SPECIAL DATA COLLECTION SYSTEM EVENT REPORT, NTS EVENT 'CABRILLO', 7 MARCH 1975

J. R. Woolson, et al

Teledyne Geotech

Prepared for:

Defense Advanced Research Projects Agency
Air Force Technical Applications Center

September 1975

SDCS-ER-75-11

SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
NTS Event "CABRILLO", 7 March 1975

J.R.Woolson, D.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. 2897

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-75-11	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) SPECIAL DATA COLLECTION SYSTEM (SDCS) NTS Event "CABRILLO", 7 March 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 ~~15~~ 17
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DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE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. 11

NTS Event "CABRILLO", 7 March 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	14:59:58	36.1N	116.4W	5.4	-
LASA	14:59:59	37.2N	116.6W	5.0	-
PDE	15:00:00	37.1N	116.1W	5.5	-
Hagfors Array, Sweden	14:59:46	35 N	119 W	5.6	-

Using RK-ON, WH2YK, LASA and NORSAR, the epicenter location becomes

SDCS & Arrays	15:00:00	37.0N	116.0W	5.5	4.2

CPSO and FN-WV were not operational for this event. Long-period array data was not recovered due to SDAC computer problems.

The time window for predicted arrival times of long-period signals at HN-ME was obscured by calibrations on the vertical and radial traces and the transverse channel was inoperative. Duplicate plots are provided for HN-ME short-period and RK-ON long-period signal presentations. The short time segment presentation for HN-ME is included to display the predicted signal arrival window with a minimum of influence on scaling from the excessive spiking evident at this station. The limited data plot for RK-ON long-peirod signals excludes a large instrument pulse on the LPZ trace immediately preceding the signal arrival. The SPR and SPT traces at RK-ON are reversed in polarity. The LPR instrument at WH2YK was not responding properly and thus is effectively inoperative.

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

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

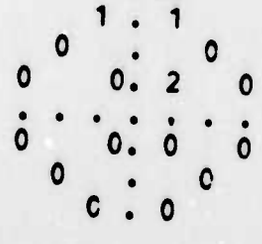
INPUT FOR EVENT 7 MAR 75
15:00:00.0 37.0CON 116.0C0W 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
LAO	15 02 53.2	-13.4	0.0	12.1	33.8
RR-ON	15 04 45.7	-8.7	-0.0	21.1	42.0
WH2YK	15 05 39.2	-7.8	-0.0	26.6	339.1
NAO	15 11 32.5	-6.9	0.0	73.3	24.2

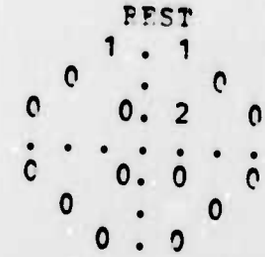
67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
NO CONVERGENCE ON CALC RUN						
15:00:04.5	37.004N	116.005W	23. CALC	2.9	16	4
15:00:00.1	36.977N	116.009W	0. REST	0.0	2	4

CALC



REST



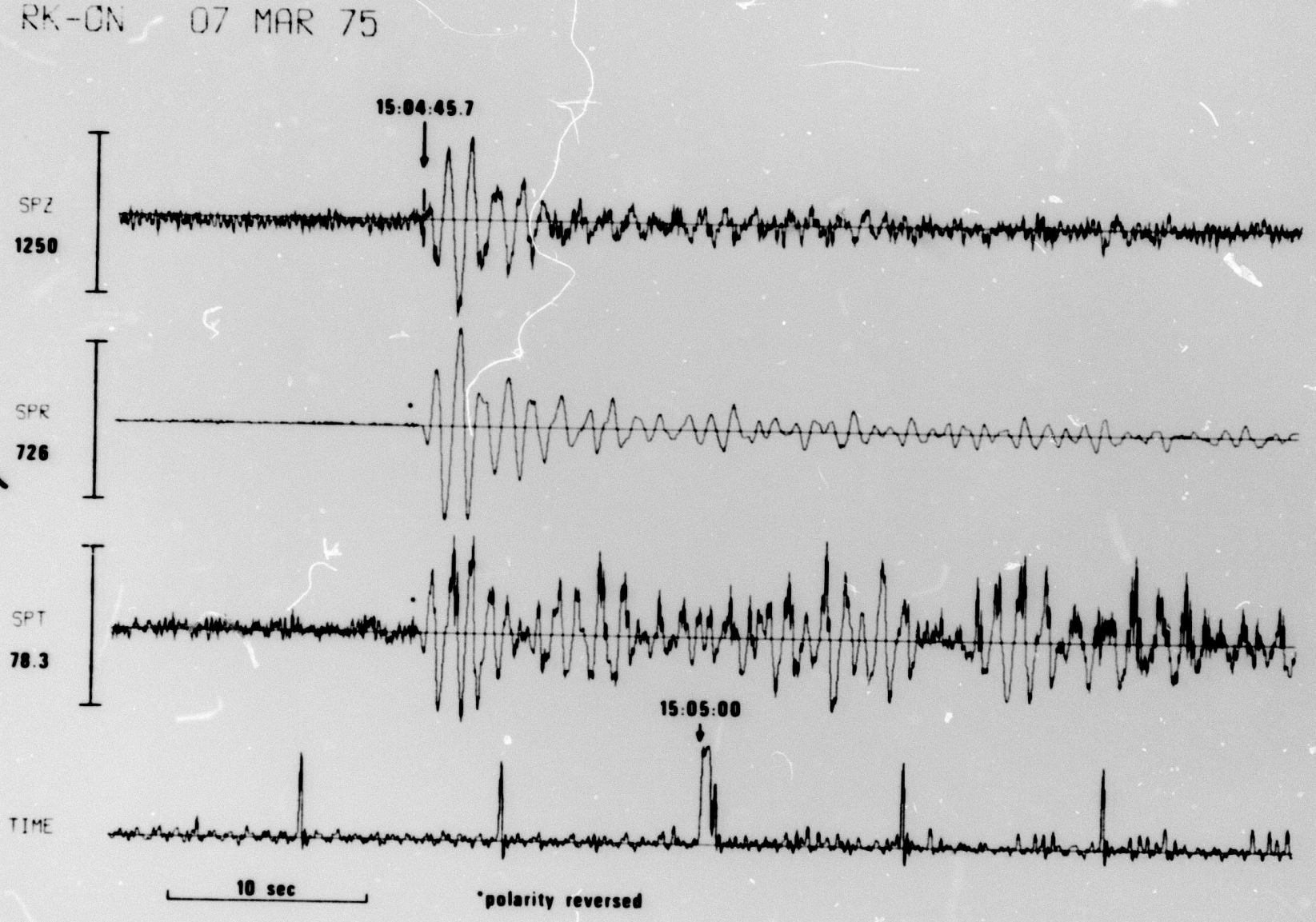
CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.90
MAJOR 136.0KM. MINOR 58.3KM. AZ= 168 AREA= 24931 SQ.KM. REST

DATA SUMMARY

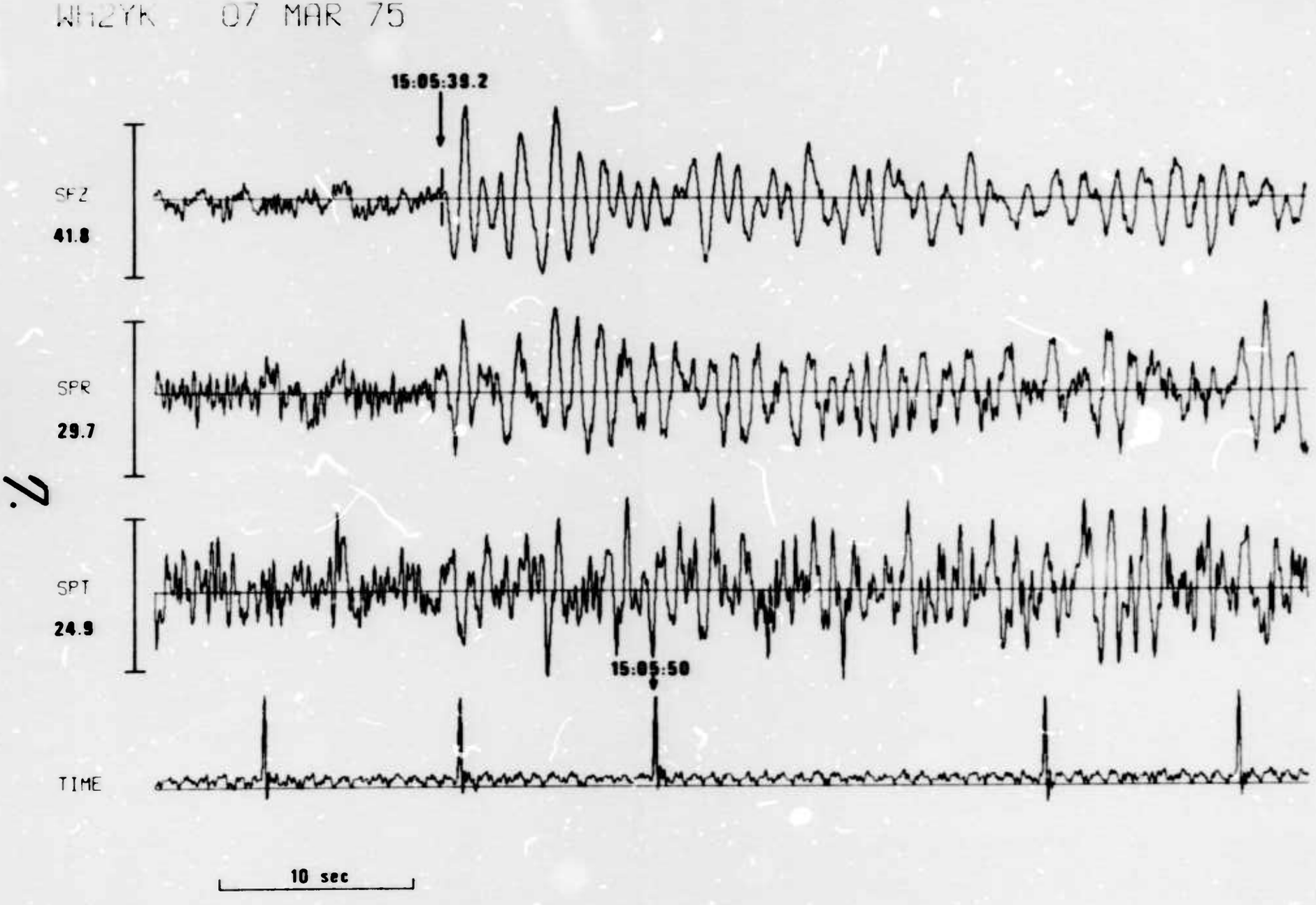
INPUT FOR EVENT 7 MAR 75
15:00:00.0 37.000N 116.000W 0KM.

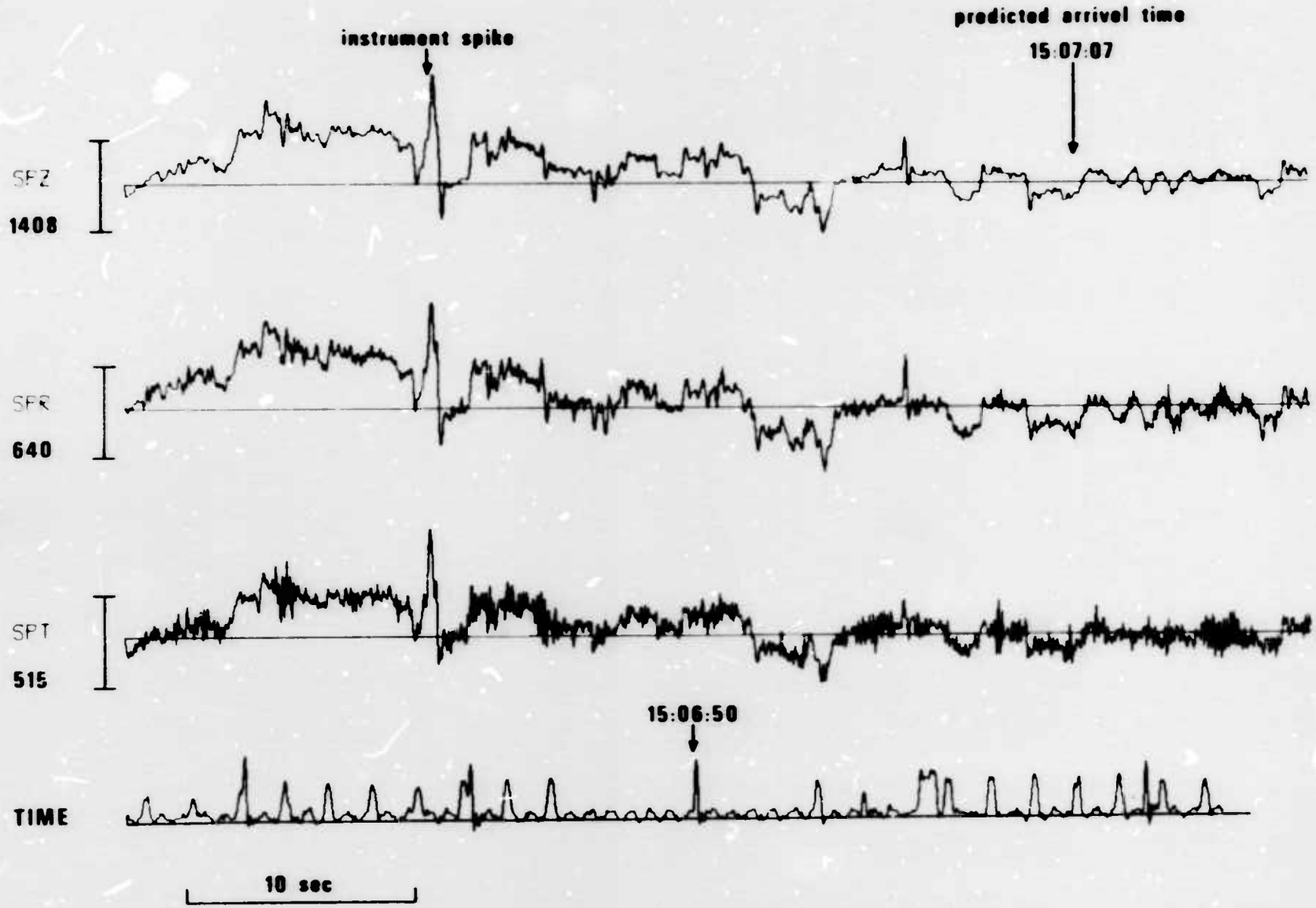
STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIP	DIST
IAO	EP	15 02 53.2	SPZ	0.5	9999.				
BK-ON	EP	15 04 45.7	SPZ	1.1	1679.	6.04			21.1
BK-ON	LR	15 13 35.0	LPZ	13.0	116.		4.51		21.1
WH2YK	EP	15 05 39.2	SPZ	1.0	43.	4.80			26.6
WH2YK	LQ	15 14 40.0	LPT	23.0	14.				
WH2YK	LR	15 17 00.0	LPZ	17.0	49.		4.24		26.6
NAO	EP	15 11 32.5	AB	1.2	98.	5.56			73.3

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
15:00:00.1	36.977N	116.009W	0. FRST	5.46	0.63	3	4.24******		1

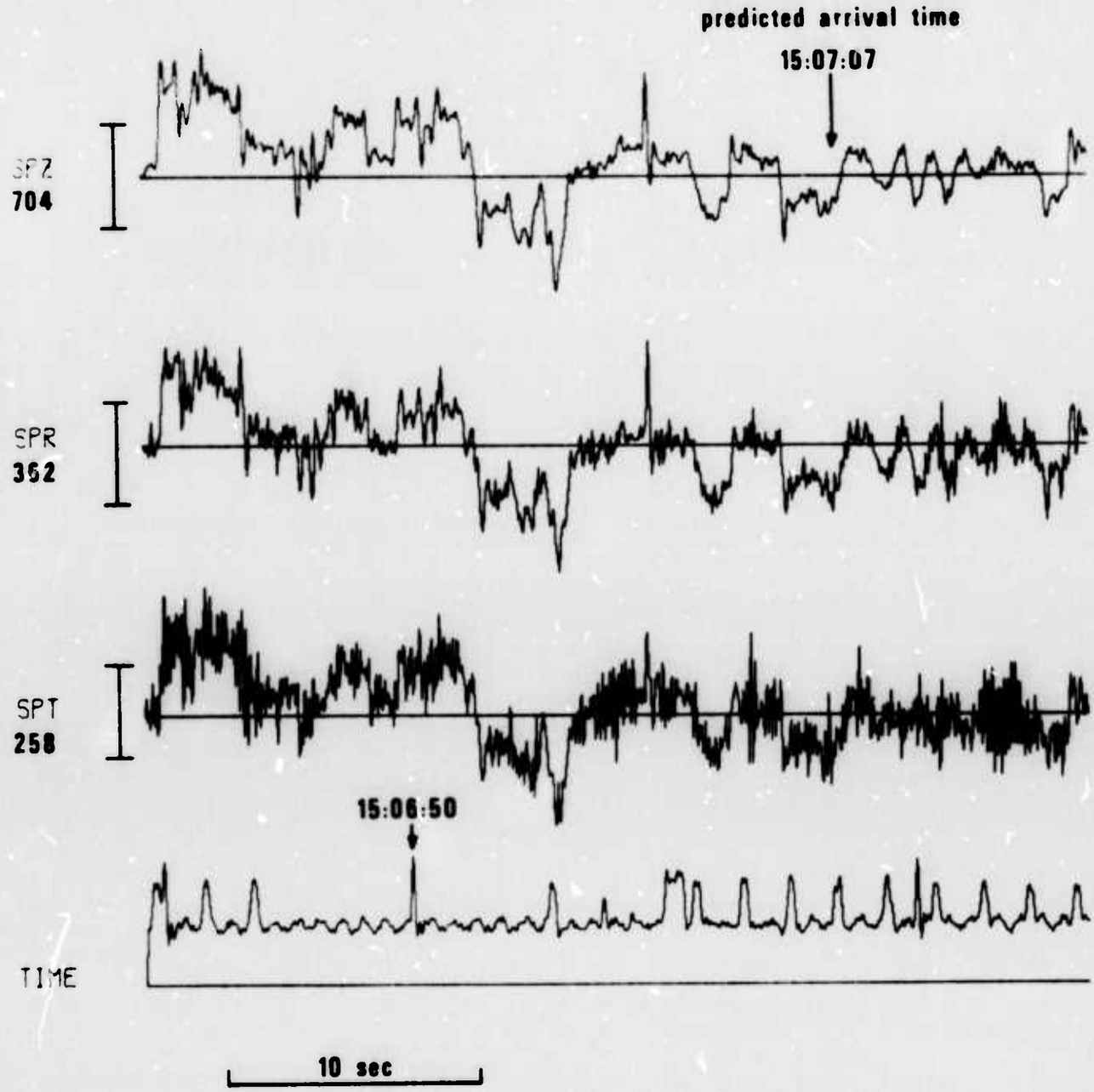

RK-ON 07 MAR 75
15:04:45.7
SPZ
1250
SPR
726
SPT
78.3
15:05:00
TIME
10 sec
*polarity reversed

6.9


WH2YK 07 MAR 75
15:05:39.2
SPZ
41.8
SPR
29.7
SPT
24.9
15:05:50
TIME
10 sec

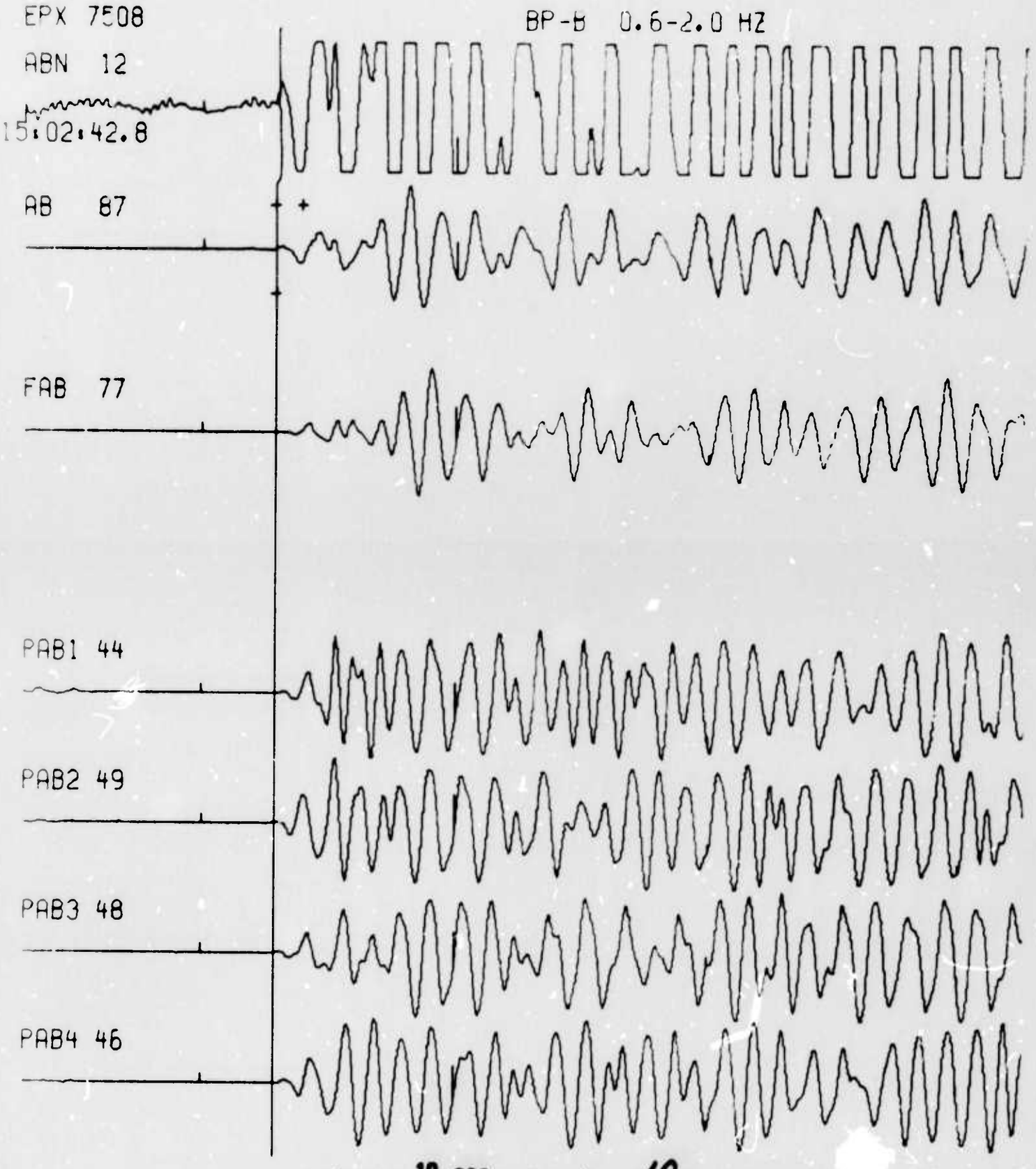

HN-ME 07 MAR 75
instrument spike
predicted arrival time
15:07:07
SPZ
1408
SPR
640
SPT
515
15:06:50
TIME
10 sec

HN-ME 07 MAR 75

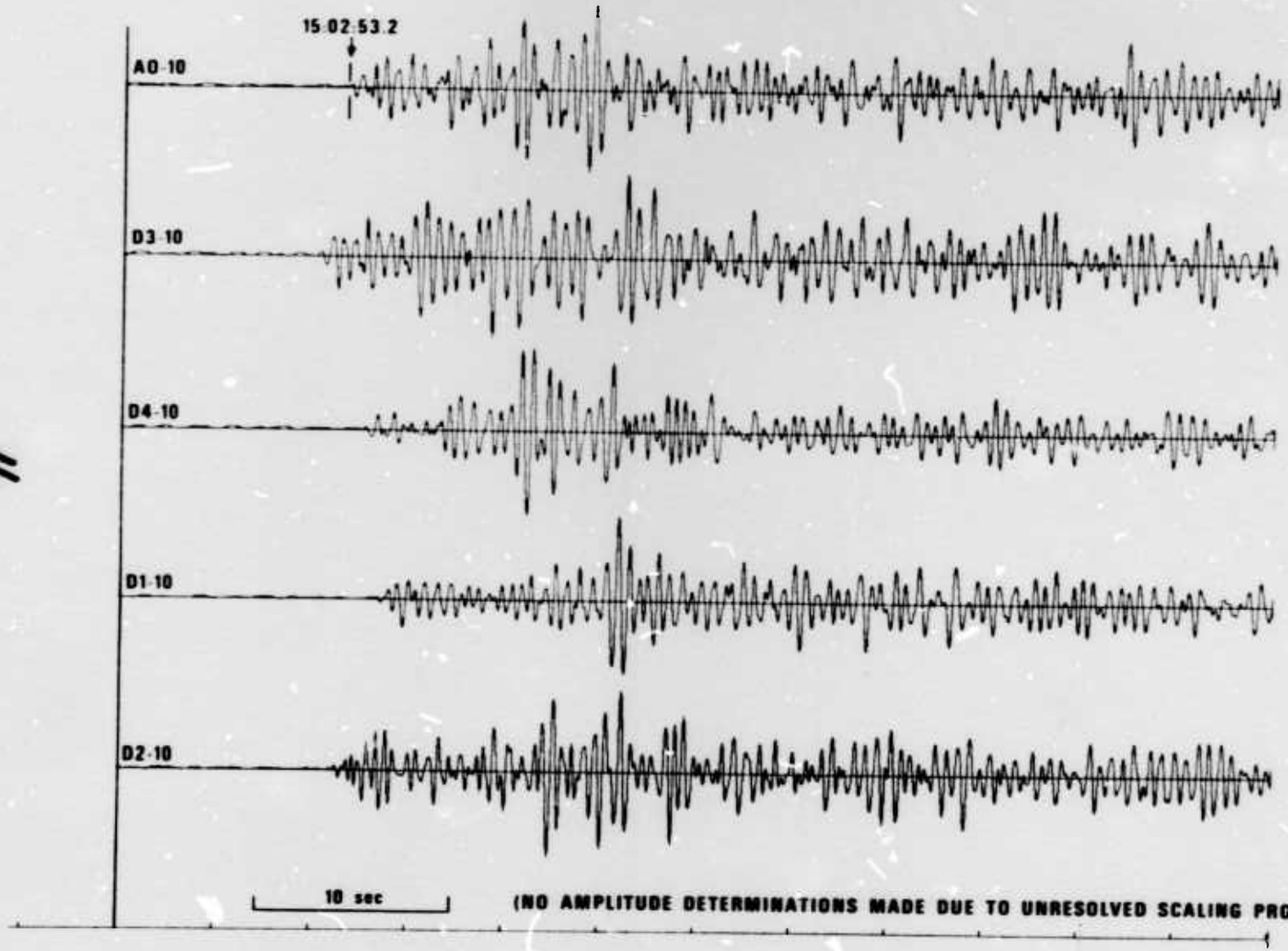


LASA

1 7 MAR 1975
2 14 59 59 37.2N 116.6W OG B 5.0 41 SOUTHERN NEVADA
3 15 2 52.8 LAO P 33.3 1.1 8.2 12.2 223.2



LASA (INDIVIDUAL SHORT-PERIOD INSTRUMENTS) 07 MAR 75



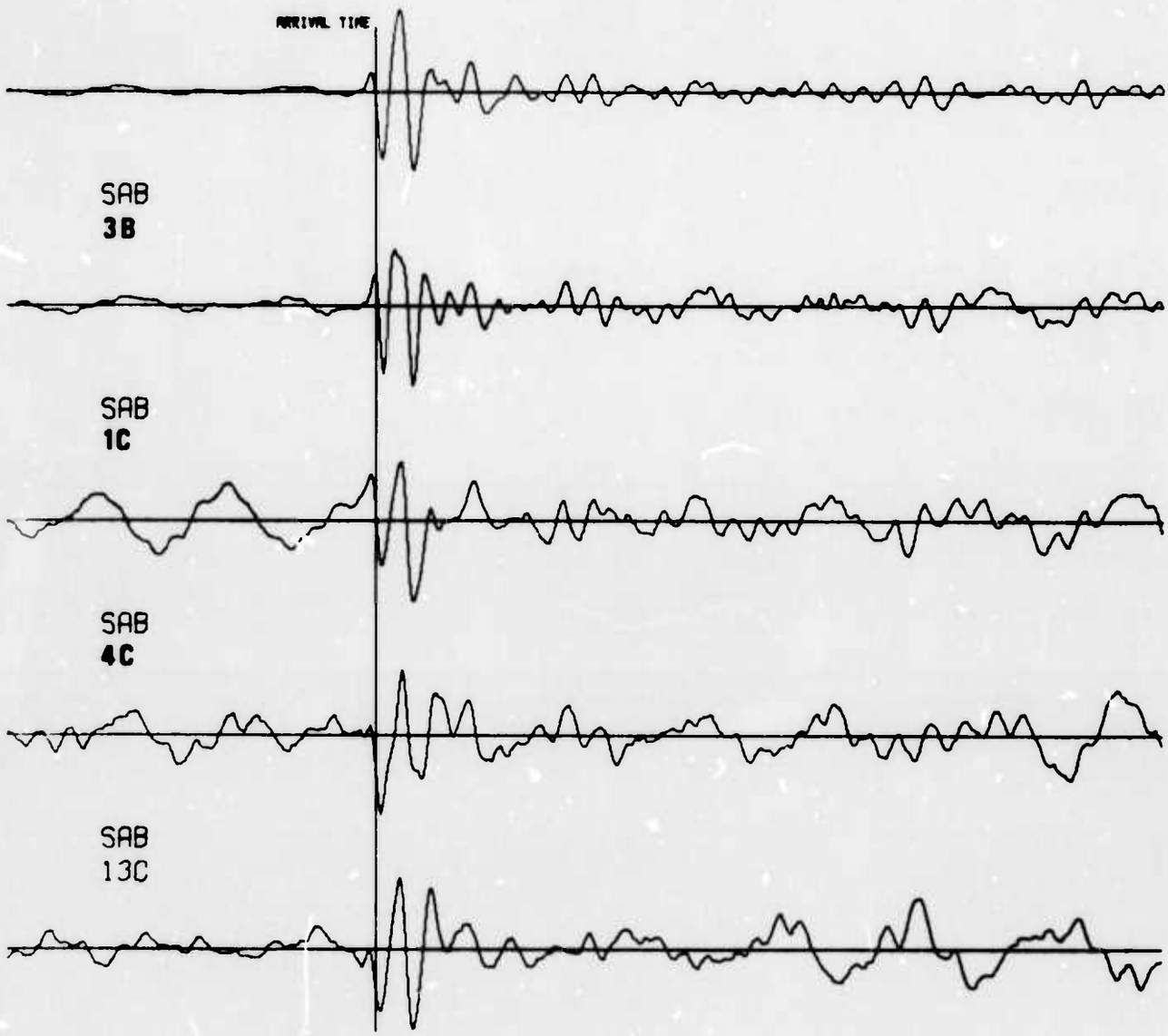
(NO AMPLITUDE DETERMINATIONS MADE DUE TO UNRESOLVED SCALING PROBLEMS)

NORSAR EVENT FILE 1975 MAR 7

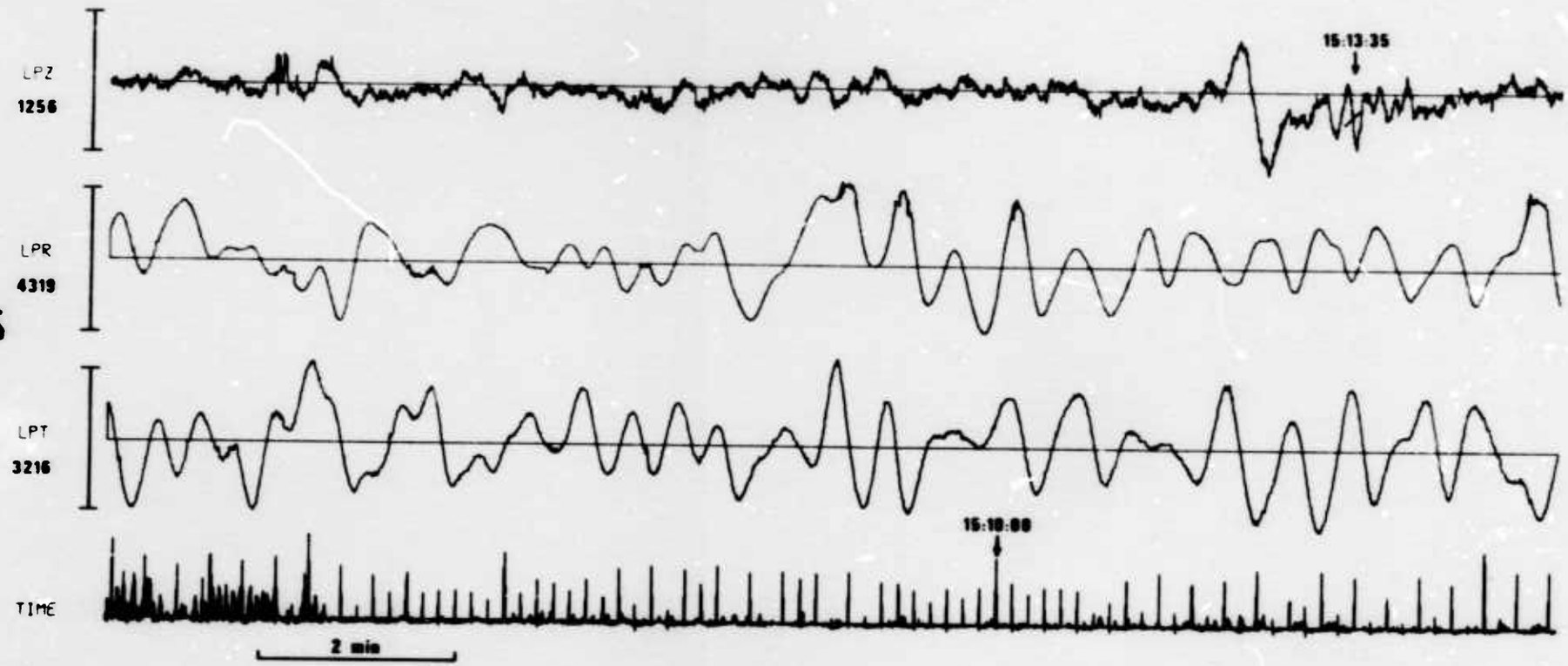
EPX NO. 92340 ARR. 15.11.33.0 36.1N 116.4W 5.2MB 33KM

DIST = 74.3 AZI = 317.9 AMP = 35.6 PER = 1.2

= 5 SECONDS

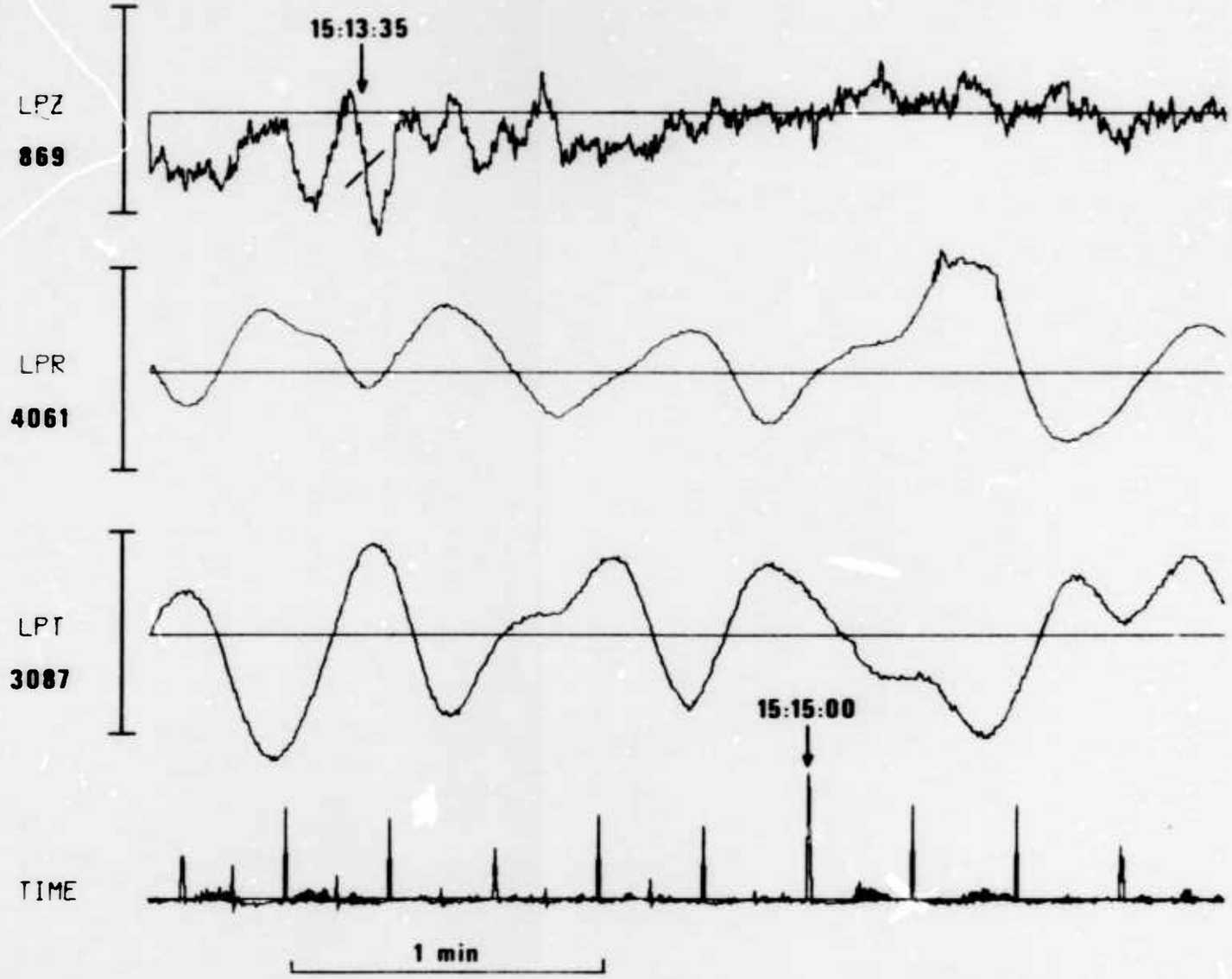


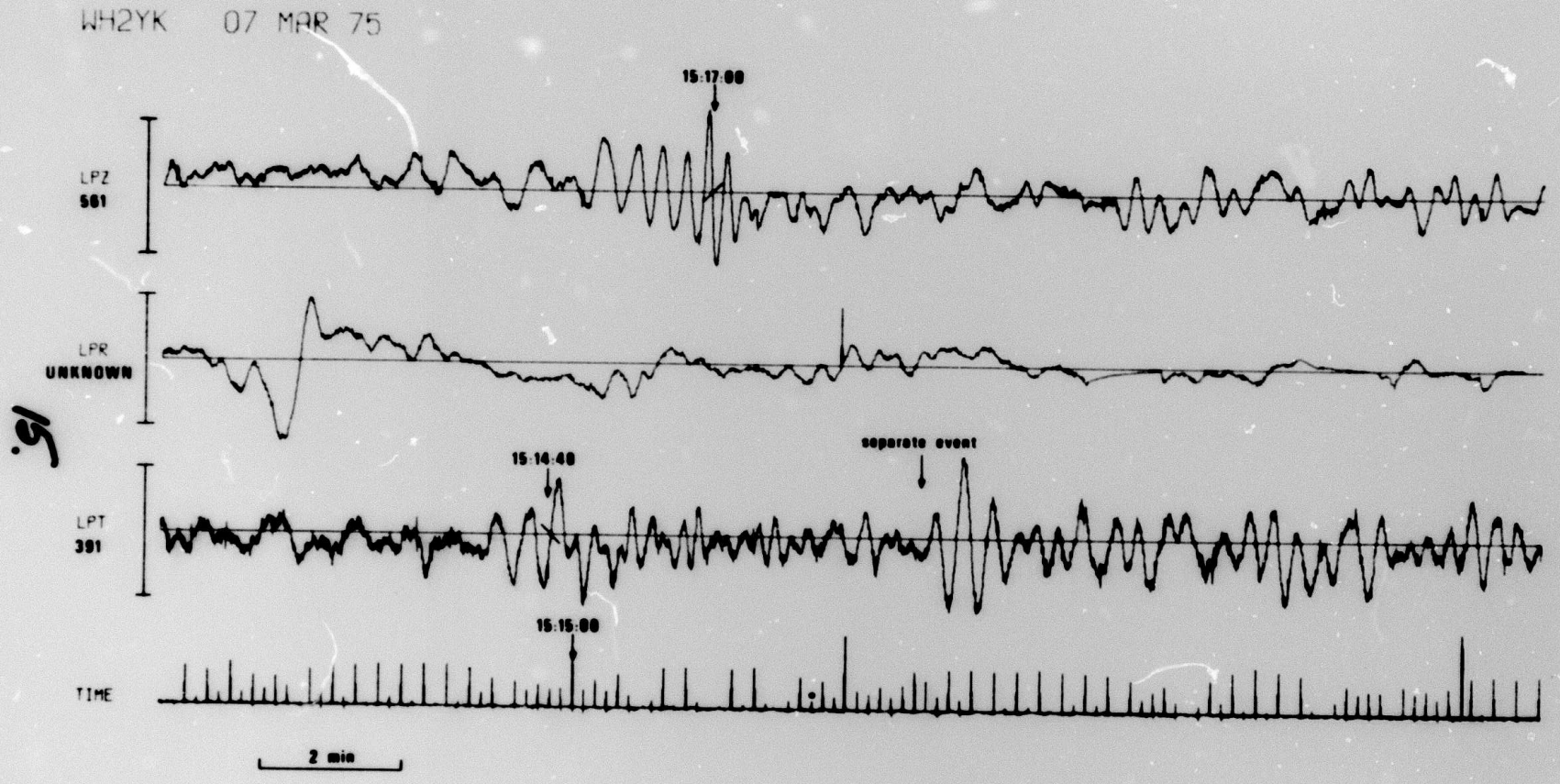
RK-ON 07 MAR 75



12.

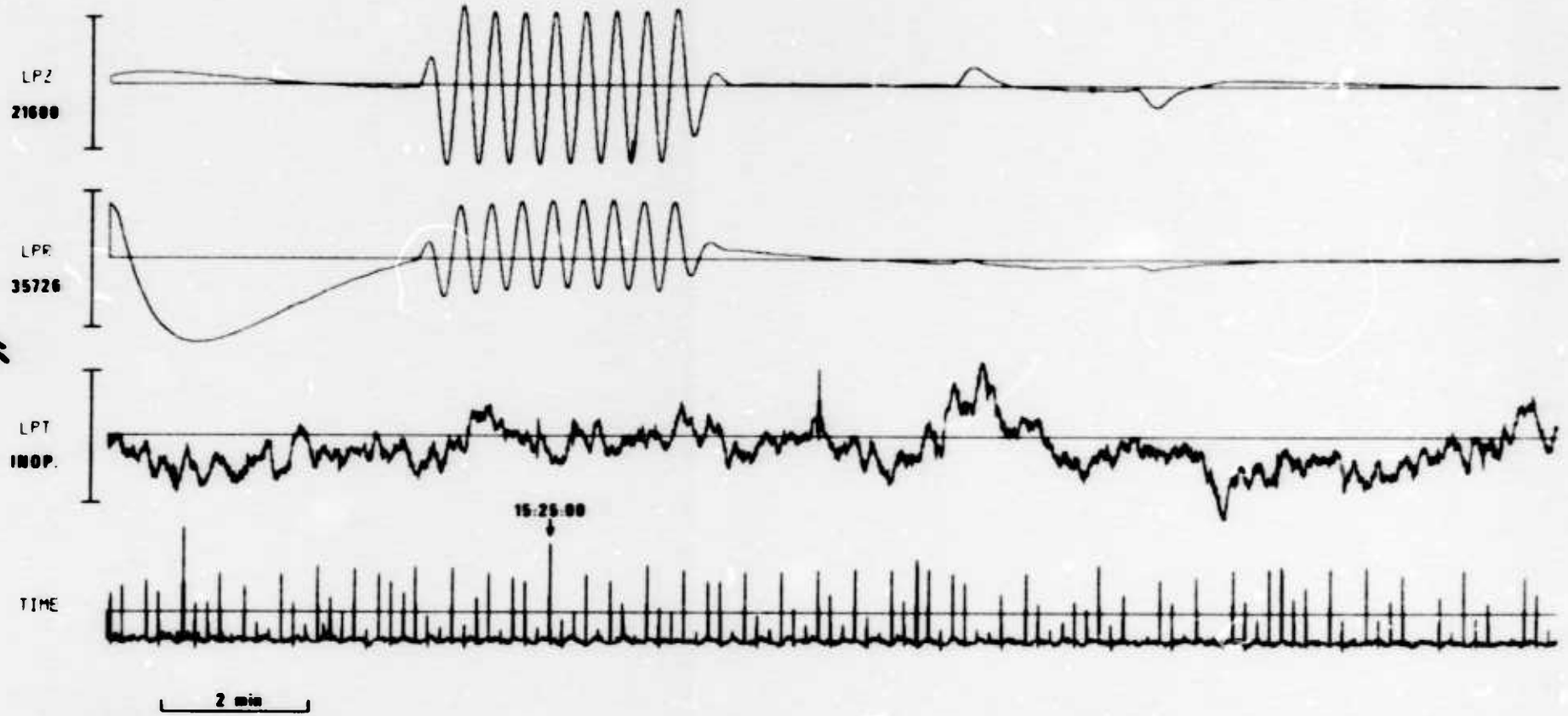
RK-ON 07 MAR 75




WH2YK 07 MAR 75
15:17:00
LPZ
561
LPR
UNKNOWN
15:14:40
separate event
LPT
391
15:15:00
TIME
2 min

19.

HN-ME 07 MAR 75



16.