

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

**National Earthquake Information Center
Waveform Catalog
June 1985**

by

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Denver, Colorado

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.

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Introduction

This report provides a visual catalog of digitally recorded waveform data available from the event tapes produced by the United States Geological Survey's National Earthquake Information Center (NEIC). It is intended to provide the researcher with a quick index both to the availability of data and to the character of the data for each event (e.g., complexity and directionality).

The network-event tapes are a data service initiated by the NEIC in 1984. Currently, these tapes contain data from the Global Digital Seismograph Network (GDSN), the Regional Seismograph Test Network (RSTN), and the Glen Almond, Canada, SRO station. In the future, data from other high-quality stations and arrays, installed and operated by countries around the world, will be added to the event tapes as they are made available to us.

Network-event tapes contain digital data for earthquakes of magnitude 5.5 or greater in the NEIC network-day tape format. For this catalog, all available vertical component recordings in all period bands are shown, including those for stations that were saturated or nonoperational or that had some other difficulty during the event. Horizontal component records were omitted in order to minimize the size of this catalog. In general, one can expect them to be of approximately the same quality as the vertical component records at any particular time. Most of the available stations do not record short-period horizontal components. All stations that have intermediate-period recordings, however, record all three components in this band. Only long-period components are recorded continuously; short- and intermediate-period channels are recorded only when an event is detected. Horizontal components (where available) are recorded whenever the vertical component is, and never otherwise.

This report mainly consists of vertical component waveforms from all reporting stations, organized by event. The section for each event is prefaced by a station coverage map, in which stations and geography within 100° of the source are shown in an azimuthal equidistant projection centered at the epicenter. Following the coverage map, all short-period, vertical component waveforms are shown in order of increasing epicentral distance. Each short-period waveform is two minutes long and is identified by station

code, start time, and epicentral distance, Δ , in degrees. The start time is chosen to be about 15 seconds before the earliest theoretical arrival time of interest (P, Pdiff, or PKPdf, depending on distance). The vertical scale is in microns of ground displacement at the dominant period of the instrument response, which is taken to be 1 second. Each page of waveforms is titled with the event origin date-time, the Flinn-Engdahl region name, and the component identifier (SPZ, LPZ or IPZ). Also, the depth of the event (h) in kilometers and its average body (m_b) and vertical surface wave (M_{sz}) magnitudes are shown for convenience.

Following the short-period waveforms (SPZ), long-period vertical (LPZ) and finally intermediate-period vertical (IPZ) waveforms are shown. In each case, the format is the same as for the short-period waveforms. Fifty minutes of long-period data are shown beginning 1 minute before the theoretical first arrival, and the dominant period is taken to be 25 seconds. Four minutes of intermediate-period data are shown beginning 30 seconds before the theoretical first arrival, and the dominant period is assumed to be 1 second. Because (1) the event detection algorithm is not perfect, (2) only about half of the available stations have intermediate-period channels, and (3) one station (GAC) has no short-period recordings, it is not uncommon for stations with good long-period recordings to have no intermediate-period and perhaps no short-period recordings at all.

Table 1. Earthquakes for June 1985 with magnitudes ≥ 5.5

	Origin Time UTC	Latitude	Longitude	Depth (km)	m_b	Magnitude M_{SZ}	Flinn-Engdahl Region Name
1.	1985 06 01 02:03:14.43	12.174° N	144.382° E	38.1	5.6	5.4	South of Mariana Islands
2.	1985 06 01 14:47:12.16	11.332° S	162.540° E	33.0	4.8	5.6	Solomon Islands
3.	1985 06 02 16:26:58.02	37.800° S	73.592° W	33.0	5.4	5.6	Near Coast of Central Chile
4.	1985 06 03 12:06:33.49	15.225° S	173.640° W	139.6	6.0		Tonga Islands
5.	1985 06 03 17:56:50.55	28.049° S	71.068° W	33.0	5.6		Near Coast of Central Chile
6.	1985 06 03 21:57:51.23	6.006° S	151.566° E	33.0	5.5	5.0	New Britain Region
7.	1985 06 04 03:56:28.91	4.921° N	127.504° E	113.0	6.0		Taland Islands
8.	1985 06 06 02:40:12.86	0.950° N	28.429° W	10.0	6.3	6.5	Central Mid-Atlantic Ridge
9.	1985 06 06 11:40:20.90	3.815° S	151.380° E	33.0	5.5	5.3	New Ireland Region
10.	1985 06 06 15:35:19.05	17.712° S	174.145° W	132.6	5.5		Tonga Islands
11.	1985 06 08 13:19:16.44	6.182° N	126.833° E	93.3	5.7		Mindanao, Philippine Islands
12.	1985 06 10 03:23:31.87	3.014° N	78.639° W	20.4	5.6	4.7	South of Panama
13.	1985 06 10 15:37:03.37	28.112° S	67.185° W	180.4	5.8		La Rioja Province, Argentina
14.	1985 06 12 11:03:01.81	15.767° N	93.875° W	33.0	5.6	4.1	Near Coast of Chiapas, Mexico
15.	1985 06 12 15:15:00.08	37.248° N	116.489° W	0.0	5.5	4.5	Southern Nevada
16.	1985 06 12 17:22:52.22	24.485° N	122.078° E	33.0	5.2	5.8	Taiwan Region
17.	1985 06 14 13:14:14.91	40.742° S	74.918° W	33.0	5.5		Off Coast of Southern Chile
18.	1985 06 15 00:57:00.77	49.878° N	78.888° E	0.0	6.0	4.3	Eastern Kazakh SSR
19.	1985 06 17 01:09:27.83	17.419° S	178.879° W	562.3	5.5		Fiji Islands Region
20.	1985 06 17 19:12:39.81	30.278° N	132.671° E	33.0	5.9	5.4	Southeast of Shikoku, Japan
21.	1985 06 21 04:31:15.17	28.351° S	176.117° W	60.2	5.4	5.8	Kernadec Islands Region
22.	1985 06 23 06:55:23.79	24.063° S	67.099° W	178.4	5.5		Chile-Argentina Border Region
23.	1985 06 23 13:01:37.15	10.911° S	163.413° E	33.0	5.5	6.5	Solomon Islands
24.	1985 06 23 19:49:54.48	10.829° S	163.671° E	33.0	5.5	6.0	Solomon Islands
25.	1985 06 26 17:10:01.99	18.909° N	64.604° W	55.6	5.6		Virgin Islands
26.	1985 06 27 19:18:47.30	1.201° N	127.288° E	149.7	5.5		Halmahera
27.	1985 06 28 07:32:19.99	10.616° S	41.211° E	10.0	5.4	5.5	Northwest of Madagascar
28.	1985 06 28 18:54:13.88	37.512° S	179.468° E	33.0	5.7	5.1	Off E. Coast of N. Island, N.Z.
29.	1985 06 30 02:39:02.79	49.854° N	78.693° E	0.0	6.0	4.0	Eastern Kazakh SSR

Table 2. Current network-event tape station list

Code	ID	Station	Latitude	Longitude	Elevation (m)	Type*
AFI	69	Afiamalu, Western Samoa	13.91° S	171.78° W	706.0	DWWSSN
ANMO	30	Albuquerque, New Mexico	34.95° N	106.46° W	1740.0	SRO
ANTO	31	Ankara, Turkey	39.87° N	32.79° E	883.0	SRO
BCAO	37	Bangui, Central African Republic	4.43° N	18.54° E	336.0	SRO
BDF	72	Brasilia, Brazil	15.66° S	47.90° W	1500.0	DWWSSN
CHTO	33	Chiang Mai, Thailand	18.79° N	98.98° E	316.0	SRO
COL	62	College, Alaska	64.90° N	147.79° W	320.0	DWWSSN
CTAO	50	Chartiers Towers, Australia	20.09° S	146.25° E	357.0	ASRO
GAC	43	Glen Almond, Quebec, Canada	45.70° N	75.48° W	620.0	SRO
GDH	70	Godhavn, Greenland	69.25° N	53.53° W	23.0	DWWSSN
GRFO	39	Graefenberg, Germany	49.69° N	11.22° E	500.0	SRO
GUMO	35	Guam, Mariana Islands	13.59° N	144.87° E	14.0	SRO
HON	66	Honolulu, Hawaii	21.32° N	158.01° W	2.0	DWWSSN
JAS1	64	Jamestown, California	37.93° N	120.42° W	425.0	DWWSSN
KEV	67	Kevo, Finland	69.76° N	27.01° E	80.0	DWWSSN
KONO	54	Kongsberg, Norway	59.65° N	9.60° E	216.0	ASRO
LEM	76	Lembang, Indonesia	6.833° S	107.62° E	1247.0	DWWSSN
LON	63	Longmire, Washington	46.75° N	121.81° W	854.0	DWWSSN
MAJO	53	Matsushiro, Japan	36.54° N	138.21° E	422.0	ASRO
NWAO	38	Mundaring (Narrogin), Australia	32.93° S	117.24° E	265.0	SRO
RSCP	81	Cumberland Plateau, Tennessee,	35.60° N	85.57° W	481.0	RSTN
RSNT	82	Yellowknife, Northwest Territories	62.48° N	114.59° W	90.0	RSTN
RSNY	84	Adirondack, New York	44.55° N	74.53° W	351.0	RSTN
RSO	85	Red Lake, Ontario	50.86° N	93.70° W	302.0	RSTN
RSSD	83	Black Hills, South Dakota	44.12° N	104.04° W	1948.0	RSTN
SCP	61	State College, Pennsylvania	40.79° N	77.87° W	352.0	DWWSSN
SLR	71	Silverton, South Africa	25.73° S	28.28° E	1348.0	DWWSSN
SNZO	42	Wellington (South Karori), New Zealand	41.31° S	174.70° E	-12.0	SRO
TATO	41	Taipei, Taiwan	24.98° N	121.49° E	53.0	SRO
TAU	74	Hobart, Tasmania	42.91° S	147.32° E	132.0	DWWSSN
TOL	73	Toledo, Spain	39.88° N	4.05° W	480.0	DWWSSN
ZOBO	51	La Paz (Zongo), Bolivia	16.27° S	68.13° W	4450.0	ASRO

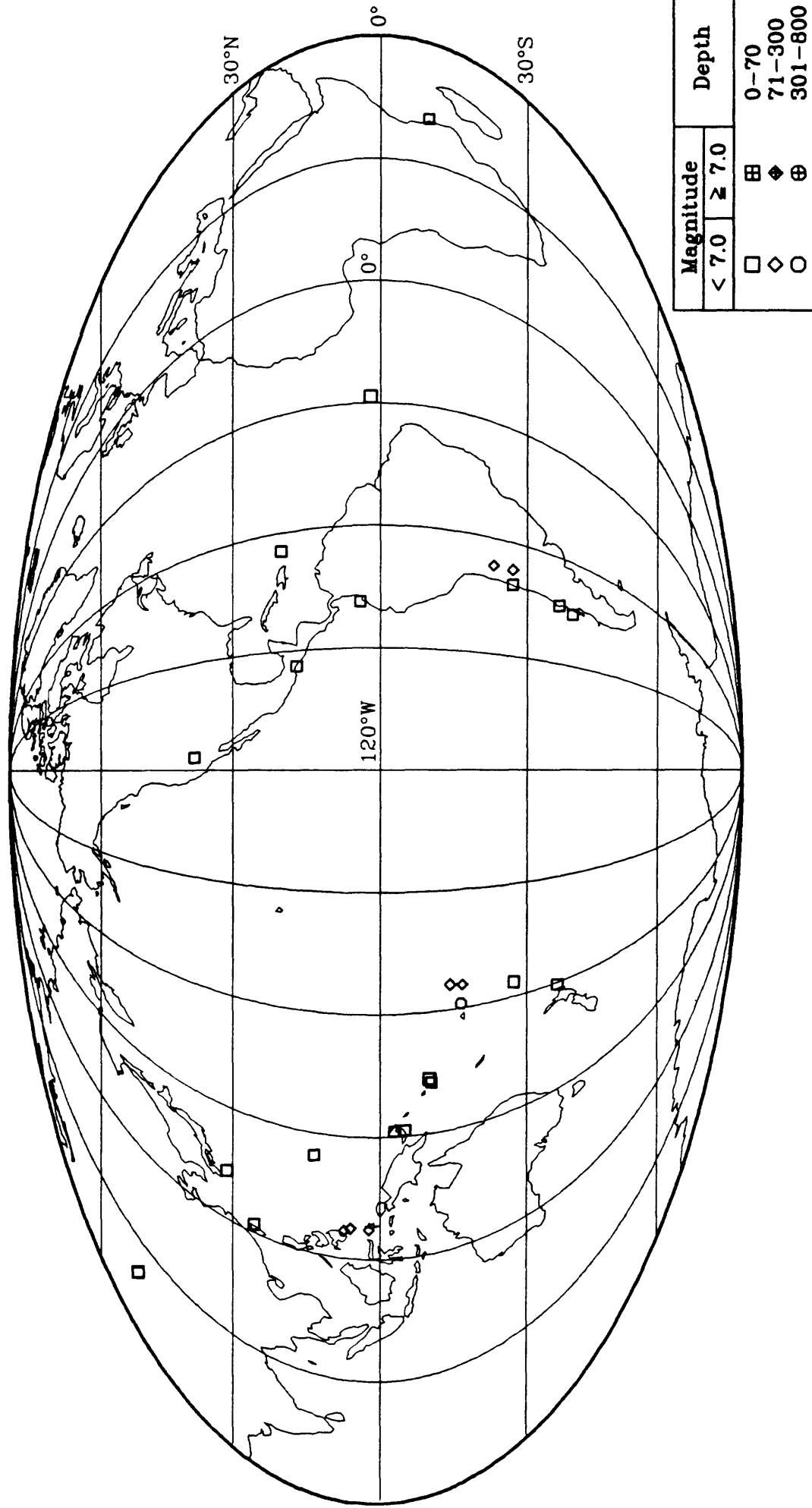
* SRO - Seismic Research Observatory

ASRO - Abbreviated Seismic Research Observatory

DWWSSN - Digital World Wide Standardized Seismograph Network

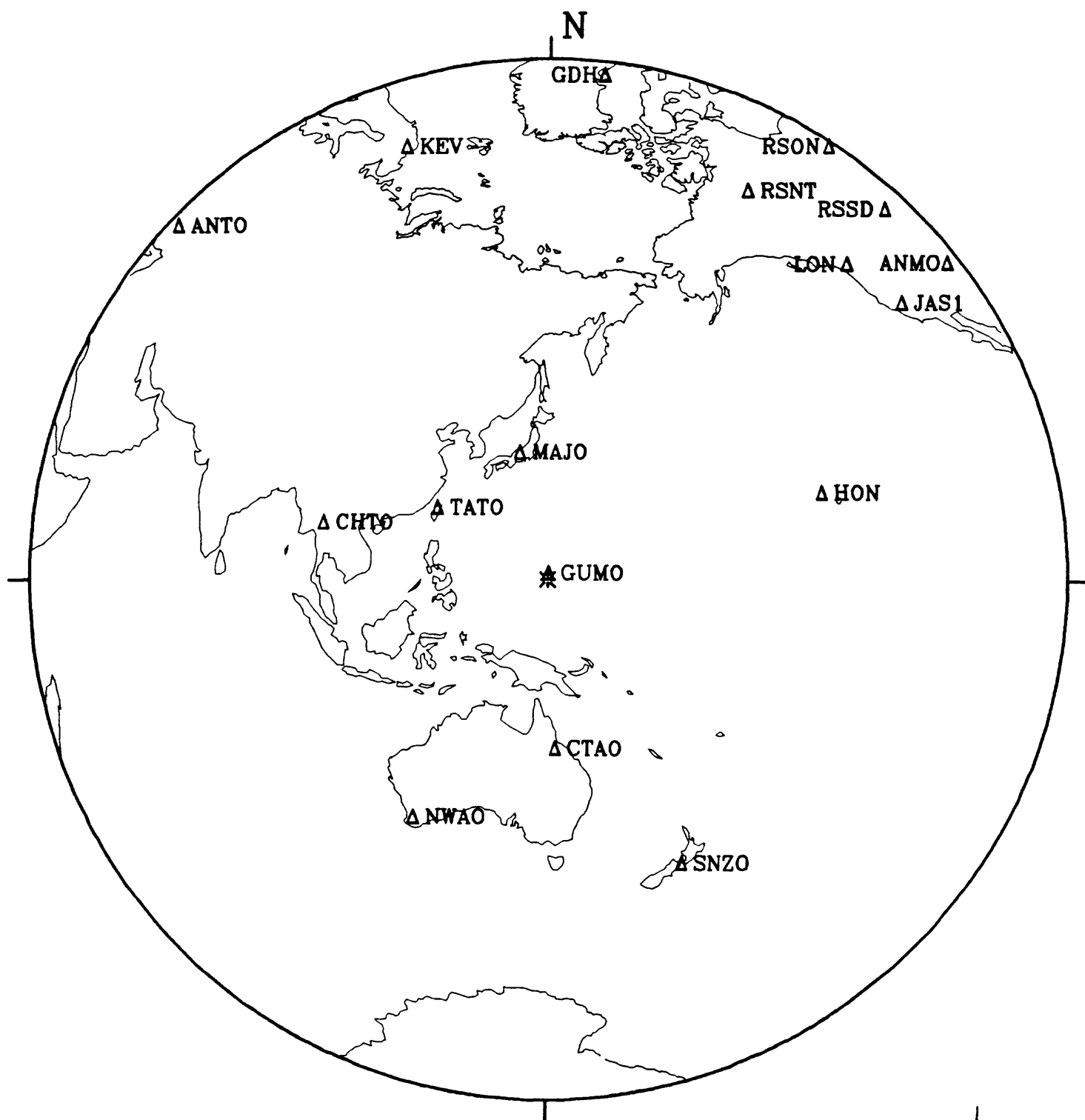
RSTN - Regional Seismic Test Network

EARTHQUAKES – June 1985 – MAGNITUDE ≥ 5.5



01 June 1985 02:03:14.43

South of Mariana Islands

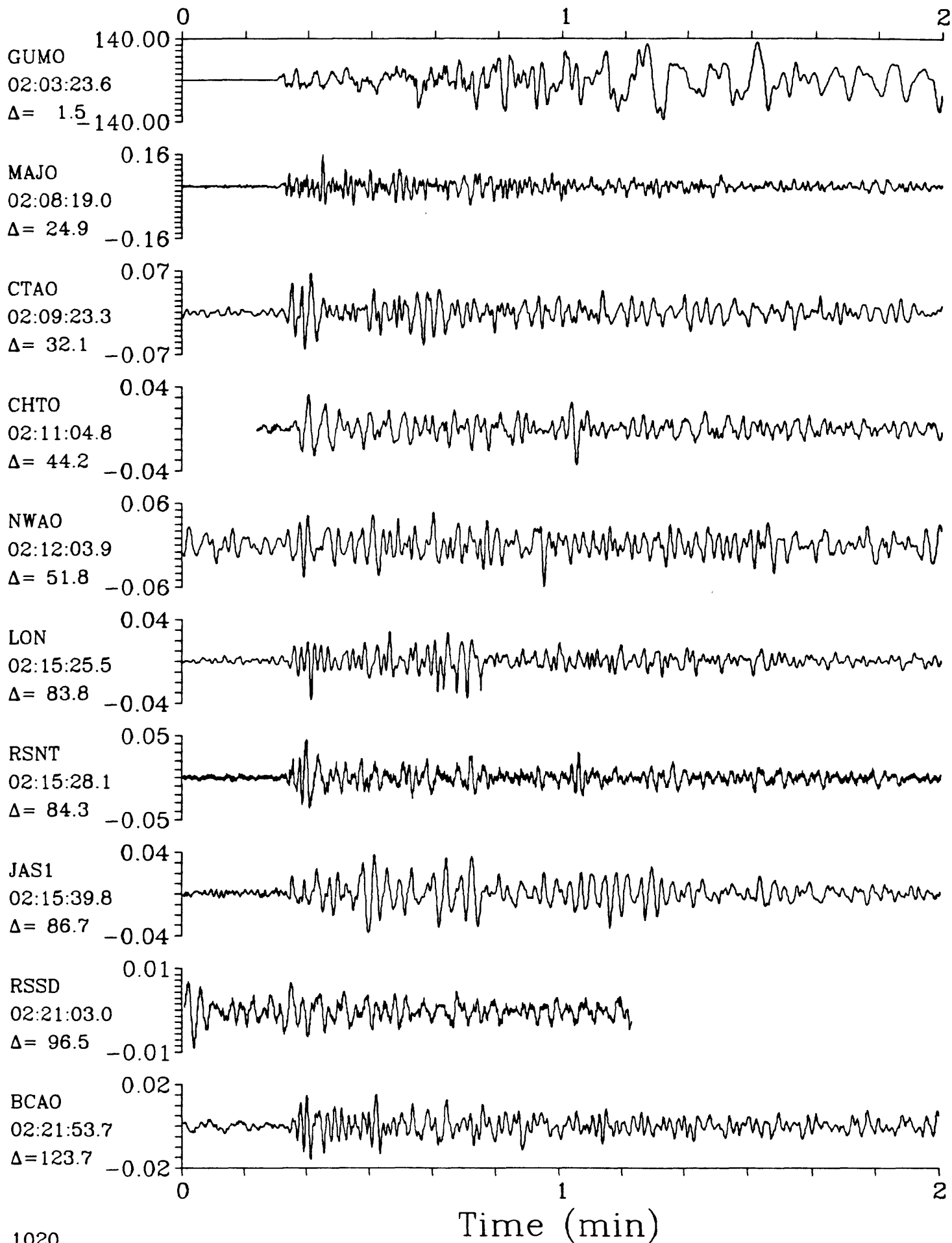


1st page

SPZ

01 June 1985 02:03:14.43

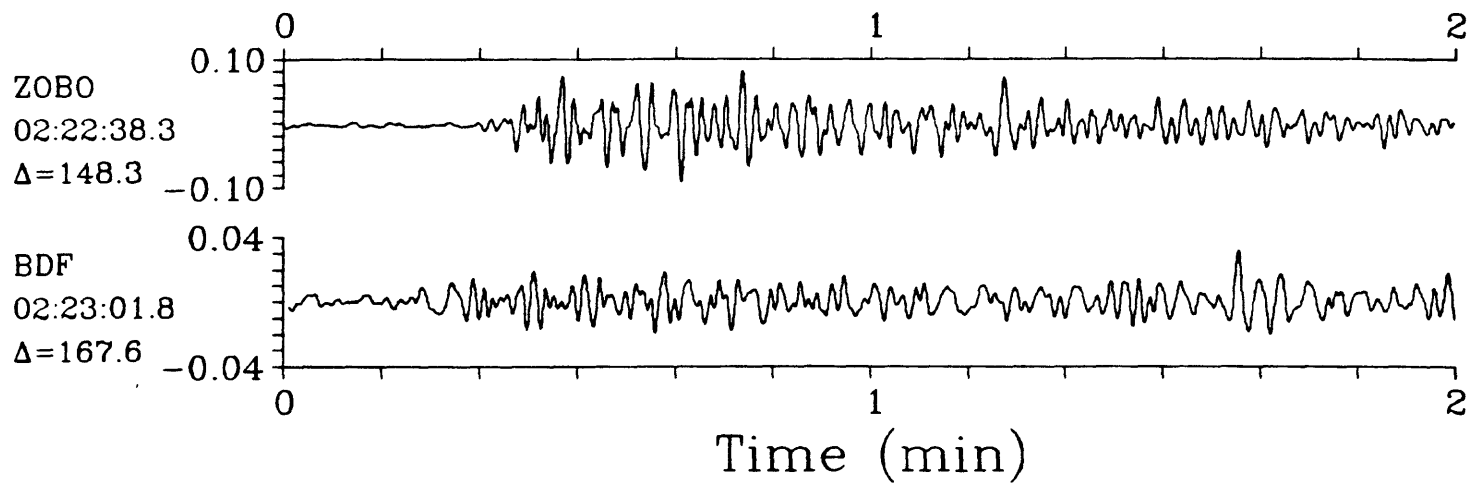
SPZ

South of Mariana Islands $h=38.1$ $m_b=5.6$ $M_{SZ}=5.4$ 

SPZ

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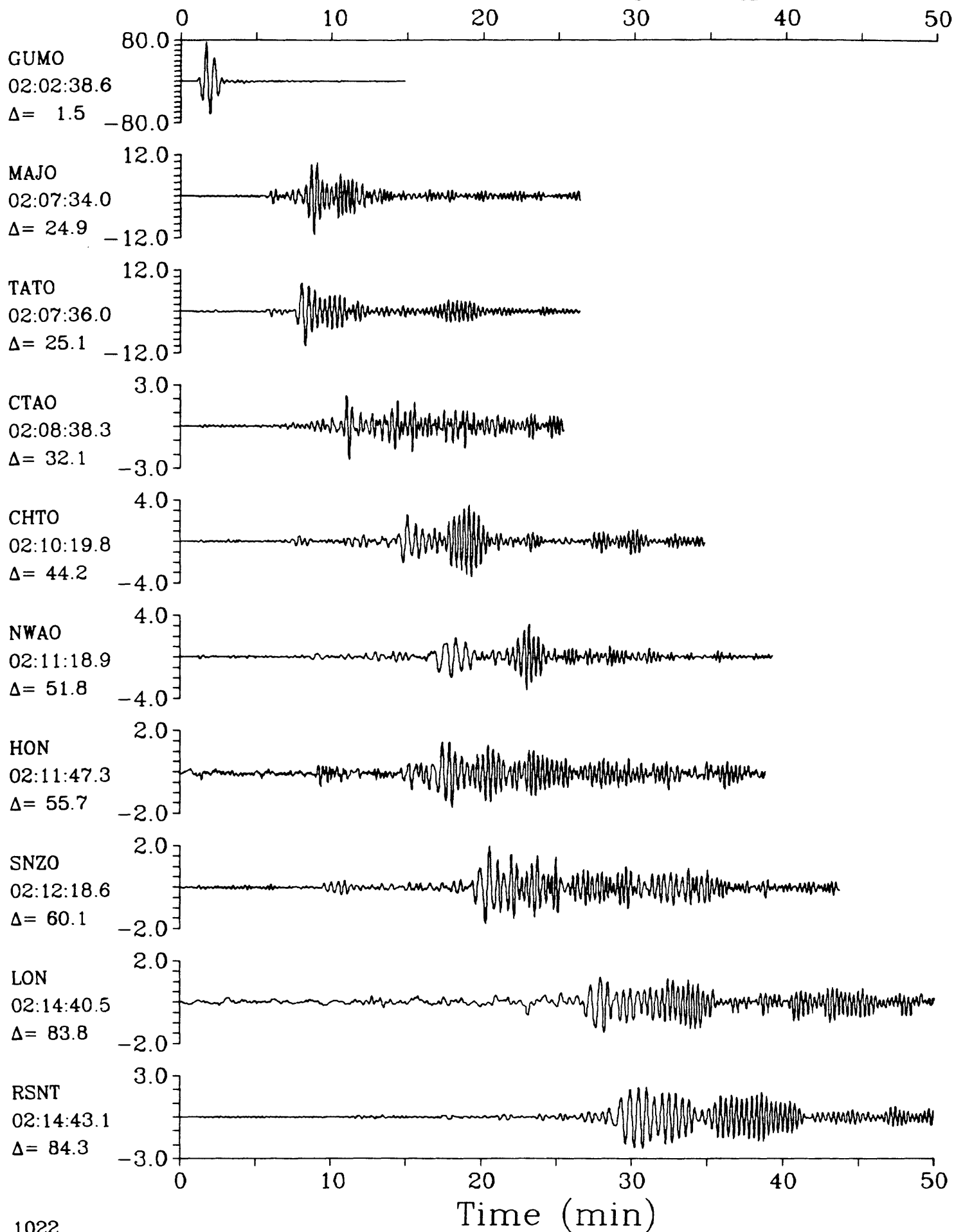
SPZ

South of Mariana Islands $h=38.1$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

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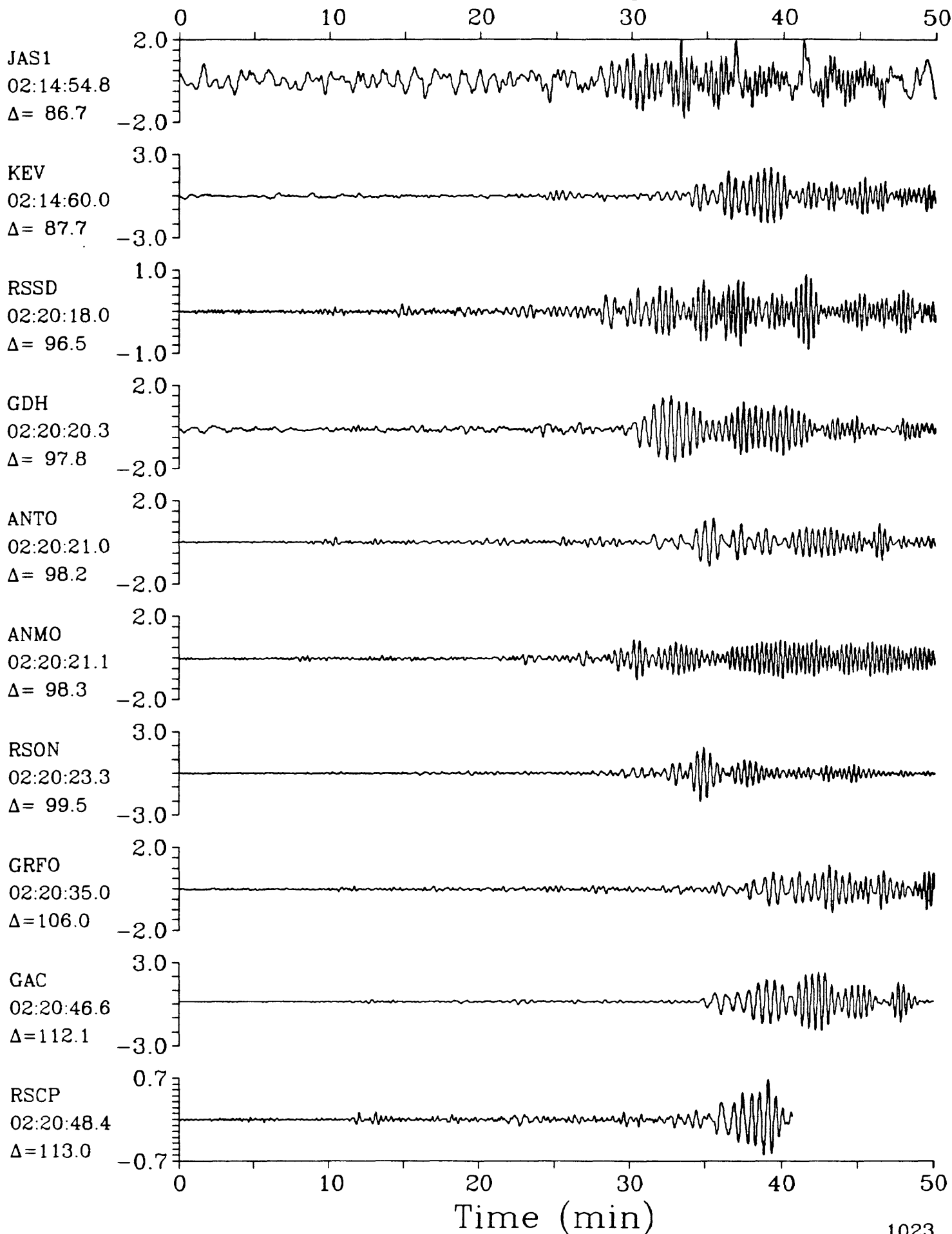
LPZ

South of Mariana Islands $h=38.1$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

01 June 1985 02:03:14.43

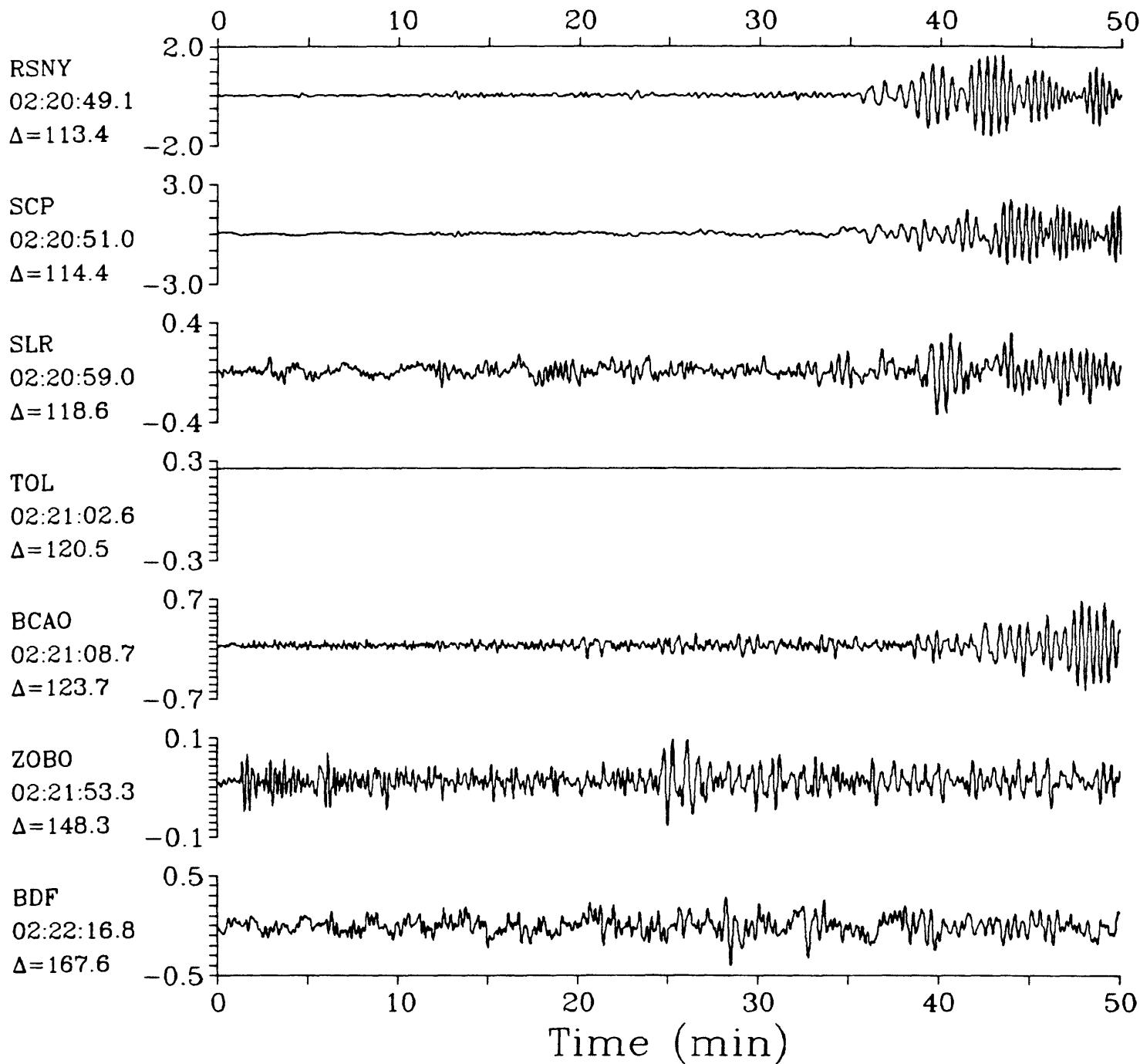
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South of Mariana Islands $h=38.1$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

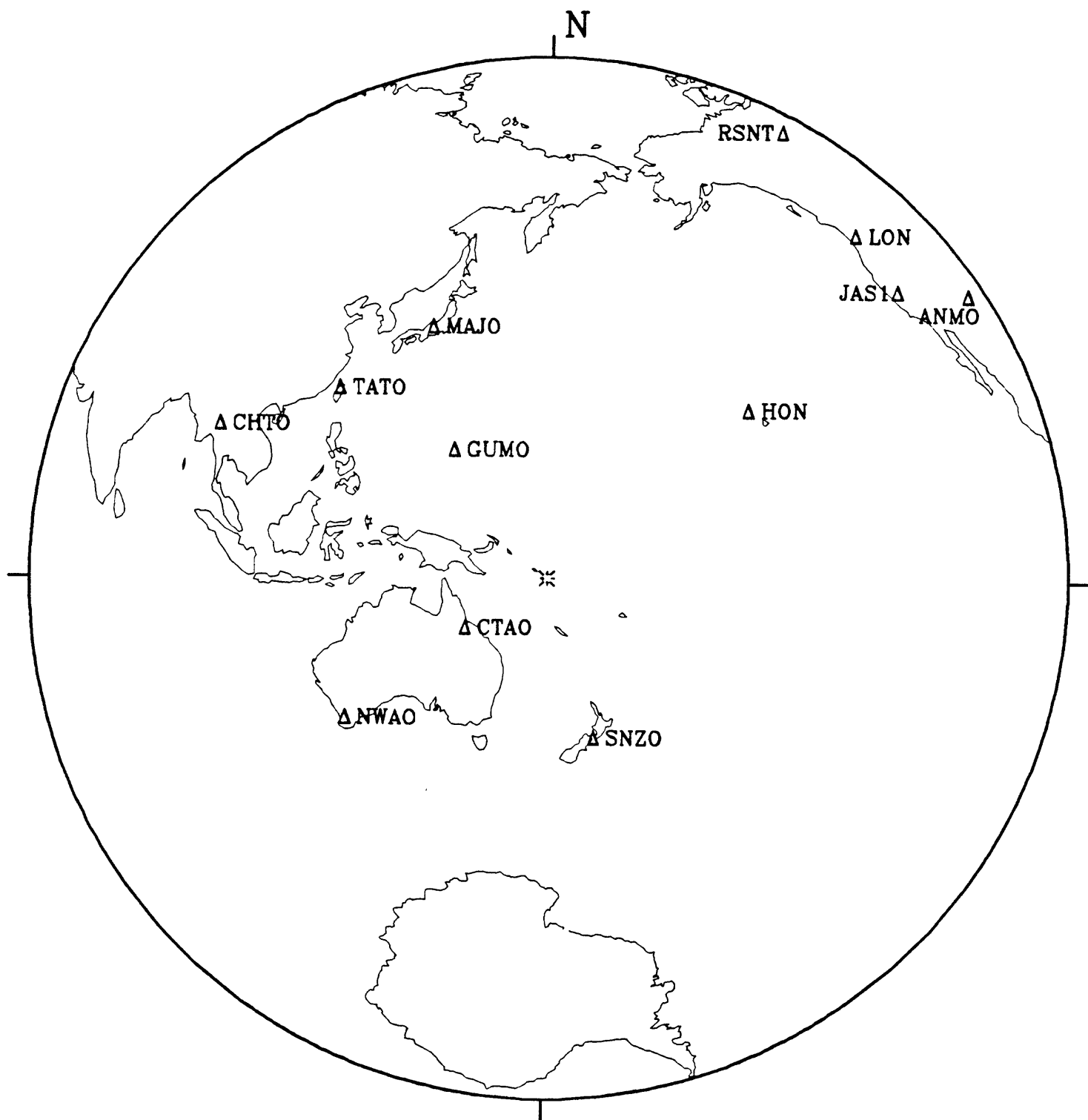
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LPZ

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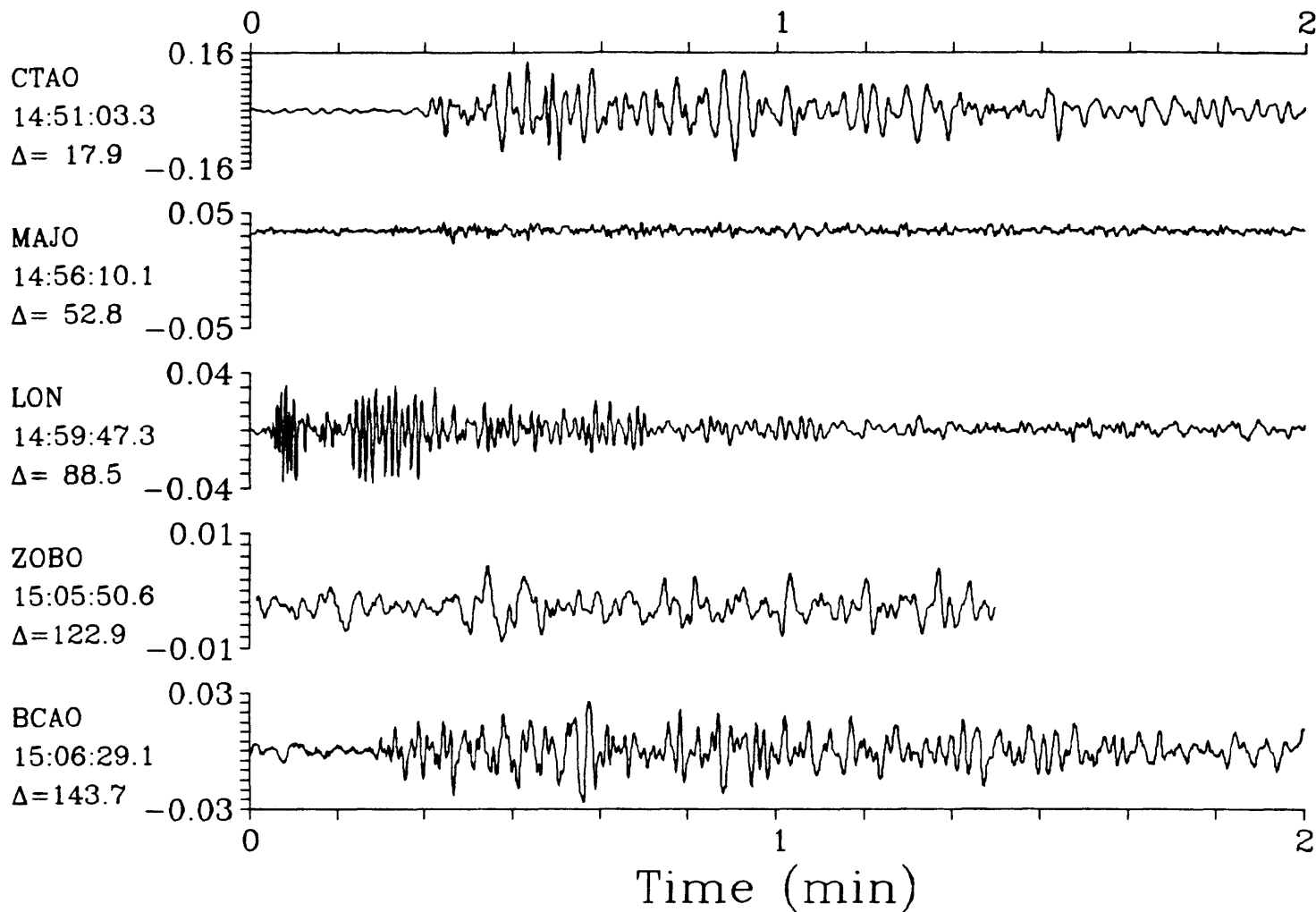
Solomon Islands



SPZ

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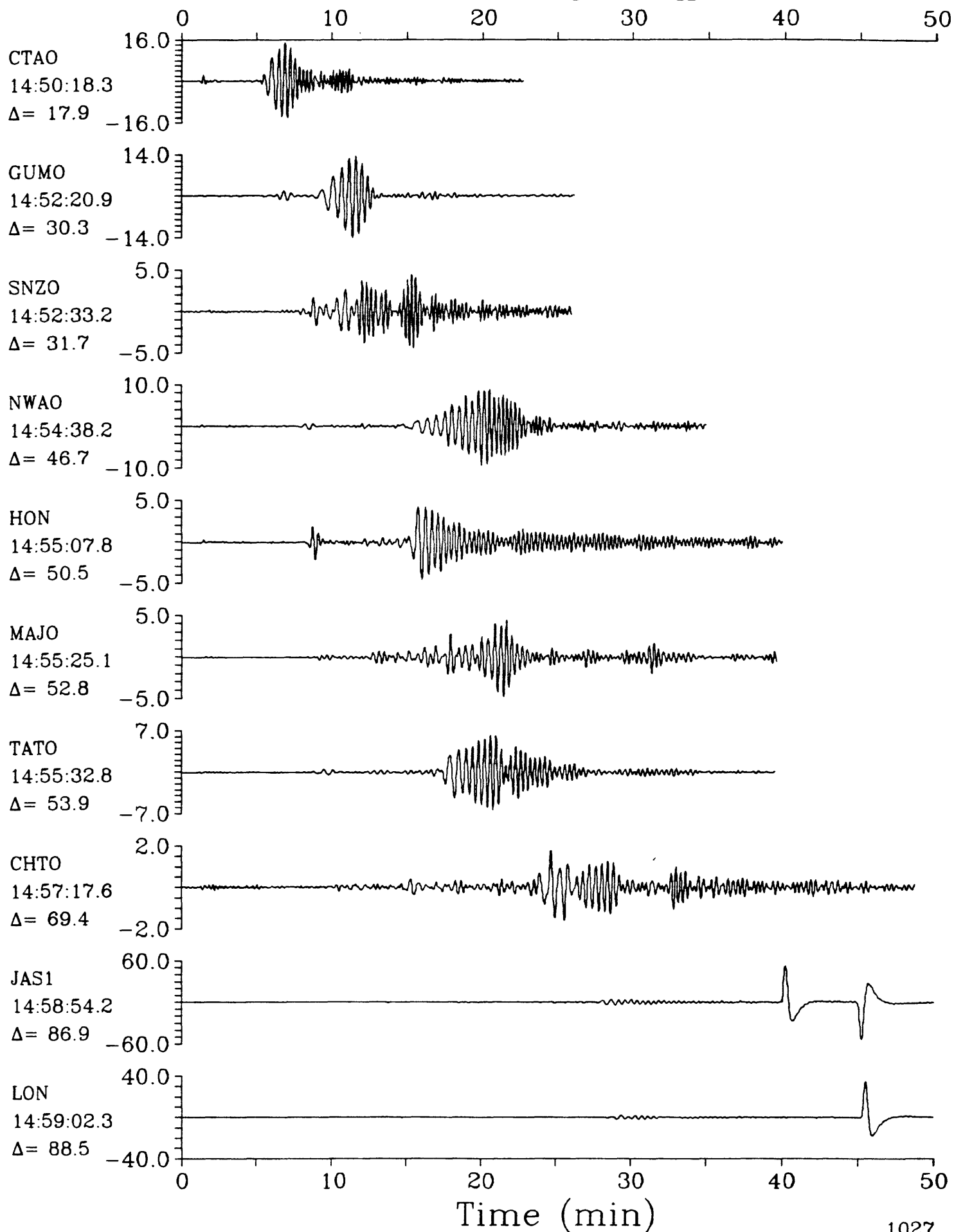
SPZ

Solomon Islands $h=33.0$ $m_b=4.8$ $M_{sz}=5.6$ 

LPZ

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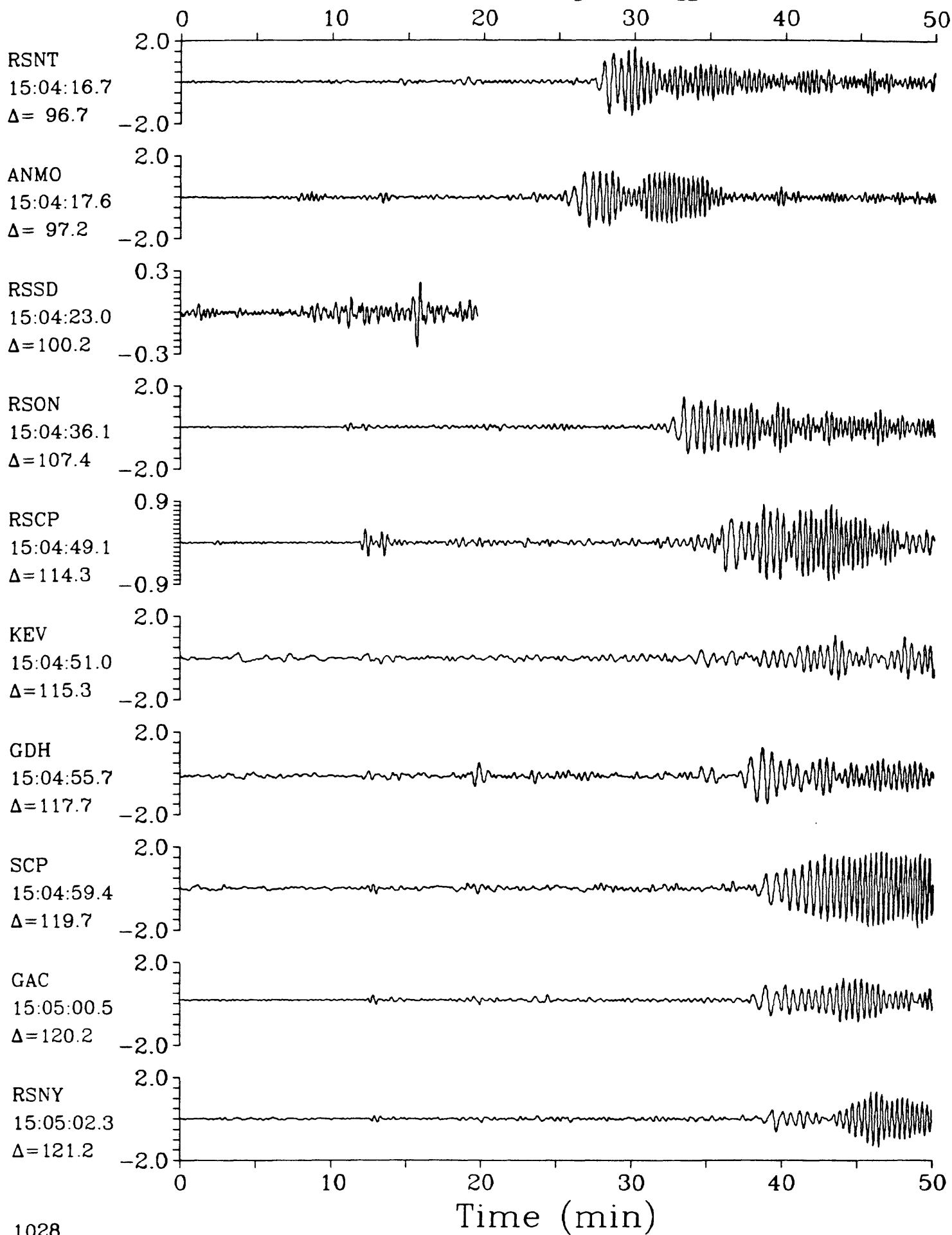
LPZ

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LPZ

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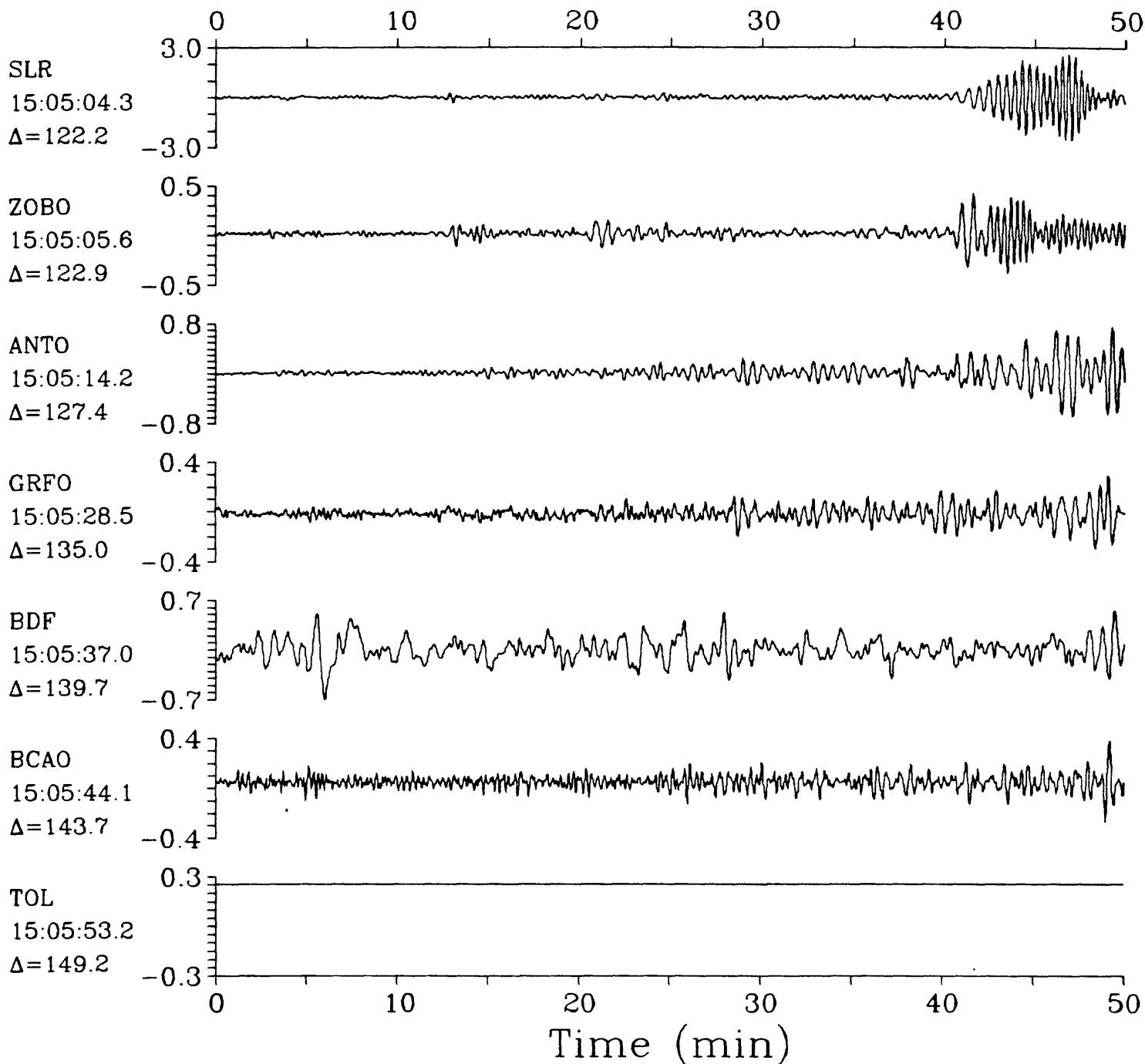
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LPZ

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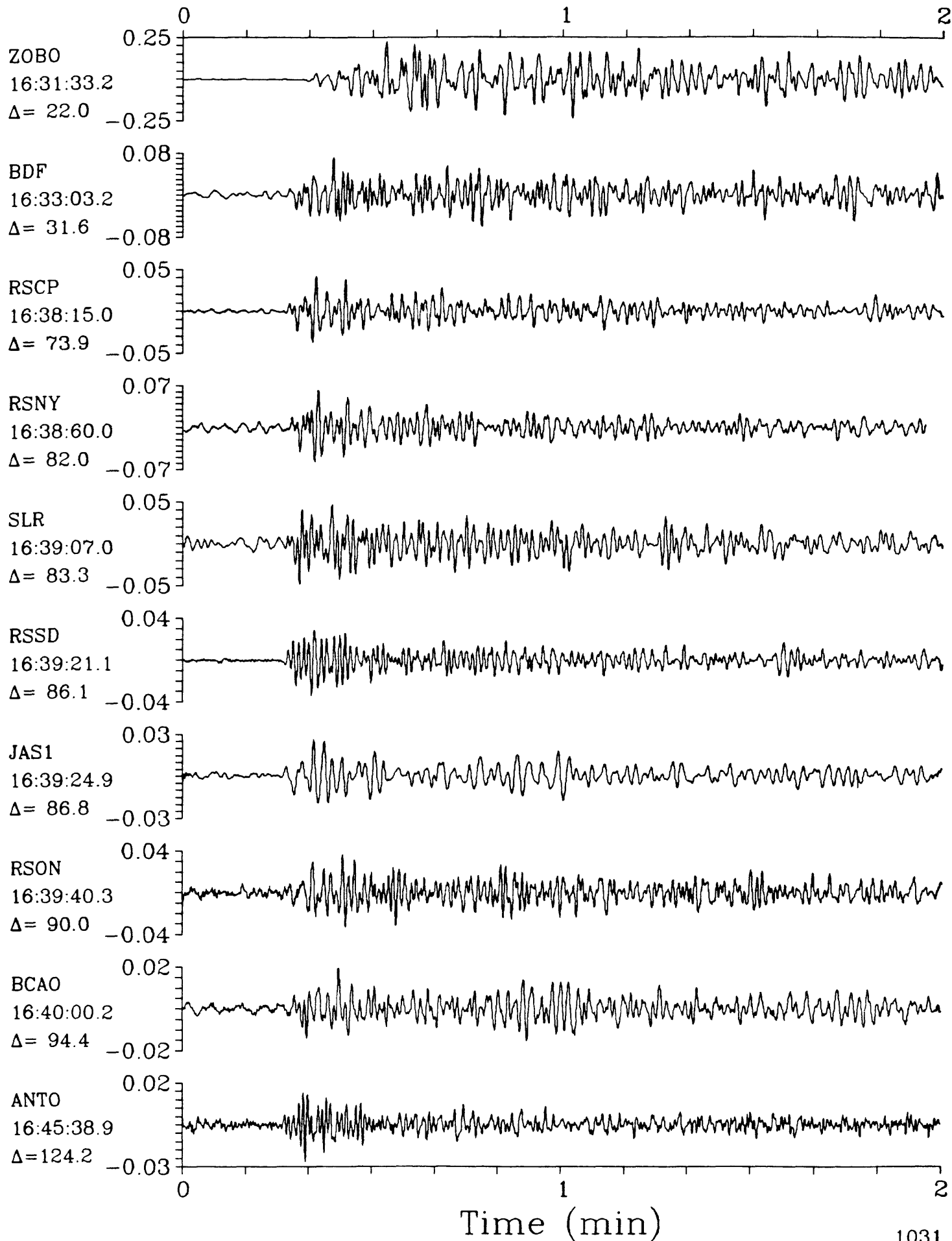
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02 June 1985 16:26:58.02

Near Coast of Central Chile

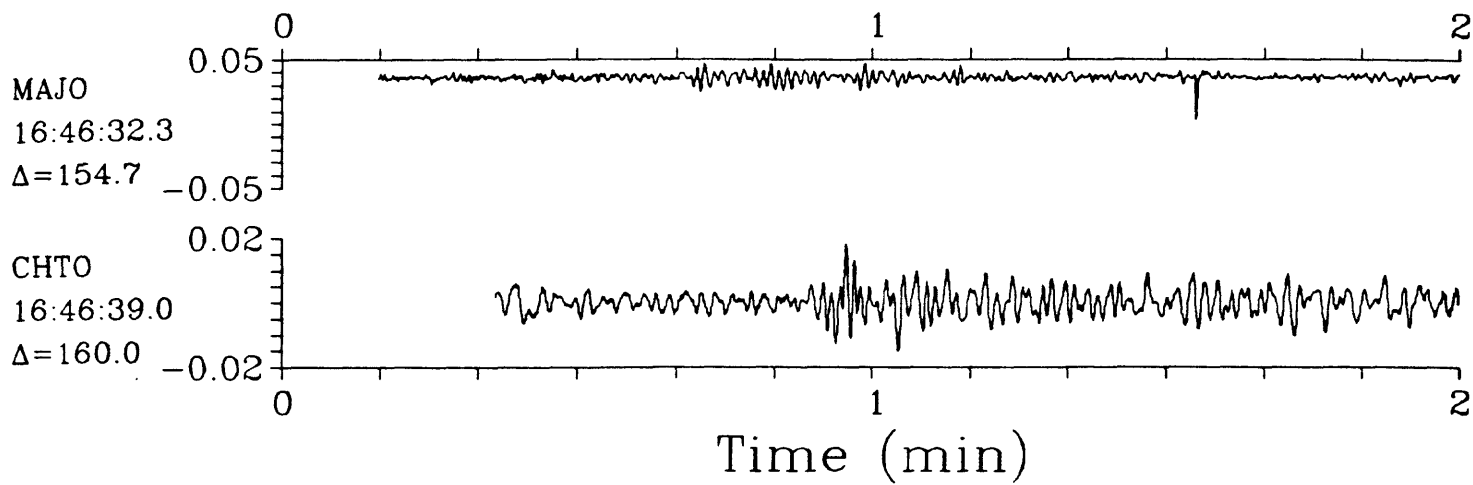




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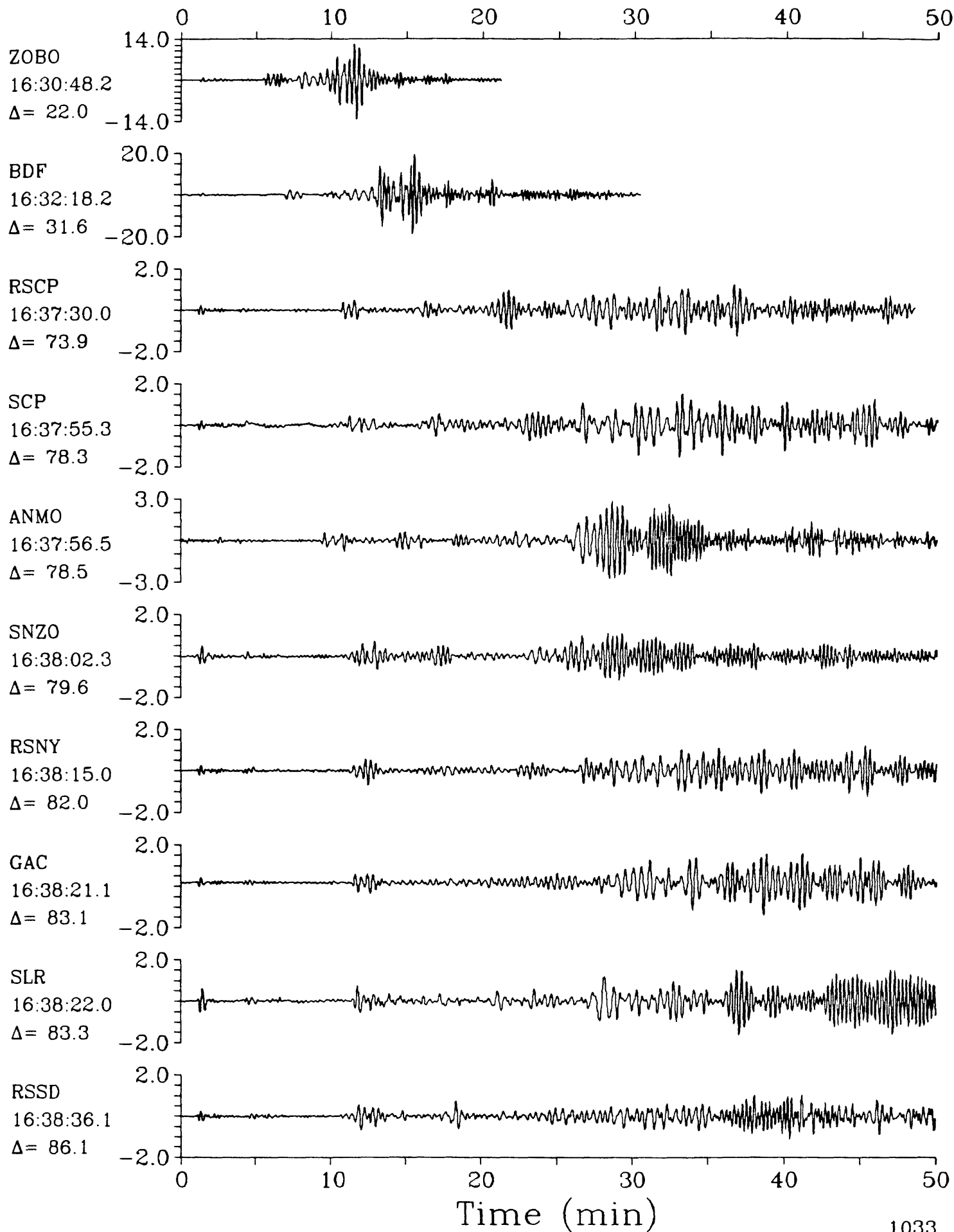
SPZ

Near Coast of Central Chile $h=33.0$ $m_b=5.4$ $M_{SZ}=5.6$ 

LPZ

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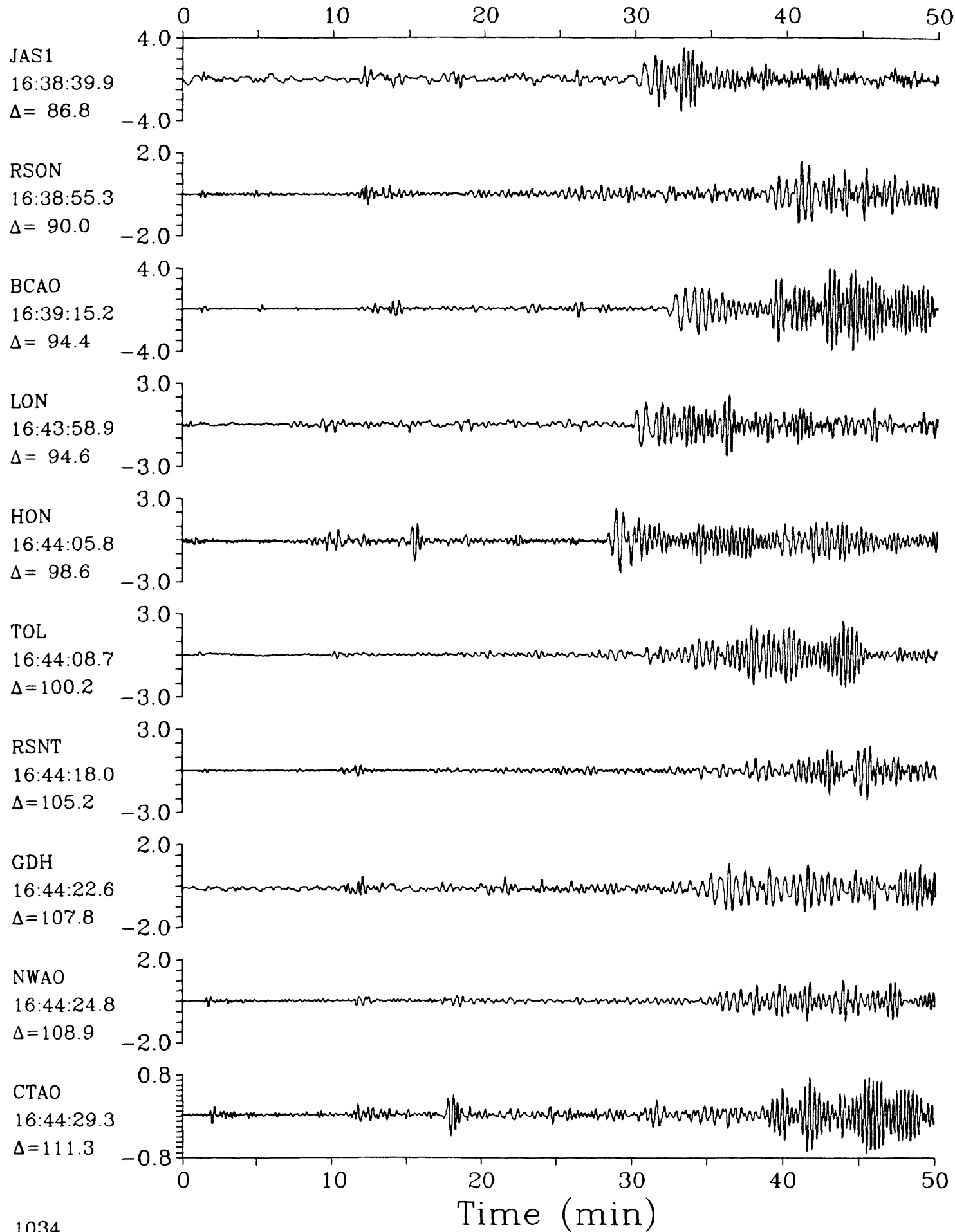
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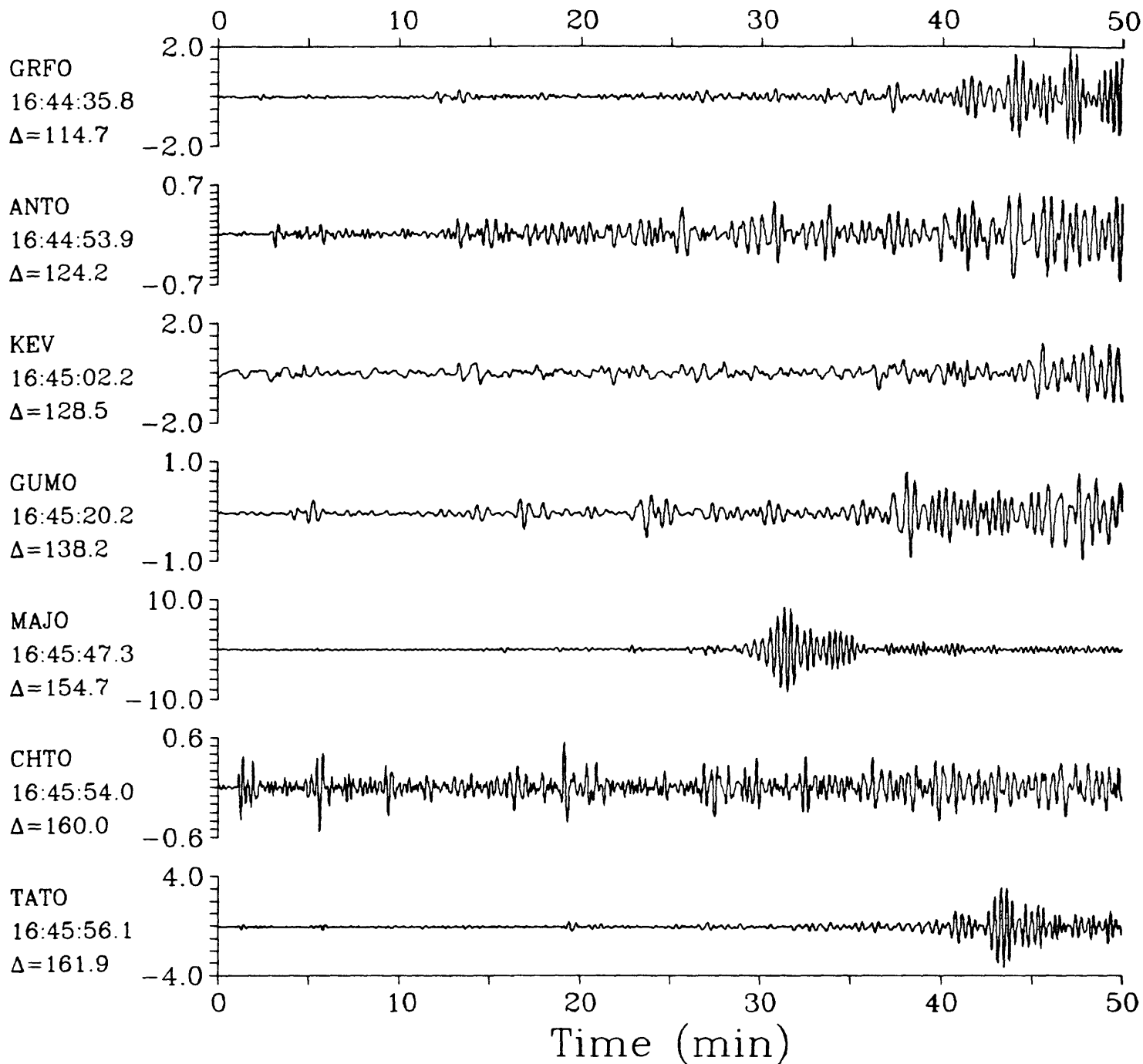
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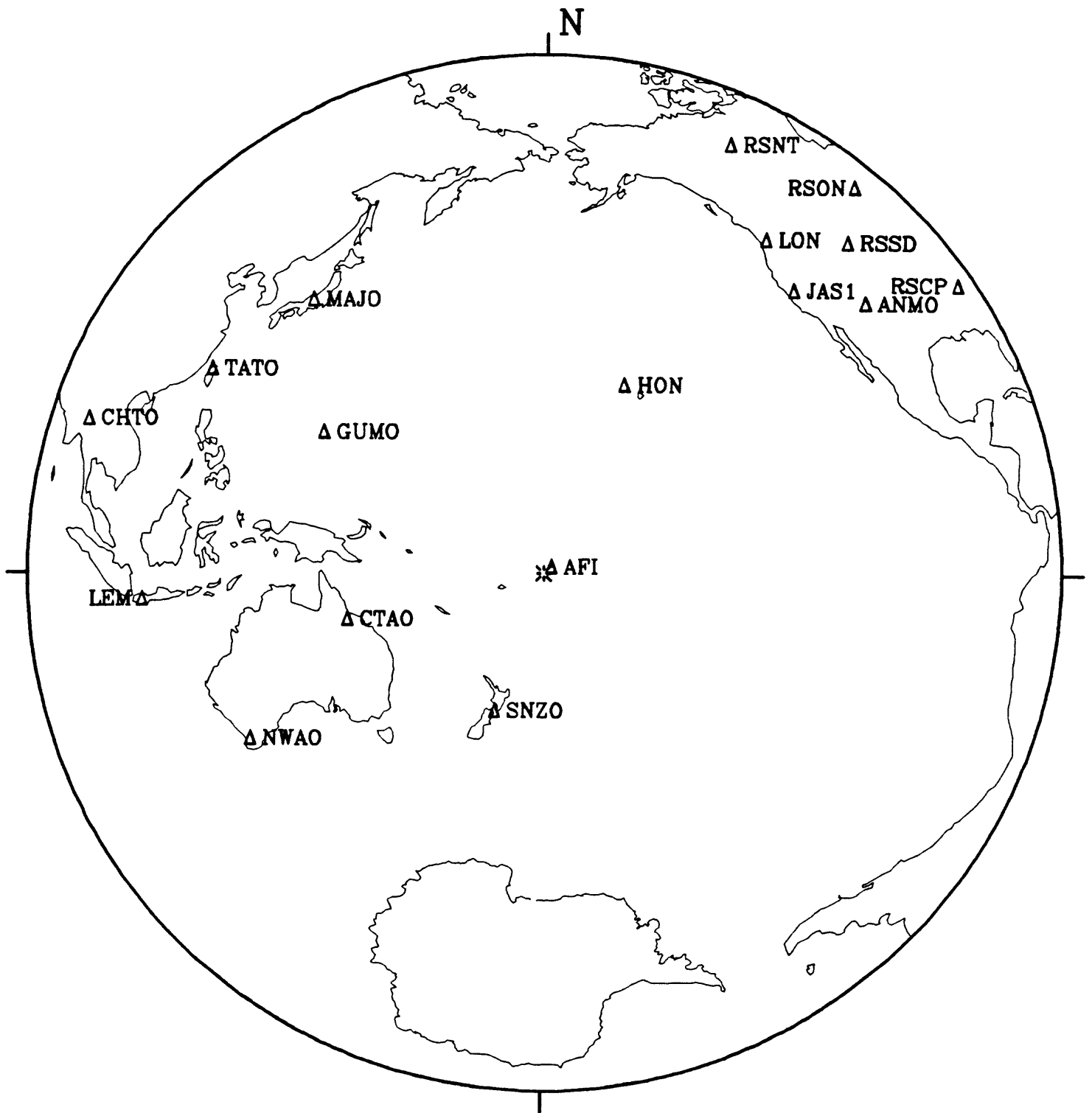
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LPZ

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03 June 1985 12:06:33.49

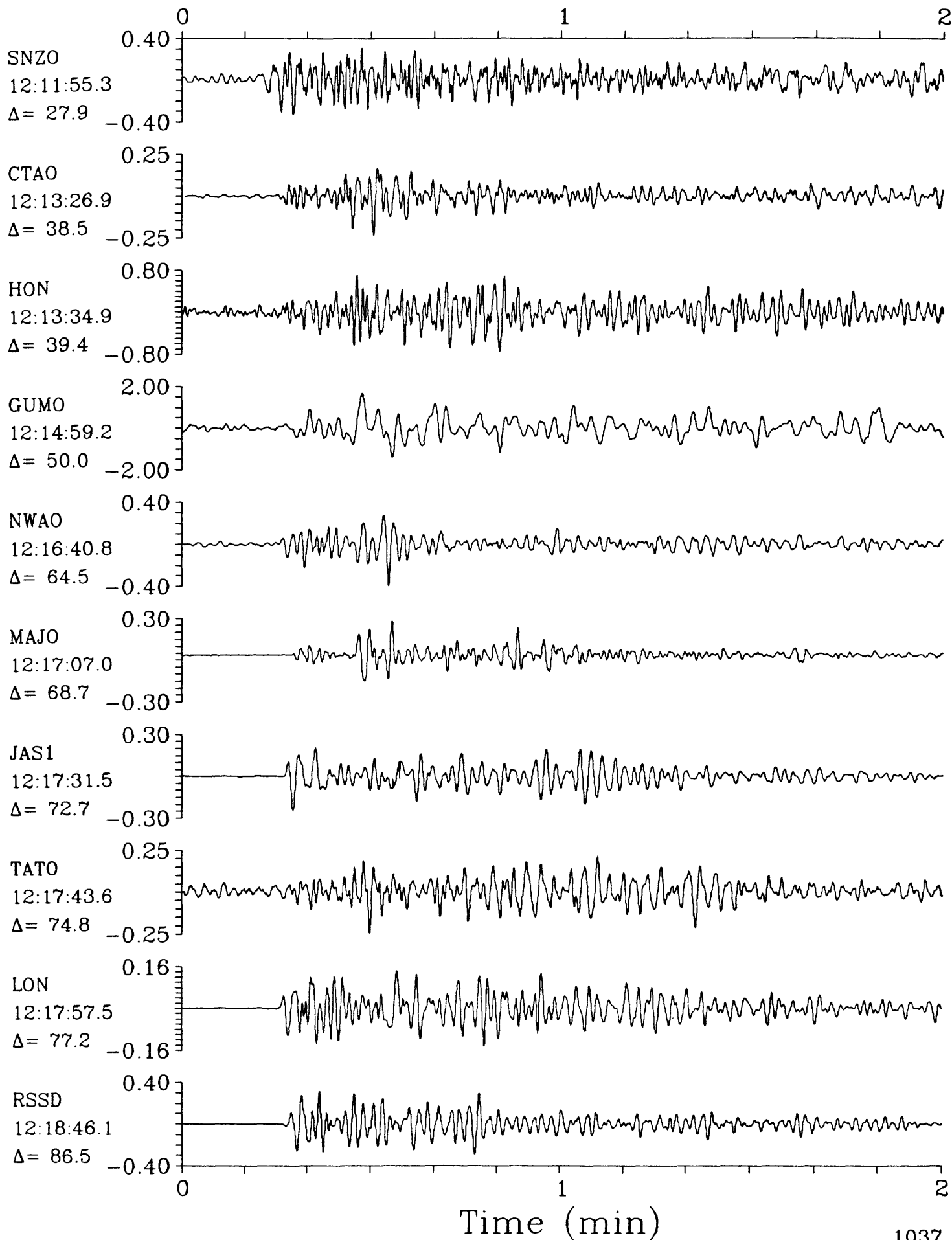
Tonga Islands



SPZ

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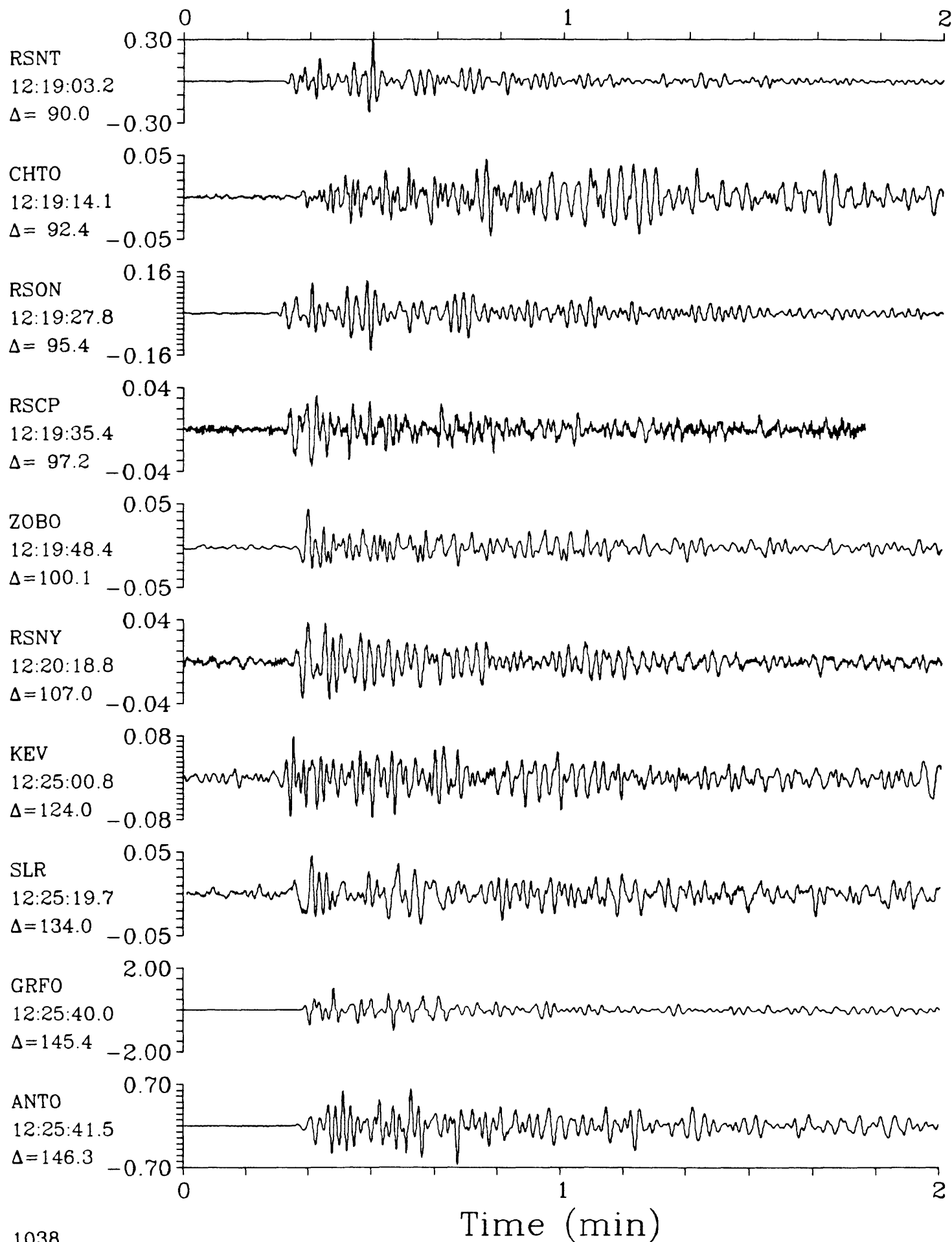
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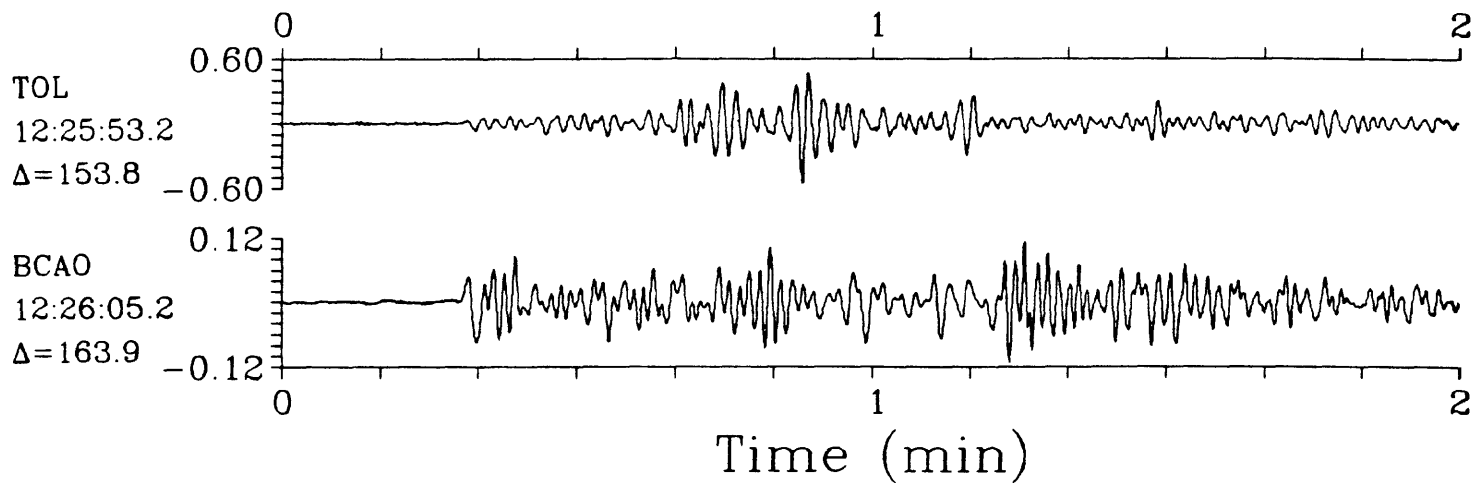
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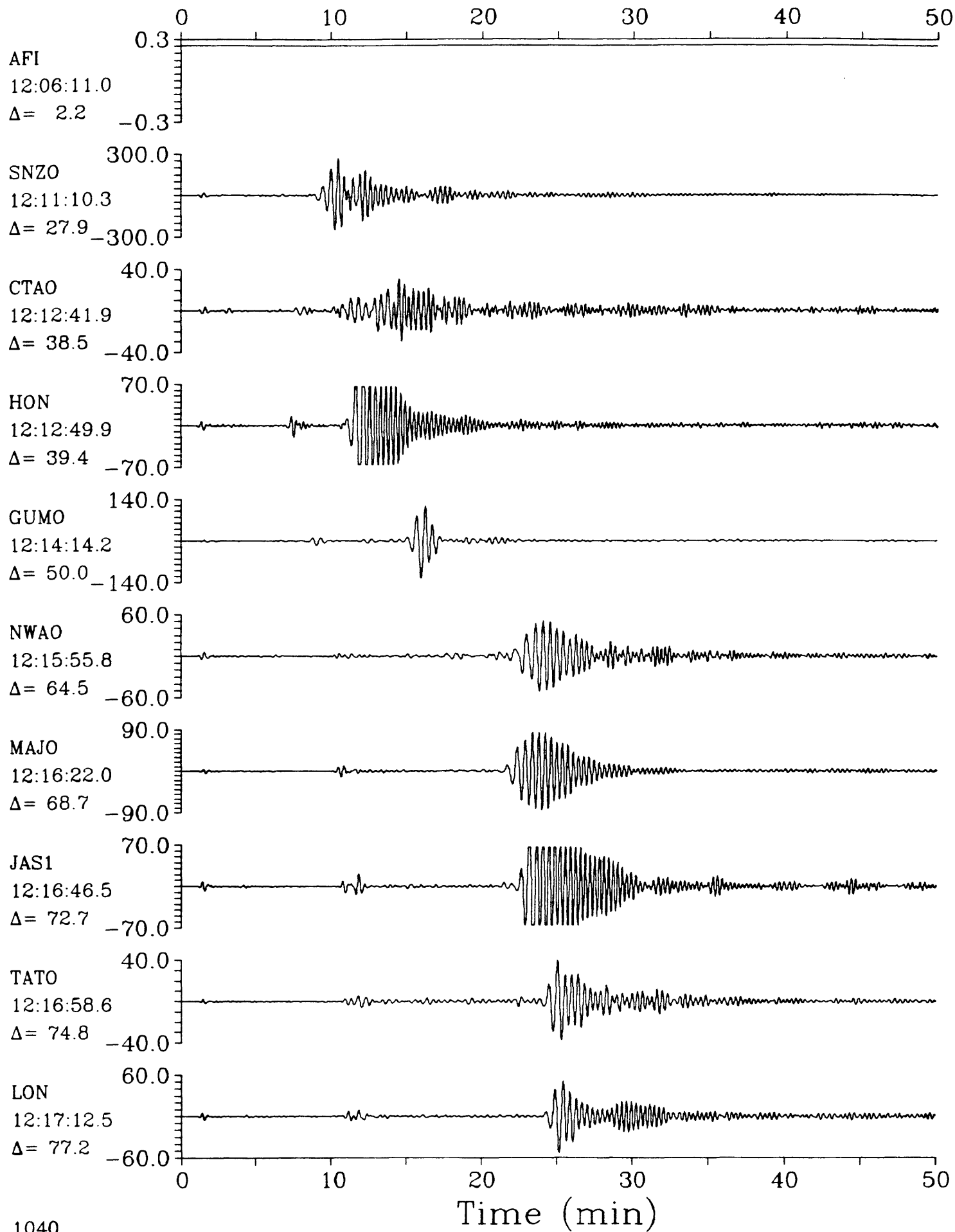
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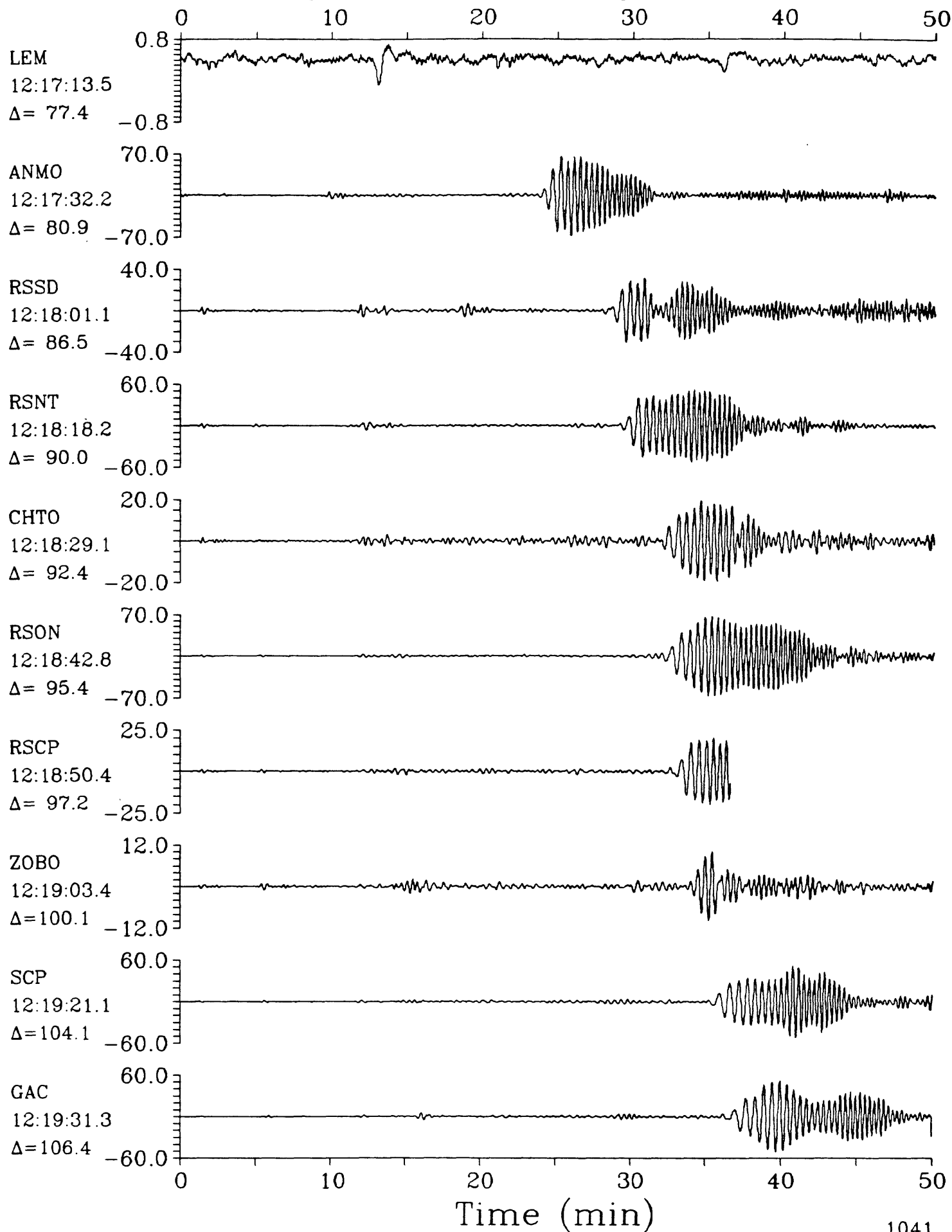
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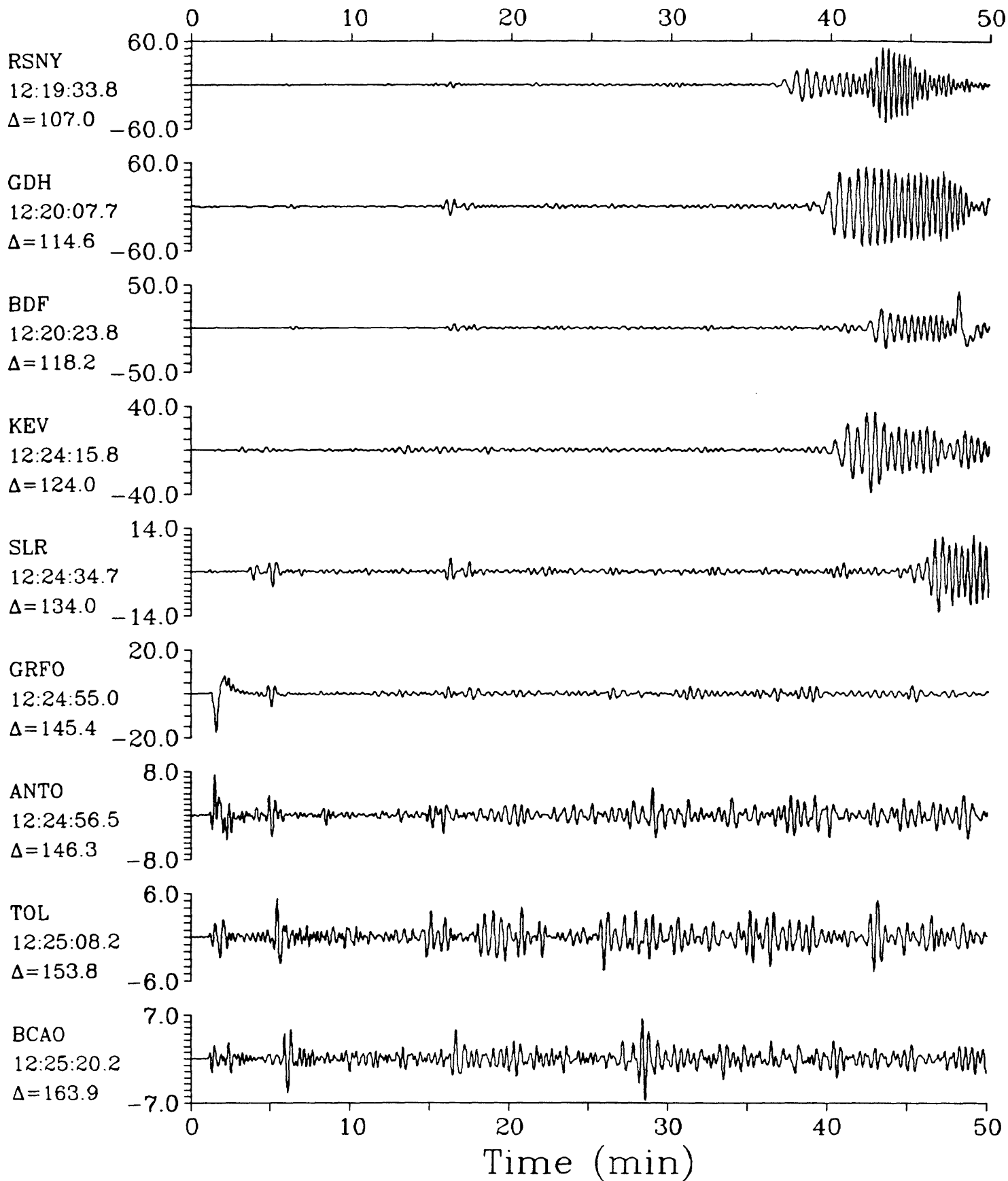
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LPZ

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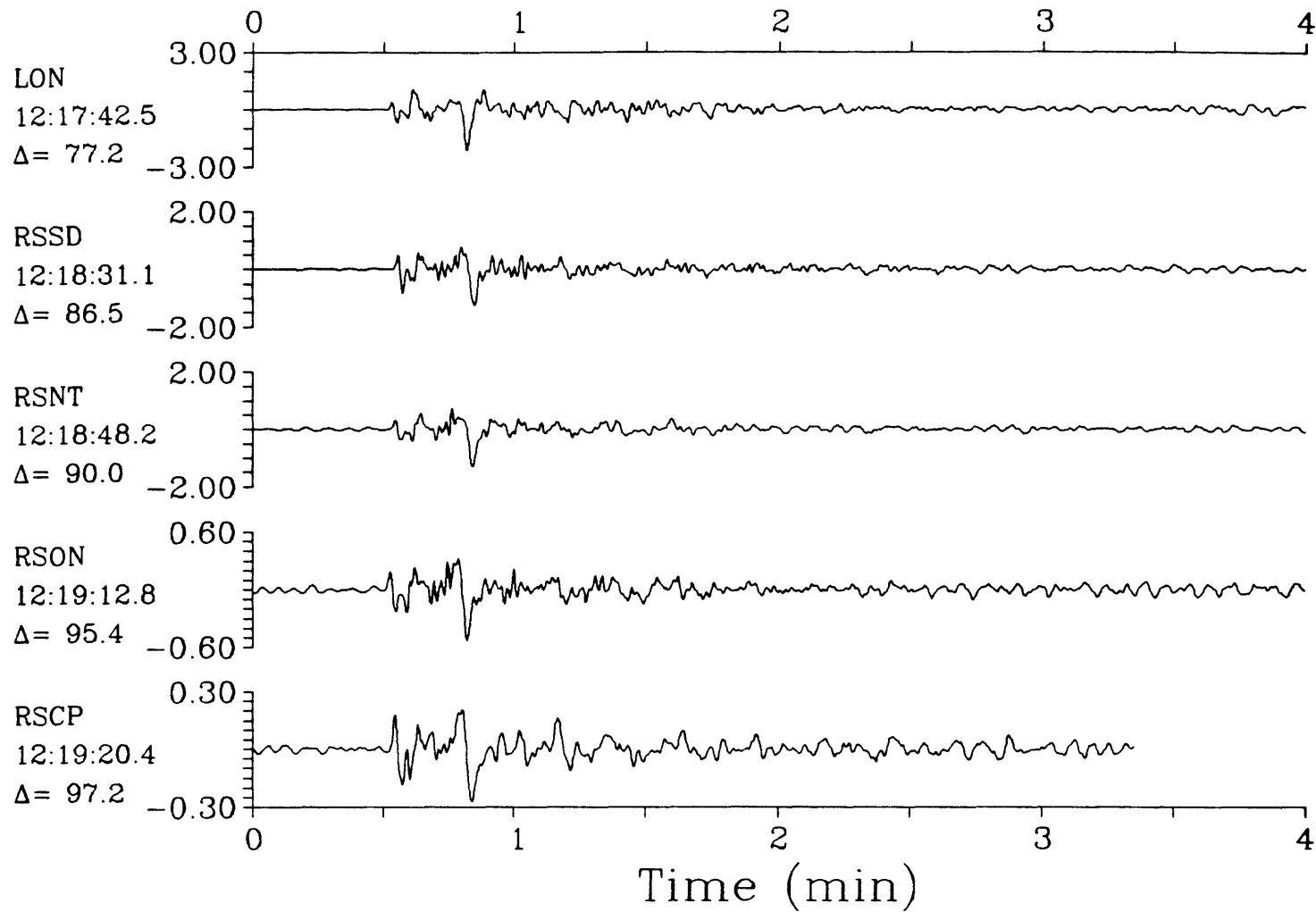
LPZ



IPZ

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IPZ



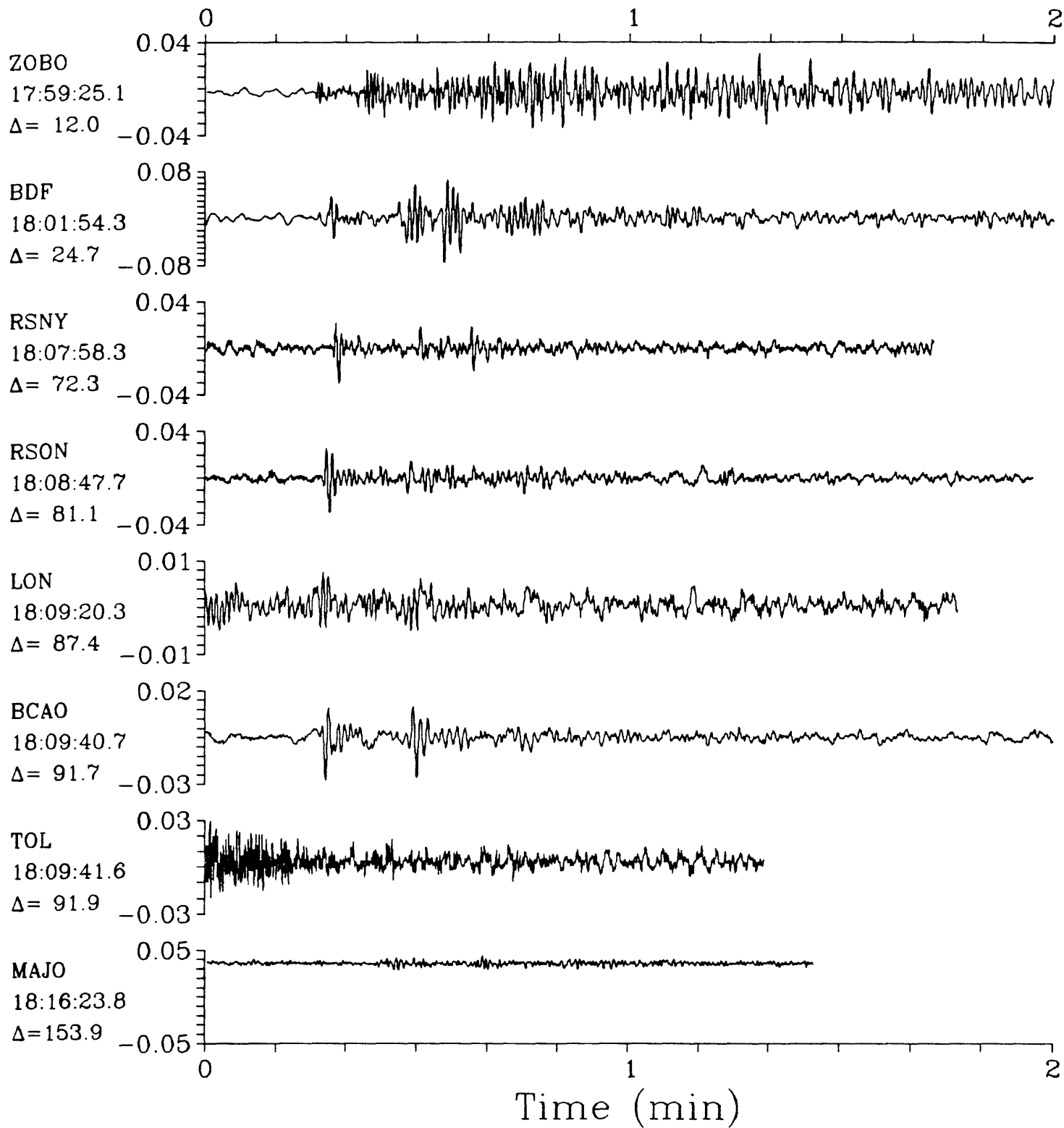
Near Coast of Central Chile



SPZ

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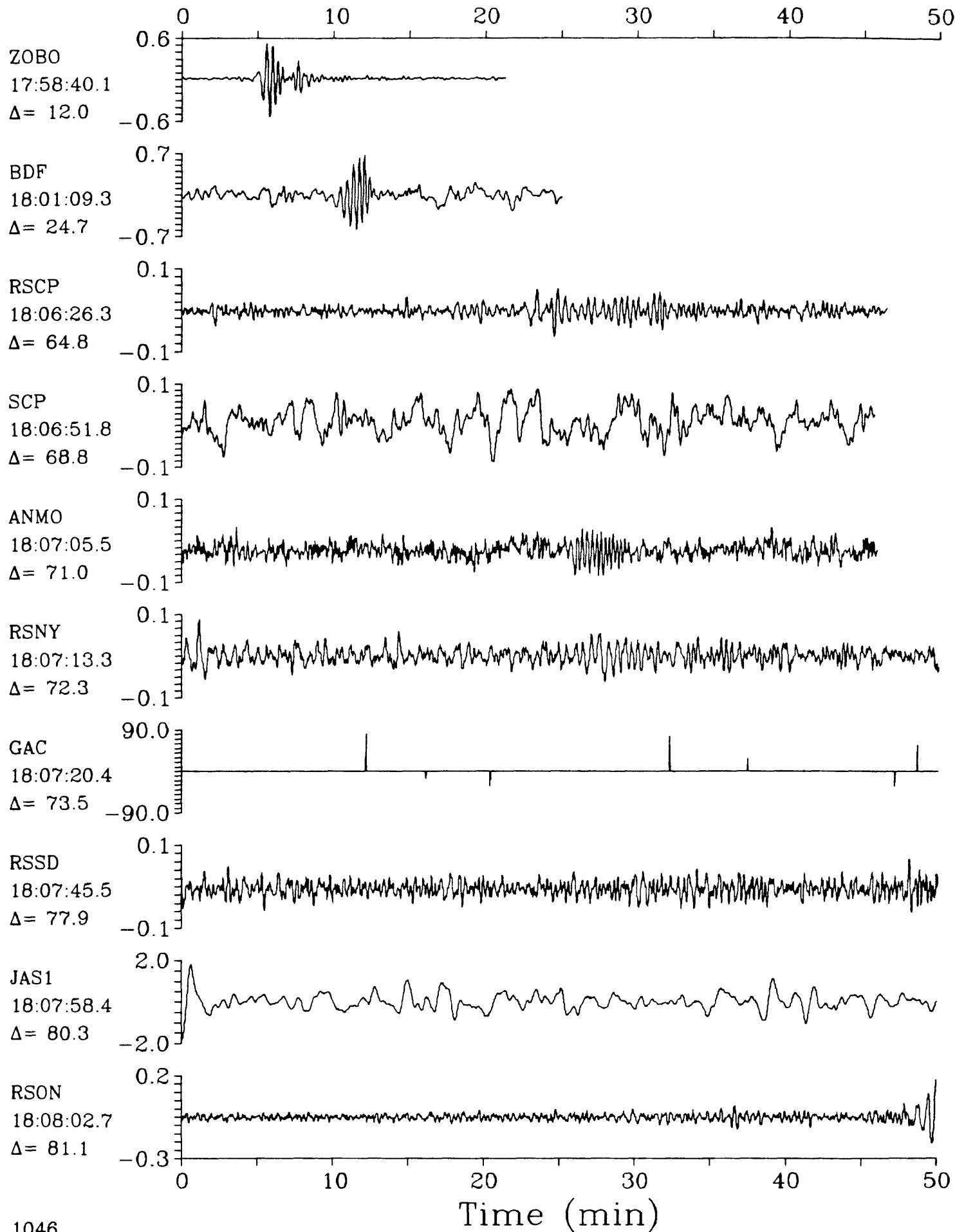
SPZ

Near Coast of Central Chile $h=33.0$ $m_b=5.6$ 

LPZ

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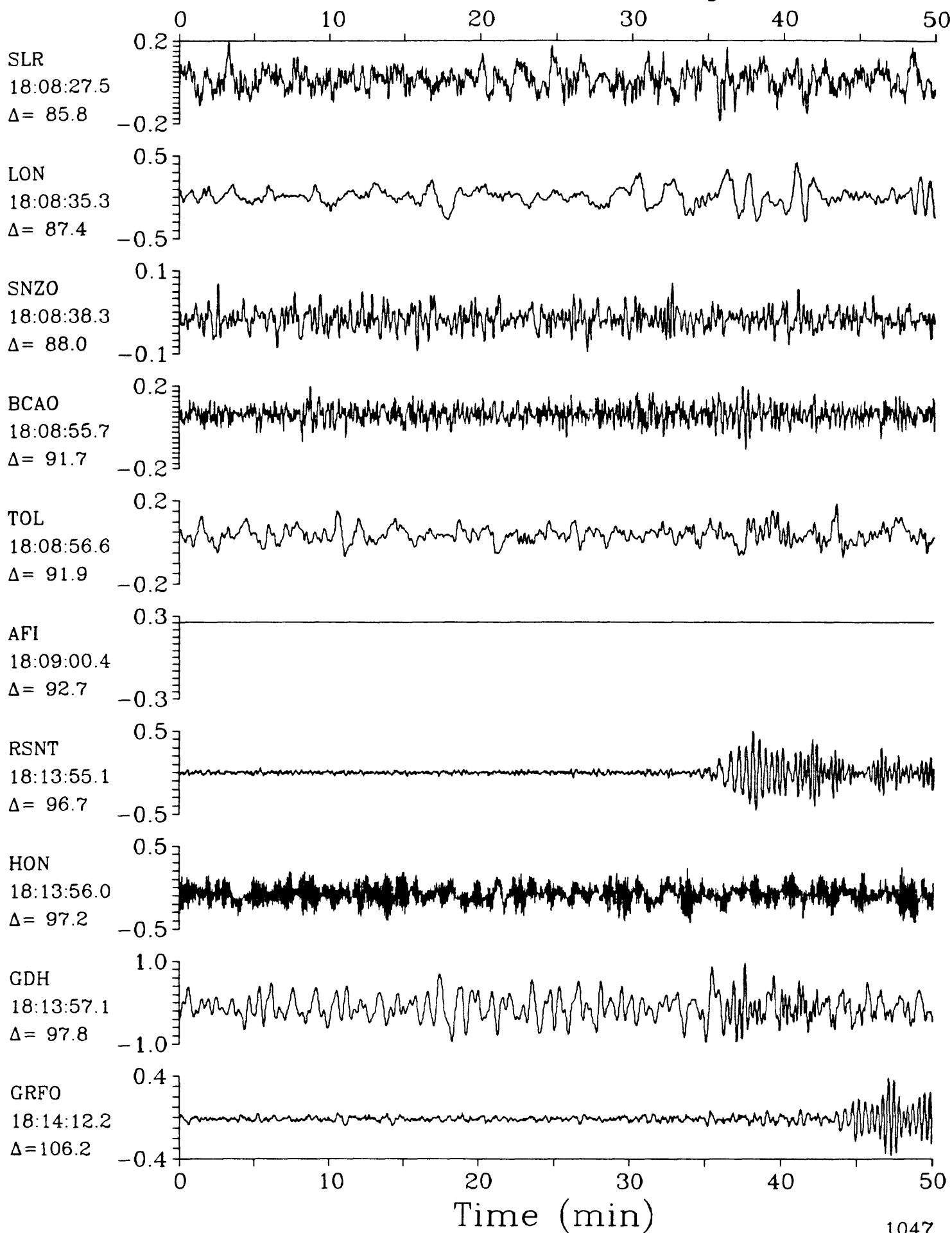
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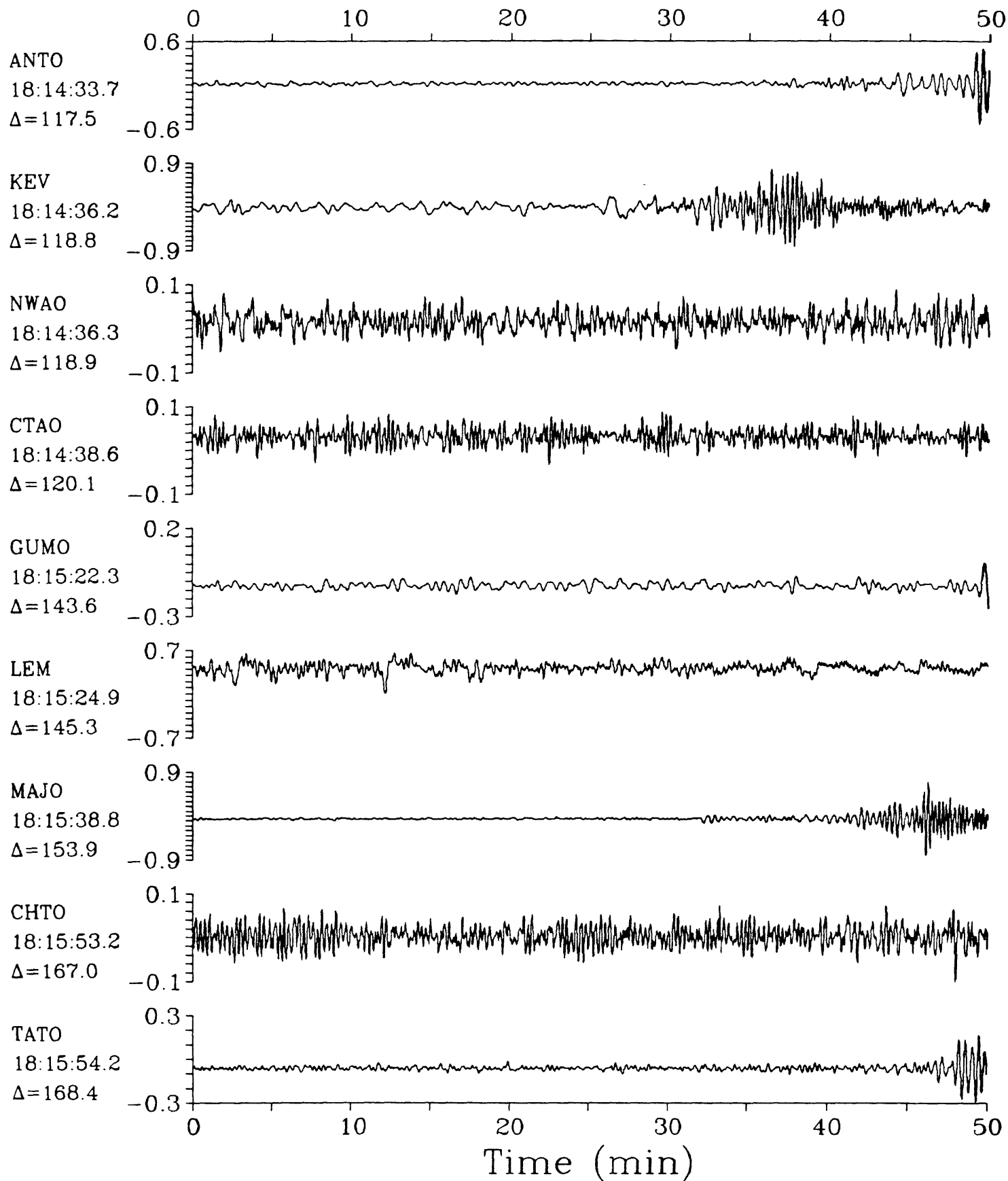
Near Coast of Central Chile $h=33.0$ $m_b=5.6$ 

LPZ

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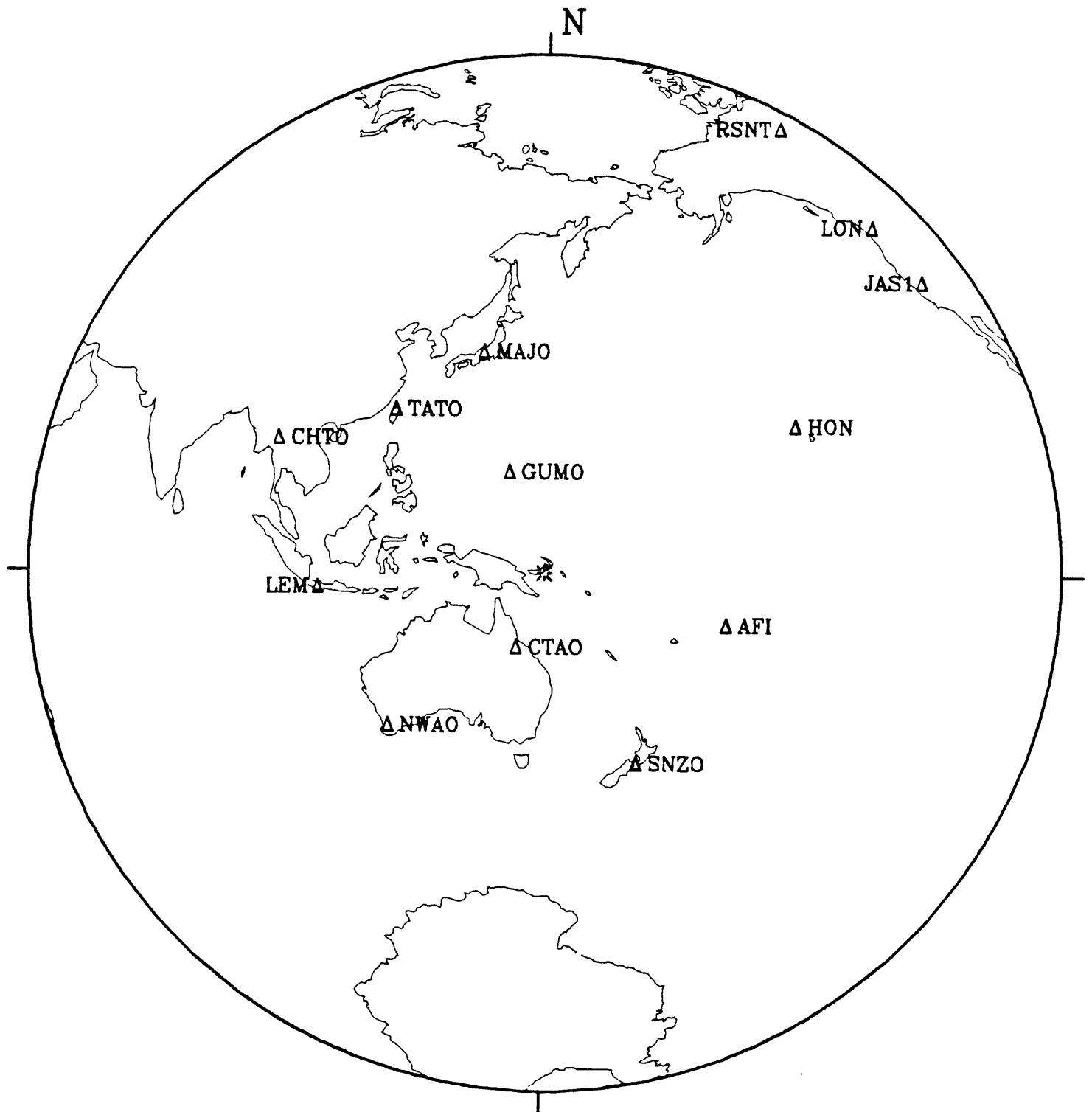
LPZ

Near Coast of Central Chile $h=33.0$ $m_b=5.6$ 

Near Coast of Central Chile $h=33.0$ $m_b=5.6$ 

03 June 1985 21:57:51.23

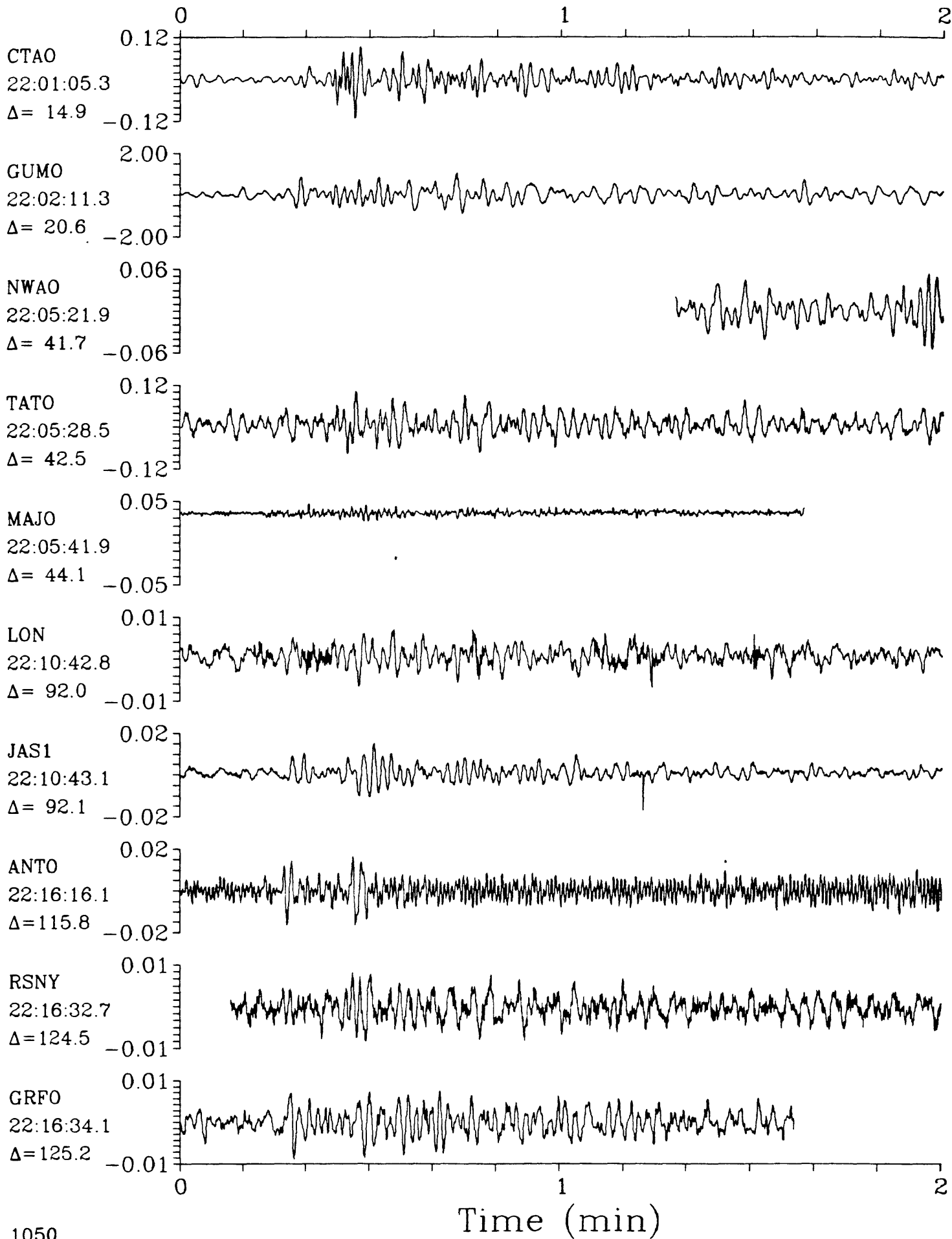
New Britain Region



SPZ

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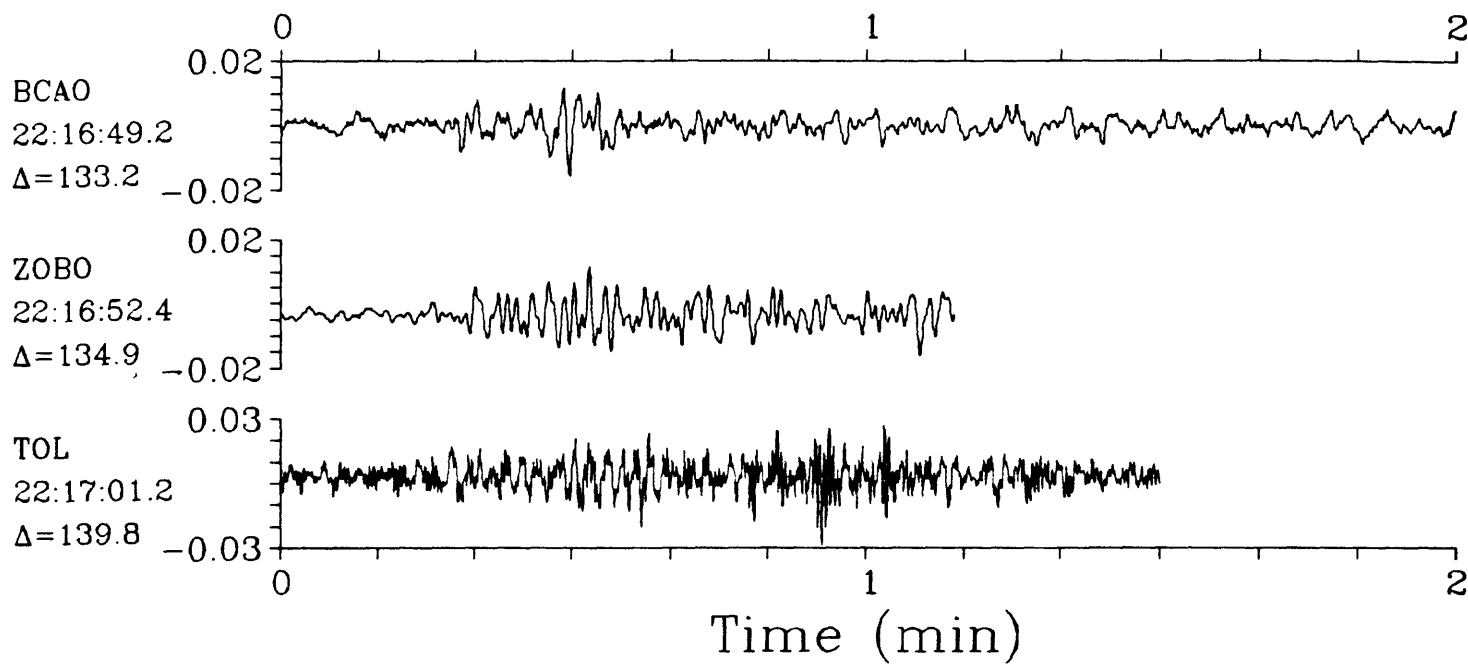
SPZ

New Britain Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

SPZ

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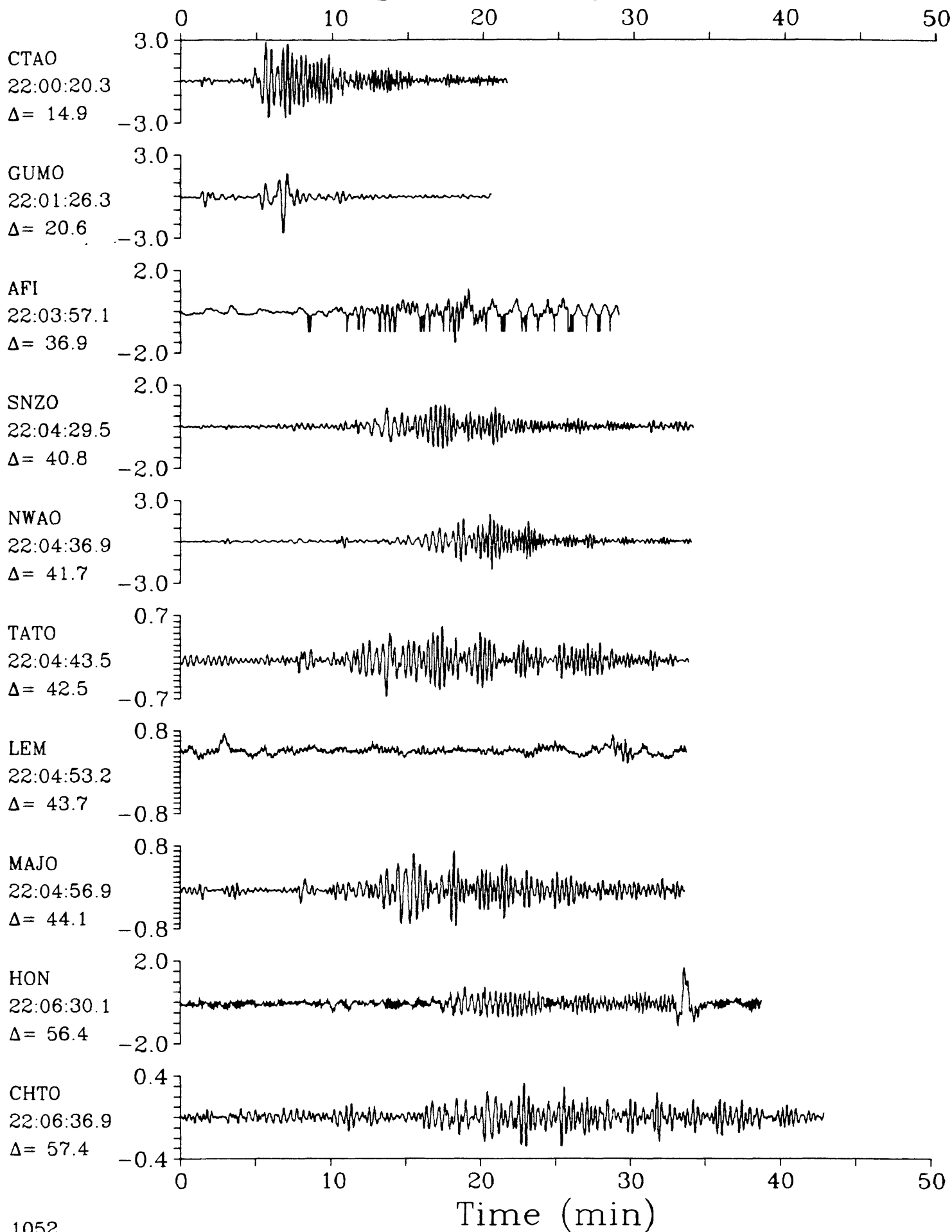
SPZ

New Britain Region $h=33.0$ $m_b=5.5$ $M_{SZ}=5.0$ 

LPZ

03 June 1985 21:57:51.23

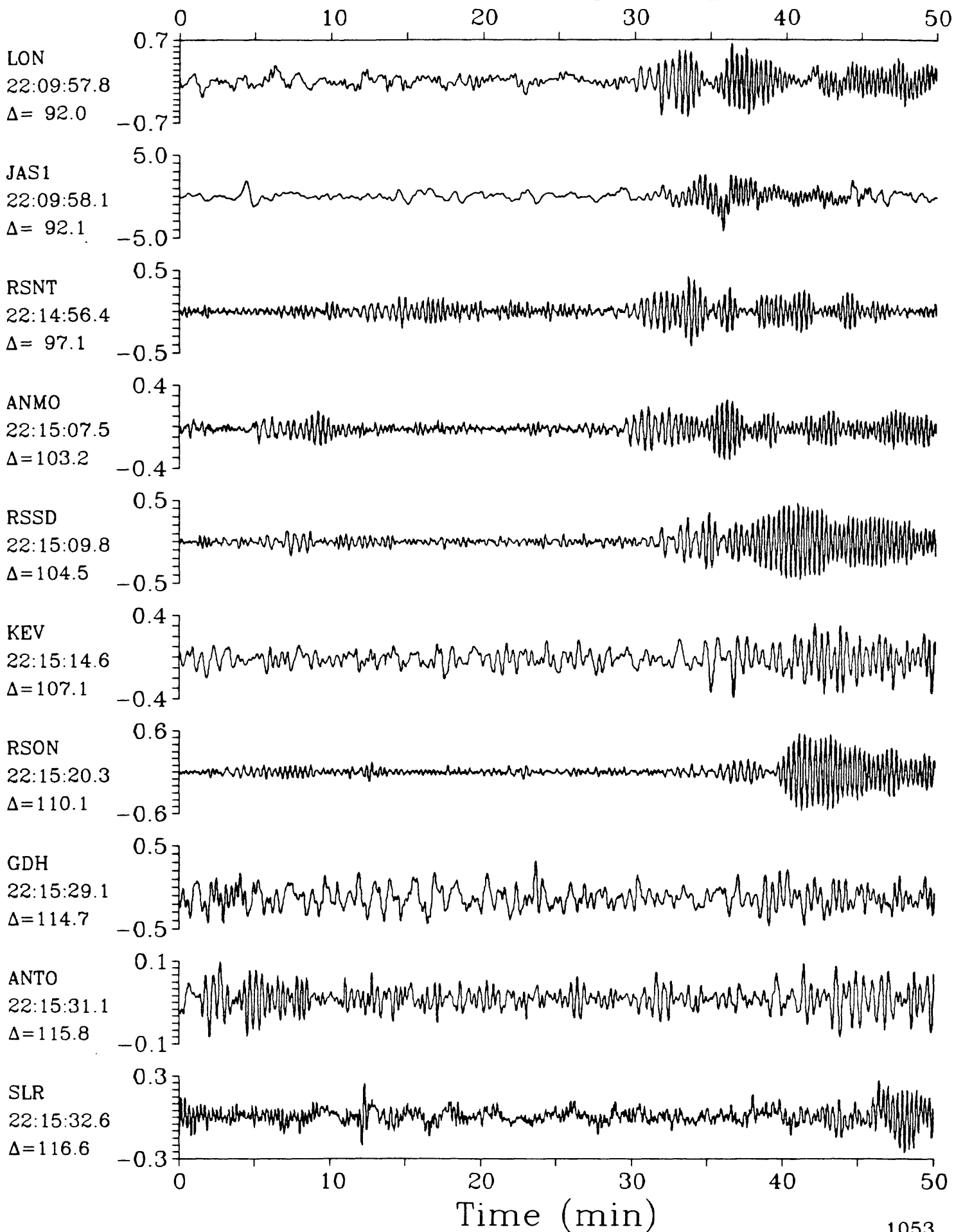
LPZ

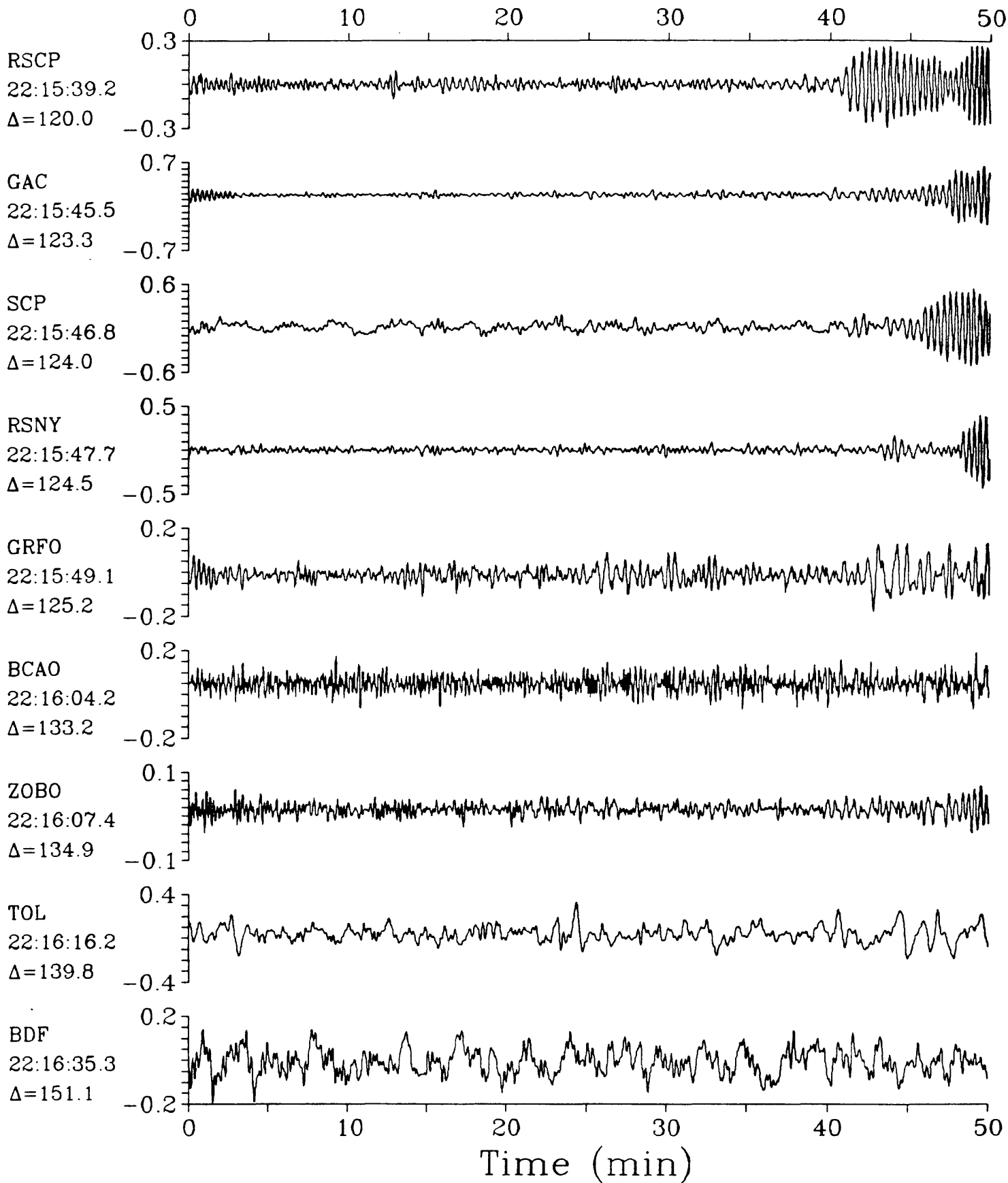
New Britain Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

LPZ

03 June 1985 21:57:51.23

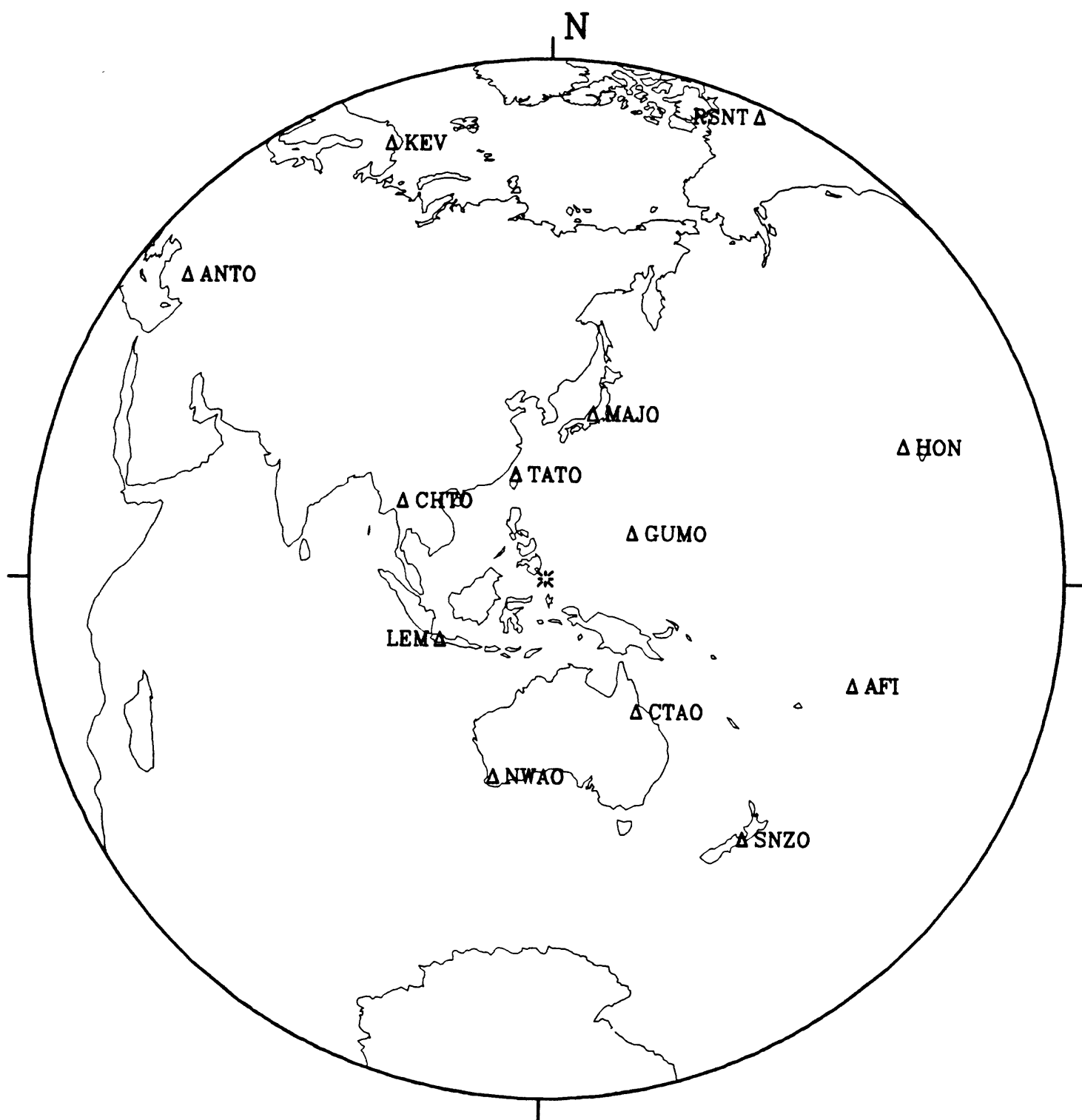
LPZ

New Britain Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

New Britain Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

04 June 1985 03:56:28.91

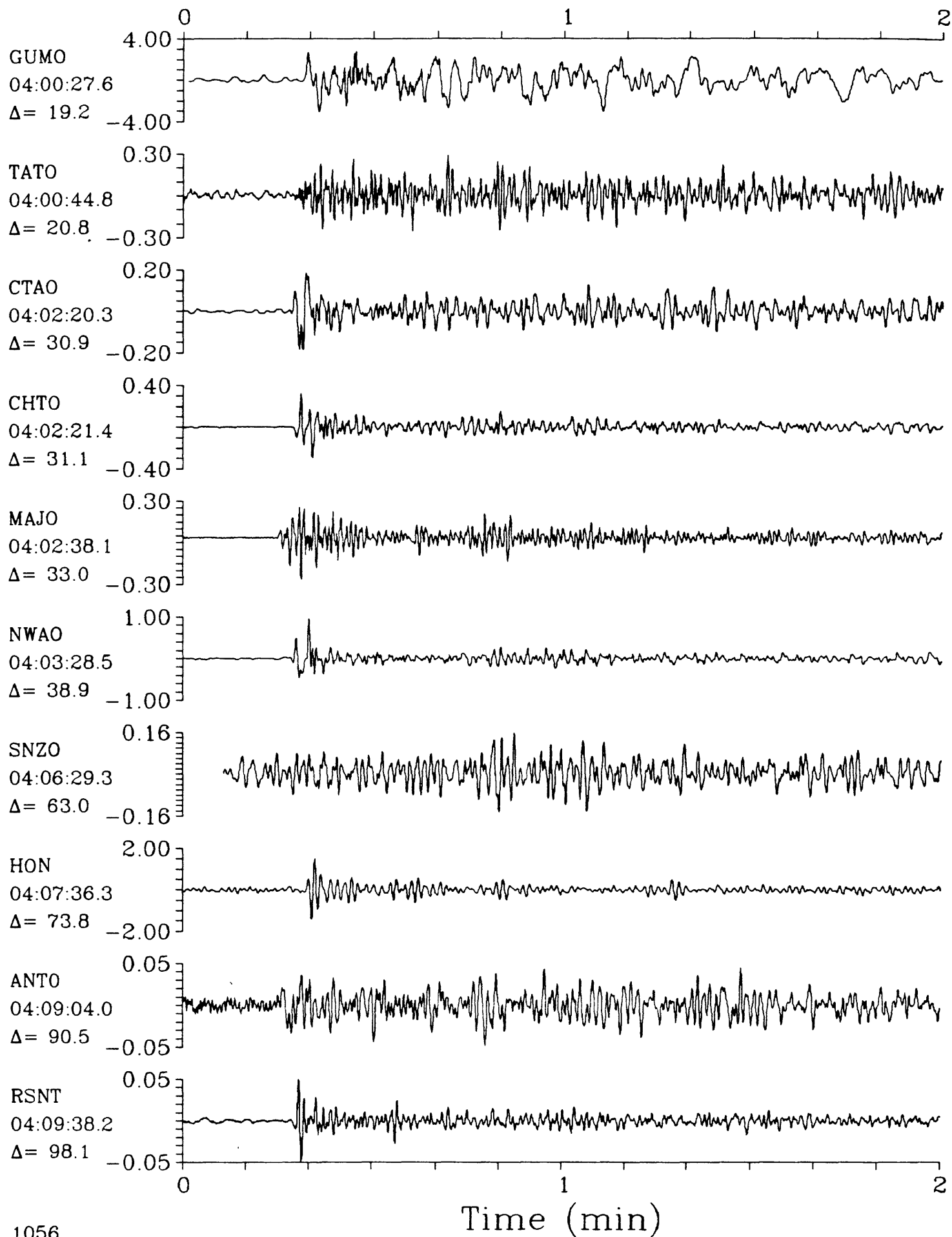
Talau Islands



SPZ

04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

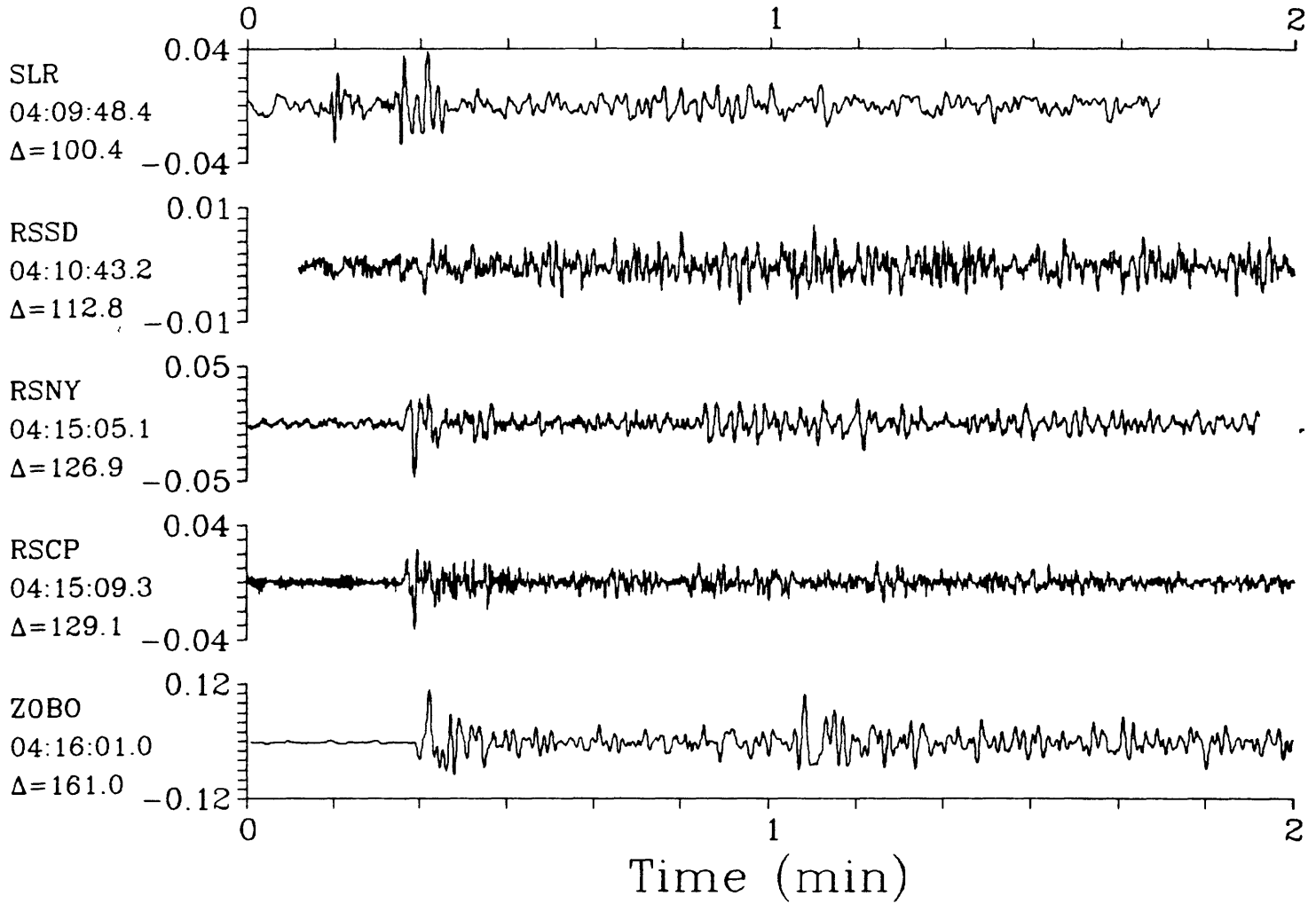
SPZ



SPZ

04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

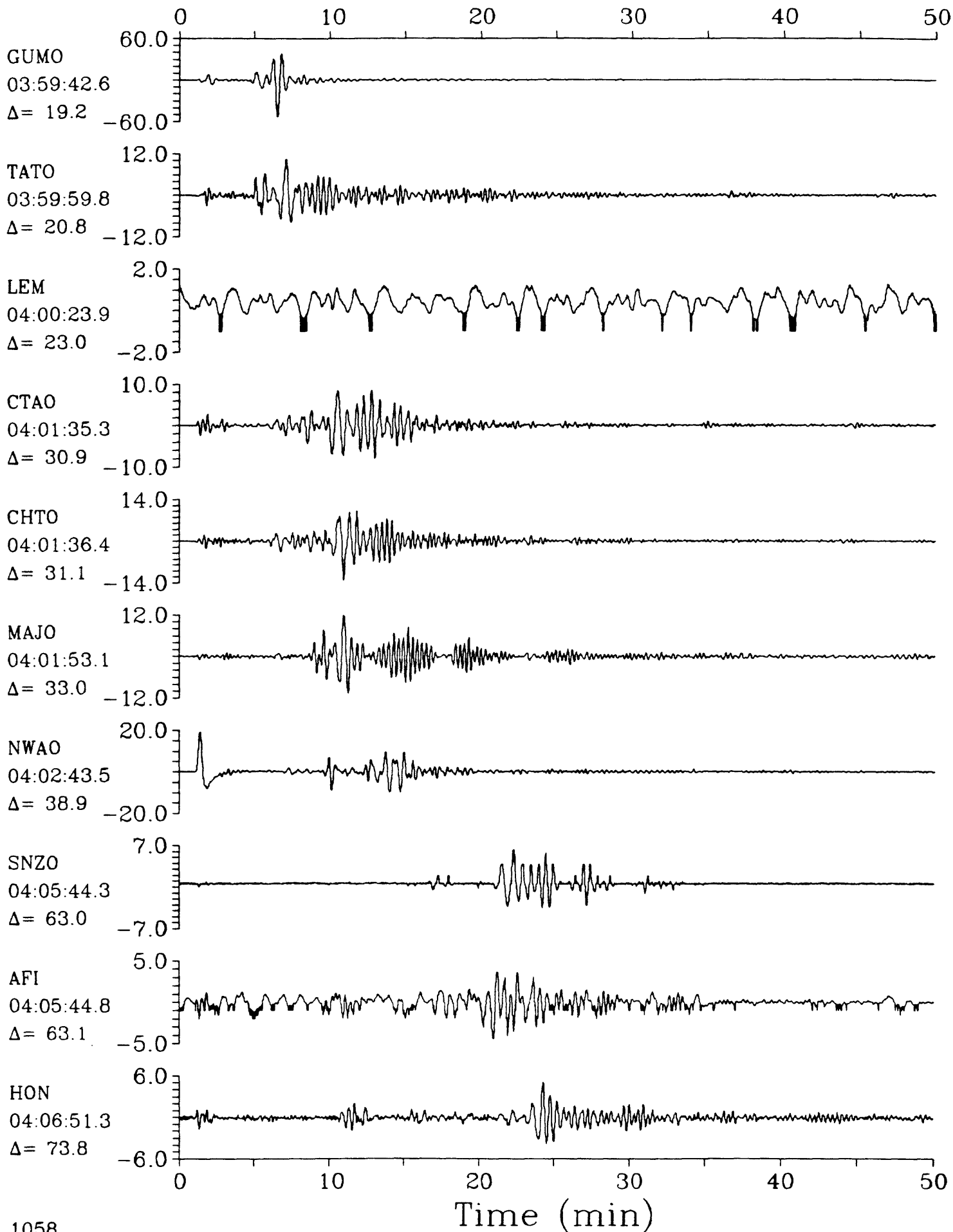
SPZ



LPZ

04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

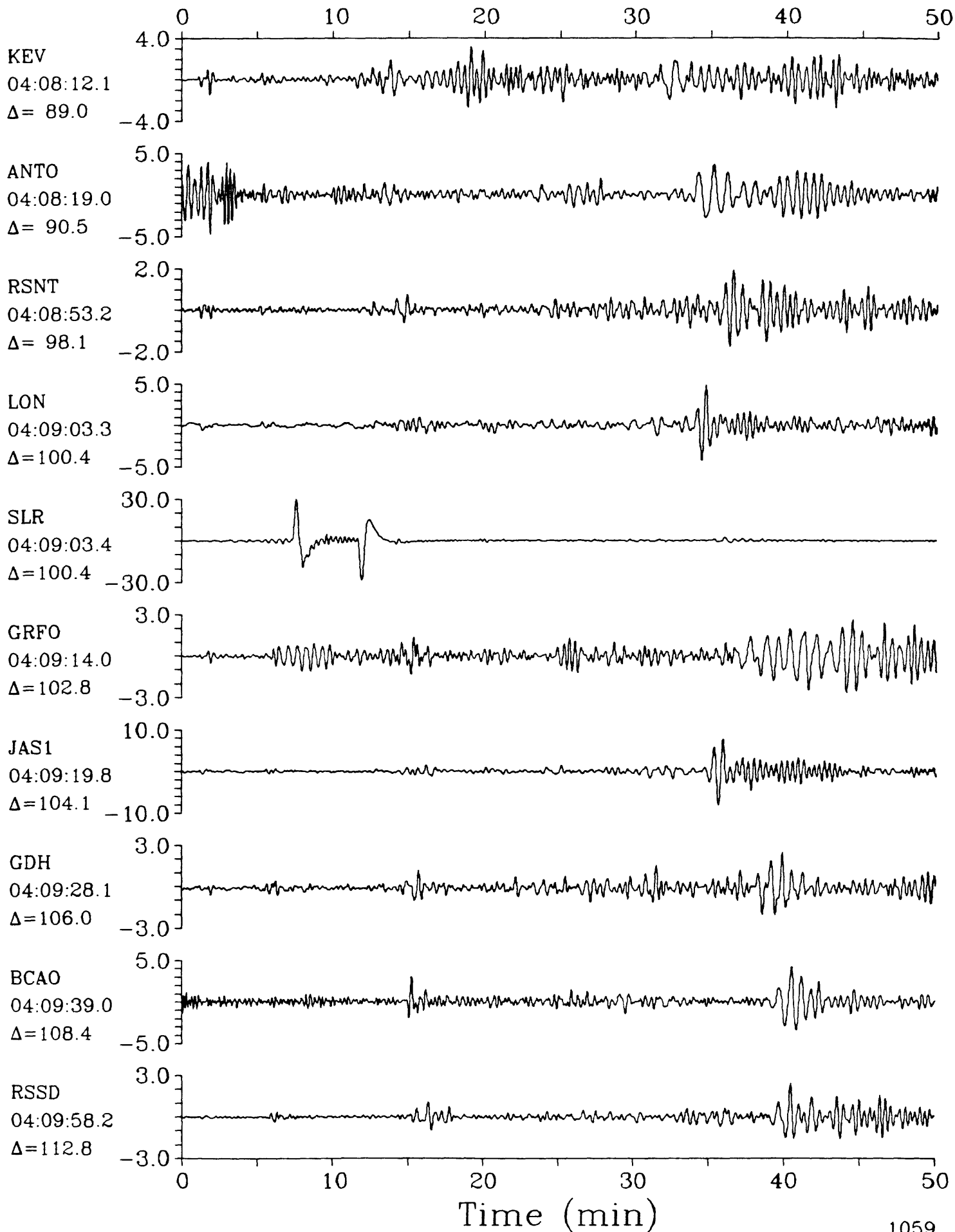
LPZ



LPZ

04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

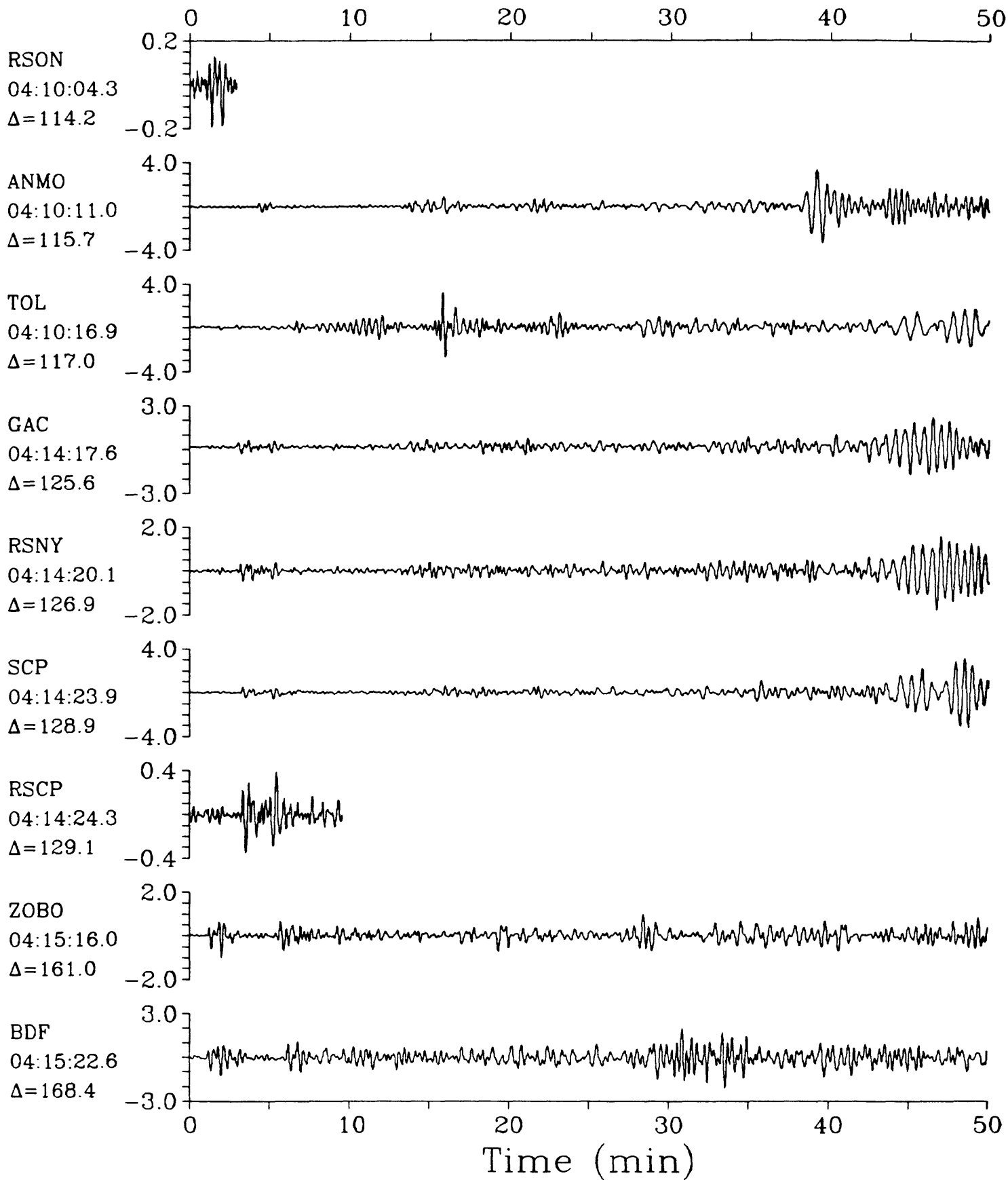
LPZ



LPZ

04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

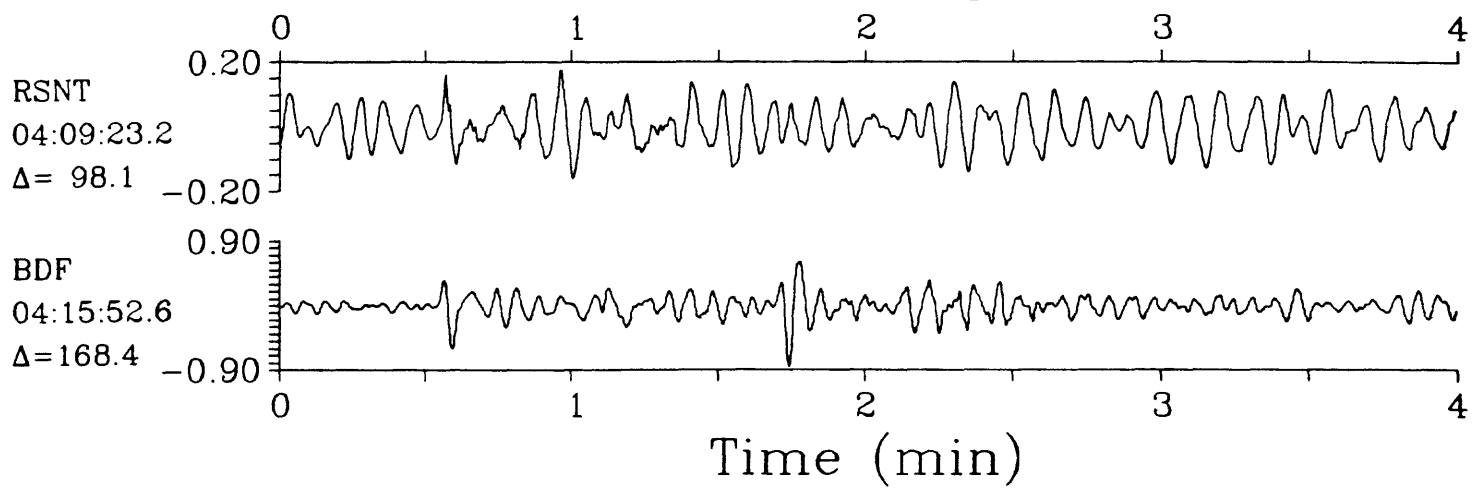
LPZ



IPZ

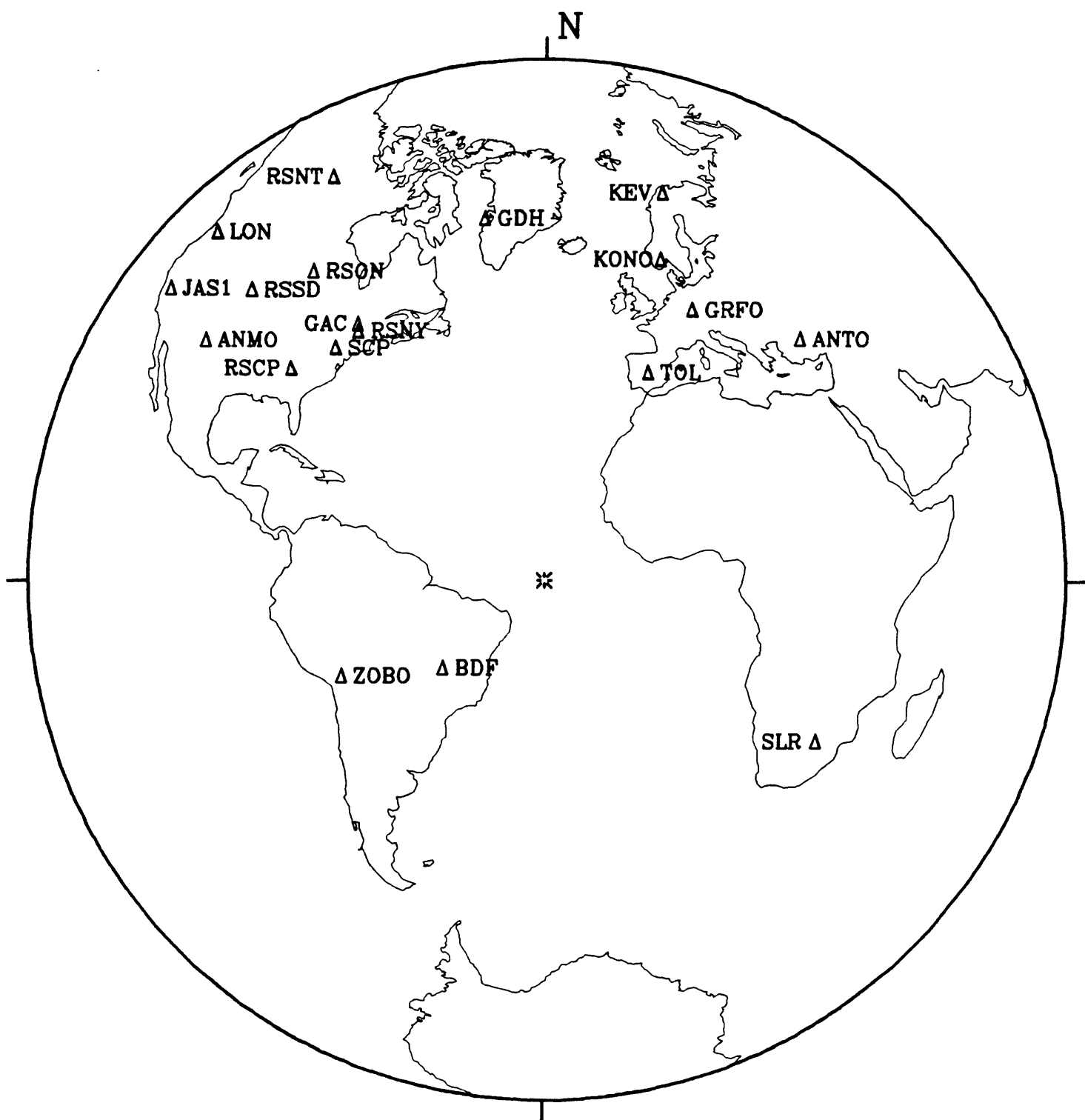
04 June 1985 03:56:28.91
Talaud Islands $h=113.0$ $m_b=6.0$

IPZ



06 June 1985 02:40:12.86

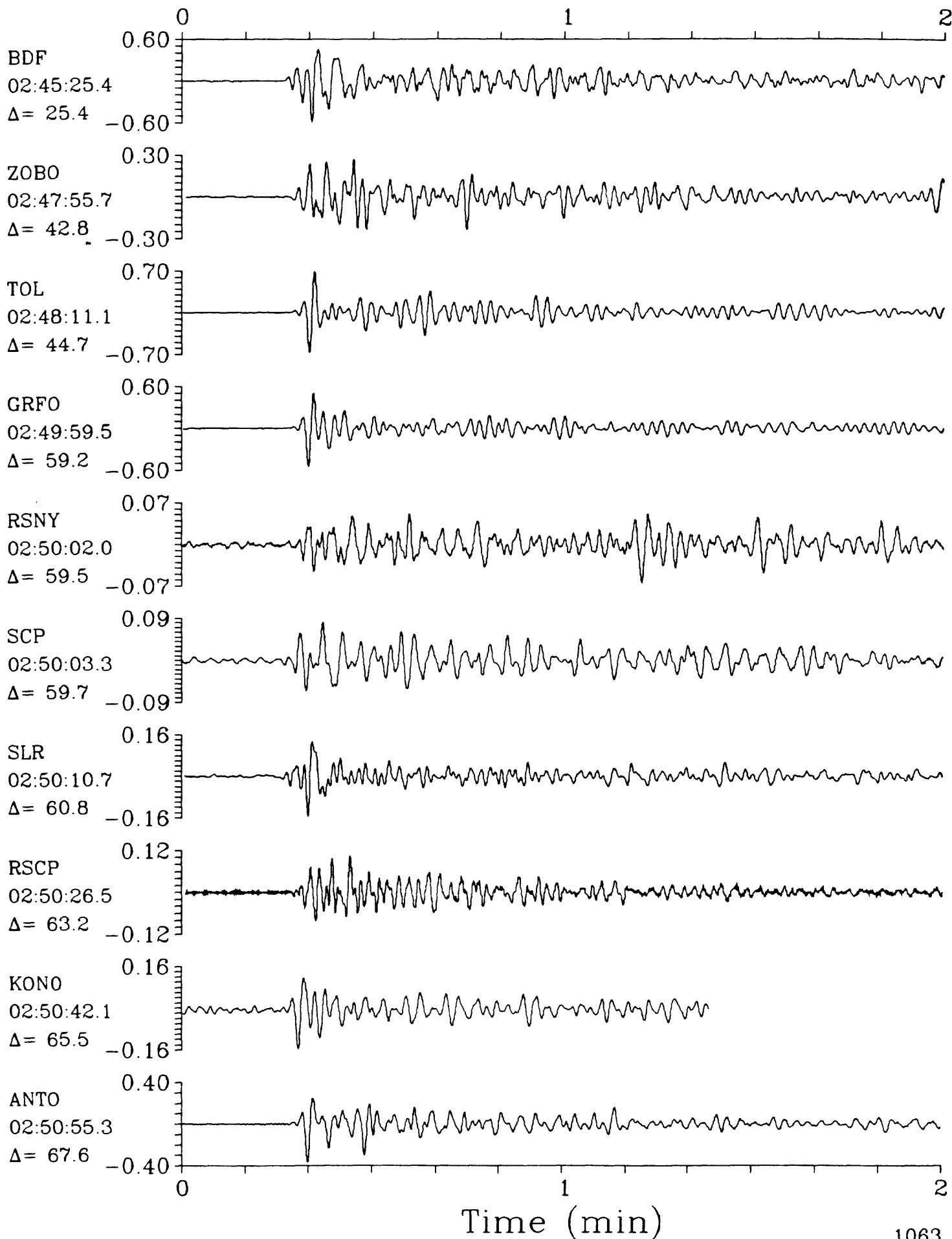
Central Mid-Atlantic Ridge



SPZ

06 June 1985 02:40:12.86

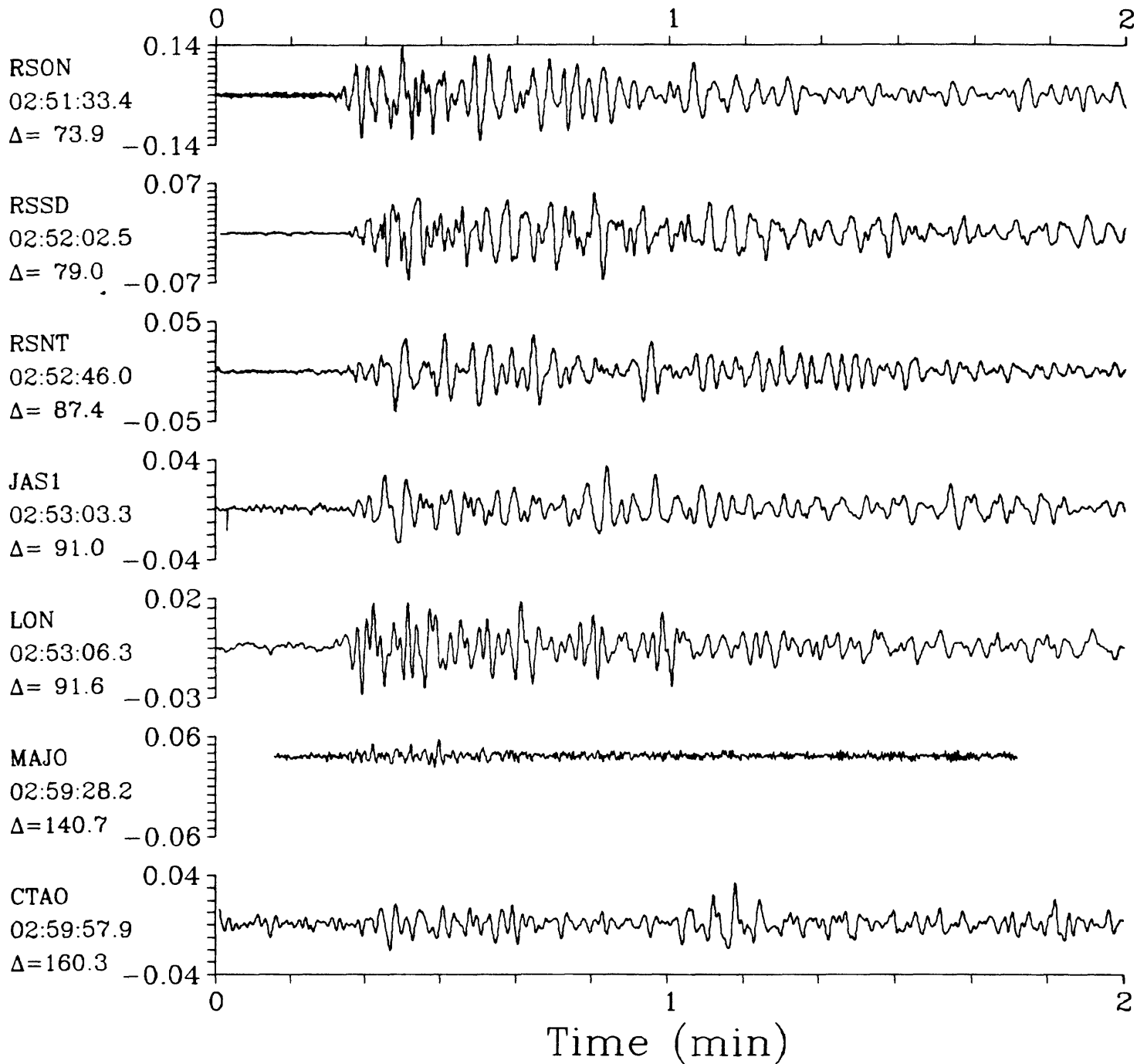
SPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{SZ}=6.5$ 

SPZ

06 June 1985 02:40:12.86

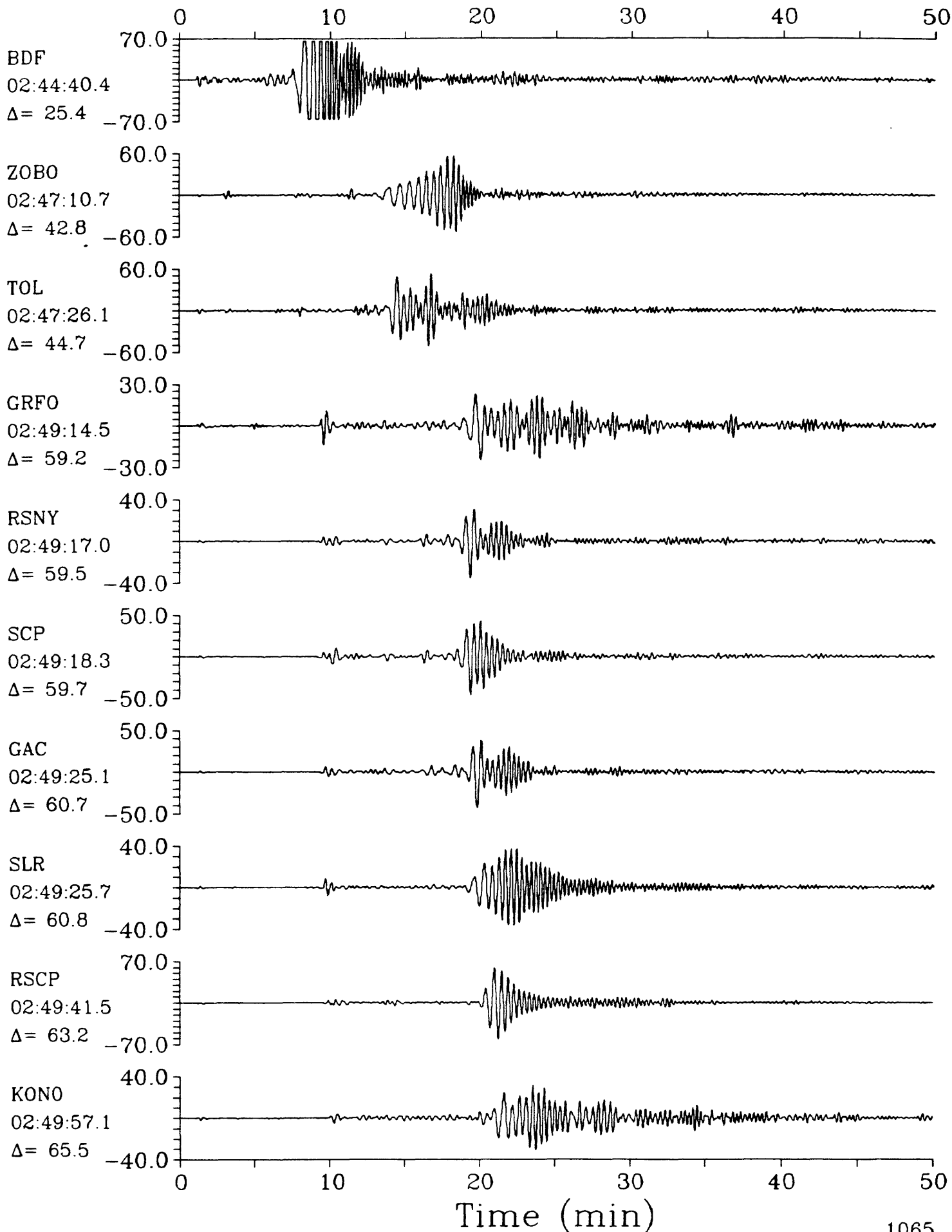
SPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{sz}=6.5$ 

LPZ

06 June 1985 02:40:12.86

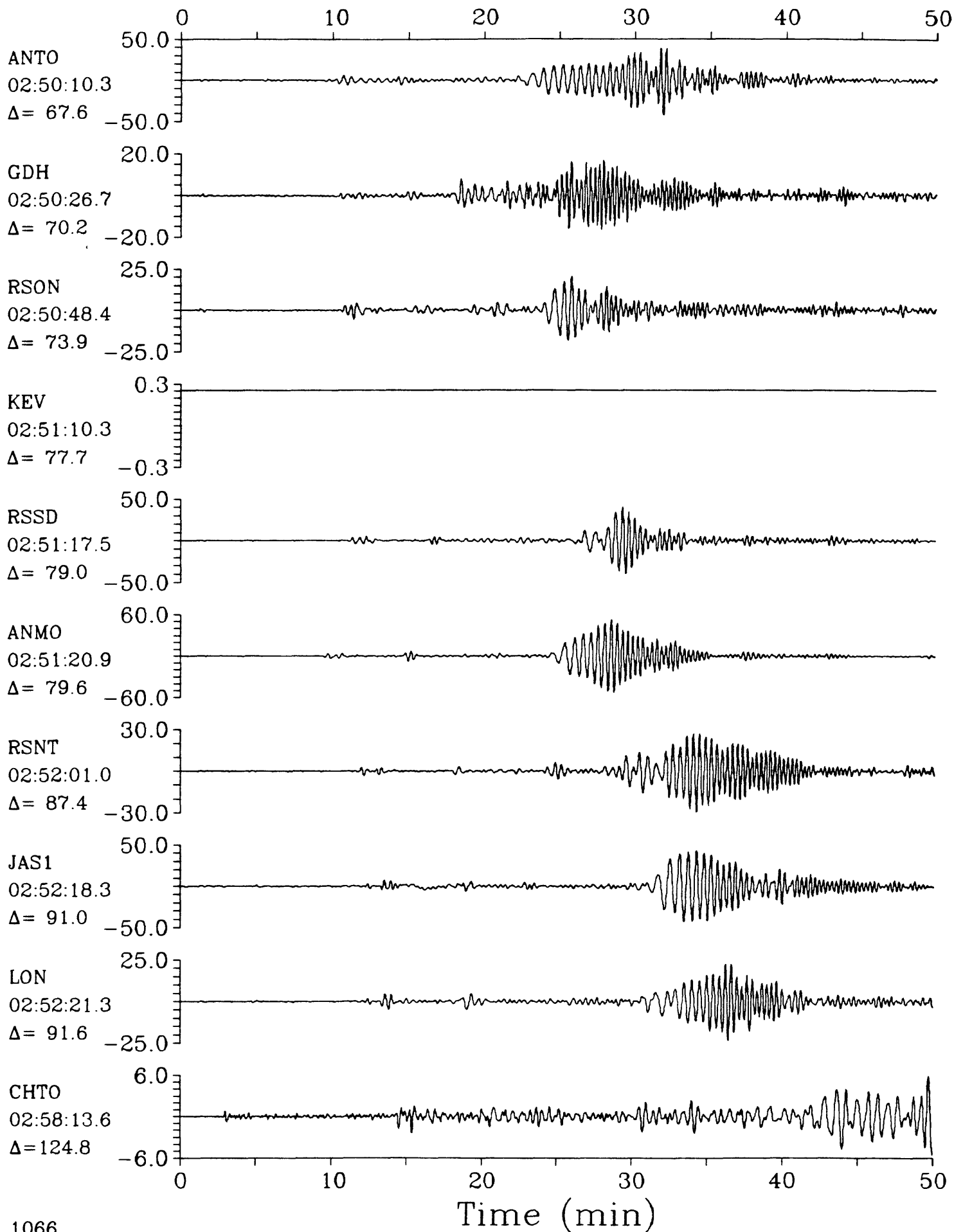
LPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{sz}=6.5$ 

LPZ

06 June 1985 02:40:12.86

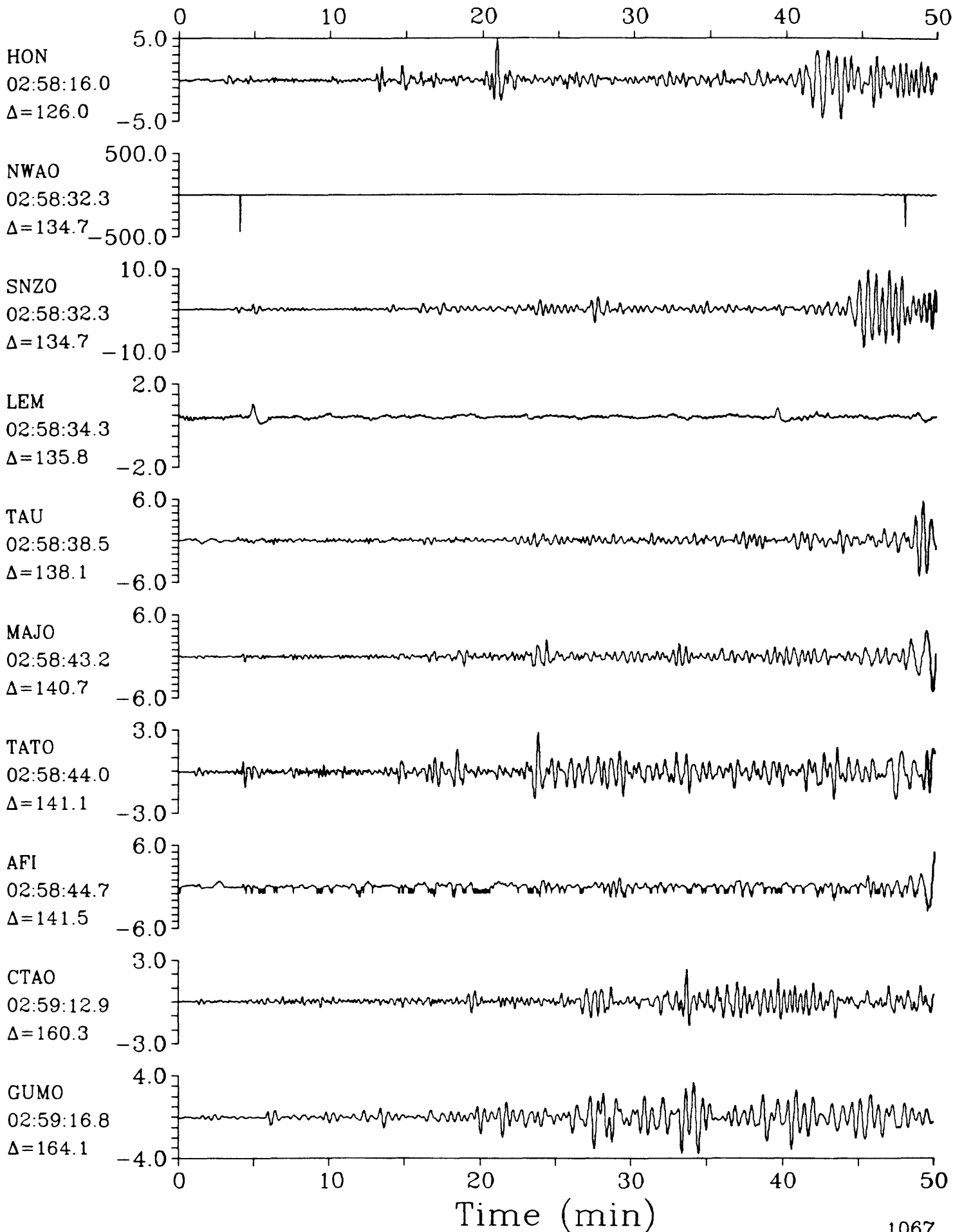
LPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{sz}=6.5$ 

LPZ

06 June 1985 02:40:12.86

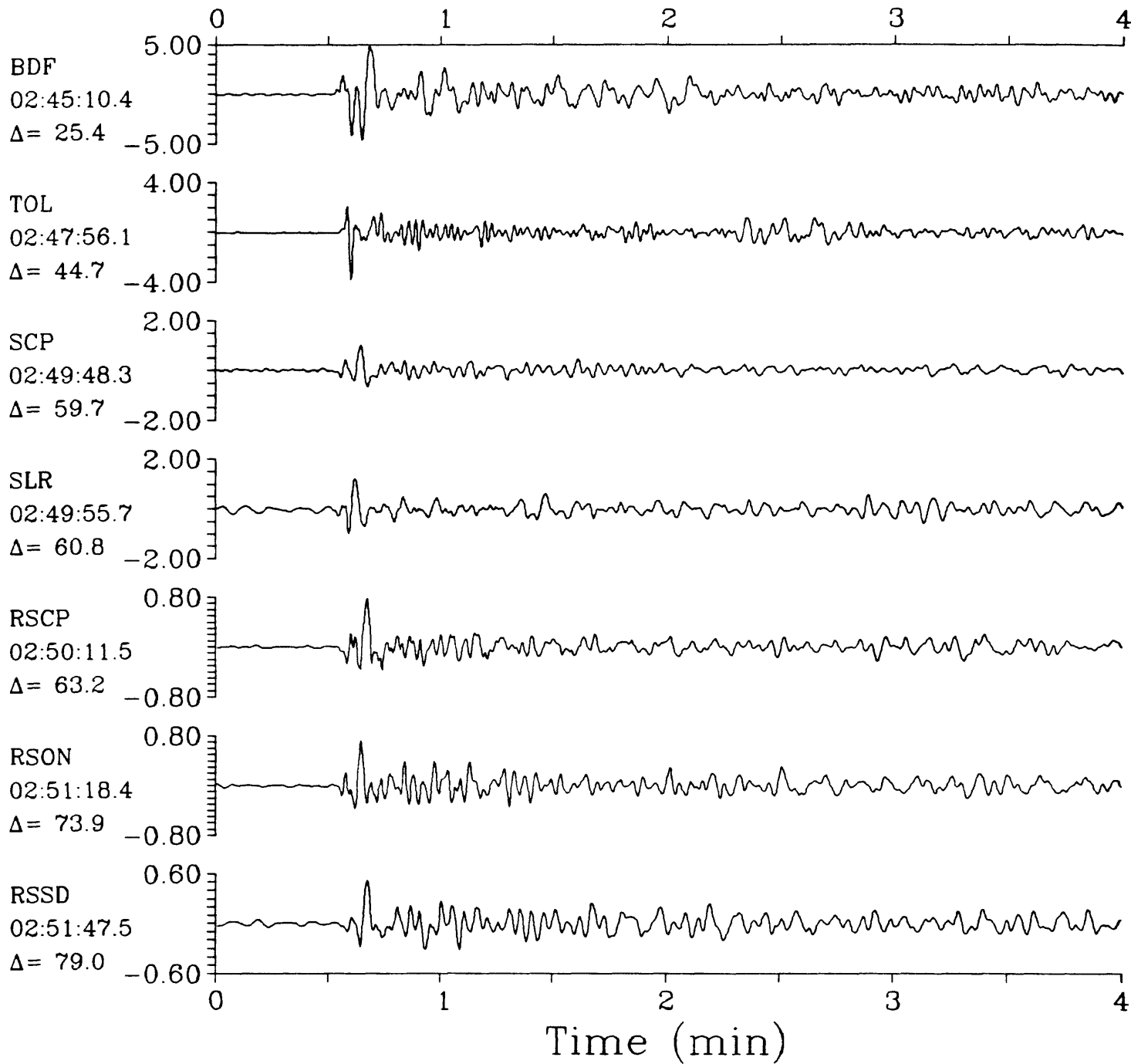
LPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{sz}=6.5$ 

IPZ

06 June 1985 02:40:12.86

IPZ

Central Mid-Atlantic Ridge $h=10.0$ $m_b=6.3$ $M_{sz}=6.5$ 

06 June 1985 11:40:20.90

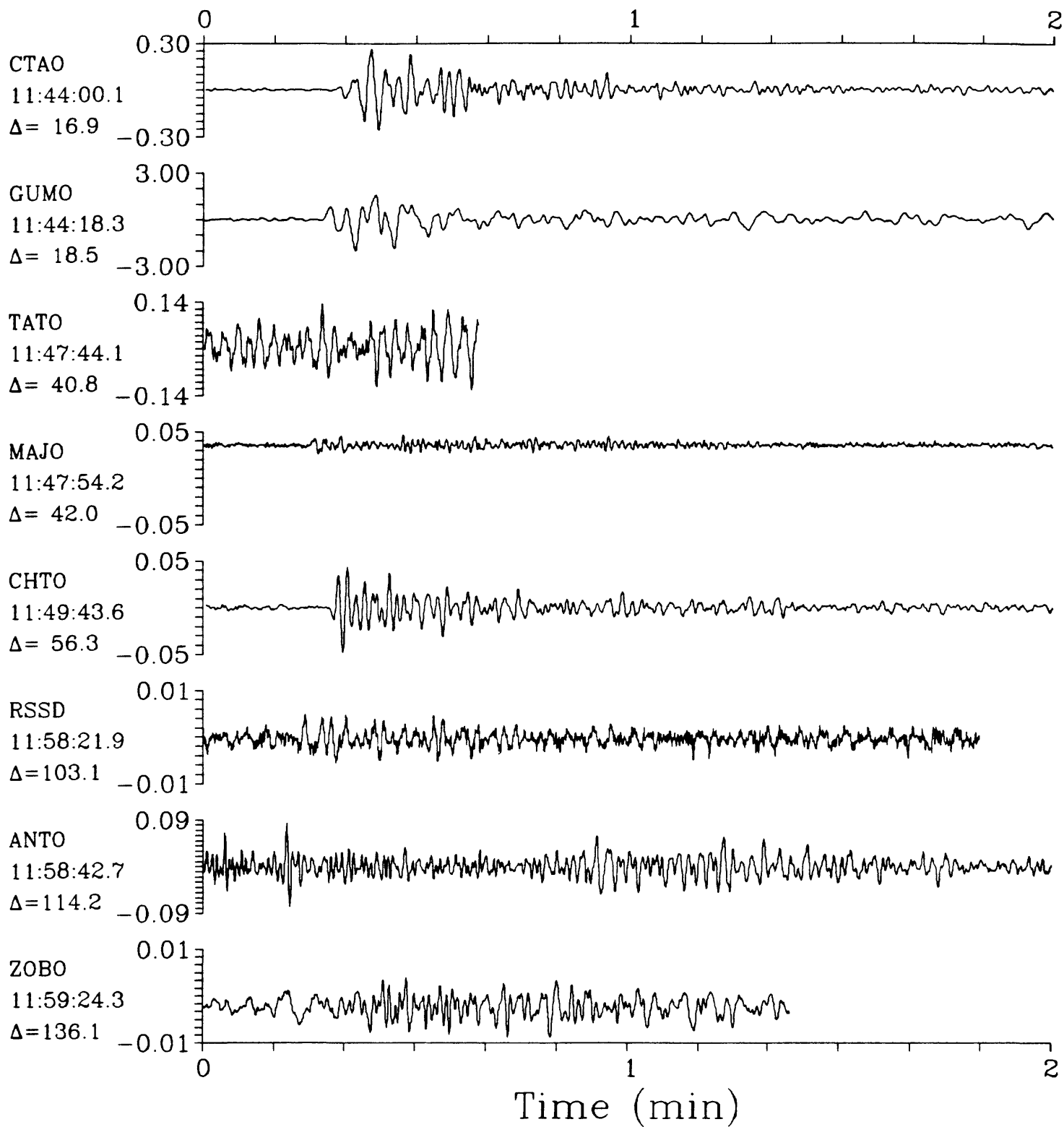
New Ireland Region



SPZ

06 June 1985 11:40:20.90

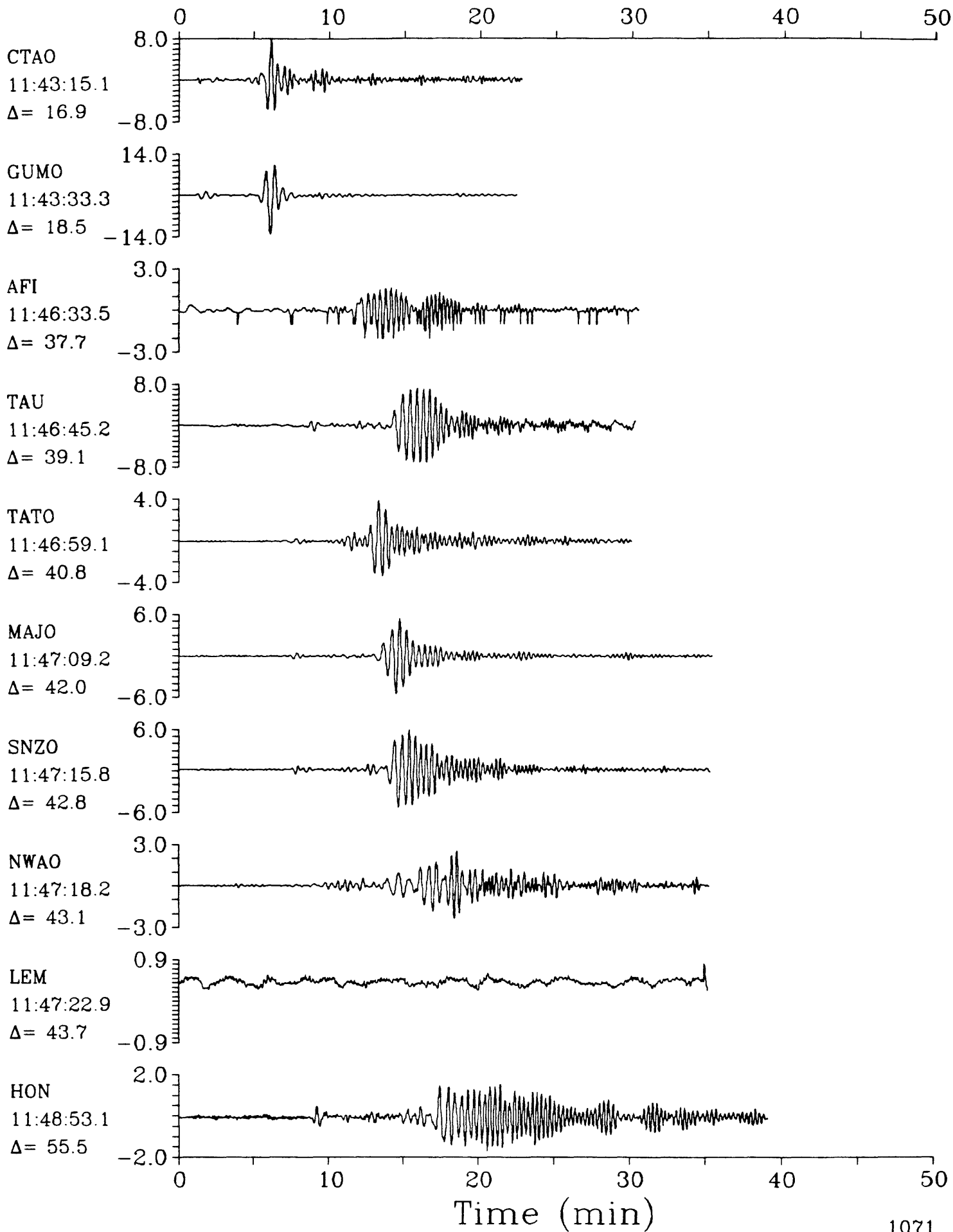
SPZ

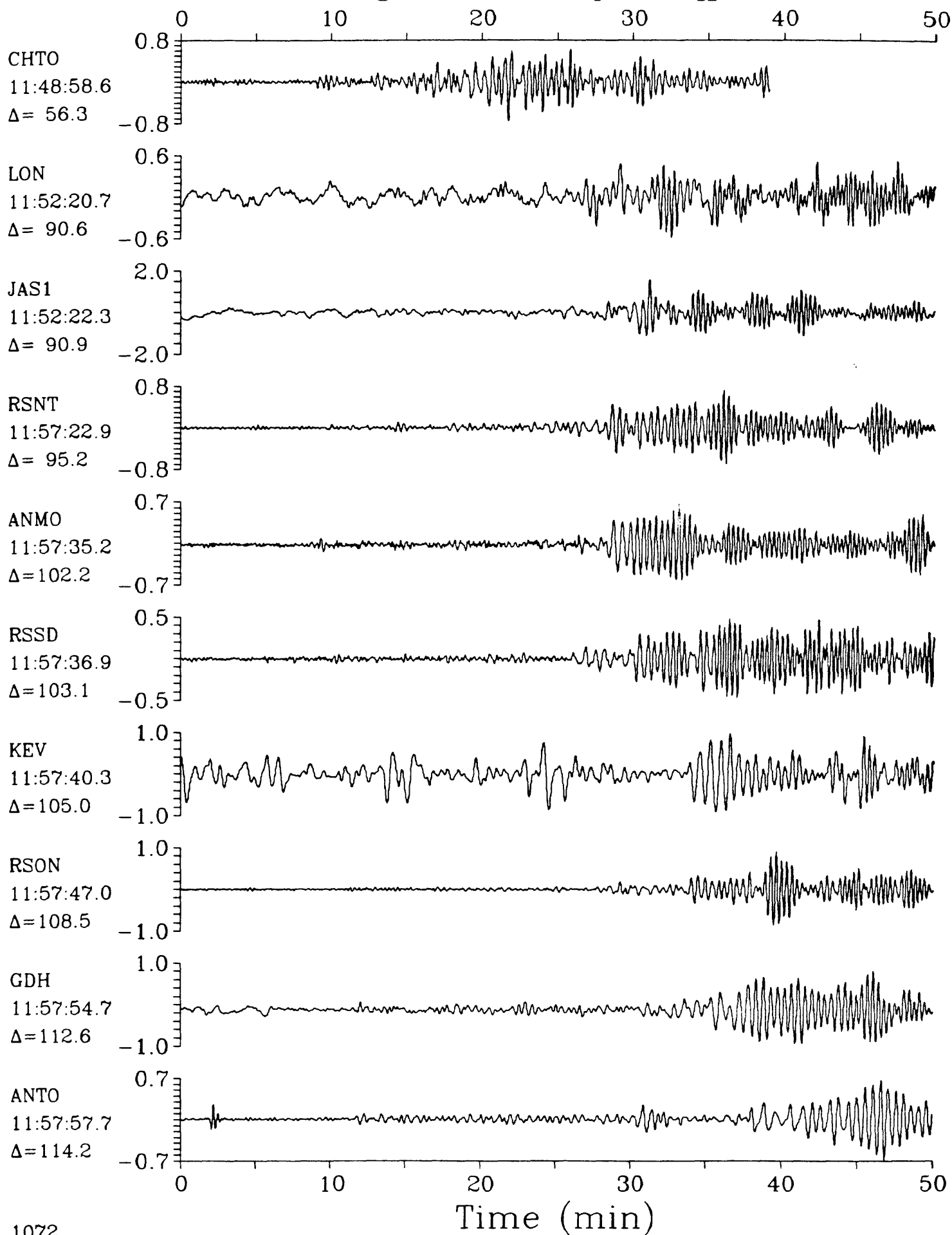
New Ireland Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.3$ 

LPZ

06 June 1985 11:40:20.90

LPZ

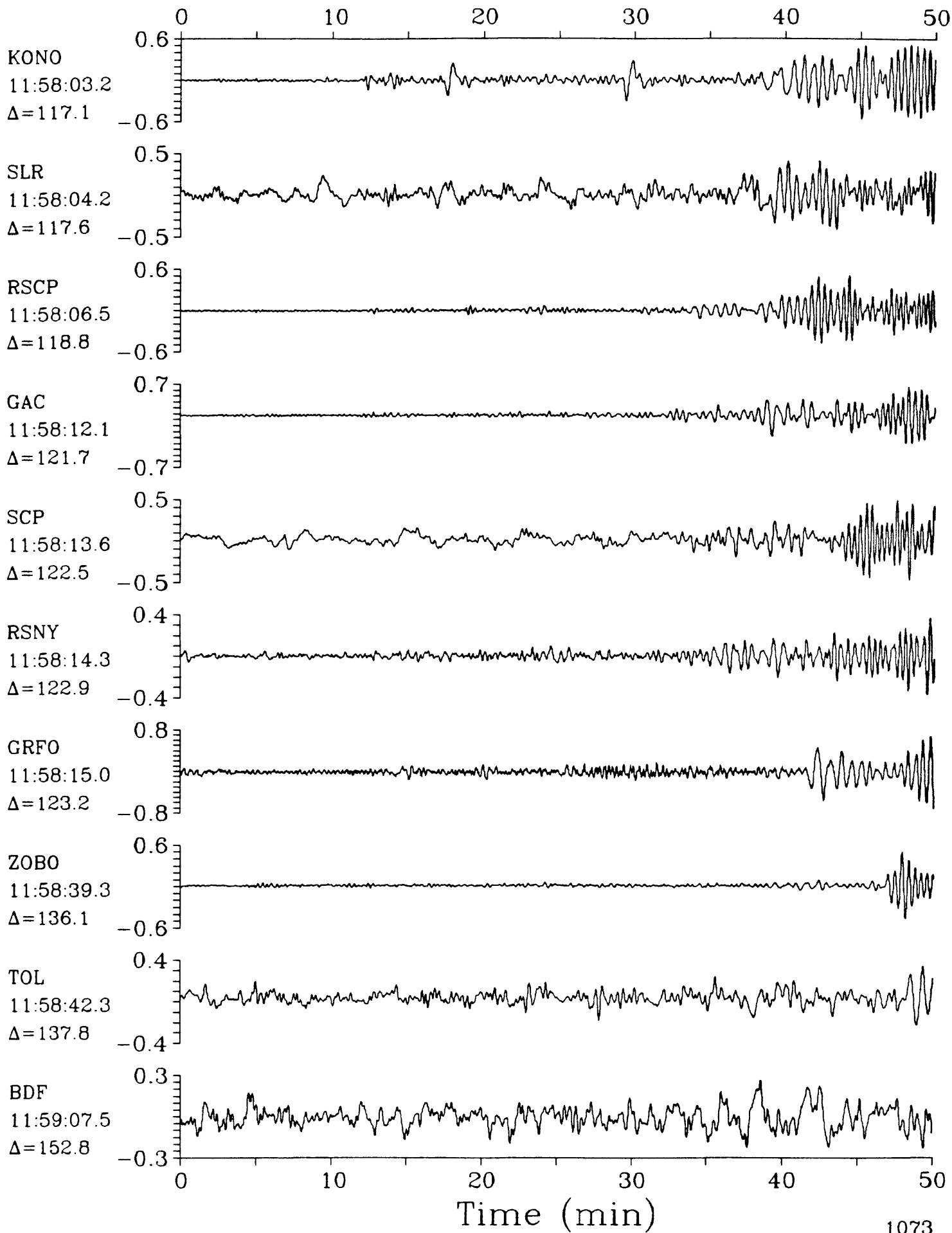
New Ireland Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.3$ 

New Ireland Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.3$ 

LPZ

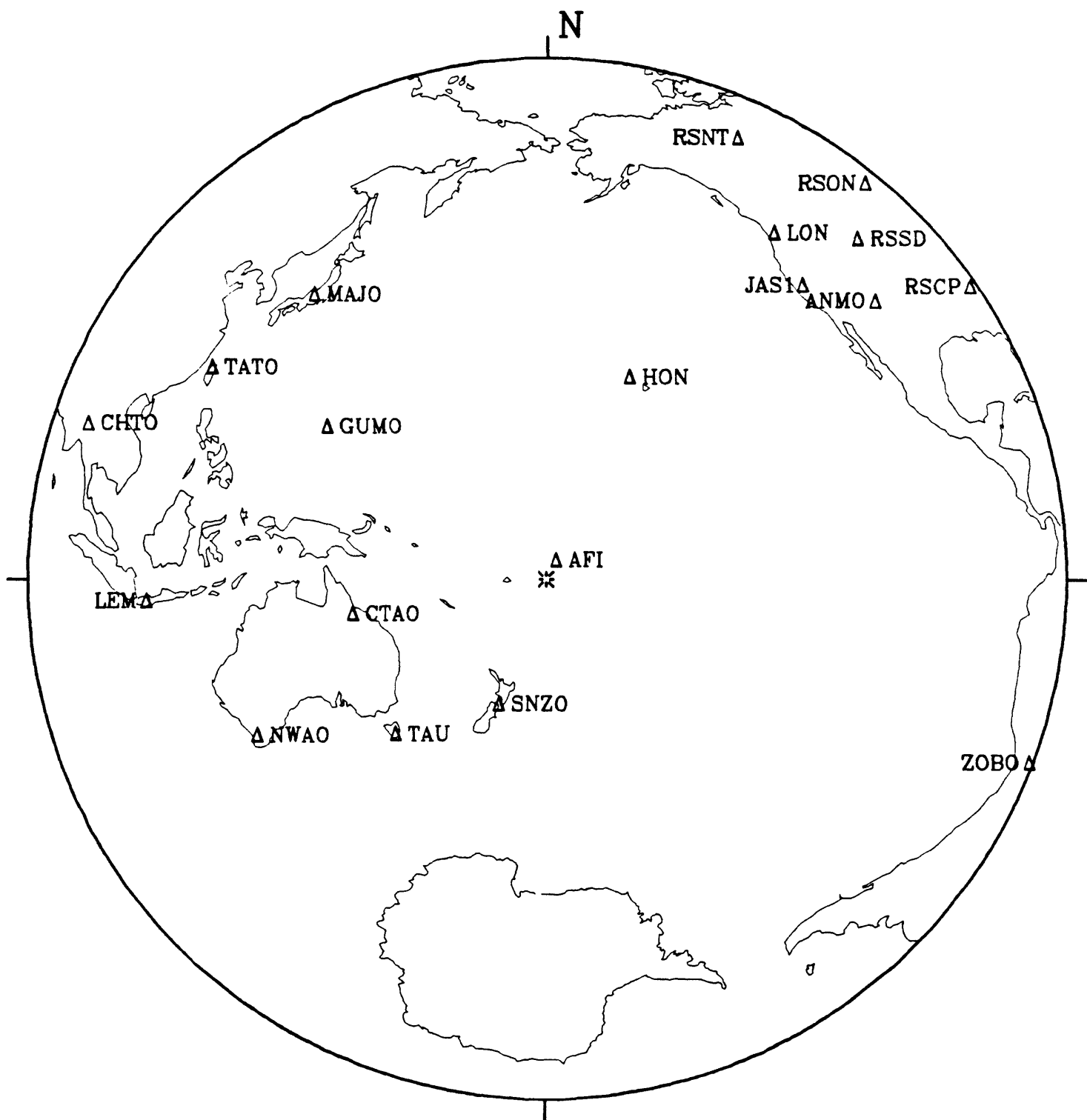
06 June 1985 11:40:20.90

LPZ

New Ireland Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.3$ 

06 June 1985 15:35:19.05

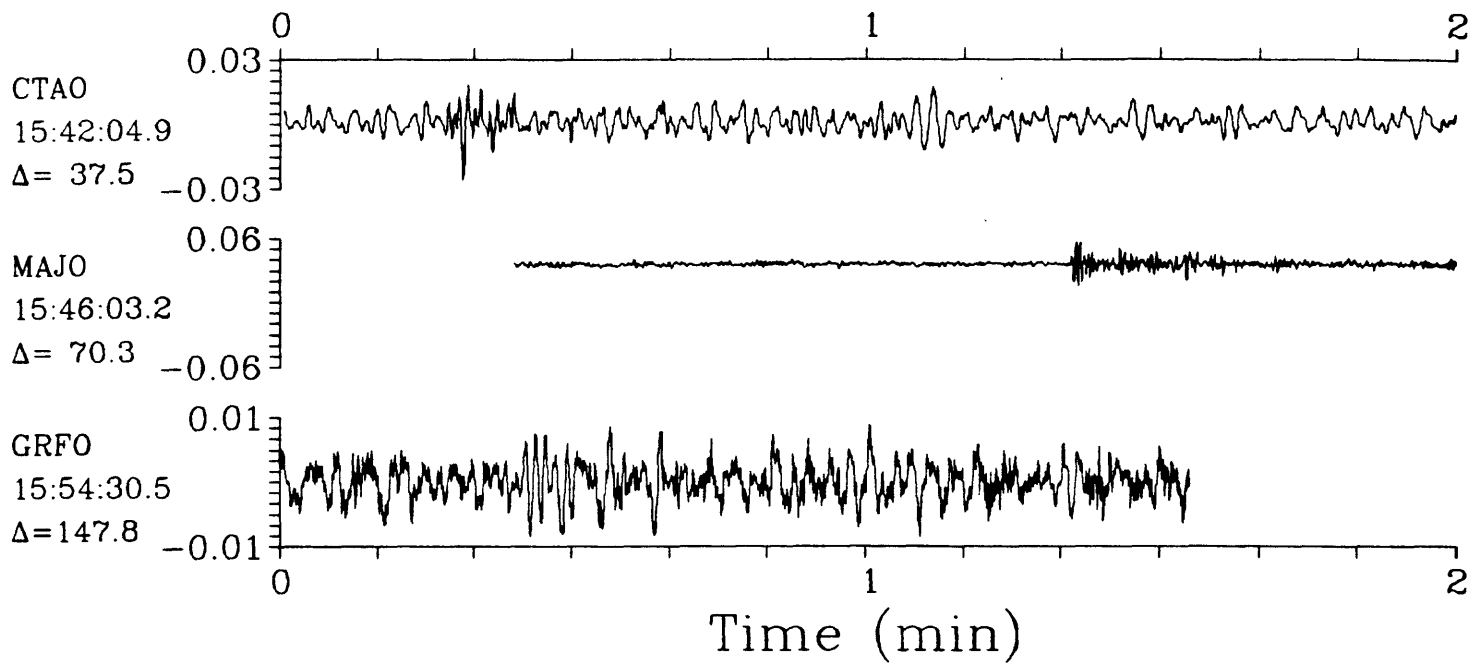
Tonga Islands



SPZ

06 June 1985 15:35:19.05
Tonga Islands $h=132.6$ $m_b=5.5$

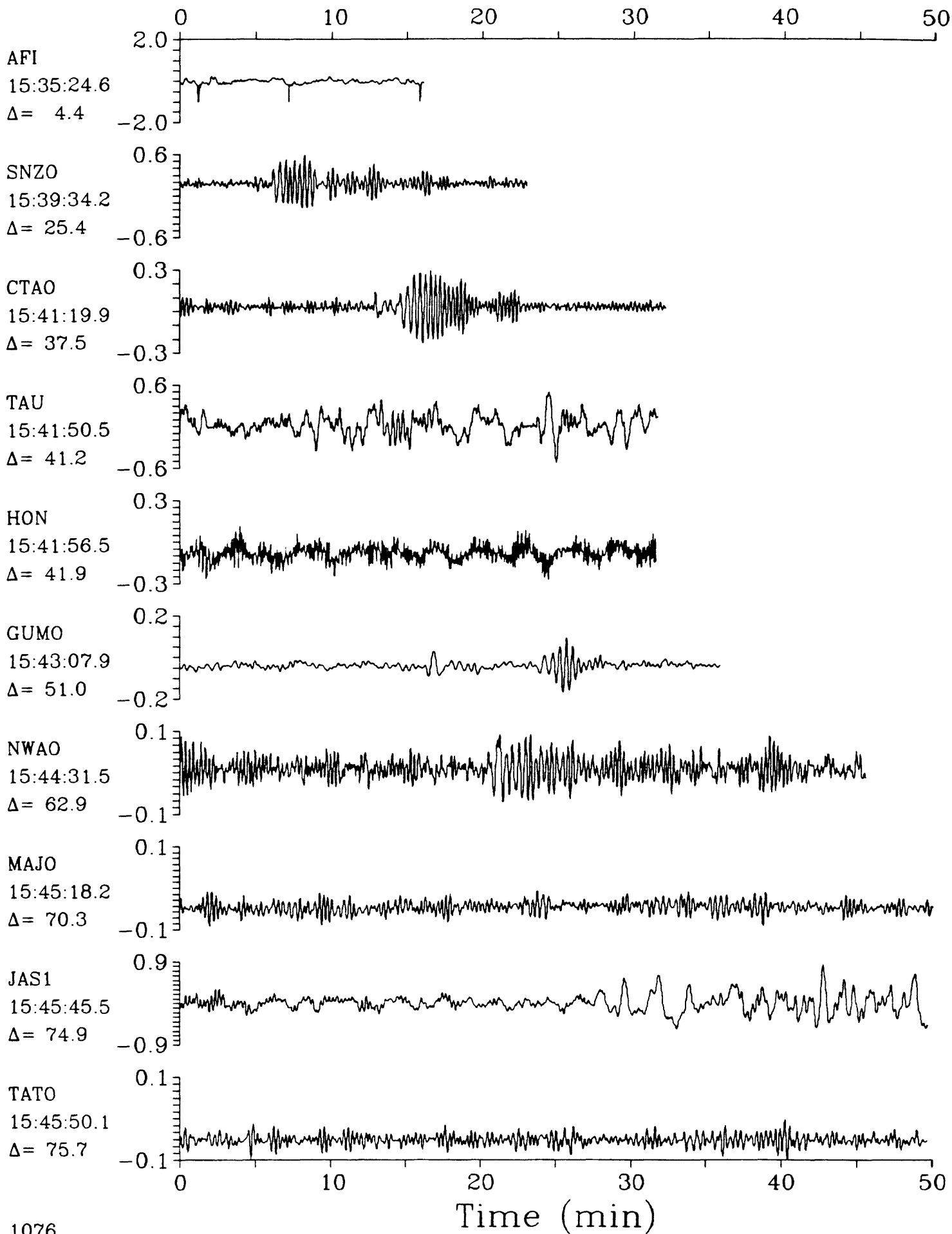
SPZ



LPZ

06 June 1985 15:35:19.05
Tonga Islands $h=132.6$ $m_b=5.5$

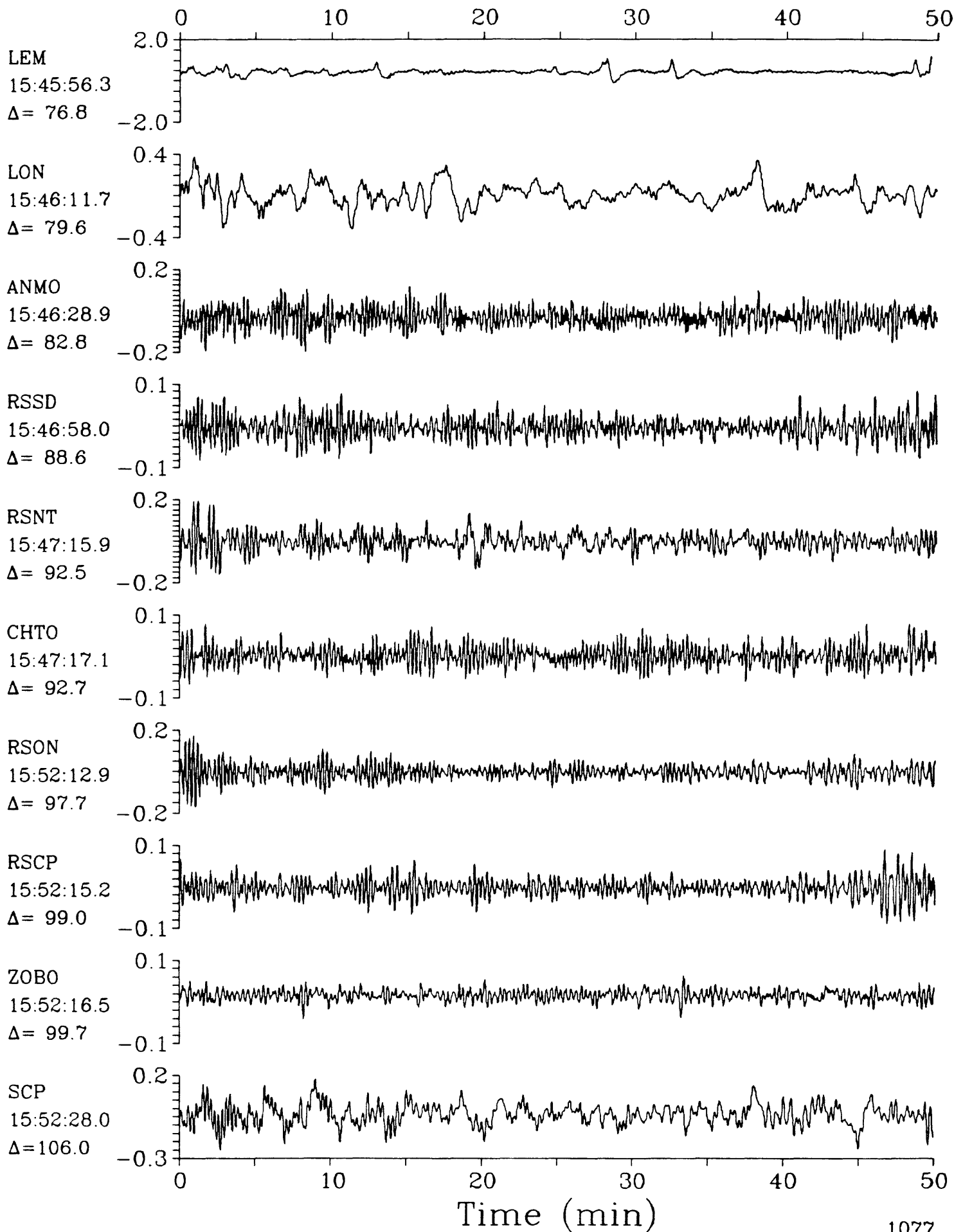
LPZ



LPZ

06 June 1985 15:35:19.05
Tonga Islands $h=132.6$ $m_b=5.5$

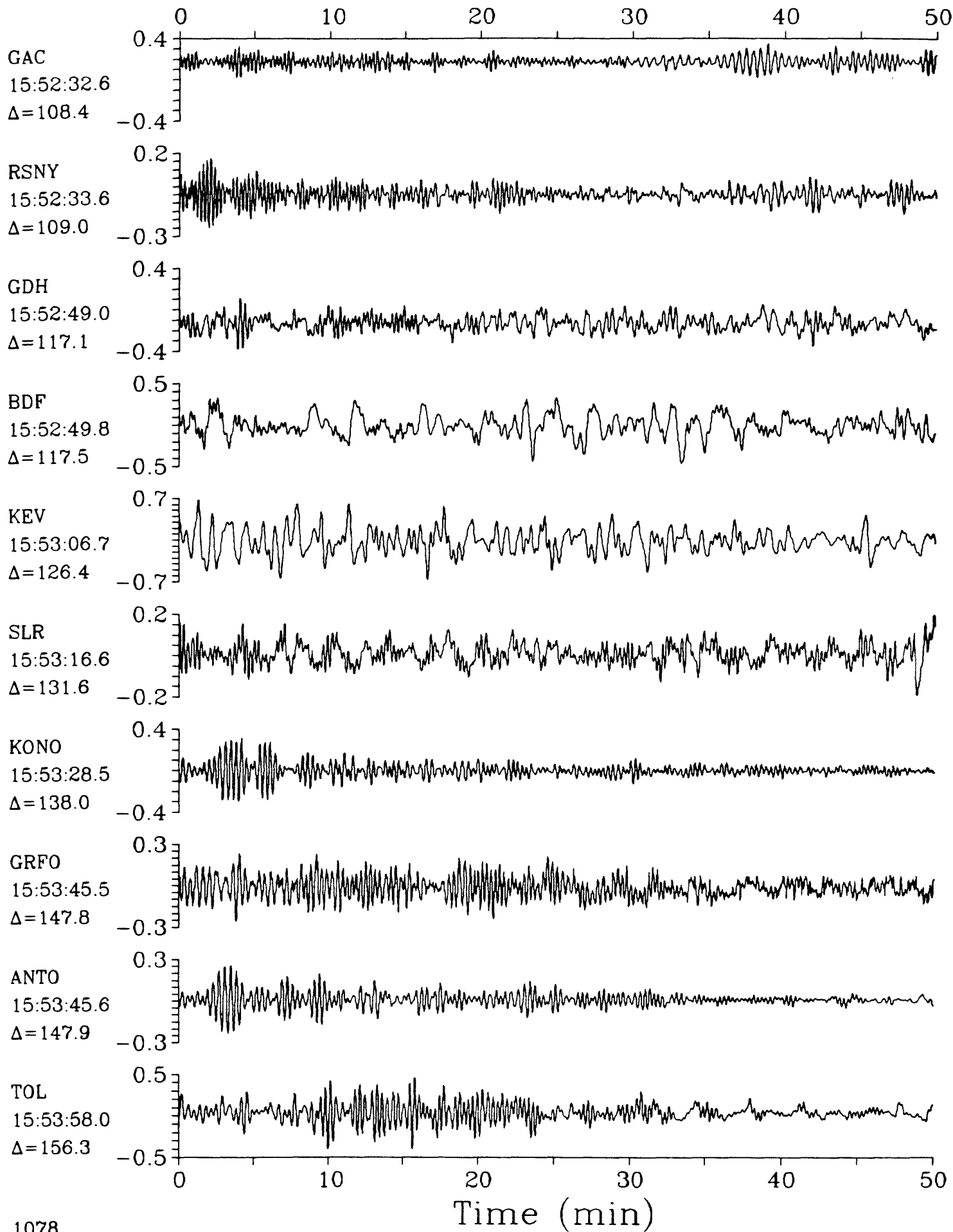
LPZ



LPZ

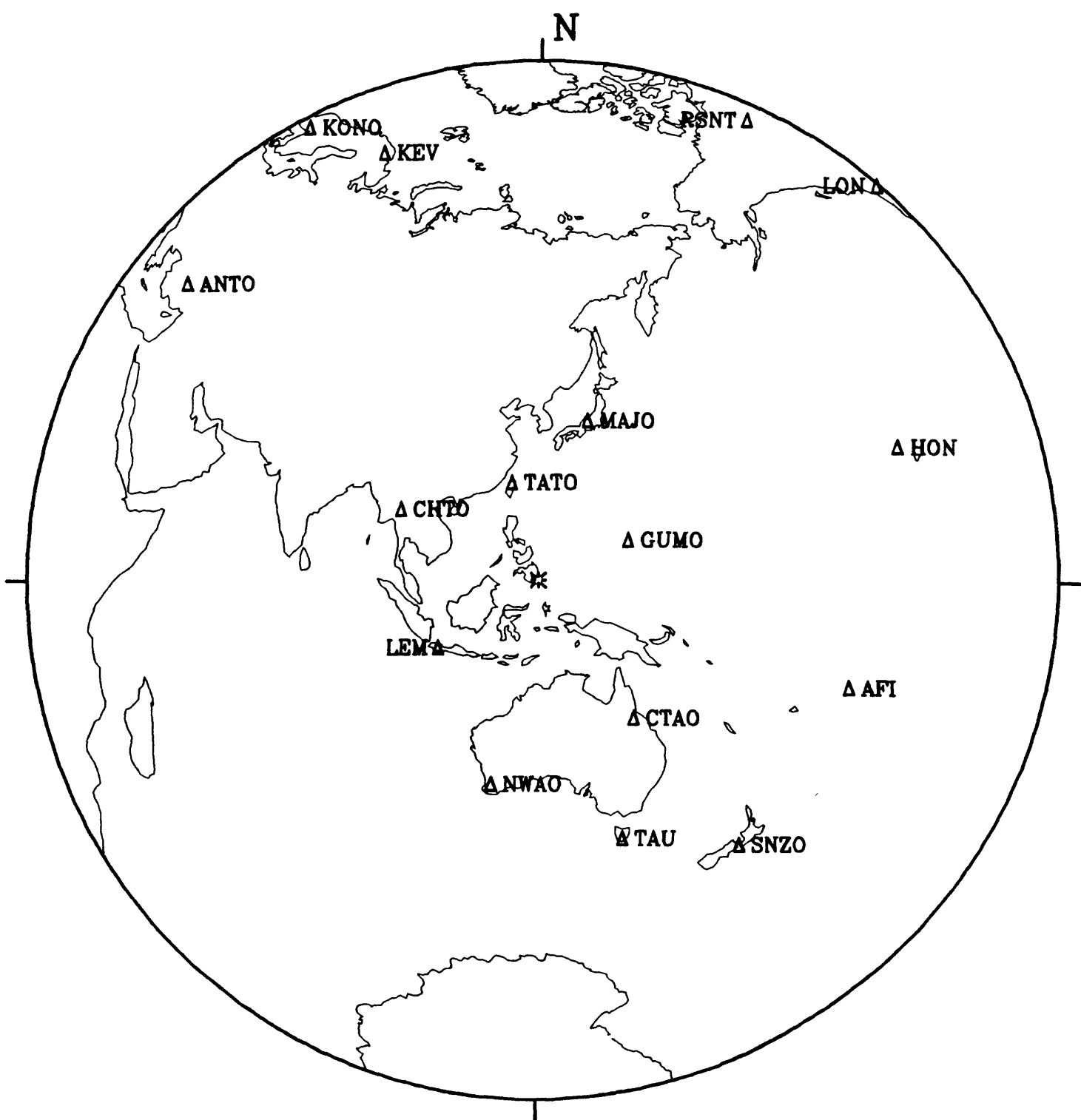
06 June 1985 15:35:19.05
Tonga Islands $h=132.6$ $m_b=5.5$

LPZ



08 June 1985 13:19:16.44

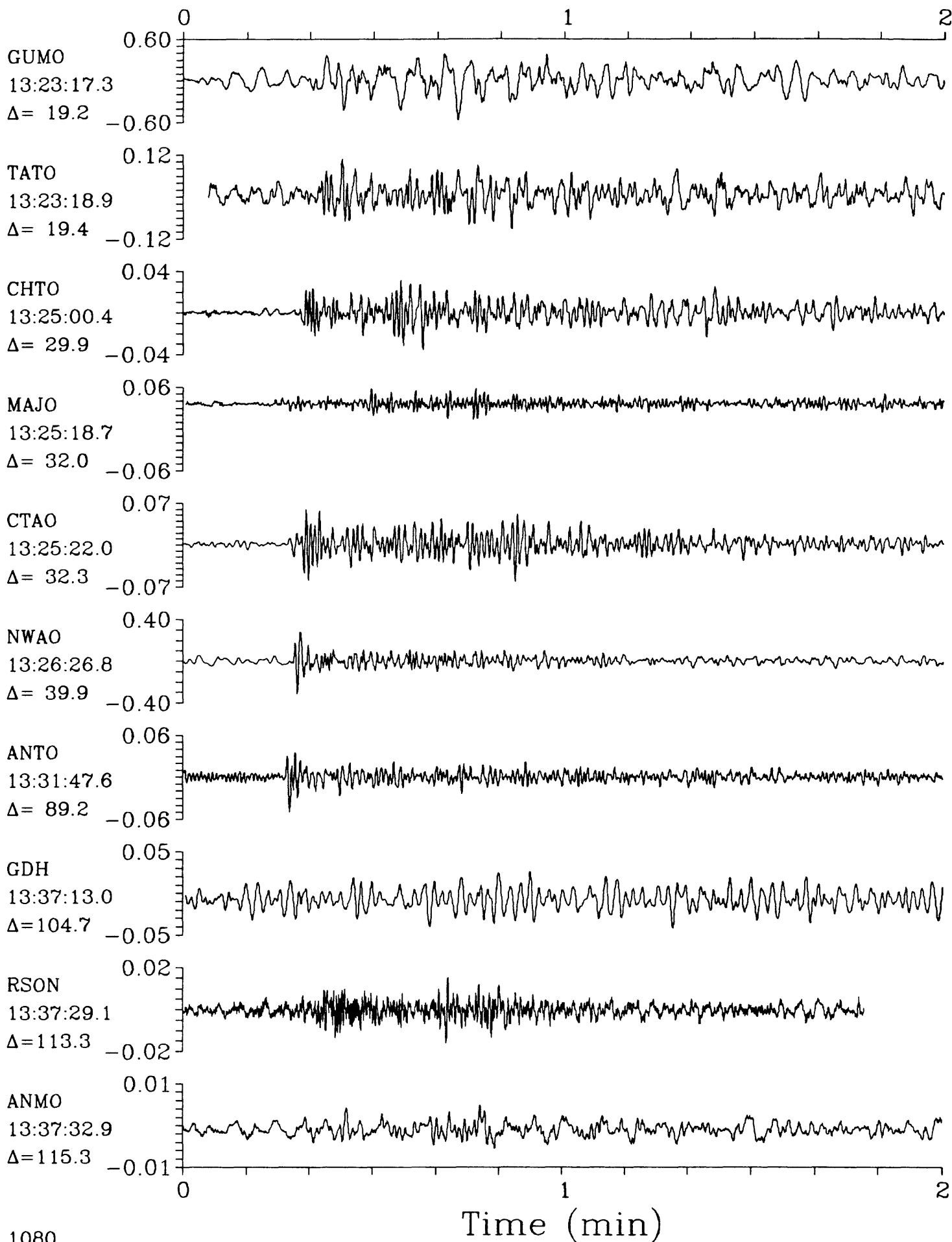
Mindanao, Philippine Islands



SPZ

08 June 1985 13:19:16.44

SPZ

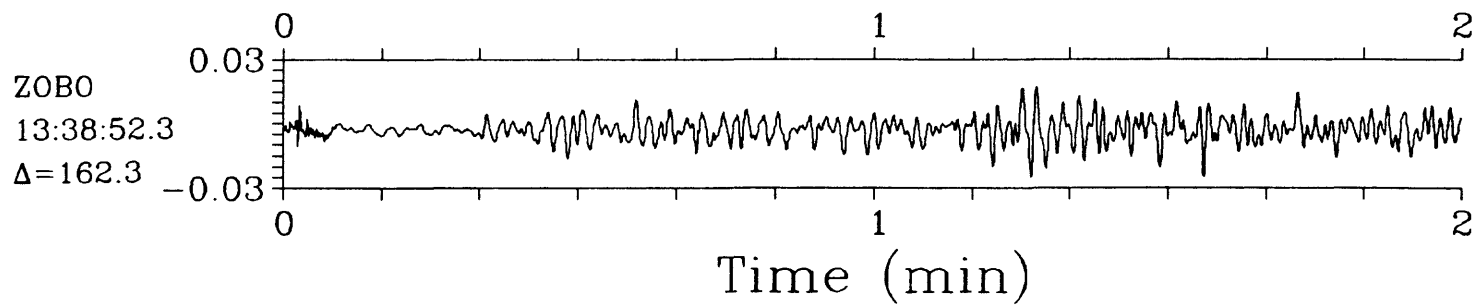
Mindanao, Philippine Islands $h=93.3$ $m_b=5.7$ 

SPZ

08 June 1985 13:19:16.44

SPZ

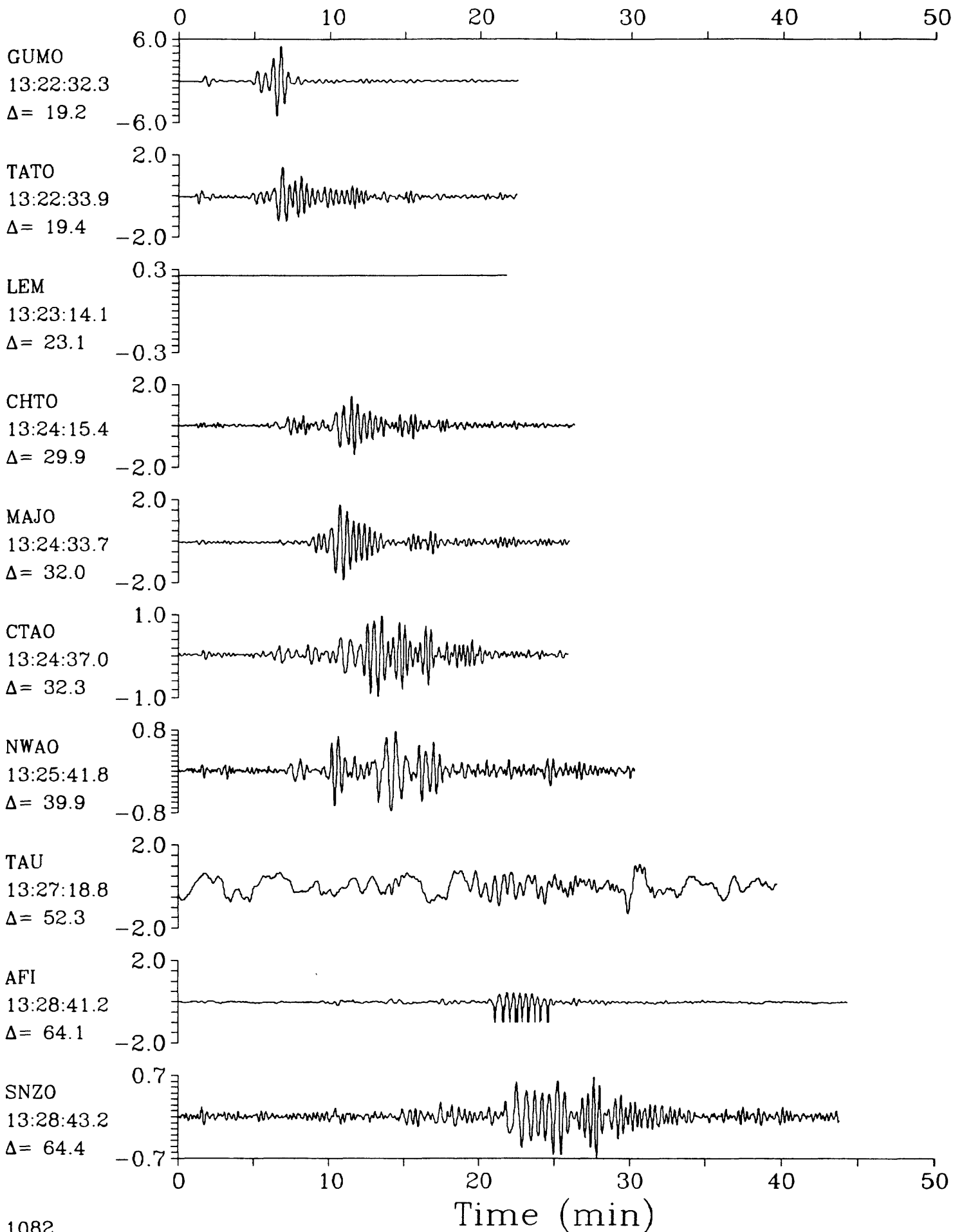
Mindanao, Philippine Islands $h=93.3$ $m_b=5.7$

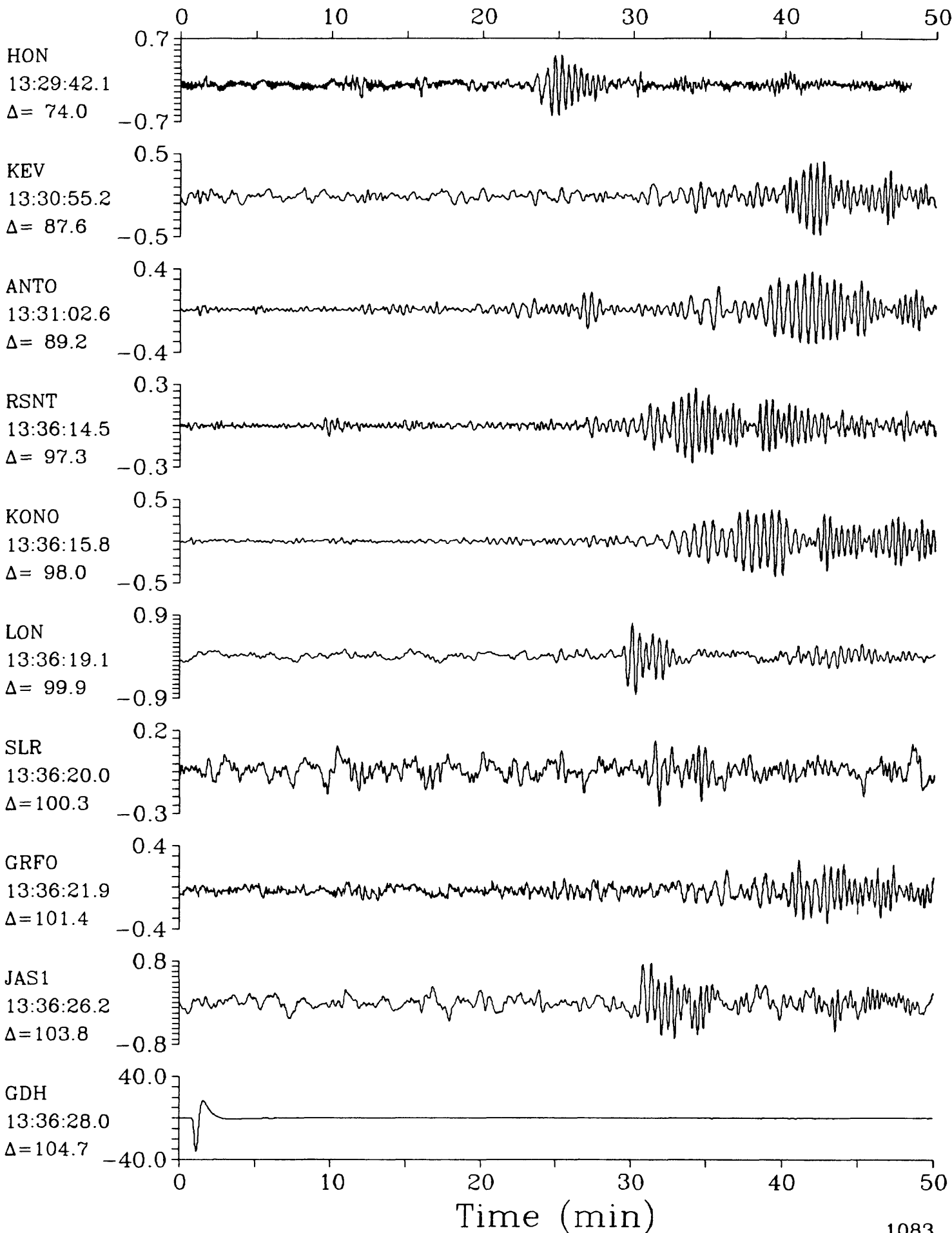


LPZ

08 June 1985 13:19:16.44

LPZ

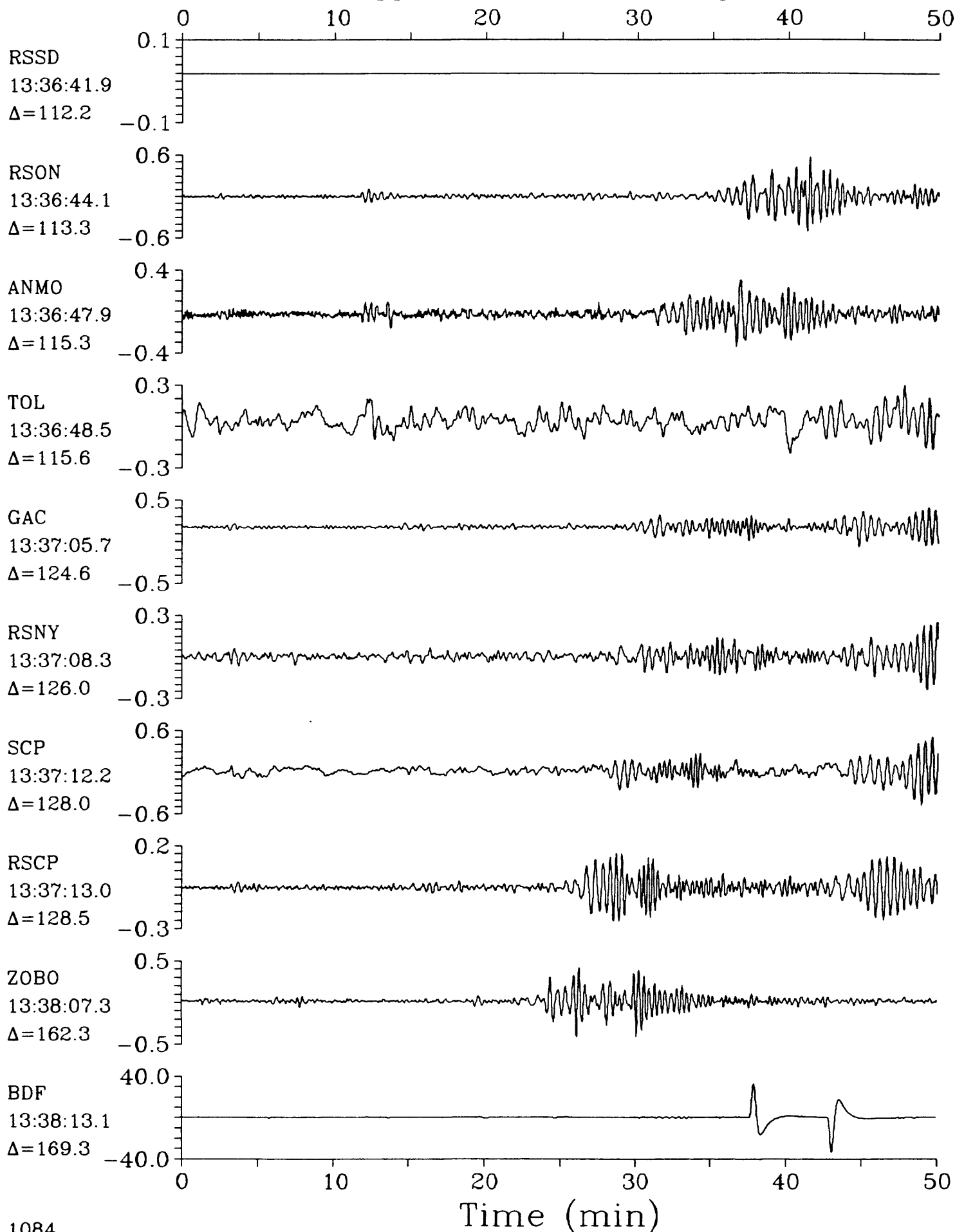
Mindanao, Philippine Islands $h=93.3$ $m_b=5.7$ 

Mindanao, Philippine Islands $h=93.3$ $m_b=5.7$ 

LPZ

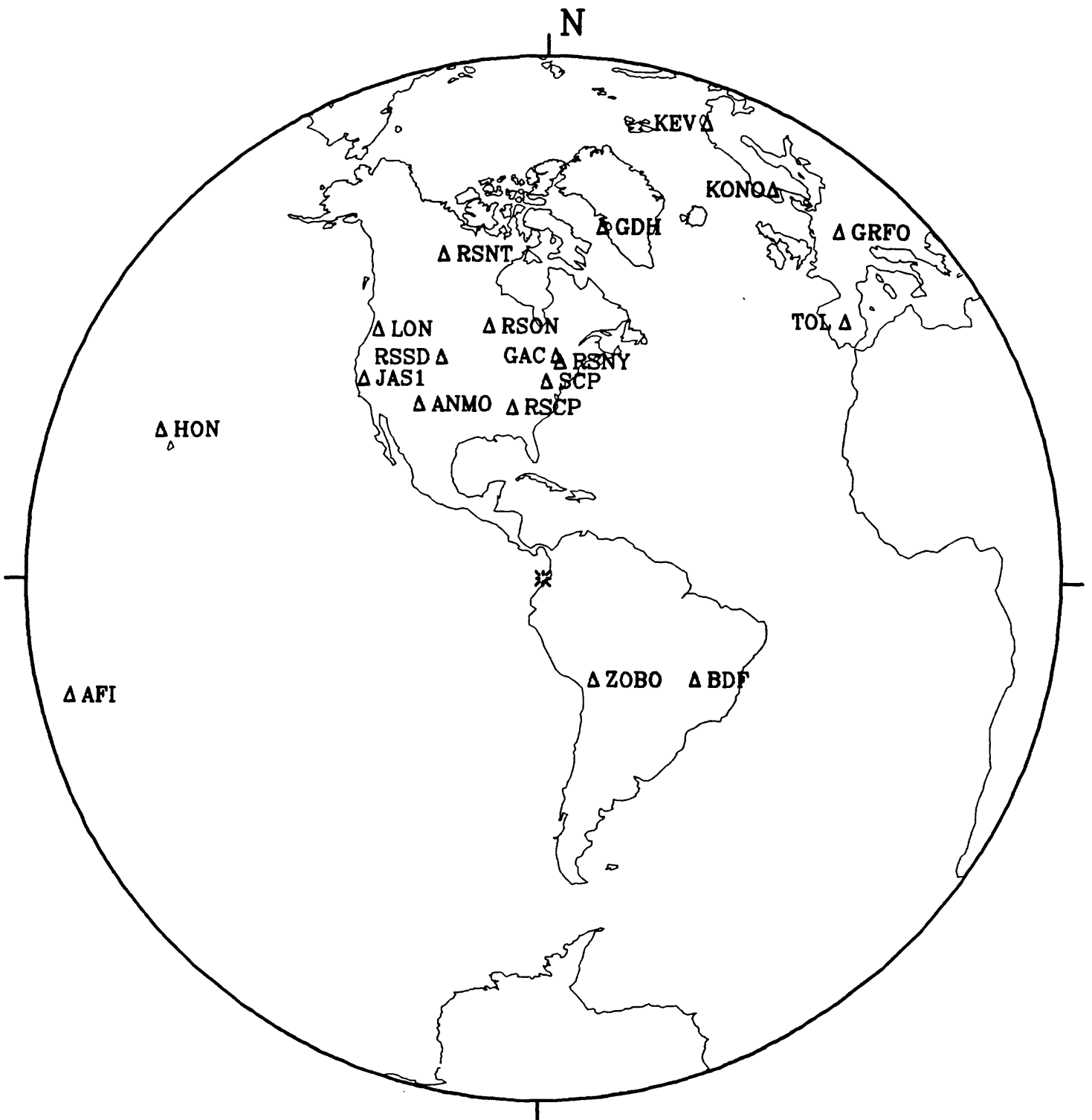
08 June 1985 13:19:16.44

LPZ

Mindanao, Philippine Islands $h=93.3$ $m_b=5.7$ 

10 June 1985 03:23:31.87

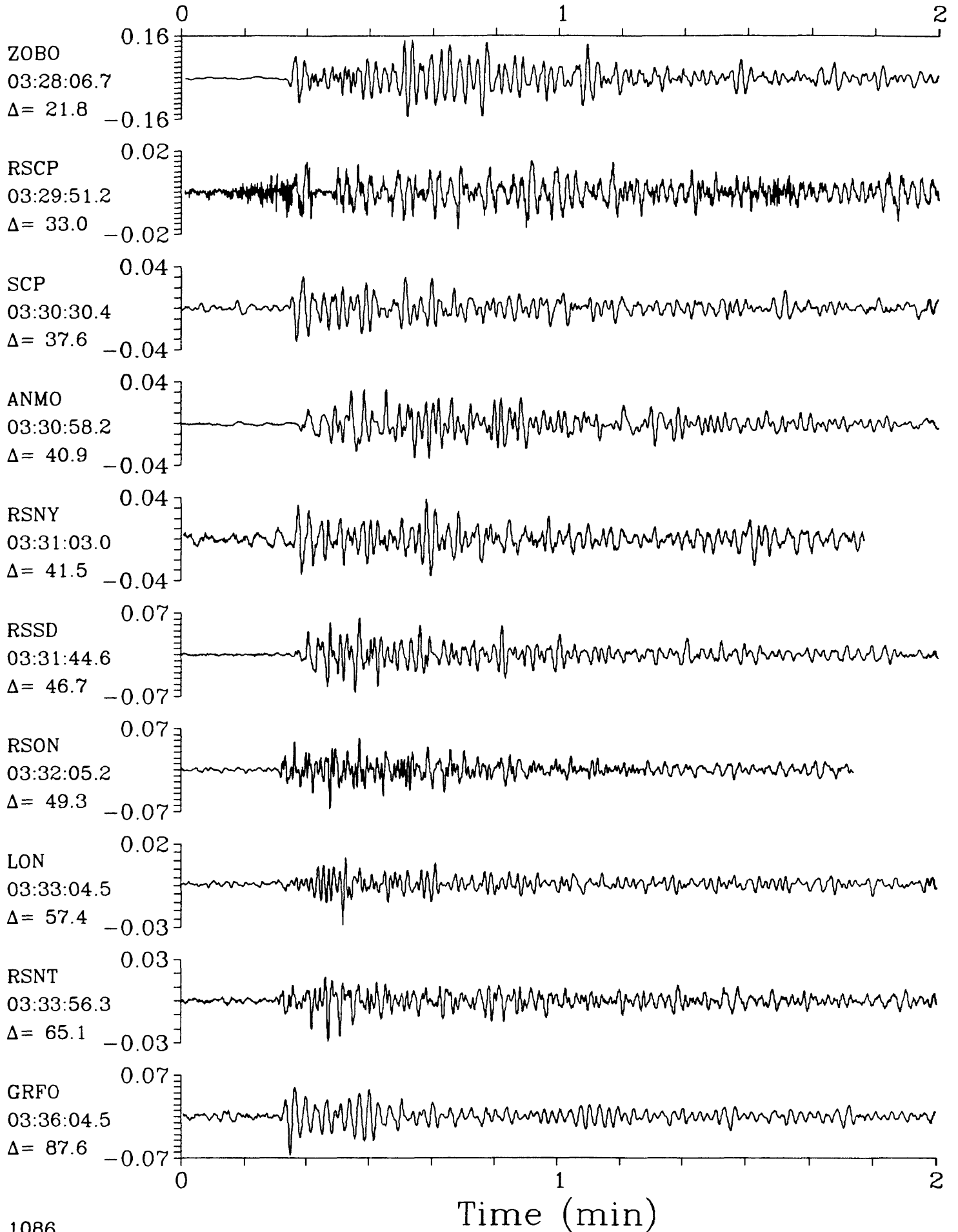
South of Panama



SPZ

10 June 1985 03:23:31.87

SPZ

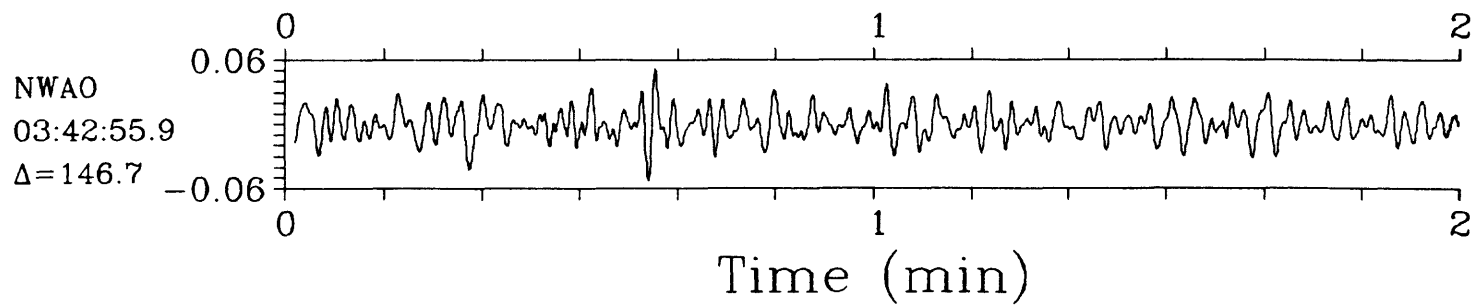
South of Panama $h=20.4$ $m_b=5.6$ $M_{SZ}=4.7$ 

SPZ

10 June 1985 03:23:31.87

SPZ

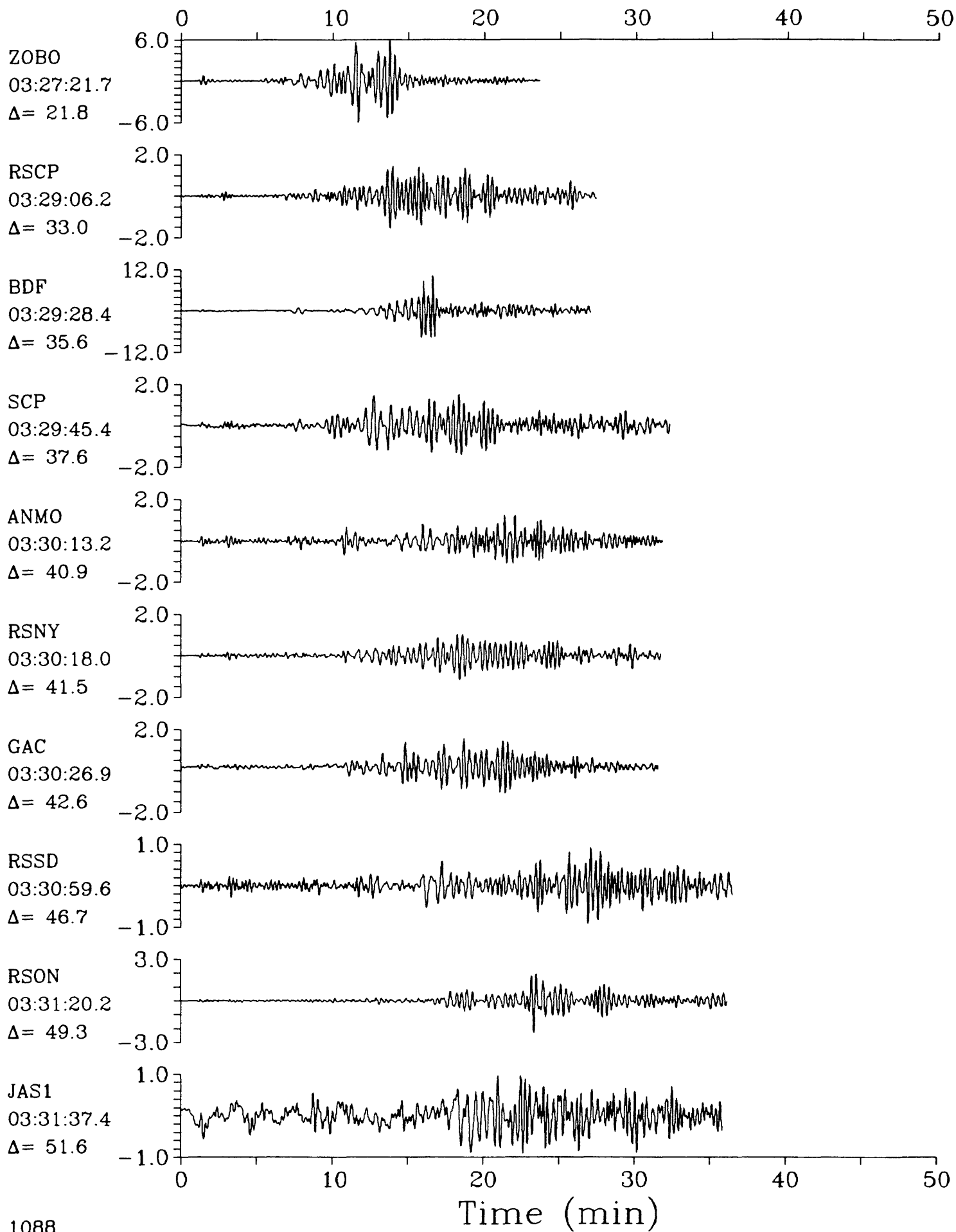
South of Panama $h=20.4$ $m_b=5.6$ $M_{sz}=4.7$



LPZ

10 June 1985 03:23:31.87

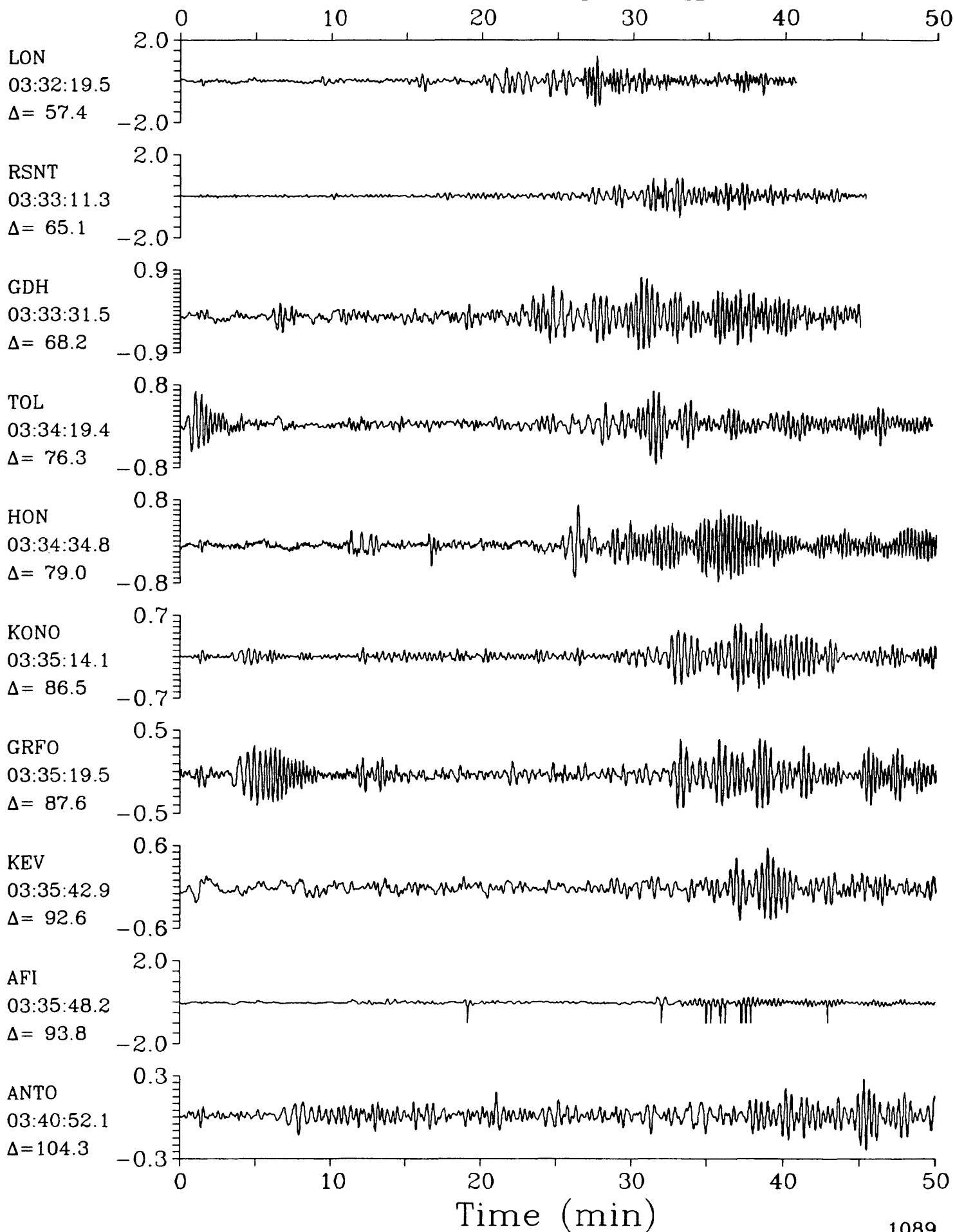
LPZ

South of Panama $h=20.4$ $m_b=5.6$ $M_{sz}=4.7$ 

LPZ

10 June 1985 03:23:31.87

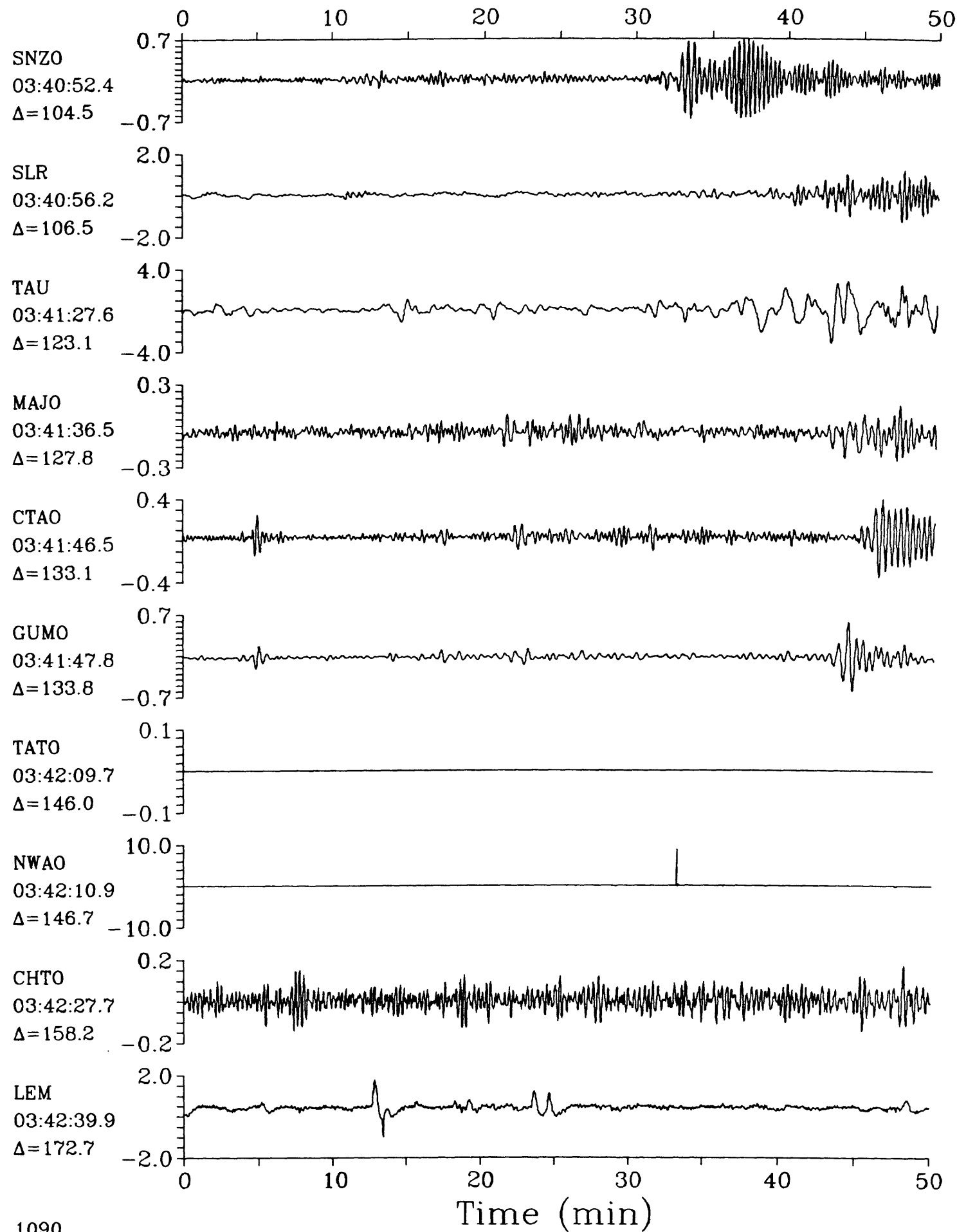
LPZ

South of Panama $h=20.4$ $m_b=5.6$ $M_{sz}=4.7$ 

LPZ

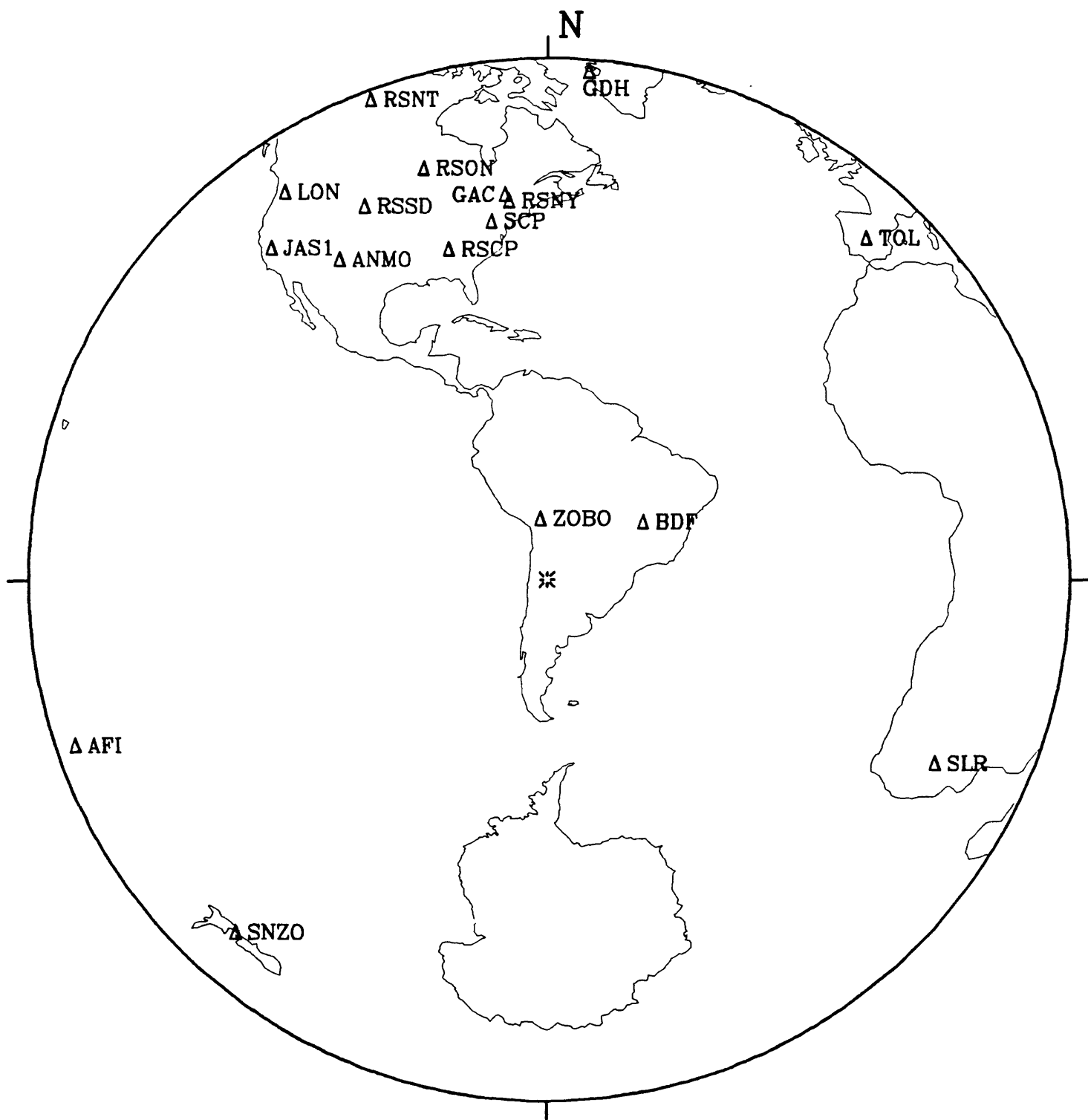
10 June 1985 03:23:31.87

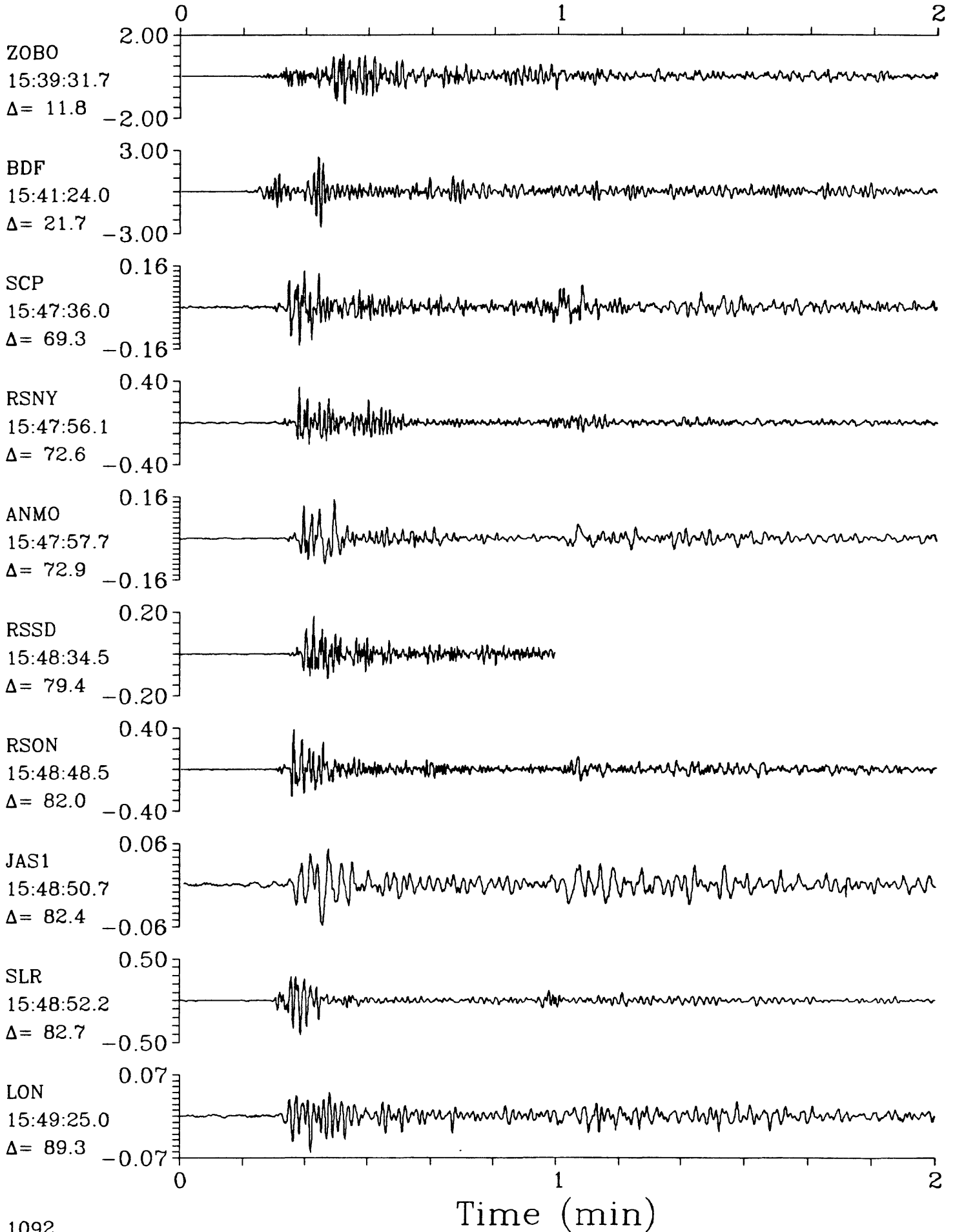
LPZ

South of Panama $h=20.4$ $m_b=5.6$ $M_{sz}=4.7$ 

10 June 1985 15:37:03.37

La Rioja Province, Argentina



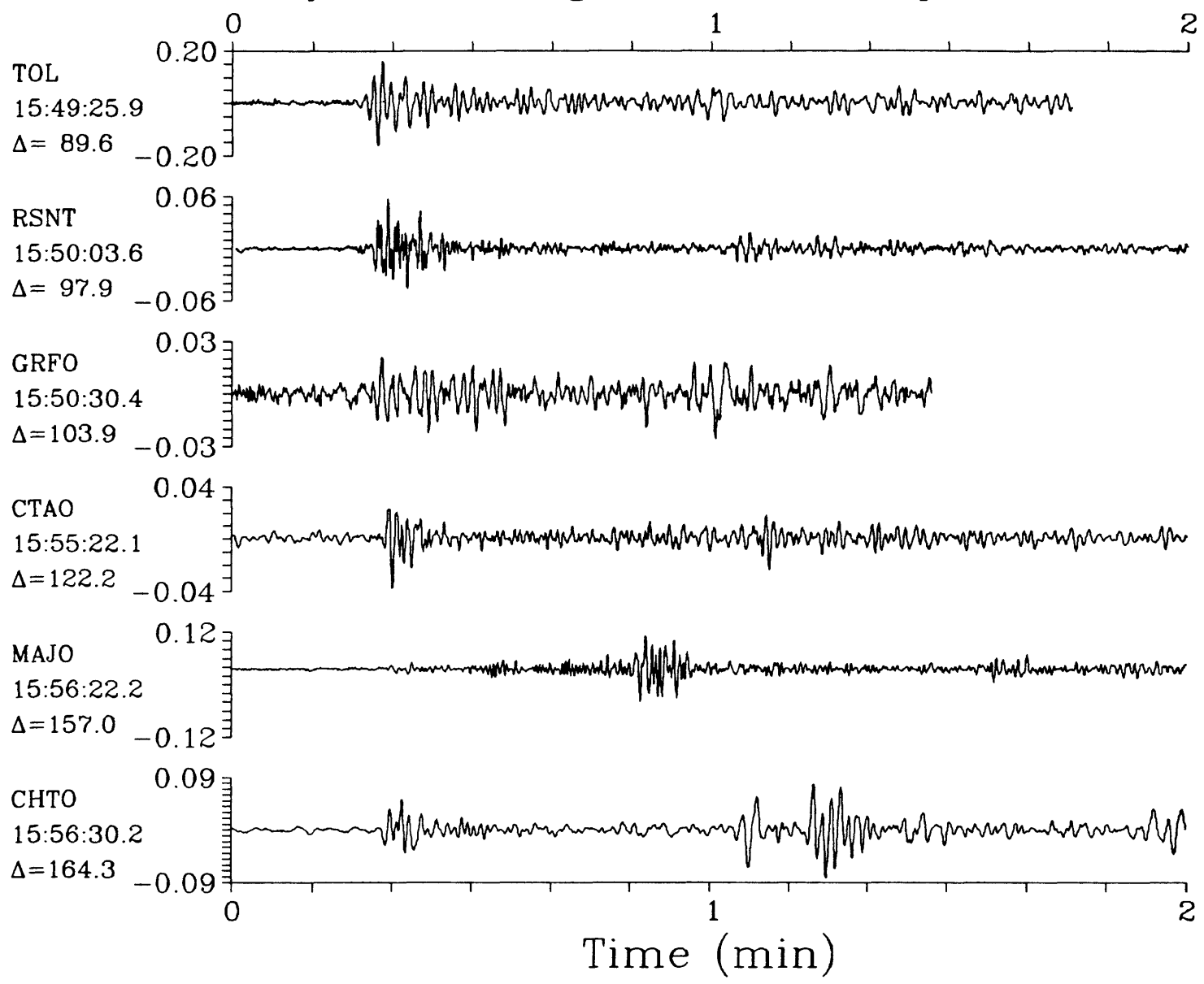
La Rioja Province, Argentina $h=180.4$ $m_b=5.8$ 

SPZ

10 June 1985 15:37:03.37

SPZ

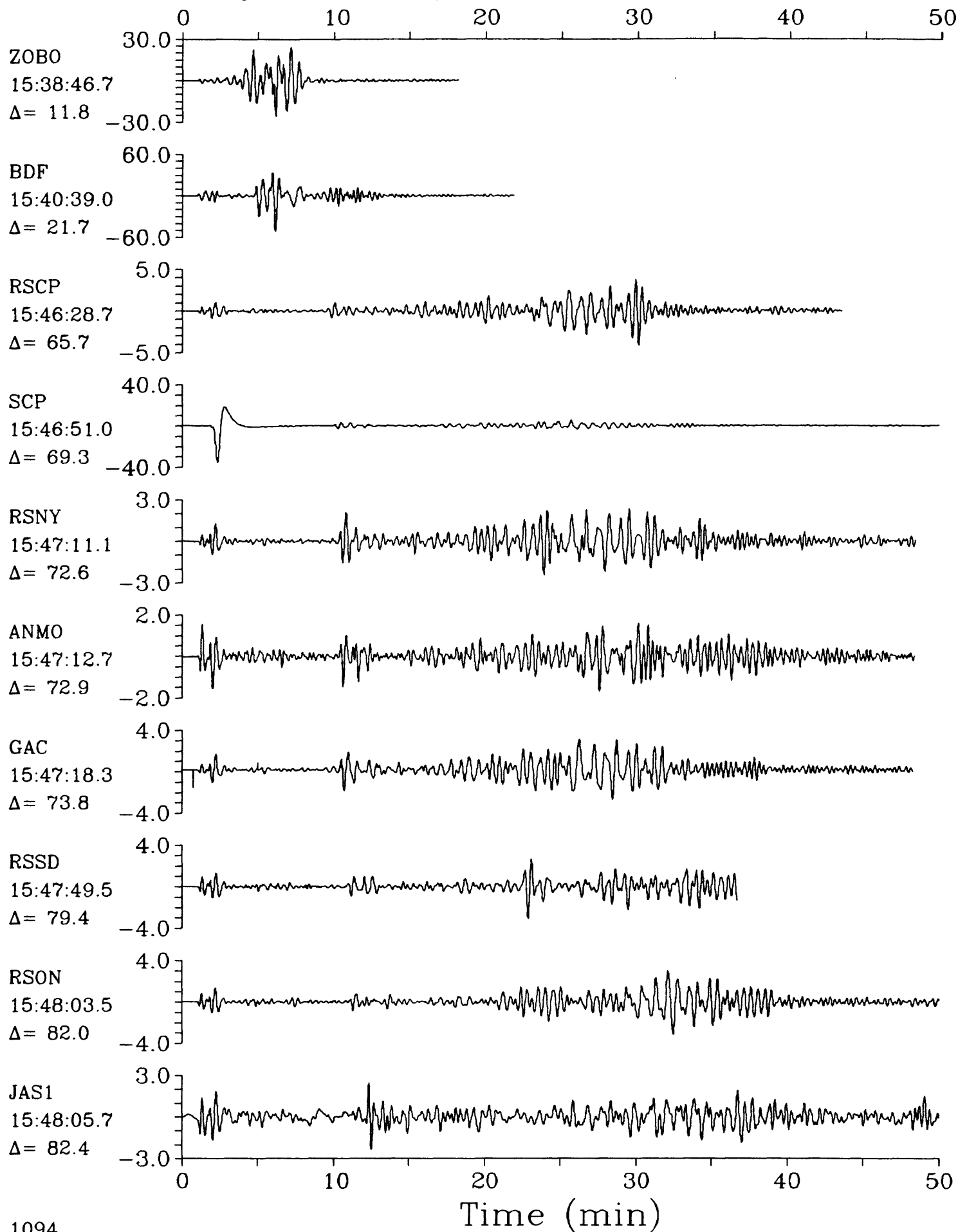
La Rioja Province, Argentina $h=180.4$ $m_b=5.8$



LPZ

10 June 1985 15:37:03.37

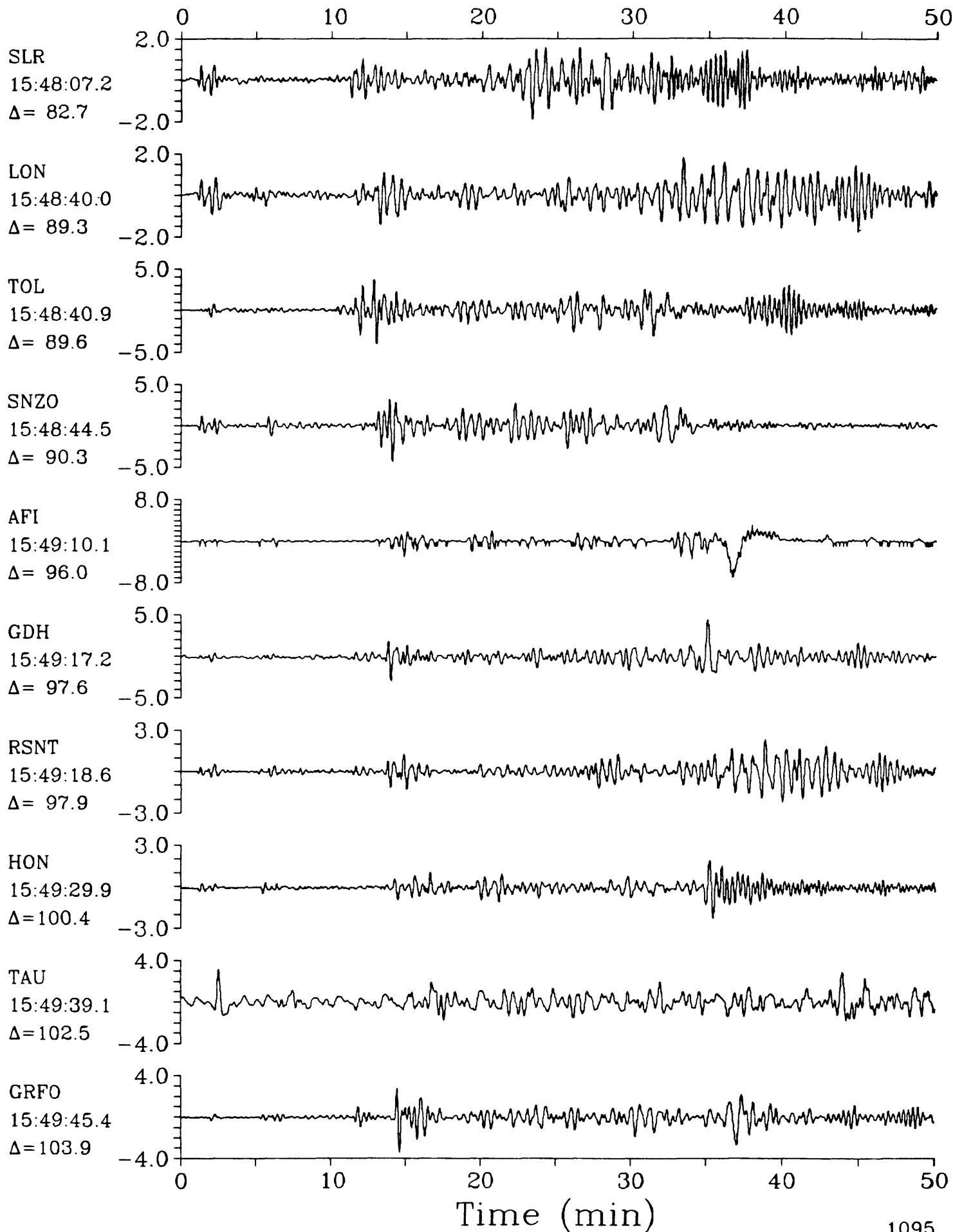
LPZ

La Rioja Province, Argentina $h=180.4$ $m_b=5.8$ 

LPZ

10 June 1985 15:37:03.37

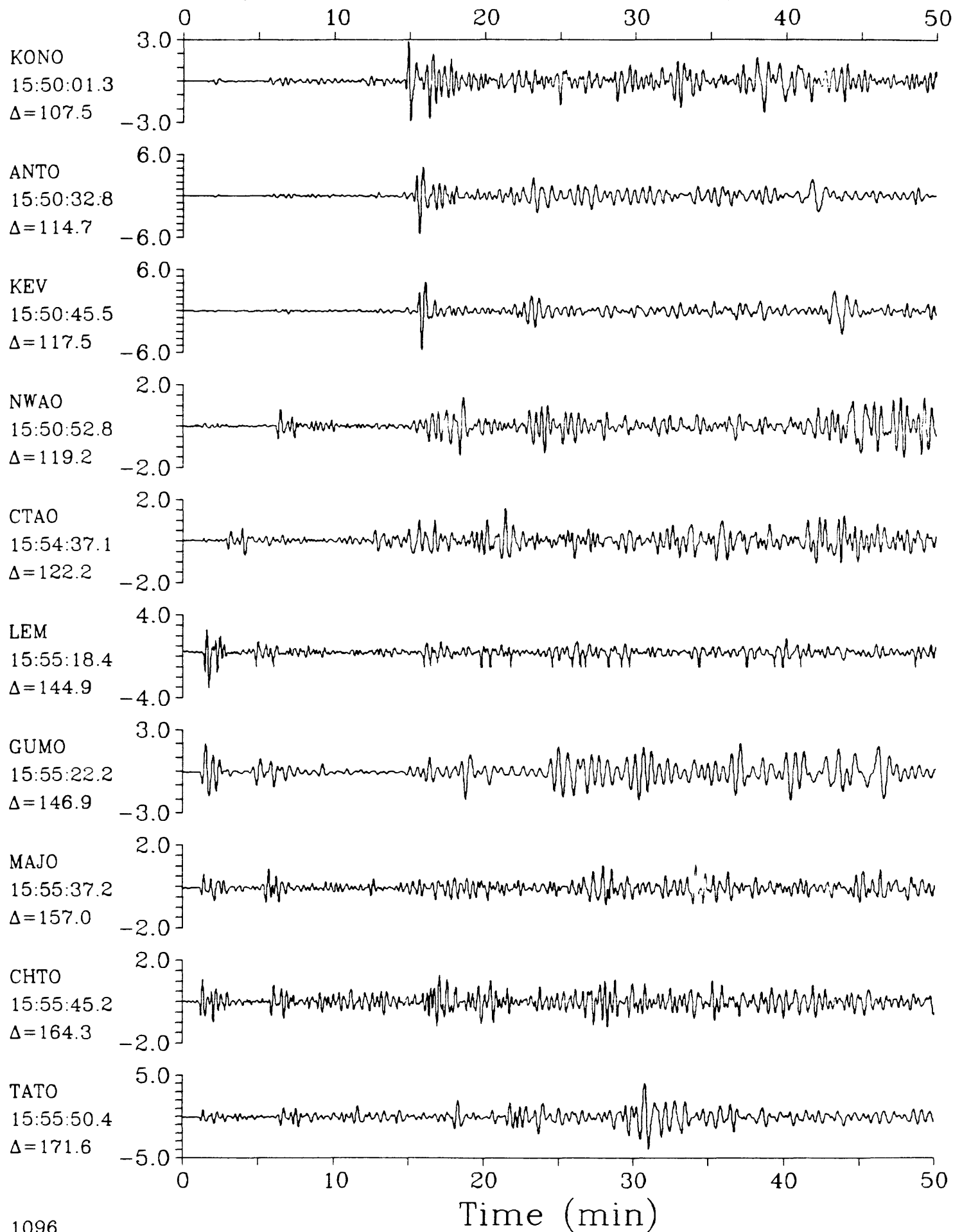
LPZ

La Rioja Province, Argentina $h=180.4$ $m_b=5.8$ 

LPZ

10 June 1985 15:37:03.37

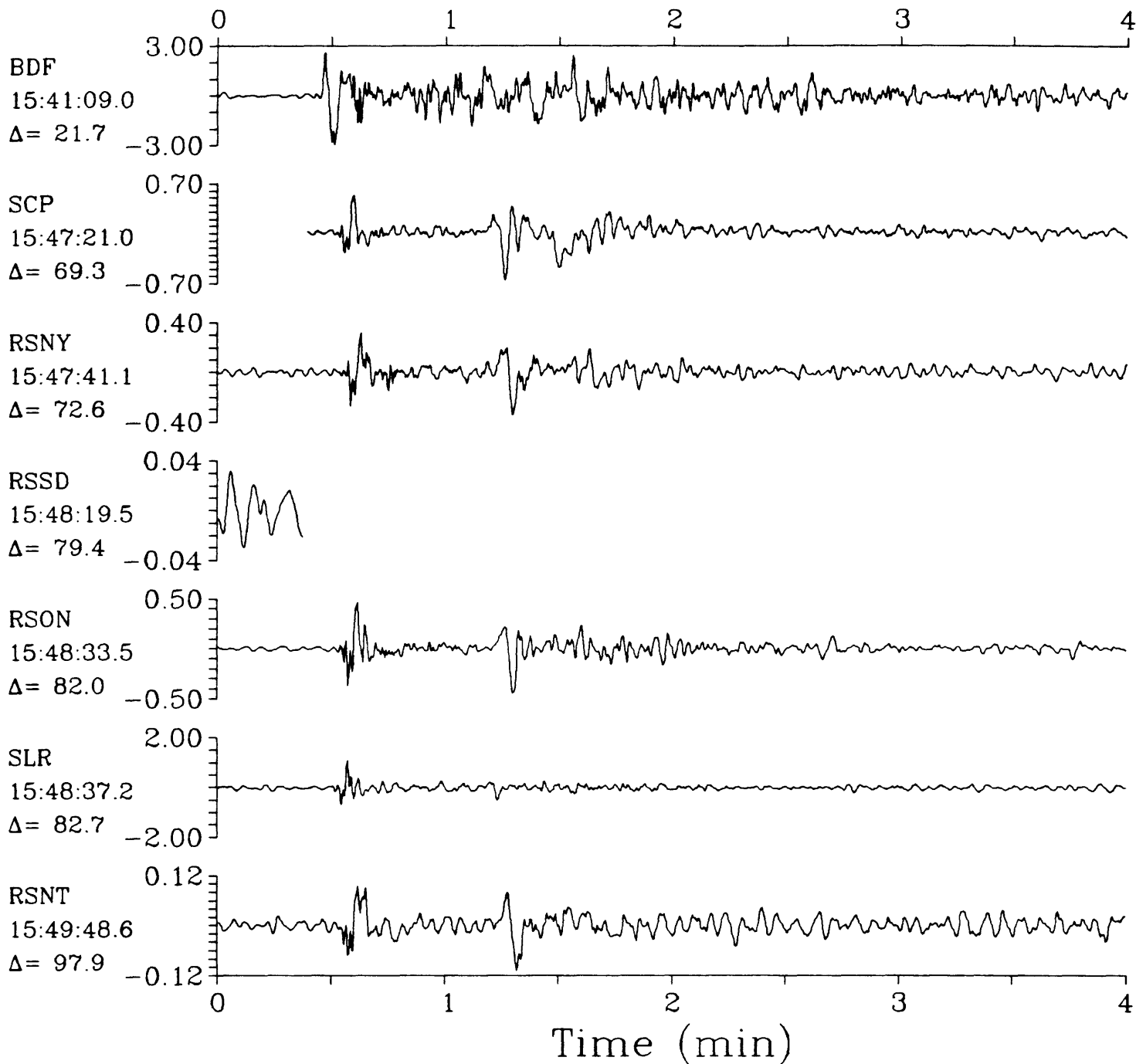
LPZ

La Rioja Province, Argentina $h=180.4$ $m_b=5.8$ 

IPZ

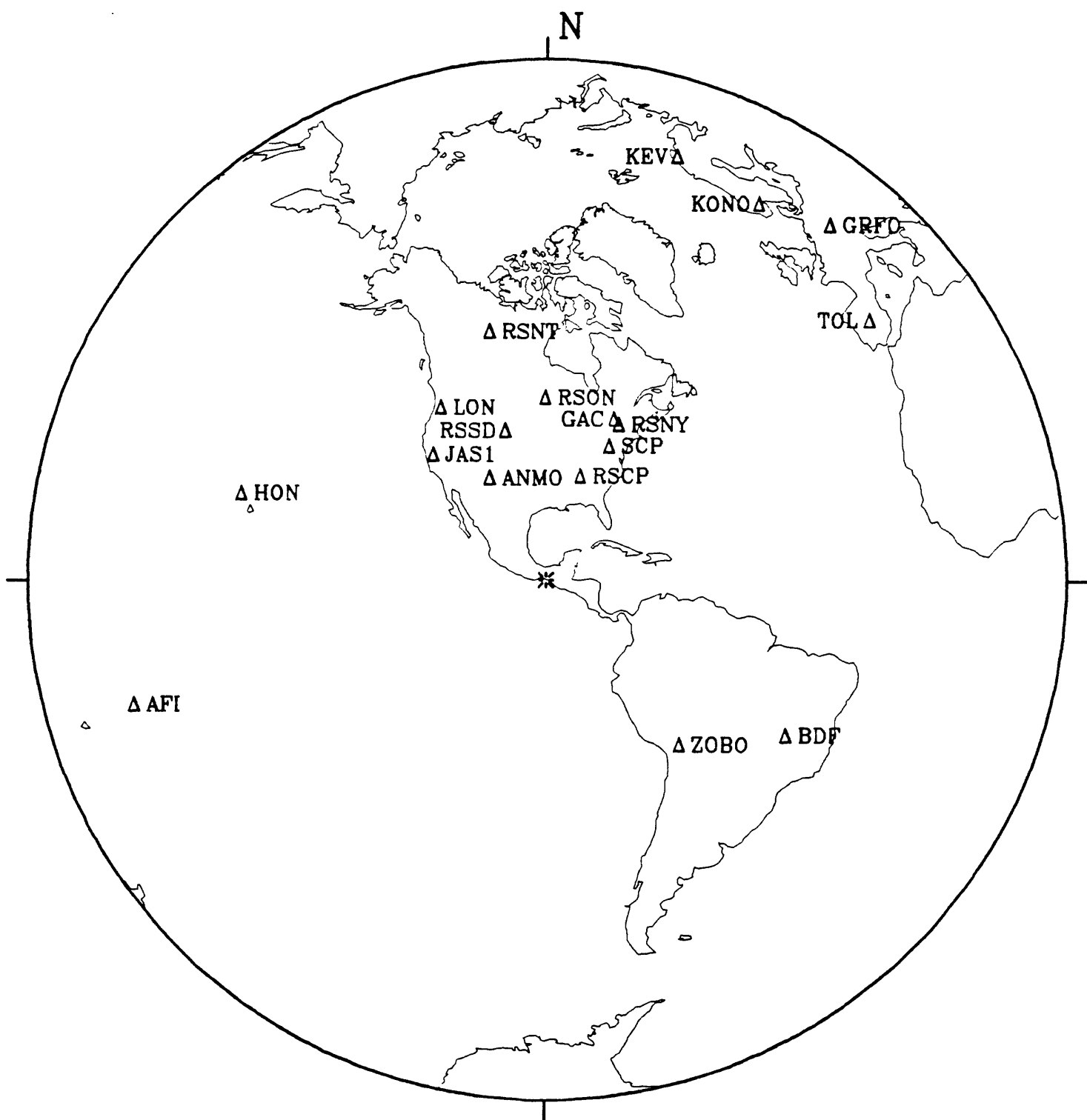
10 June 1985 15:37:03.37

IPZ

La Rioja Province, Argentina $h=180.4$ $m_b=5.8$ 

12 June 1985 11:03:01.81

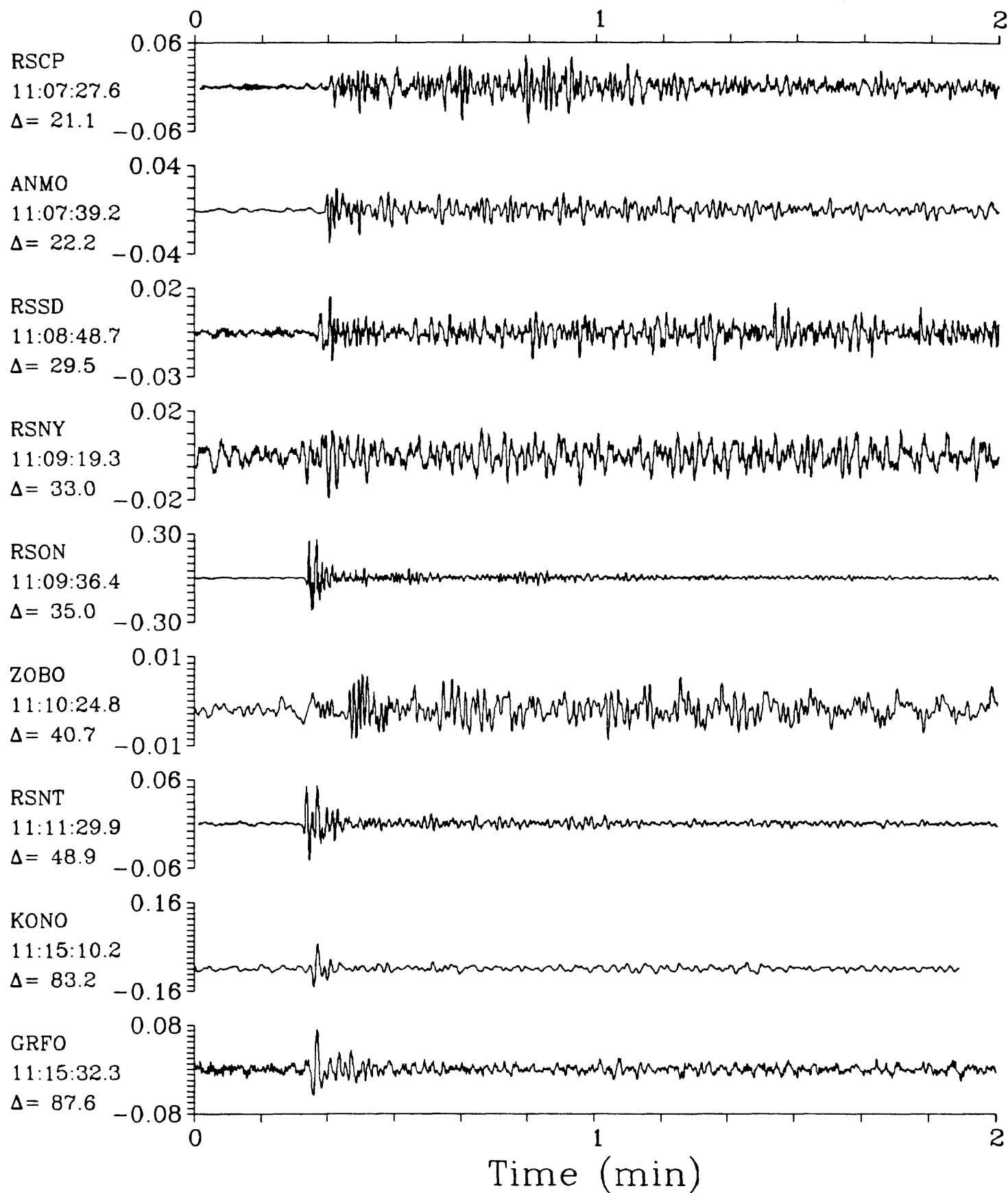
Near Coast of Chiapas, Mexico



SPZ

12 June 1985 11:03:01.81

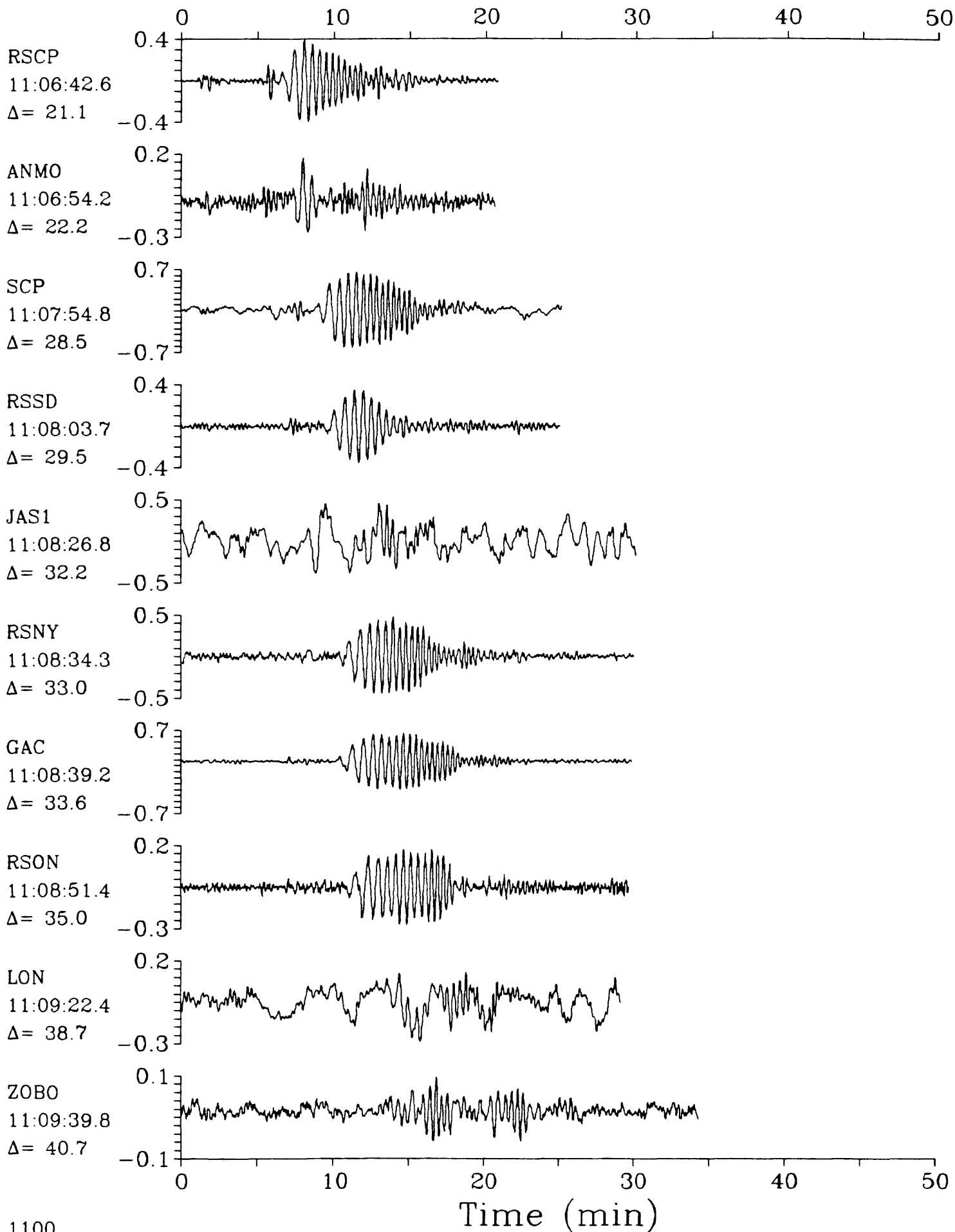
SPZ

Near Coast of Chiapas, Mexico $h=33.0$ $m_b=5.6$ $M_{SZ}=4.1$ 

LPZ

12 June 1985 11:03:01.81

LPZ

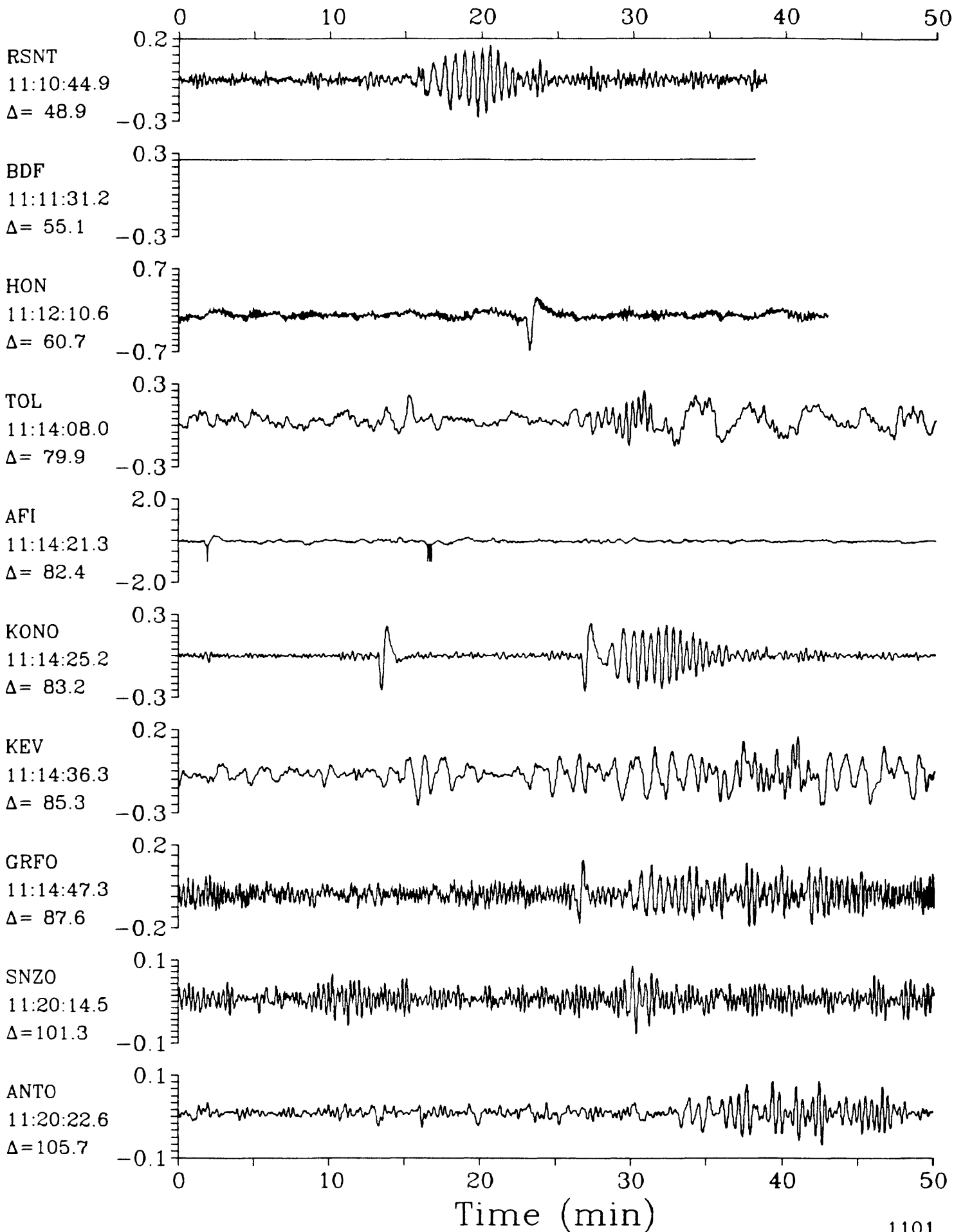
Near Coast of Chiapas, Mexico $h=33.0$ $m_b=5.6$ $M_{SZ}=4.1$ 

1100

LPZ

12 June 1985 11:03:01.81

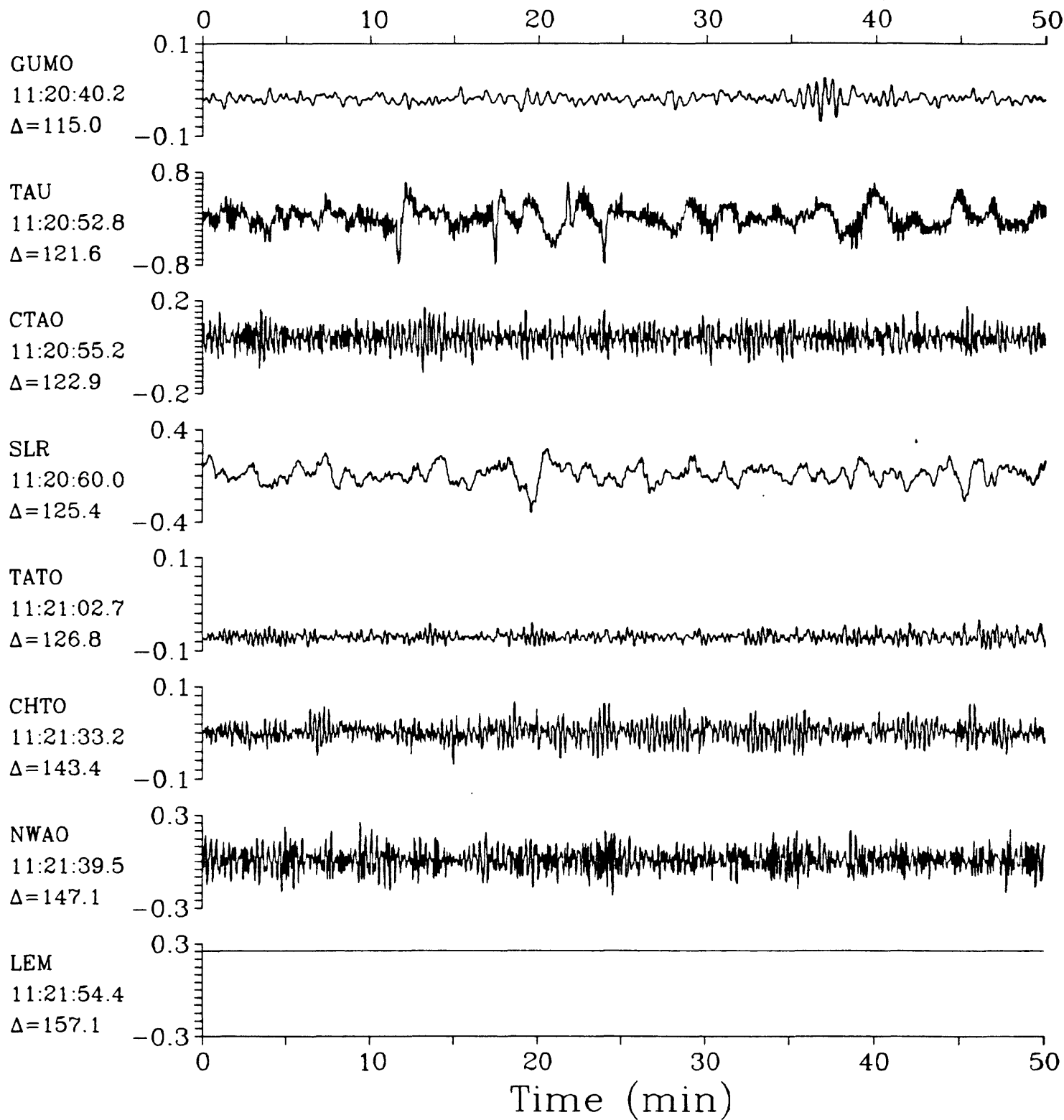
LPZ

Near Coast of Chiapas, Mexico $h=33.0$ $m_b=5.6$ $M_{sz}=4.1$ 

LPZ

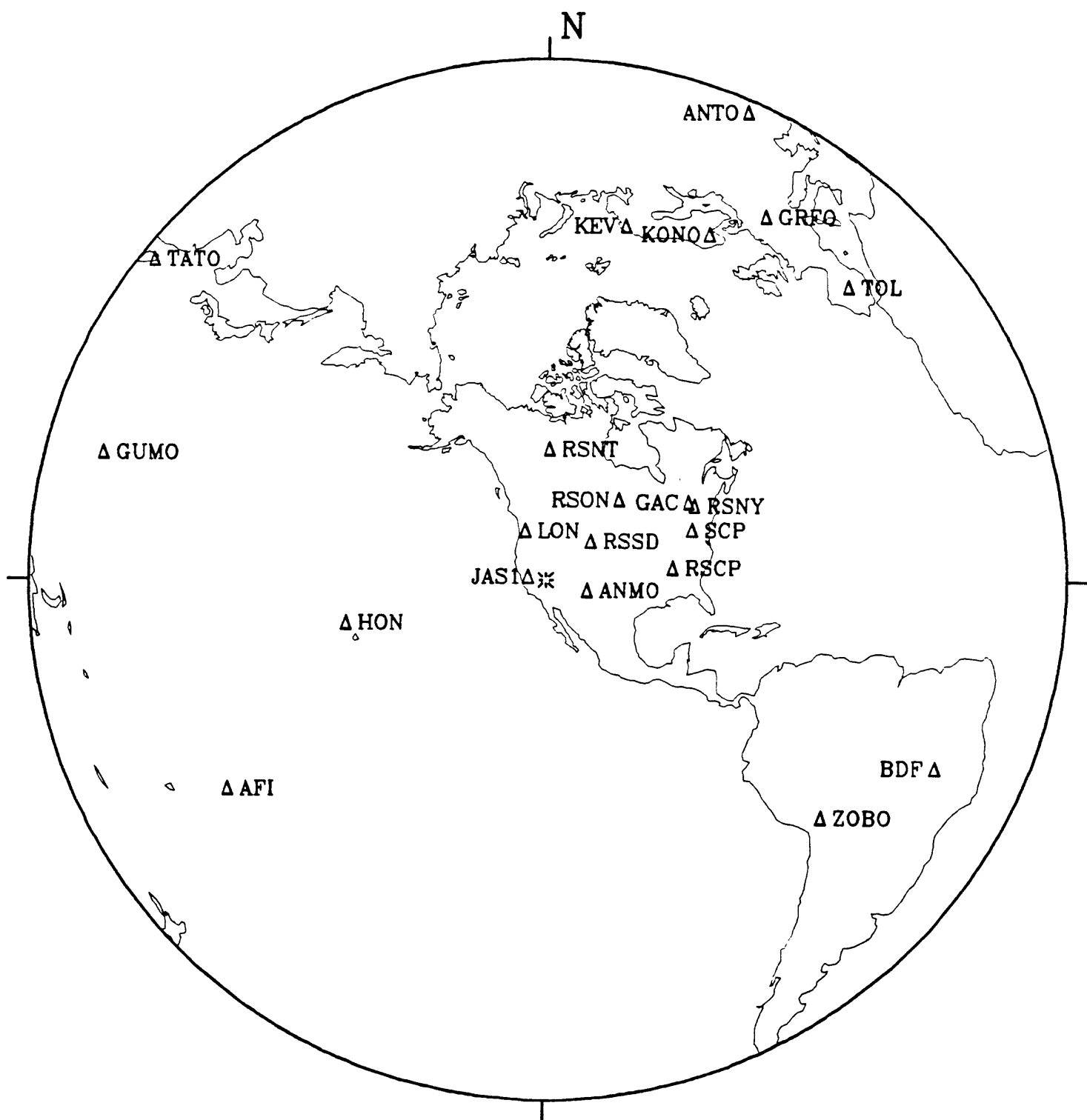
12 June 1985 11:03:01.81

LPZ

Near Coast of Chiapas, Mexico $h=33.0$ $m_b=5.6$ $M_{SZ}=4.1$ 

12 June 1985 15:15:00.08

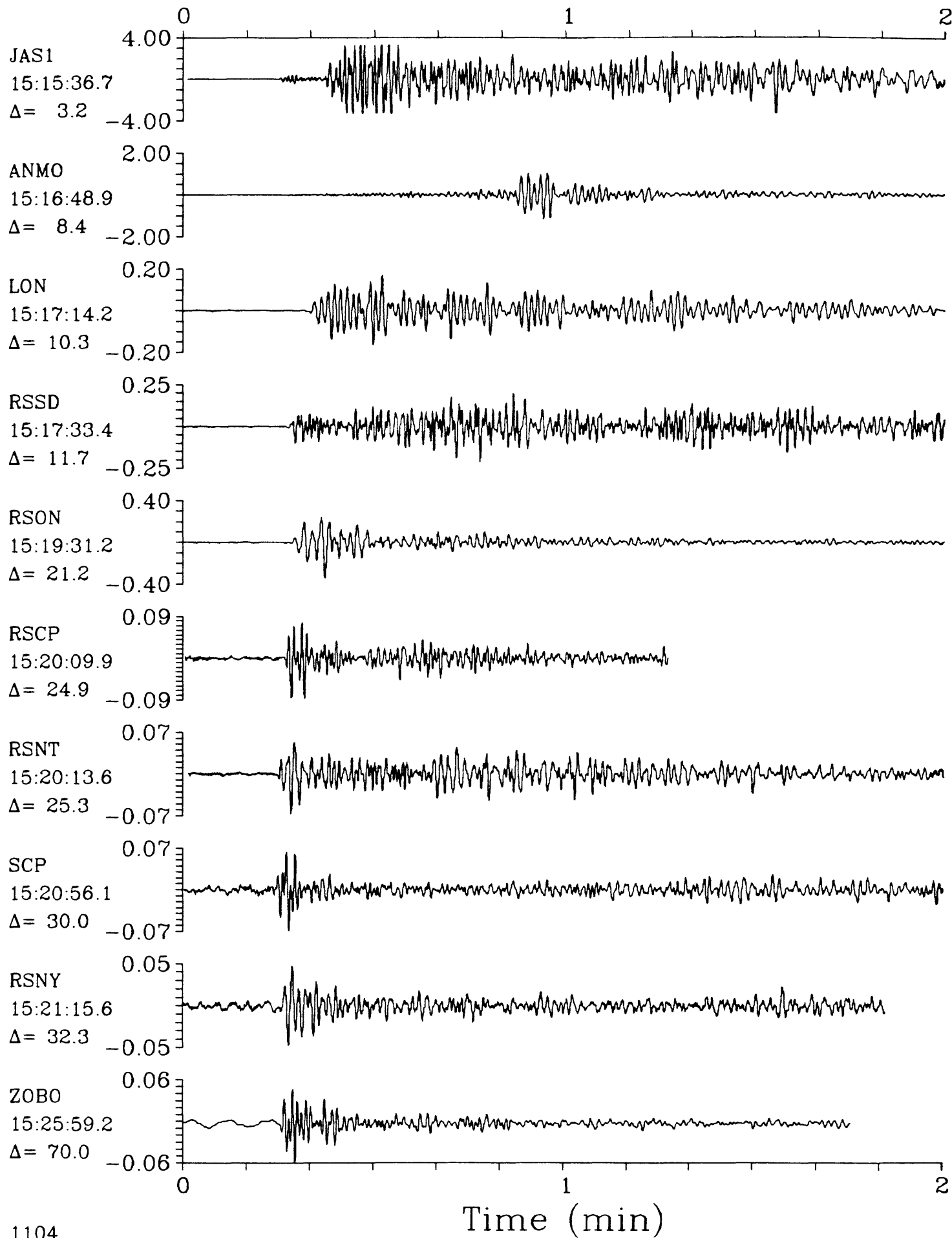
Southern Nevada



SPZ

12 June 1985 15:15:00.08

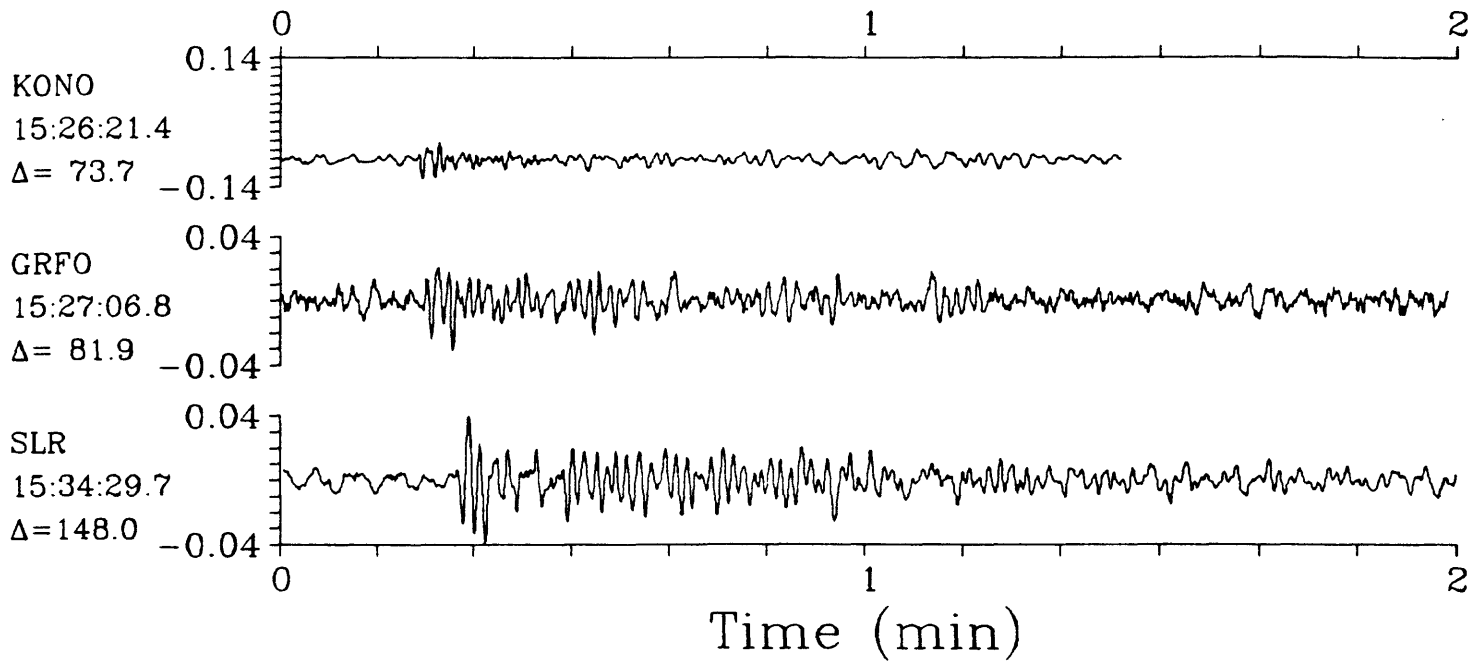
SPZ

Southern Nevada $h=0.0$ $m_b=5.5$ $M_{SZ}=4.5$ 

SPZ

12 June 1985 15:15:00.08

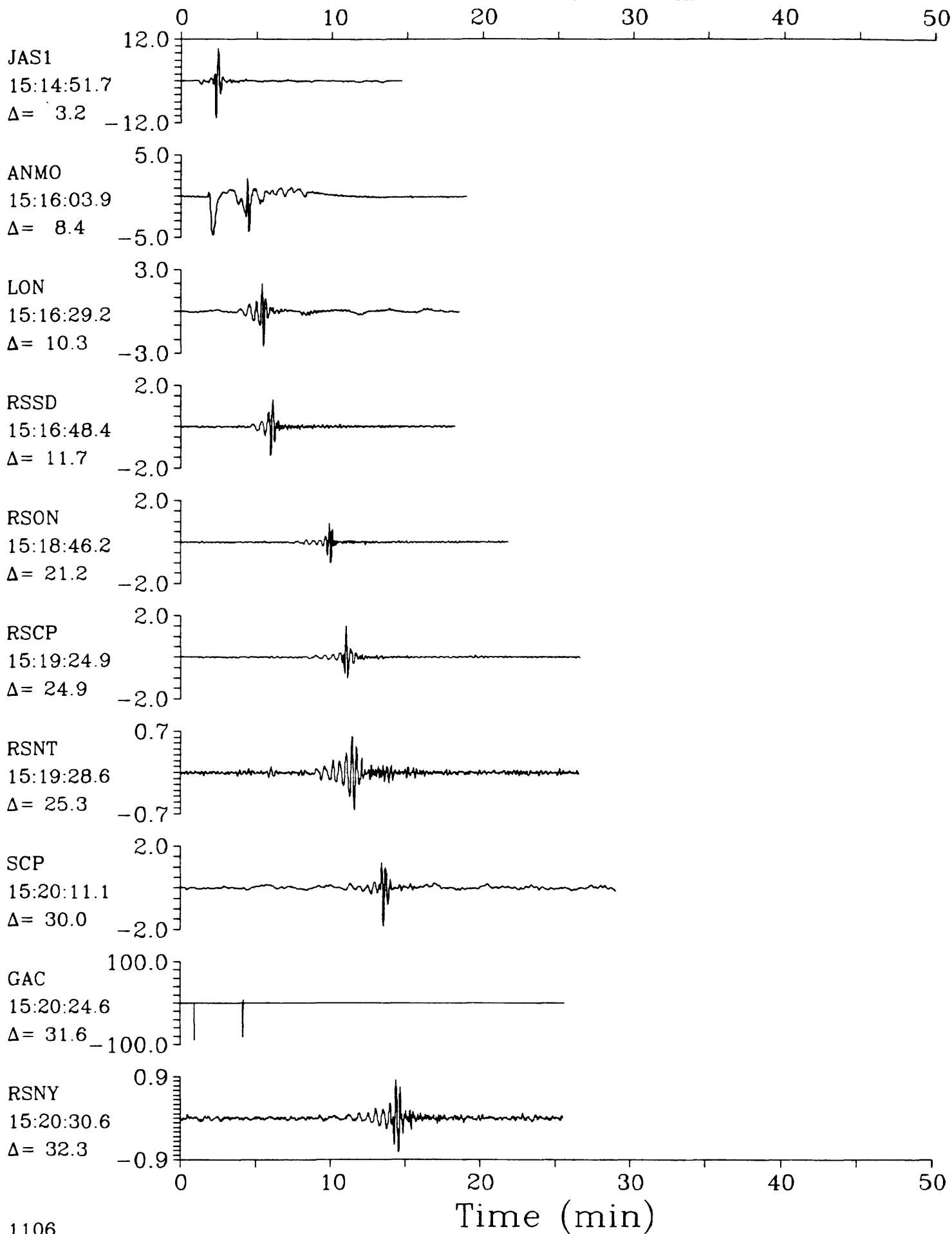
SPZ

Southern Nevada $h=0.0$ $m_b=5.5$ $M_{sz}=4.5$ 

LPZ

12 June 1985 15:15:00.08

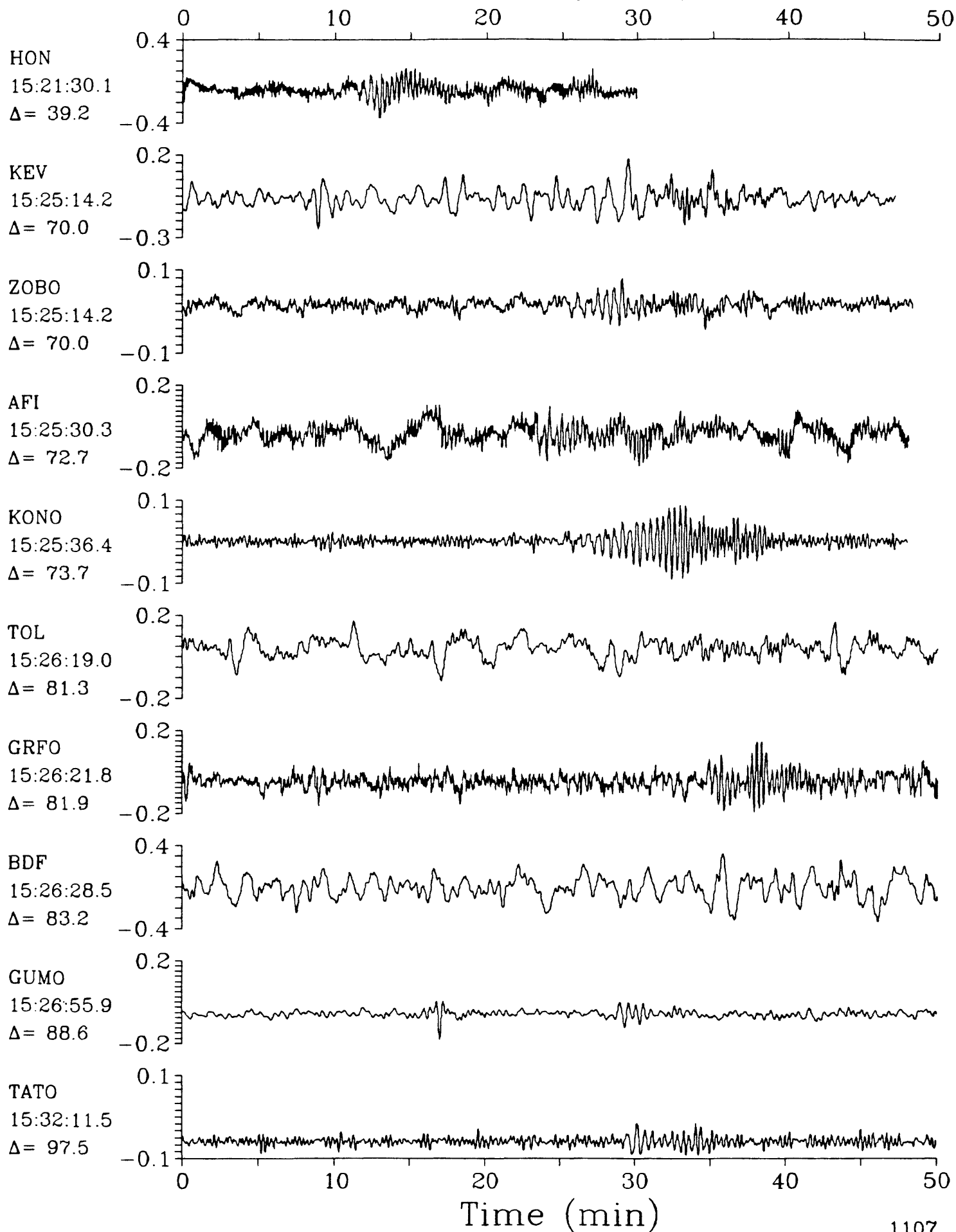
LPZ

Southern Nevada $h=0.0$ $m_b=5.5$ $M_{sz}=4.5$ 

LPZ

12 June 1985 15:15:00.08

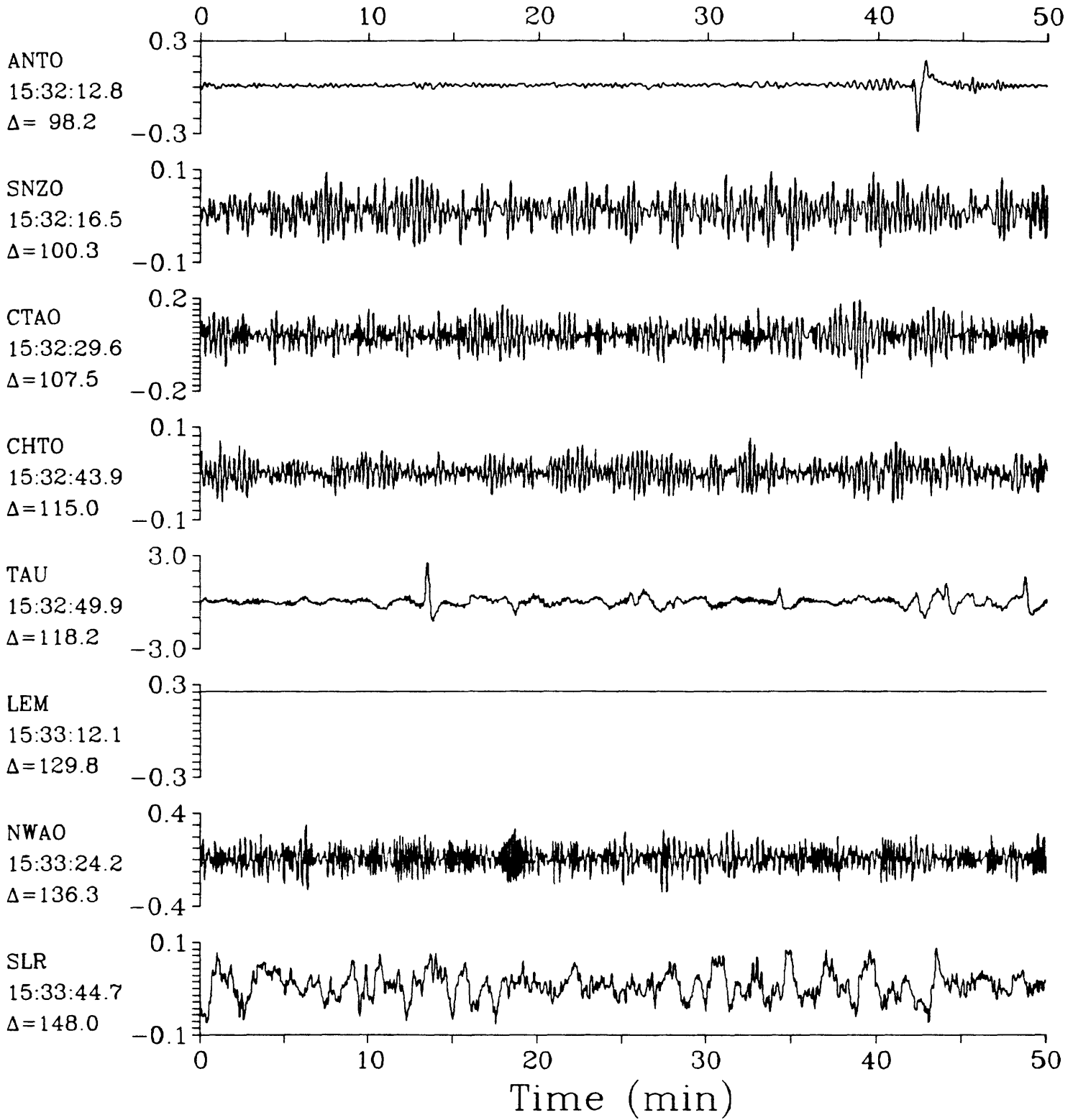
LPZ

Southern Nevada $h=0.0$ $m_b=5.5$ $M_{SZ}=4.5$ 

LPZ

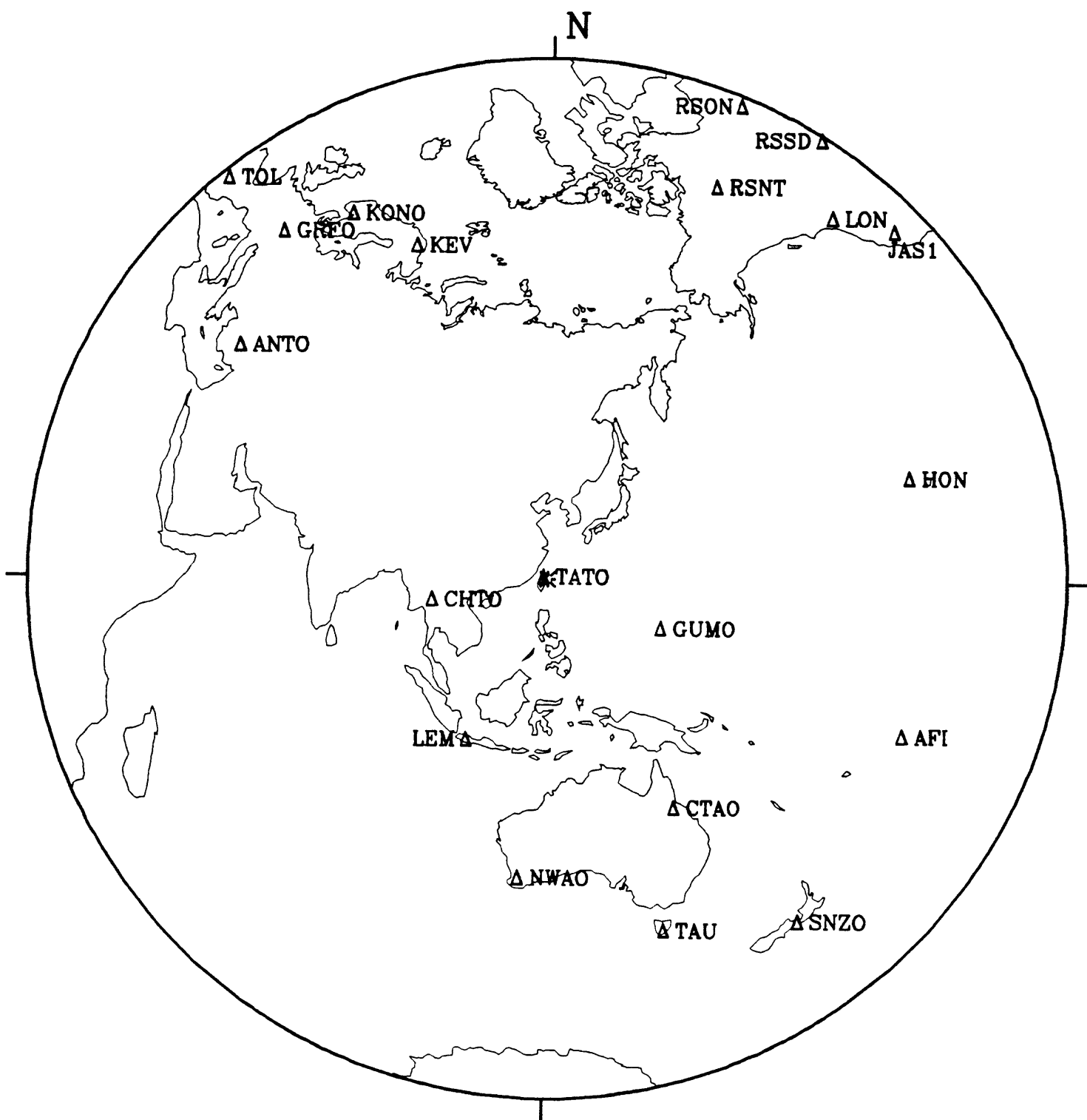
12 June 1985 15:15:00.08

LPZ

Southern Nevada $h=0.0$ $m_b=5.5$ $M_{sz}=4.5$ 

12 June 1985 17:22:52.22

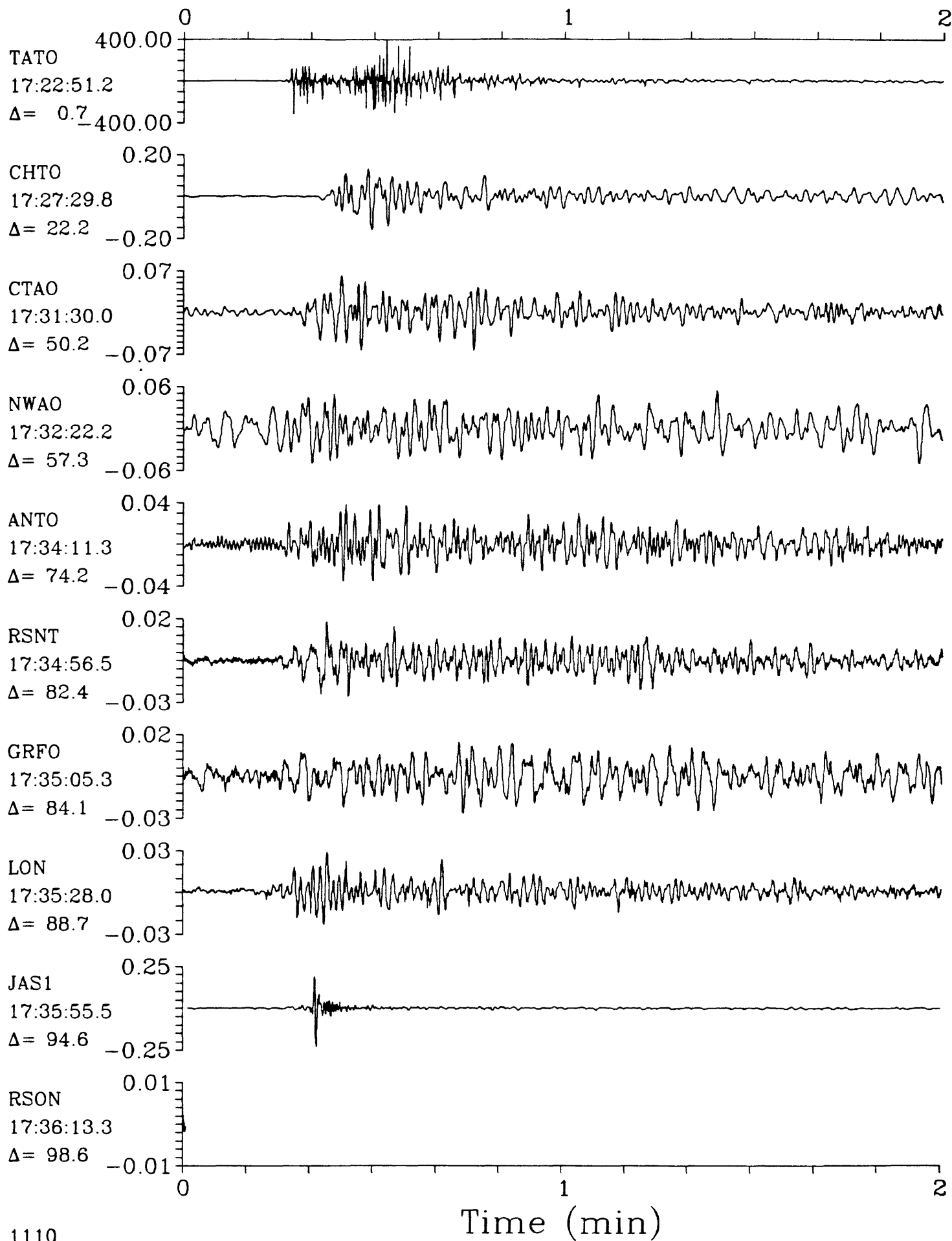
Taiwan Region



SPZ

12 June 1985 17:22:52.22

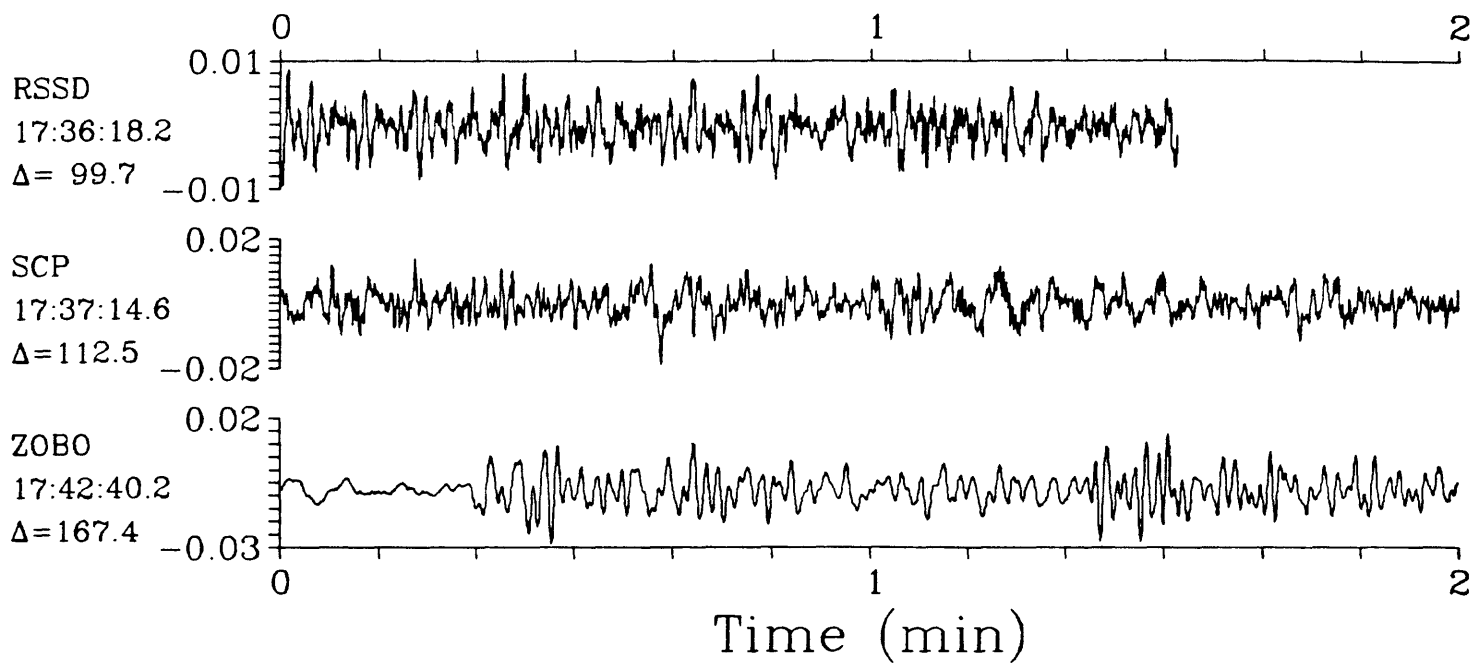
SPZ

Taiwan Region $h=33.0$ $m_b=5.2$ $M_{sz}=5.8$ 

SPZ

12 June 1985 17:22:52.22

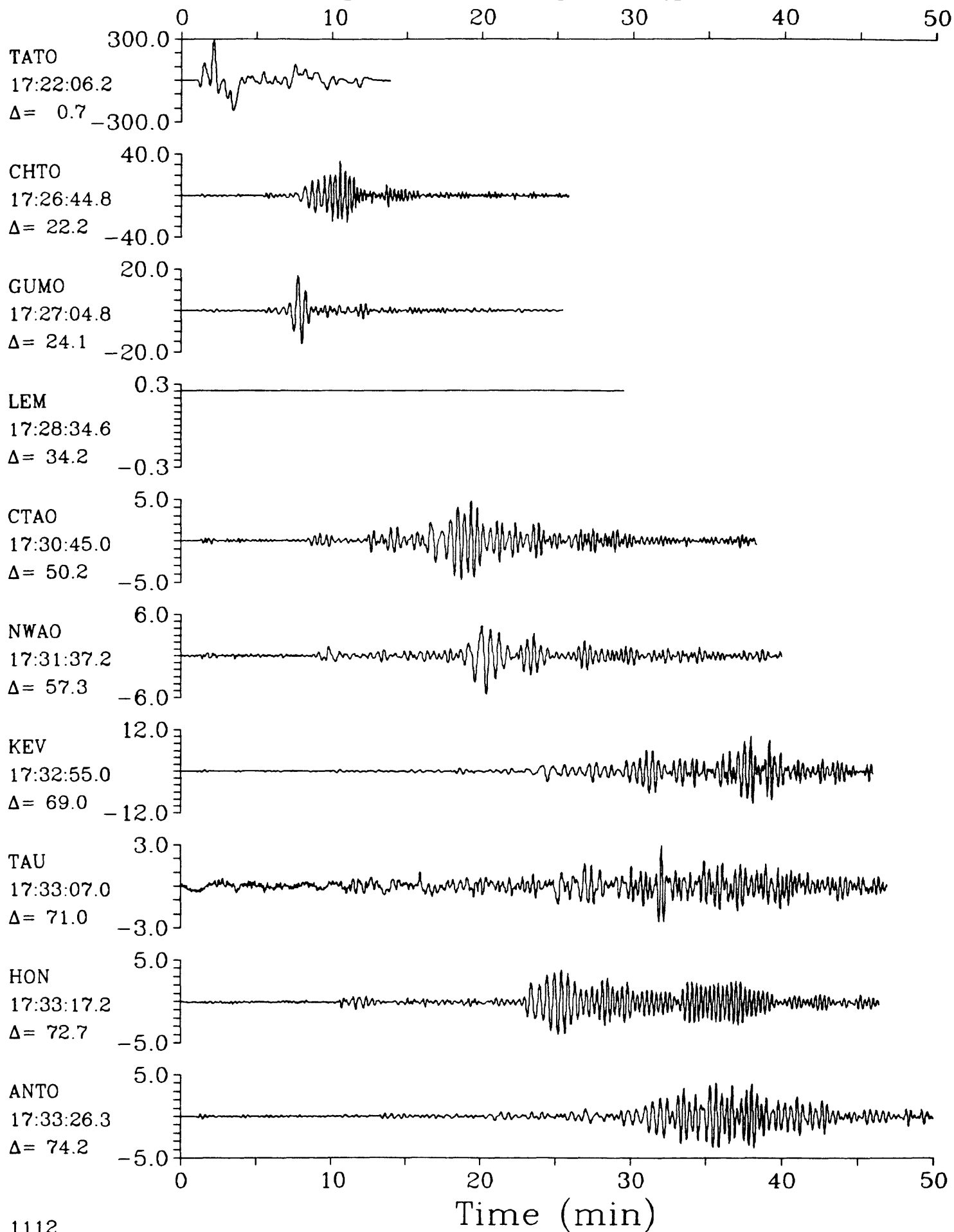
SPZ

Taiwan Region $h=33.0$ $m_b=5.2$ $M_{sz}=5.8$ 

LPZ

12 June 1985 17:22:52.22

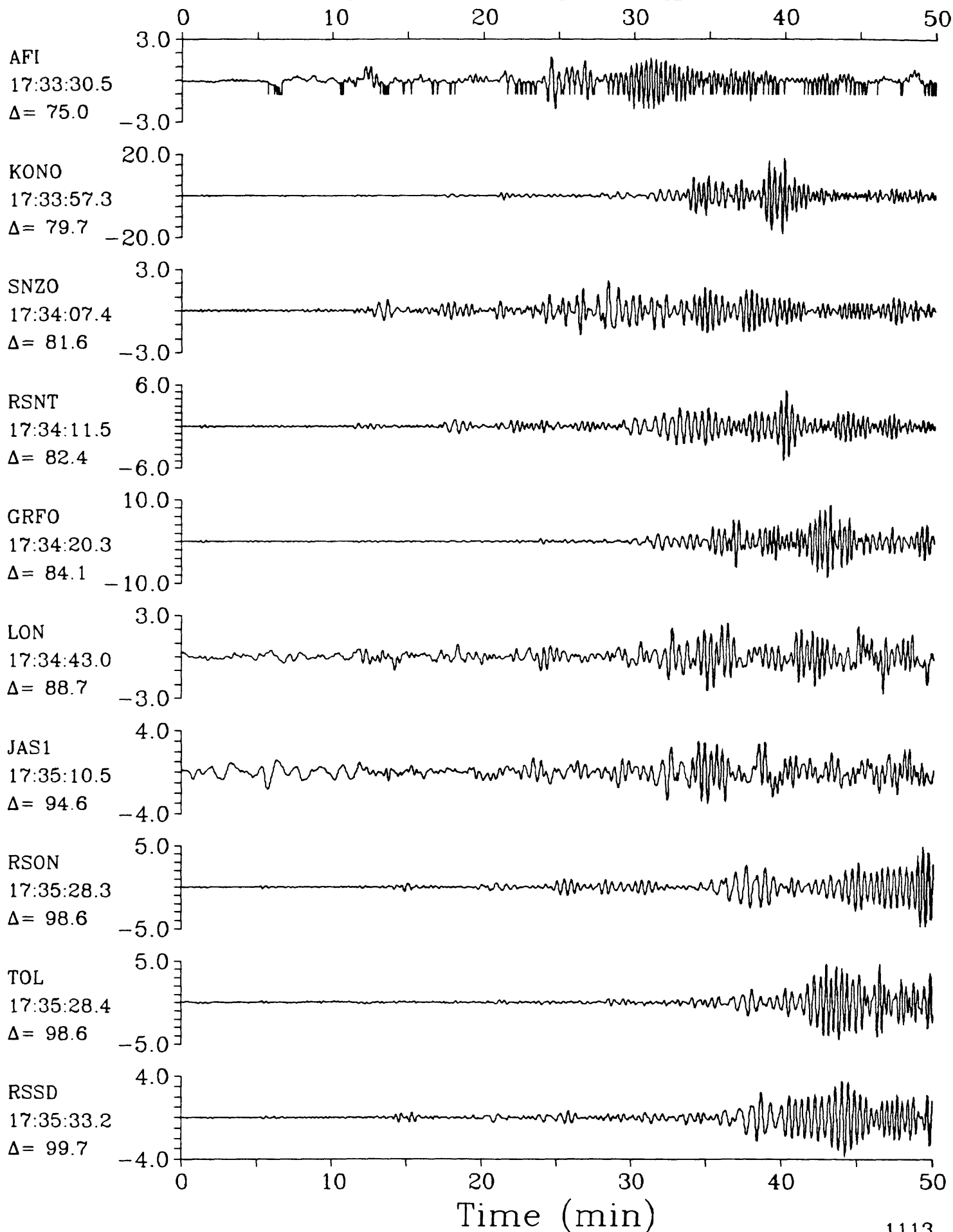
LPZ

Taiwan Region $h=33.0$ $m_b=5.2$ $M_{sz}=5.8$ 

LPZ

12 June 1985 17:22:52.22

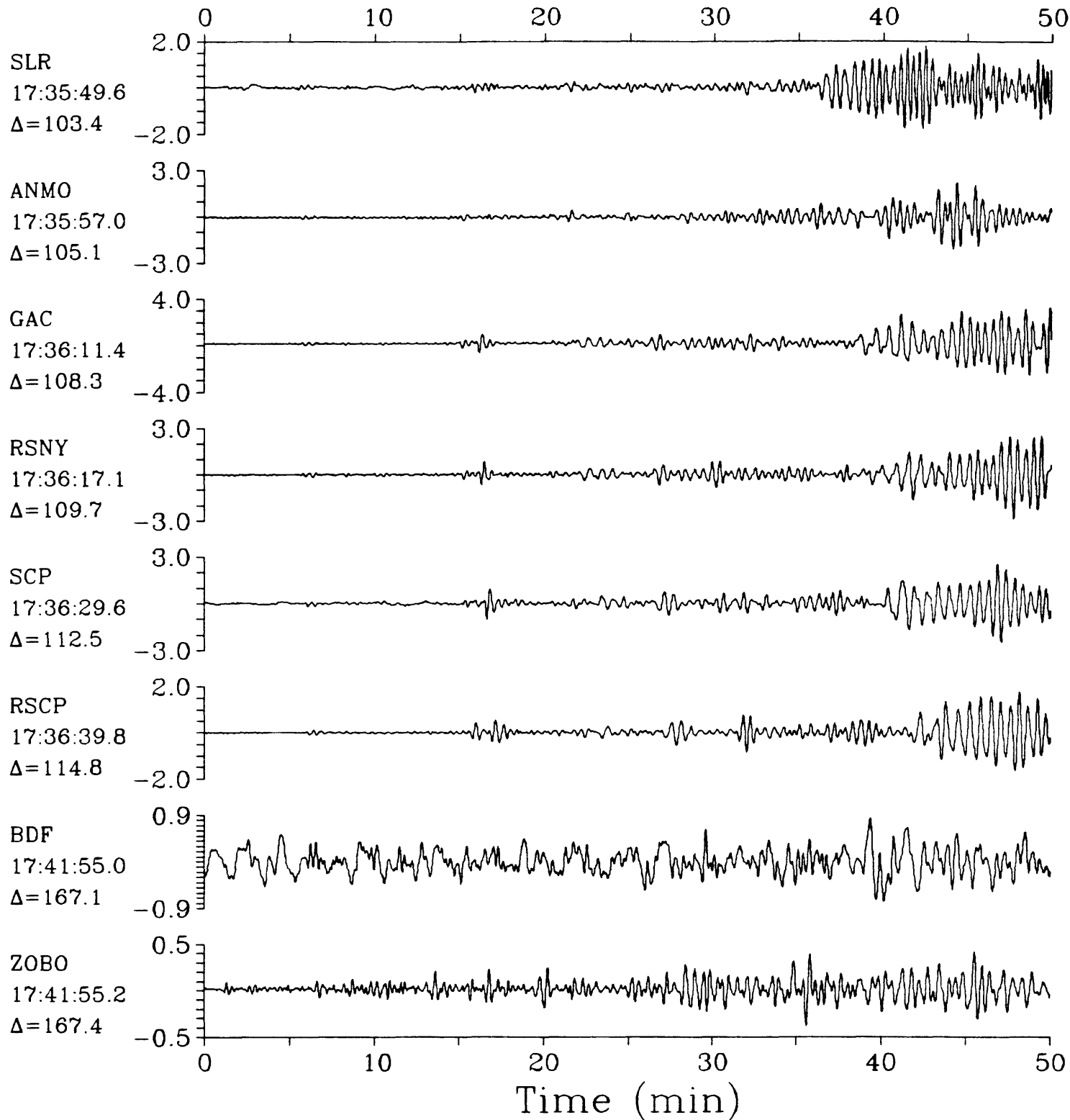
LPZ

Taiwan Region $h=33.0$ $m_b=5.2$ $M_{sz}=5.8$ 

LPZ

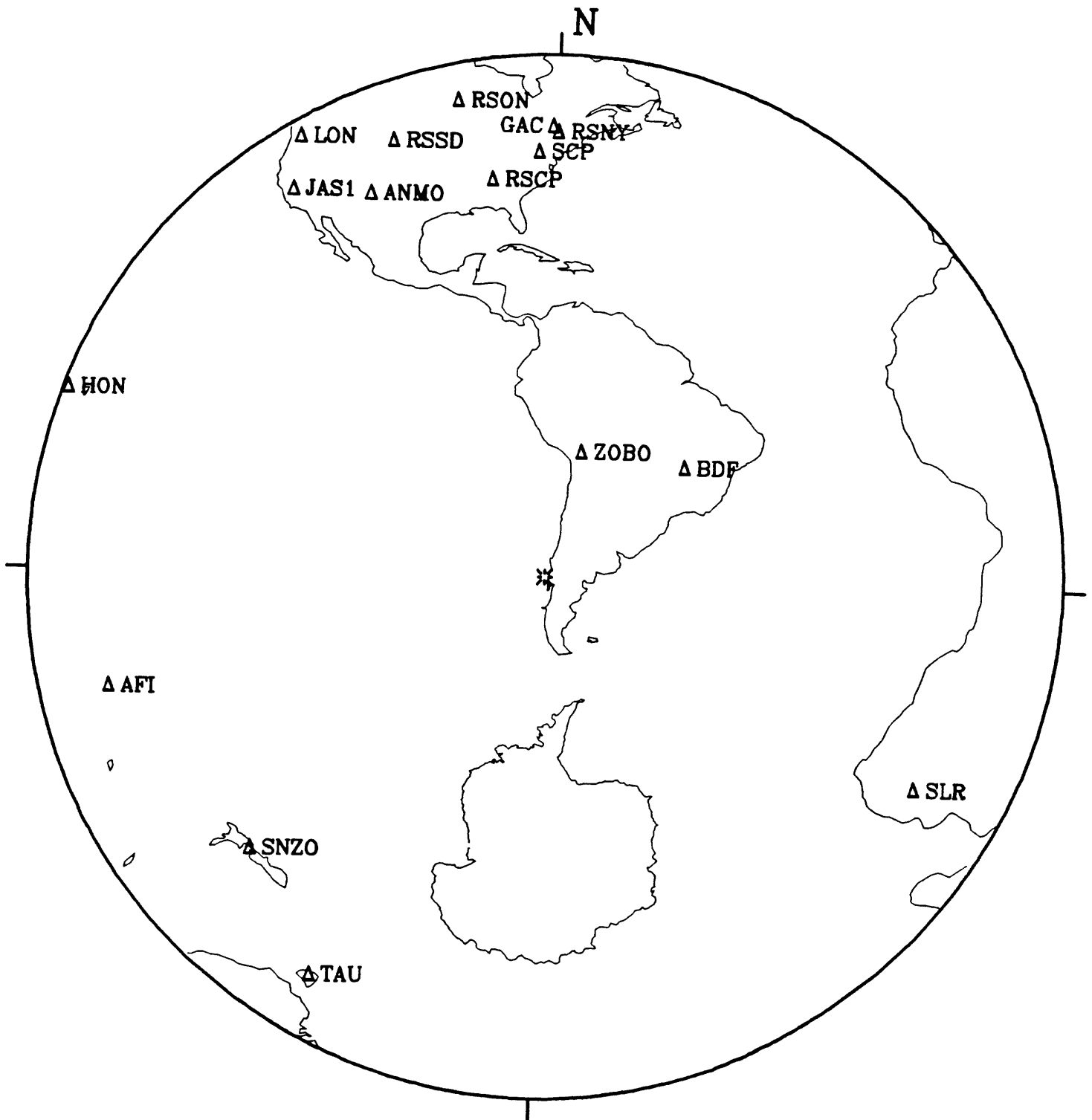
12 June 1985 17:22:52.22

LPZ

Taiwan Region $h=33.0$ $m_b=5.2$ $M_{sz}=5.8$ 

14 June 1985 13:14:14.91

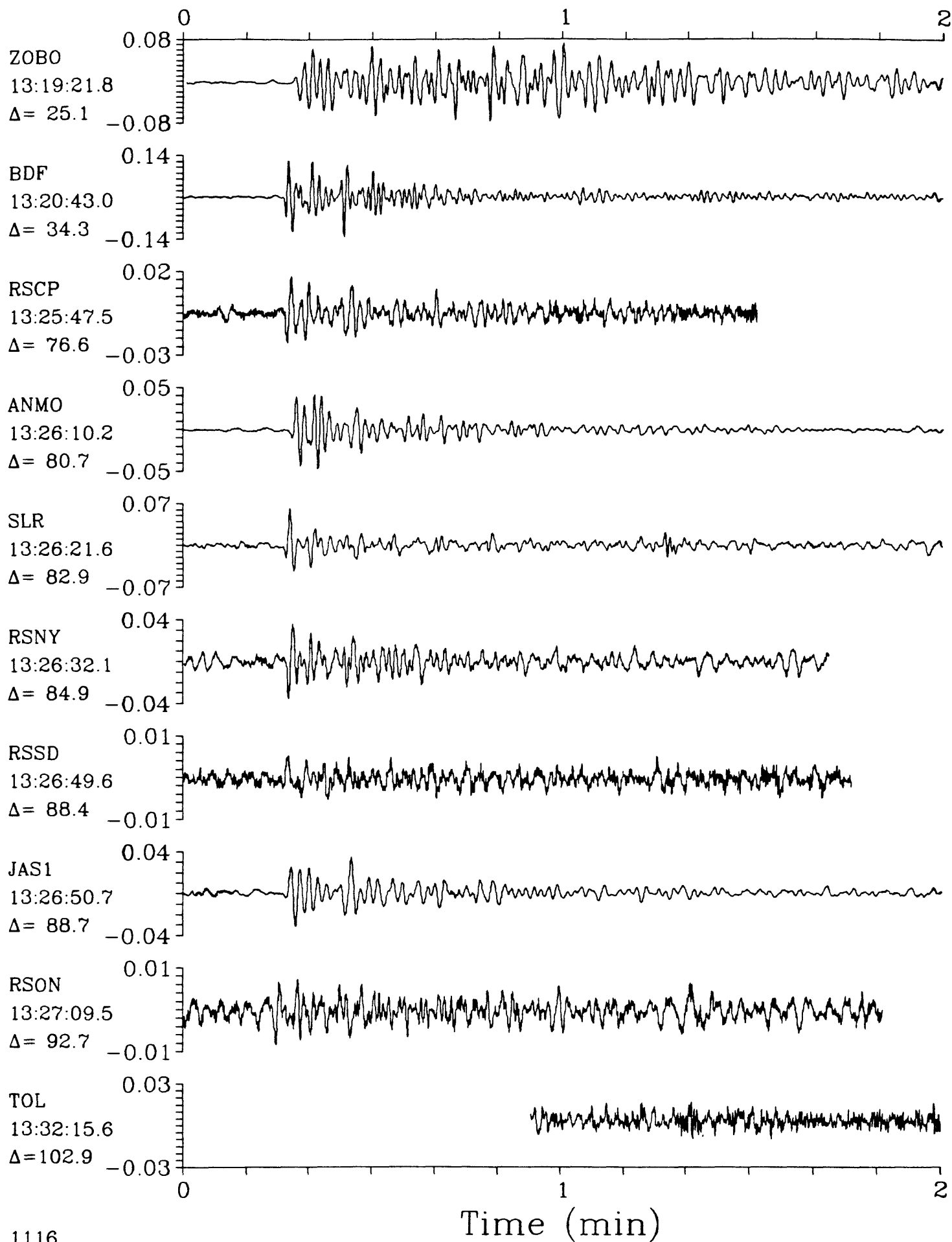
Off Coast of Southern Chile



SPZ

14 June 1985 13:14:14.91

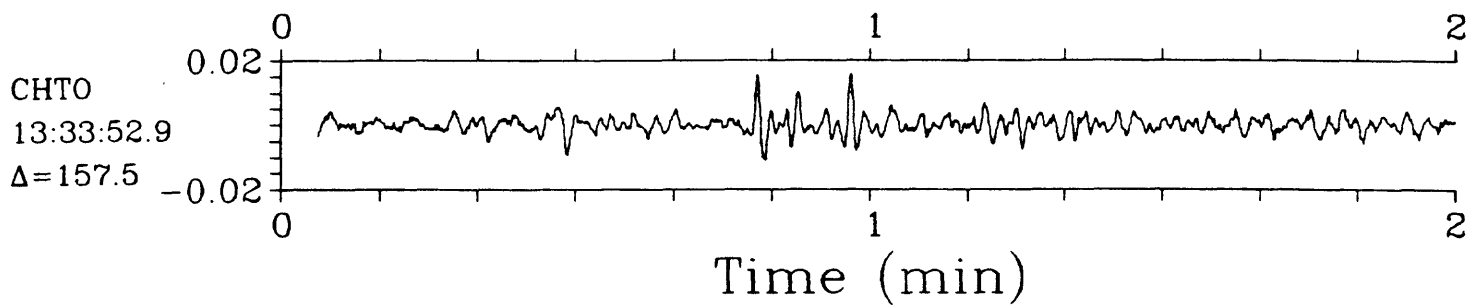
SPZ

Off Coast of Southern Chile $h=33.0$ $m_b=5.5$ 

SPZ

14 June 1985 13:14:14.91

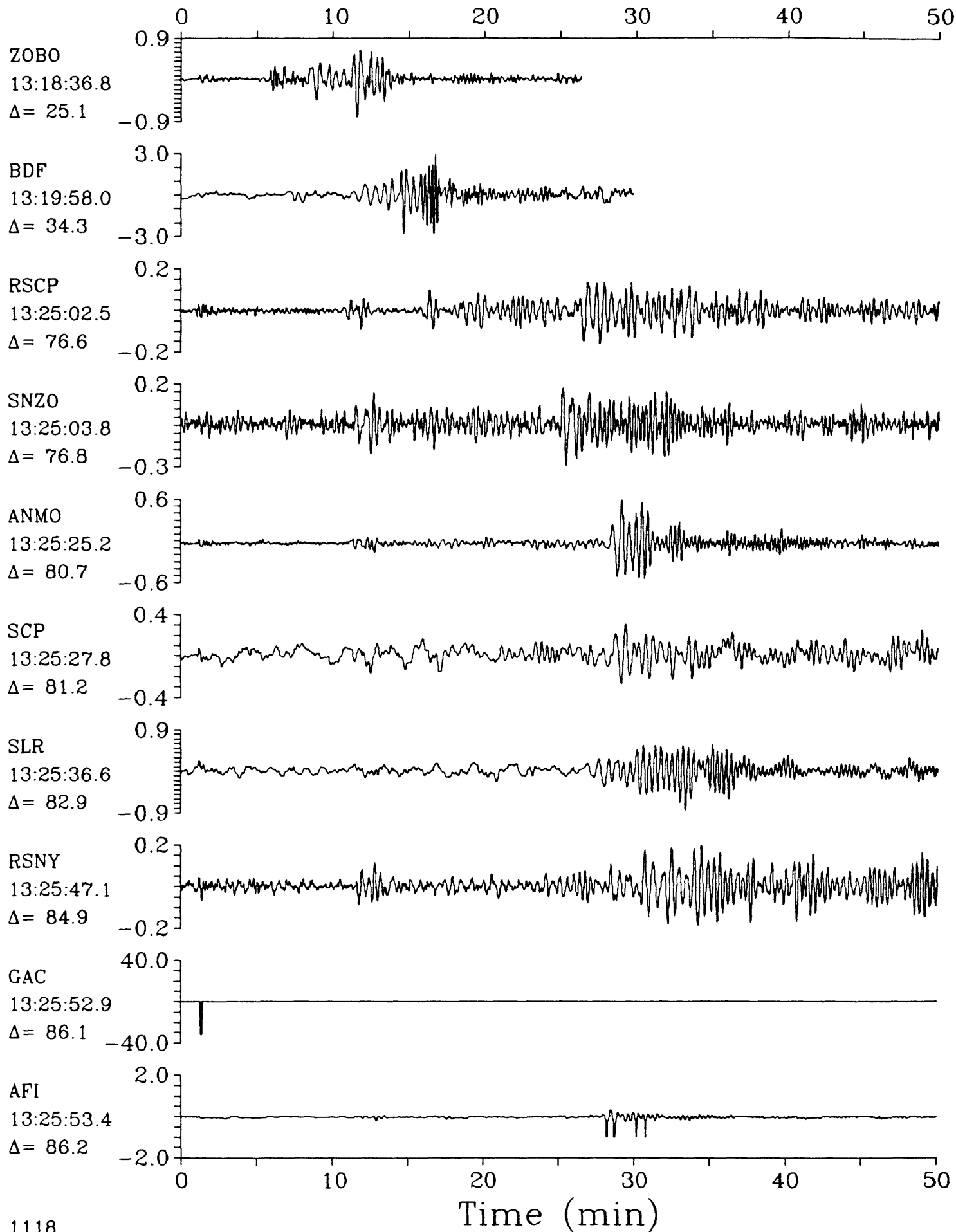
SPZ

Off Coast of Southern Chile $h=33.0$ $m_b=5.5$ 

LPZ

14 June 1985 13:14:14.91

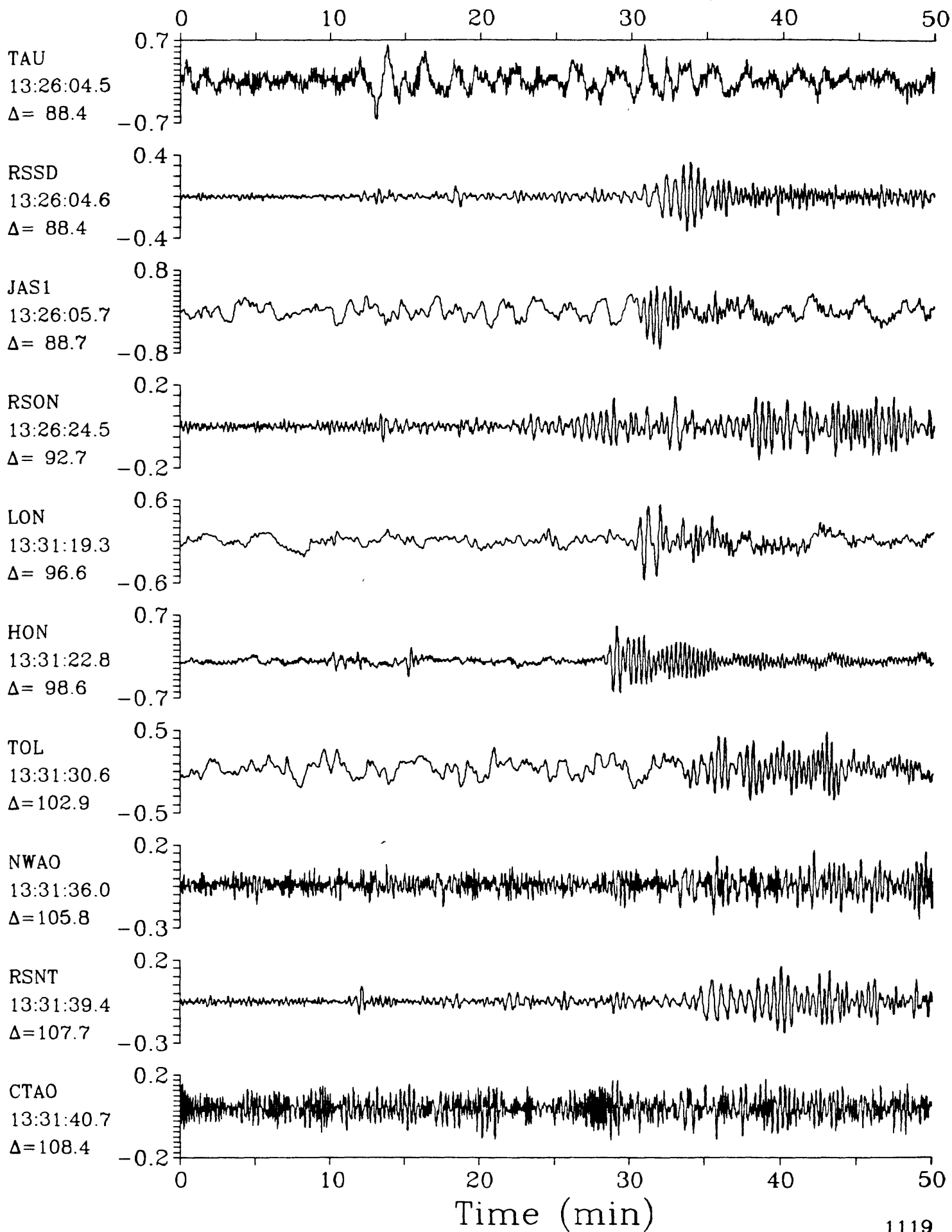
LPZ

Off Coast of Southern Chile $h=33.0$ $m_b=5.5$ 

LPZ

14 June 1985 13:14:14.91

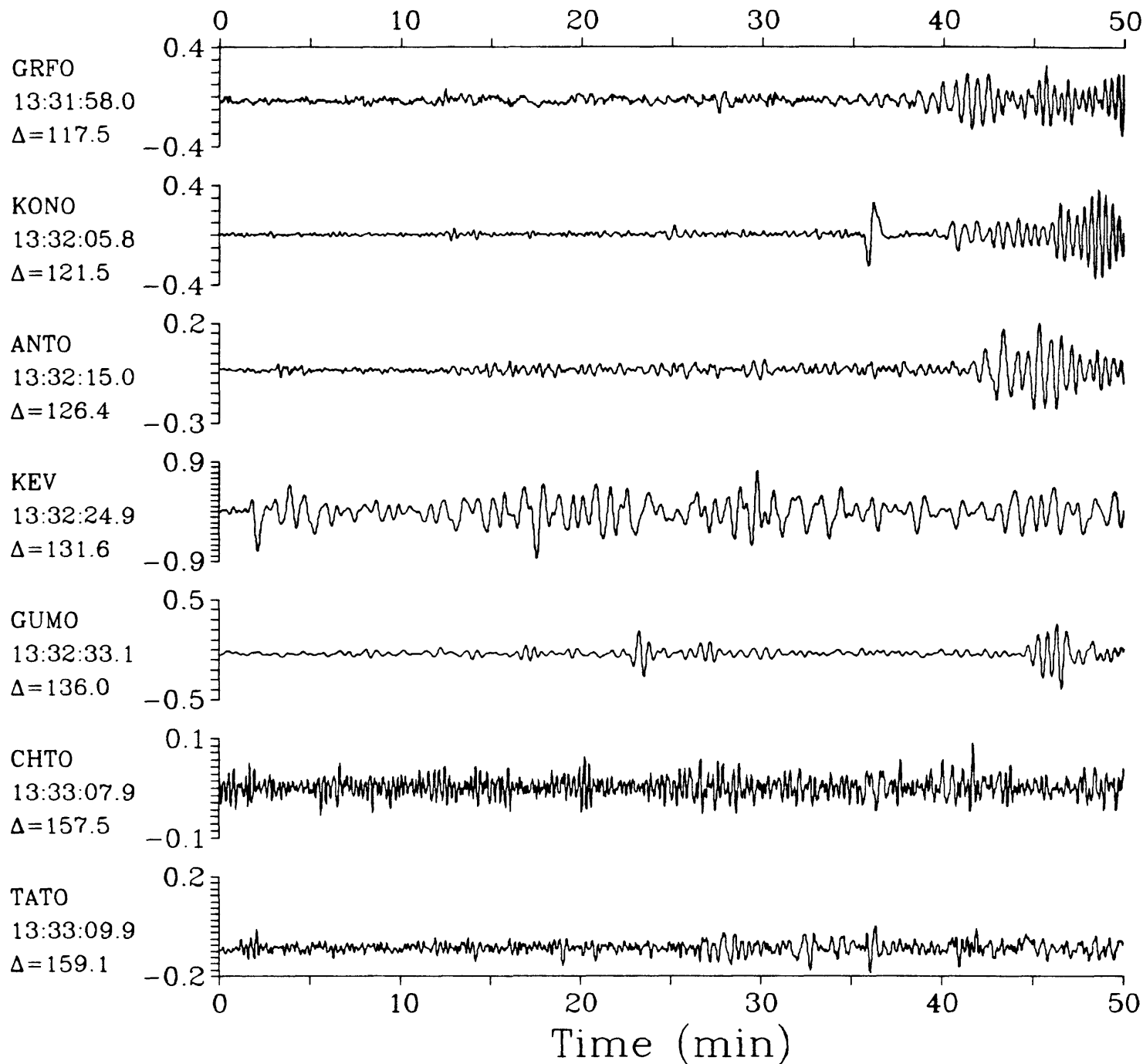
LPZ

Off Coast of Southern Chile $h=33.0$ $m_b=5.5$ 

LPZ

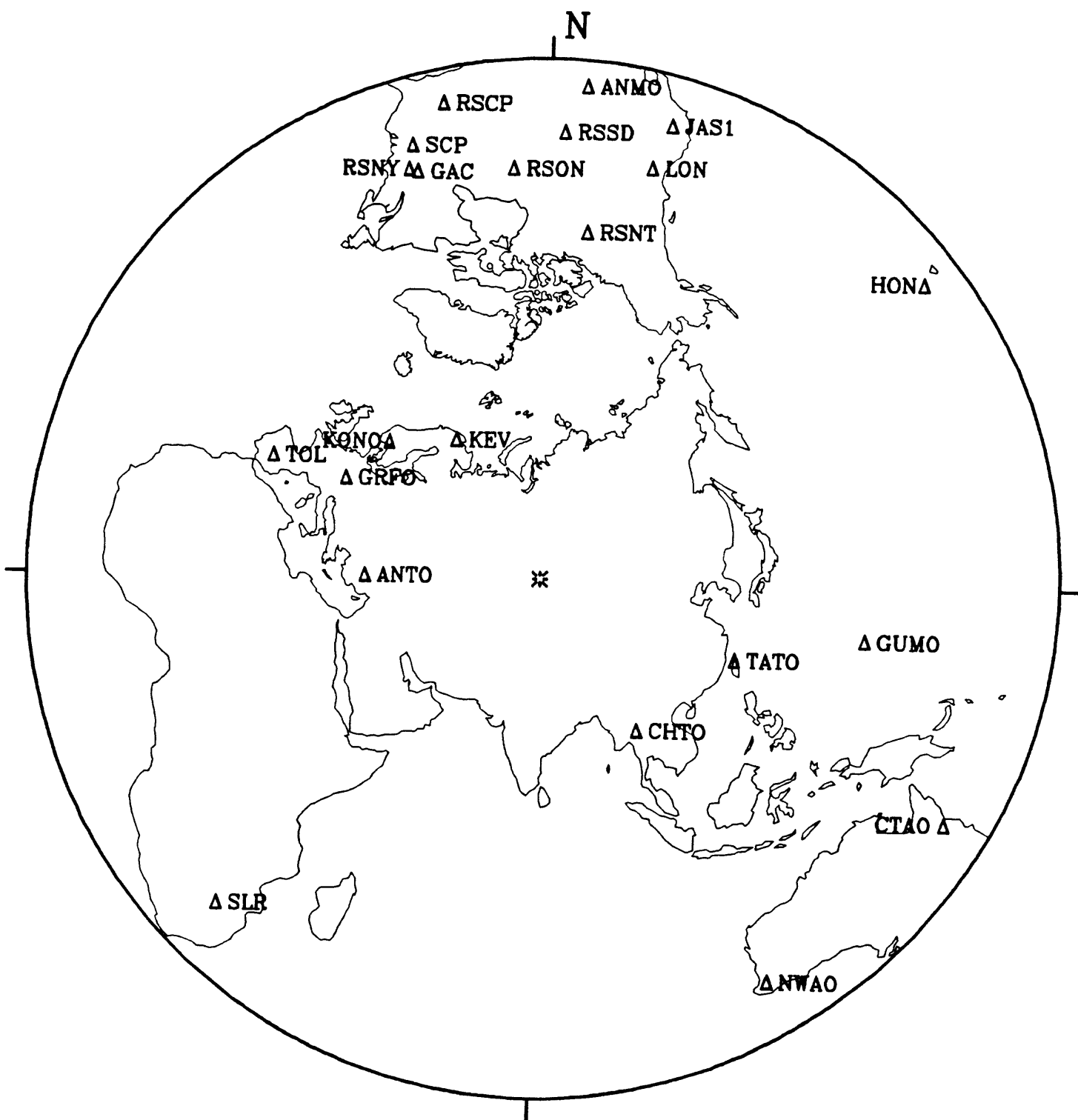
14 June 1985 13:14:14.91

LPZ

Off Coast of Southern Chile $h=33.0$ $m_b=5.5$ 

15 June 1985 00:57:00.77

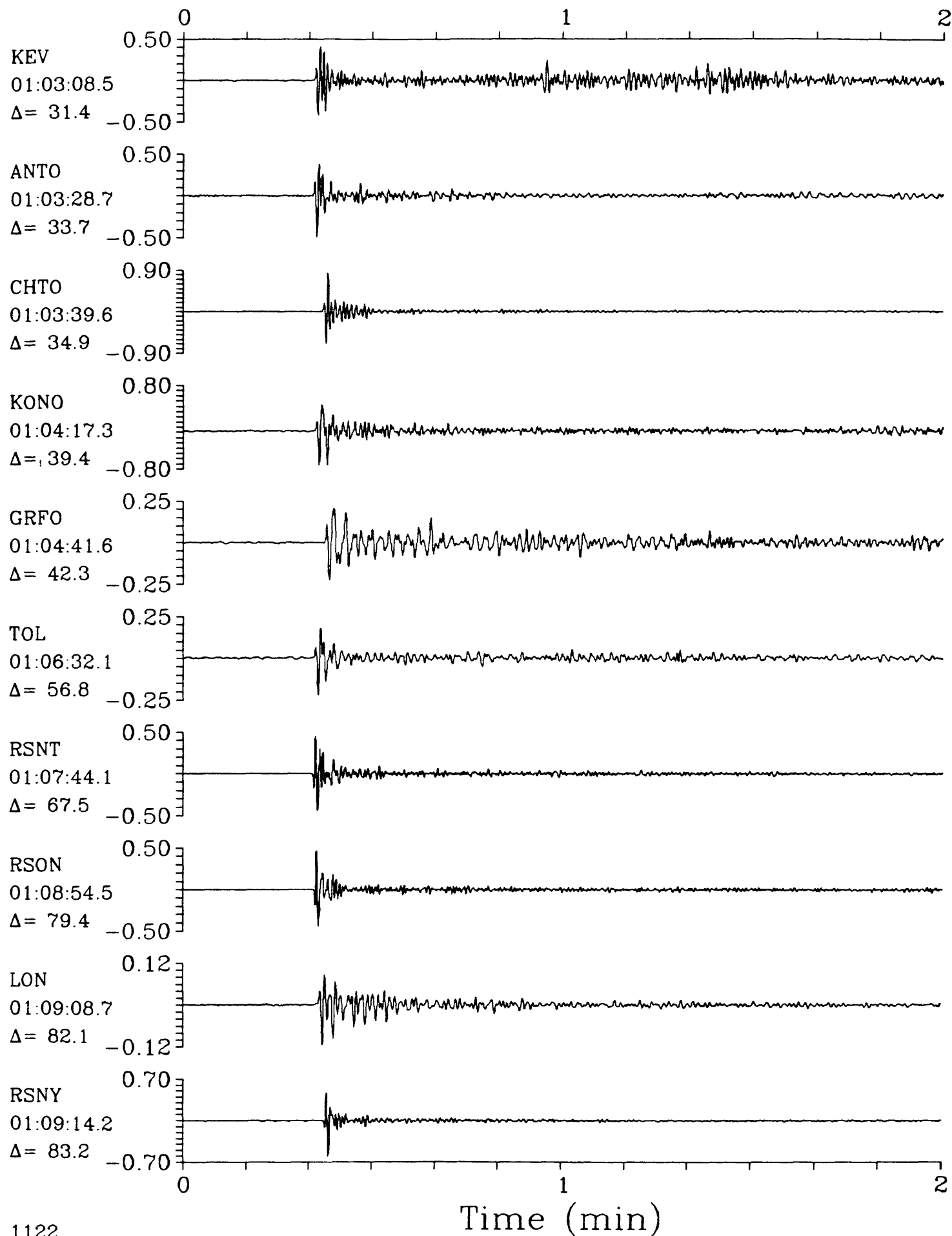
Eastern Kazakh SSR



SPZ

15 June 1985 00:57:00.77

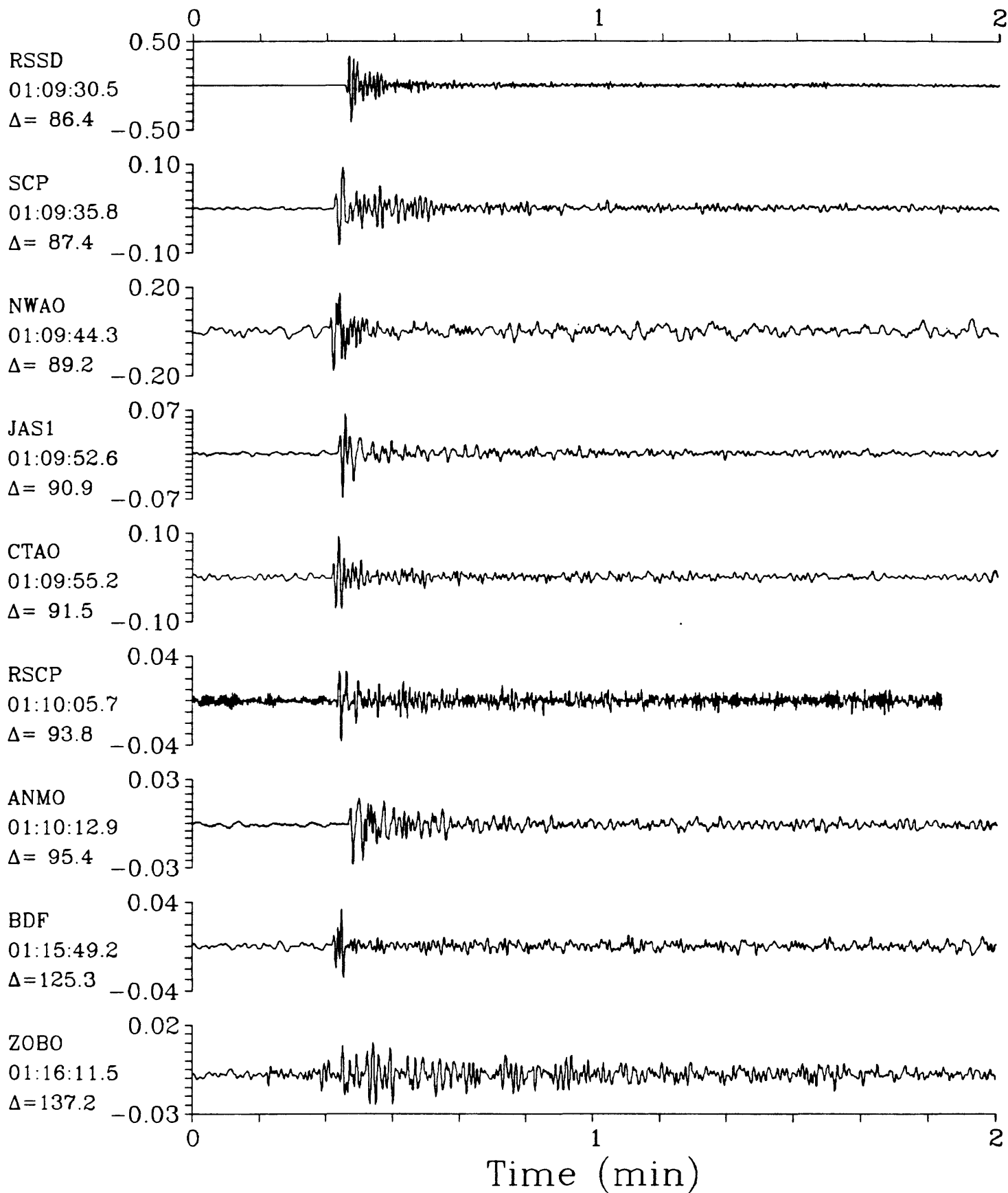
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.3$ 

SPZ

15 June 1985 00:57:00.77

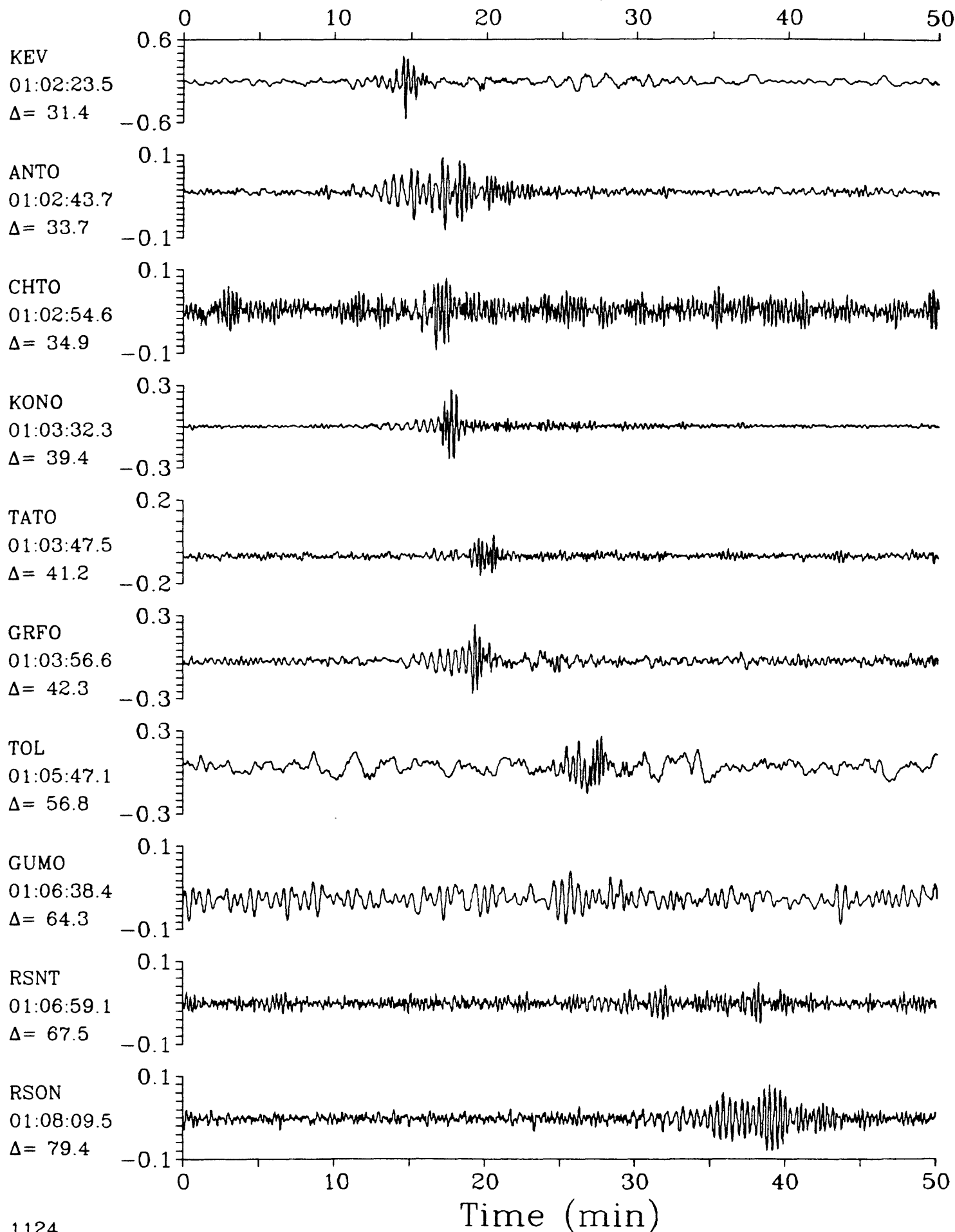
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.3$ 

LPZ

15 June 1985 00:57:00.77

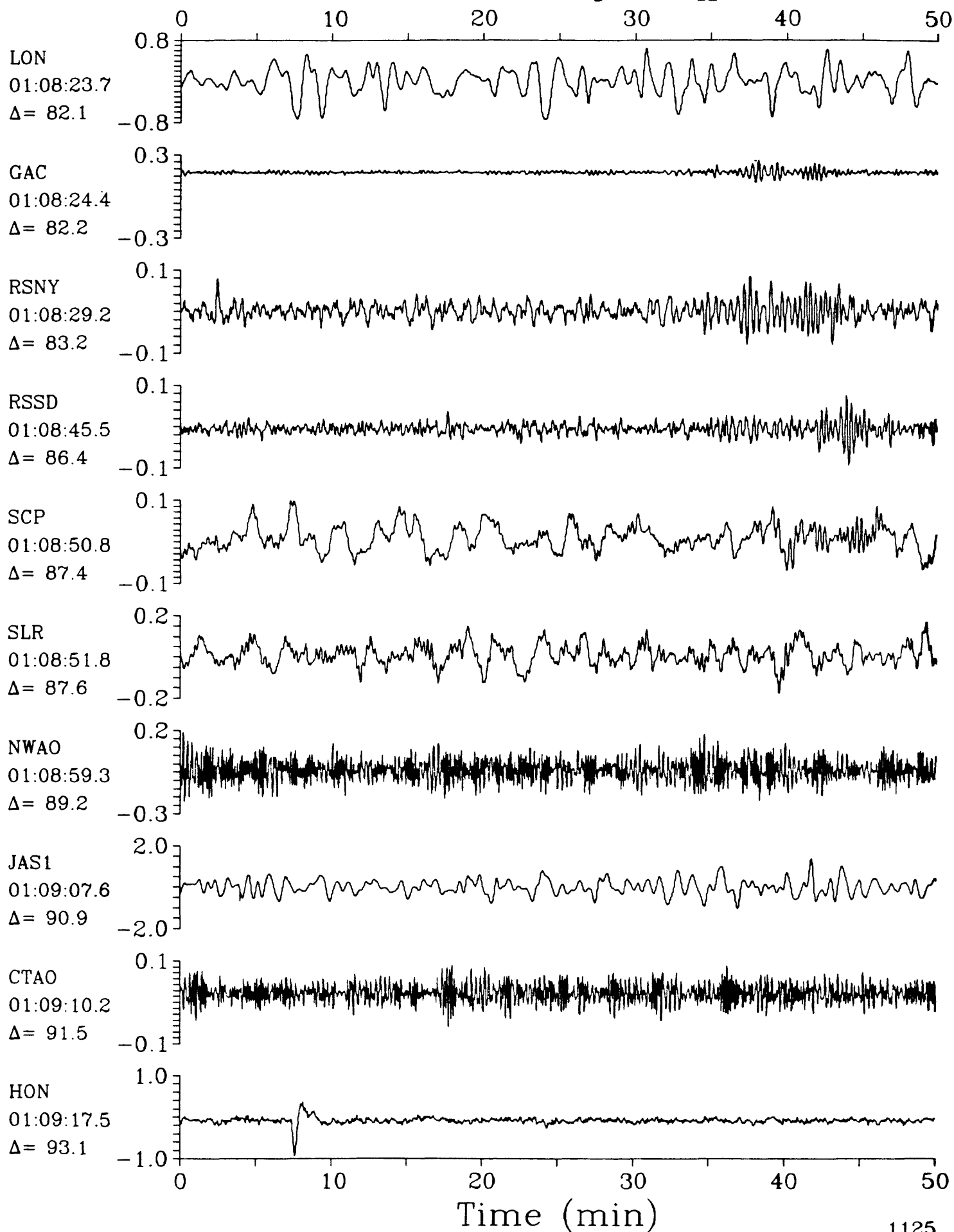
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.3$ 

LPZ

15 June 1985 00:57:00.77

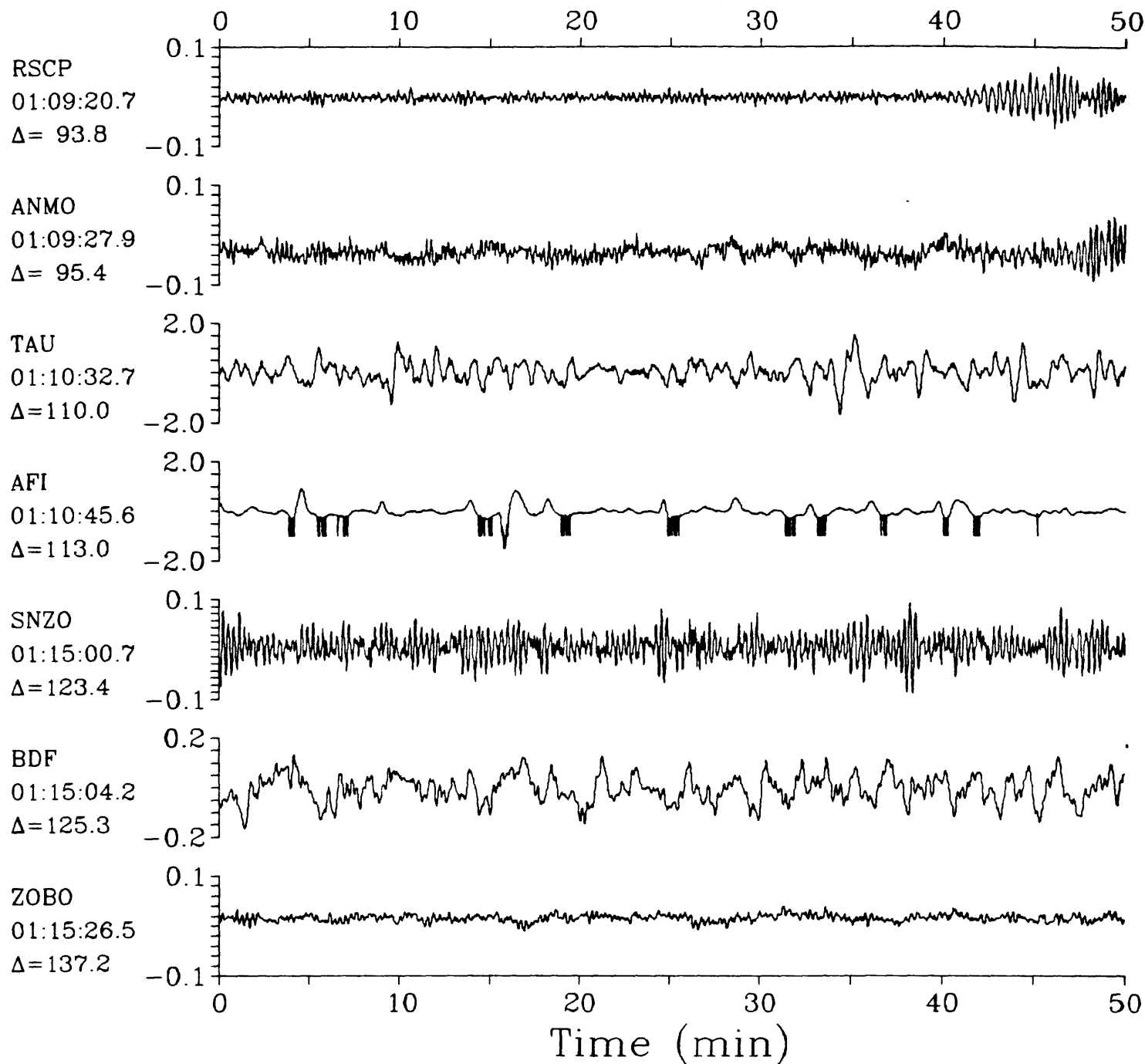
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.3$ 

LPZ

15 June 1985 00:57:00.77

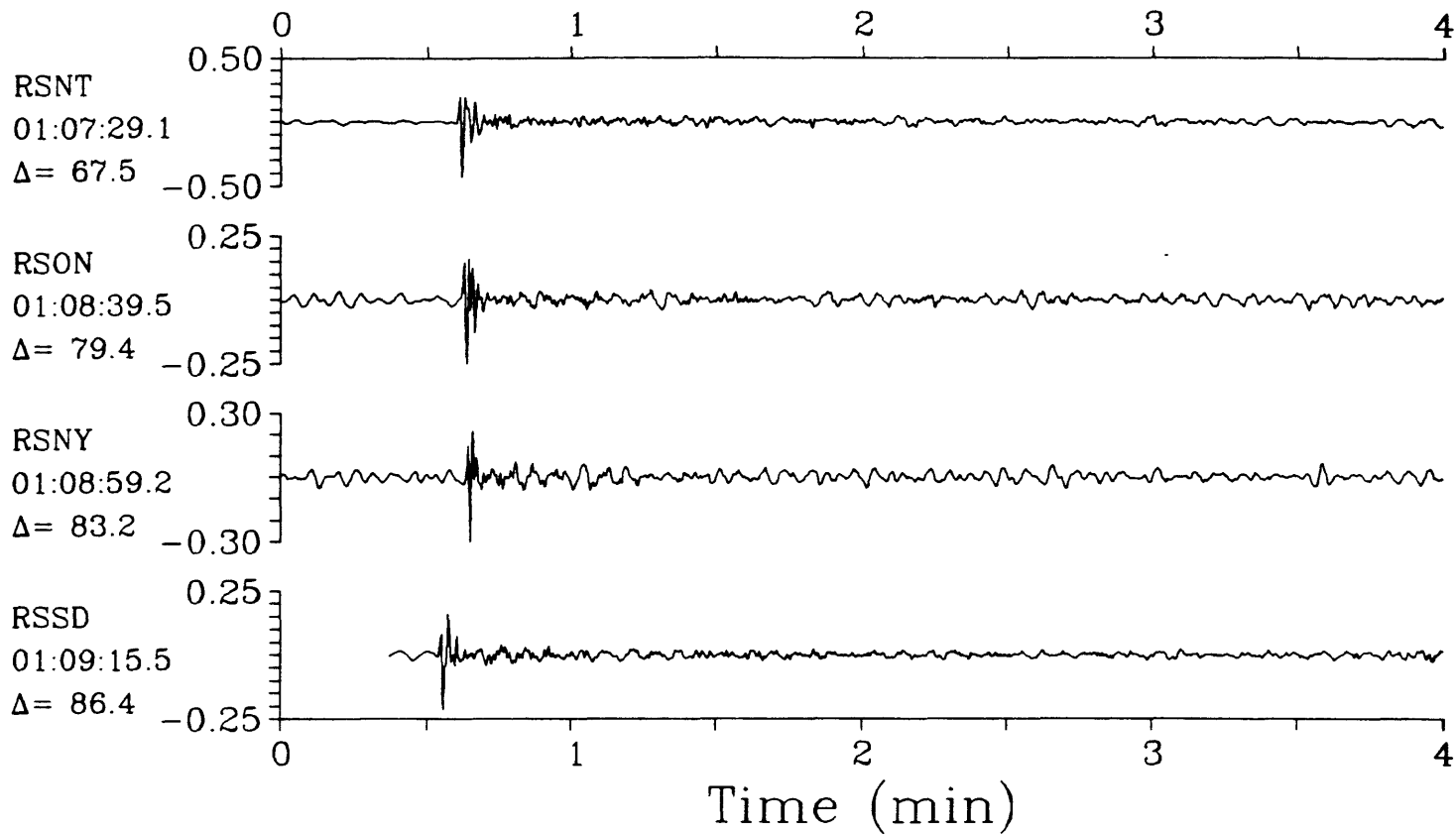
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{SZ}=4.3$ 

IPZ

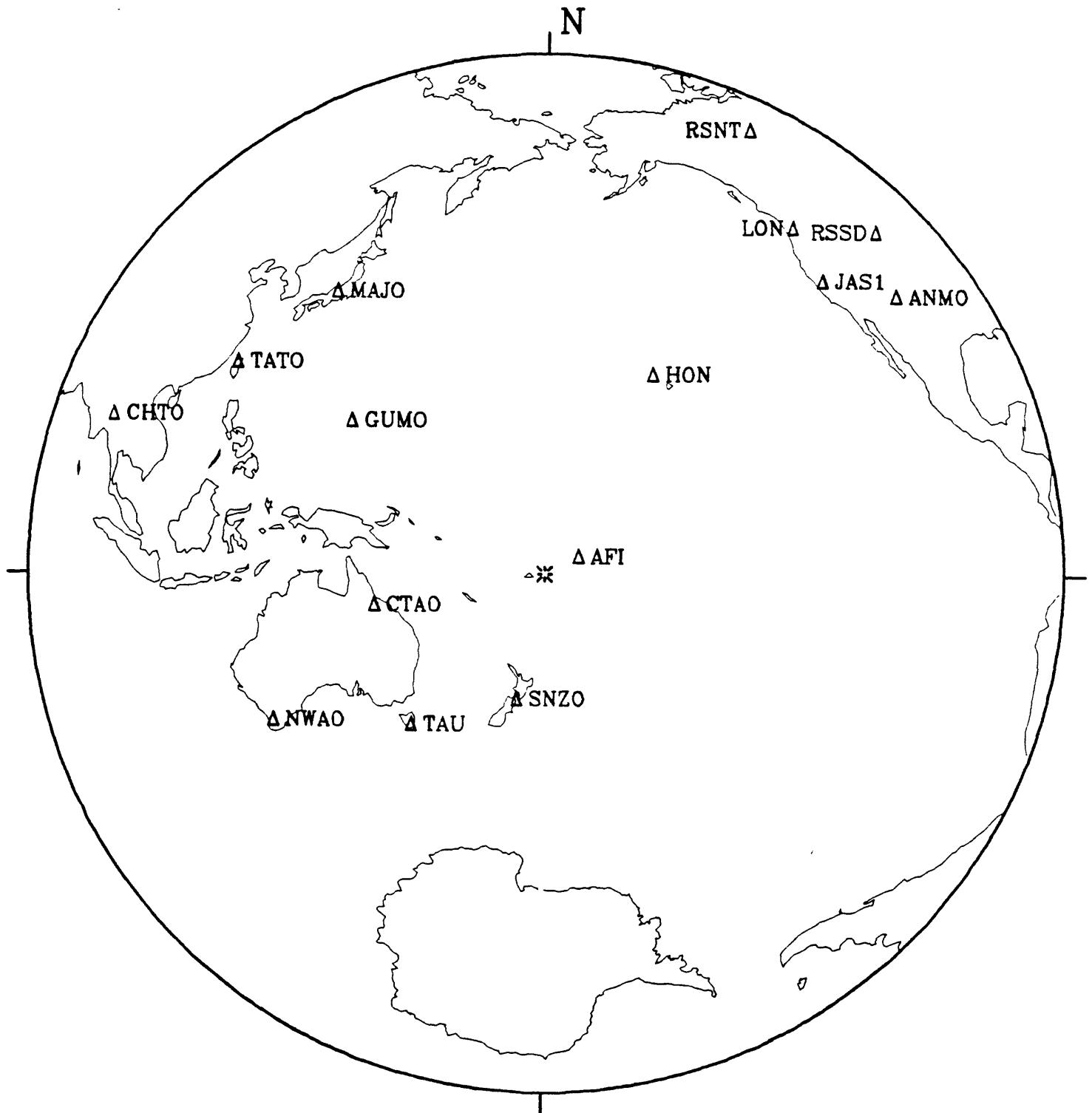
15 June 1985 00:57:00.77

IPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.3$ 

17 June 1985 01:09:27.83

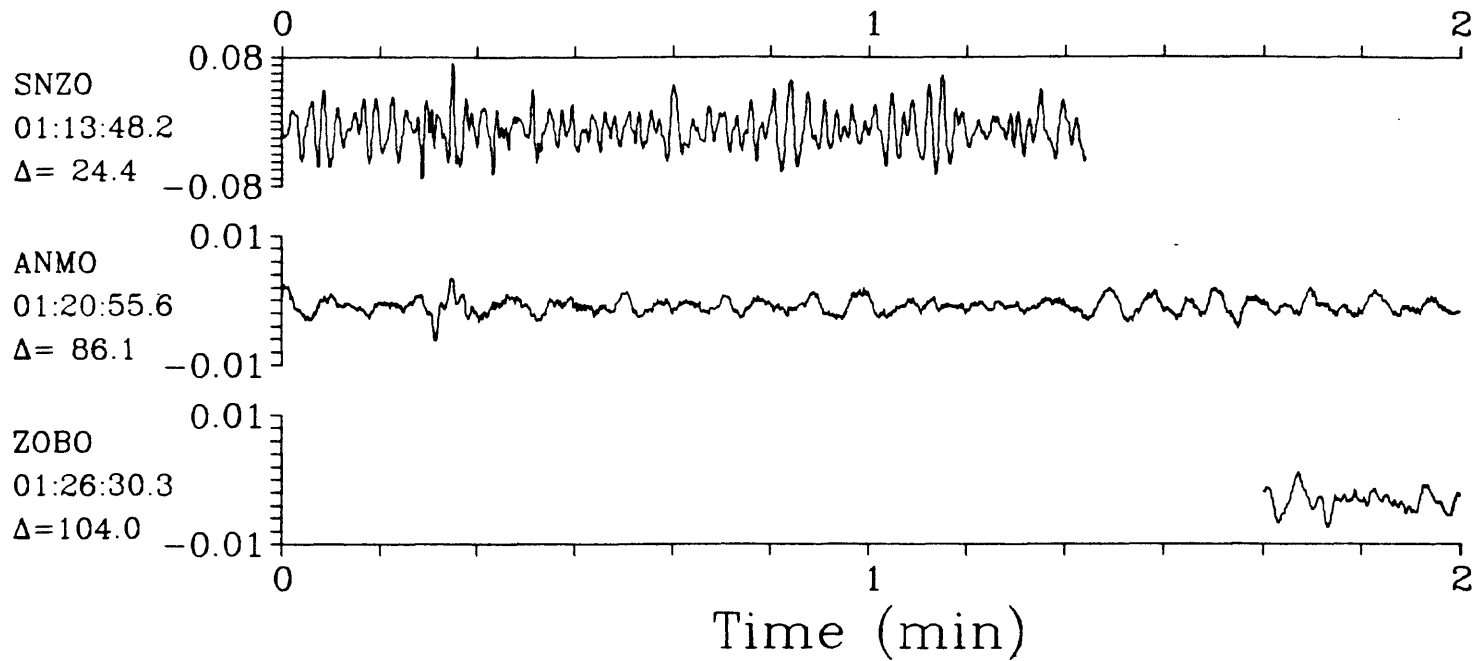
Fiji Islands Region



SPZ

17 June 1985 01:09:27.83

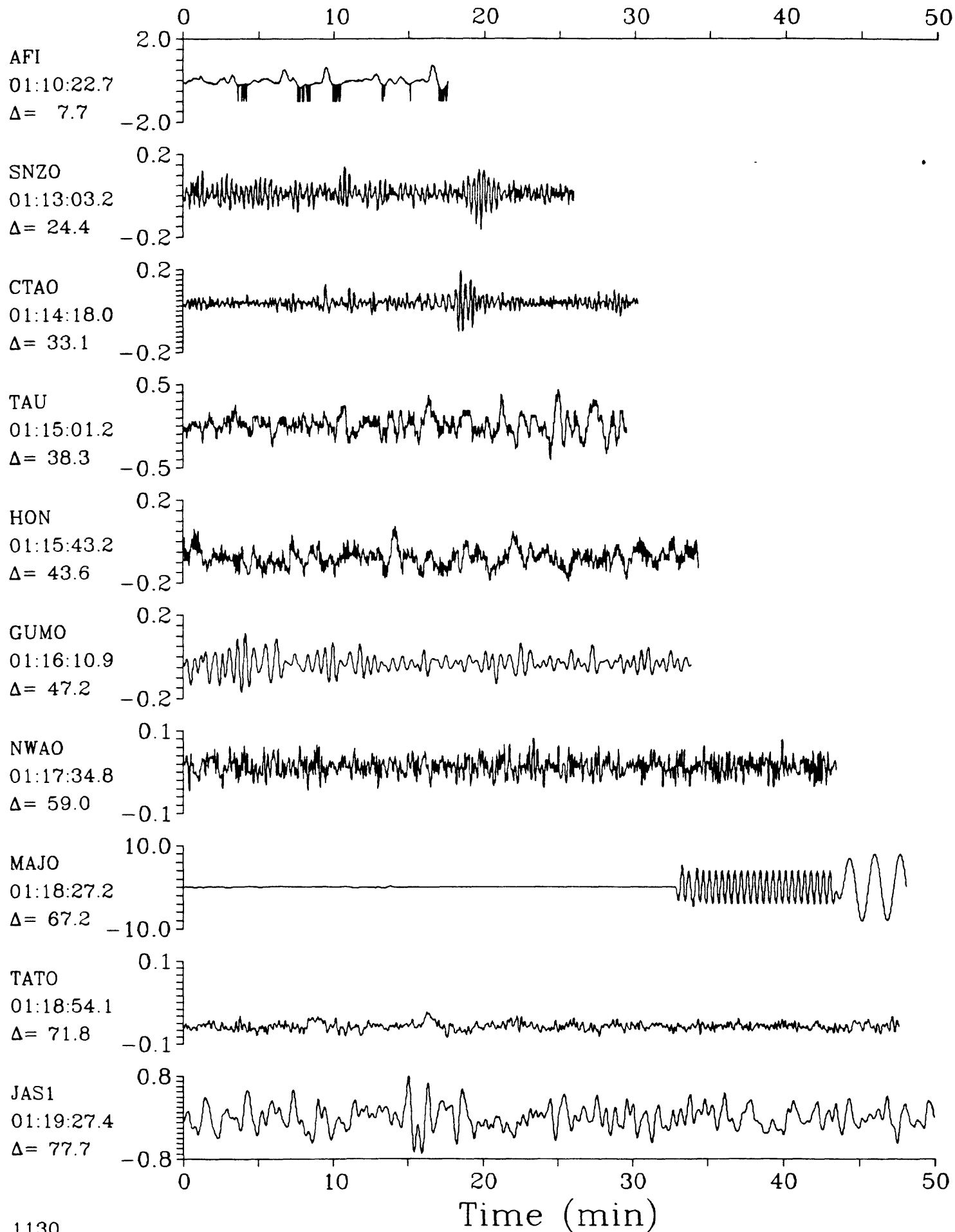
SPZ

Fiji Islands Region $h=562.3$ $m_b=5.5$ 

LPZ

17 June 1985 01:09:27.83

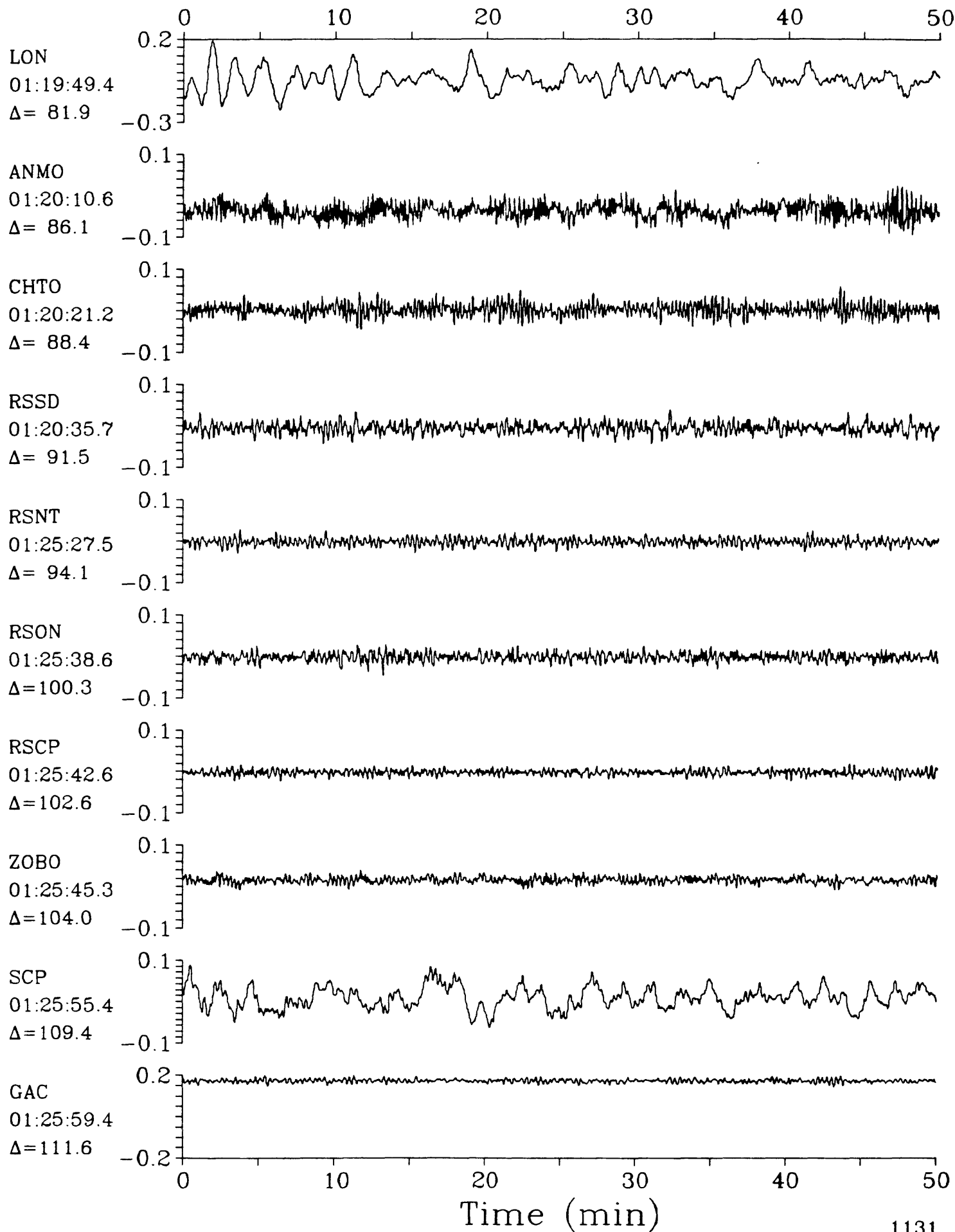
LPZ

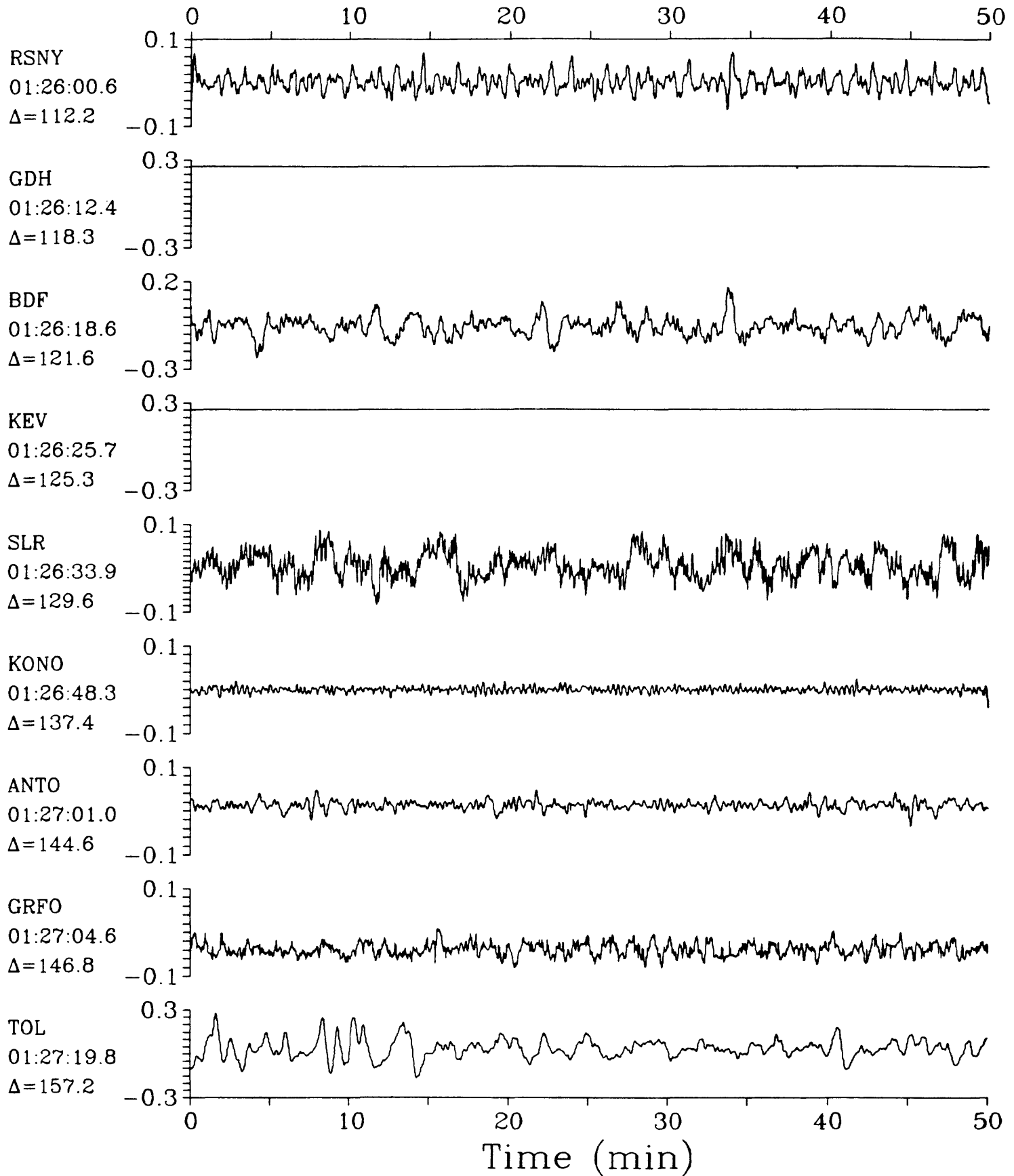
Fiji Islands Region $h=562.3$ $m_b=5.5$ 

LPZ

17 June 1985 01:09:27.83
Fiji Islands Region $h=562.3$ $m_b=5.5$

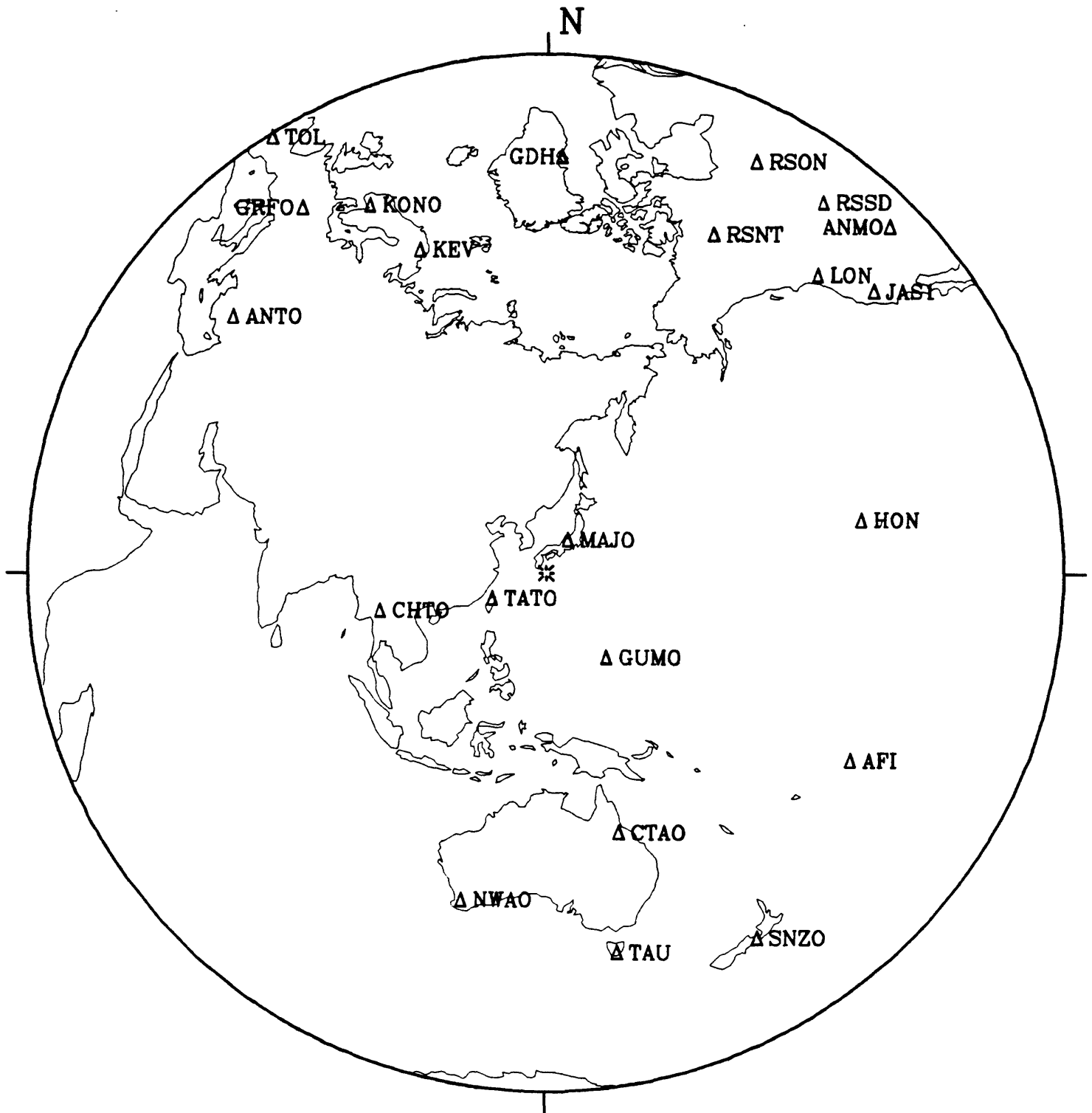
LPZ





17 June 1985 19:12:39.81

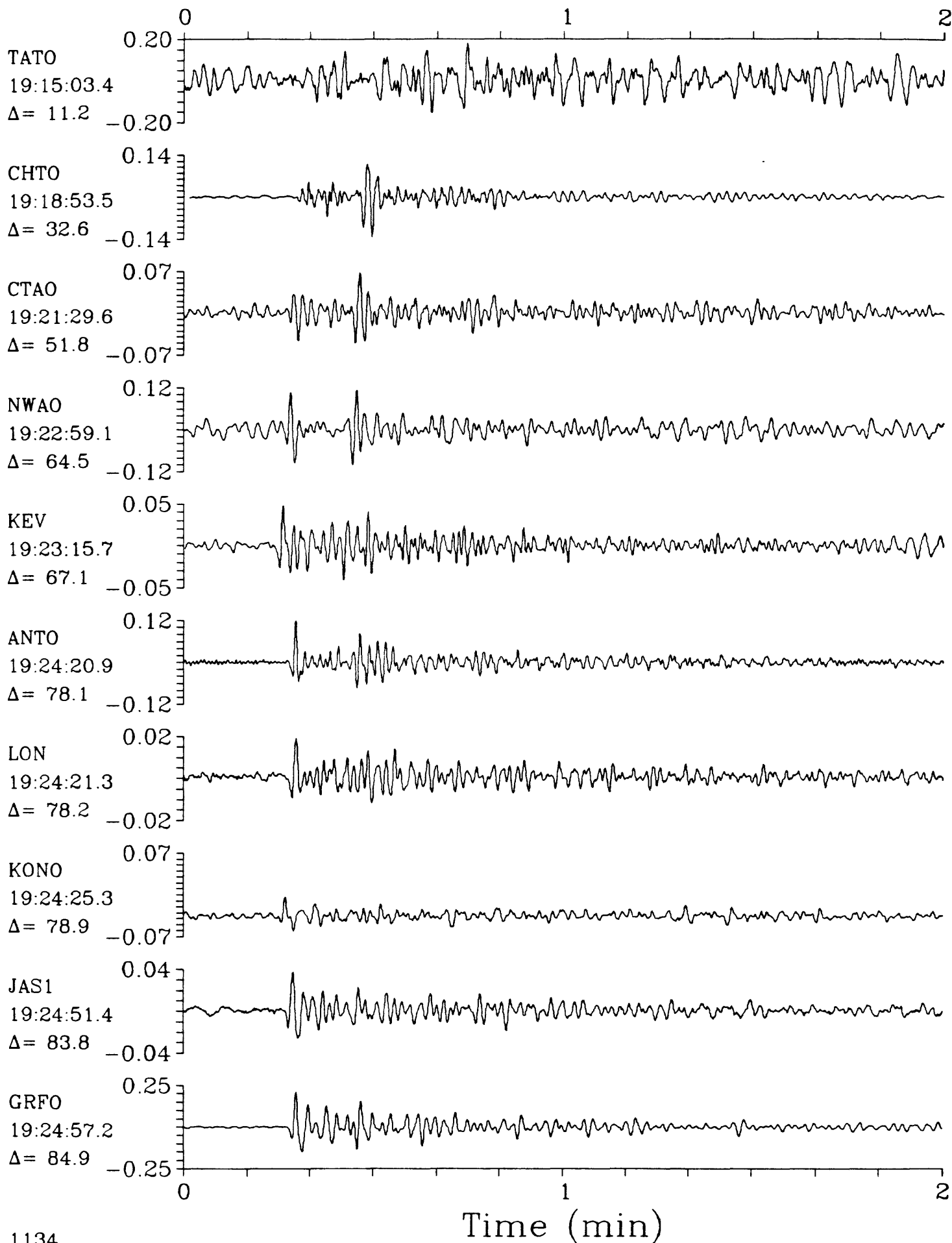
Southeast of Shikoku, Japan



SPZ

17 June 1985 19:12:39.81

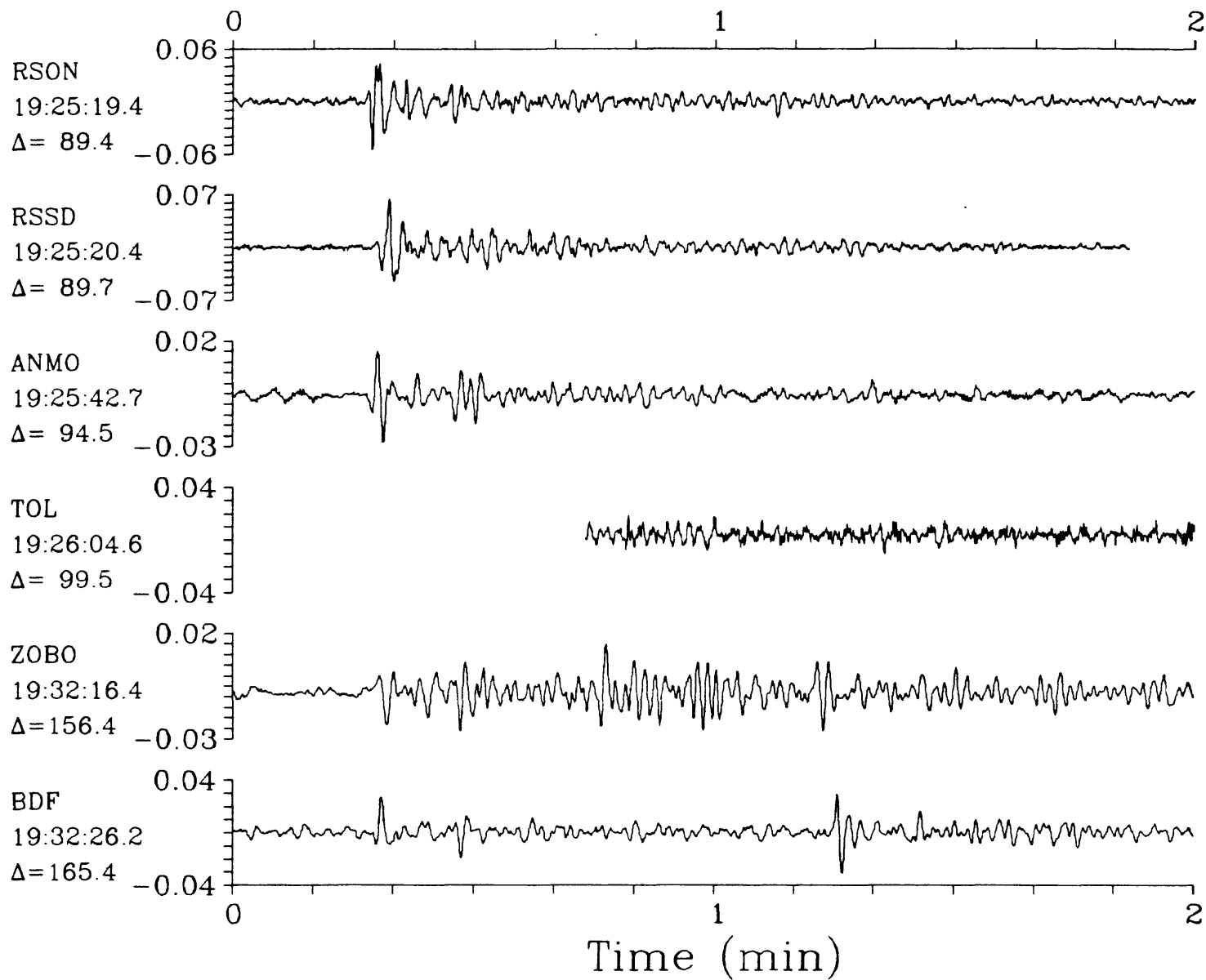
SPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

SPZ

17 June 1985 19:12:39.81

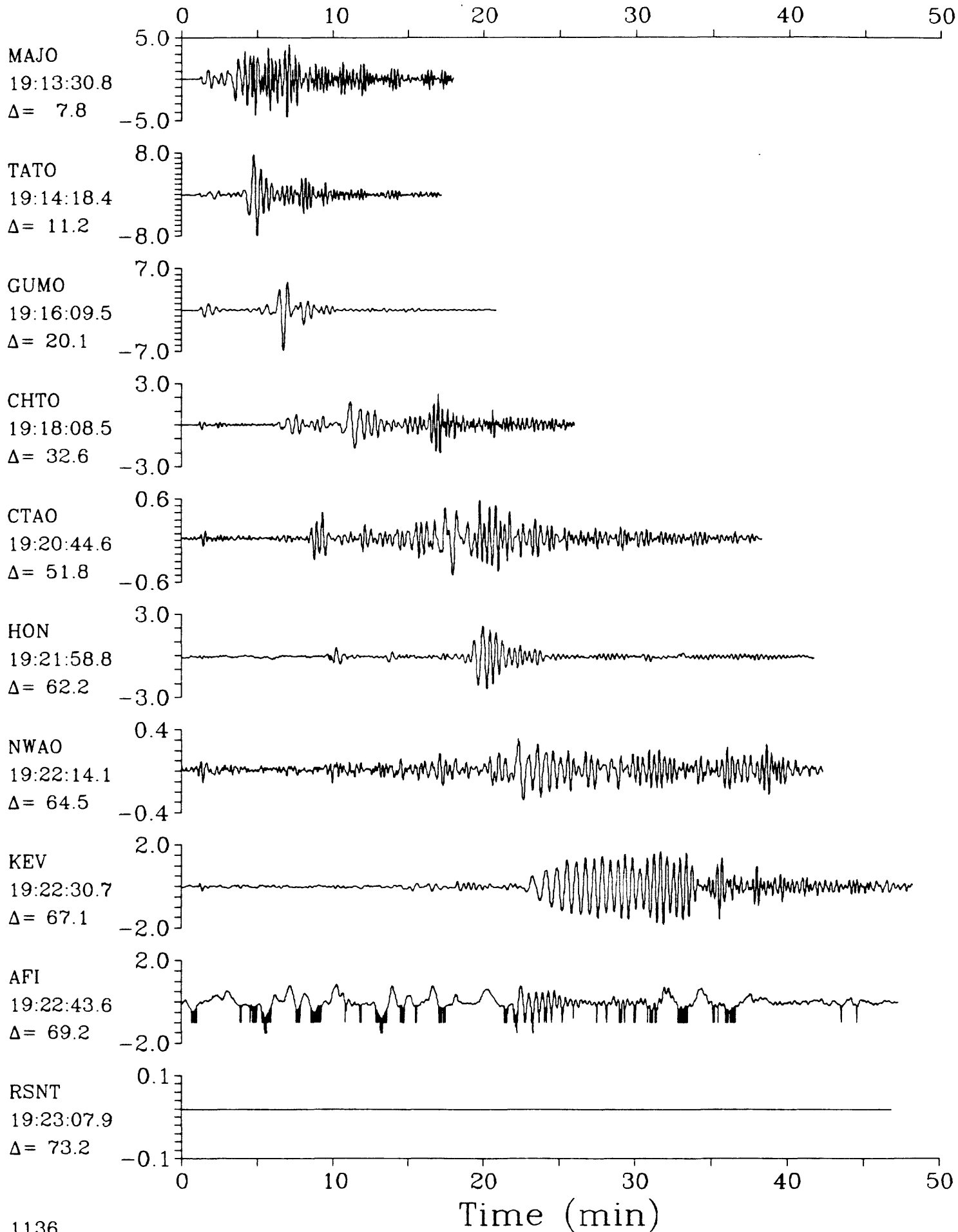
SPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

LPZ

17 June 1985 19:12:39.81

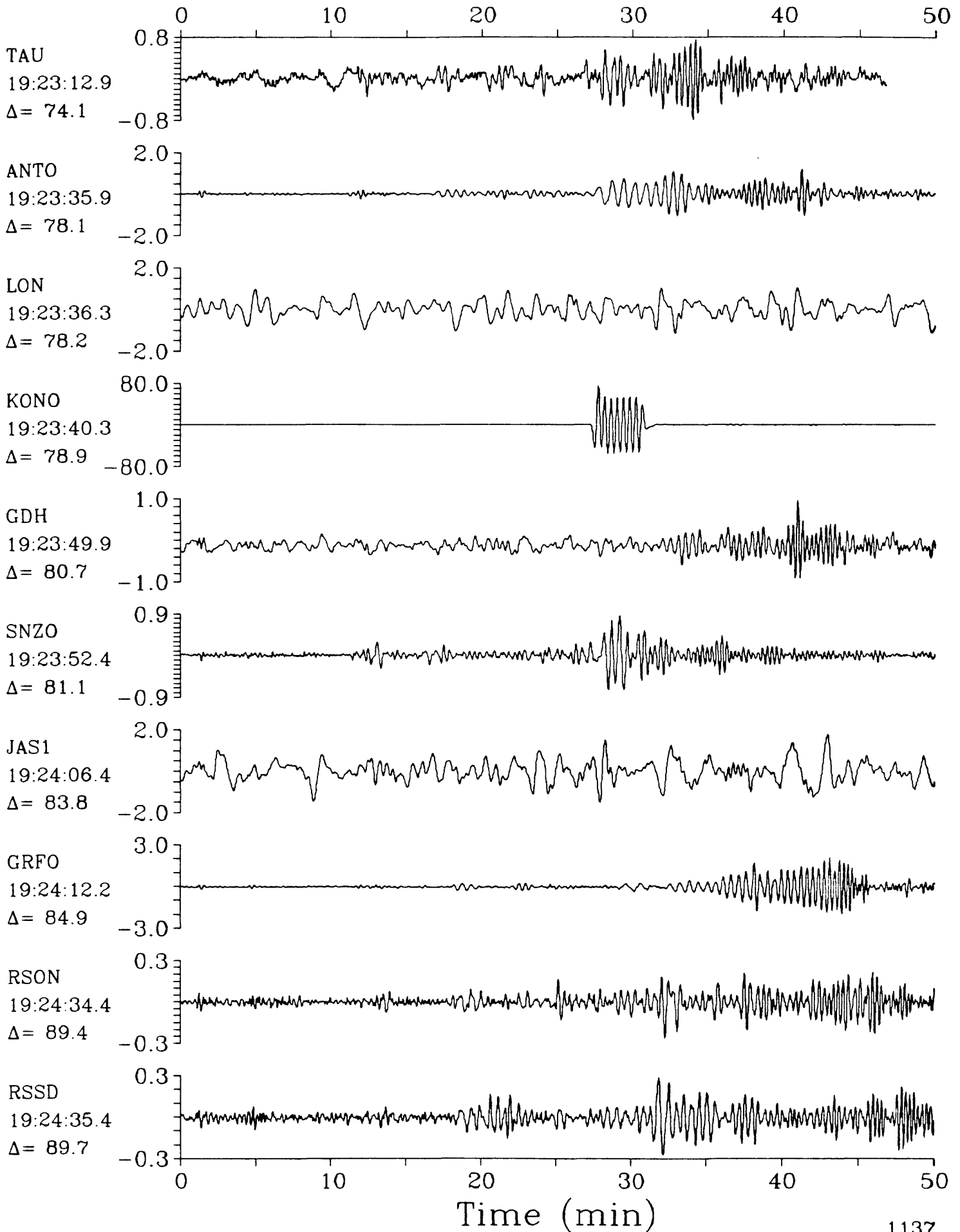
LPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

LPZ

17 June 1985 19:12:39.81

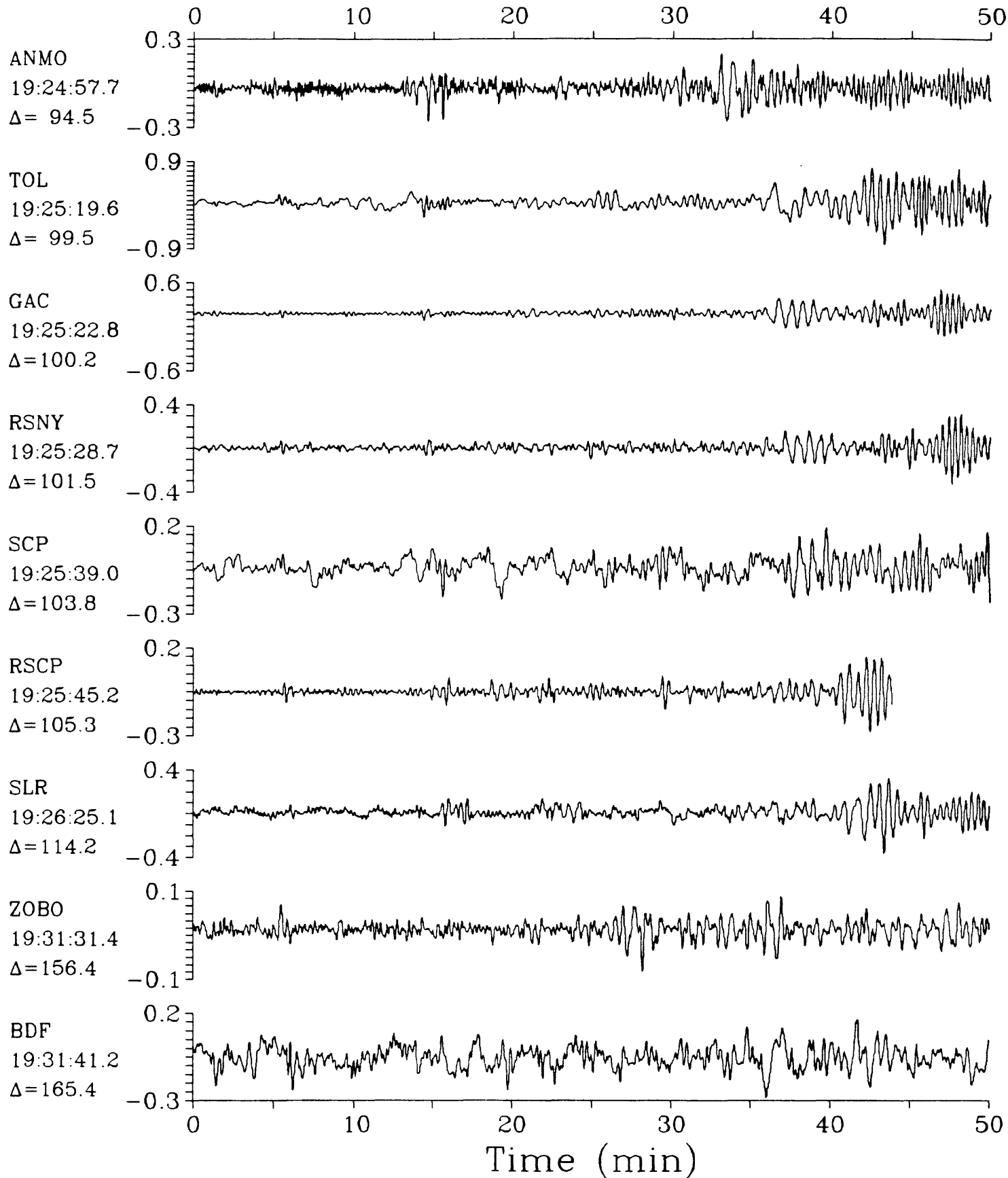
LPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

LPZ

17 June 1985 19:12:39.81

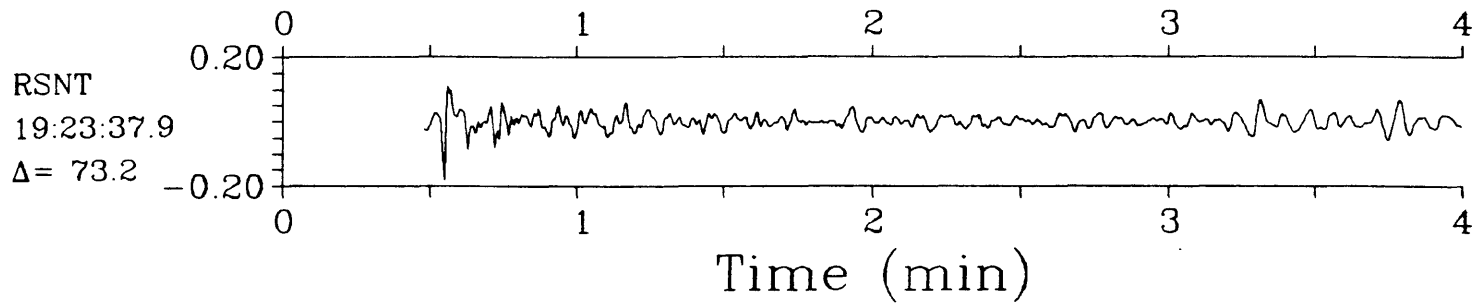
LPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

IPZ

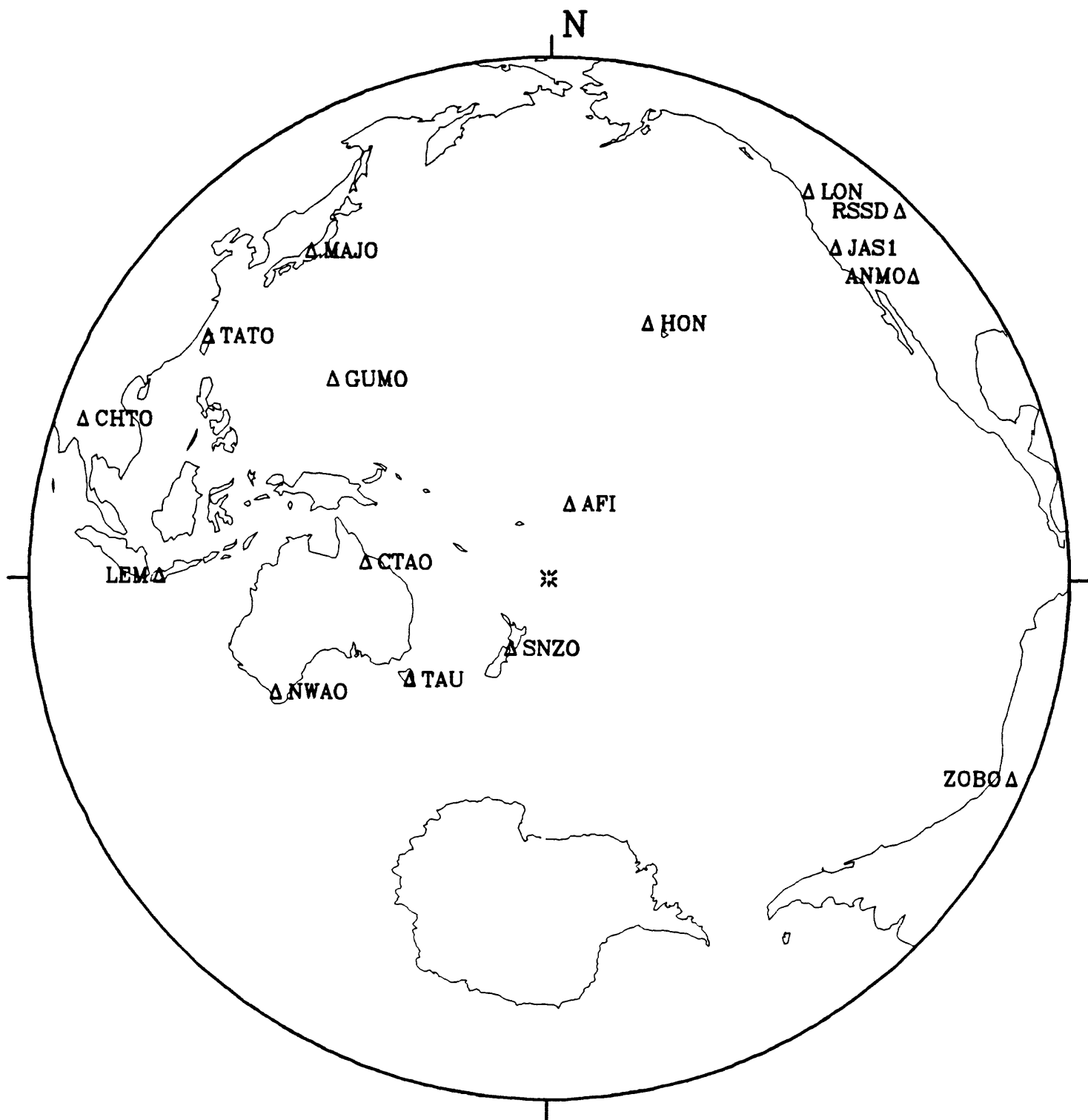
17 June 1985 19:12:39.81

IPZ

Southeast of Shikoku, Japan $h=33.0$ $m_b=5.9$ $M_{sz}=5.4$ 

21 June 1985 04:31:15.17

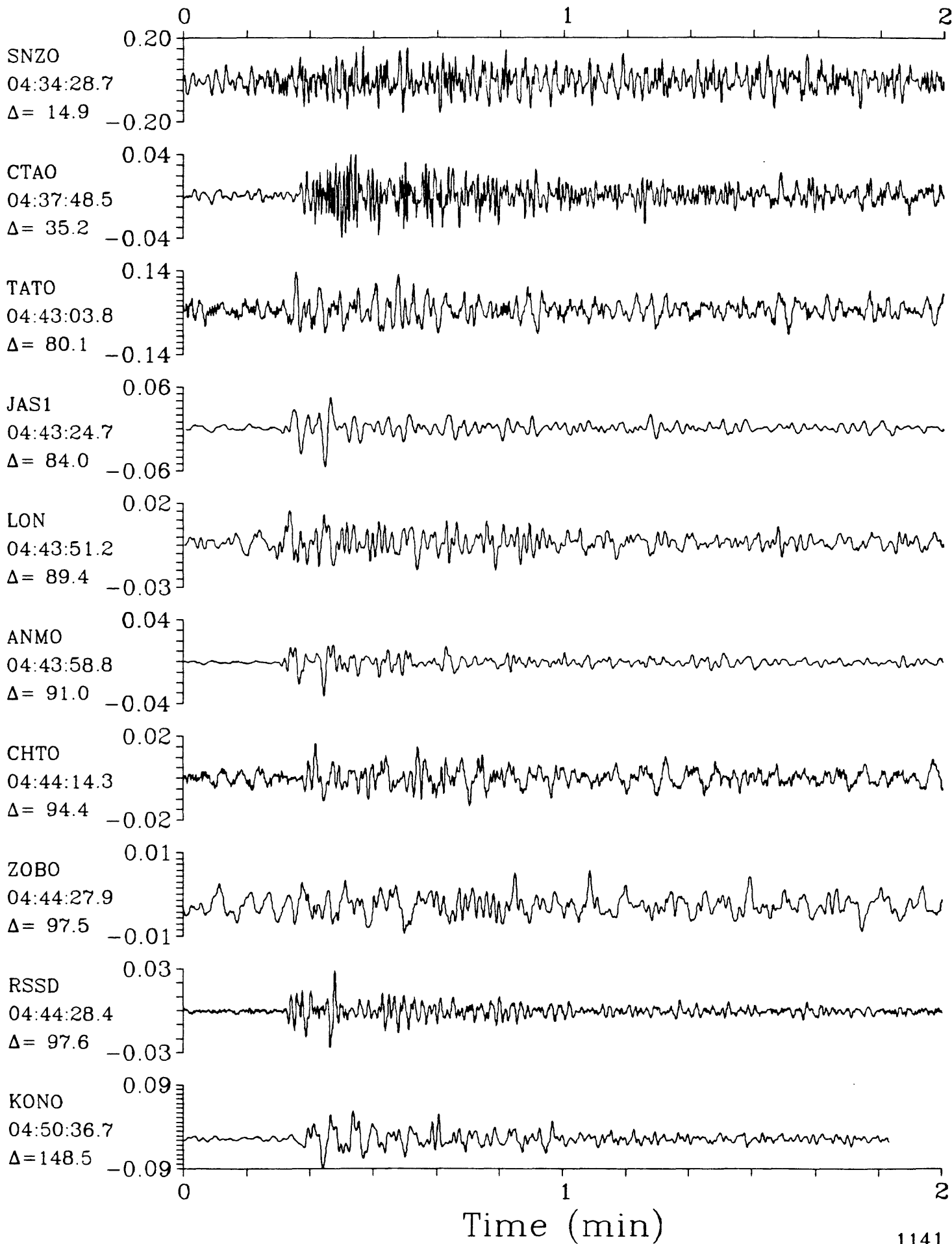
Kermadec Islands Region



SPZ

21 June 1985 04:31:15.17

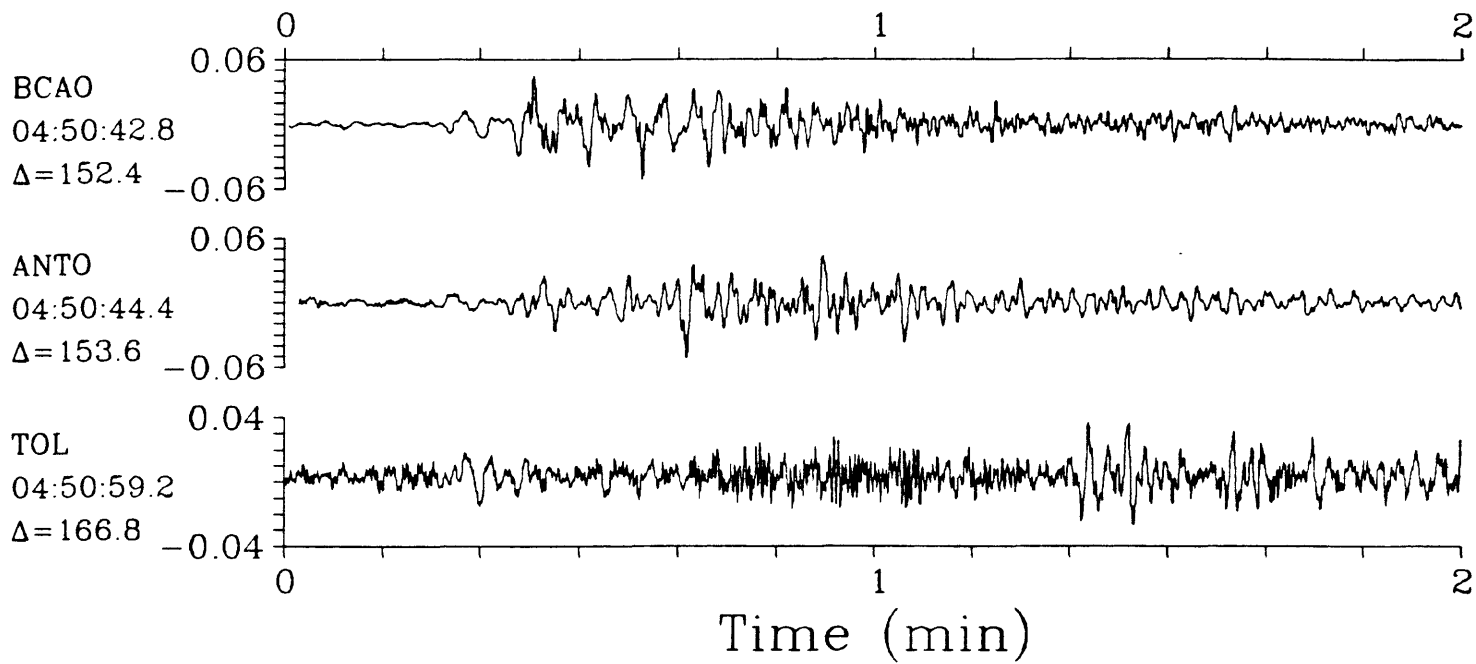
SPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

SPZ

21 June 1985 04:31:15.17

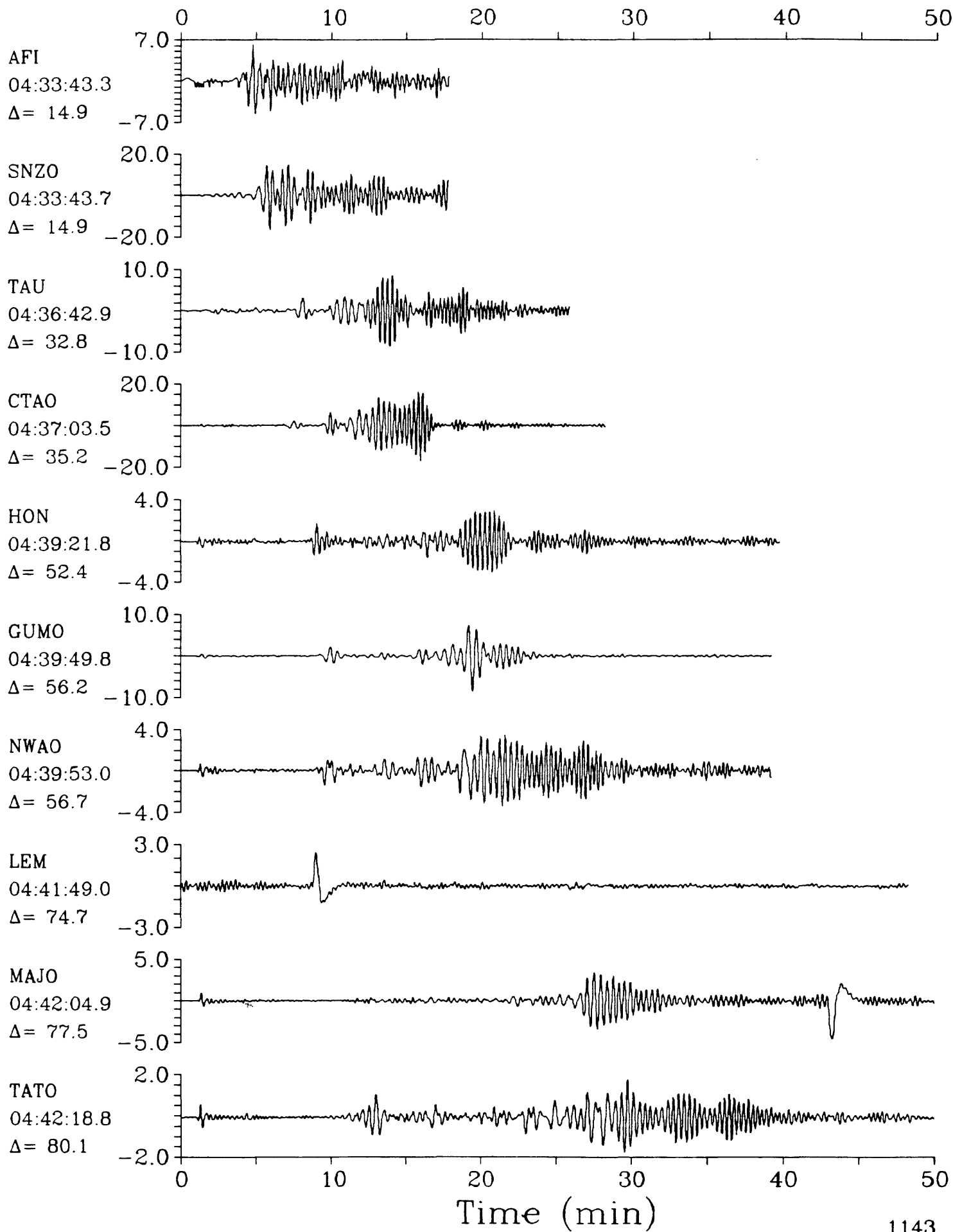
SPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

LPZ

21 June 1985 04:31:15.17

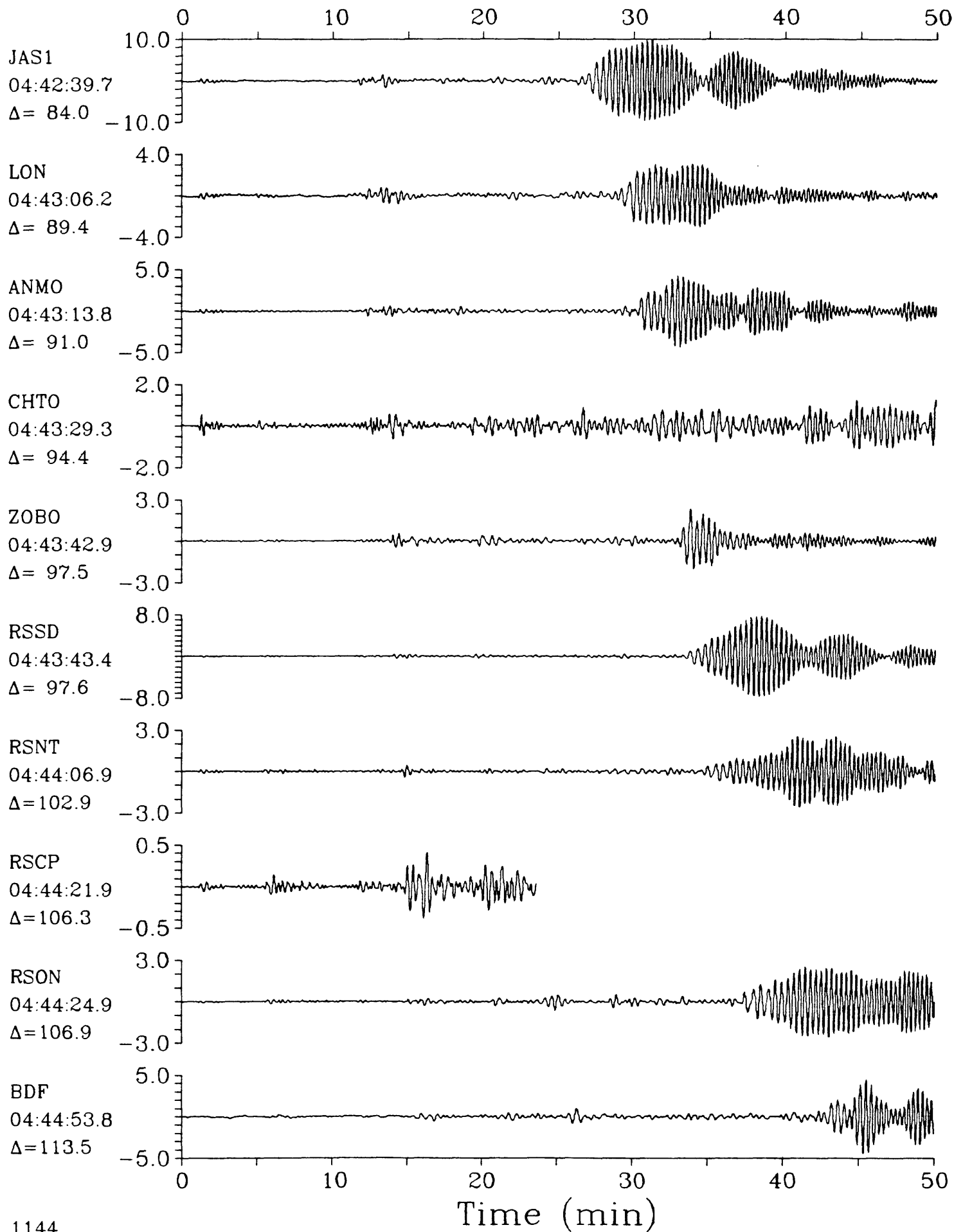
LPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

LPZ

21 June 1985 04:31:15.17

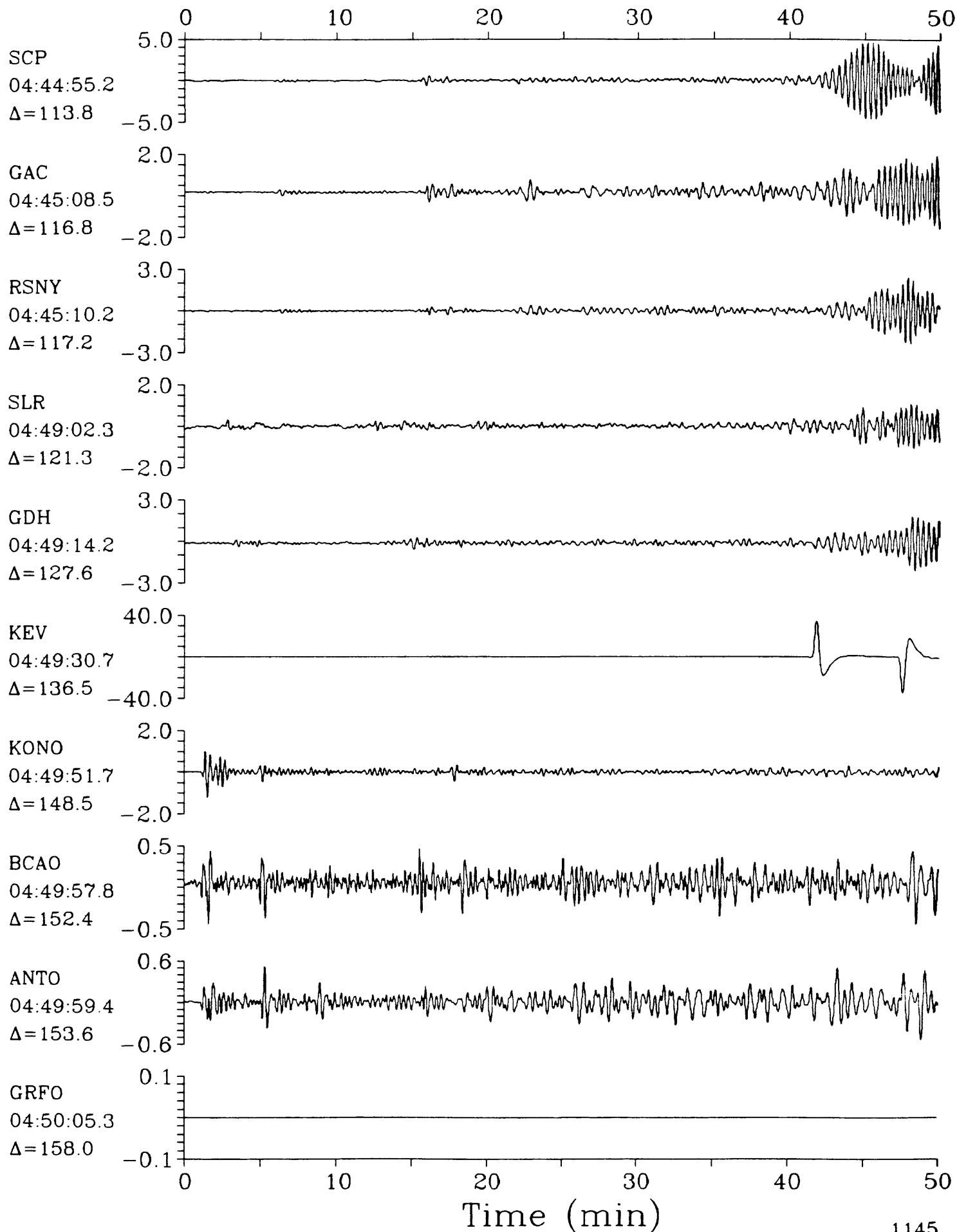
LPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

LPZ

21 June 1985 04:31:15.17

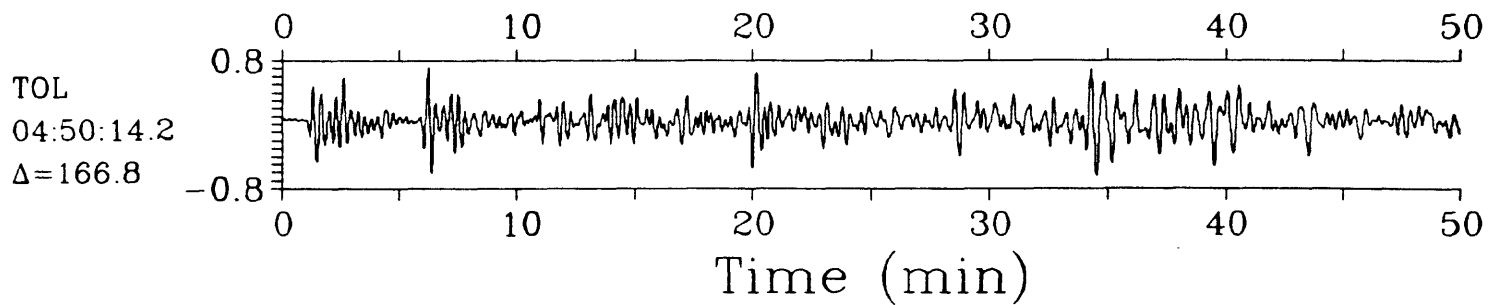
LPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

LPZ

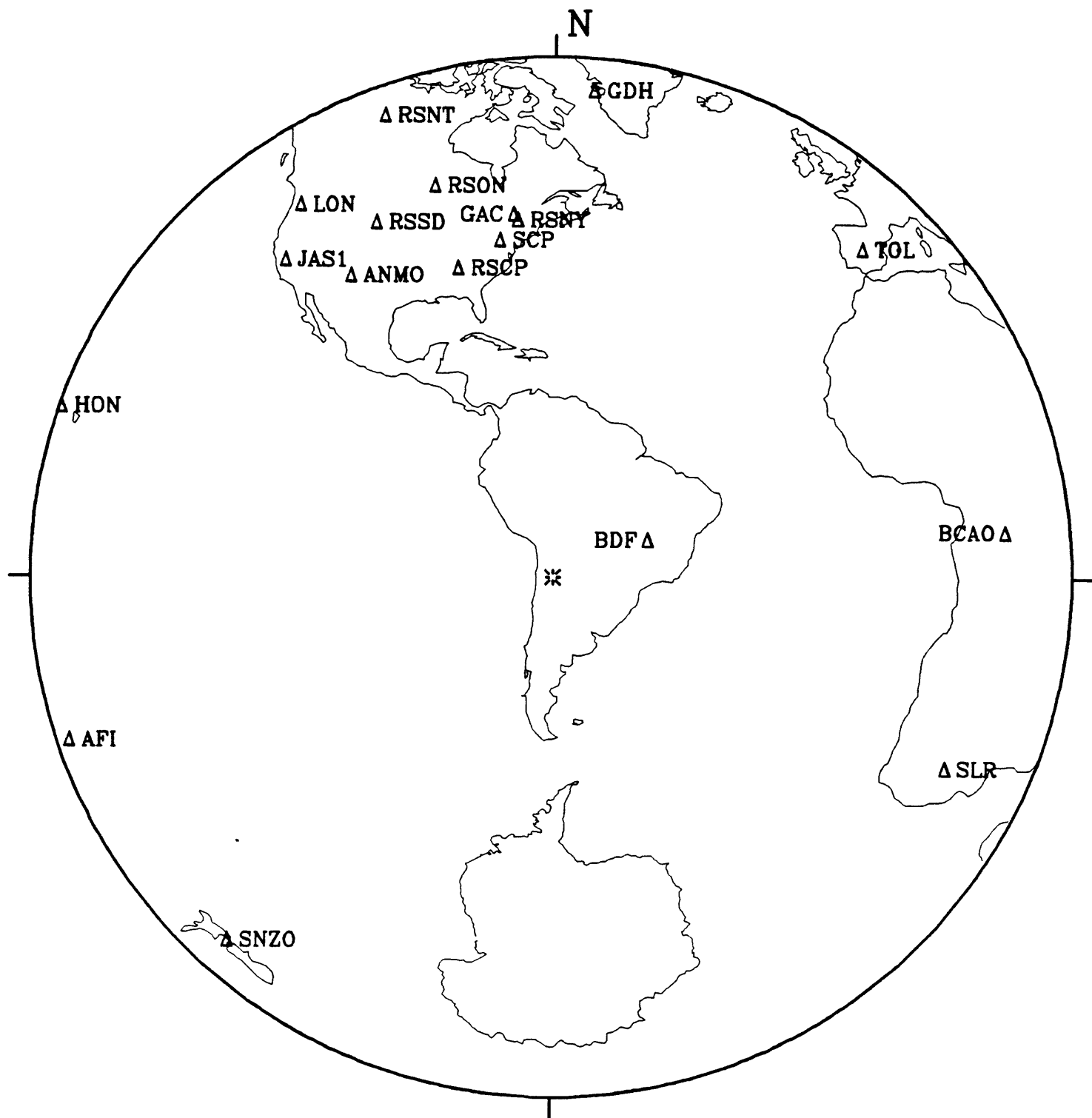
21 June 1985 04:31:15.17

LPZ

Kermadec Islands Region $h=60.2$ $m_b=5.4$ $M_{sz}=5.8$ 

23 June 1985 06:55:23.79

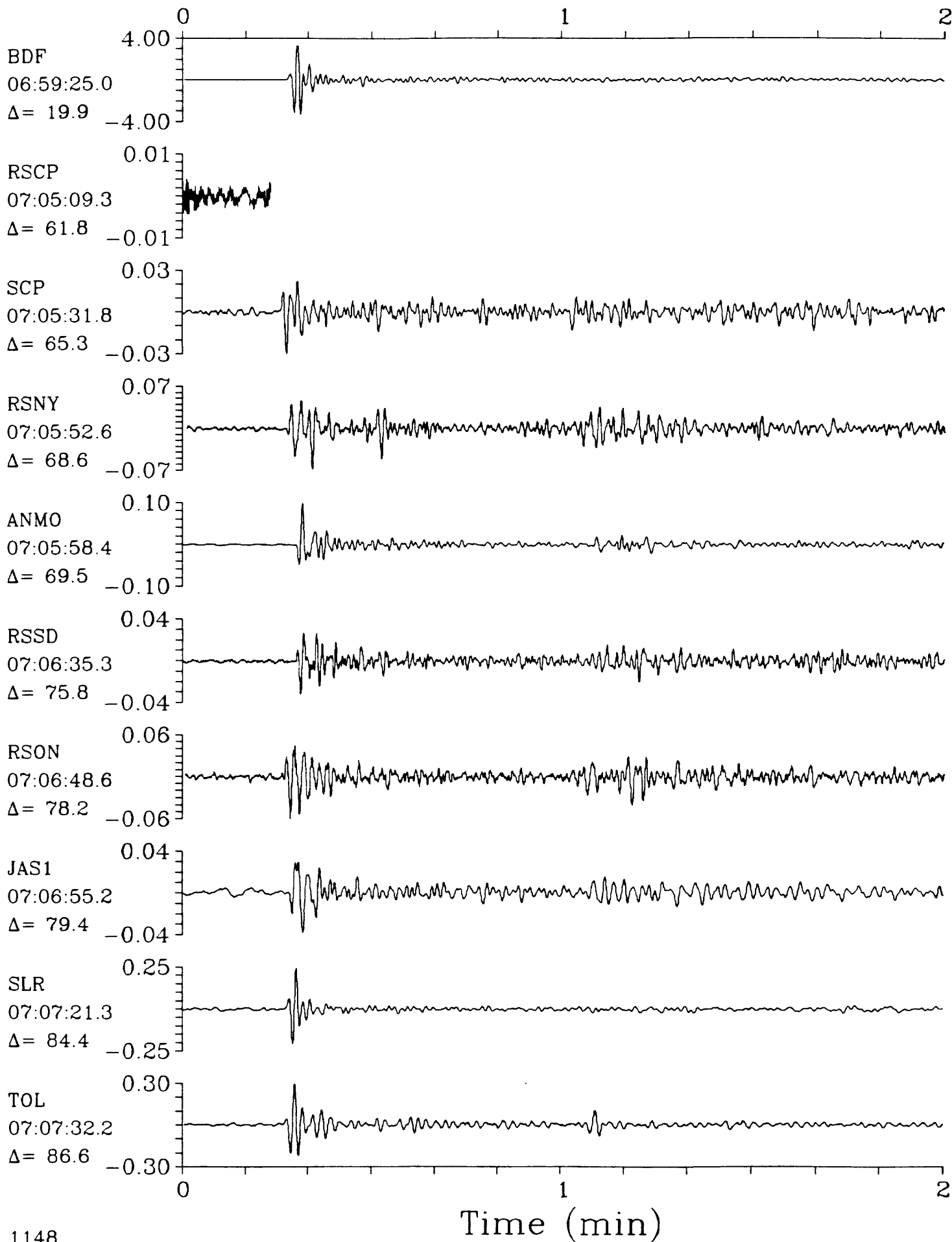
Chile–Argentina Border Region

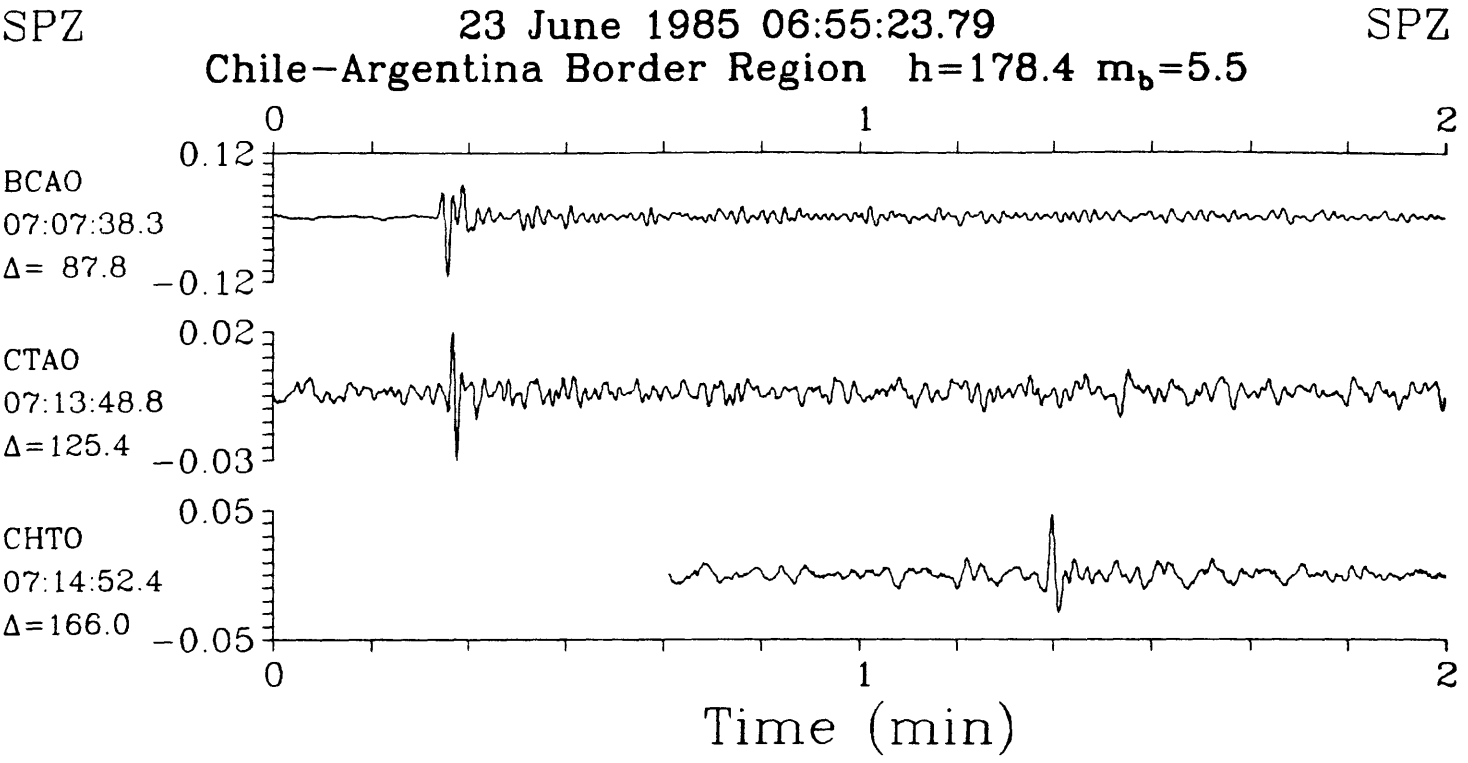


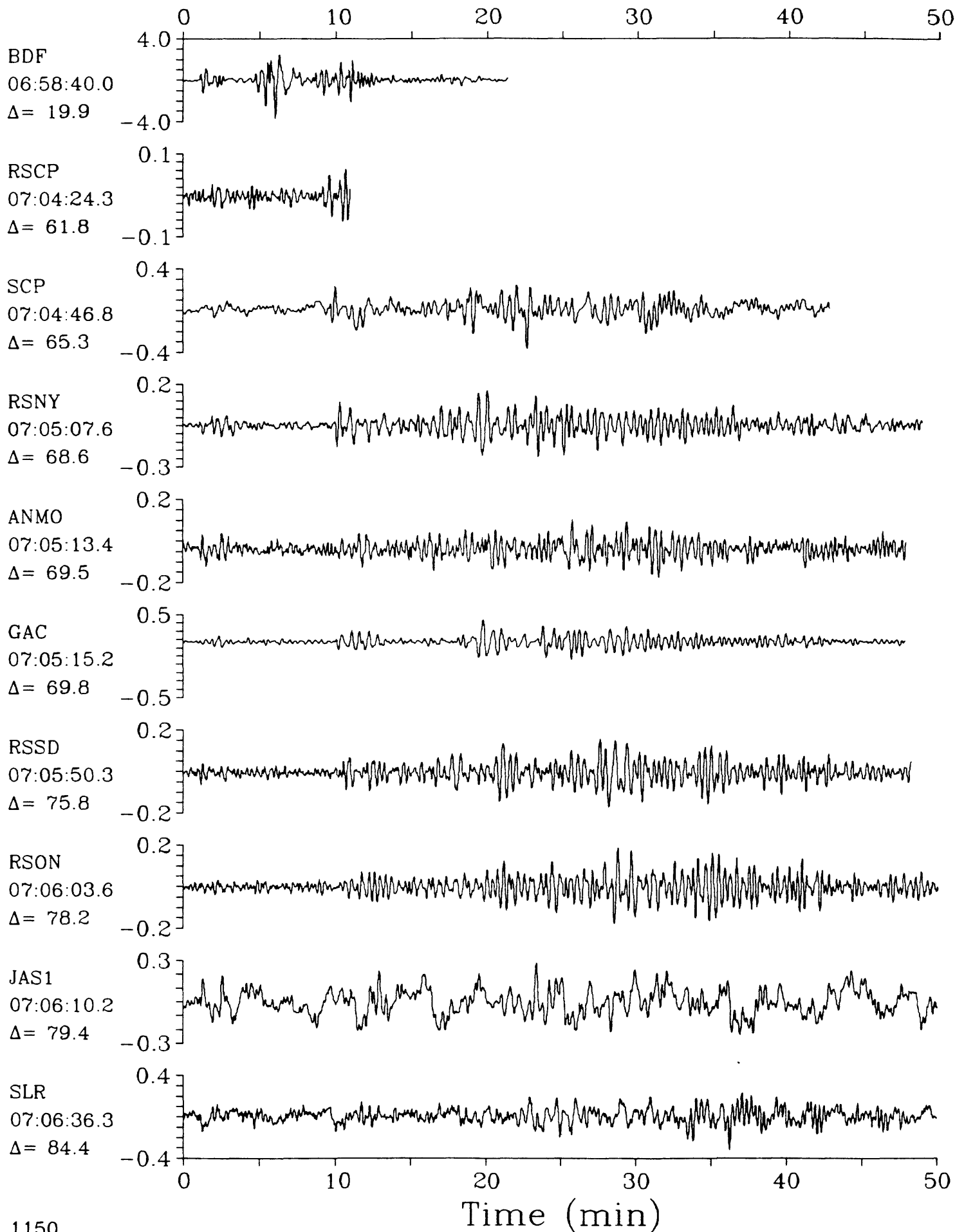
SPZ

23 June 1985 06:55:23.79

SPZ

Chile-Argentina Border Region $h=178.4$ $m_b=5.5$ 

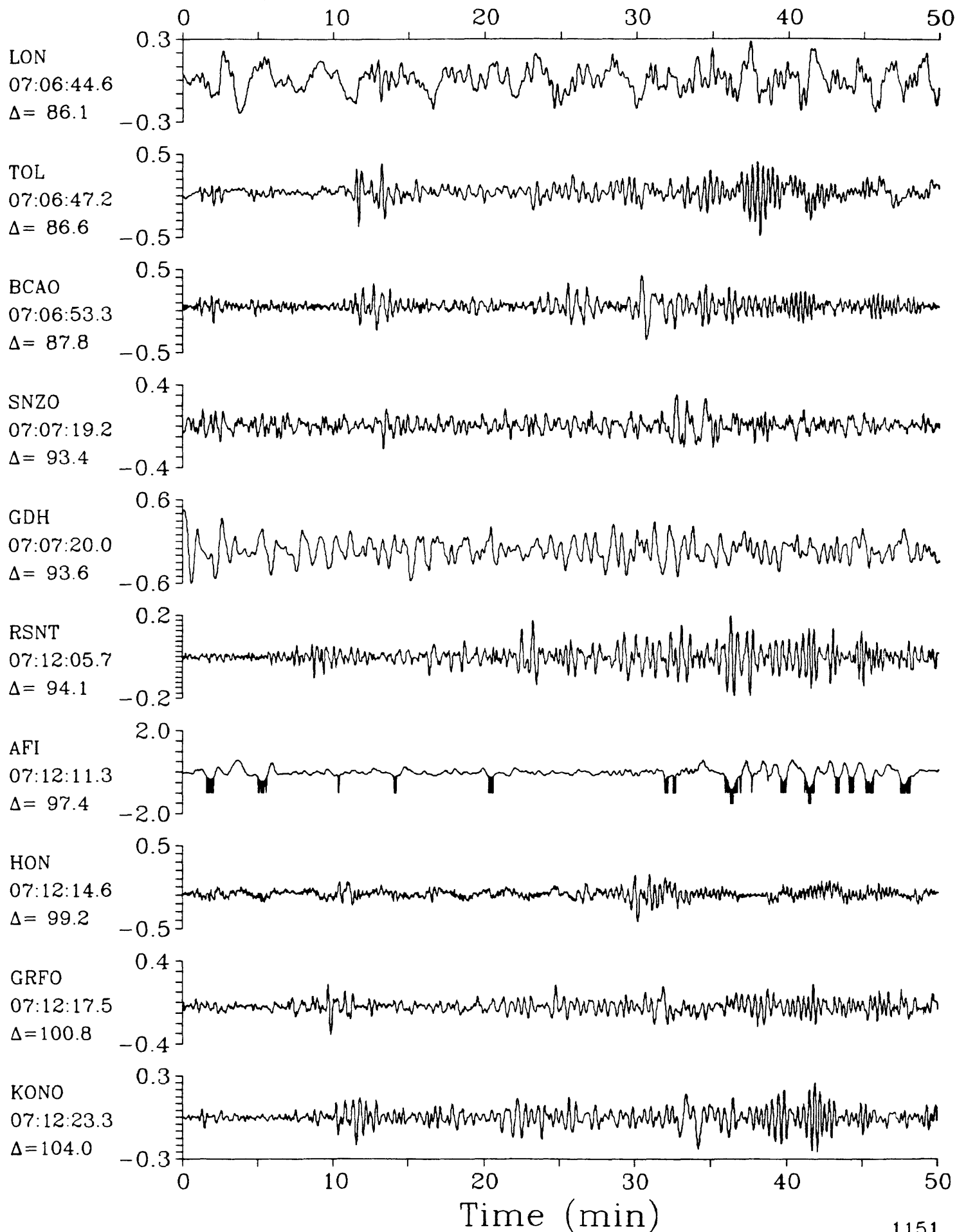


Chile-Argentina Border Region $h=178.4$ $m_b=5.5$ 

LPZ

23 June 1985 06:55:23.79

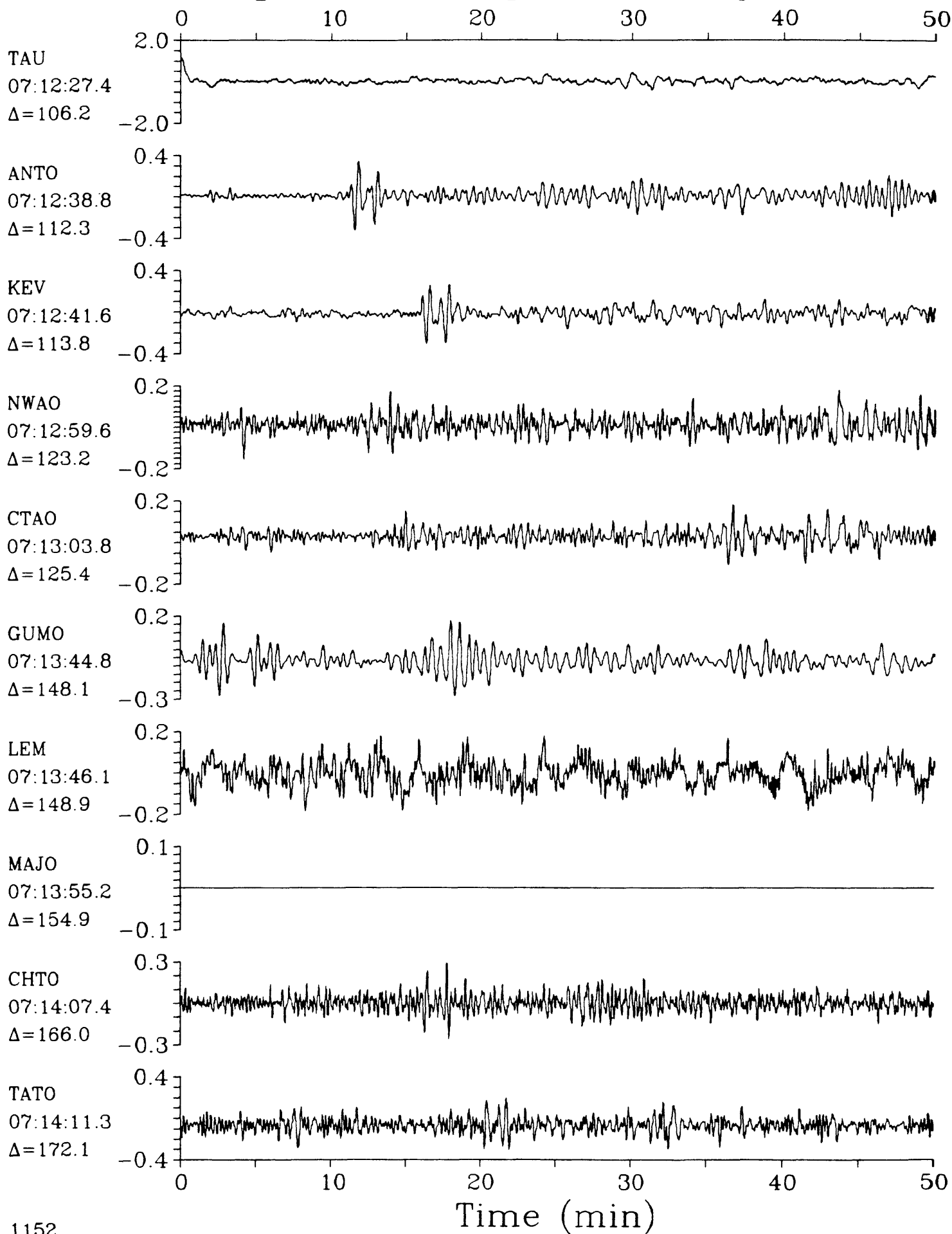
LPZ

Chile-Argentina Border Region $h=178.4$ $m_b=5.5$ 

LPZ

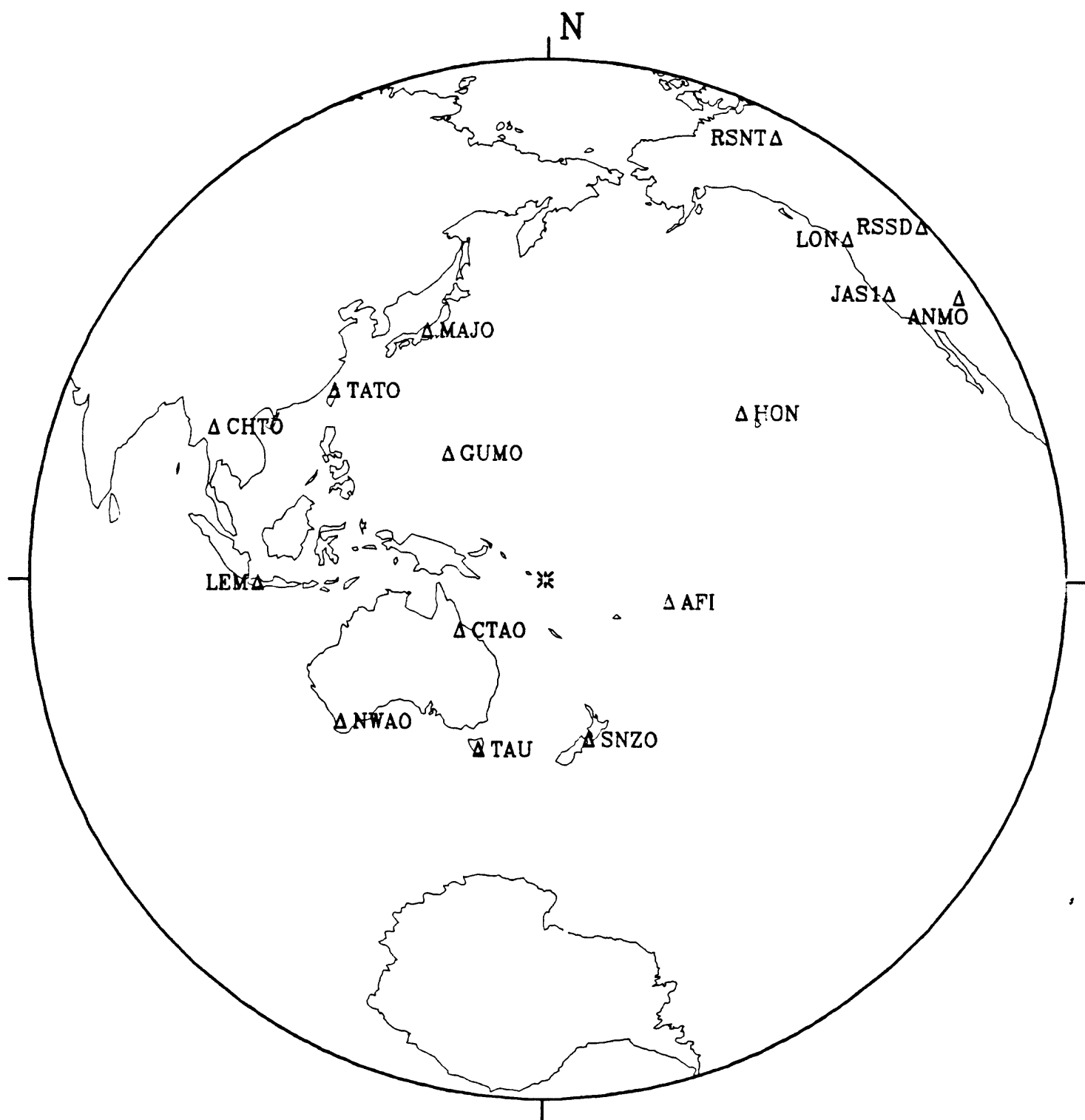
23 June 1985 06:55:23.79

LPZ

Chile-Argentina Border Region $h=178.4$ $m_b=5.5$ 

23 June 1985 13:01:37.15

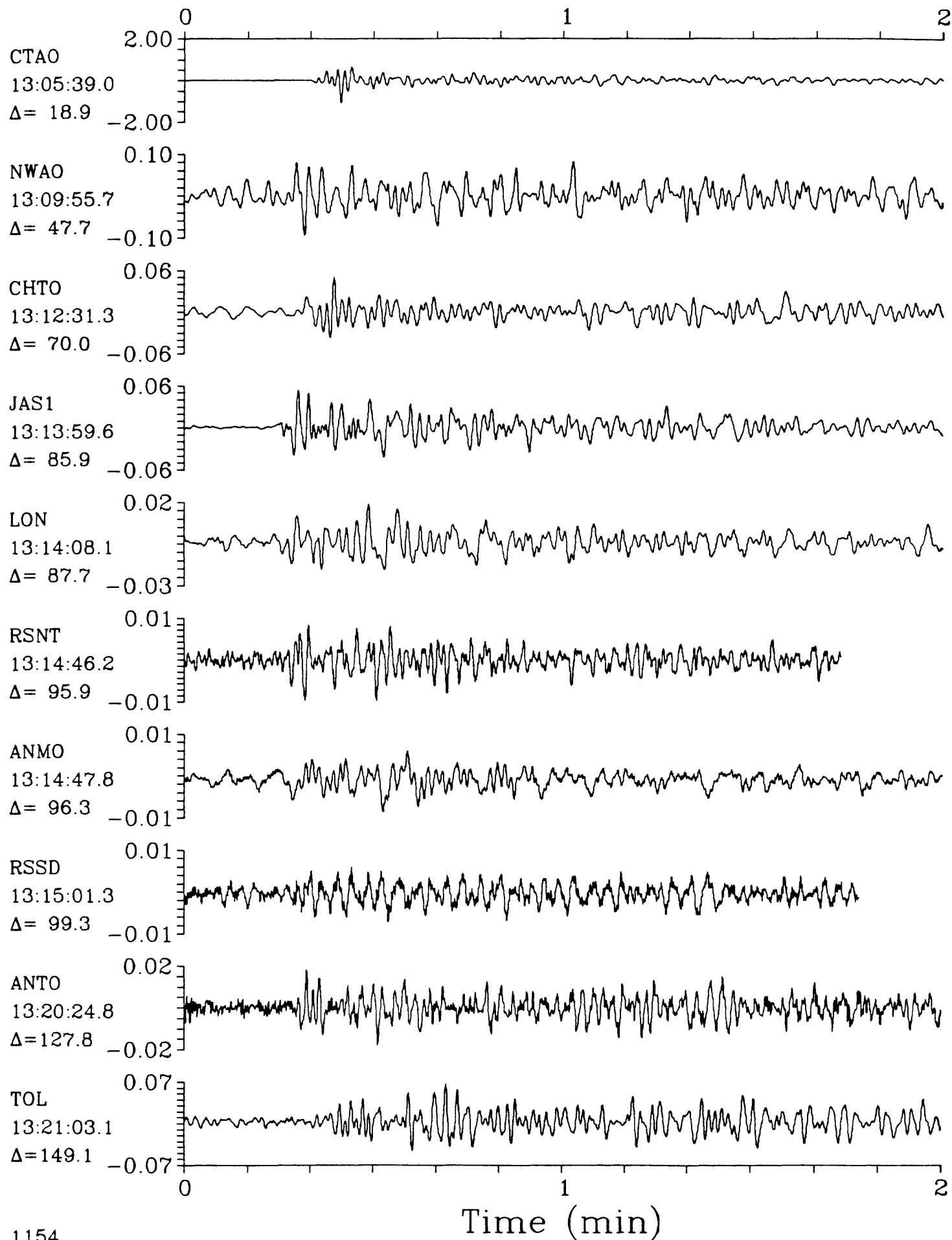
Solomon Islands



SPZ

23 June 1985 13:01:37.15

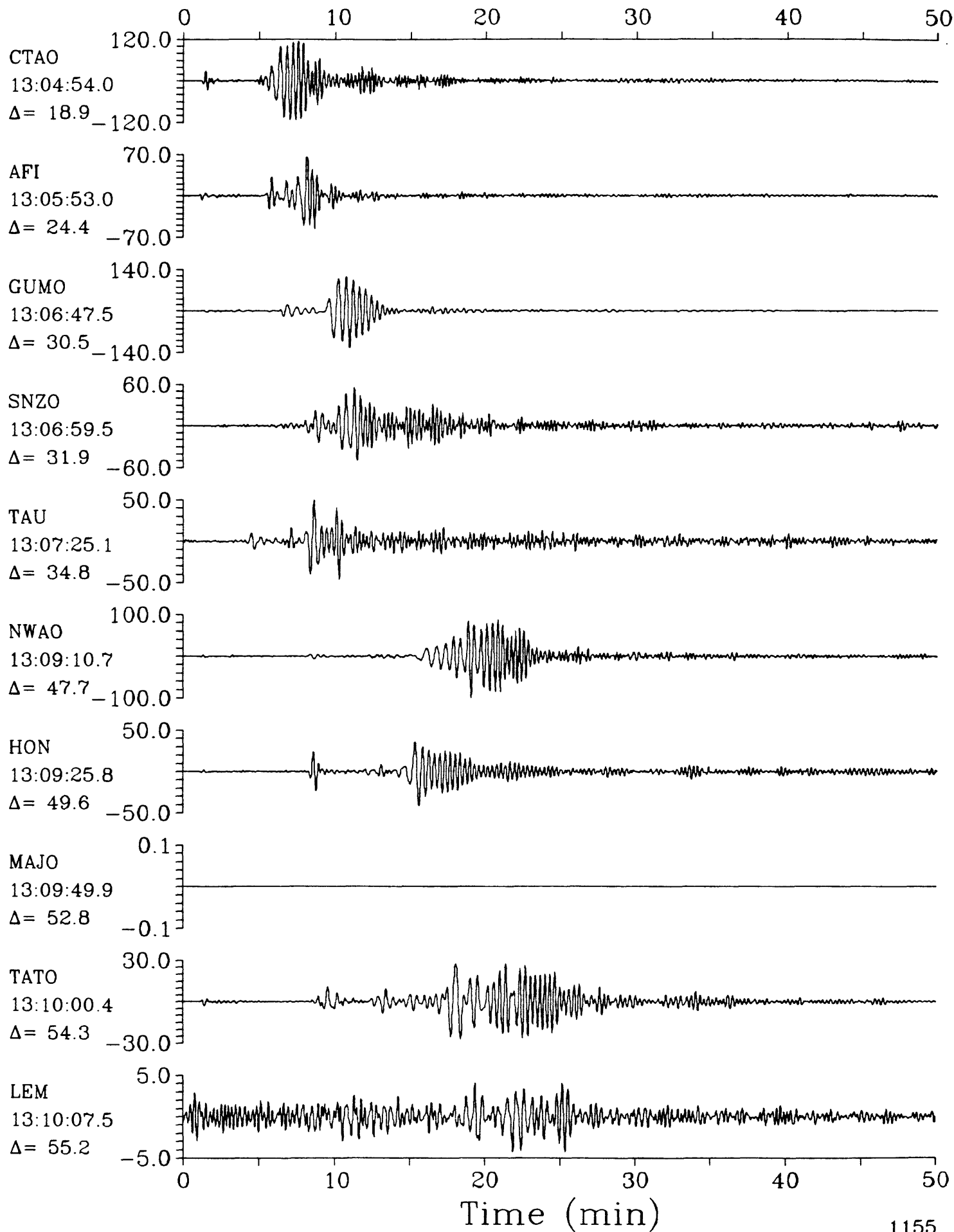
SPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.5$ 

LPZ

23 June 1985 13:01:37.15

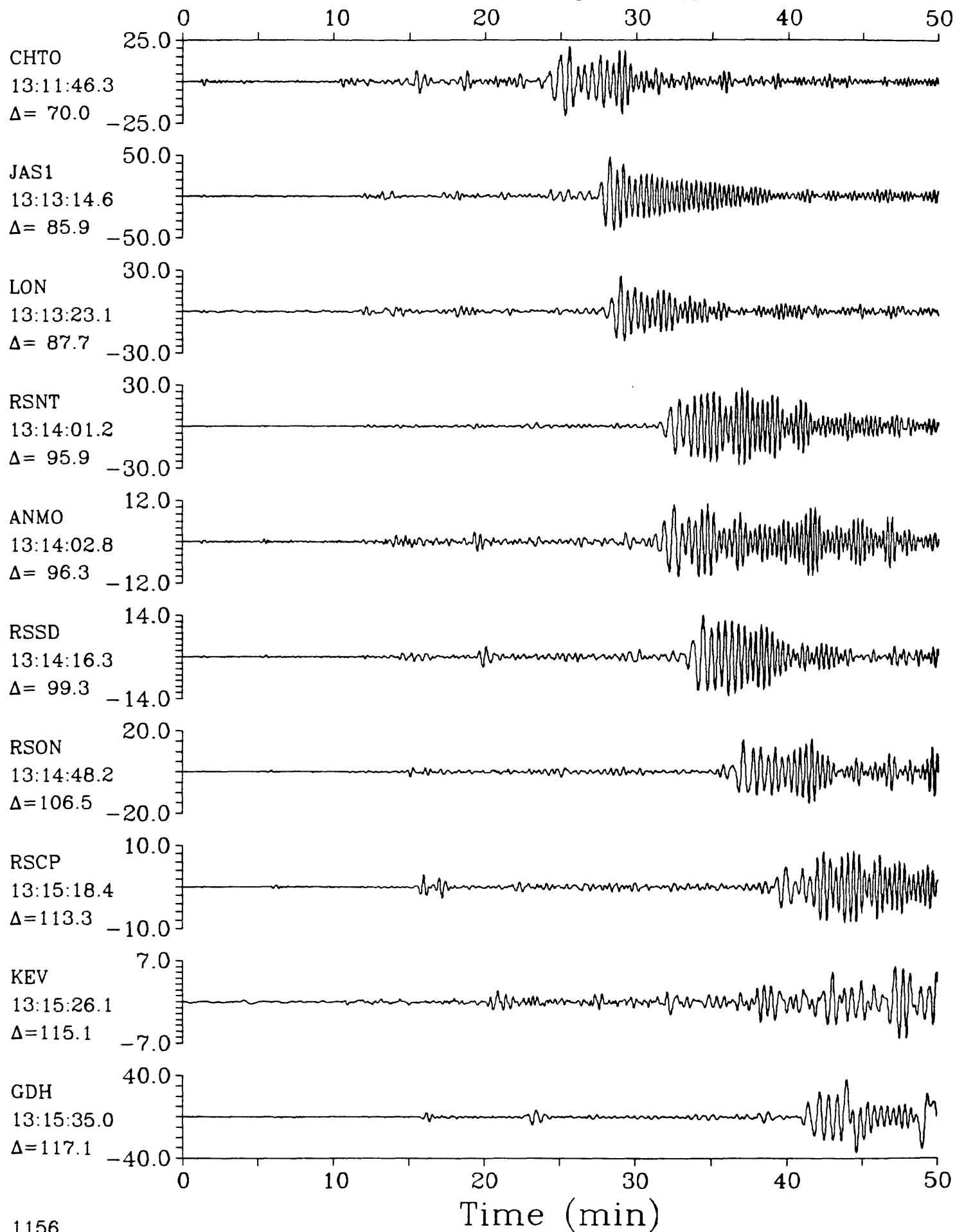
LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.5$ 

LPZ

23 June 1985 13:01:37.15

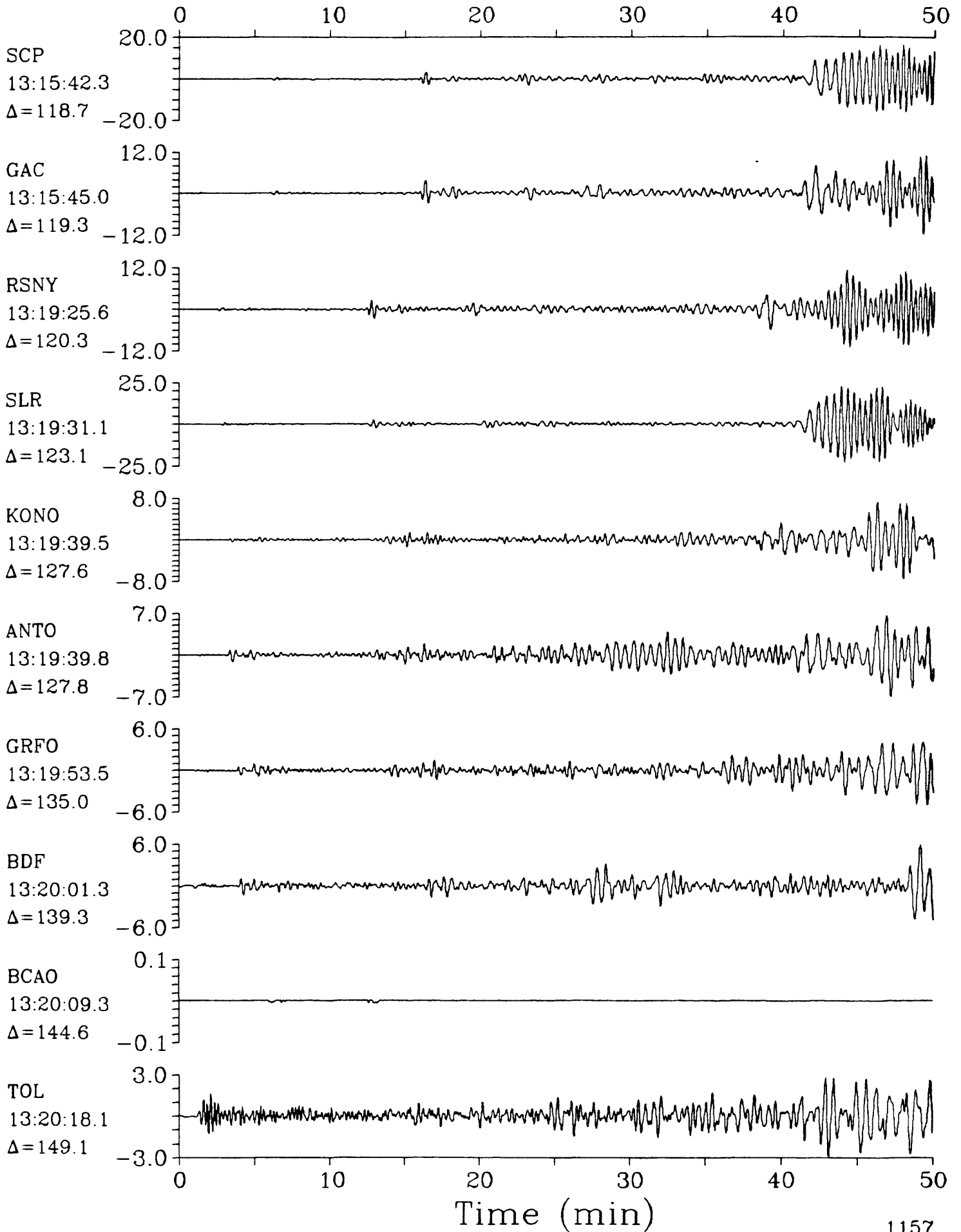
LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{SZ}=6.5$ 

LPZ

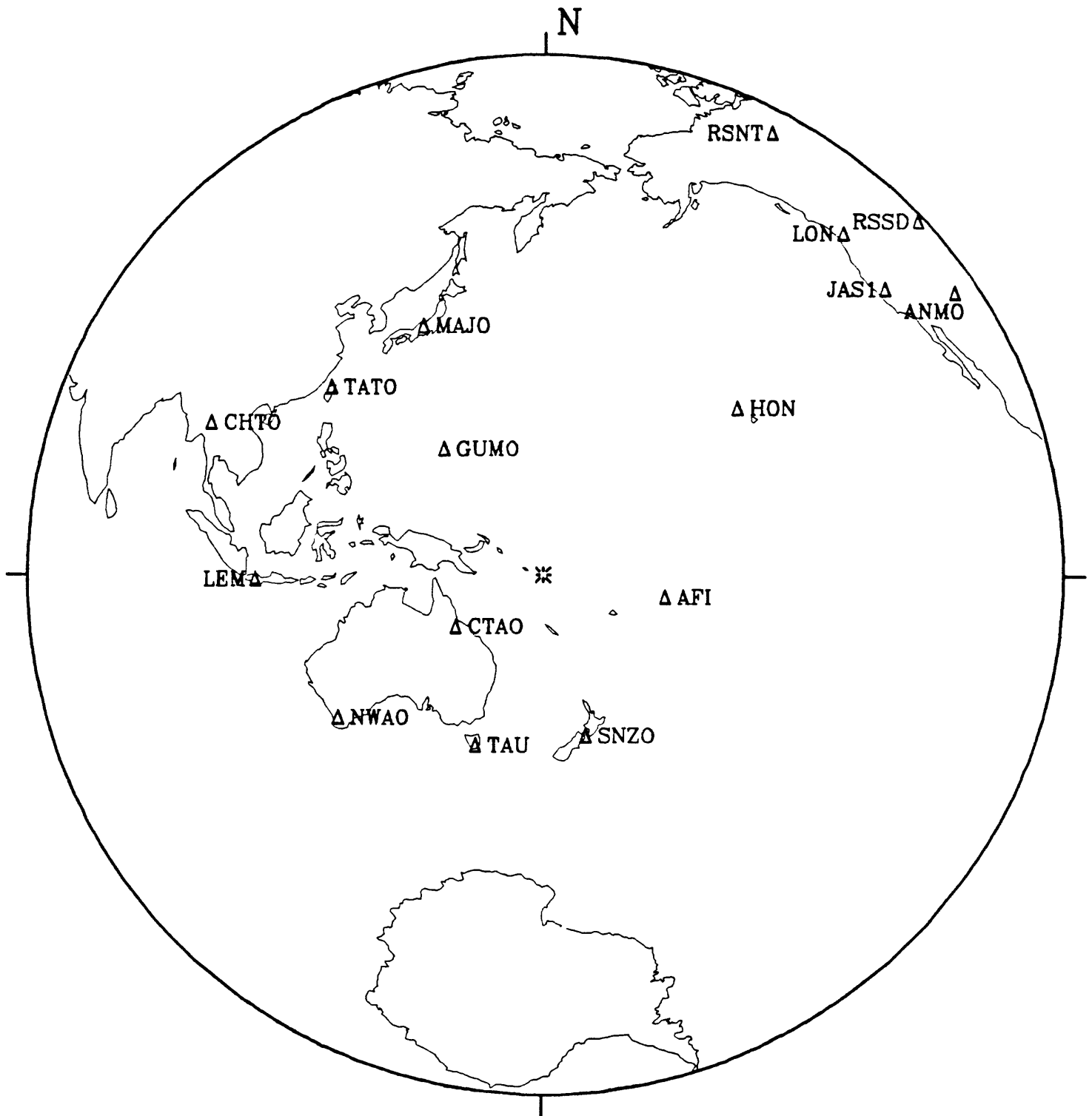
23 June 1985 13:01:37.15

LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.5$ 

23 June 1985 19:49:54.48

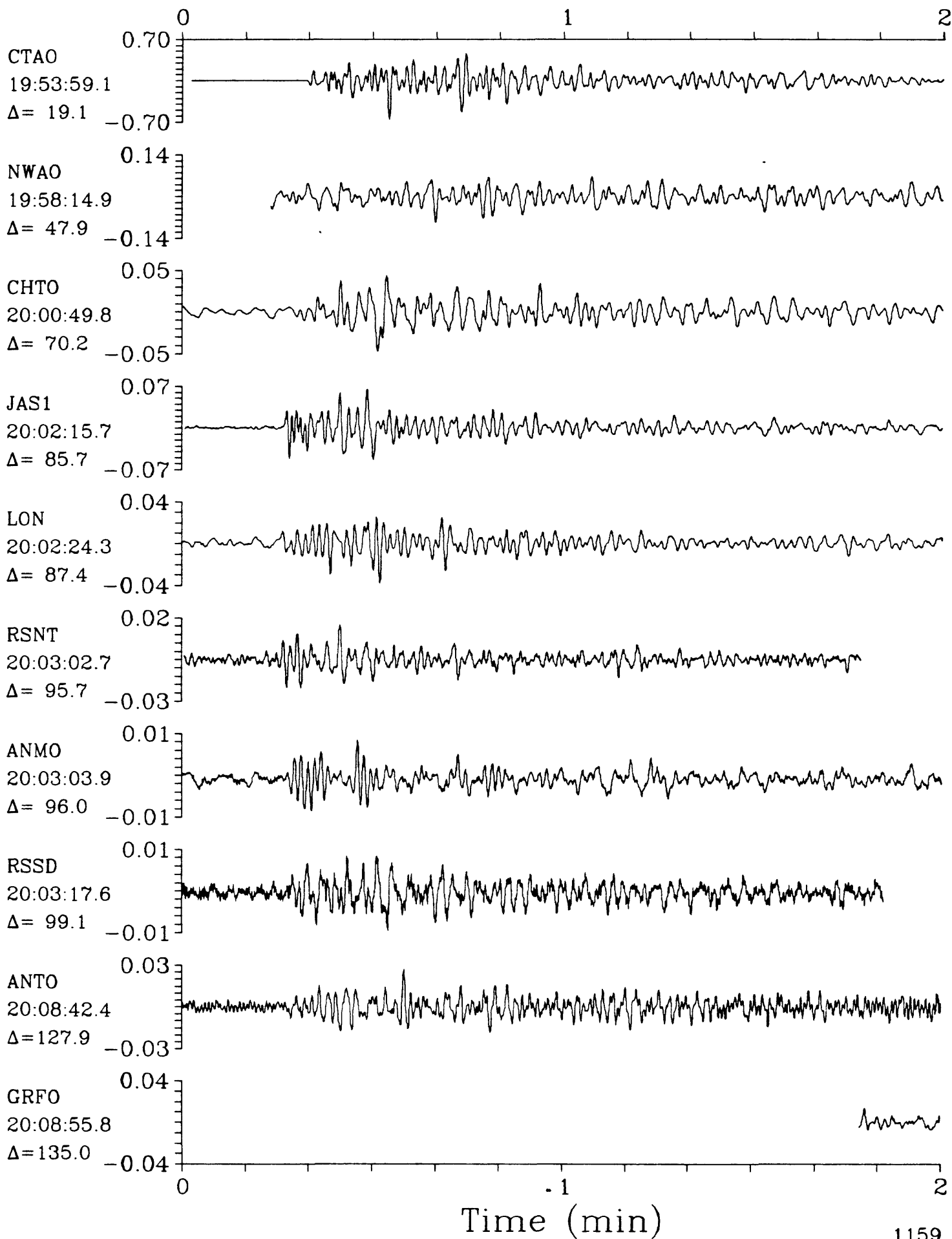
Solomon Islands



SPZ

23 June 1985 19:49:54.48

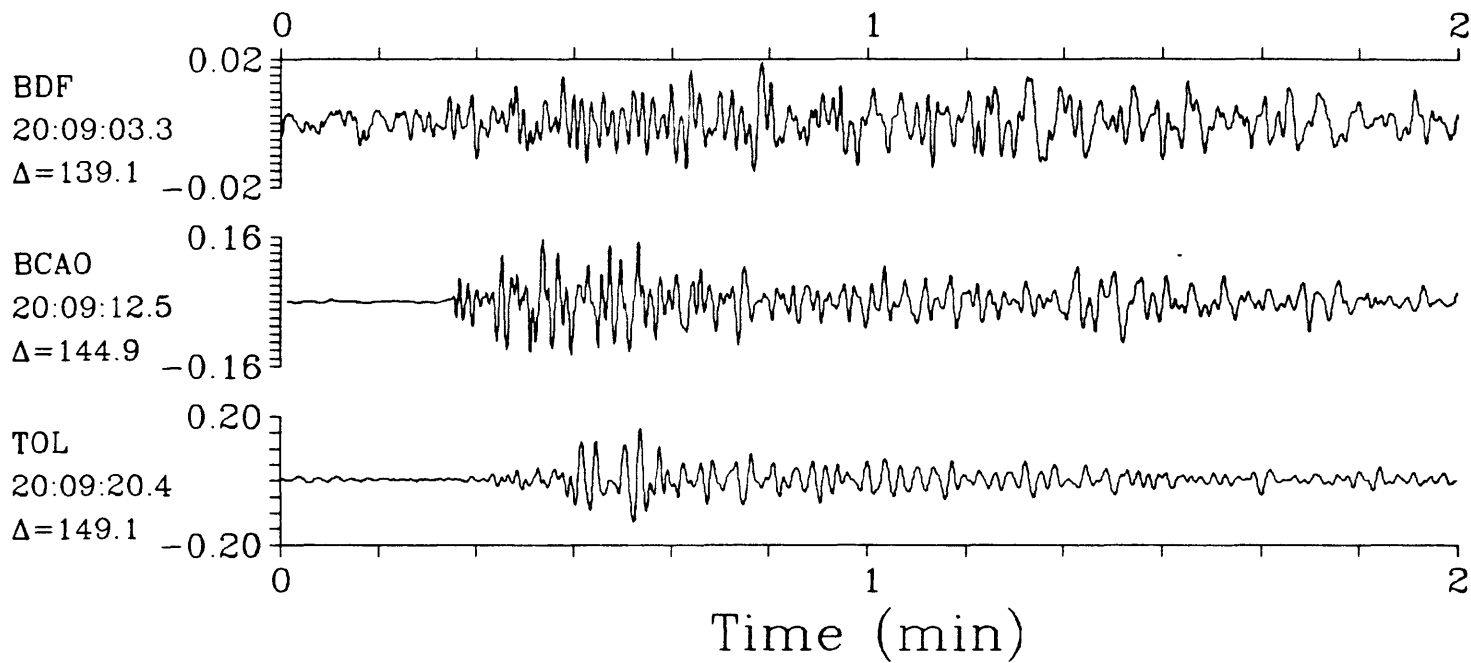
SPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.0$ 

SPZ

23 June 1985 19:49:54.48

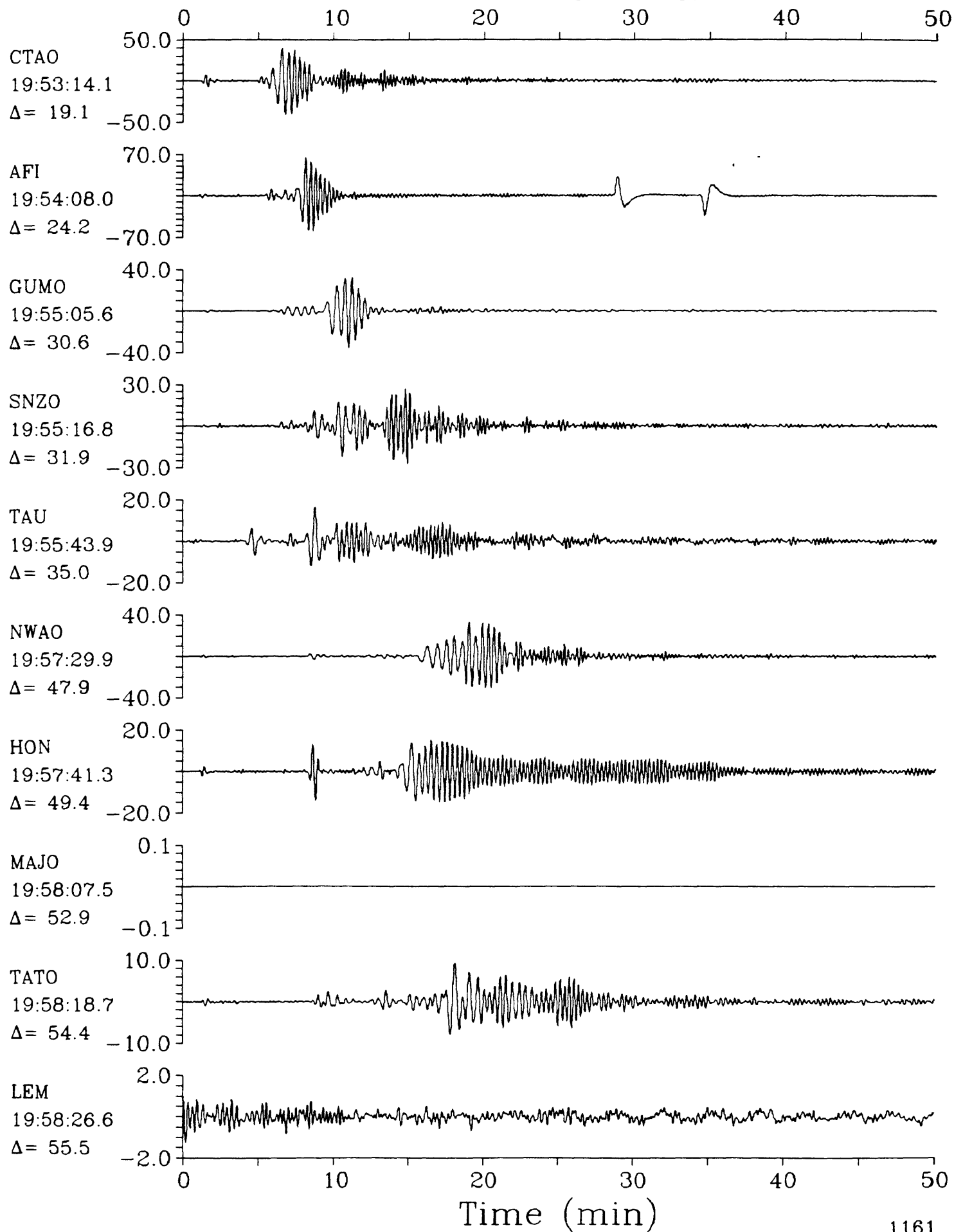
SPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.0$ 

LPZ

23 June 1985 19:49:54.48

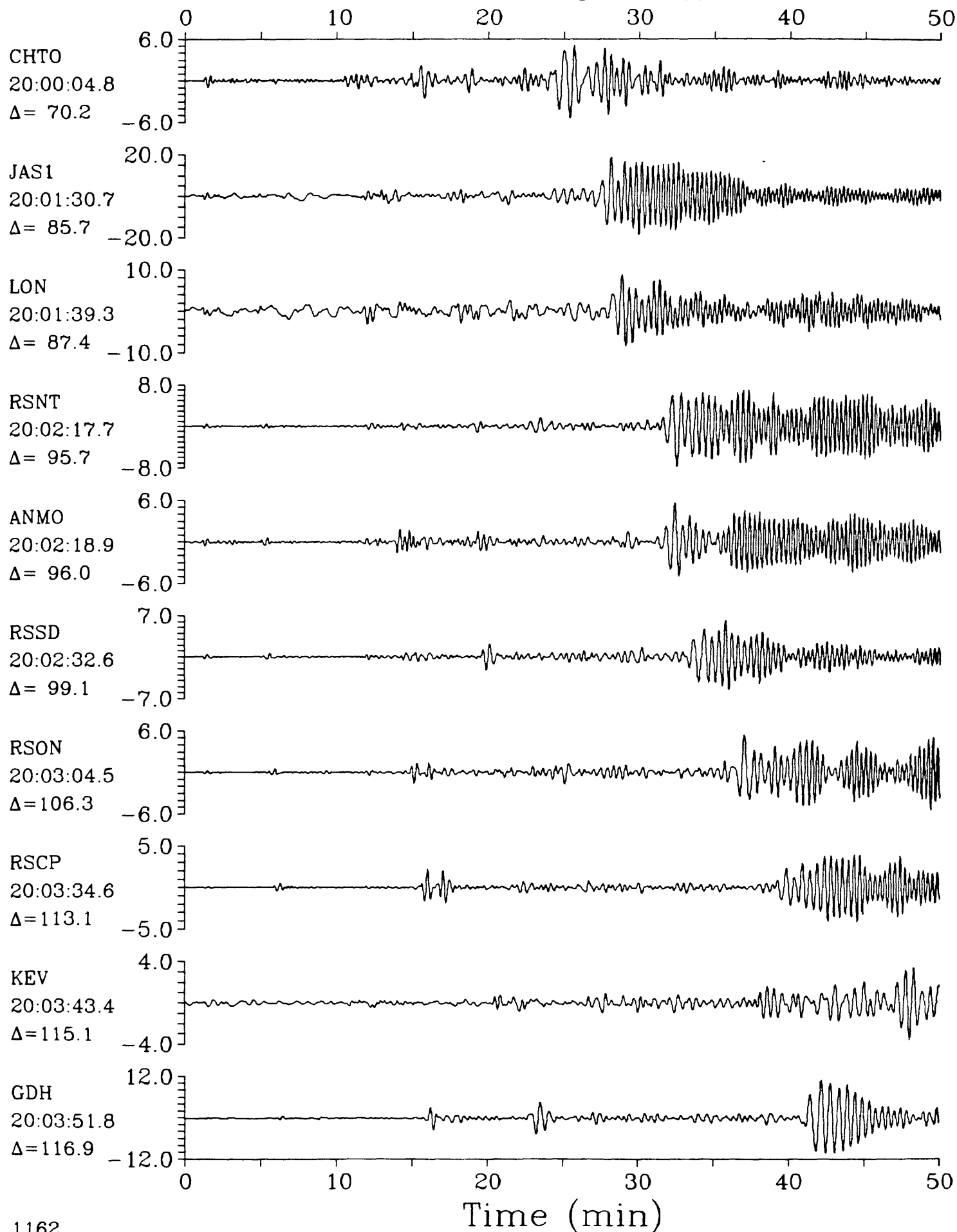
LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.0$ 

LPZ

23 June 1985 19:49:54.48

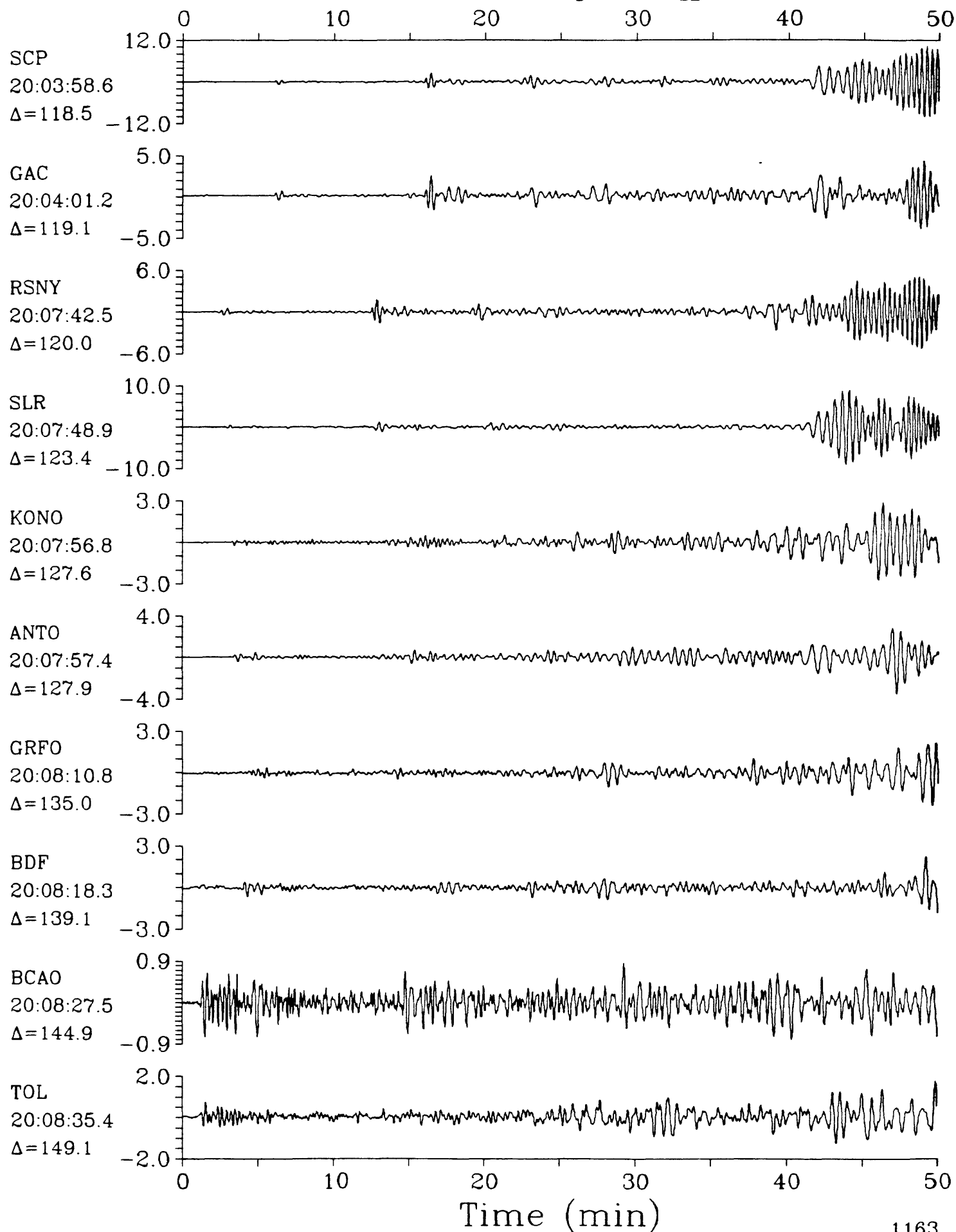
LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.0$ 

LPZ

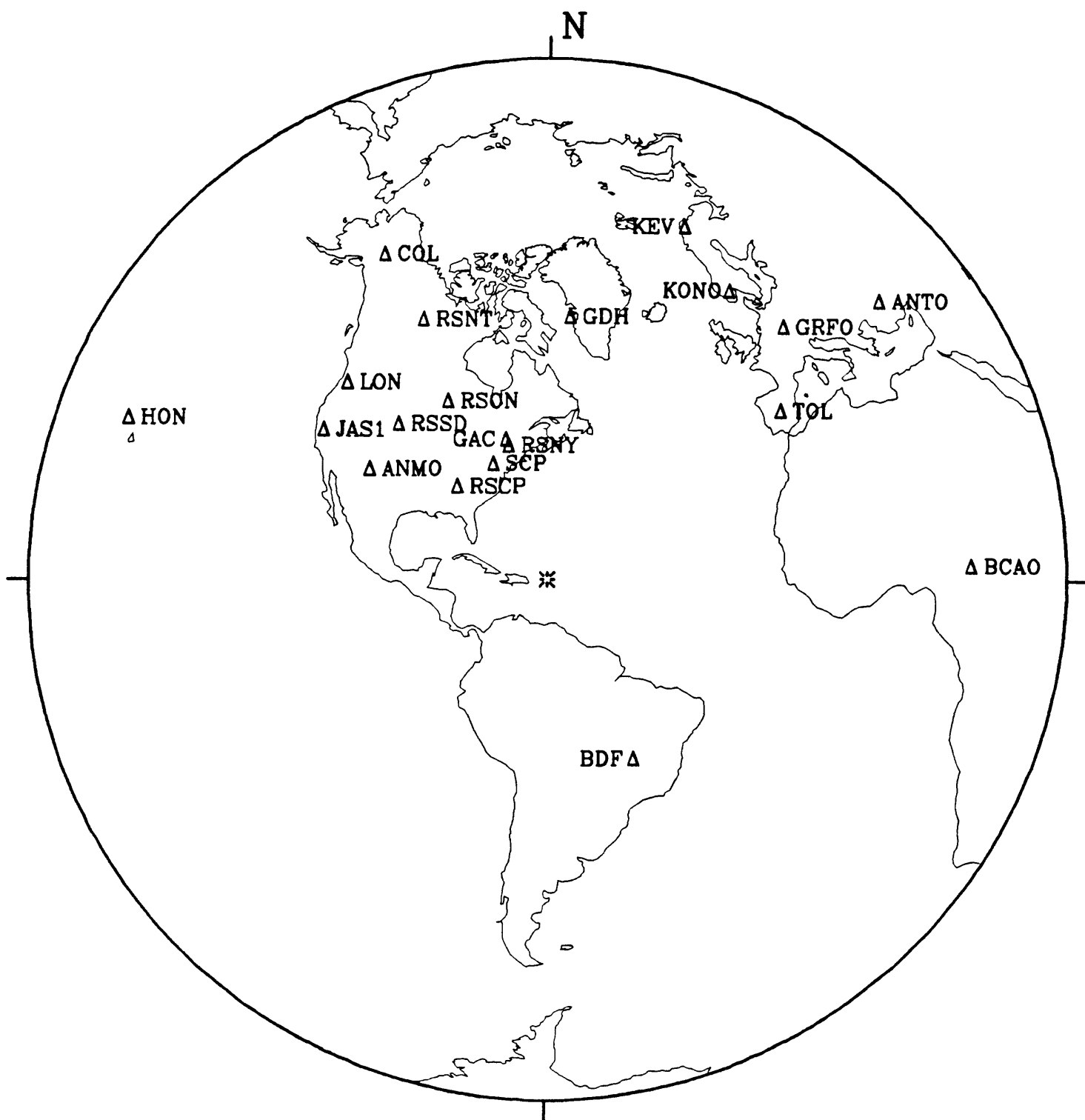
23 June 1985 19:49:54.48

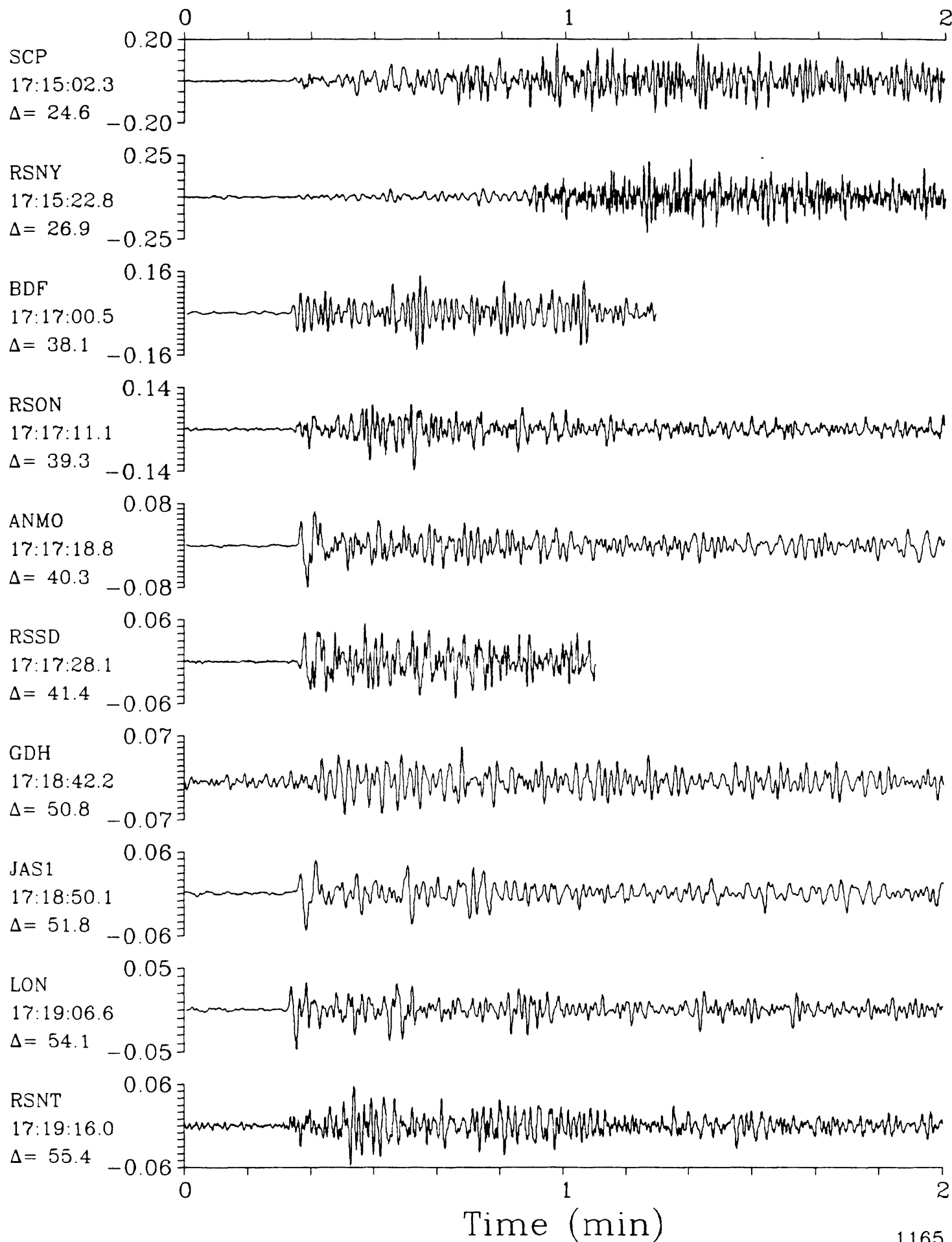
LPZ

Solomon Islands $h=33.0$ $m_b=5.5$ $M_{sz}=6.0$ 

26 June 1985 17:10:01.99

Virgin Islands

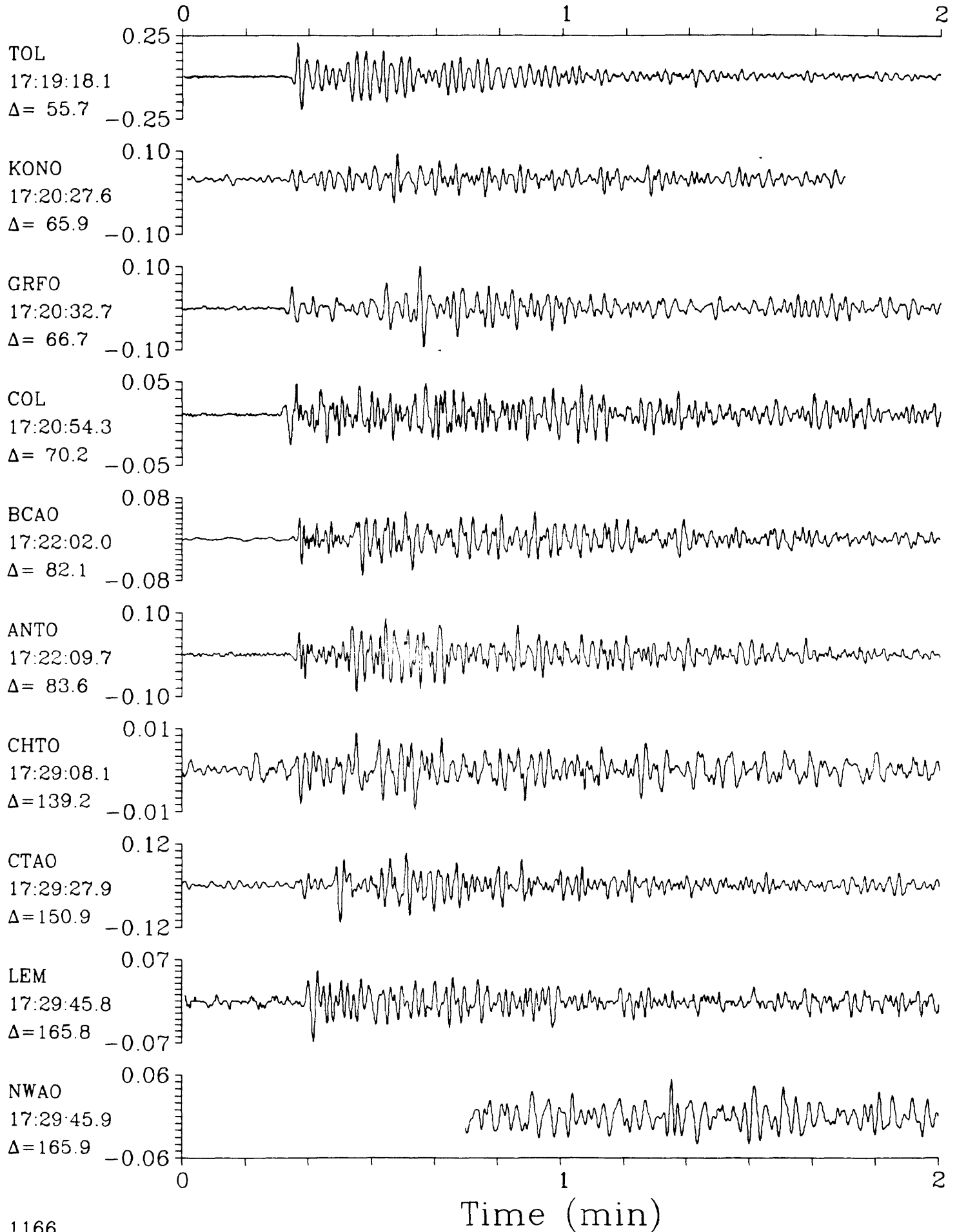




SPZ

26 June 1985 17:10:01.99
Virgin Islands $h=55.6$ $m_b=5.6$

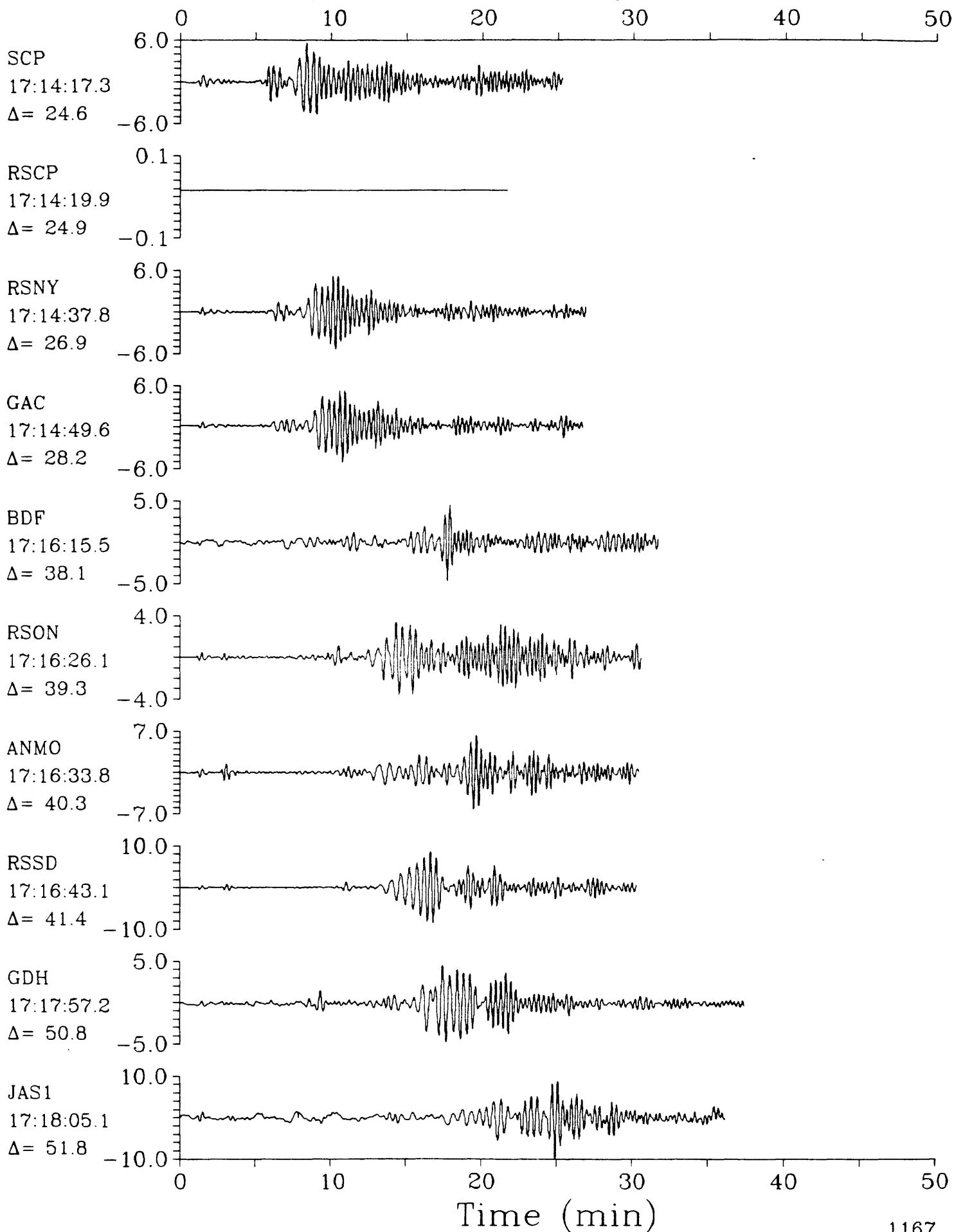
SPZ

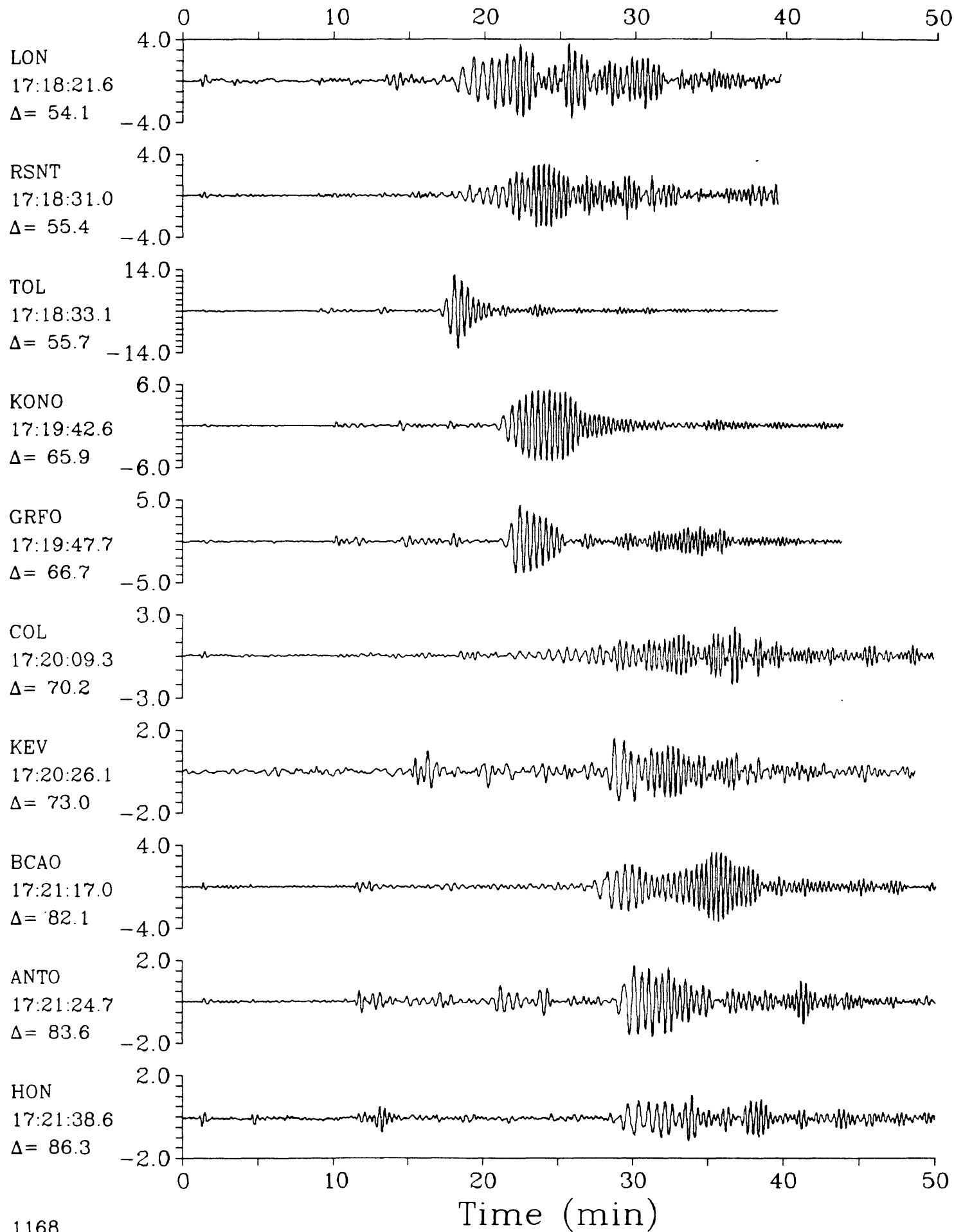


LPZ

26 June 1985 17:10:01.99
Virgin Islands $h=55.6$ $m_b=5.6$

LPZ

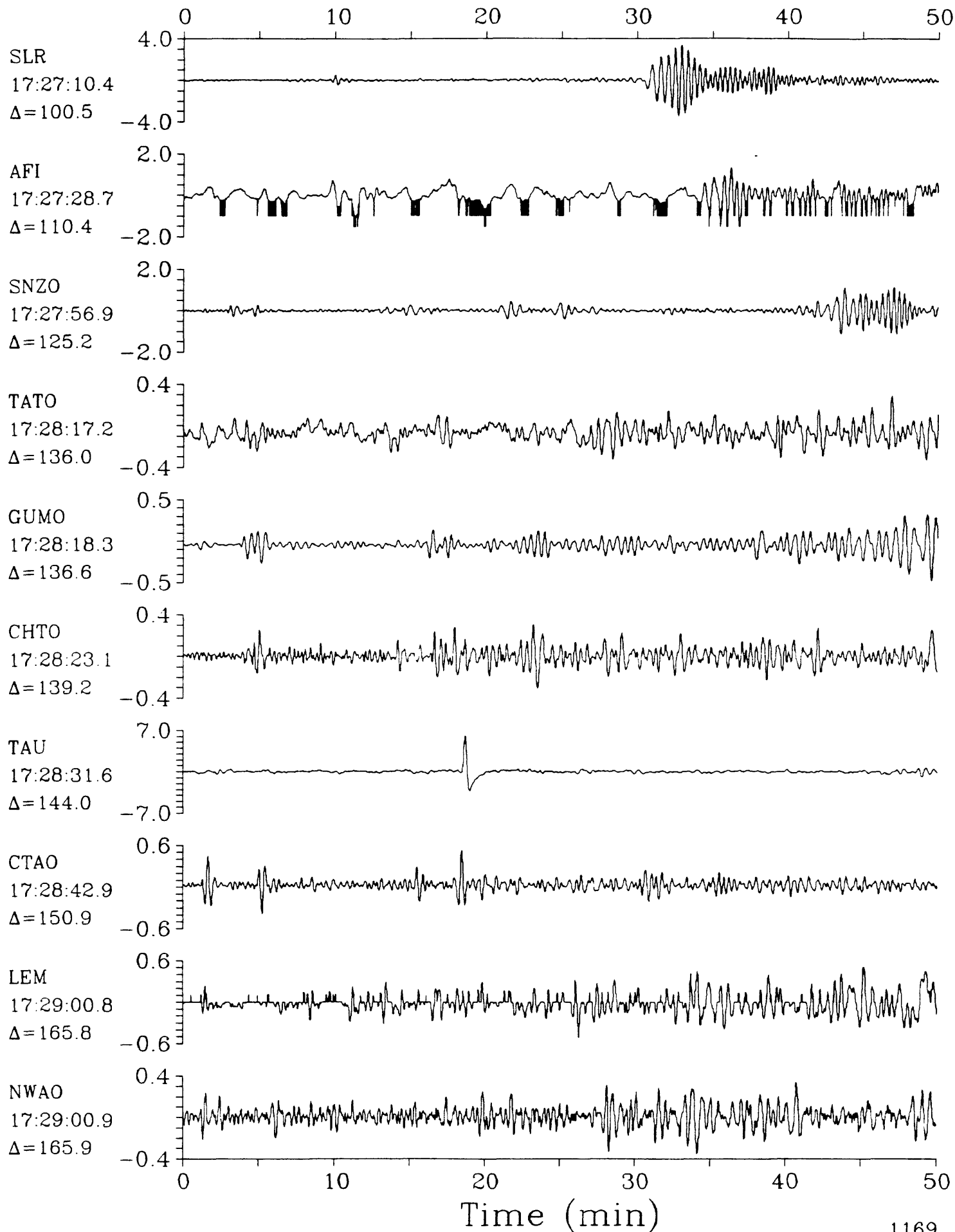




LPZ

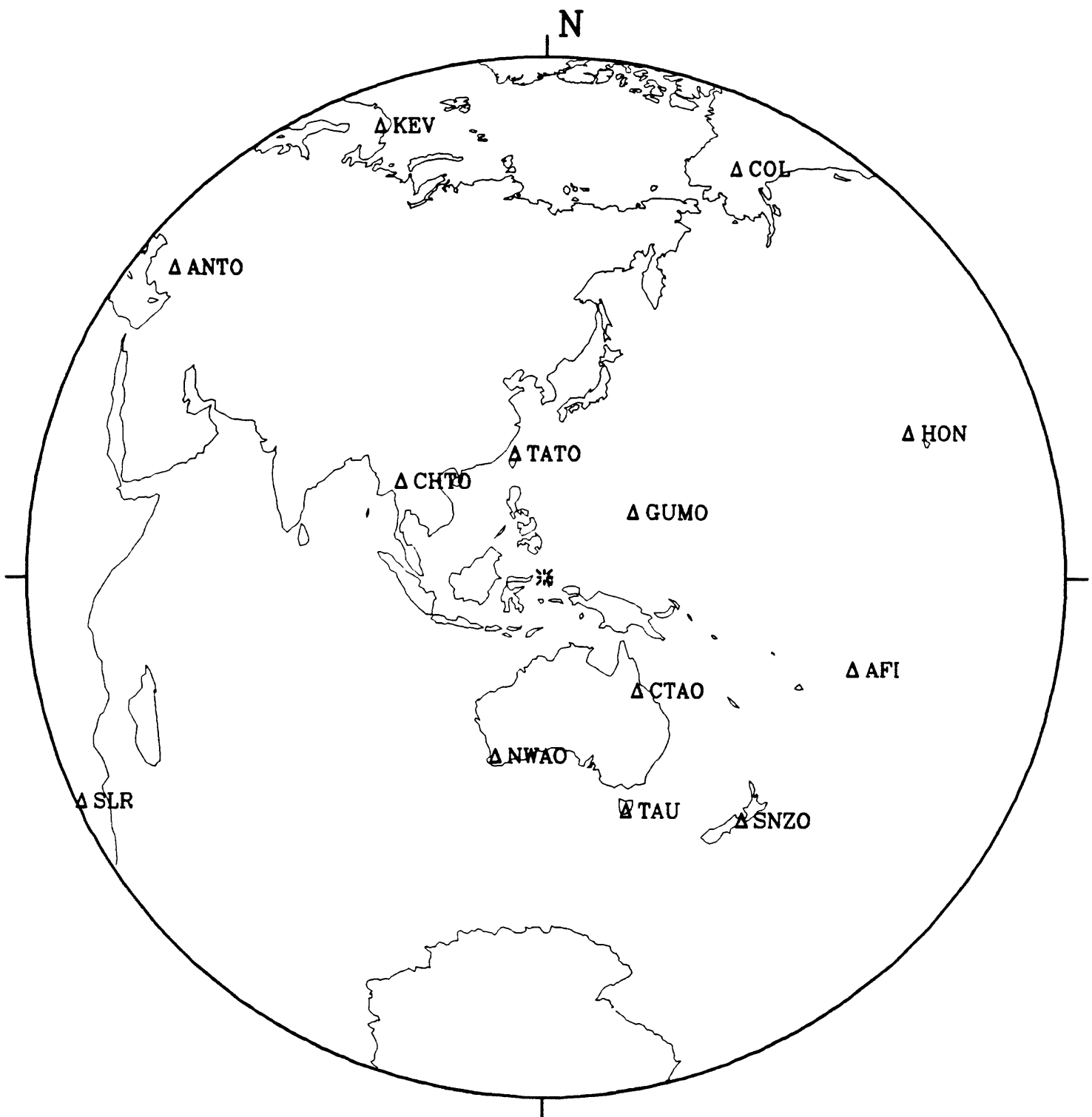
26 June 1985 17:10:01.99
Virgin Islands $h=55.6$ $m_b=5.6$

LPZ



27 June 1985 19:18:47.30

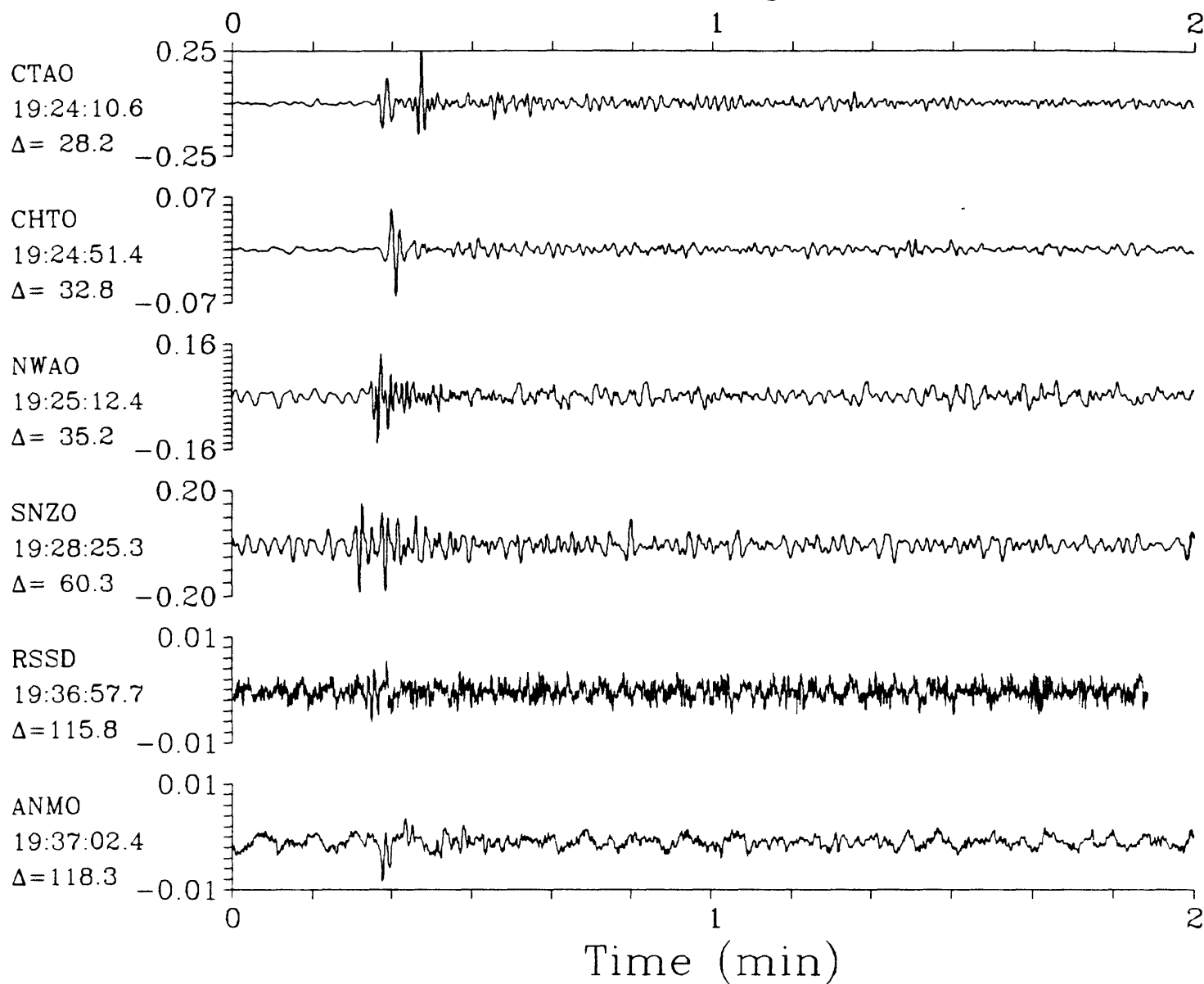
Halmahera



SPZ

27 June 1985 19:18:47.30
Halmahera $h=149.7$ $m_b=5.5$

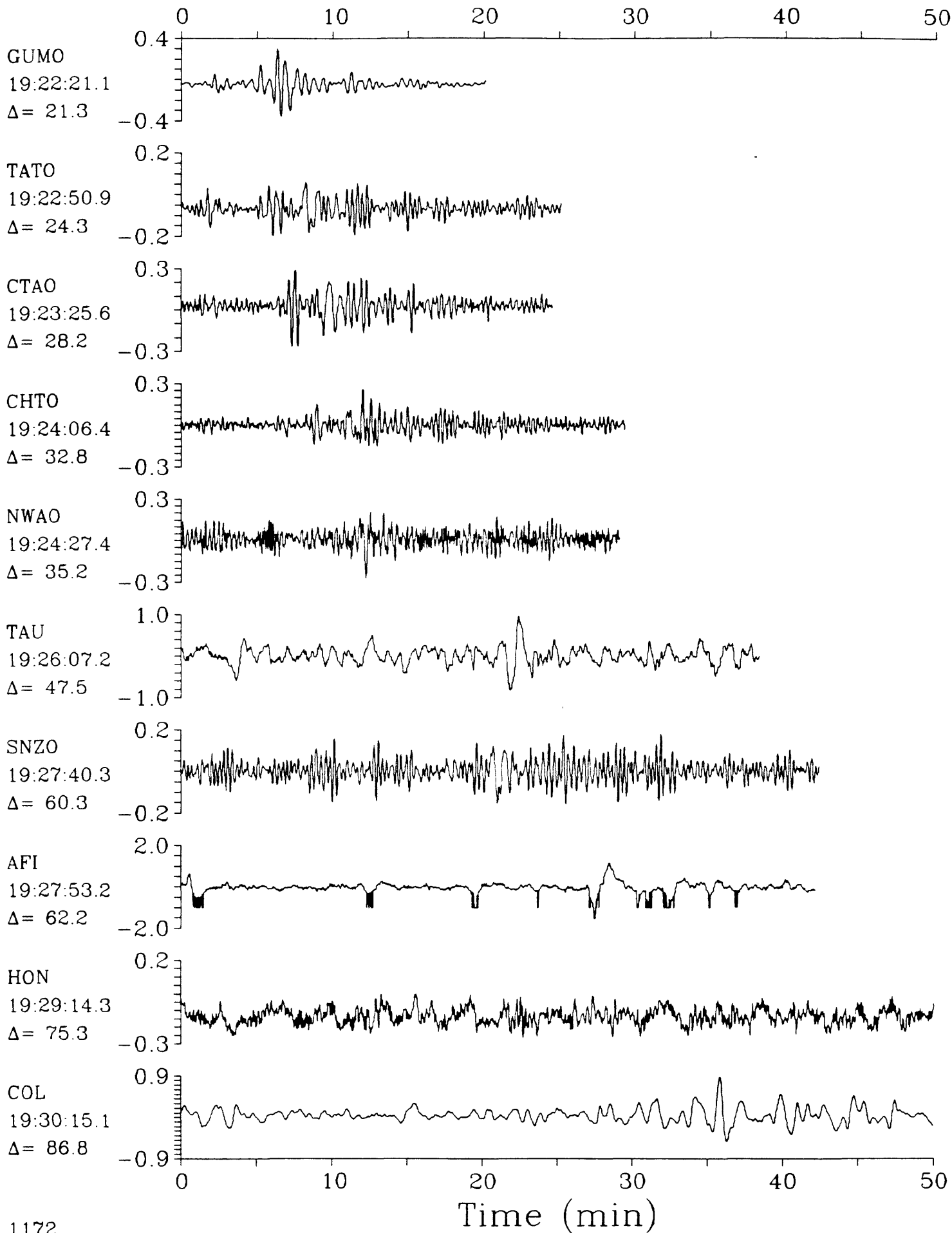
SPZ



LPZ

27 June 1985 19:18:47.30
Halmahera $h=149.7$ $m_b=5.5$

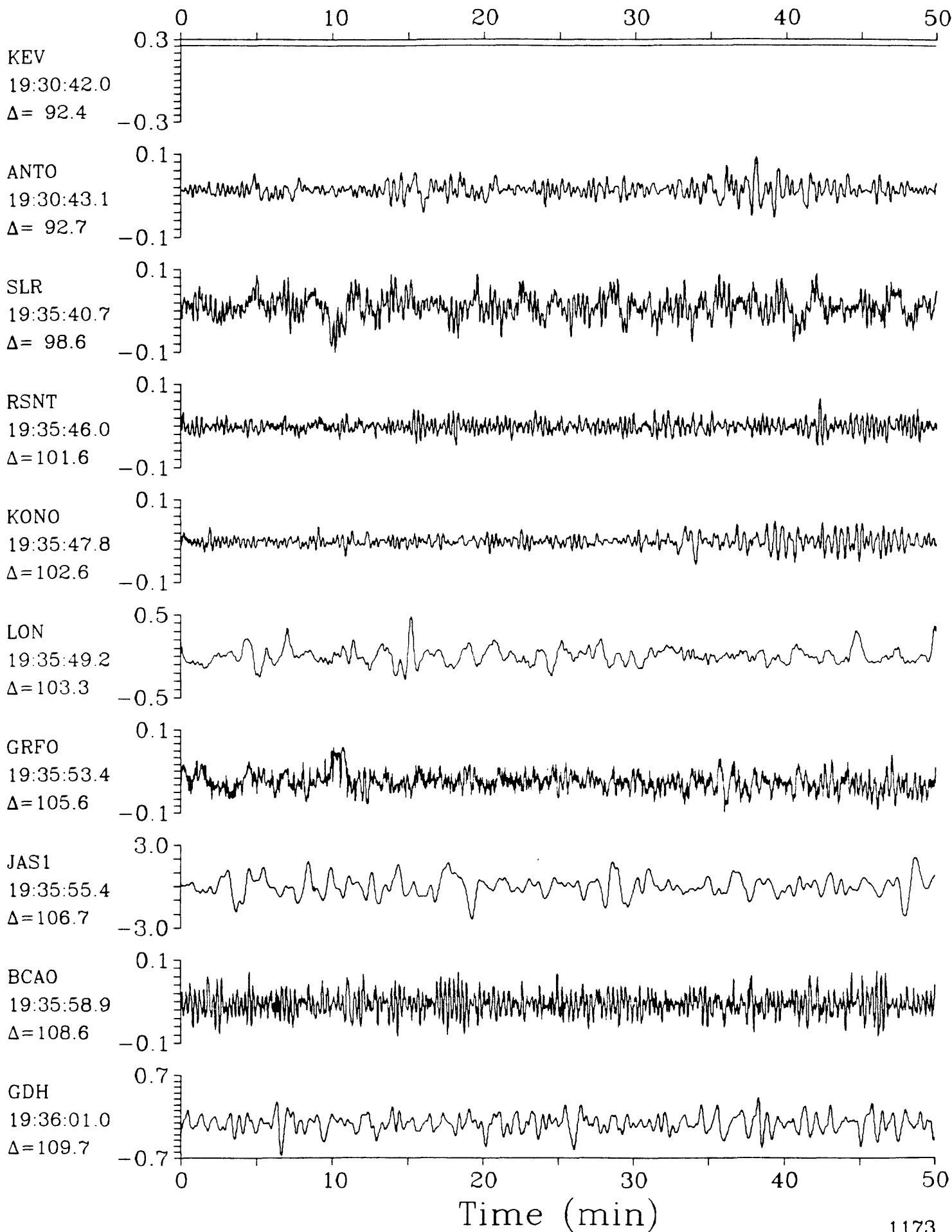
LPZ



LPZ

27 June 1985 19:18:47.30
Halmahera $h=149.7$ $m_b=5.5$

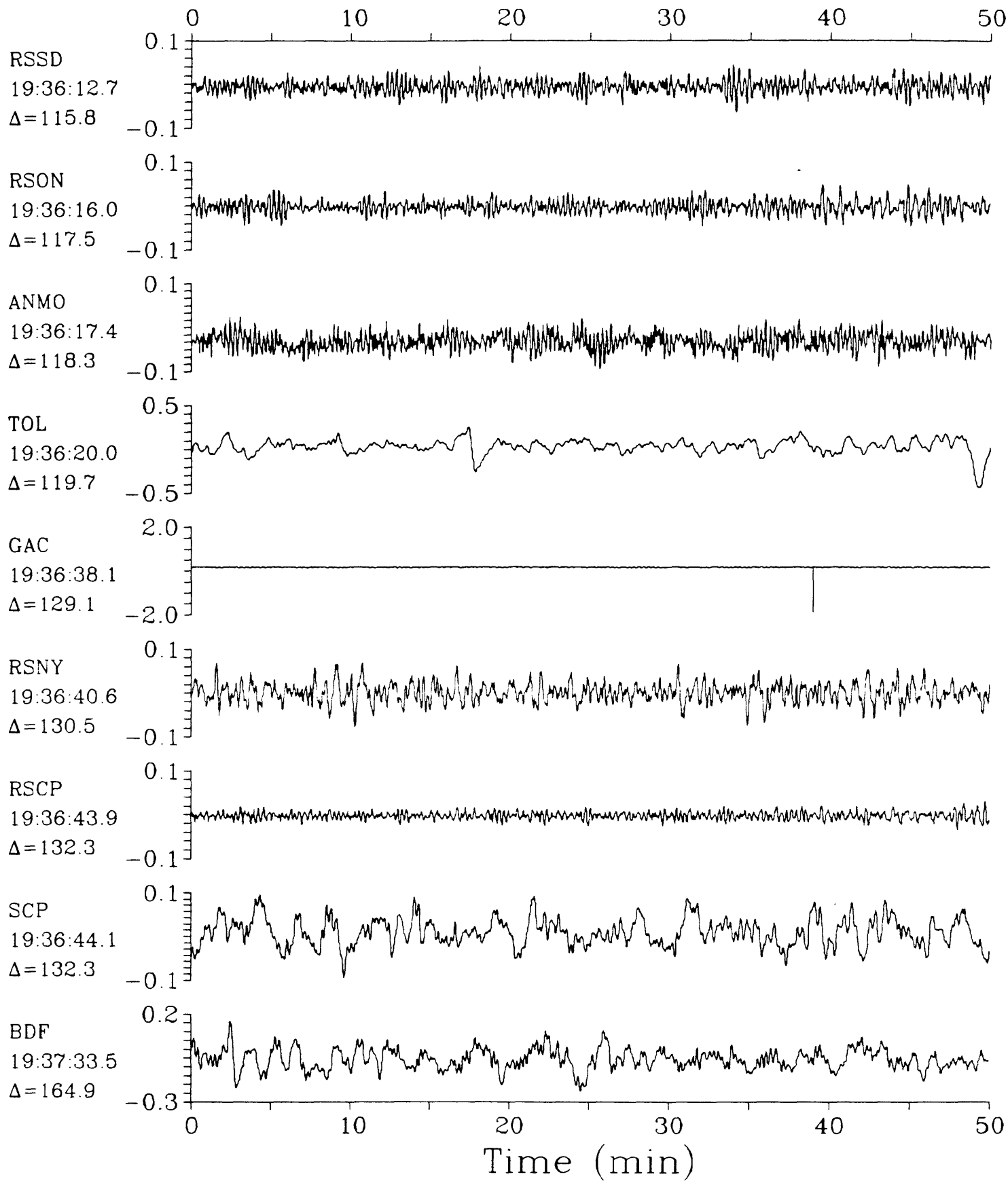
LPZ



LPZ

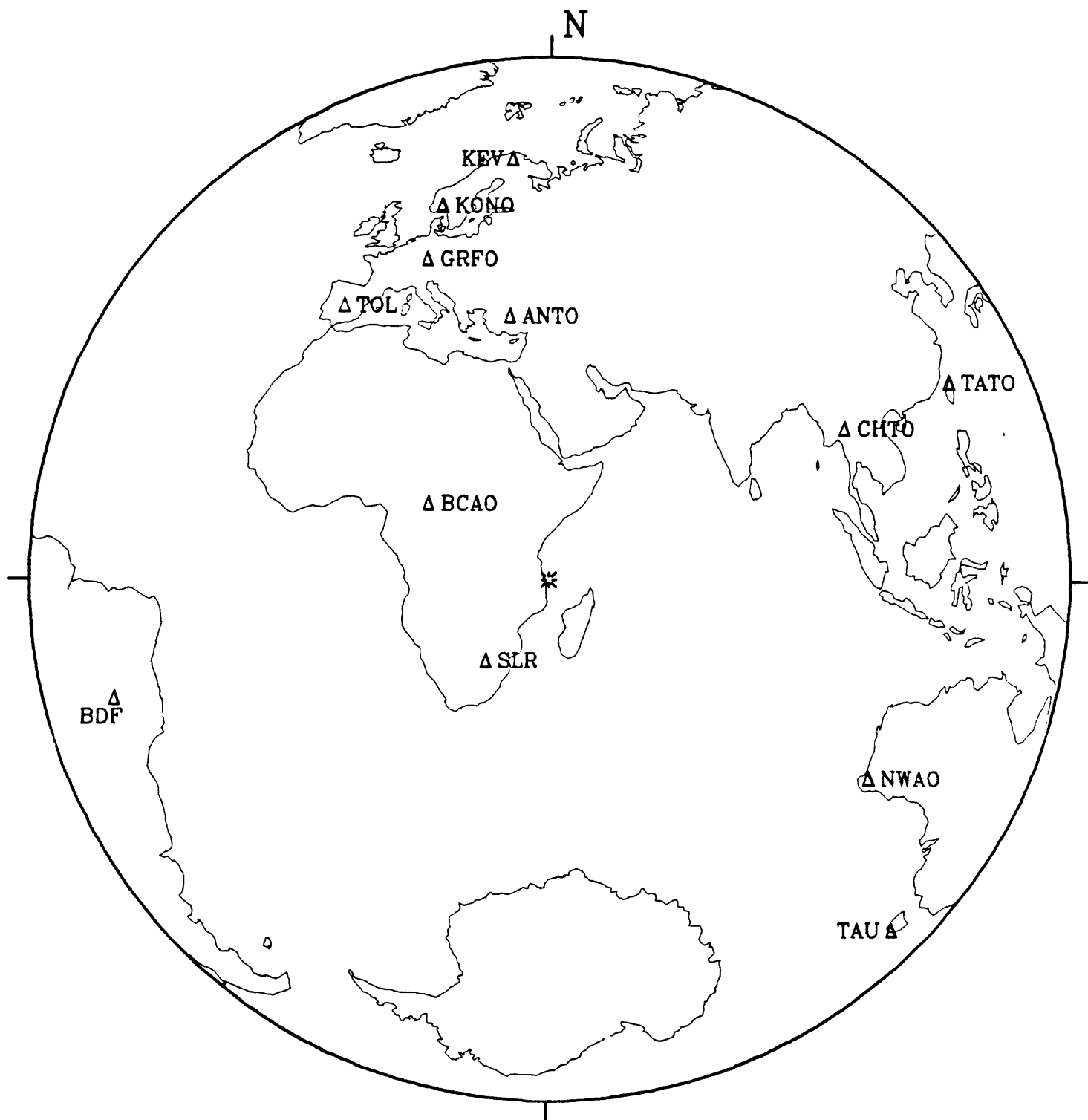
27 June 1985 19:18:47.30
Halmahera $h=149.7$ $m_b=5.5$

LPZ



28 June 1985 07:32:19.99

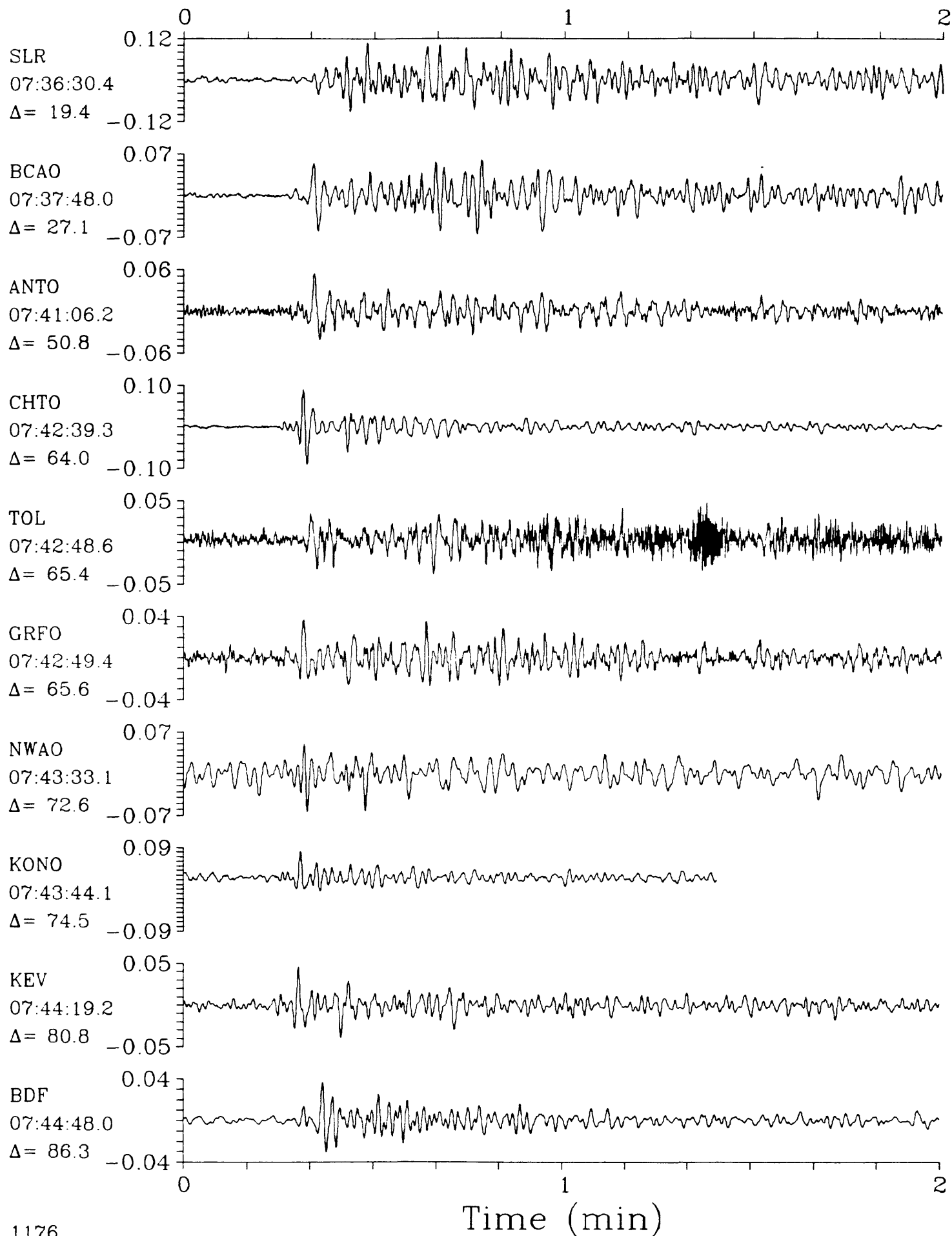
Northwest of Madagascar



SPZ

28 June 1985 07:32:19.99

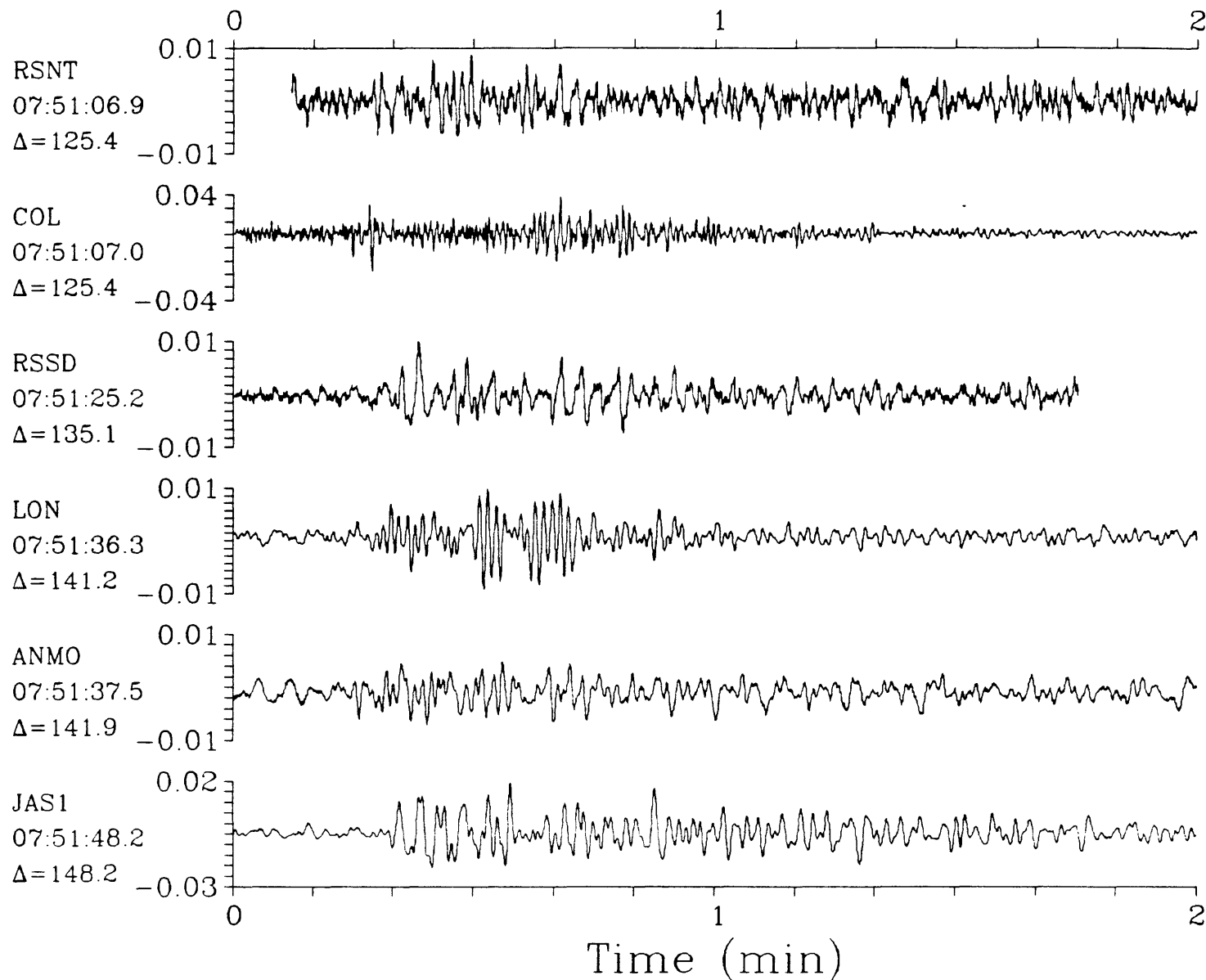
SPZ

Northwest of Madagascar $h=10.0$ $m_b=5.4$ $M_{sz}=5.5$ 

SPZ

28 June 1985 07:32:19.99

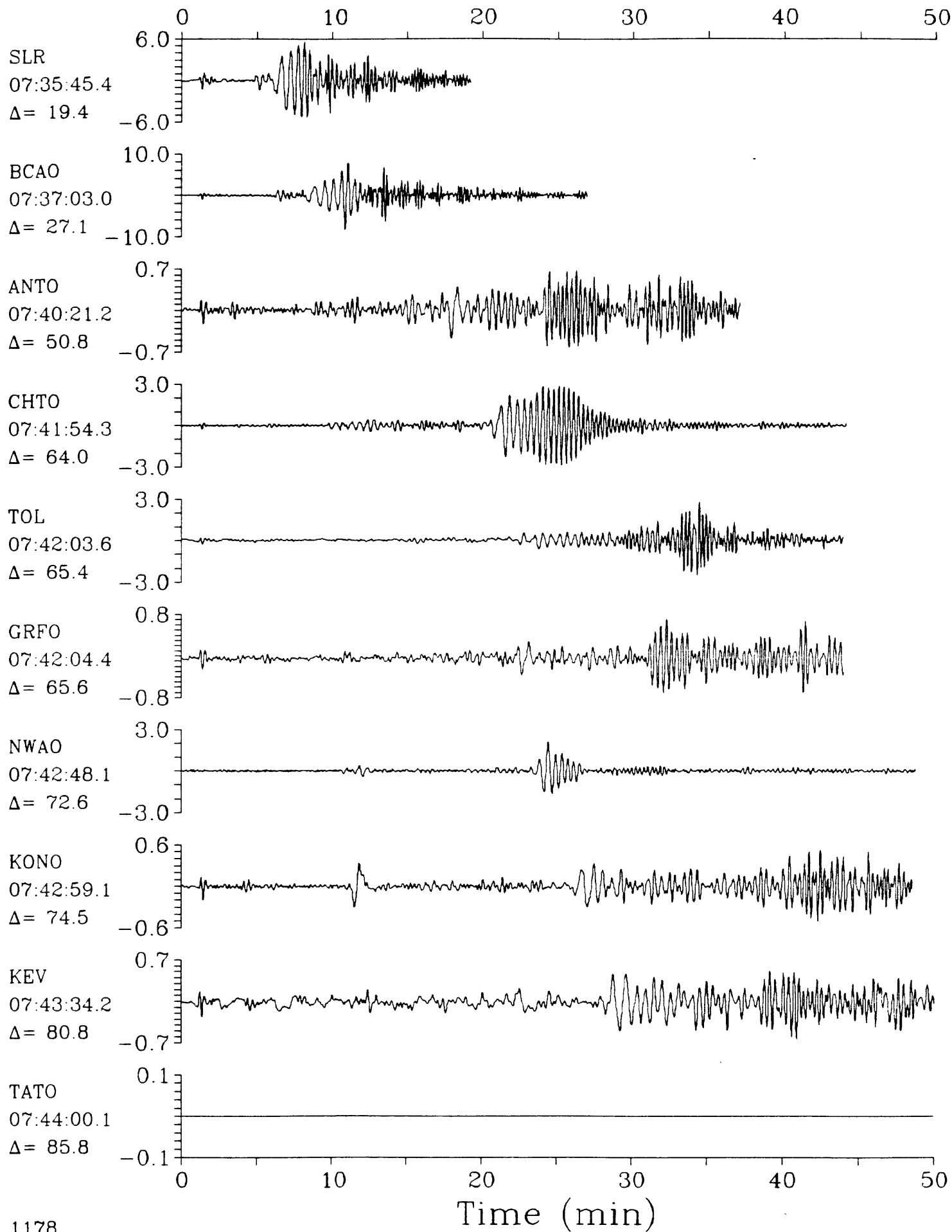
SPZ

Northwest of Madagascar $h=10.0$ $m_b=5.4$ $M_{sz}=5.5$ 

LPZ

28 June 1985 07:32:19.99

LPZ

Northwest of Madagascar $h=10.0$ $m_b=5.4$ $M_{sz}=5.5$ 

LPZ

28 June 1985 07:32:19.99

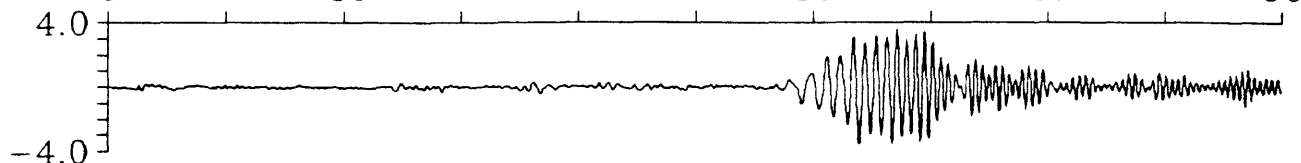
LPZ

Northwest of Madagascar $h=10.0$ $m_b=5.4$ $M_{SZ}=5.5$

0 10 20 30 40 50

BDF

07:44:03.0

 $\Delta=86.3$ 

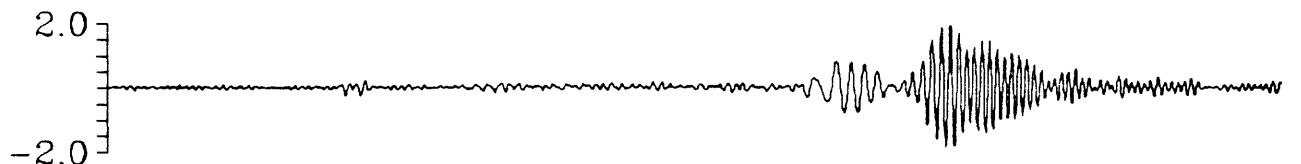
TAU

07:44:40.9

 $\Delta=94.4$ 

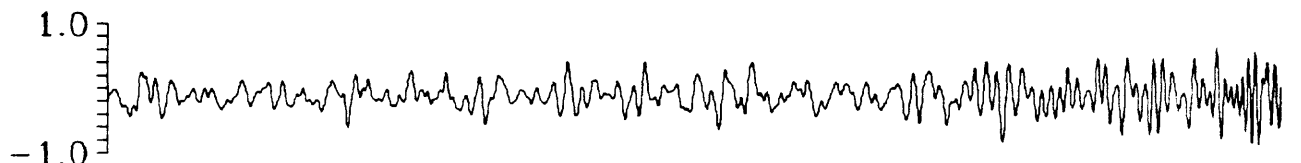
CTAO

07:49:34.5

 $\Delta=100.2$ 

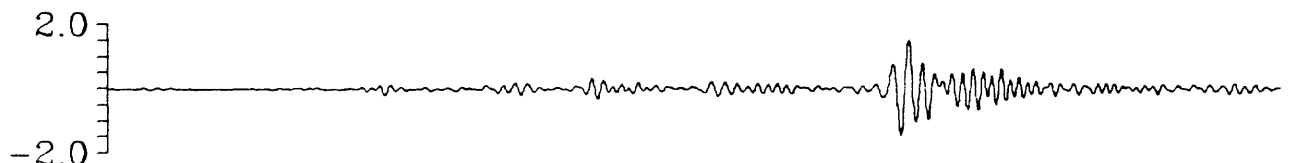
GDH

07:49:36.9

 $\Delta=101.5$ 

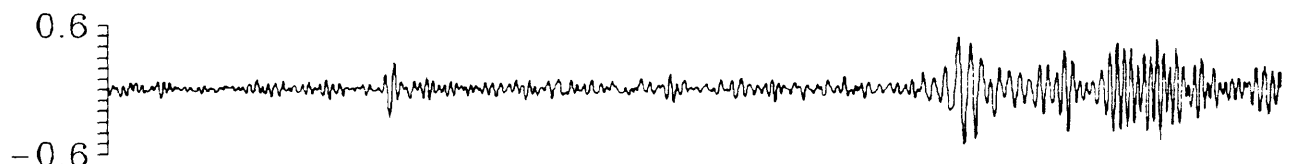
GUMO

07:49:44.3

 $\Delta=105.6$ 

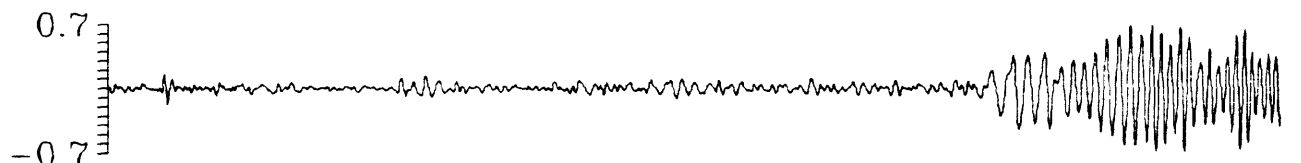
SNZO

07:49:58.1

 $\Delta=112.9$ 

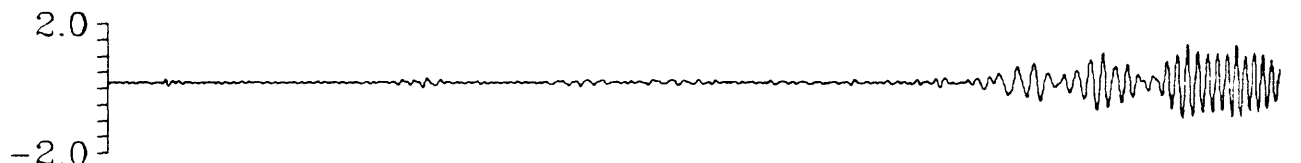
RSNY

07:50:03.3

 $\Delta=115.7$ 

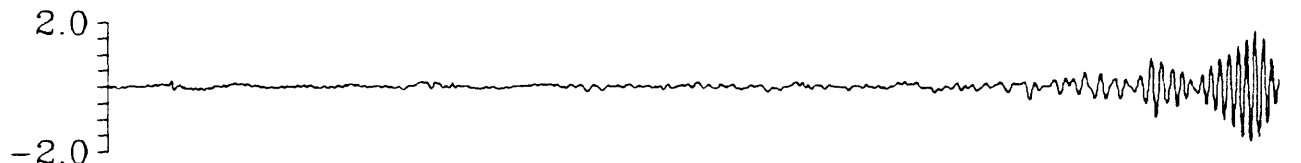
GAC

07:50:04.2

 $\Delta=116.1$ 

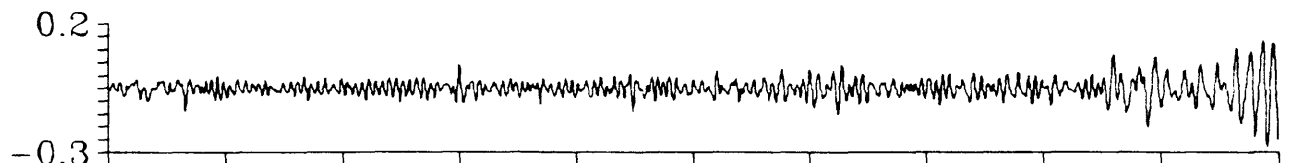
SCP

07:50:09.4

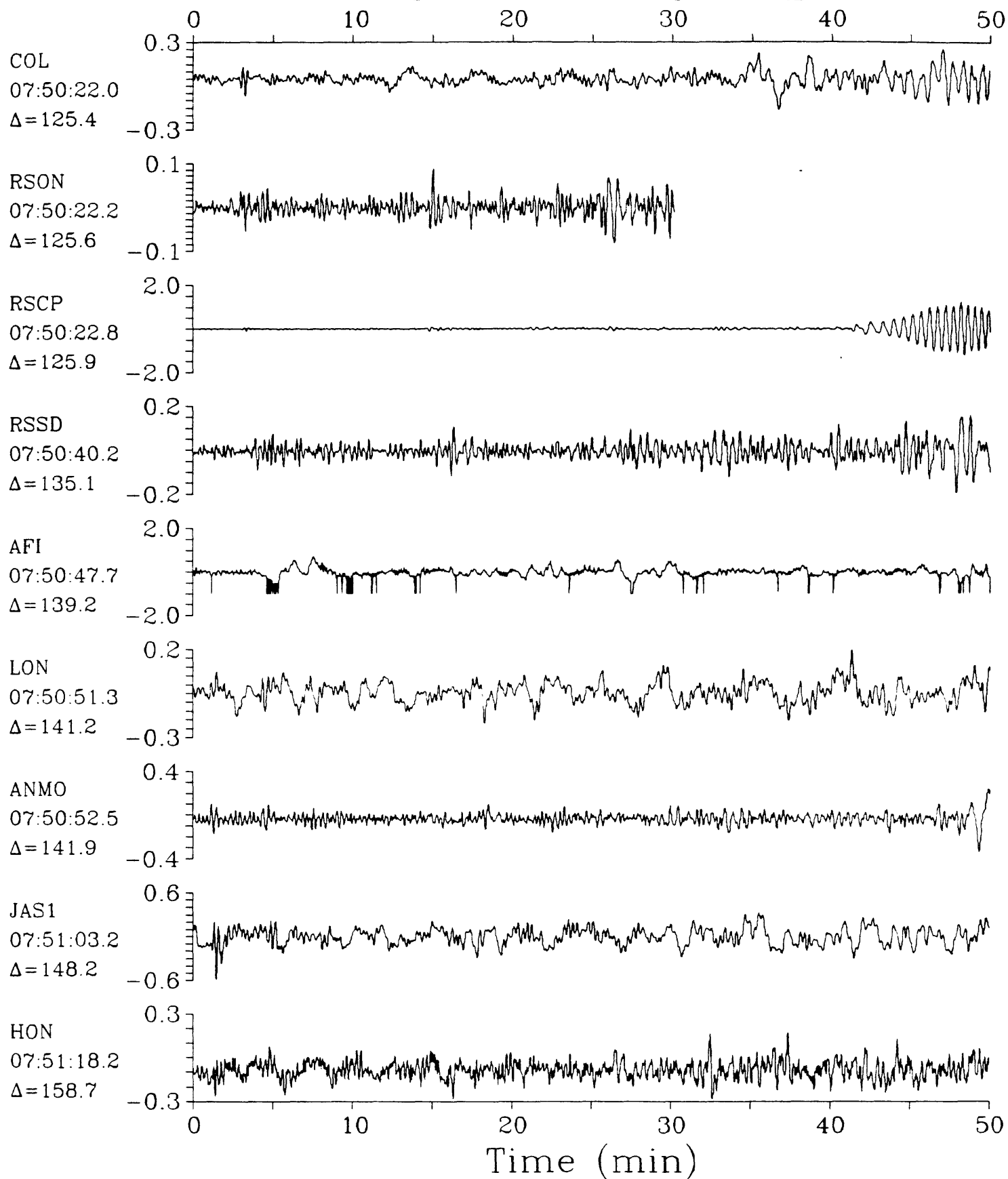
 $\Delta=118.8$ 

RSNT

07:50:21.9

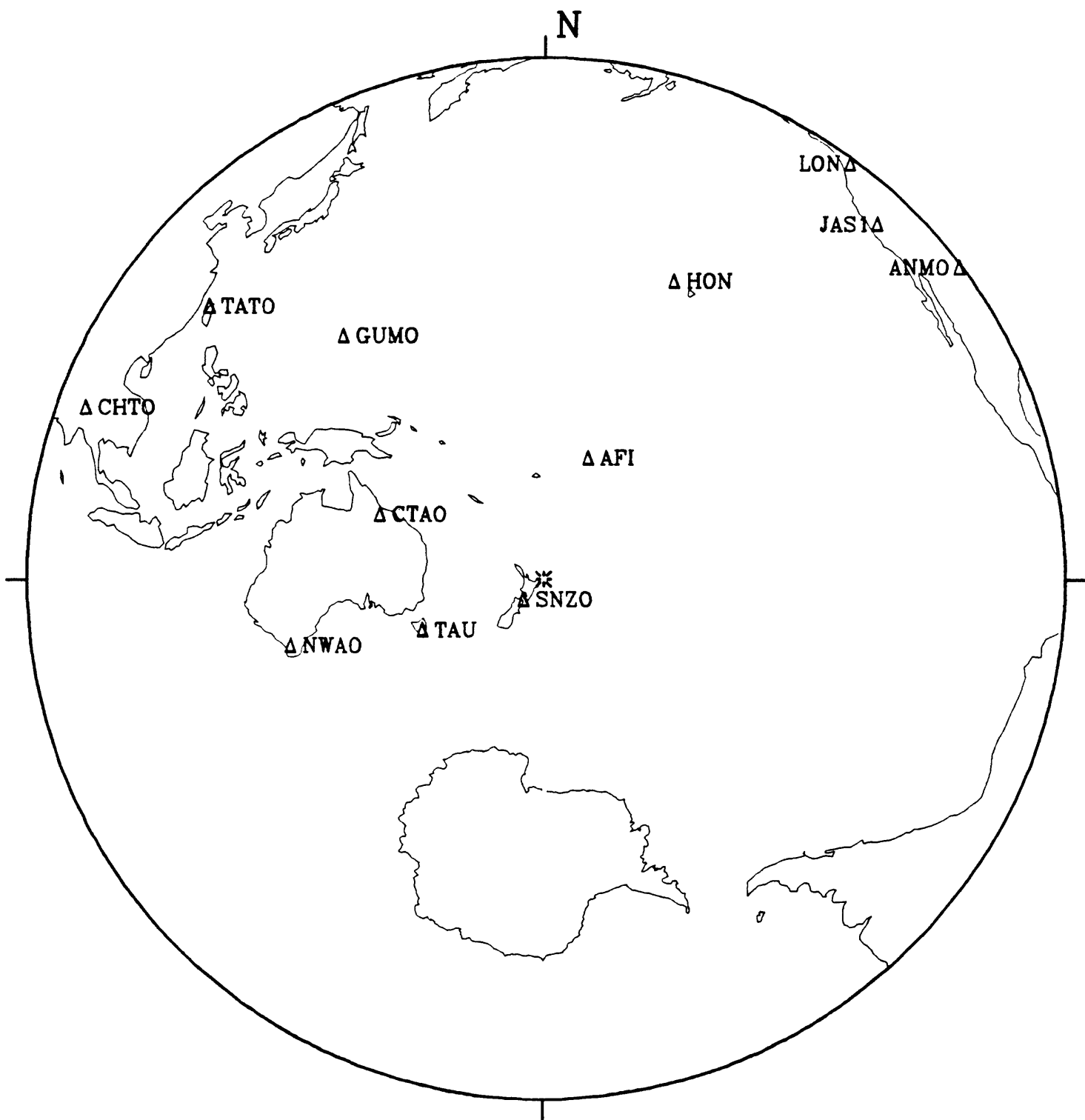
 $\Delta=125.4$ 

Time (min)

Northwest of Madagascar $h=10.0$ $m_b=5.4$ $M_{sz}=5.5$ 

28 June 1985 18:54:13.88

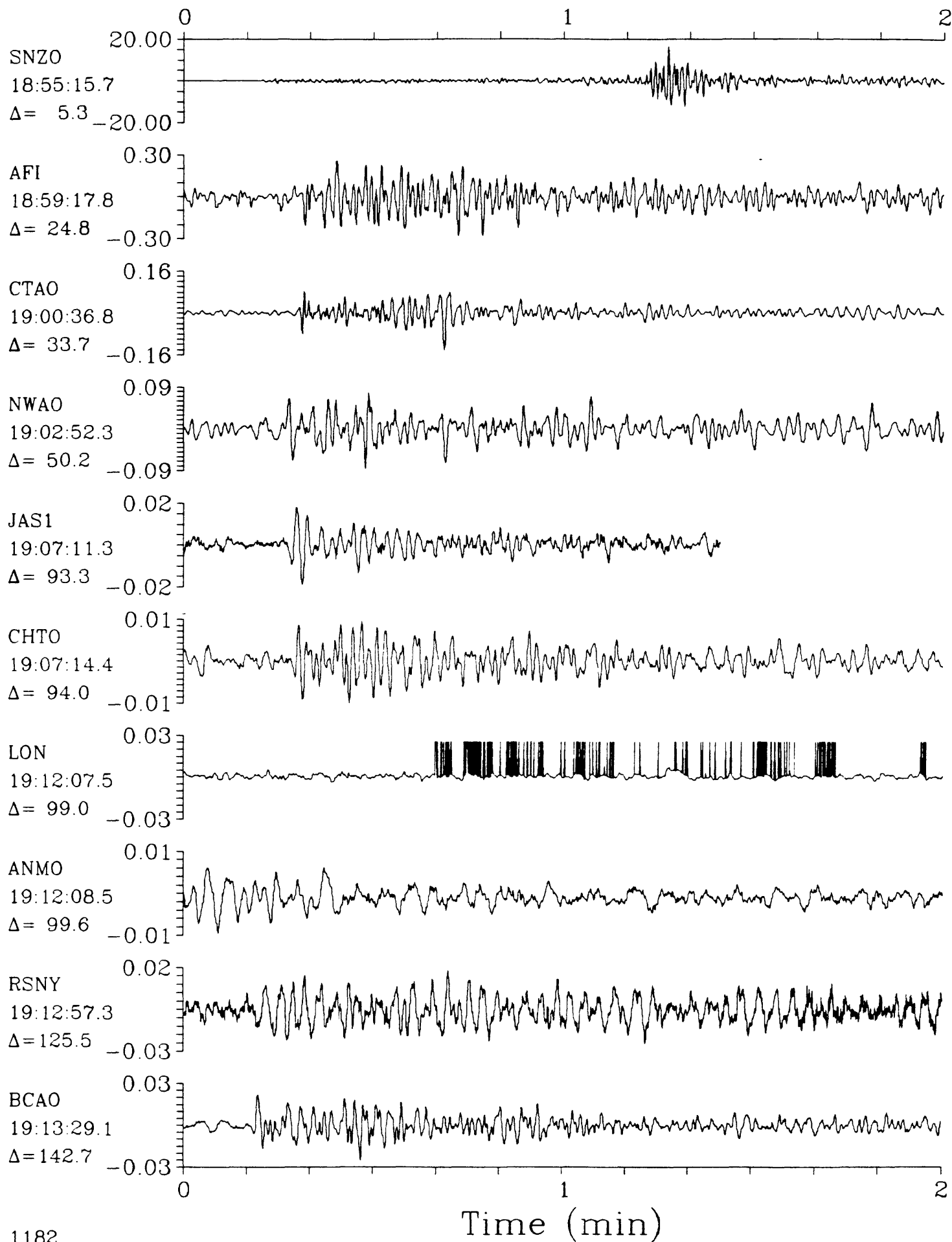
Off E. Coast of N. Island, N.Z.



SPZ

28 June 1985 18:54:13.88

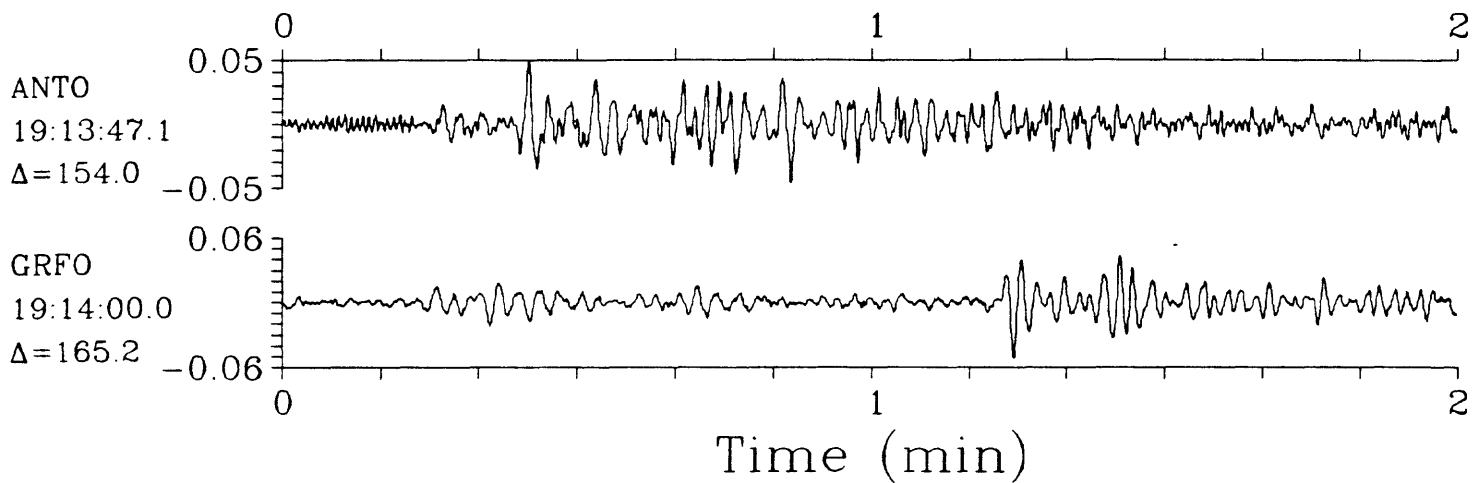
SPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.7$ $M_{SZ}=5.1$ 

SPZ

28 June 1985 18:54:13.88

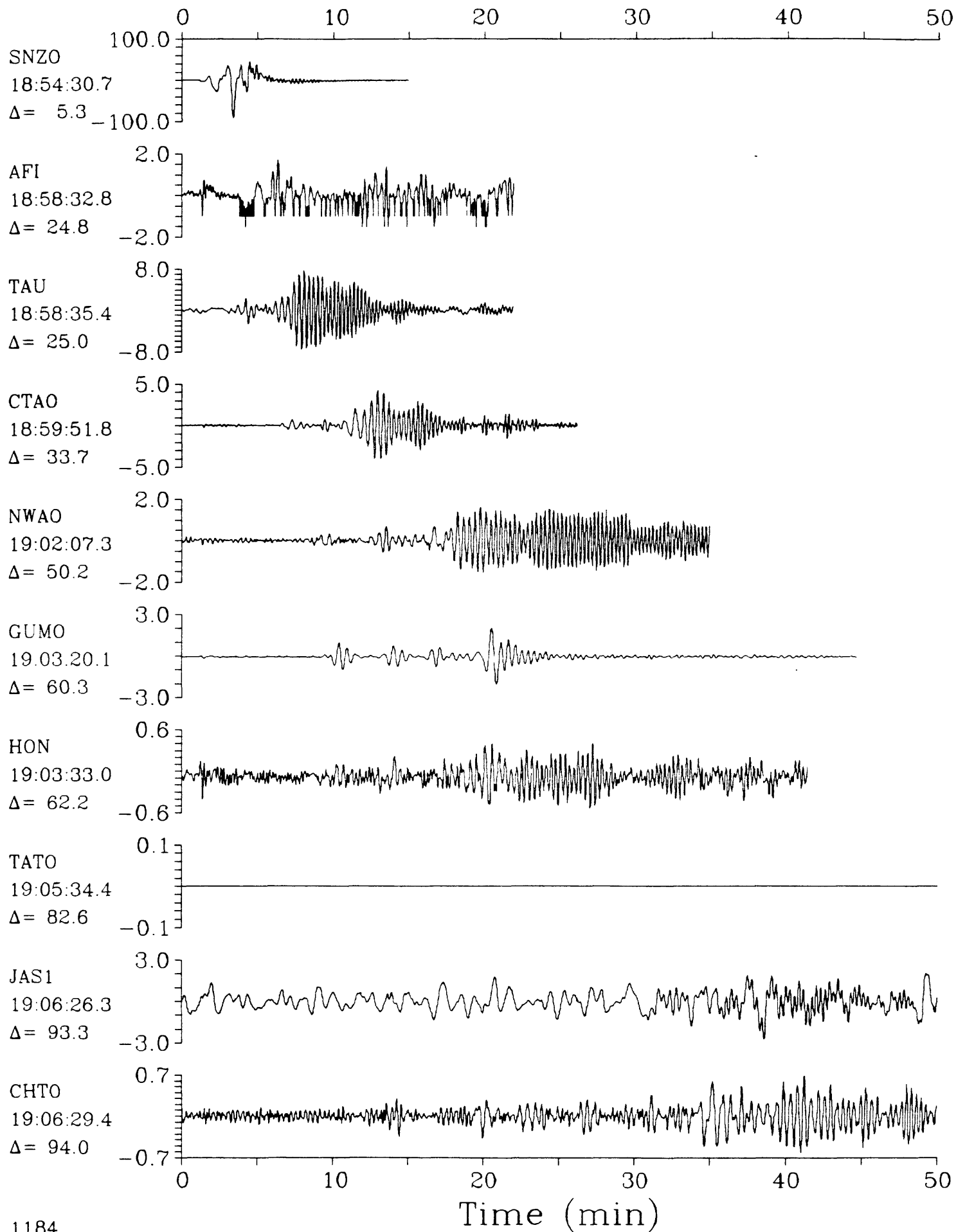
SPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.7$ $M_{SZ}=5.1$ 

LPZ

28 June 1985 18:54:13.88

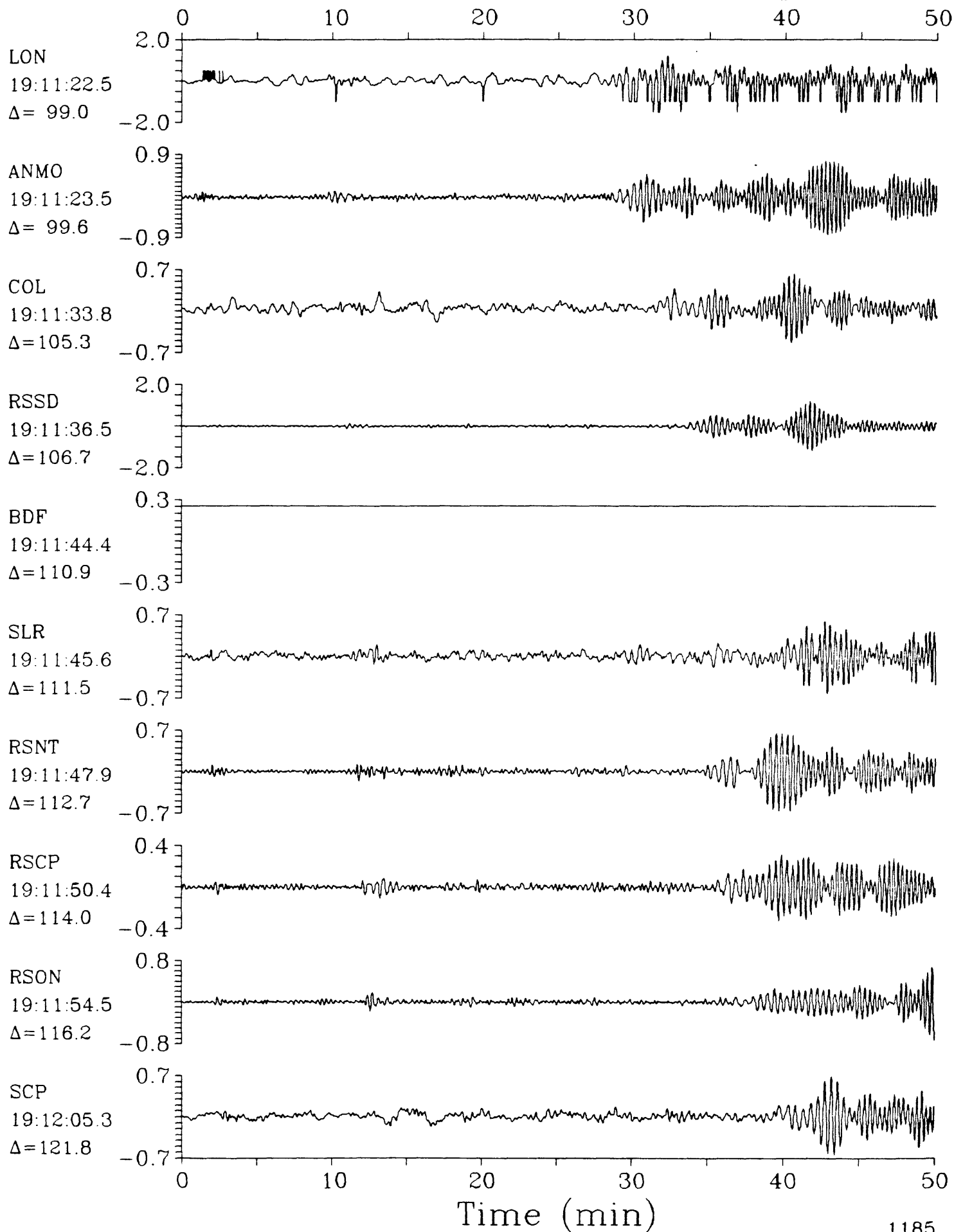
LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.7$ $M_{sz}=5.1$ 

LPZ

28 June 1985 18:54:13.88

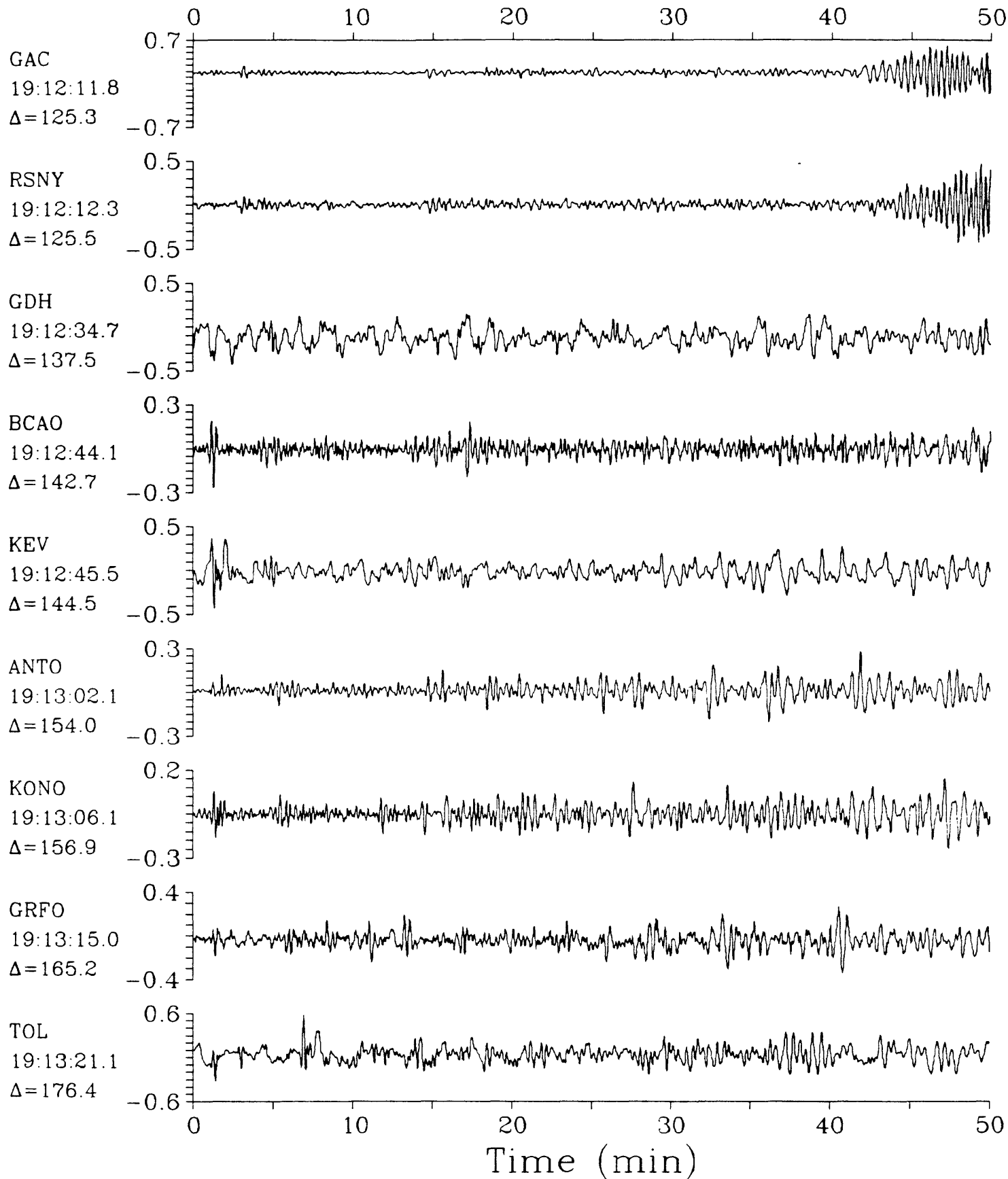
LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.7$ $M_{sz}=5.1$ 

LPZ

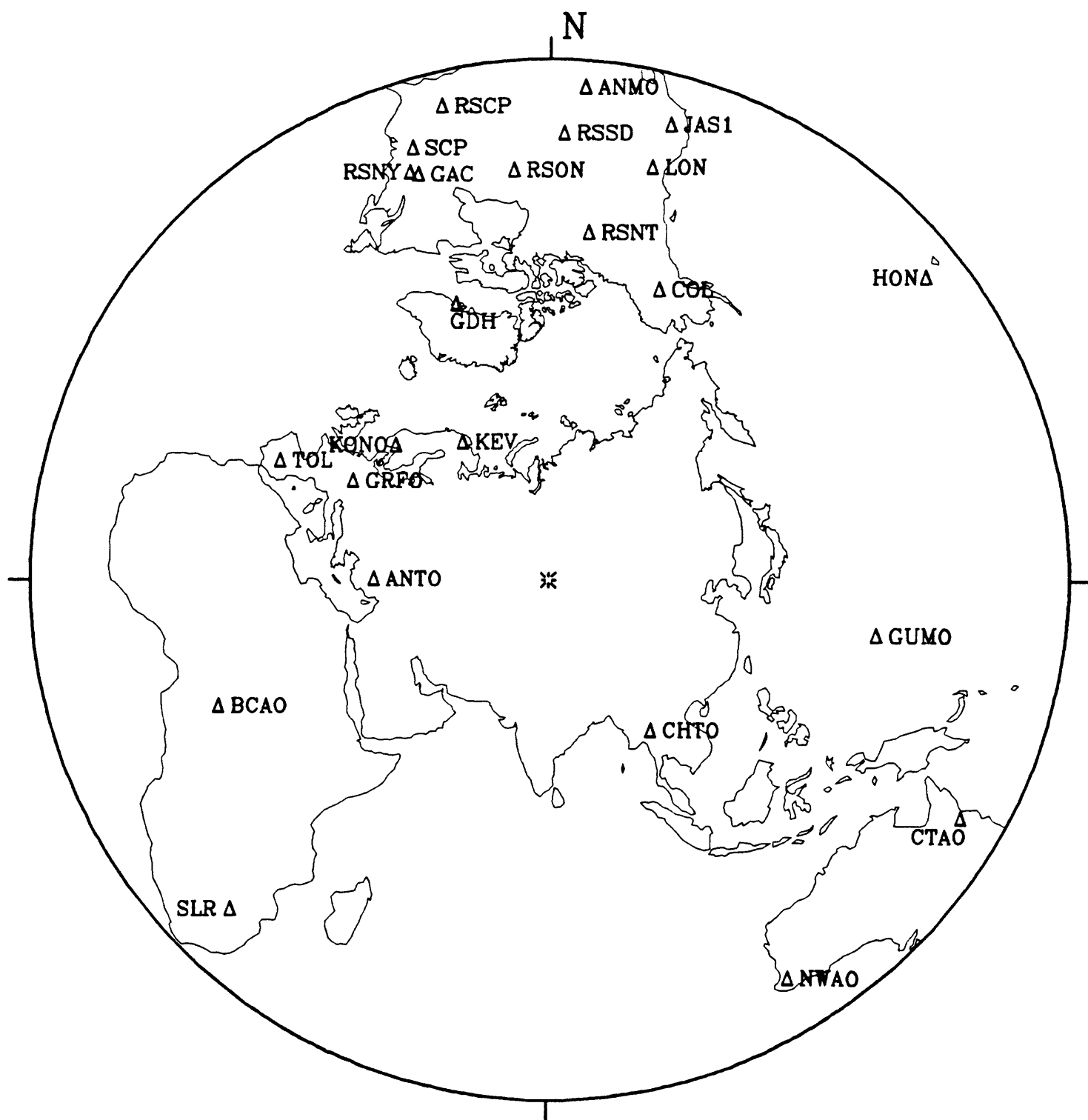
28 June 1985 18:54:13.88

LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.7$ $M_{sz}=5.1$ 

30 June 1985 02:39:02.79

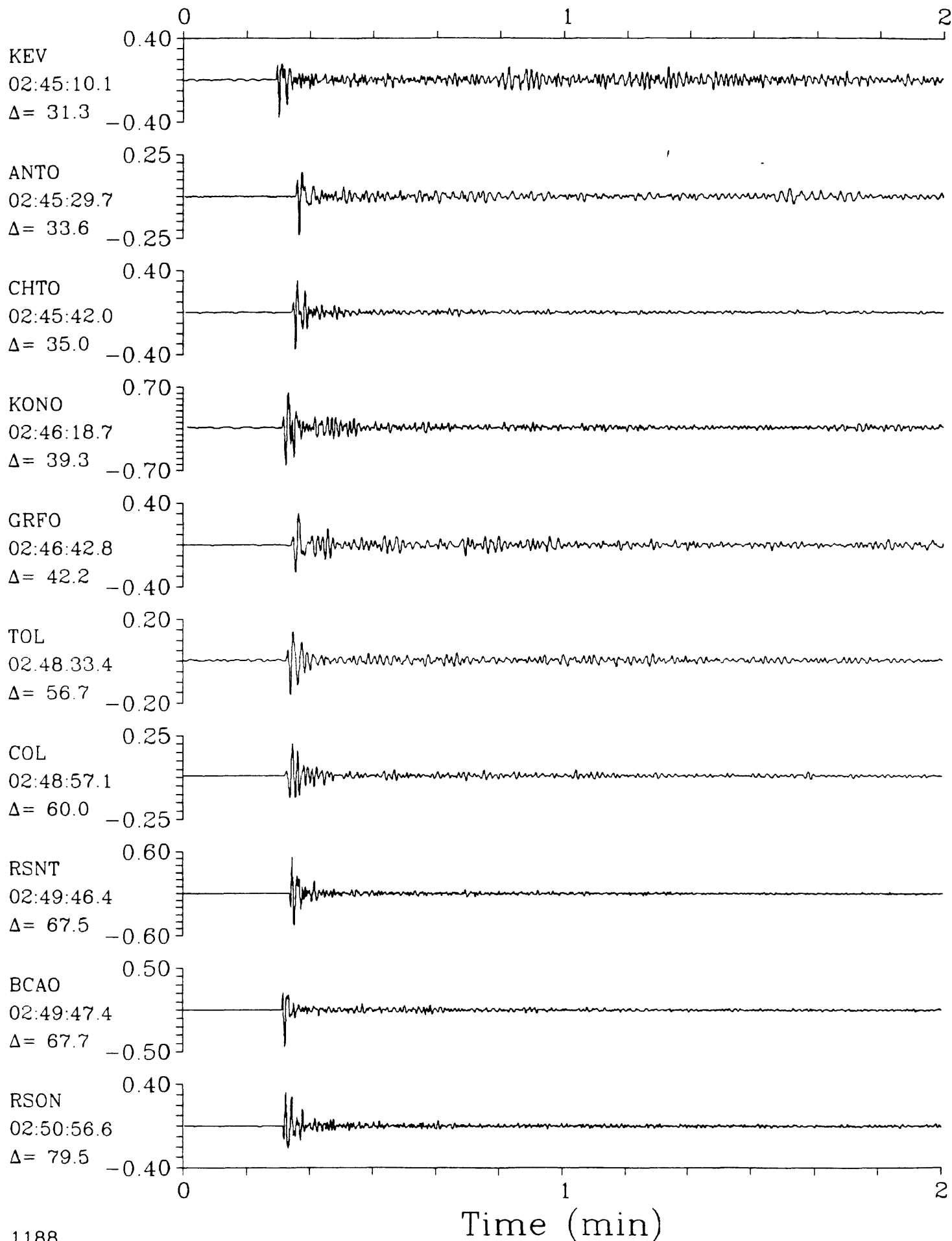
Eastern Kazakh SSR



SPZ

30 June 1985 02:39:02.79

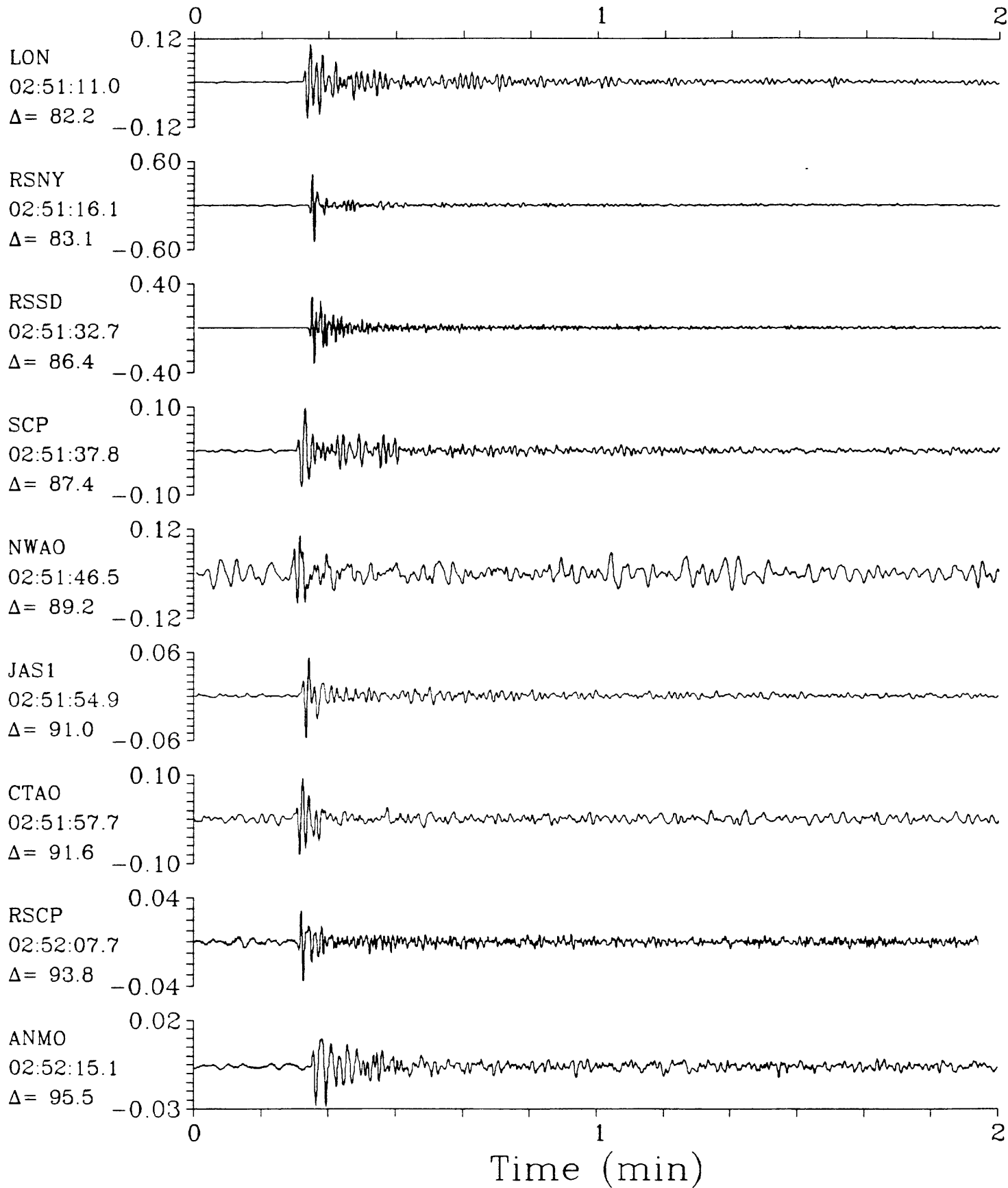
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.0$ 

SPZ

30 June 1985 02:39:02.79

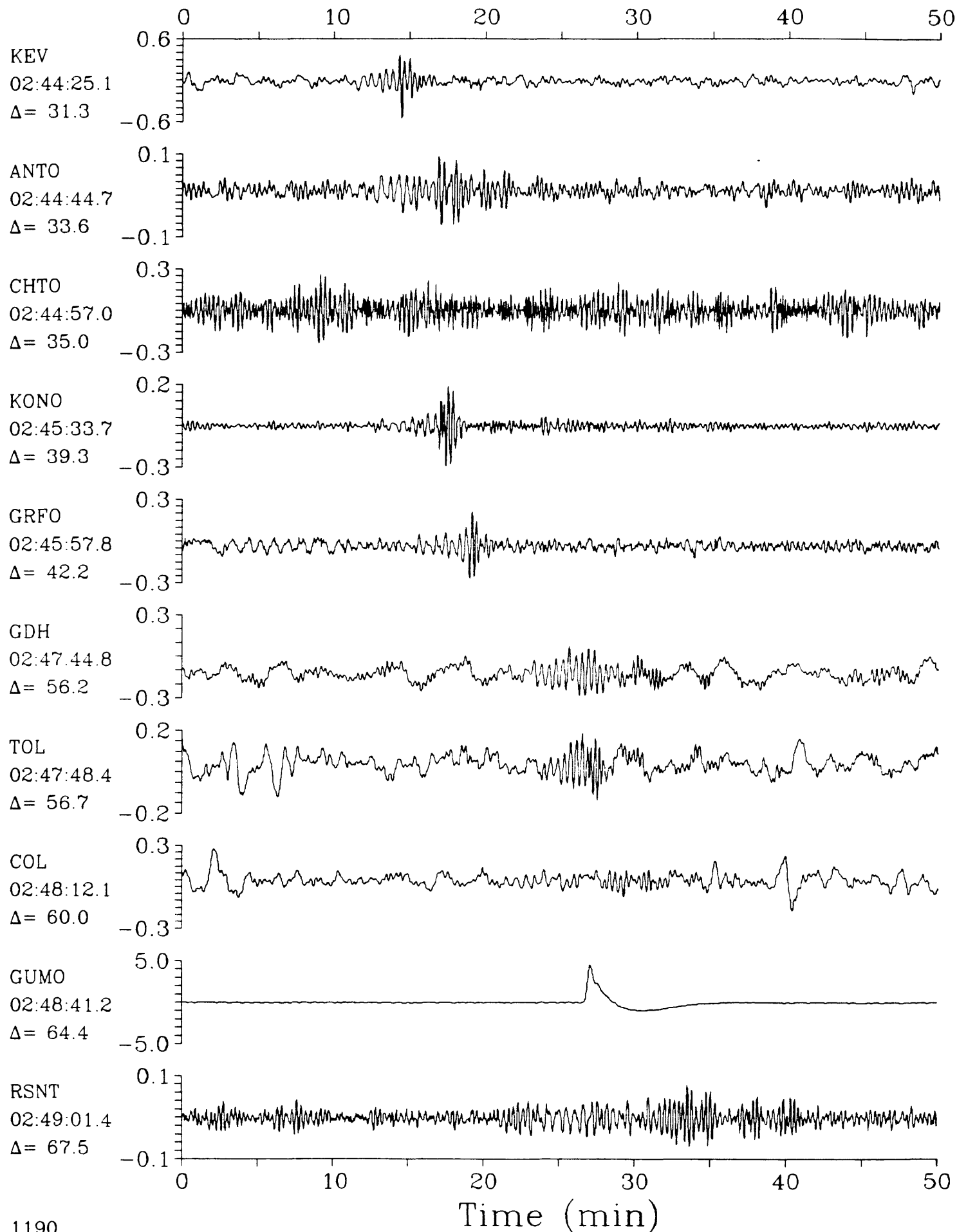
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.0$ 

LPZ

30 June 1985 02:39:02.79

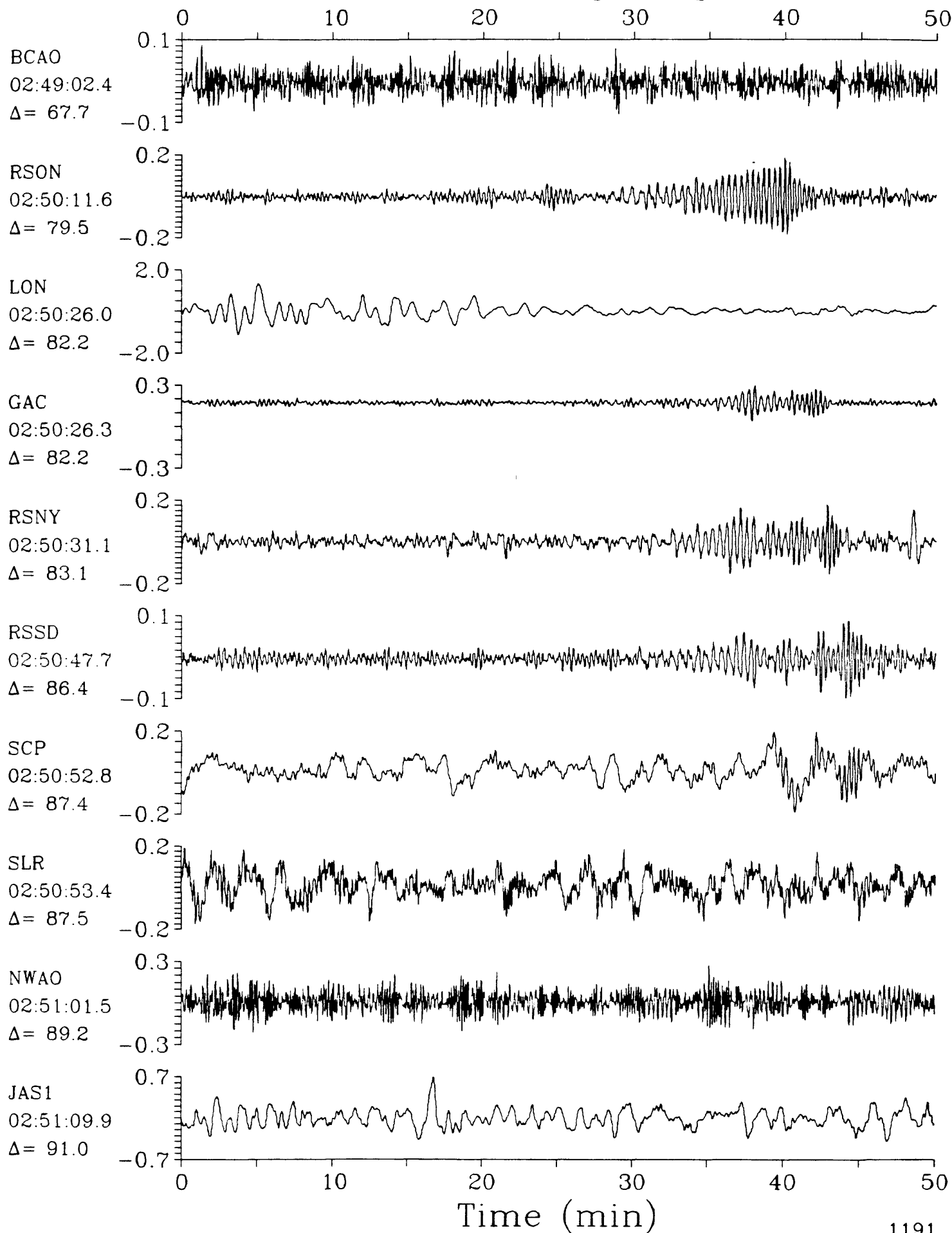
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.0$ 

LPZ

30 June 1985 02:39:02.79

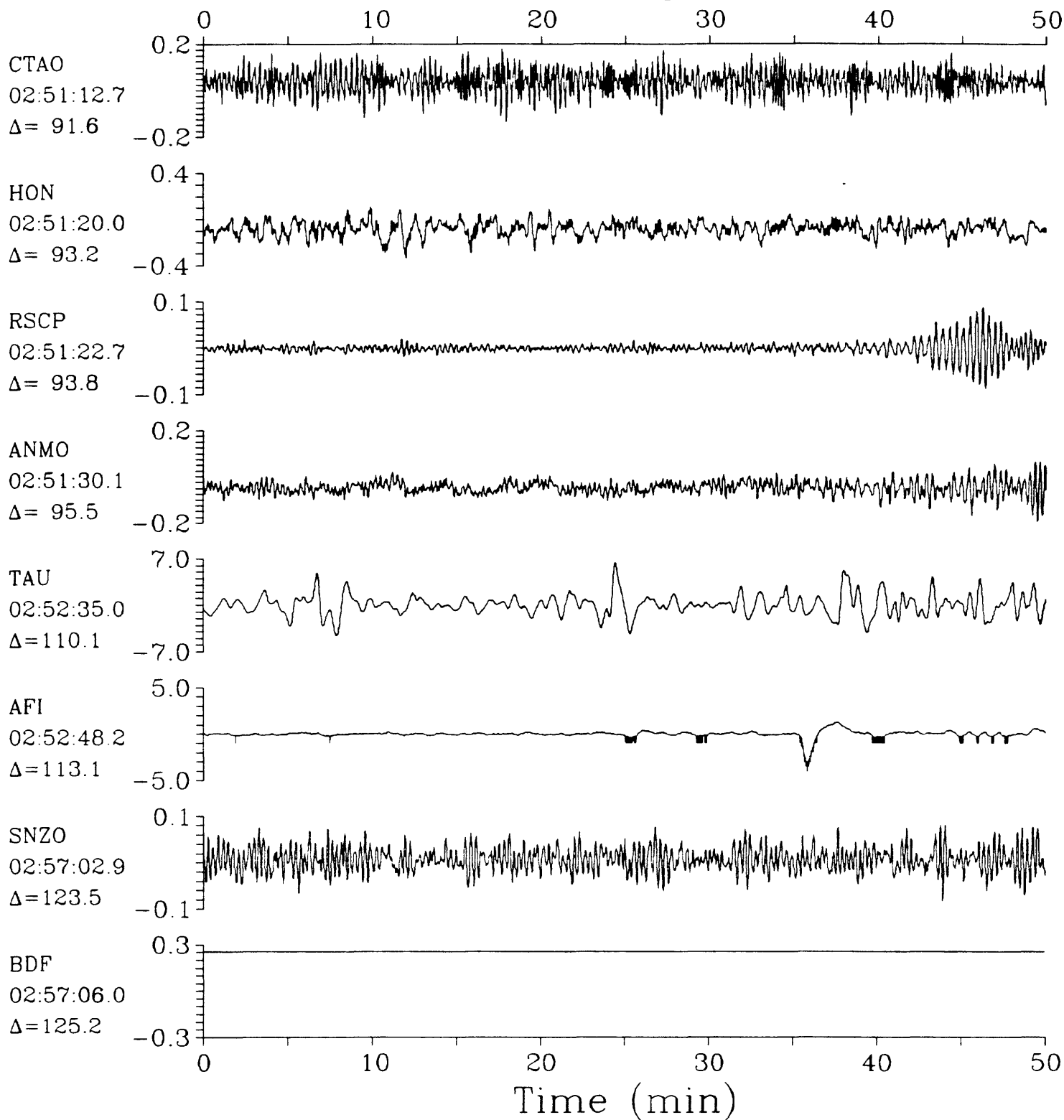
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{SZ}=4.0$ 

LPZ

30 June 1985 02:39:02.79

LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.0$ 

IPZ

30 June 1985 02:39:02.79

IPZ

Eastern Kazakh SSR $h=0.0$ $m_b=6.0$ $M_{sz}=4.0$ 