SPECIAL DATA COLLECTION SYSTEM EVENT REPORT: MEXICO-GUATEMALA BORDER, 22 AUGUST 1975

K. J. Hill, et al

Teledyne Geotech
Alexandria, Virginia

December 1975

SDCS-ER-75-43

SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Mexico-Guatemala Border, 22 August 1975

K.J. Hill, M.S. Dawkins, and R.R. Baumstark
Alexandria Laboratories
Teledyne Geotech, 314 Montgomery Street, Alexandria, Virginia 22314

December 1975

Sponsored By
The Defense Advanced Research Projects Agency
Nuclear Monitoring Research Office
1400 Wilson Boulevard, Arlington, Virginia 22209
ARPA Order No. 2897

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

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: SDCS-ER-75-43
2. GOVT ACCESSION NO.:
3. RECIPIENT'S CATALOG NUMBER:

4. TITLE (and Subtitle): SPECIAL DATA COLLECTION SYSTEM (SDCS) Mexico-Guatemala Border, 22 August 1975

5. TYPE OF REPORT & PERIOD COVERED: Technical

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s): Hill, K. J., Dawkins, M. S., and Baumstark, R. R.

8. CONTRACT OR GRANT NUMBER(s): F08606-74-C-0013

9. PERFORMING ORGANIZATION NAME AND ADDRESS:
Teledyne Geotech
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: 23 December 1975

13. NUMBER OF PAGES: 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)

SDCS Event Report No. 43

Mexico-Guatemala Border, 22 August 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	Latitude	Longitude	m_b	M_s
NORSAR	23:20:46.6	23:08:46	16 N	093 W	5.4	N/A
Hagfors	23:20:53.3	23:07:16	2 N	097 W	5.7	5.4

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

23:08:14.5	14.7N	093.5W	5.2	5.0

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at WH2YK, CPSO, RK-ON, FN-WV, LASA and NORSAR. The horizontal SP channels at all SDCS stations were rotated. High-level background noise prevented determination of signal arrival at HN-ME. At WH2YK all SP channels displayed high-level background noise.

Long-period signals were recorded at WH2YK, CPSO, HN-ME, FN-WV, ALPA and LASA. Horizontal channels at WH2YK, CPSO, HN-ME and FN-WV were rotated. At RK-ON both the vertical and transverse LP channels were inoperative and the radial LP channel operated at an unknown gain. NORSAR long-period array data were not recoverable. Validity of the ALPA long-period vertical beam is uncertain.

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 3[illegible].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

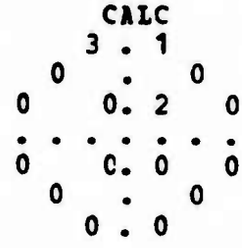
INPUT FOR EVENT 22 AUG 75
23:08:10.0 13.999N 93.000W 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
CPO	23 13 10.6	0.5	1.1	22.0	17.4
FN-WV	23 13 55.0	-0.6	-0.4	26.8	24.8
LAC	23 14 56.4	-0.2	0.2	33.6	344.1
RK-CN	23 15 15.4	0.1	-1.6	36.1	359.8
WH2YK	23 17 46.1	0.1	0.6	54.8	336.5
NAC	23 20 46.6	0.2	0.1	84.1	28.5

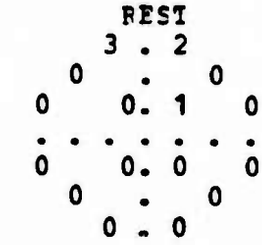
67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
23:09:16.6	17.697N	93.098W	440. CALC	0.4	7	6
23:08:14.5	14.692N	93.461W	0. REST	0.9	3	6

CALC



REST



CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.25
MAJOR 80.4KM. MINOR 52.8KM. AZ= 174 AREA= 13354 SQ.KM. REST

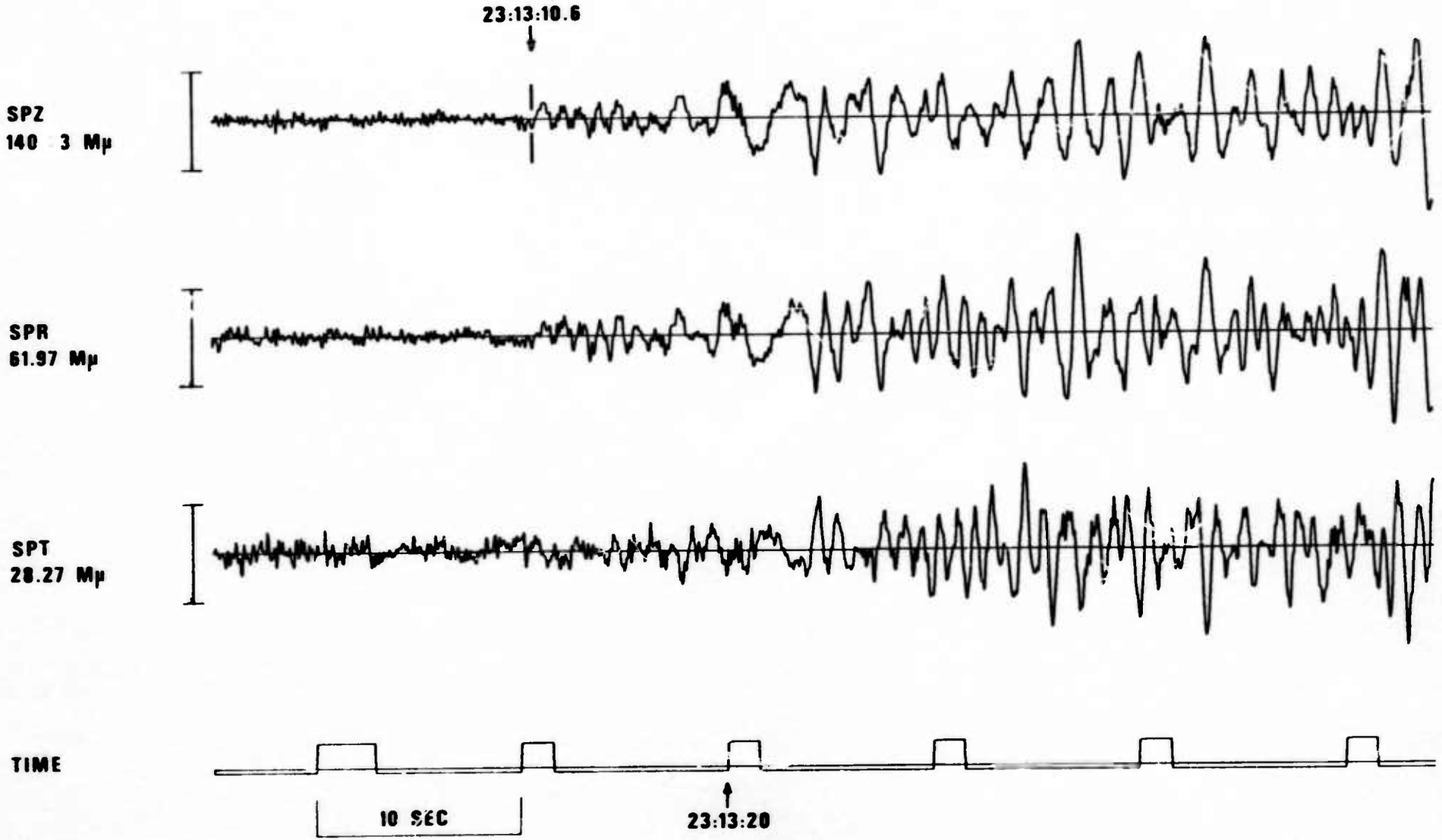
DATA SUMMARY

INPUT FOR EVENT 22 AUG 75
23:08:10.0 13.999N 93.000W 0KM.

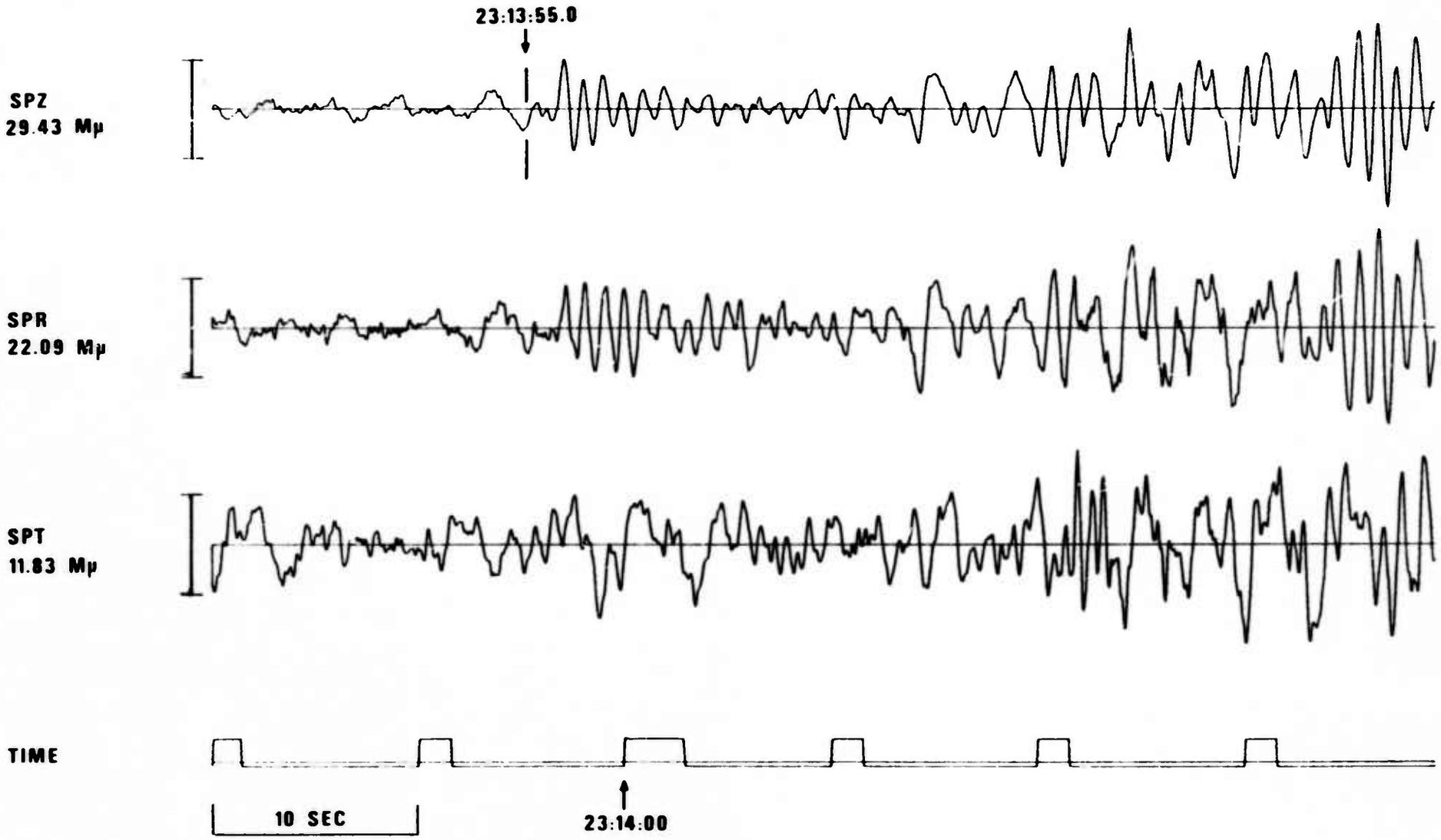
STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIR	DIST
CPC	EP	23 13 10.6	SPZ	1.0	589.	5.67			22.0
CPC	LR	23 23 22.0	LPZ	18.0	589.		5.23		22.0
FN-WV	EP	23 13 55.0	SPZ	1.0	27.	4.61			26.8
FN-WV	LR	23 25 13.0	LPZ	22.0	374.		5.12		26.8
LAC	EP	23 14 56.4	SAB	1.2	268.	5.83			33.6
LAC	LR	23 30 05.0	LPZ	20.0	201.		4.95		33.6
RK-ON	EP	23 15 15.4	SPZ	1.0	52.	5.01			36.1
HN-ME	LR	23 31 46.0	LPZ	23.0	117.		4.77		38.0
WH2YK	EP	23 17 46.1	SPZ	0.7	9.	4.45			54.8
WH2YK	LQ	23 40 00.0	LPT	18.0	538.				
WH2YK	LR	23 44 52.0	LPZ	17.0	347.		5.40		54.8
ALPA	LR	23 49 33.0	LPZ	19.0	60.		4.69		62.2
NAC	EP	23 20 46.6	AB	1.0	108.	5.73			84.1

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
23:09:16.6	17.697N	93.098W	440. CALC	4.64	0.62	5	4.99	0.3	6
23:08:14.5	14.692N	93.461W	0. REST	5.22	0.61	6	5.03	0.3	6

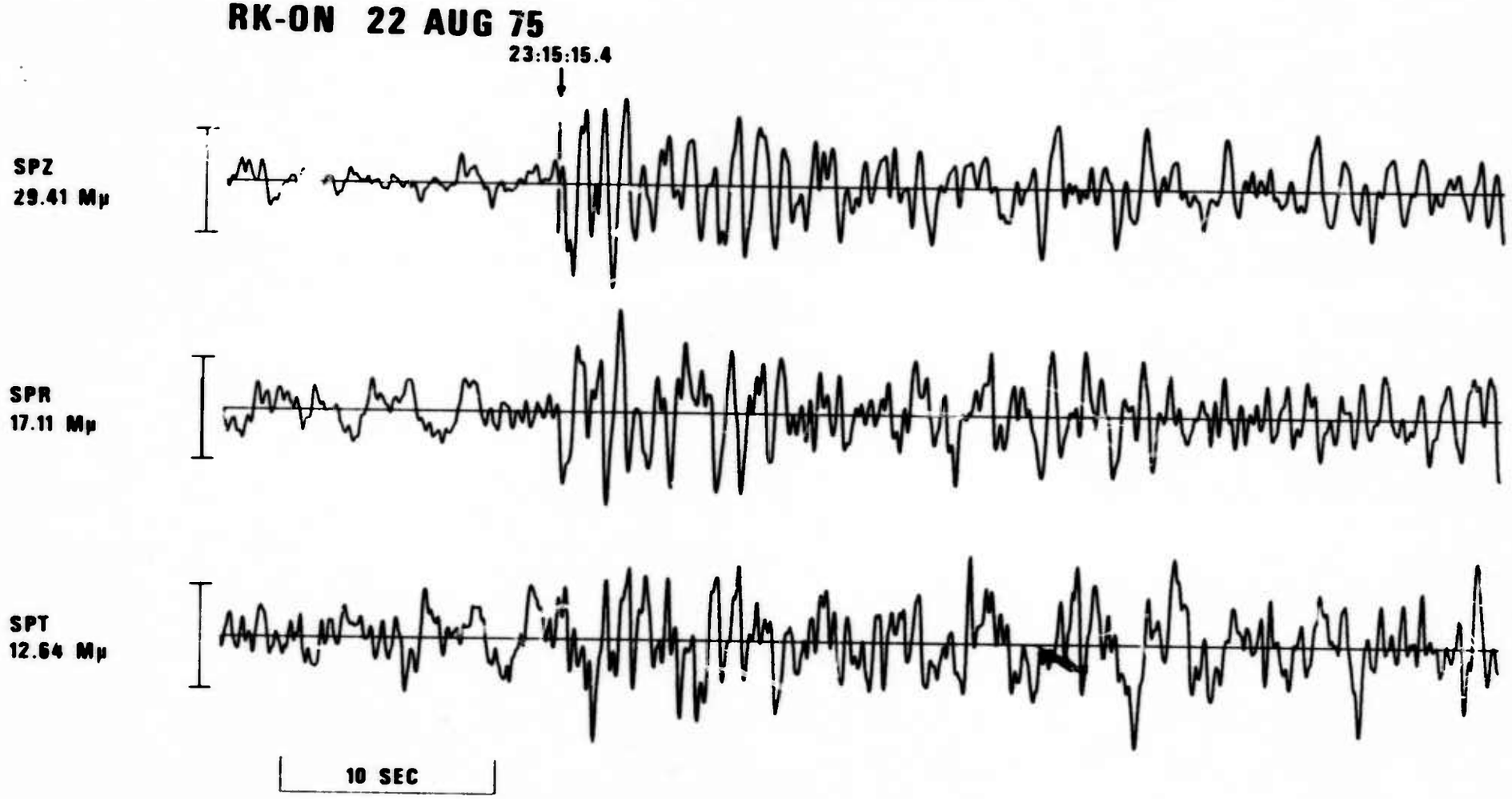
CPC NOT USED IN CALC RUN SP AVG. MAG.

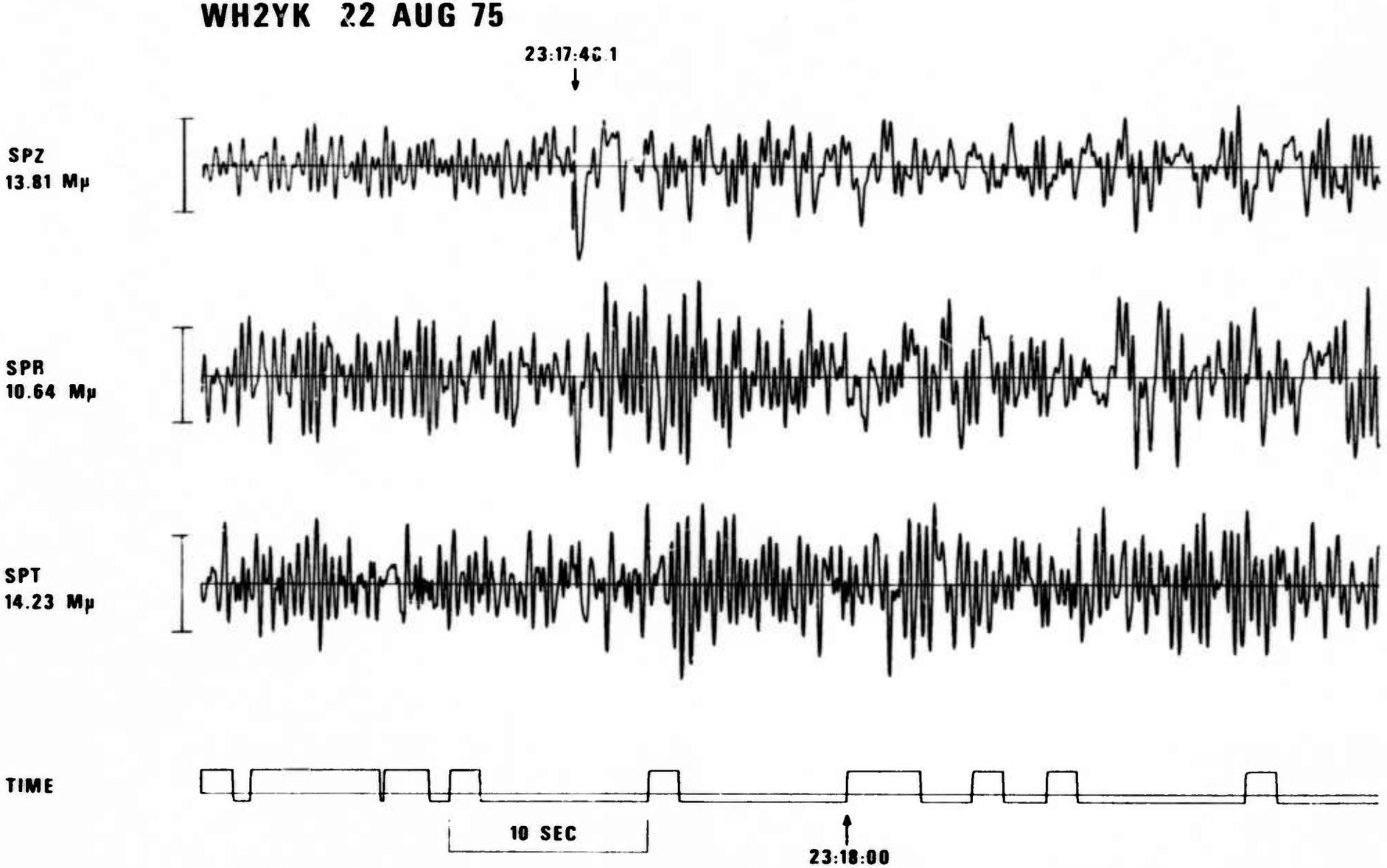

CPSO 22 AUG 75
23:13:10.6
SPZ
140 3 Mμ
SPR
61.97 Mμ
SPT
28.27 Mμ
TIME
10 SEC
23:13:20

FN-WV 22 AUG 75

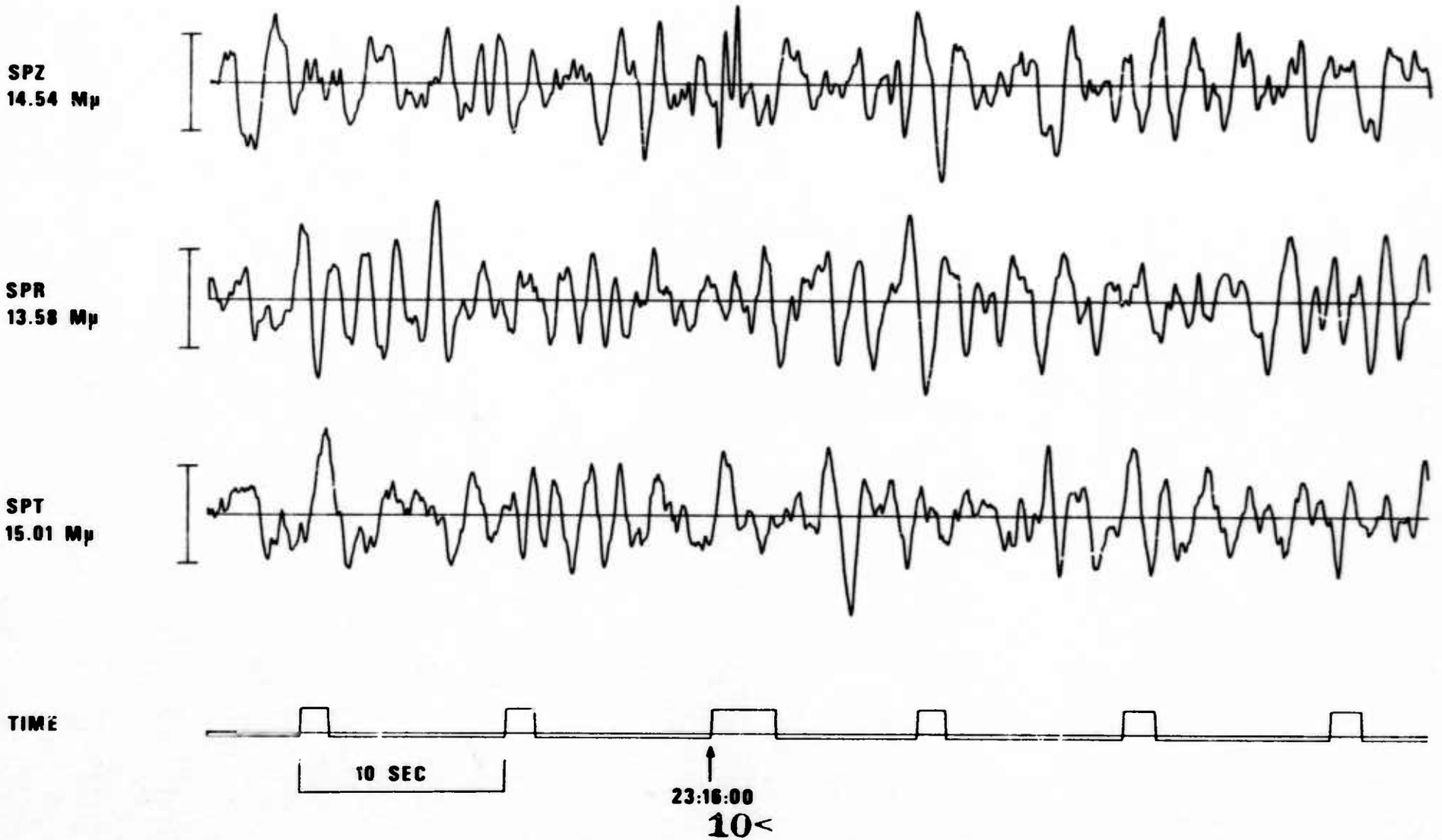


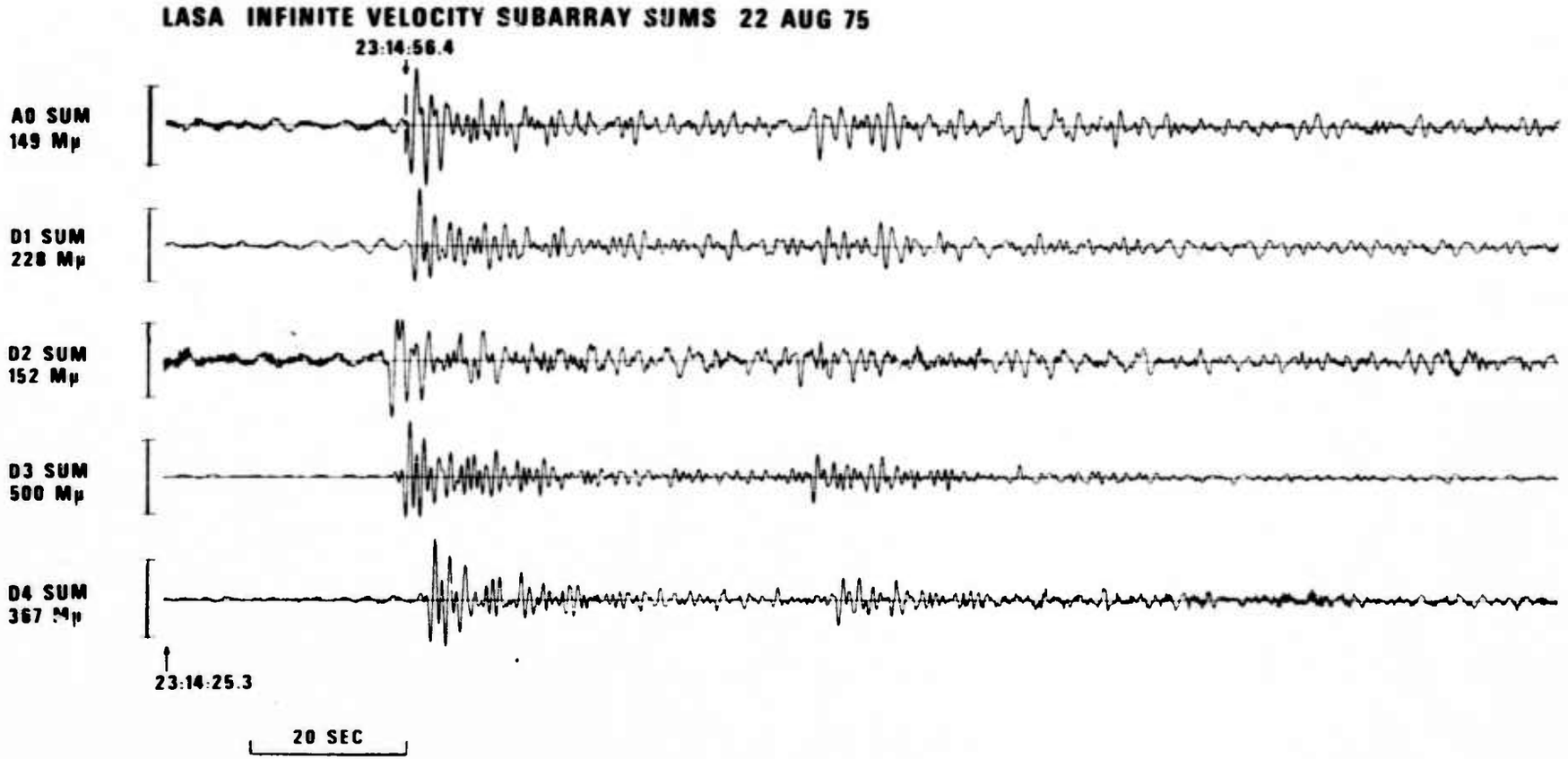
7<


RK-ON 22 AUG 75
23:15:15.4
SPZ
29.41 Mμ
SPR
17.11 Mμ
SPT
12.64 Mμ
10 SEC


WH2YK 22 AUG 75
23:17:46.1
SPZ
13.81 Mμ
SPR
10.64 Mμ
SPT
14.23 Mμ
TIME
10 SEC
23:18:00

HN-ME 22 AUG 75



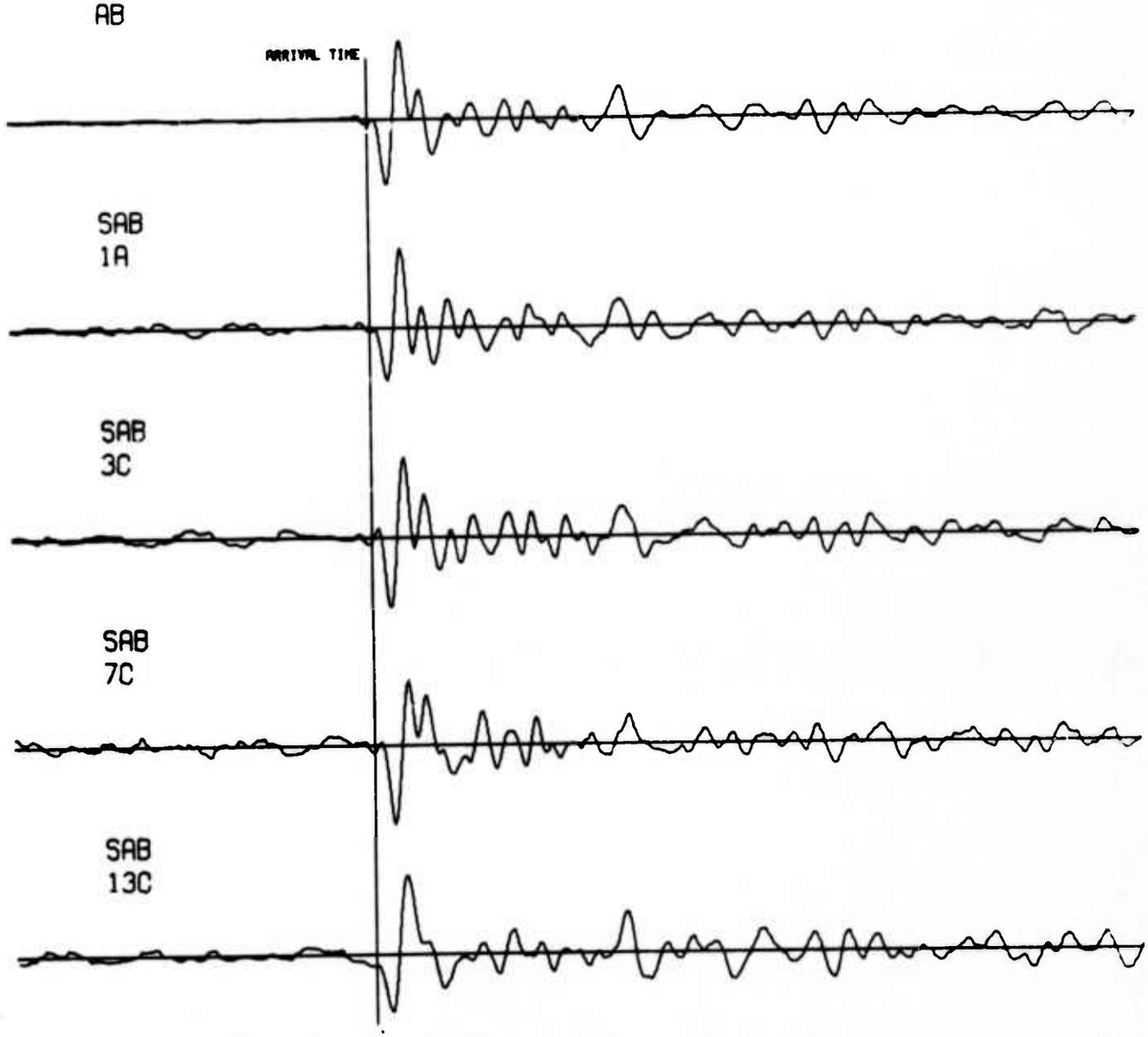

LASA INFINITE VELOCITY SUBARRAY SUMS 22 AUG 75
23:14:56.4
A0 SUM
149 Mμ
D1 SUM
228 Mμ
D2 SUM
152 Mμ
D3 SUM
500 Mμ
D4 SUM
367 Mμ
23:14:25.3
20 SEC

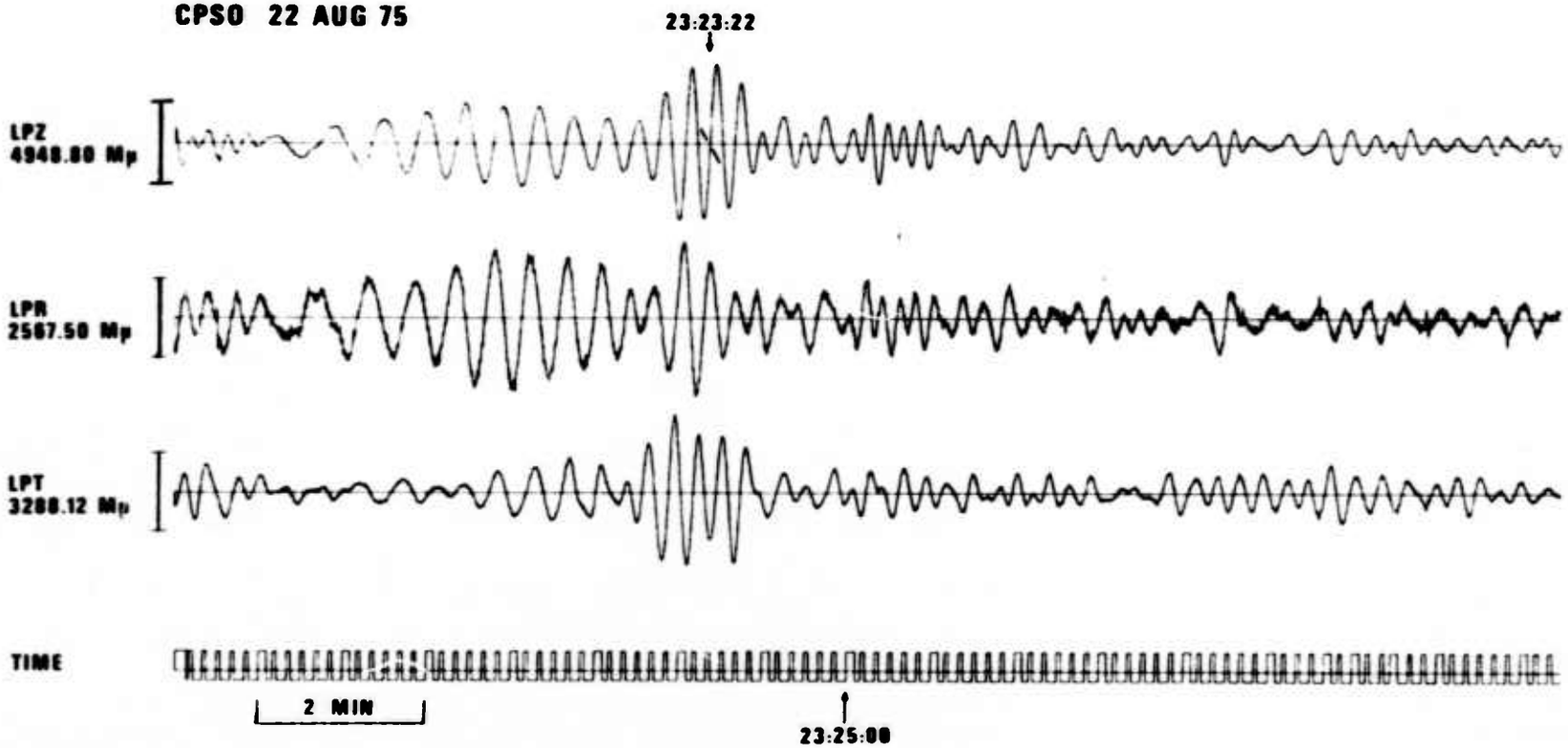
NORSAR EVENT FILE **22 AUG 75**

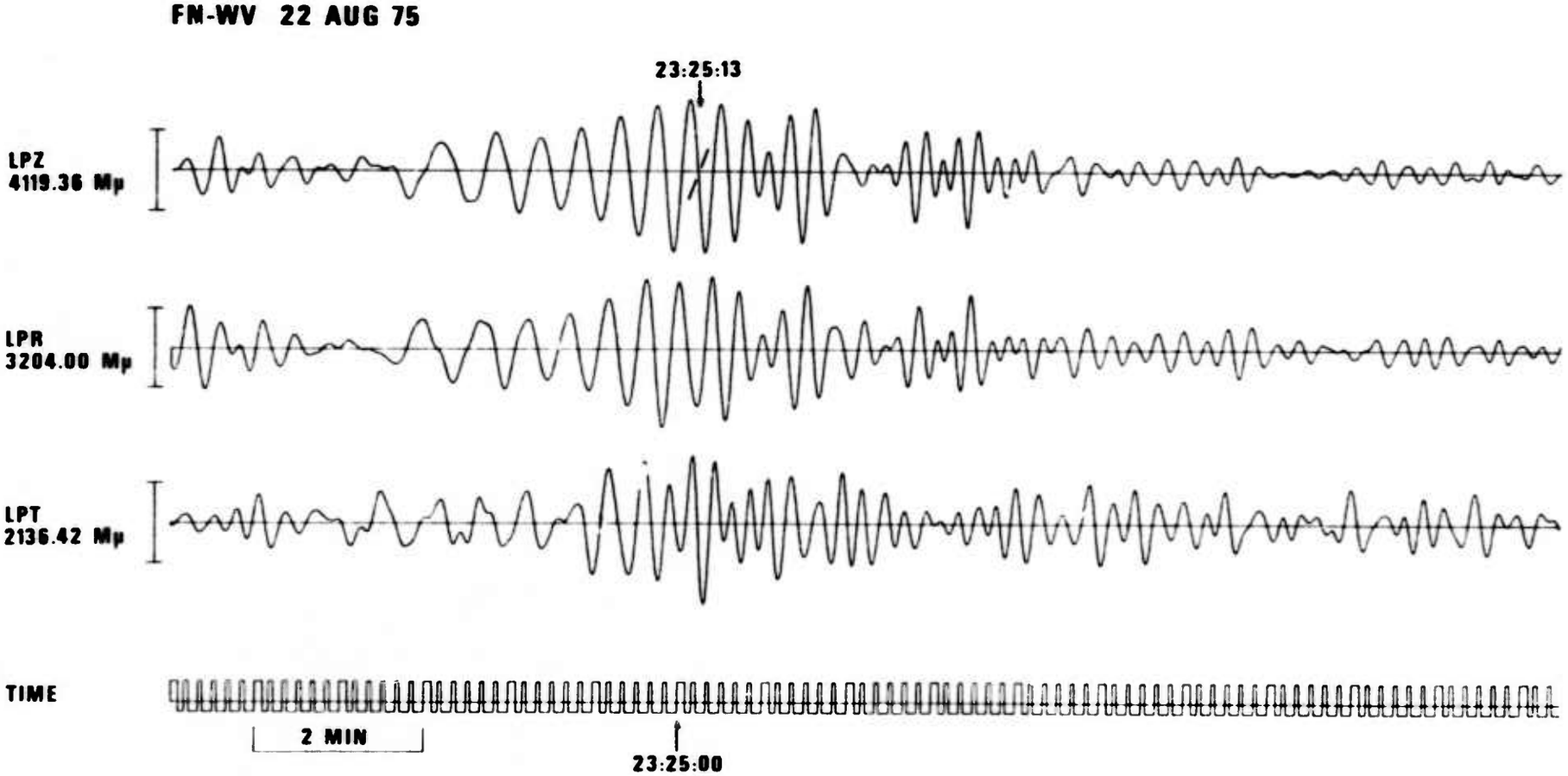
EPX NO. 41080 ARR. 23.20.47.3 11.6N 95.2W 5.5MB 33KM

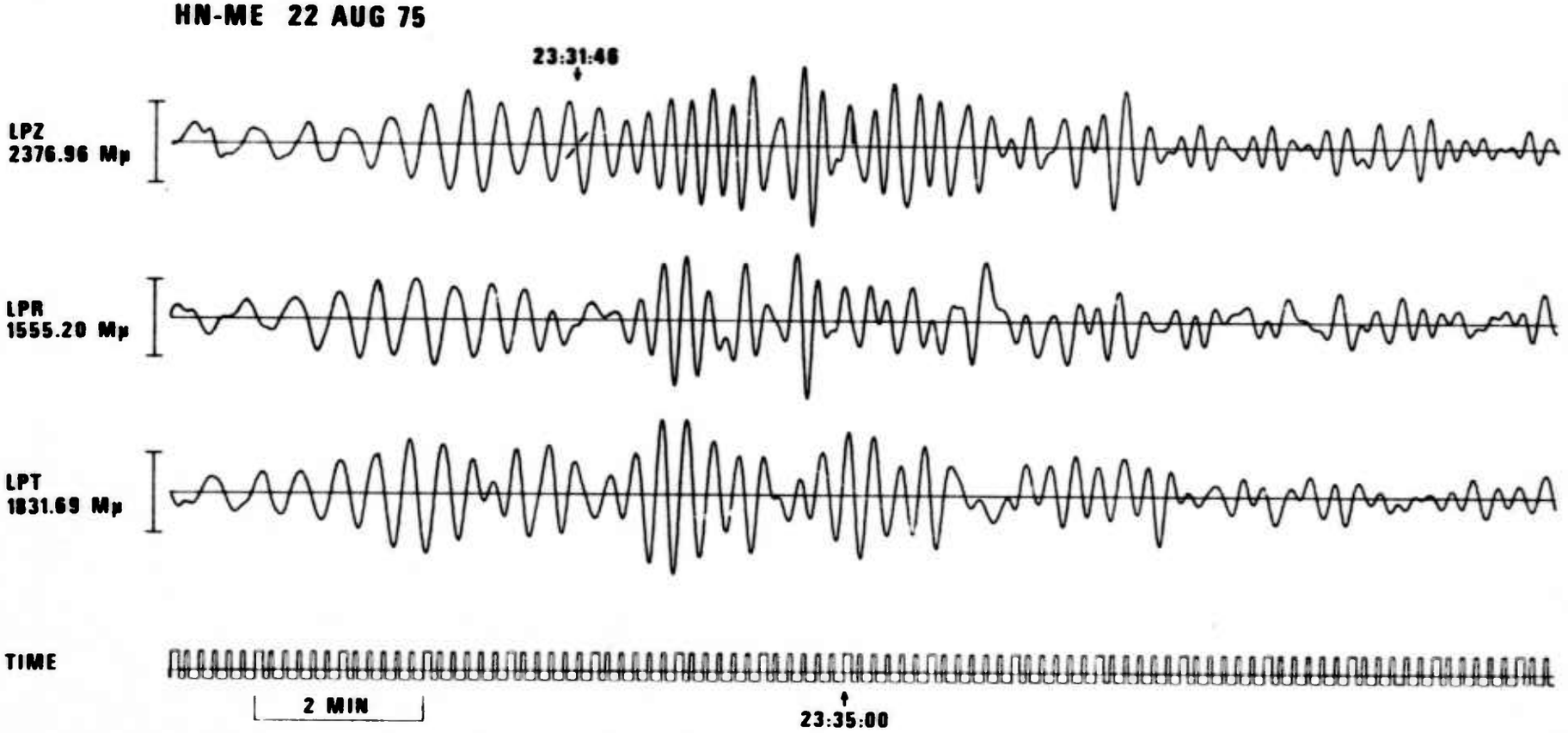
DIST = 87.6 AZI = 289.5 AMP = 37.2 PER = 1.0

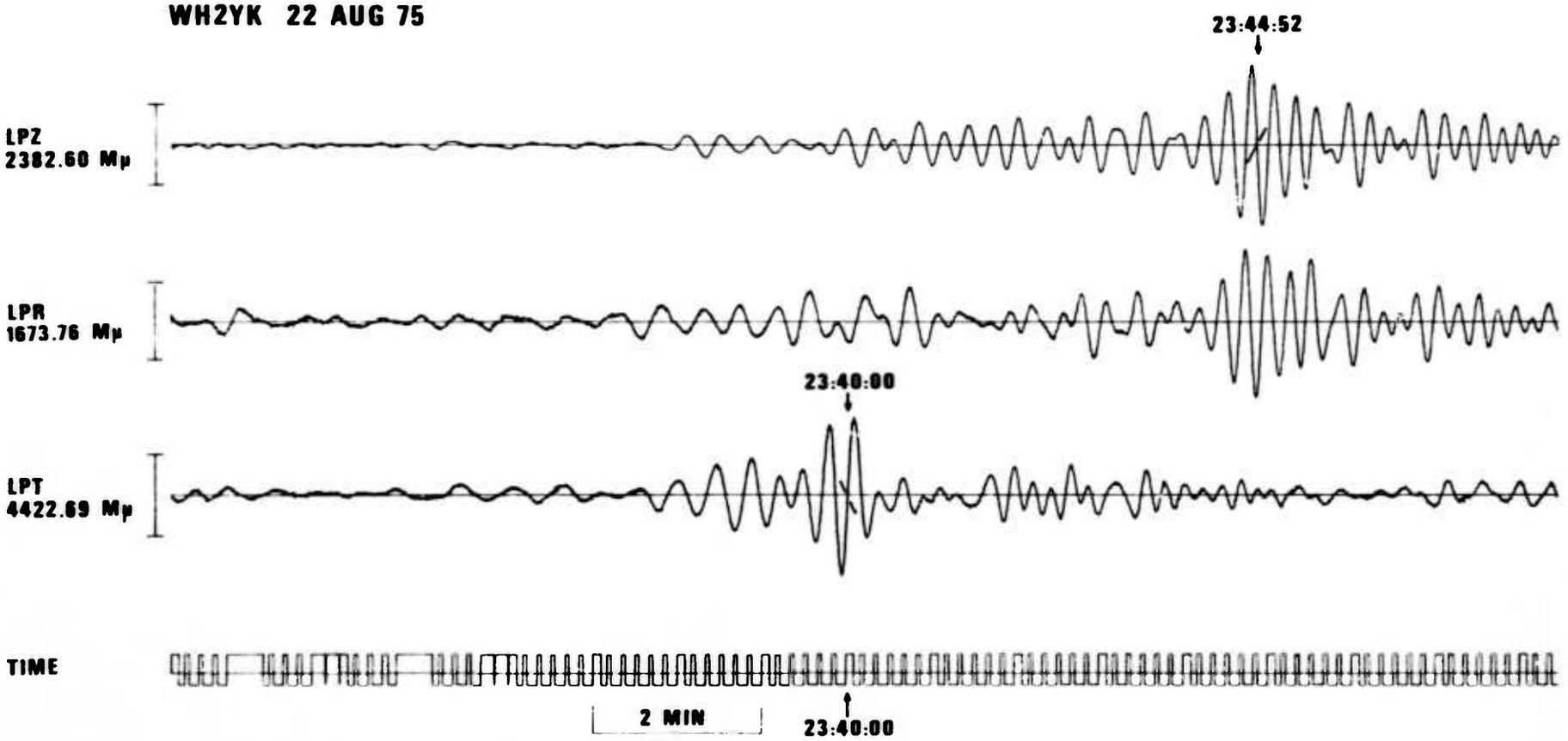
= 5 SECONDS

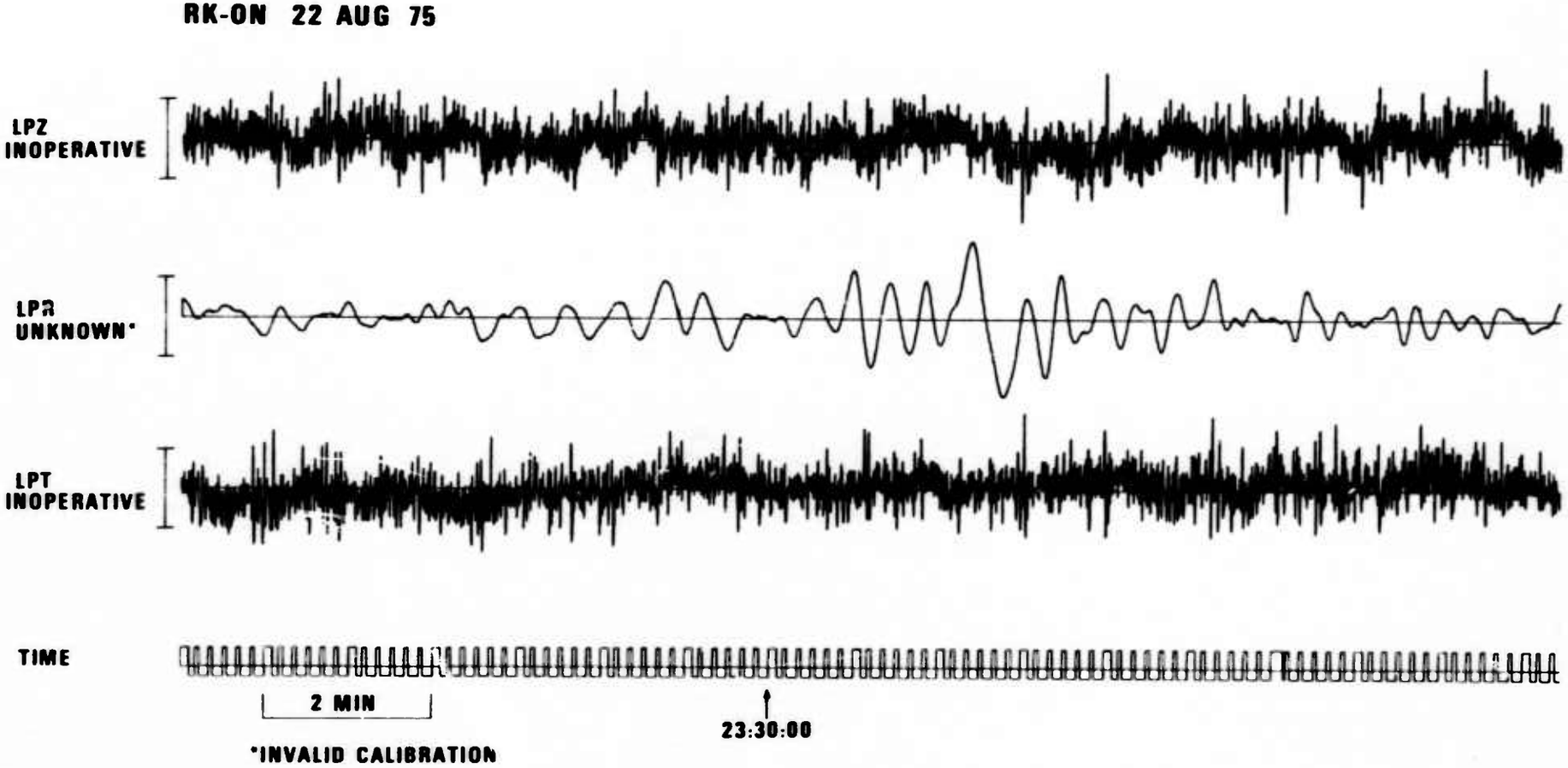


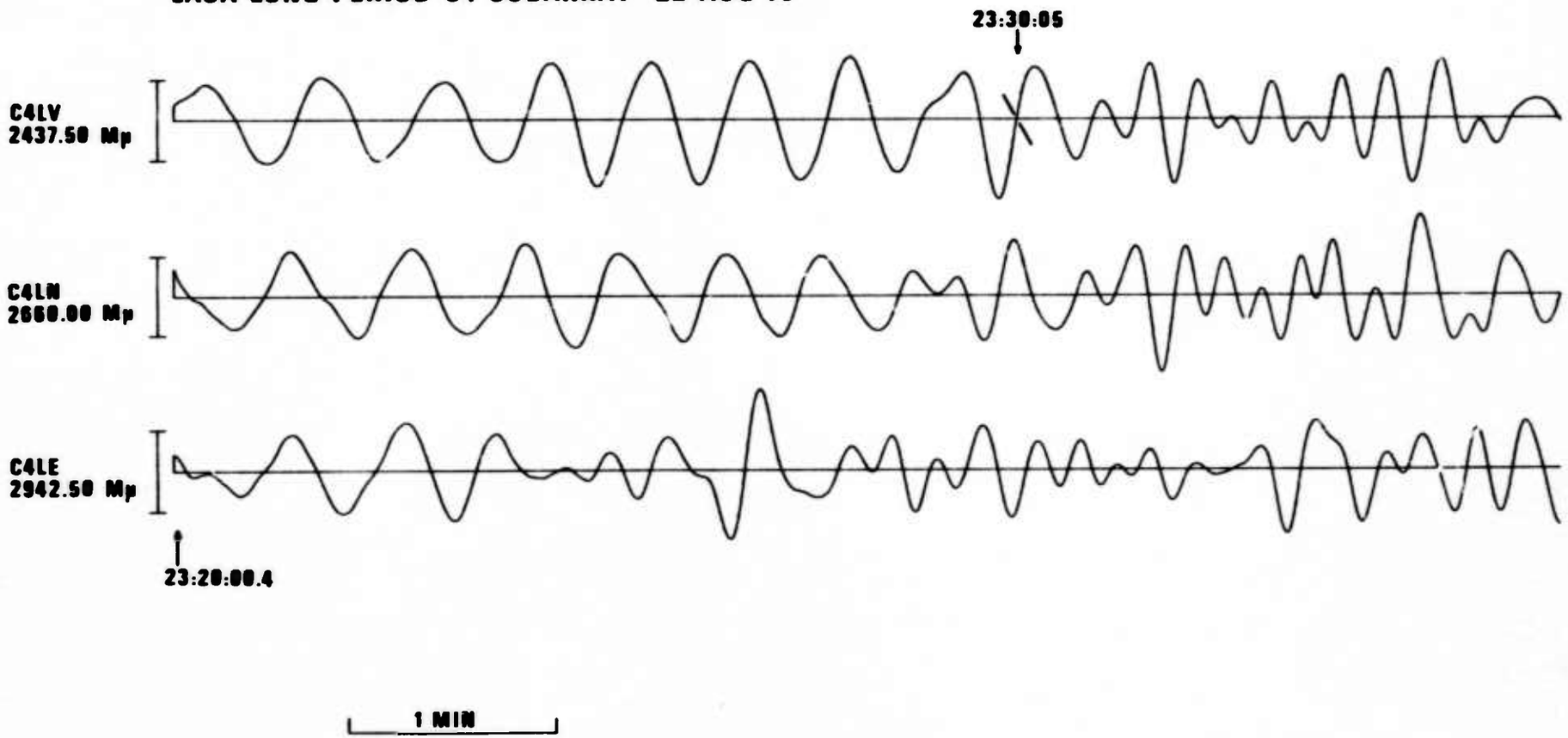

CPSO 22 AUG 75
23:23:22
LPZ
4948.80 Mμ
LPR
2587.50 Mμ
LPT
3288.12 Mμ
TIME
2 MIN
23:25:08


FN-WV 22 AUG 75
23:25:13
LPZ
4119.36 Mμ
LPR
3204.00 Mμ
LPT
2136.42 Mμ
TIME
2 MIN
23:25:00


HN-ME 22 AUG 75
23:31:46
LPZ
2376.96 Mμ
LPR
1555.20 Mμ
LPT
1831.69 Mμ
TIME
2 MIN
23:35:00


WH2YK 22 AUG 75
23:44:52
LPZ
2382.60 Mμ
LPR
1673.76 Mμ
23:40:00
LPT
4422.69 Mμ
TIME
2 MIN
23:40:00


RK-ON 22 AUG 75
LPZ
INOPERATIVE
LPR
UNKNOWN*
LPT
INOPERATIVE
TIME
2 MIN
23:30:00
*INVALID CALIBRATION


LASA LONG PERIOD C4 SUBARRAY 22 AUG 75
23:30:05
C4LV
2437.50 Mp
C4LN
2660.00 Mp
C4LE
2942.50 Mp
23:20:00.4
1 MIN

ALPA LONG-PERIOD VERTICAL BEAM 22 AUG 75