SPECIAL DATA COLLECTION SYSTEM EVENT REPORT, NTS EVENT 'MAST', 19 JUNE 1975

J. R. Woolson, et al

Teledyne Geotech

Prepared for:

Defense Advanced Research Projects Agency
Air Force Technical Applications Center

September 1975

SDCS-ER-75-18

SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
NTS Event "MAST", 19 June 1975

J.R.Woolson, O.D.Solari, D.J.Reinbold, and R.J.Markle
Alexandria Laboratories
Teledyne Geotech, 314 Montgomery Street, Alexandria, Virginia 22314

September 1975

Sponsored By
The Defense Advanced Research Projects Agency
Nuclear Monitoring Research Office
1400 Wilson Boulevard, Arlington, Virginia 22209
ARPA Order No. 2837

Monitored By
VELA Seismological Center
312 Montgomery Street, Alexandria, Virginia 22314

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER SDCS-ER-75-18	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) SPECIAL DATA COLLECTION SYSTEM (SDCS) NTS Event "MAST", 19 June 1975		5. TYPE OF REPORT & PERIOD COVERED Technical 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Woolson, J. R., Solari, D. D., Reinbold, D. J., and Markle, R. J.		8. CONTRACT OR GRANT NUMBER(s) F08606-74-C-0013
9. PERFORMING ORGANIZATION NAME AND ADDRESS Alexandria Laboratories 314 Montgomery Street Alexandria, Virginia 22314		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS T/4703
11. CONTROLLING OFFICE NAME AND ADDRESS Defense Advanced Research Projects Agency Nuclear Monitoring Research Office 1400 Wilson Blvd.-Arlington, Virginia 22209		12. REPORT DATE 8 September 1975 13. NUMBER OF PAGES<br~~17~~ 19
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) VELA Seismological Center 312 Montgomery Street Alexandria, Virginia 22314		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

1.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

SDCS Event Report No. 18

NTS Event "MAST", 19 June 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	13:00:10	38 N	116 W	5.8	N/A
LASA	12:59:57	37.3N	117.7W	5.6	N/A
Hagfors Array, Sweden	13:00:01	37 N	115 W	6.3	5.0

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

SDCS & Arrays	13:00:01	37.3N	116.3W	5.9	5.5

All SDCS stations were operational for this event.

Short-period signals associated with this event were recorded at all SDCS stations along with LASA and NORSAR. The short-period horizontal channel gains at HN-ME were indeterminable due to erratic calibrations. The NORSAR short-period subarray signal presentation was not recoverable and three "on-line" array beam traces are presented.

Long-period signals were recorded at all SDCS stations; however, high-amplitude instrument pulsing on the HN-ME vertical channel precluded precise analysis of the long-period data at that station and unresolved horizontal gains at CPSO prevented rotation of the N-S and E-W components to orientations radial and transverse to the event location.

Long-period array data was not recoverable due to magnetic tape problems at SDAC.

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

HYPOCENTER DETERMINATION

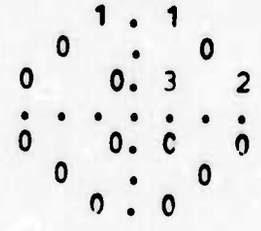
INPUT FOR EVENT 19 JUN 75
13:00:00.0 37.000N 116.000W 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
LAO	13 02 52.0	-0.2	0.0	12.0	35.4
PK-ON	13 04 45.5	0.3	-0.0	21.0	42.8
CPO	13 05 22.9	-0.3	0.0	24.7	84.7
WH2YK	13 05 37.2	0.4	0.6	26.2	339.1
PN-WV	13 06 01.5	0.5	0.5	28.9	76.2
HN-ME	13 07 08.2	0.3	0.0	36.6	60.5
NAO	13 11 31.0	-0.8	-1.2	73.1	24.1

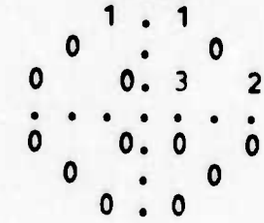
67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
13:00:08.0	37.503N	116.147W	42. CALC	0.5	4	7
13:00:01.2	37.331N	116.278W	0. REST	0.6	3	7

CALC



REST



CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.69
MAJOR 61.6KM. MINOR 37.9KM. AZ= 31 AREA= 7322 SQ.KM. REST

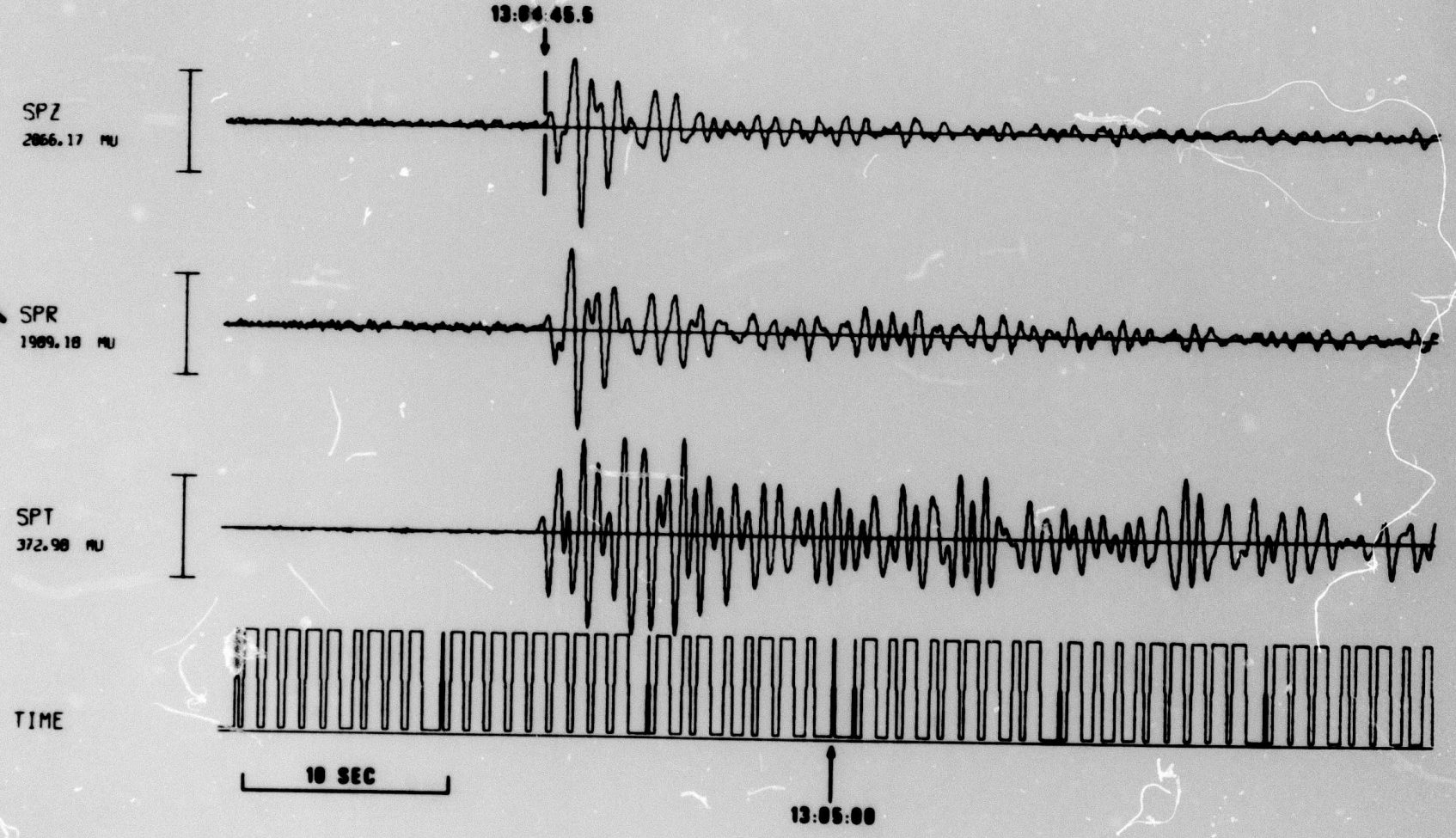
DATA SUMMARY

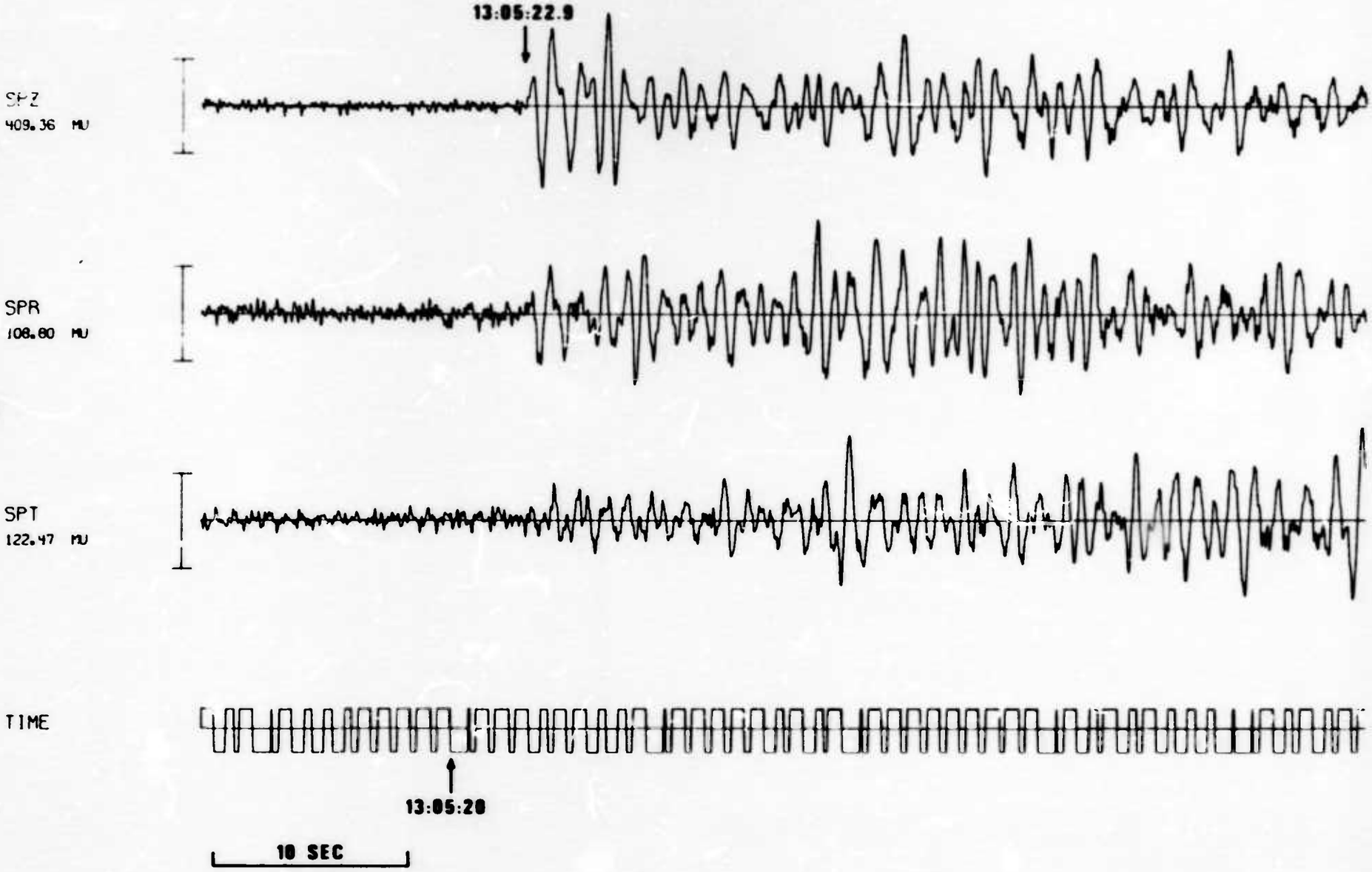
INPUT FOR EVENT 19 JUN 75
13:00:00.0 37.000N 116.000W 0KM.

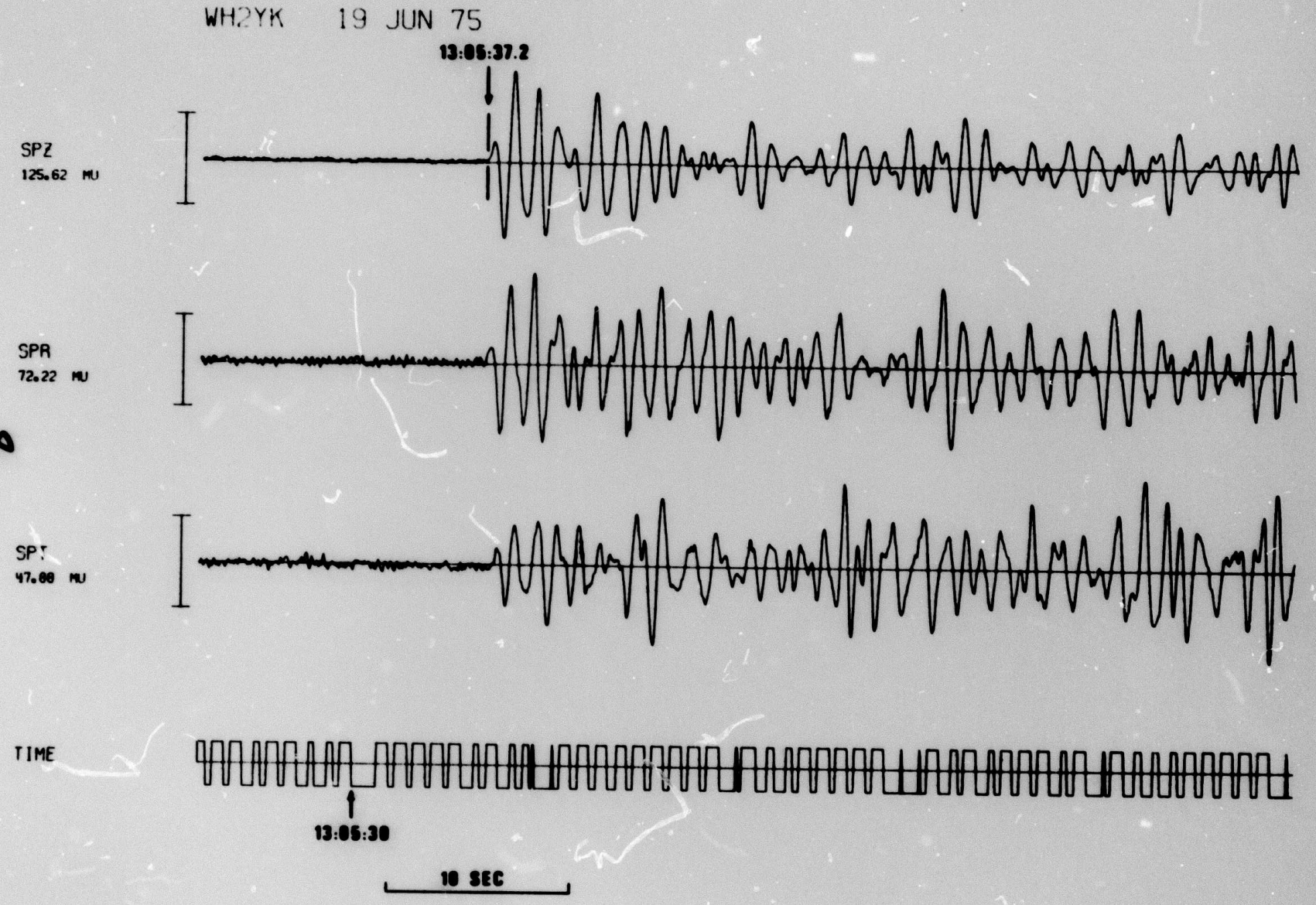
STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIR	DIST
LAC M	EP	13 02 52.0	AB	1.0	363.	6.36			12.0
RK-ON	EP	13 04 45.5	SPZ	0.7	3104.	6.29			21.0
RK-ON	LQ	13 12 40.0	LPT	13.0	457.				
RK-ON	LR	13 13 35.0	LPZ	14.0	1158.		5.51		21.0
CPO	EP	13 05 22.9	SPZ	0.9	729.	6.00			24.7
CPO	LQ	13 13 42.0	LPT	18.0	0.				
CPO	LR	13 15 24.0	LPZ	15.0	1995.		5.81		24.7
WH2YK	EP	13 05 37.2	SPZ	1.3	372.	5.69			26.2
WH2YK	LQ	13 14 46.0	LPT	20.0	158.				
WH2YK	LR	13 16 41.0	LPZ	17.0	853.		5.47		26.2
FN-WV	EP	13 06 01.5	SPZ	1.3	93.	5.27			28.9
FN-WV	LQ	13 16 07.0	LPT	16.0	824.				
FN-WV	LR	13 18 02.0	LPZ	16.0	1127.		5.63		28.9
HN-ME	EP	13 07 08.2	SPZ	1.1	943.	6.21			36.6
NAO	EP	13 11 31.0	AB	0.8	124.	5.68			73.1

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
13:00:08.0	37.503N	116.147W	42. CALC	5.81	0.43	6	5.47******		1
13:00:01.2	37.331N	116.278W	0. REST	5.86	0.39	6	5.47******		1

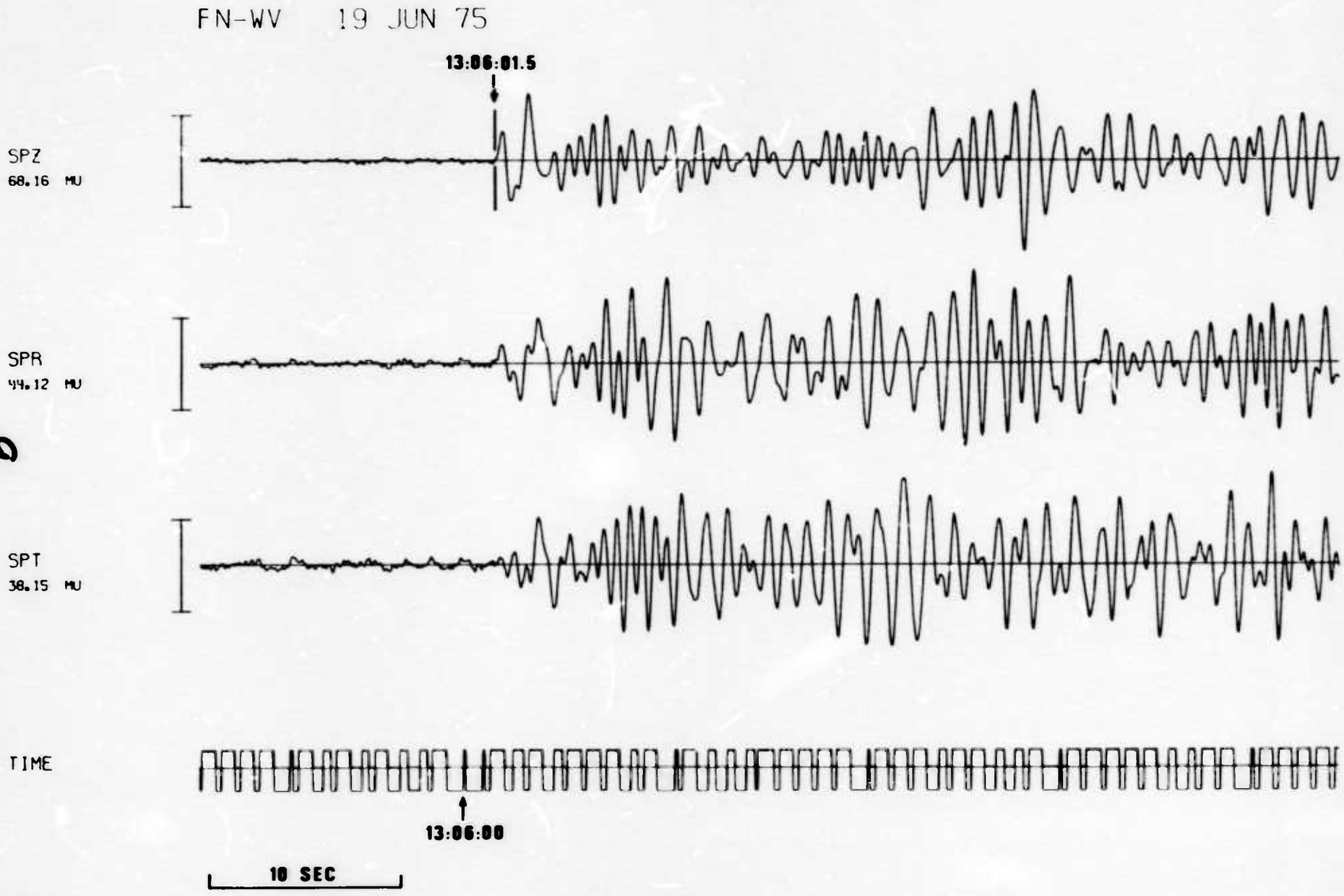
RK-UN 19 JUN 75



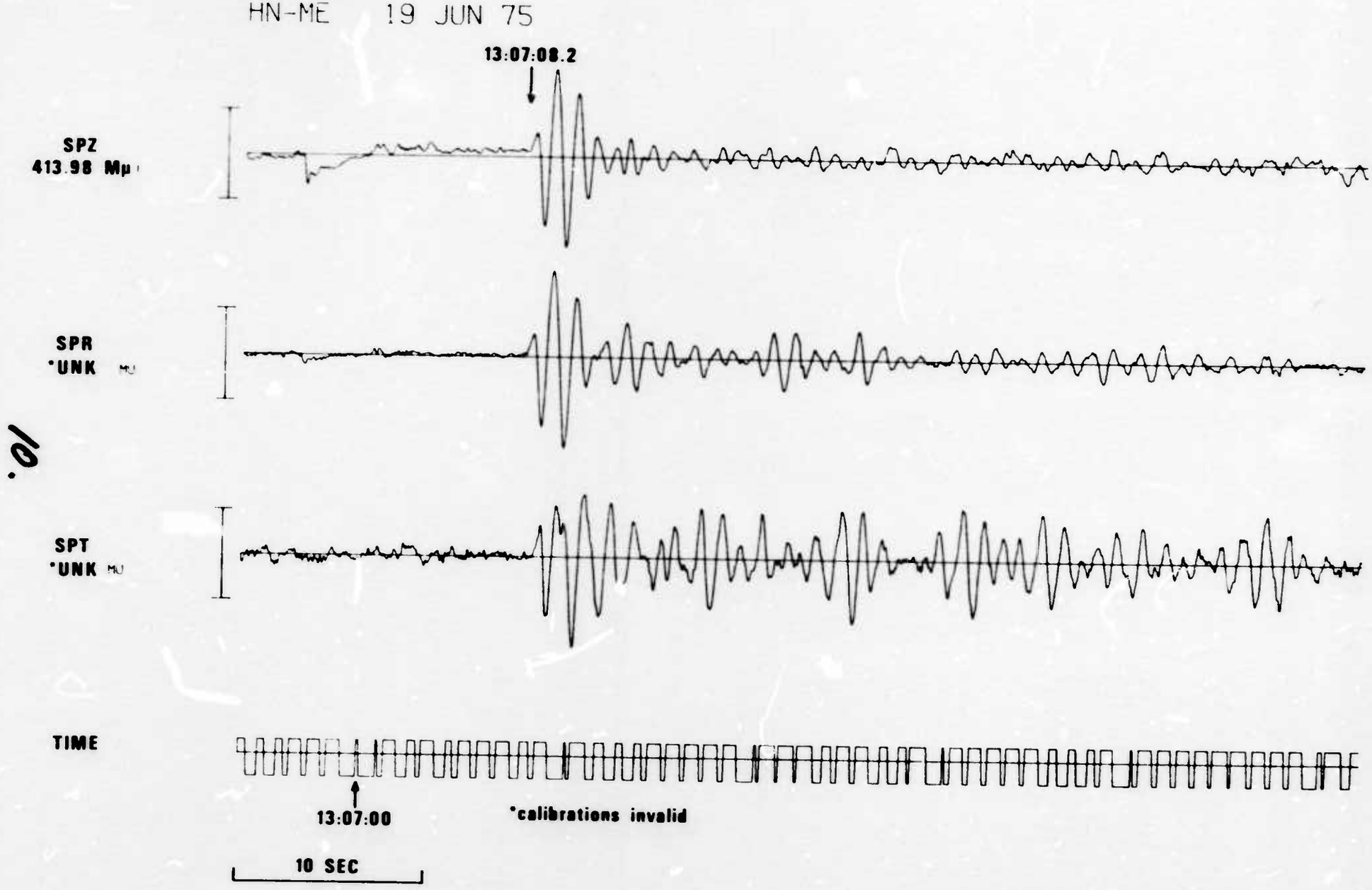

CPSO 19 JUN 75
13:05:22.9
SPZ
409.36 MU
SPR
108.80 MU
SPT
122.47 MU
TIME
13:05:20
10 SEC


WH2YK 19 JUN 75
13:05:37.2
SPZ
125.62 MU
SPR
72.22 MU
SPT
47.88 MU
TIME
13:05:30
10 SEC

8

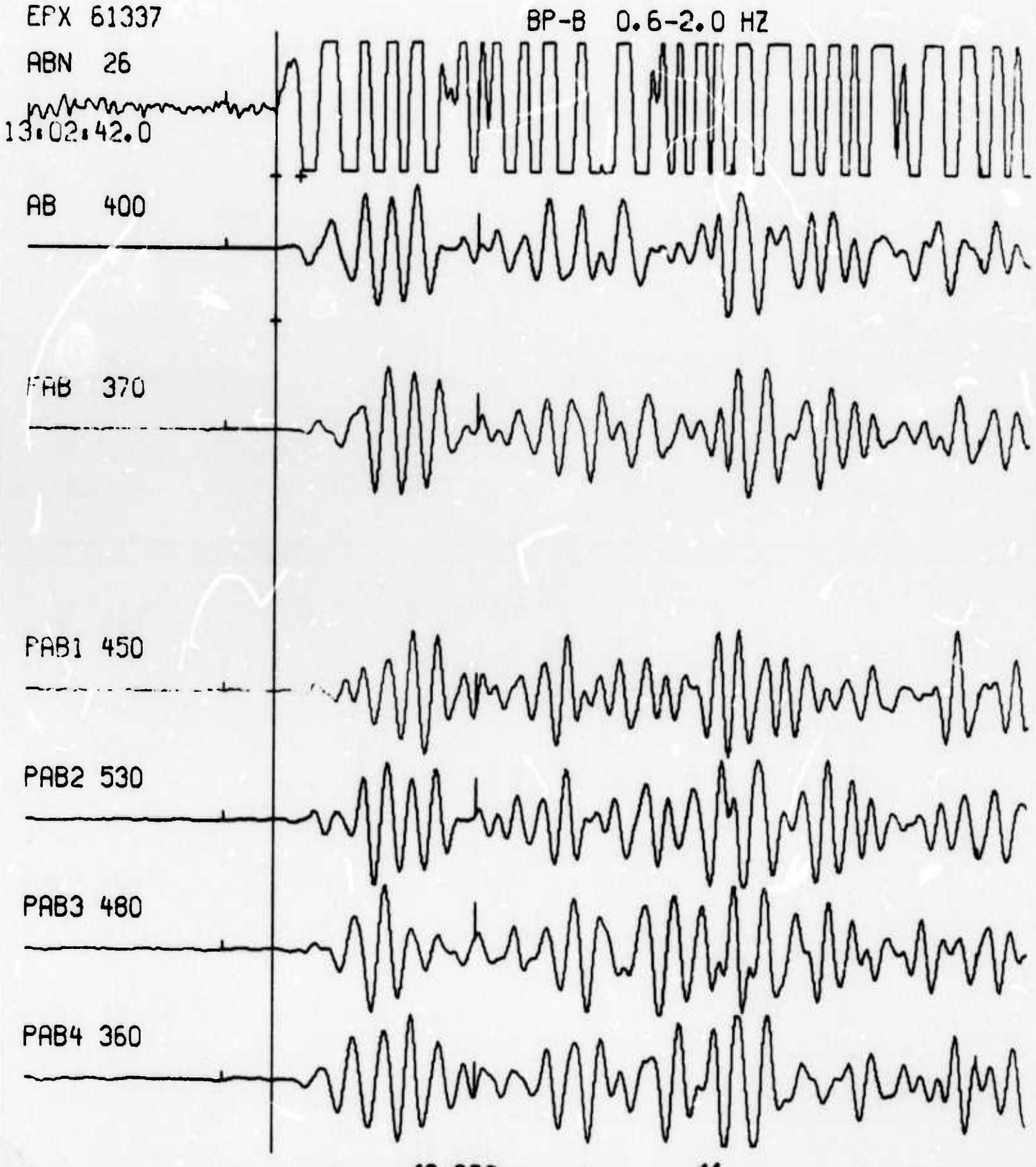

FN-WV 19 JUN 75
13:06:01.5
SPZ
68.16 MU
SPR
44.12 MU
SPT
38.15 MU
TIME
13:06:00
10 SEC

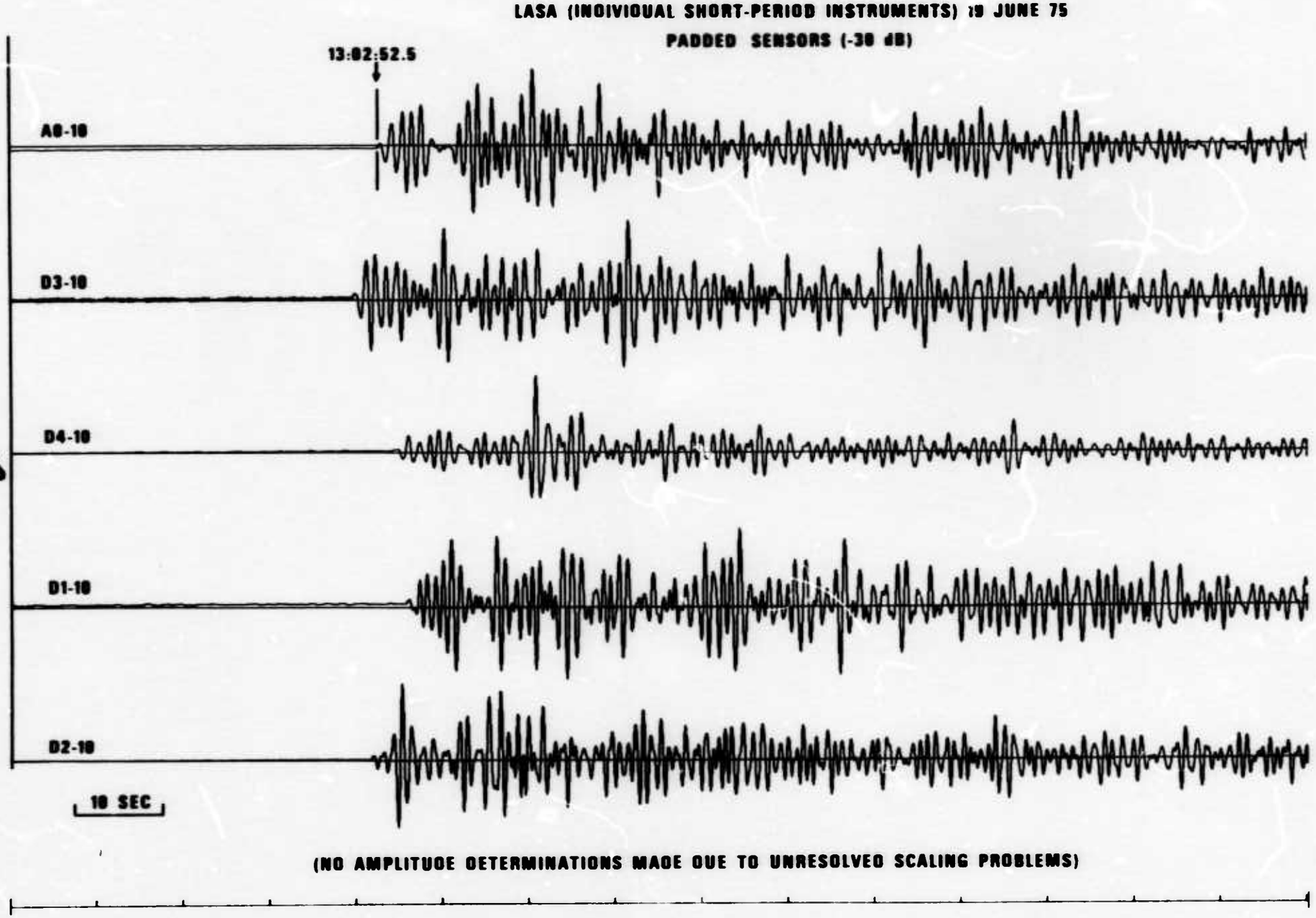
9.


HN-ME 19 JUN 75
13:07:08.2
SPZ
413.98 Mμ
SPR
*UNK MU
SPT
*UNK MU
TIME
13:07:00
*calibrations invalid
10 SEC

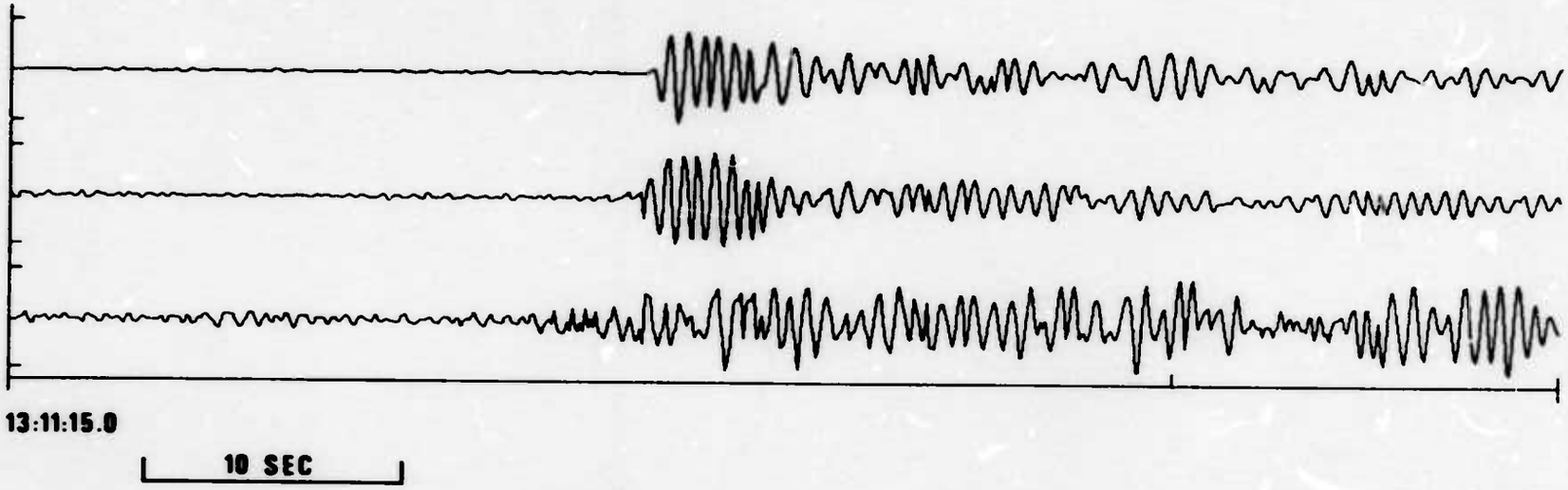
LASA

1 19 JUN 1975
2 12 59 57 37.3N 117.7W 33C D 5.7 40 CALIFORNIA-NEVEDA BORDER
3 13 2 52.0 LAO P 239.1 1.0 8.3 12.6 226.7

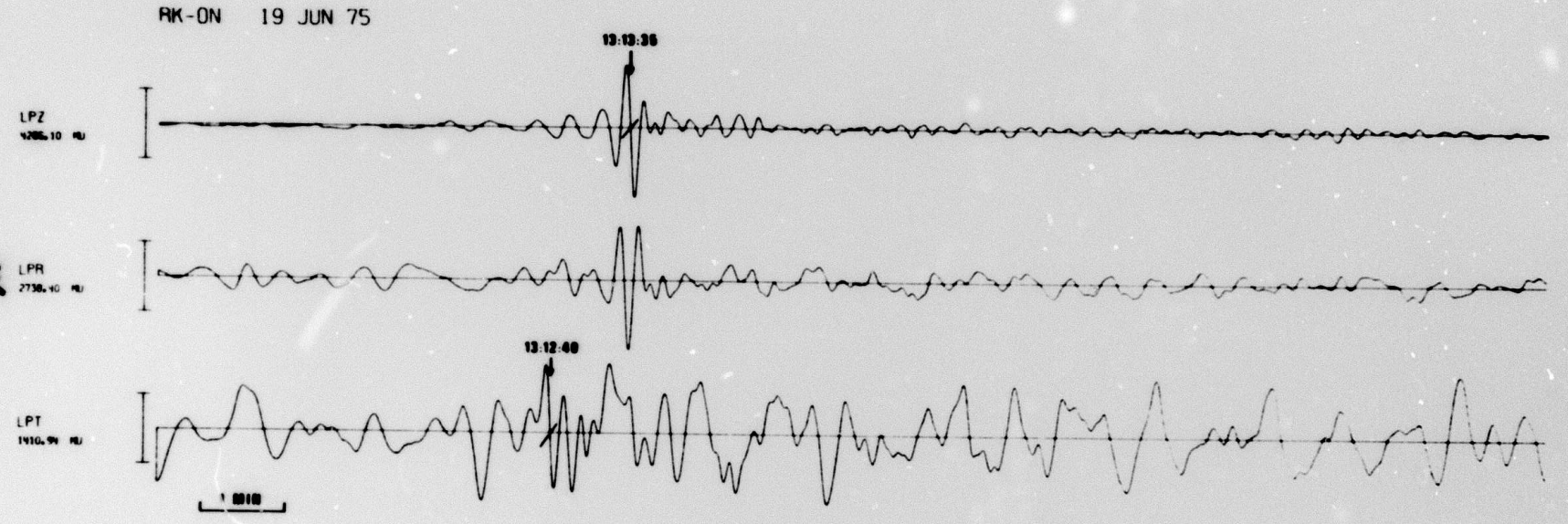


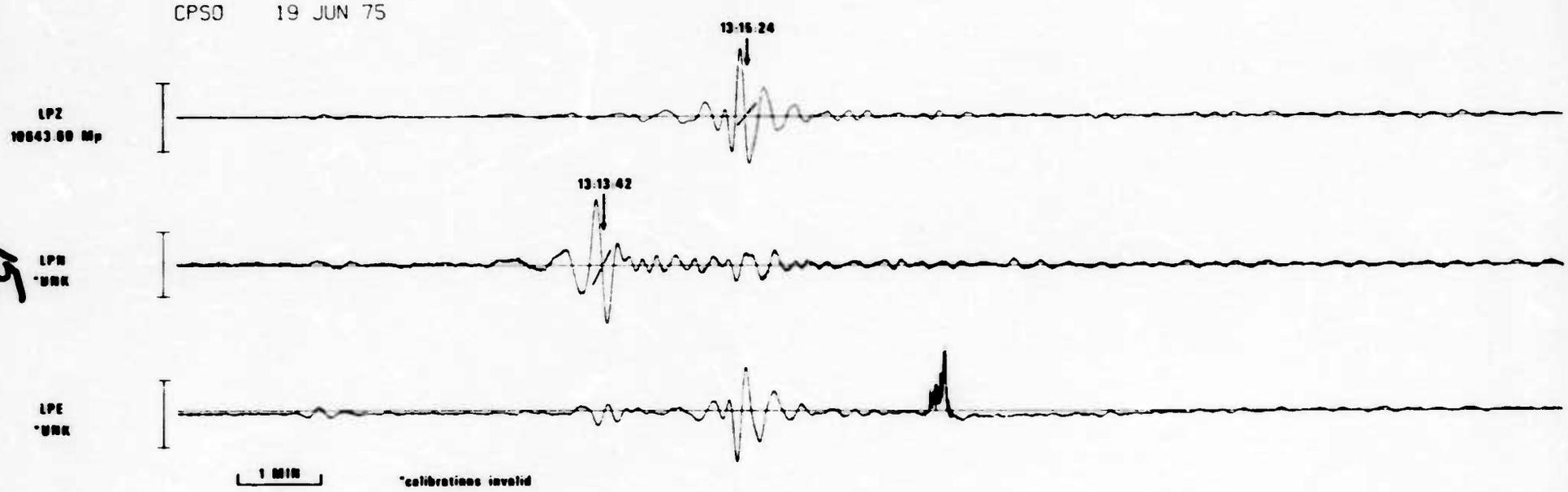

LASA (INDIVIDUAL SHORT-PERIOD INSTRUMENTS) 19 JUNE 75
PADDED SENSORS (-30 dB)
13:02:52.5
A0-19
D3-19
D4-19
D1-19
D2-19
10 SEC
(NO AMPLITUDE DETERMINATIONS MADE DUE TO UNRESOLVED SCALING PROBLEMS)

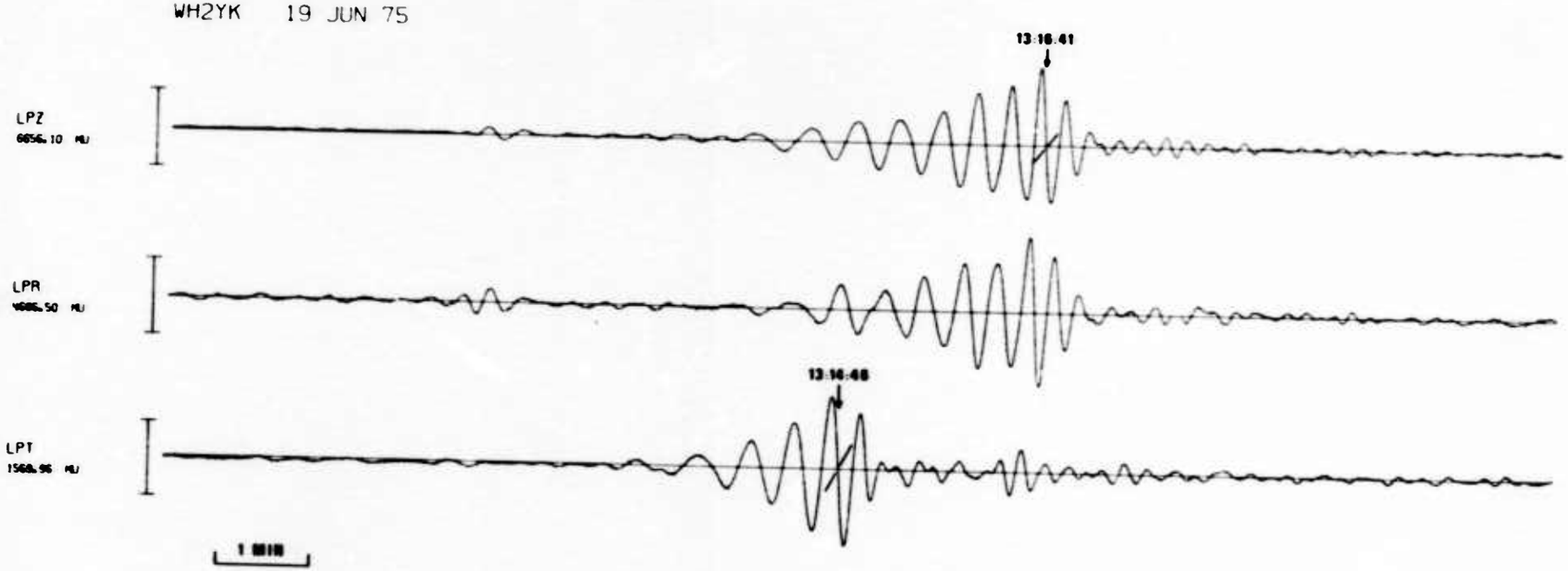
NORSAR ARRAY BEAMS 19 JUN 75

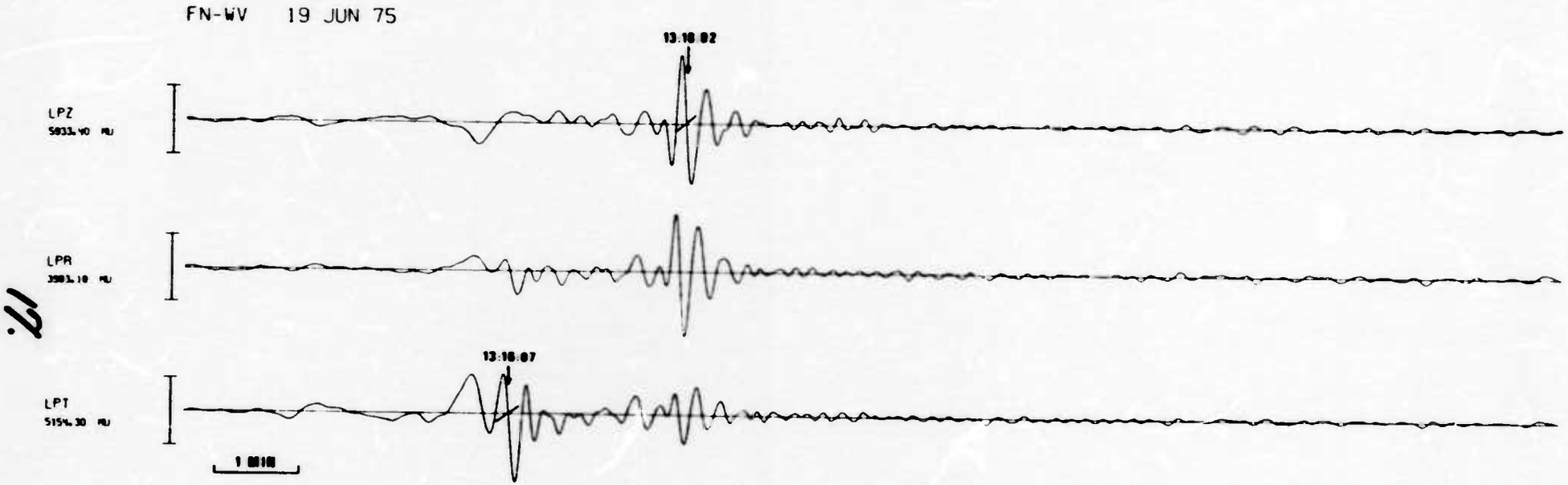


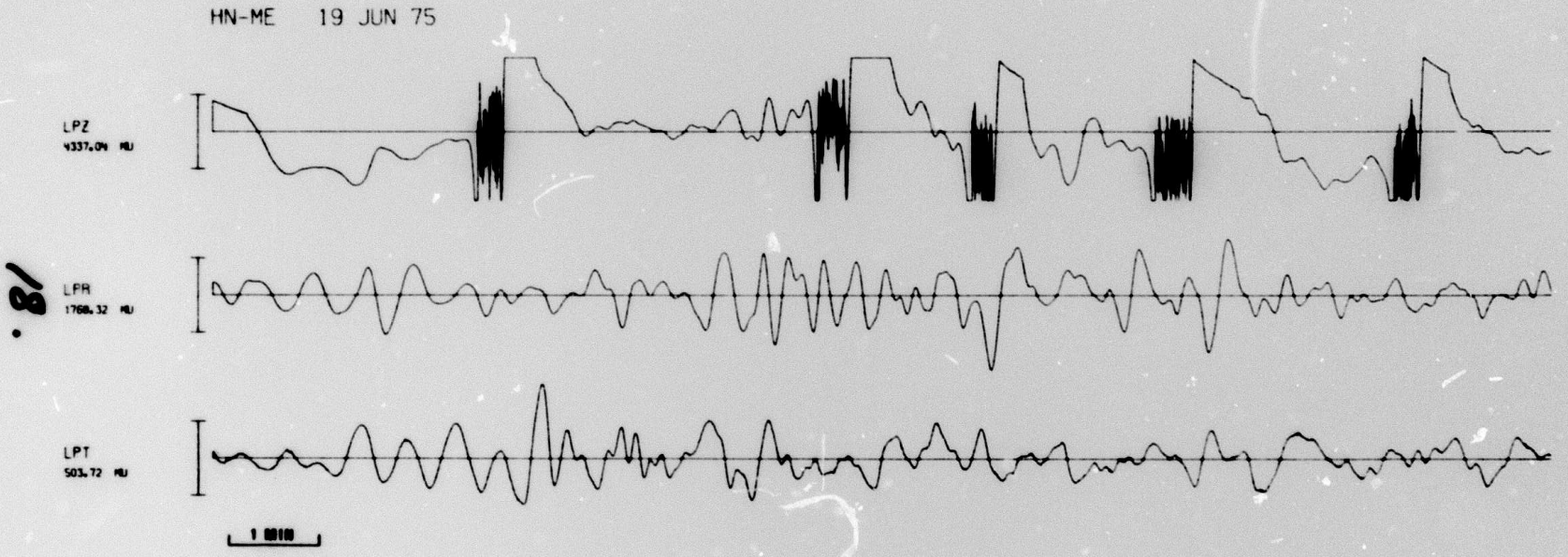
(THIS PRESENTATION HAS TESTED VALIDITY ONLY FOR RELATIVE ARRIVAL TIME)


RK-ON 19 JUN 75
13:13:36
LPZ
LPR
13:12:48
LPT


CPSO 19 JUN 75
13:15:24
LPZ
10843.88 Mp
13:13:42
LPN
*UNK
LPE
*UNK
1 MIN
*calibrations invalid


WH2YK 19 JUN 75
13:16:41
LPZ
6656.10 MU
LPR
13:16:48
LPT
1 MIN


FN-WV 19 JUN 75
13:16:02
LPZ
LPR
13:16:07
LPT
1 SEC


HN-ME 19 JUN 75
LPZ
4337.09 MU
LPR
1768.32 MU
LPT
503.72 MU
1 MIN