

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

National Earthquake Information Center
Waveform Catalog
January 1986

by

Madeleine D. Zirbes
Janna M. Lishner
Beverly J. Moon
U.S. Geological Survey
Denver, Colorado

Open-File Report 86-660A
1986

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

Contents

Introduction	ii
1. 1986 January 2 21:33:40.67 West of Australia	1
2. 1986 January 3 09:43:27.51 Molucca Sea	6
3. 1986 January 5 08:08:07.59 Southwest of Africa	12
4. 1986 January 10 22:16:22.41 Southwest of Africa	18
5. 1986 January 12 06:38:21.38 Near Coast of Ecuador	23
6. 1986 January 12 20:14:53.72 Afghanistan	28
7. 1986 January 14 10:34:00.82 Solomon Islands	34
8. 1986 January 15 20:17:31.41 Loyalty Islands Region	39
9. 1986 January 16 13:04:34.19 Taiwan Region	46
10. 1986 January 17 04:15:00.01 Near Coast of Peru	53
11. 1986 January 18 01:59:05.21 Andreanof Islands, Aleutian Is.	59
12. 1986 January 21 05:24:22.48 Tonga Islands	65
13. 1986 January 22 12:26:45.93 Solomon Islands	71
14. 1986 January 22 14:57:12.95 Molucca Sea	78
15. 1986 January 22 20:38:25.56 Bonin Islands Region	84
16. 1986 January 26 07:48:22.94 Near Coast of Northern Chile	89
17. 1986 January 27 07:35:21.28 Solomon Islands	95
18. 1986 January 28 12:32:17.46 Nicobar Islands Region	101
19. 1986 January 29 13:34:09.66 Northern Colombia	108

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 PKPdiff, 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.

With the inclusion of the Network of Autonomously Registering Stations (NARS) in September 1985, it was difficult to list the name of each station in the network on the station coverage map because of their close proximity. Instead, a new symbol (\square) will be used to denote each station of the network, with the name NARS. When other networks are included with stations situated close together, a new symbol will be used to denote each station of each network. The name used will be the network name only.

Table 1. Earthquakes for January 1986 with magnitudes ≥ 5.5

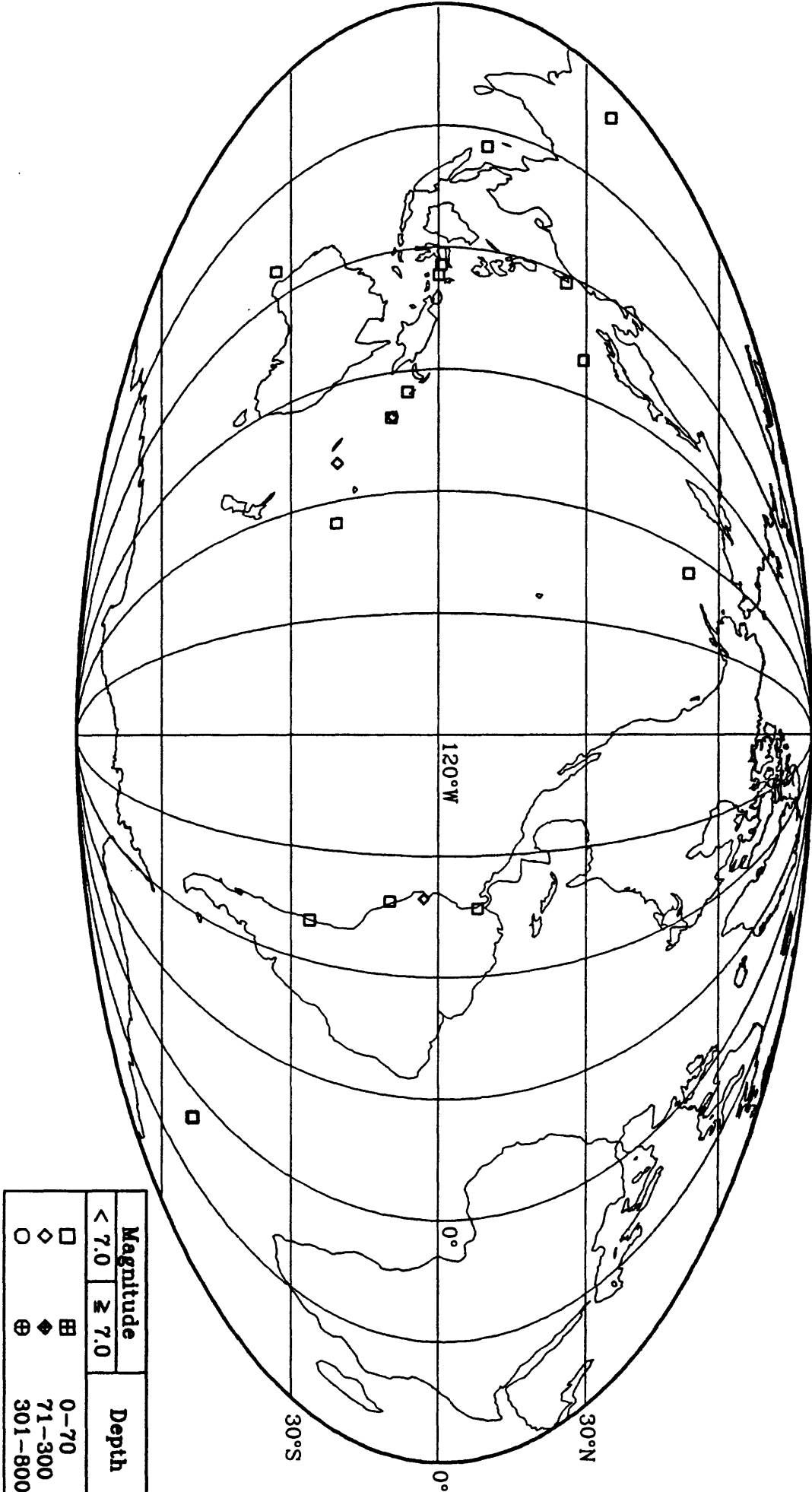
	Origin Time UTC	Latitude	Longitude	Depth (km)	Magnitude m_b	Magnitude M_{s2}	Flinn-Engdahl Region Name
1.	1986 01 02 21:33:40.67	34.218° S	111.943° E	10.0	5.1	5.5	West of Australia
2.	1986 01 03 09:43:27.51	0.986° S	126.826° E	33.0	5.6	5.6	Molucca Sea
3.	1986 01 05 08:08:07.59	53.286° S	9.761° E	10.0	5.8	5.4	Southwest of Africa
4.	1986 01 10 22:16:22.41	53.058° S	9.647° E	10.0	5.5	5.1	Southwest of Africa
5.	1986 01 12 06:38:21.38	3.955° S	79.380° W	103.3	5.5		Near Coast of Ecuador
6.	1986 01 12 20:14:53.72	34.166° N	69.596° E	33.0	5.3	5.5	Afghanistan
7.	1986 01 14 10:34:00.82	7.132° S	155.189° E	33.0	5.6	4.7	Solomon Islands
8.	1986 01 15 20:17:31.41	21.376° S	170.284° E	145.0	6.1		Loyalty Islands Region
9.	1986 01 16 13:04:34.19	24.737° N	122.096° E	33.0	5.5	5.9	Taiwan Region
10.	1986 01 17 04:15:00.01	10.693° S	78.375° W	50.2	5.6		Near Coast of Peru
11.	1986 01 18 01:59:05.21	51.569° N	173.116° W	62.9	5.7		Andreanof Islands, Aleutian Is.
12.	1986 01 21 05:24:22.48	21.528° S	174.336° W	40.4	5.7	5.2	Tonga Islands
13.	1986 01 22 12:26:45.93	10.186° S	161.055° E	100.0	5.9		Solomon Islands
14.	1986 01 22 14:57:12.95	0.516° S	124.323° E	57.7	5.7		Molucca Sea
15.	1986 01 22 20:38:25.56	28.363° N	140.473° E	33.0	4.7	5.5	Bonin Islands Region
16.	1986 01 26 07:48:22.94	27.124° S	70.865° W	30.0	5.7	4.8	Near Coast of Northern Chile
17.	1986 01 27 07:35:21.28	10.399° S	161.177° E	55.2	5.6		Solomon Islands
18.	1986 01 28 12:32:17.46	8.779° N	94.175° E	33.0	5.7	5.8	Nicobar Islands Region
19.	1986 01 29 13:34:09.66	6.887° N	76.863° W	10.0	5.6	5.3	Northern Colombia

Table 2. Network-event tape station list for January 1986.

Code	ID	Station	Latitude	Longitude	Elevation (m)	Type*
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	Charters 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
GRA1	302	Haidhof, Germany	49.69° N	11.22° E	500.0	GRF
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
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
NRAO	301	NORESS array site A0	60.735° N	11.541° E	302.0	NRSA
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
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
TATO	41	Taipei, Taiwan	24.98° N	121.49° E	53.0	SRO
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

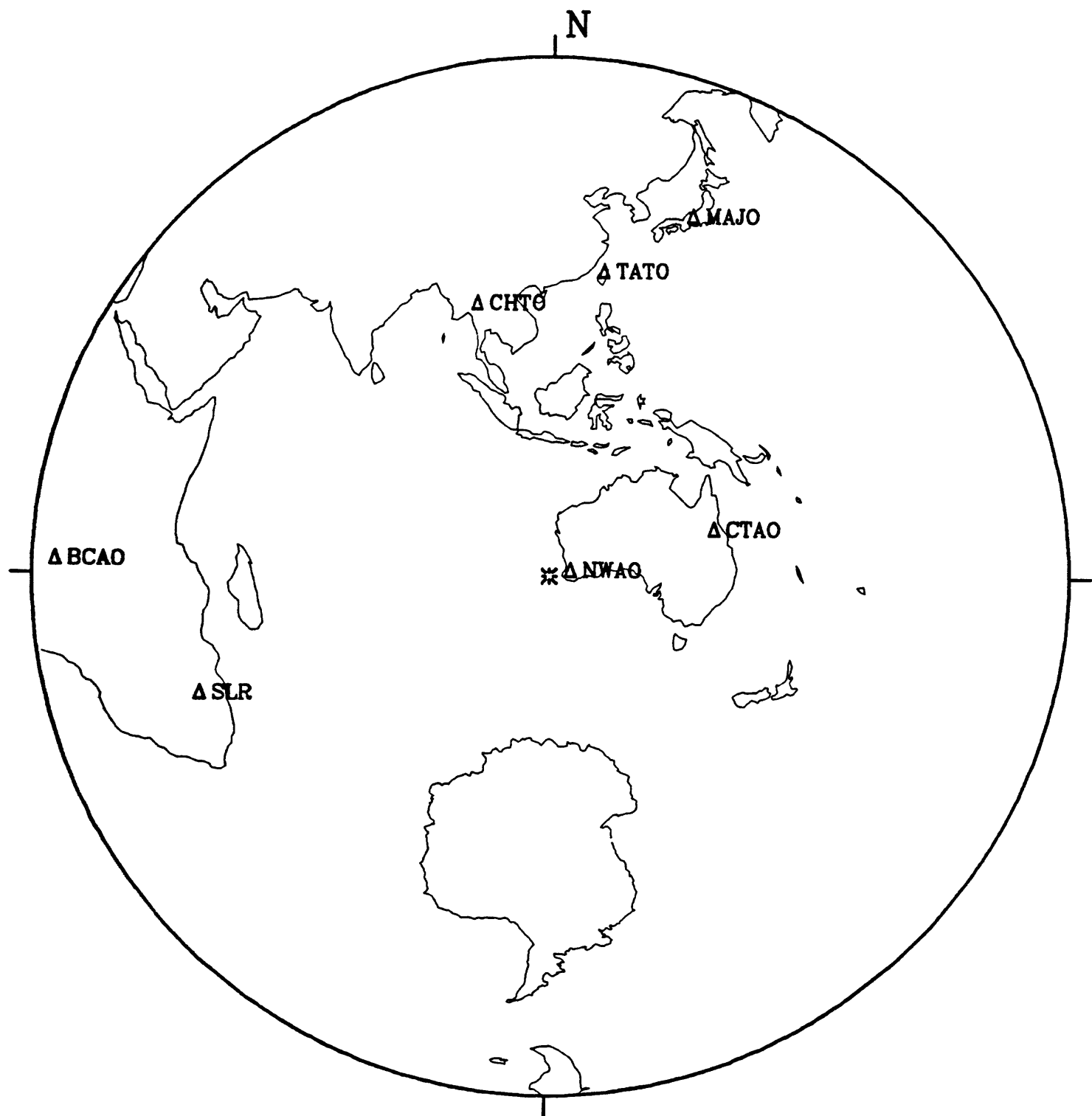
- * ASRO - Abbreviated Seismic Research Observatory
- DWWSSN - Digital World Wide Standardized Seismograph Network
- GRF - Graefenberg Array
- NARS - Network of Autonomously Registrating Stations
- NRSA - Norwegian Regional Seismic Array
- RSTN - Regional Seismic Test Network
- SRO - Seismic Research Observatory

EARTHQUAKES - January 1986 - MAGNITUDE ≥ 5.5



02 January 1986 21:33:40.67

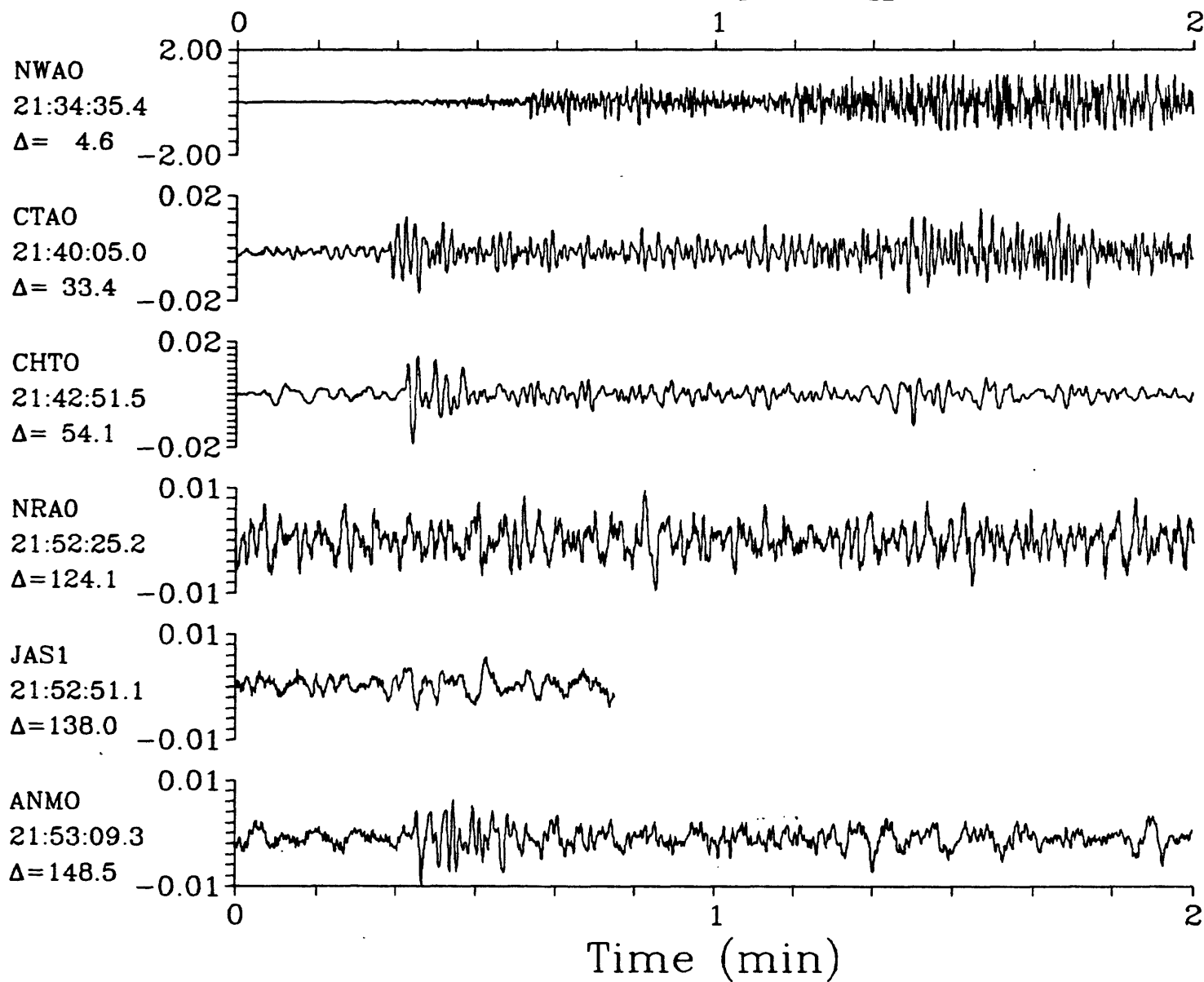
West of Australia



SPZ

02 January 1986 21:33:40.67

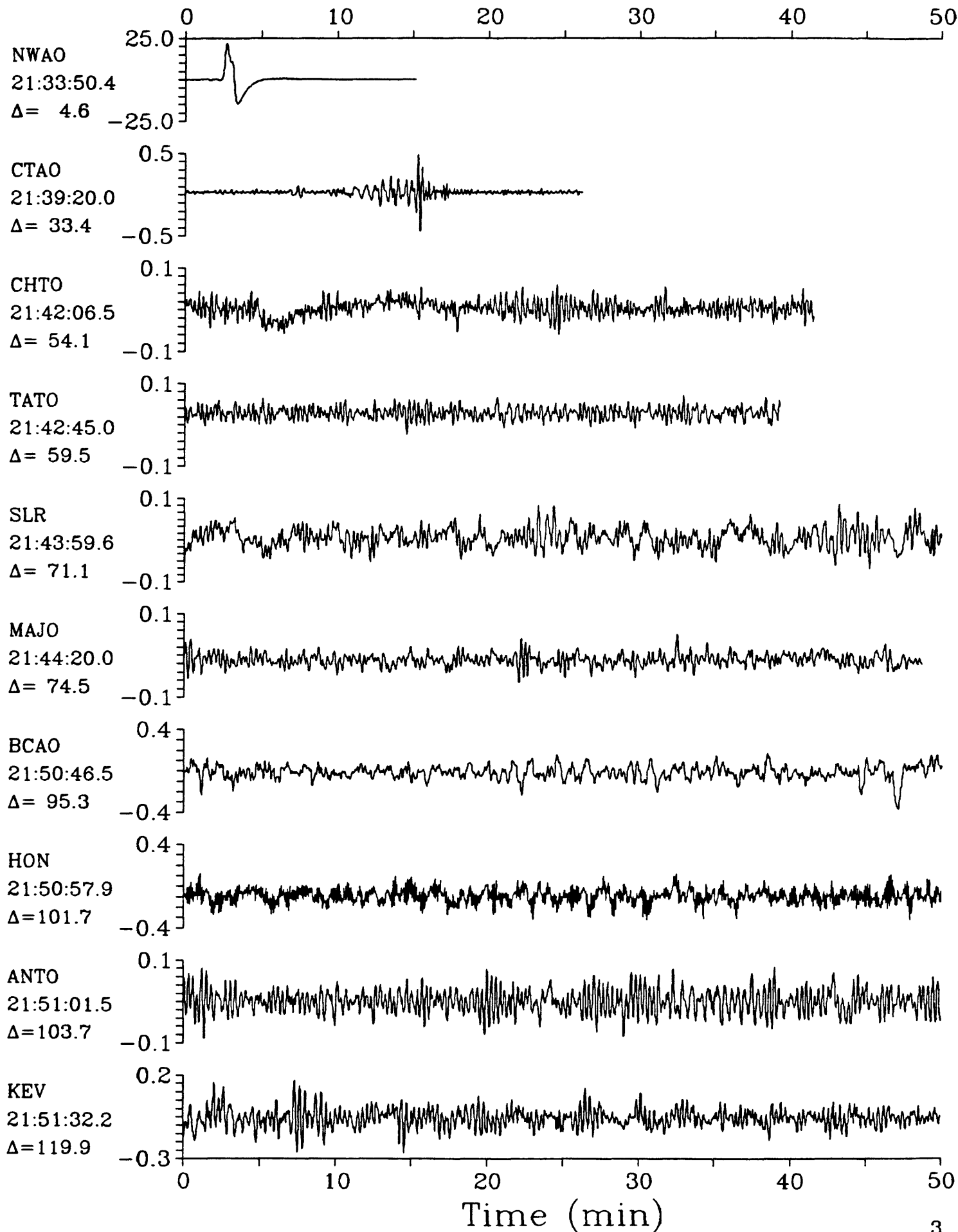
SPZ

West of Australia $h=10.0$ $m_b=5.1$ $M_{SZ}=5.5$ 

LPZ

02 January 1986 21:33:40.67

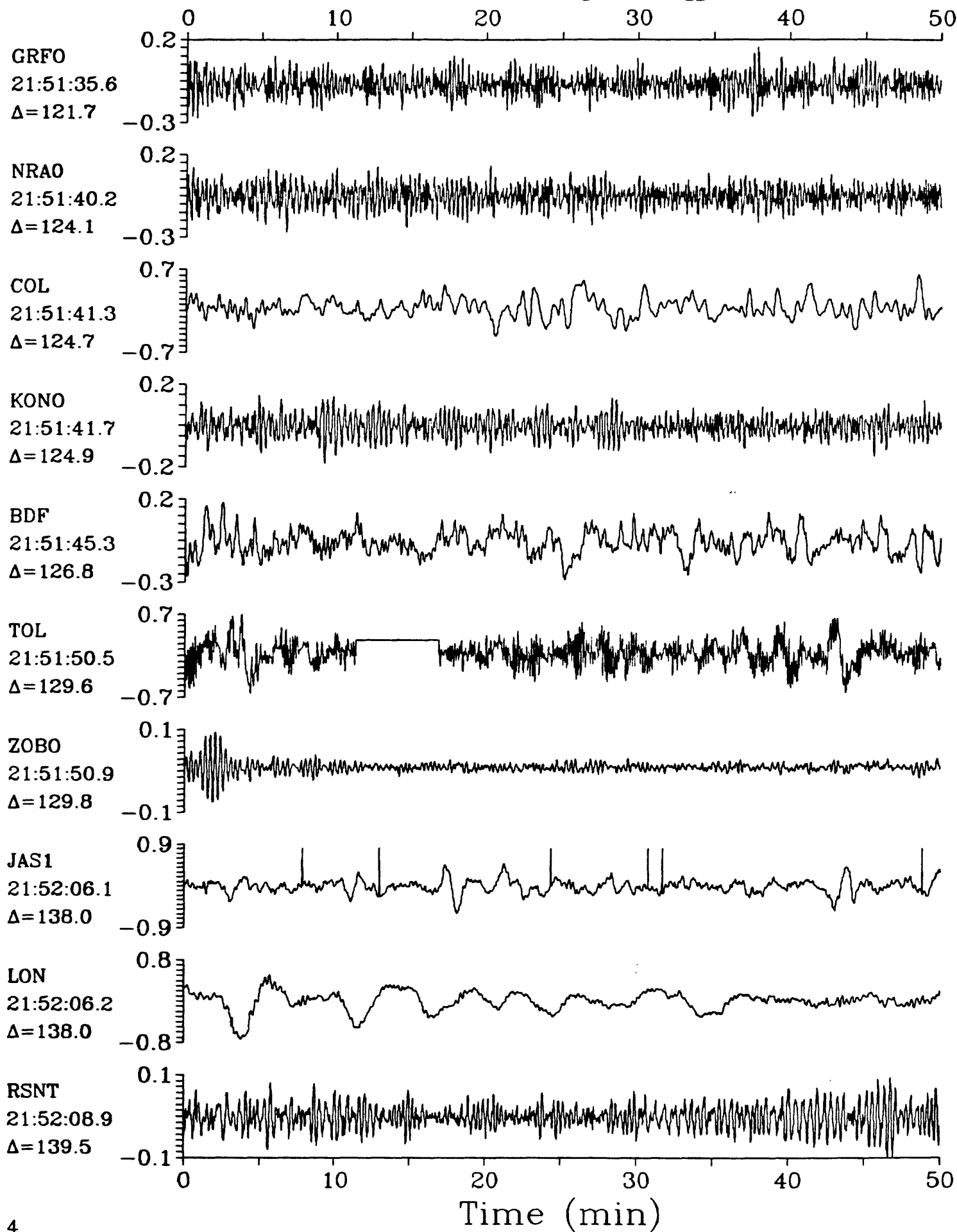
LPZ

West of Australia $h=10.0$ $m_b=5.1$ $M_{SZ}=5.5$ 

LPZ

02 January 1986 21:33:40.67
West of Australia $h=10.0$ $m_b=5.1$ $M_{SZ}=5.5$

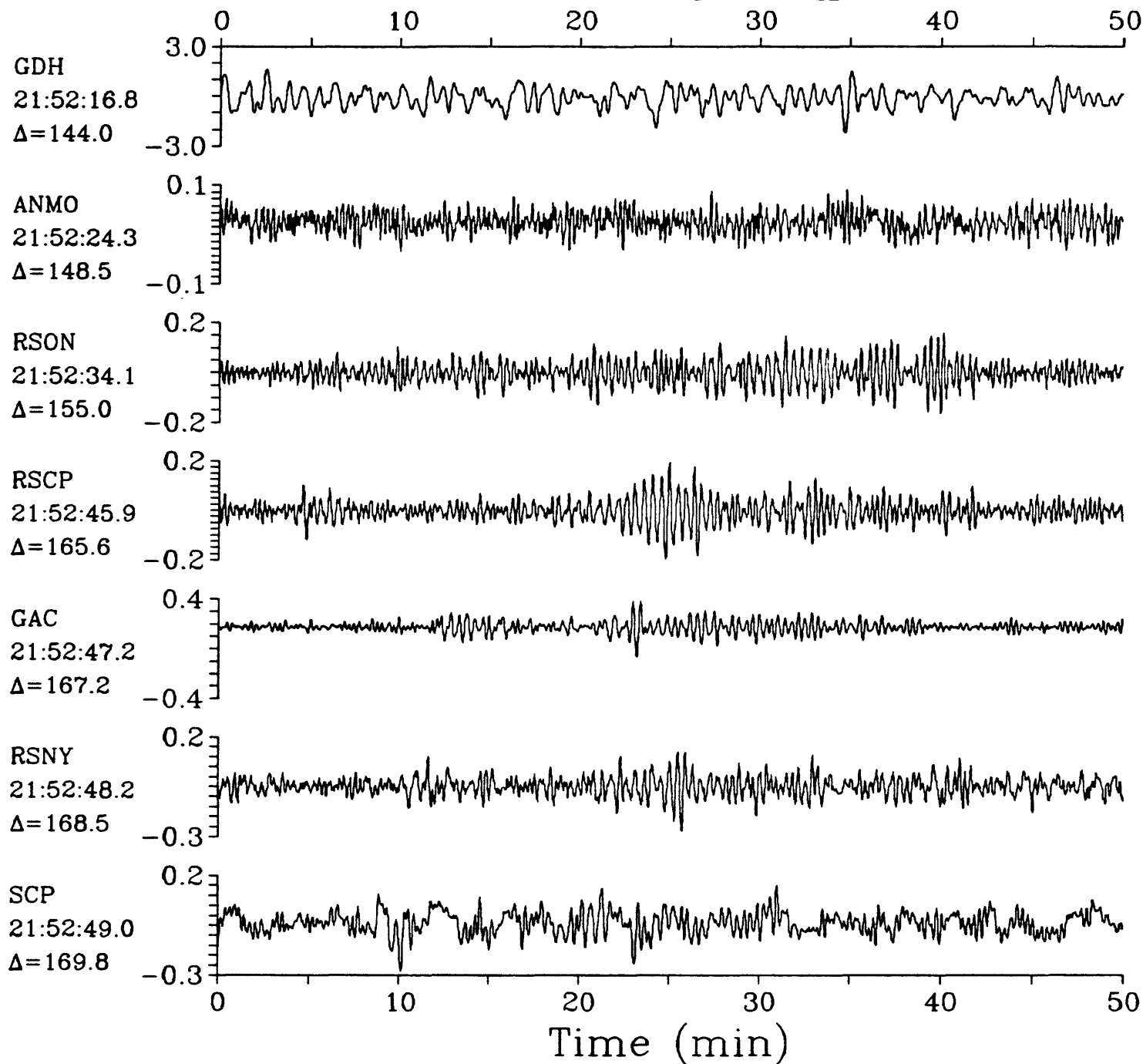
LPZ



LPZ

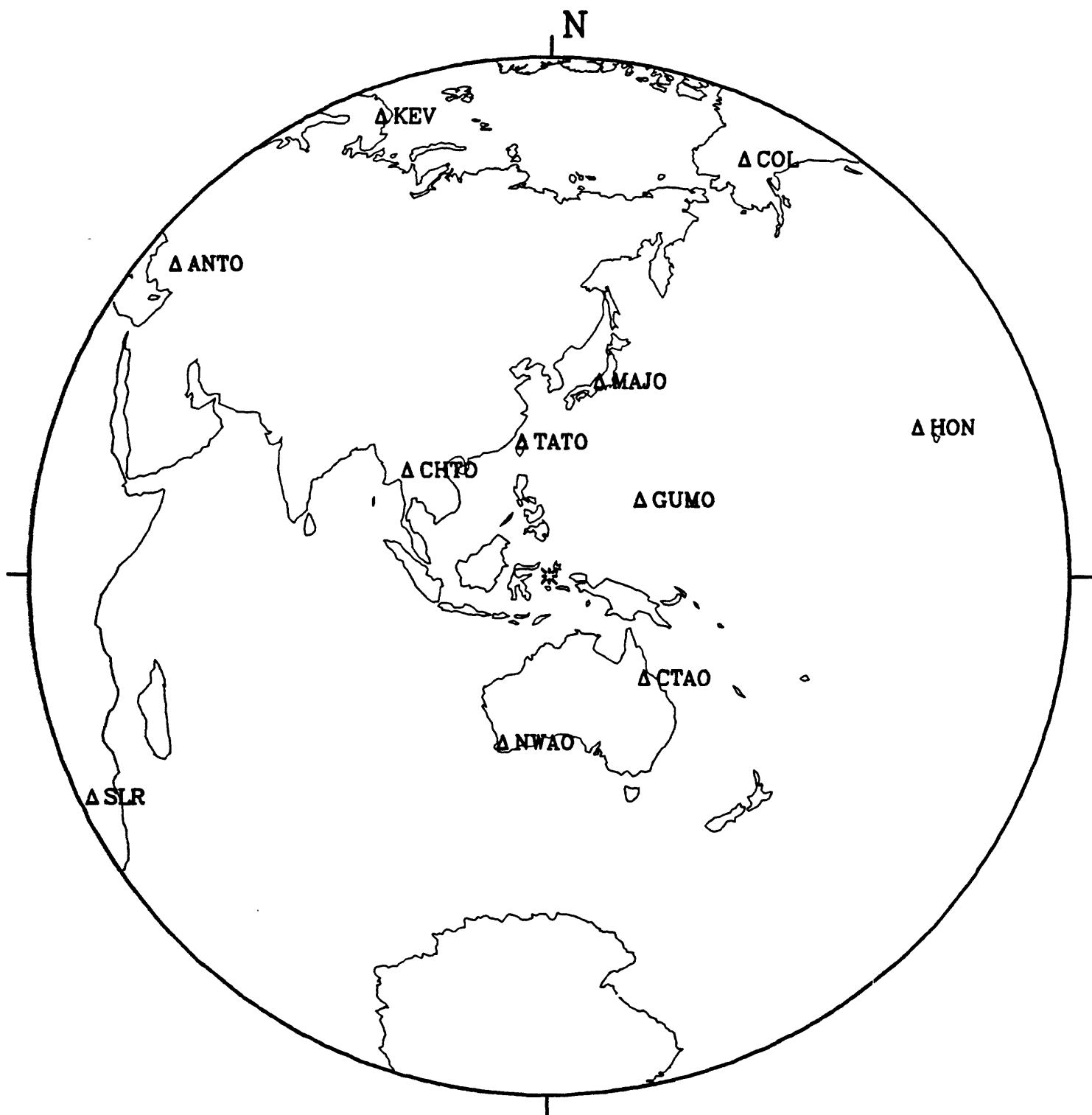
02 January 1986 21:33:40.67

LPZ

West of Australia $h=10.0$ $m_b=5.1$ $M_{sz}=5.5$ 

03 January 1986 09:43:27.51

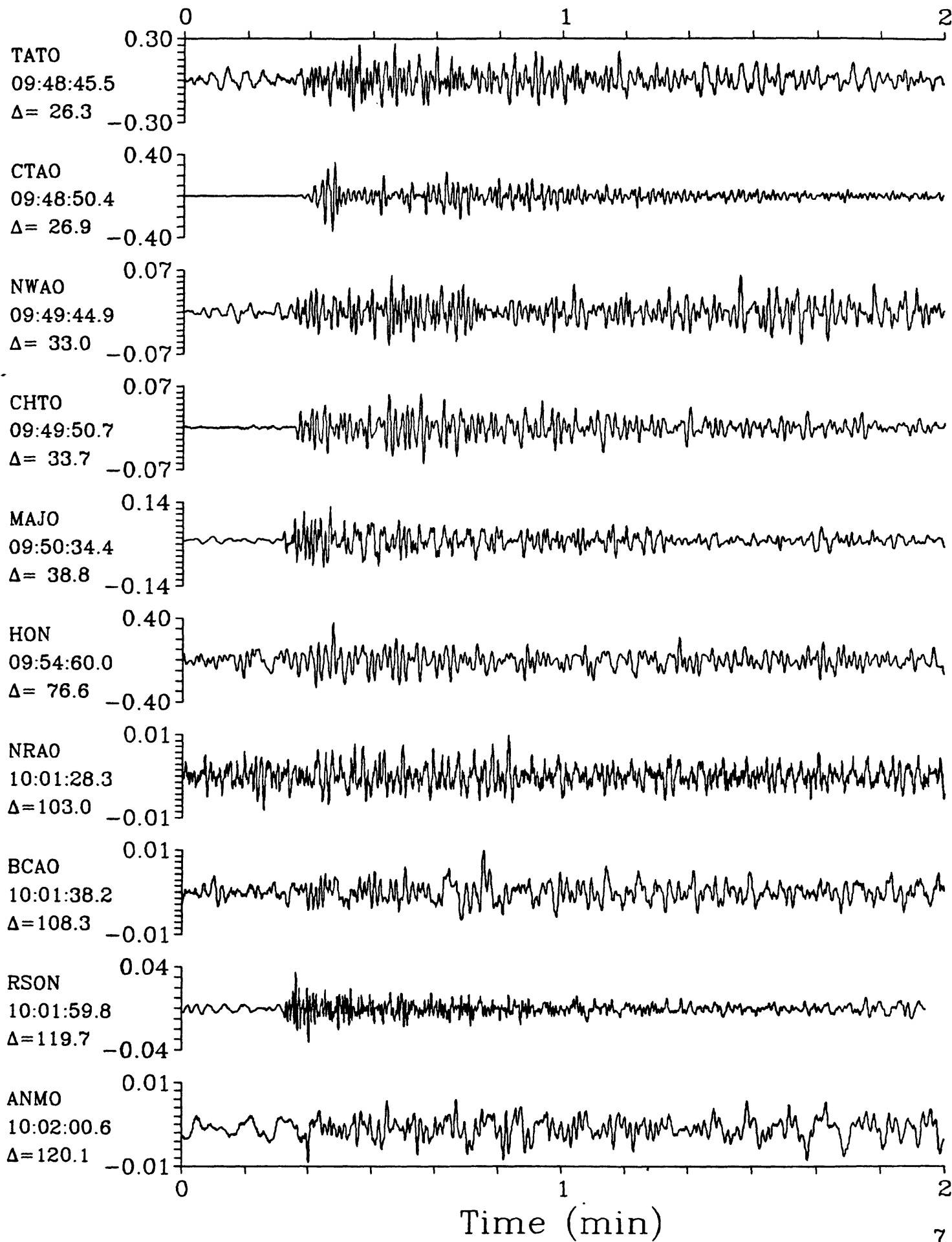
Molucca Sea



SPZ

03 January 1986 09:43:27.51
Molucca Sea $h=33.0$ $m_b=5.6$ $M_{sz}=5.6$

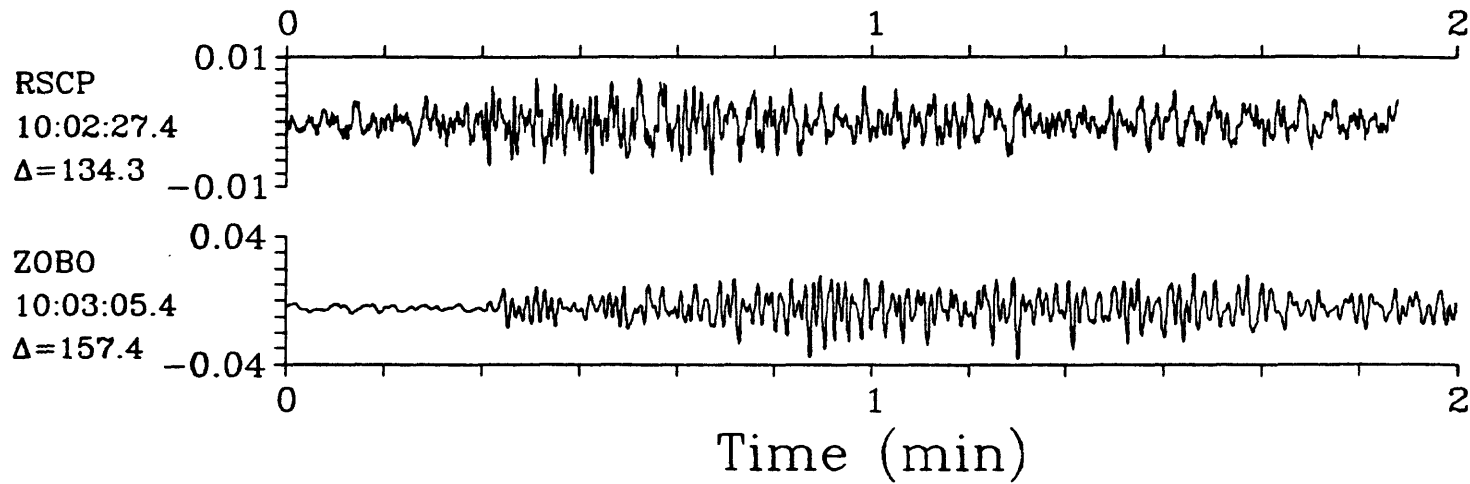
SPZ



SPZ

03 January 1986 09:43:27.51
Molucca Sea $h=33.0$ $m_b=5.6$ $M_{sz}=5.6$

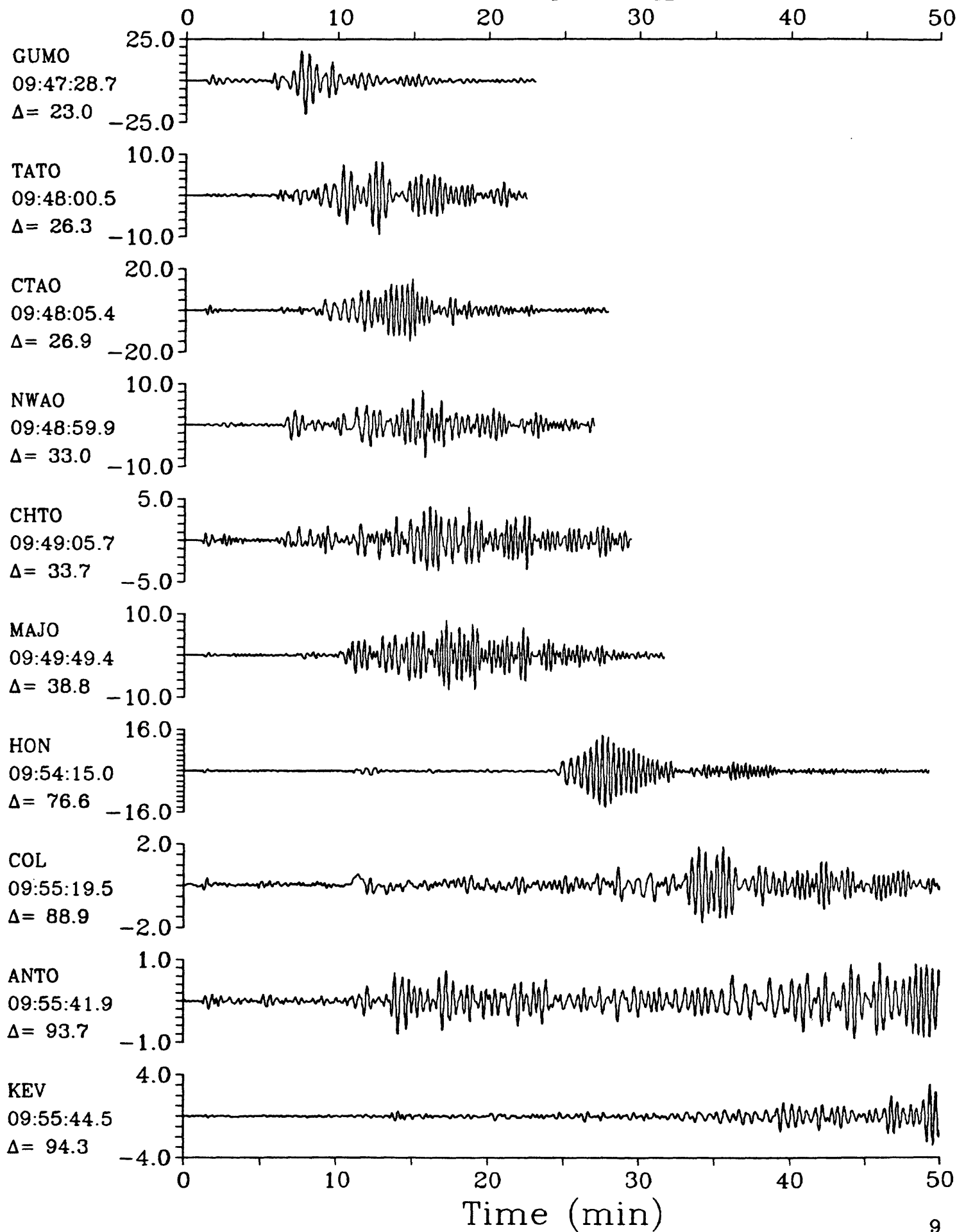
SPZ



LPZ

03 January 1986 09:43:27.51
Molucca Sea $h=33.0$ $m_b=5.6$ $M_{sz}=5.6$

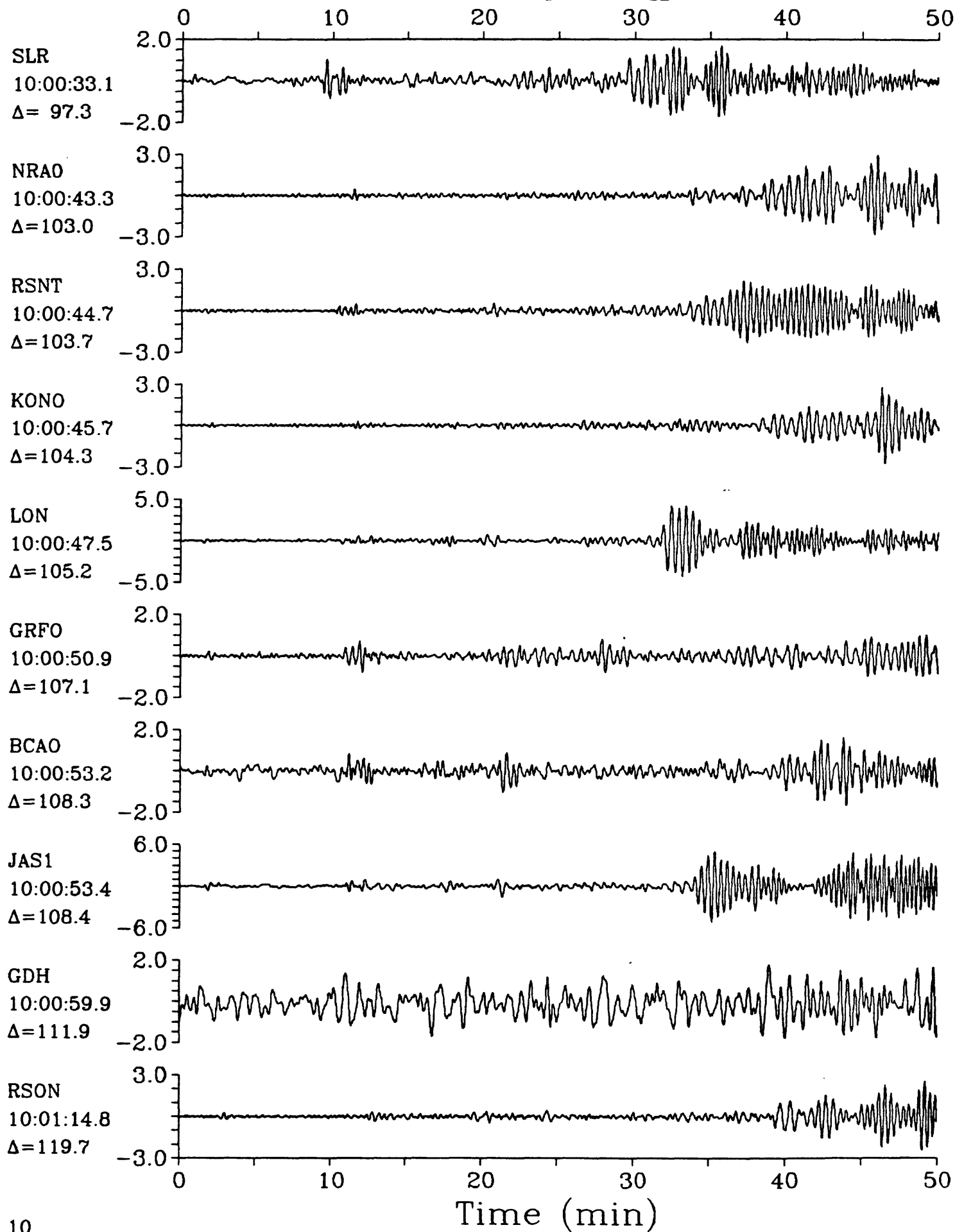
LPZ



LPZ

03 January 1986 09:43:27.51
Molucca Sea $h=33.0$ $m_b=5.6$ $M_{sz}=5.6$

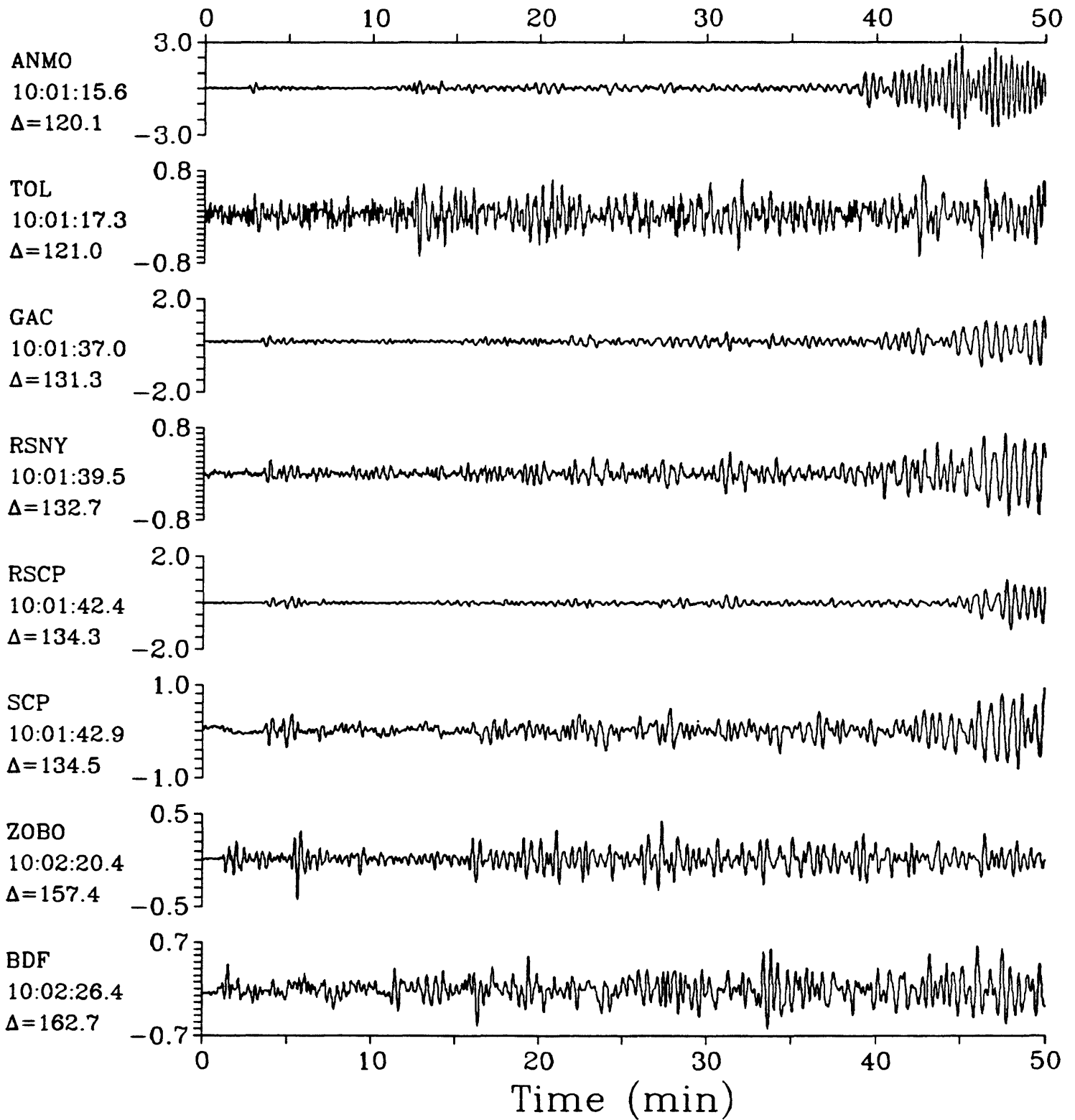
LPZ



LPZ

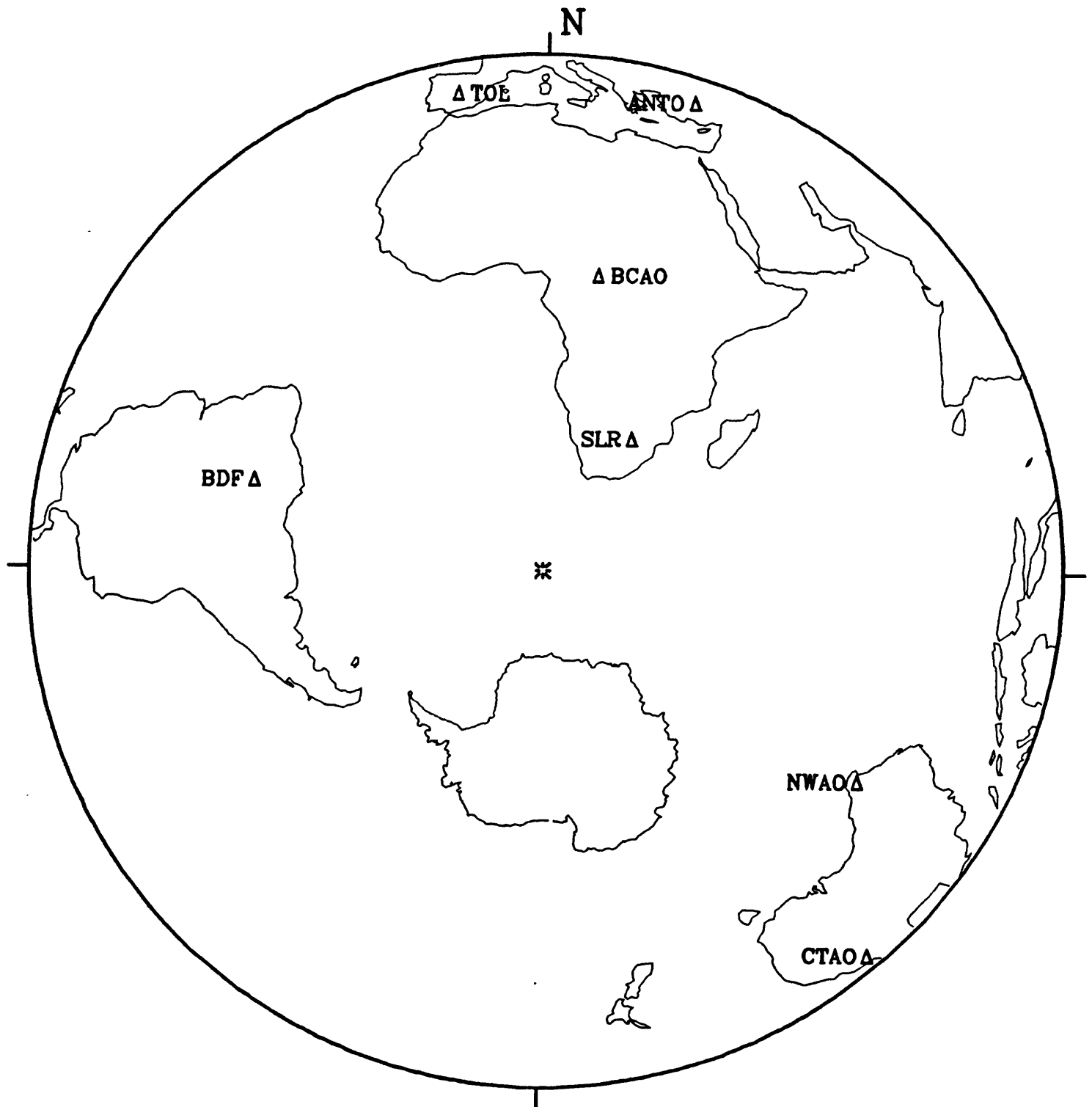
03 January 1986 09:43:27.51
Molucca Sea $h=33.0$ $m_b=5.6$ $M_{SZ}=5.6$

LPZ



05 January 1986 08:08:07.59

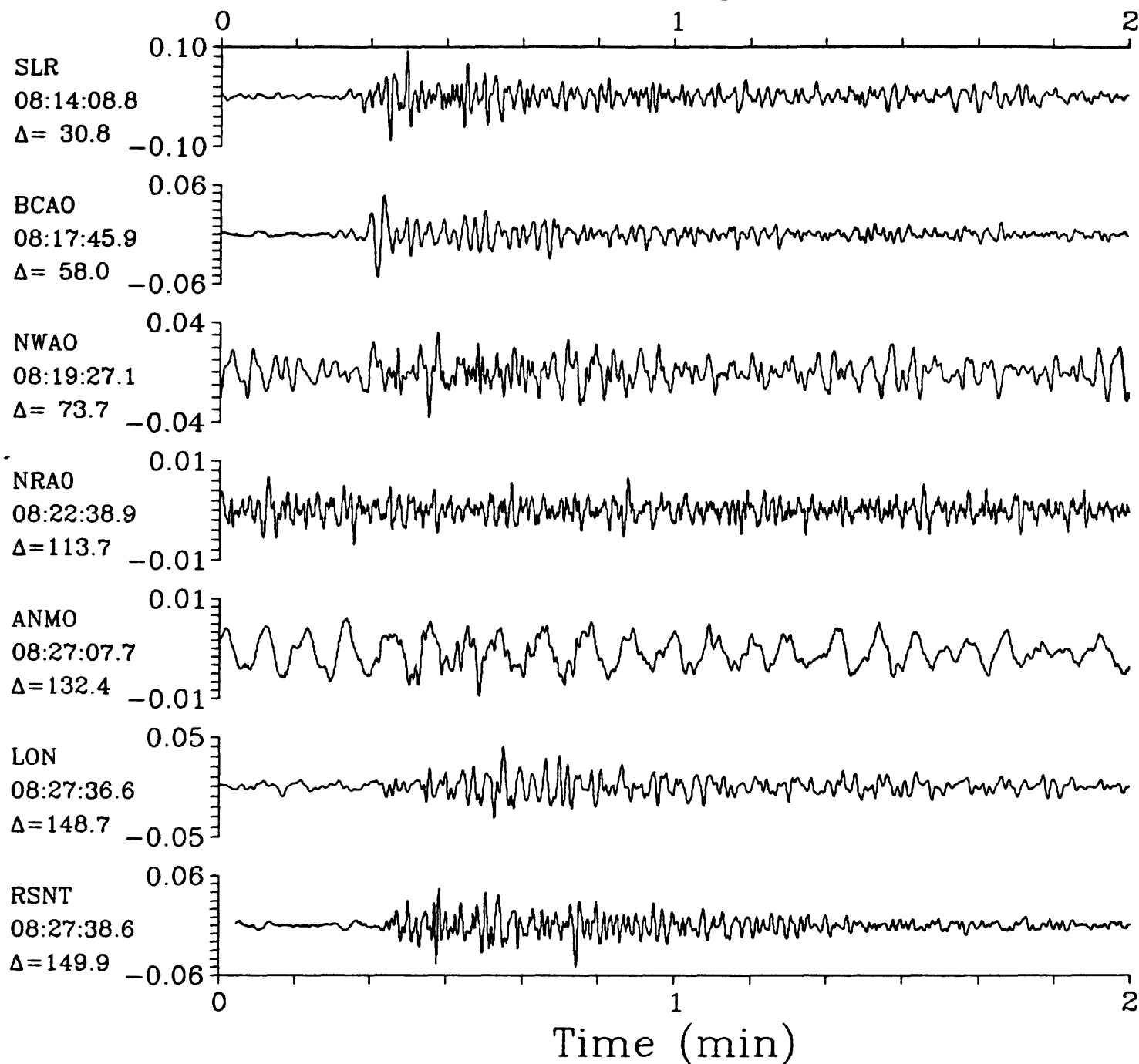
Southwest of Africa



SPZ

05 January 1986 08:08:07.59

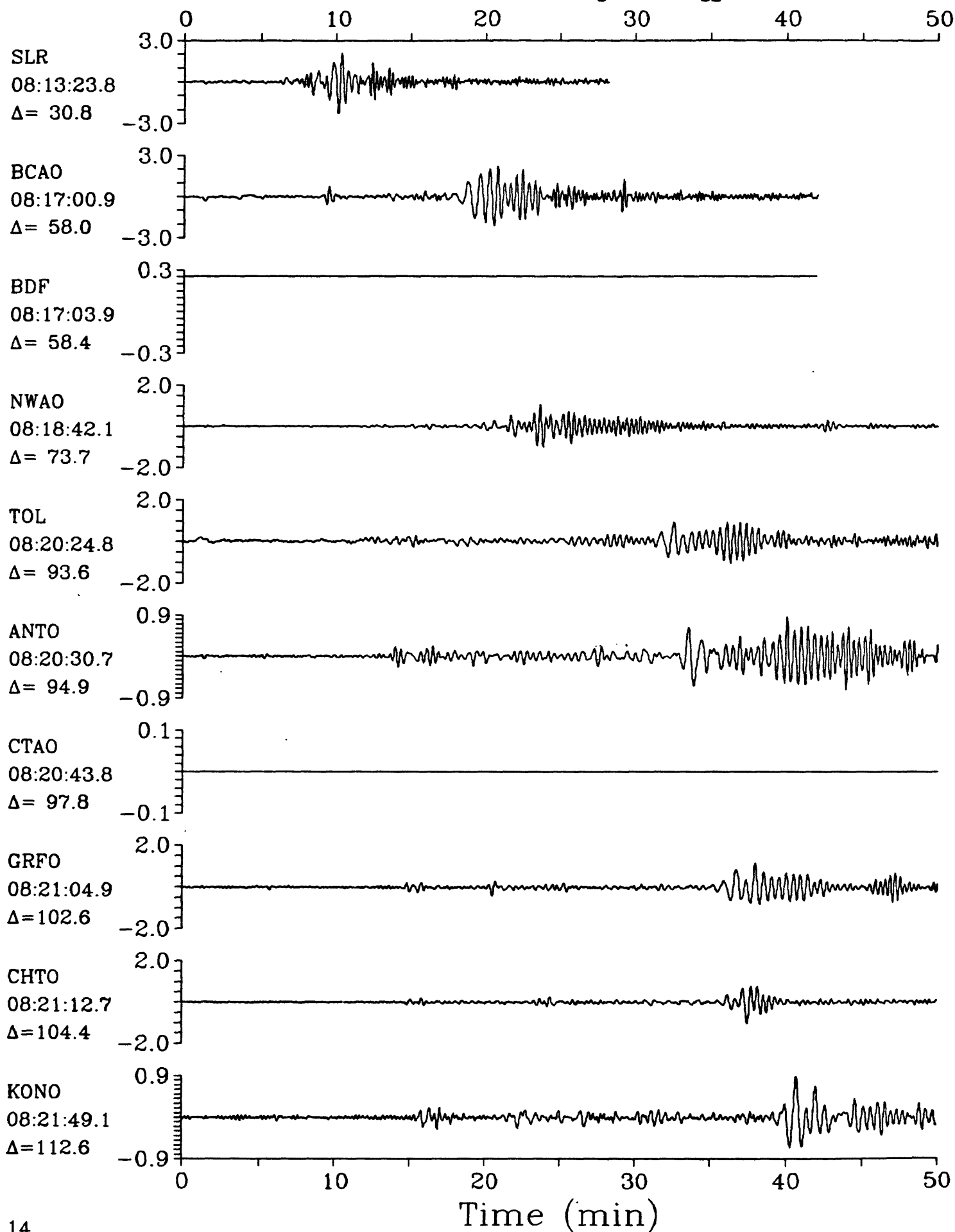
SPZ

Southwest of Africa $h=10.0$ $m_b=5.8$ $M_{sz}=5.4$ 

LPZ

05 January 1986 08:08:07.59

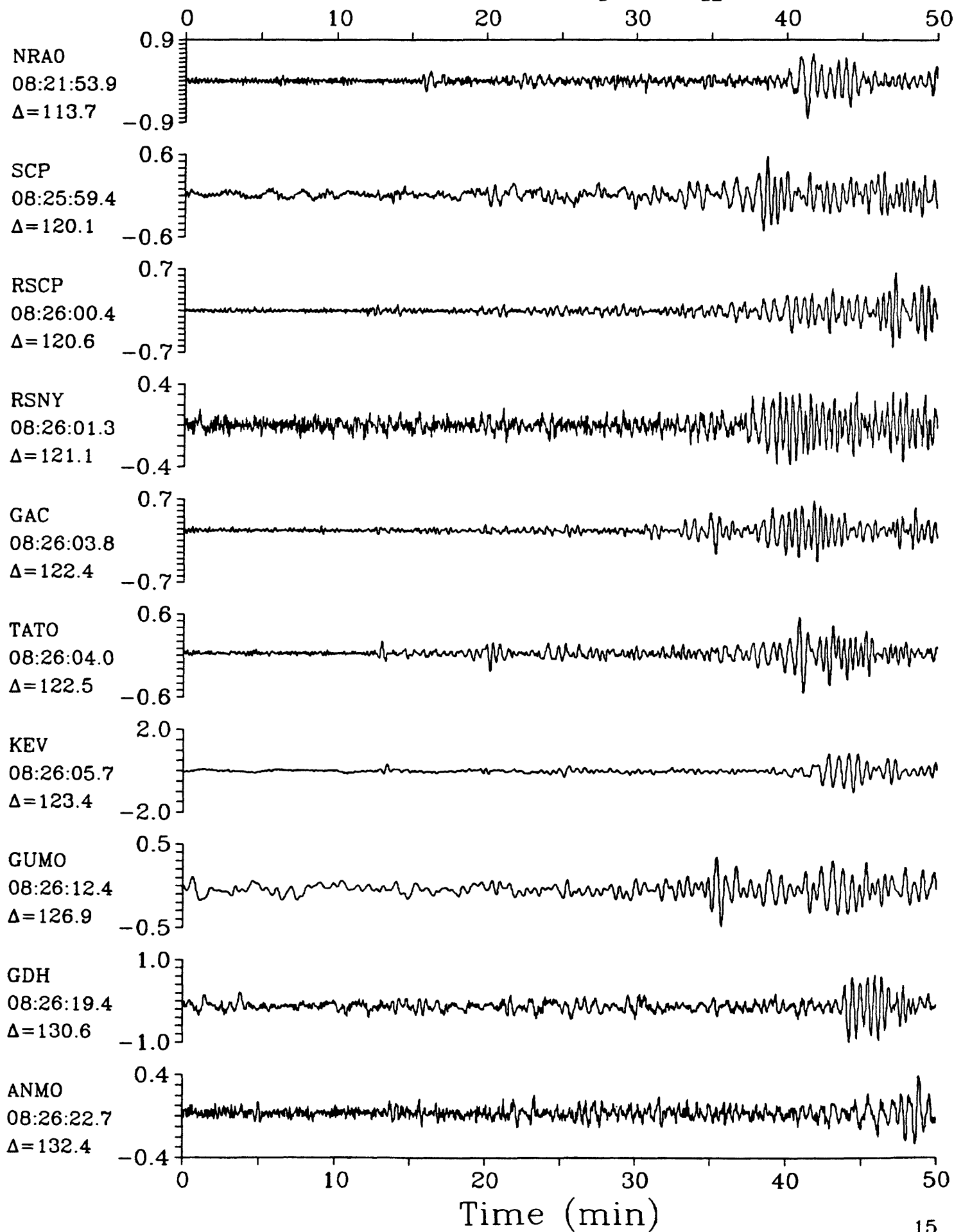
LPZ

Southwest of Africa $h=10.0$ $m_b=5.8$ $M_{sz}=5.4$ 

LPZ

05 January 1986 08:08:07.59

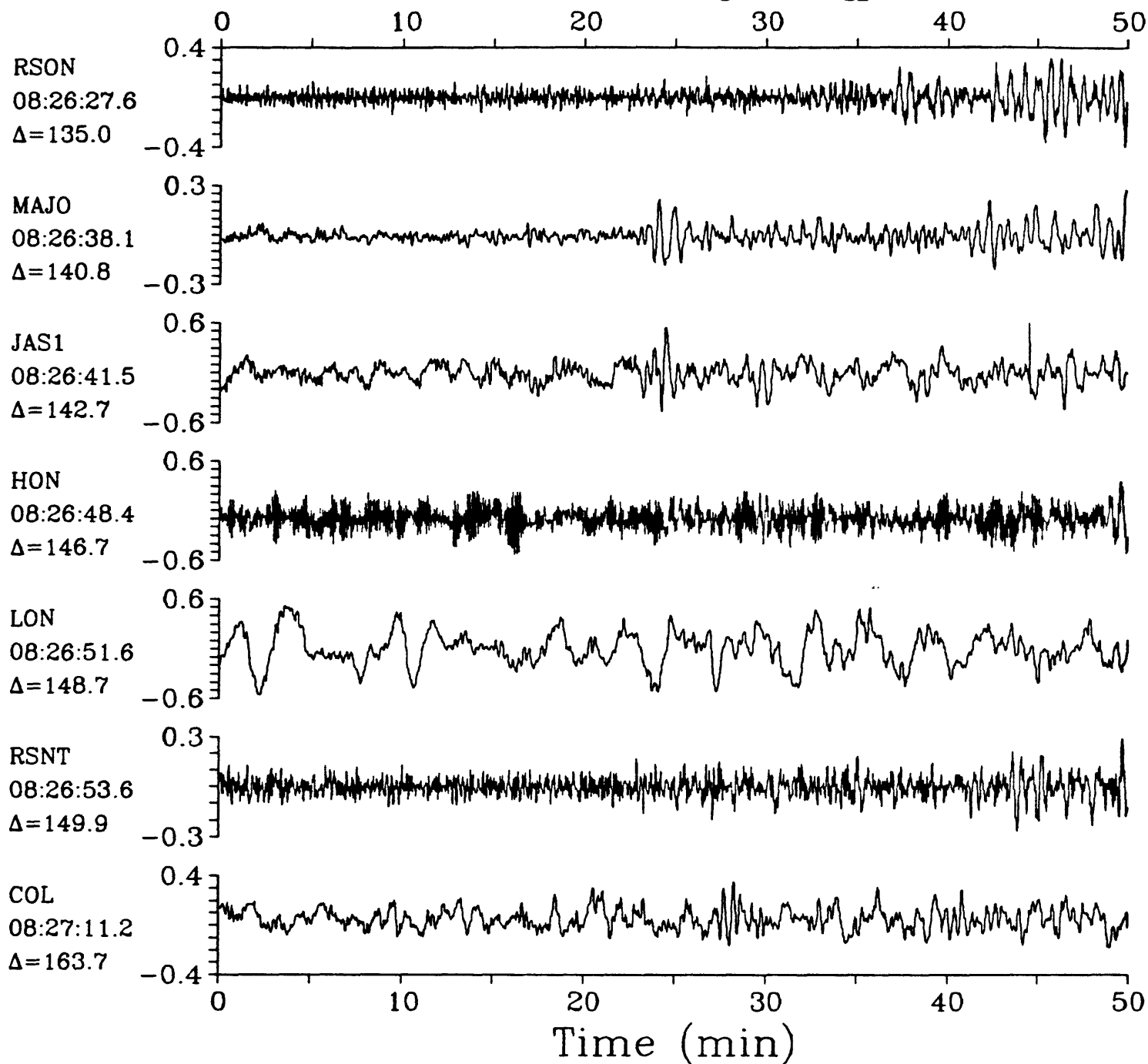
LPZ

Southwest of Africa $h=10.0$ $m_b=5.8$ $M_{SZ}=5.4$ 

LPZ

05 January 1986 08:08:07.59

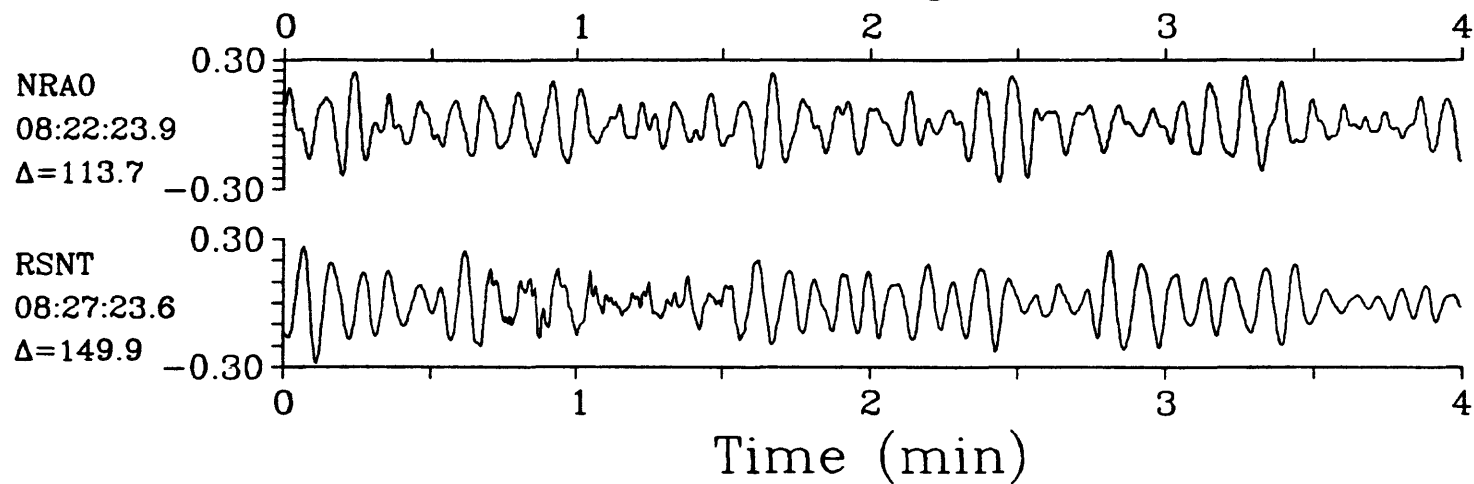
LPZ

Southwest of Africa $h=10.0$ $m_b=5.8$ $M_{SZ}=5.4$ 

IPZ

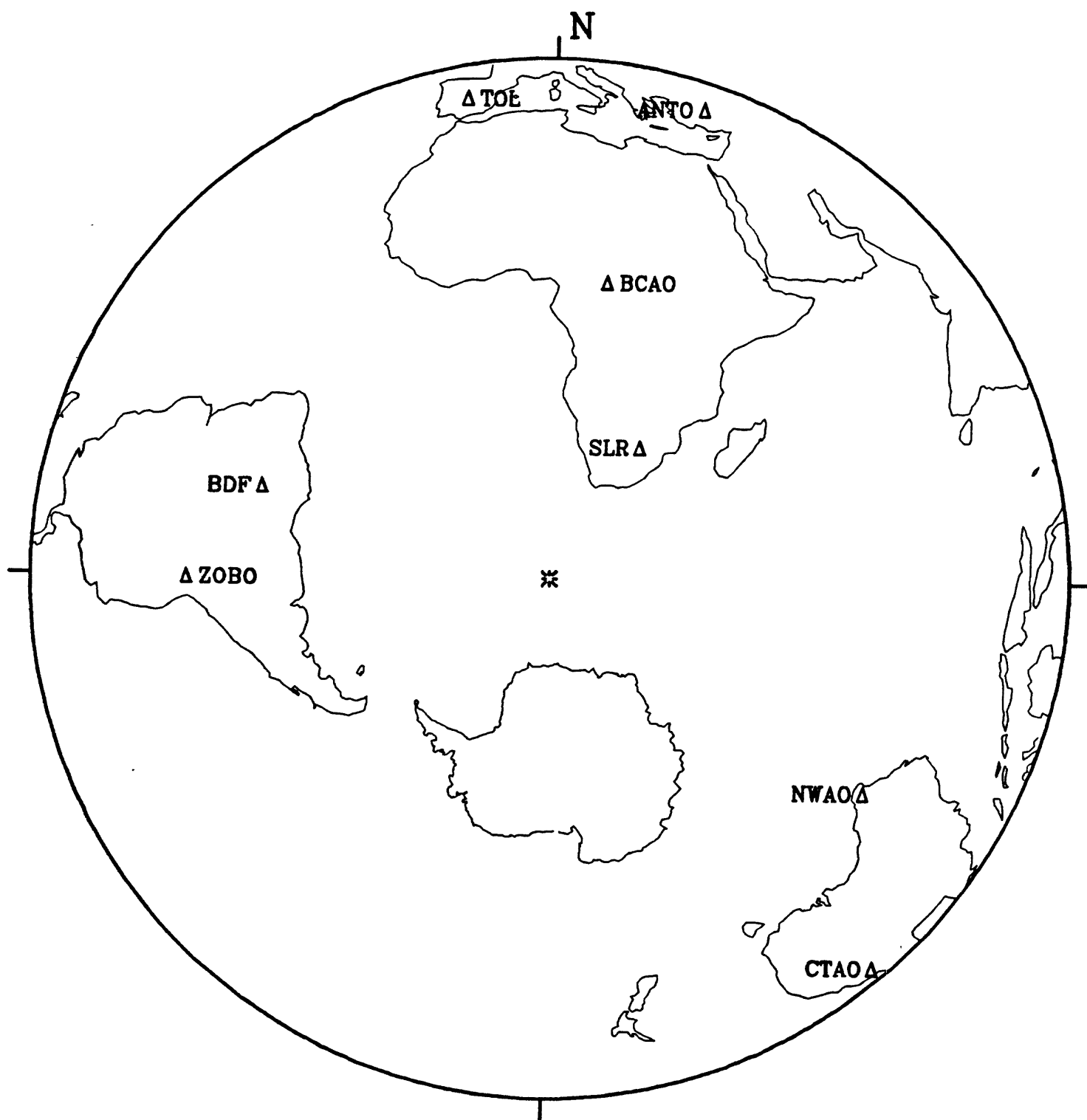
05 January 1986 08:08:07.59

IPZ

Southwest of Africa $h=10.0$ $m_b=5.8$ $M_{SZ}=5.4$ 

10 January 1986 22:16:22.41

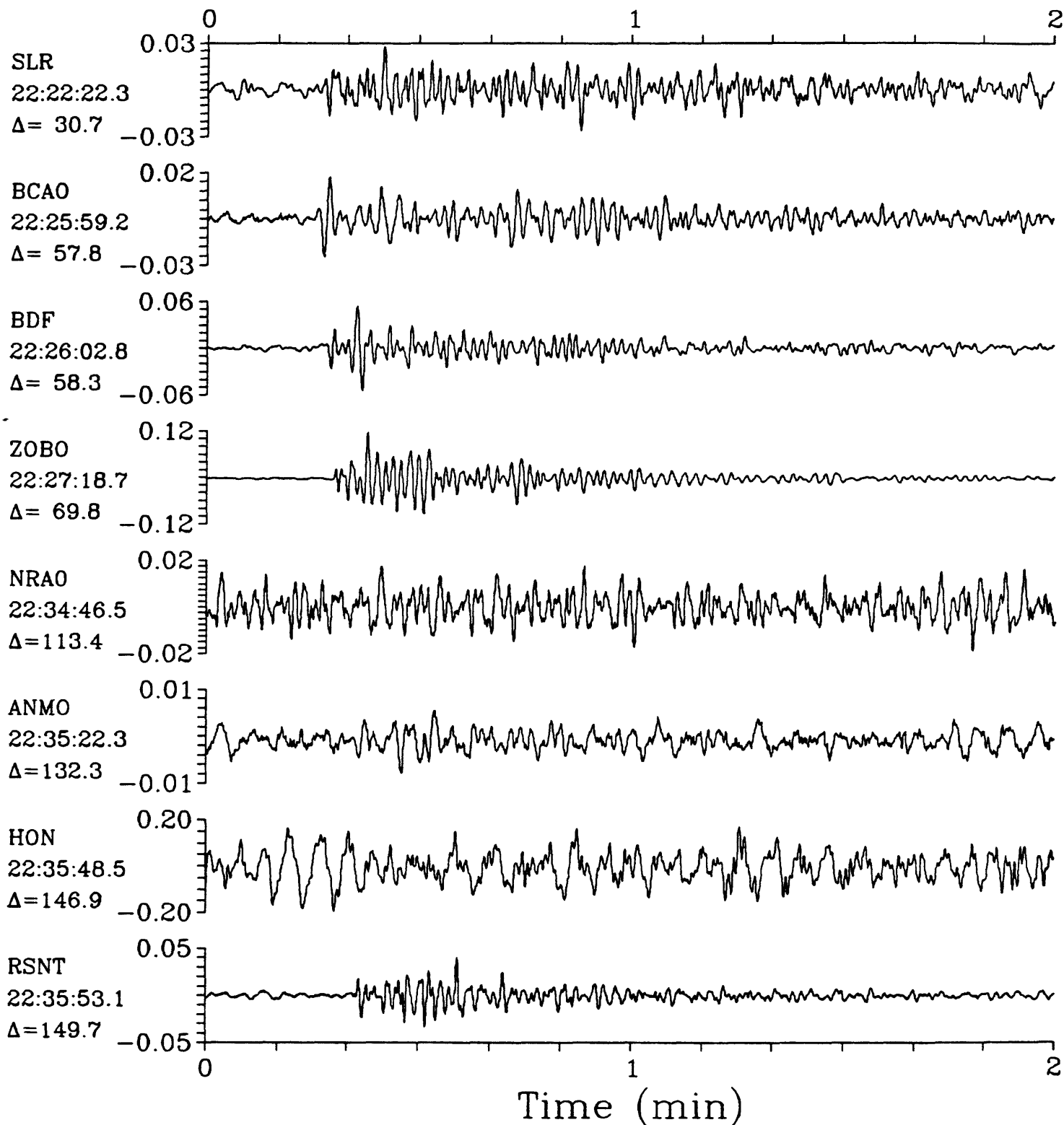
Southwest of Africa



SPZ

10 January 1986 22:16:22.41

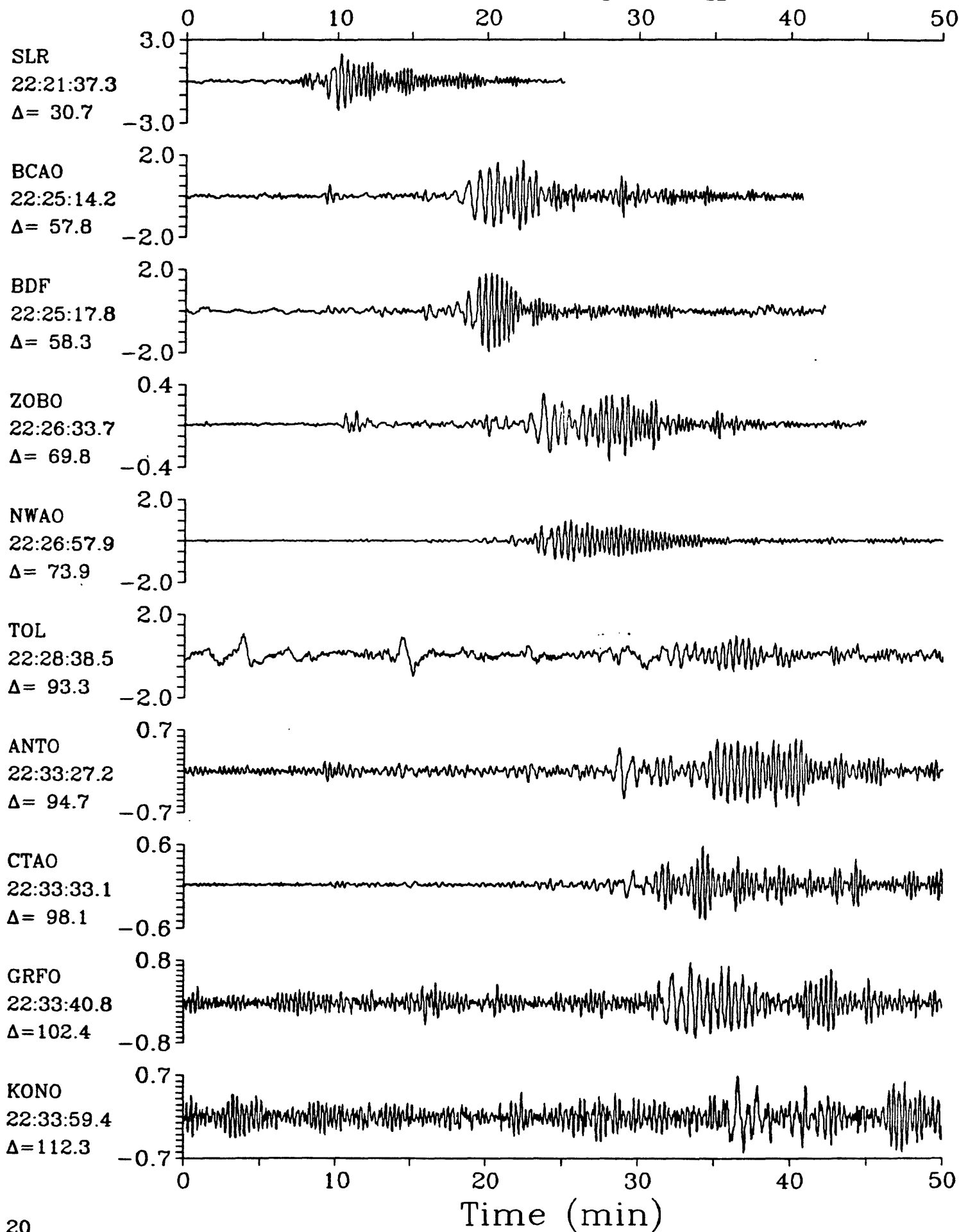
SPZ

Southwest of Africa $h=10.0$ $m_b=5.5$ $M_{sz}=5.1$ 

LPZ

10 January 1986 22:16:22.41

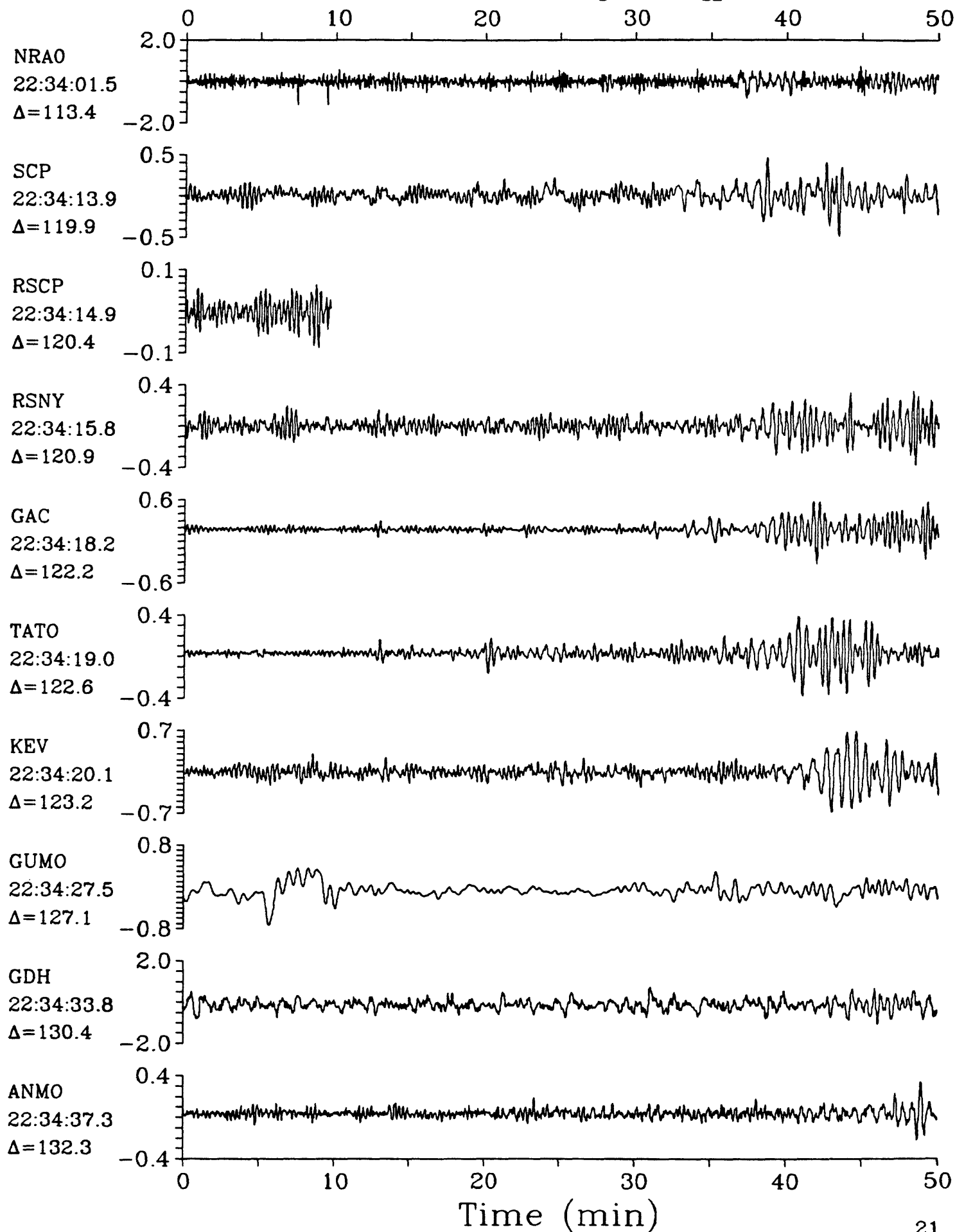
LPZ

Southwest of Africa $h=10.0$ $m_b=5.5$ $M_{SZ}=5.1$ 

LPZ

10 January 1986 22:16:22.41

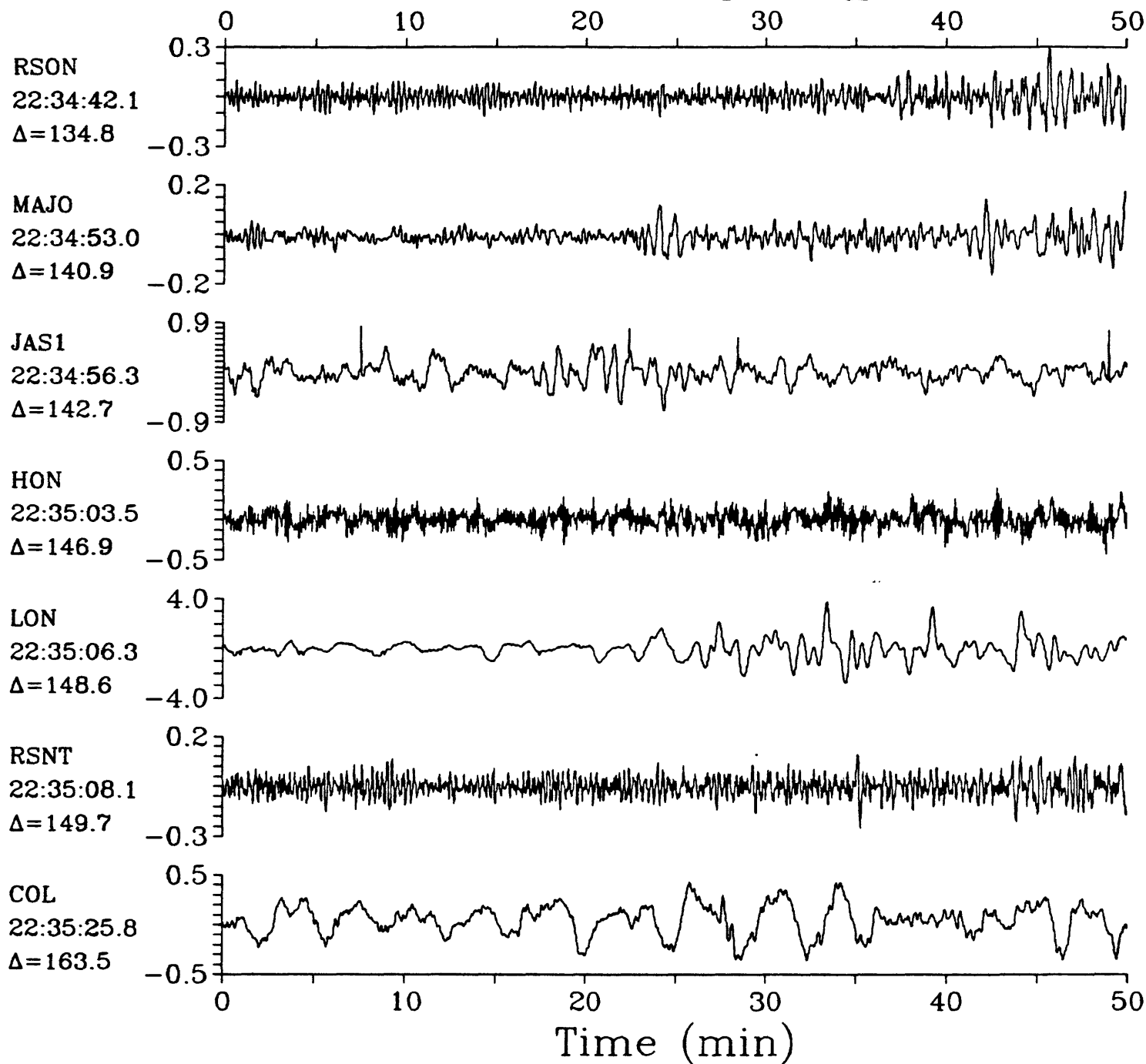
LPZ

Southwest of Africa $h=10.0$ $m_b=5.5$ $M_{SZ}=5.1$ 

LPZ

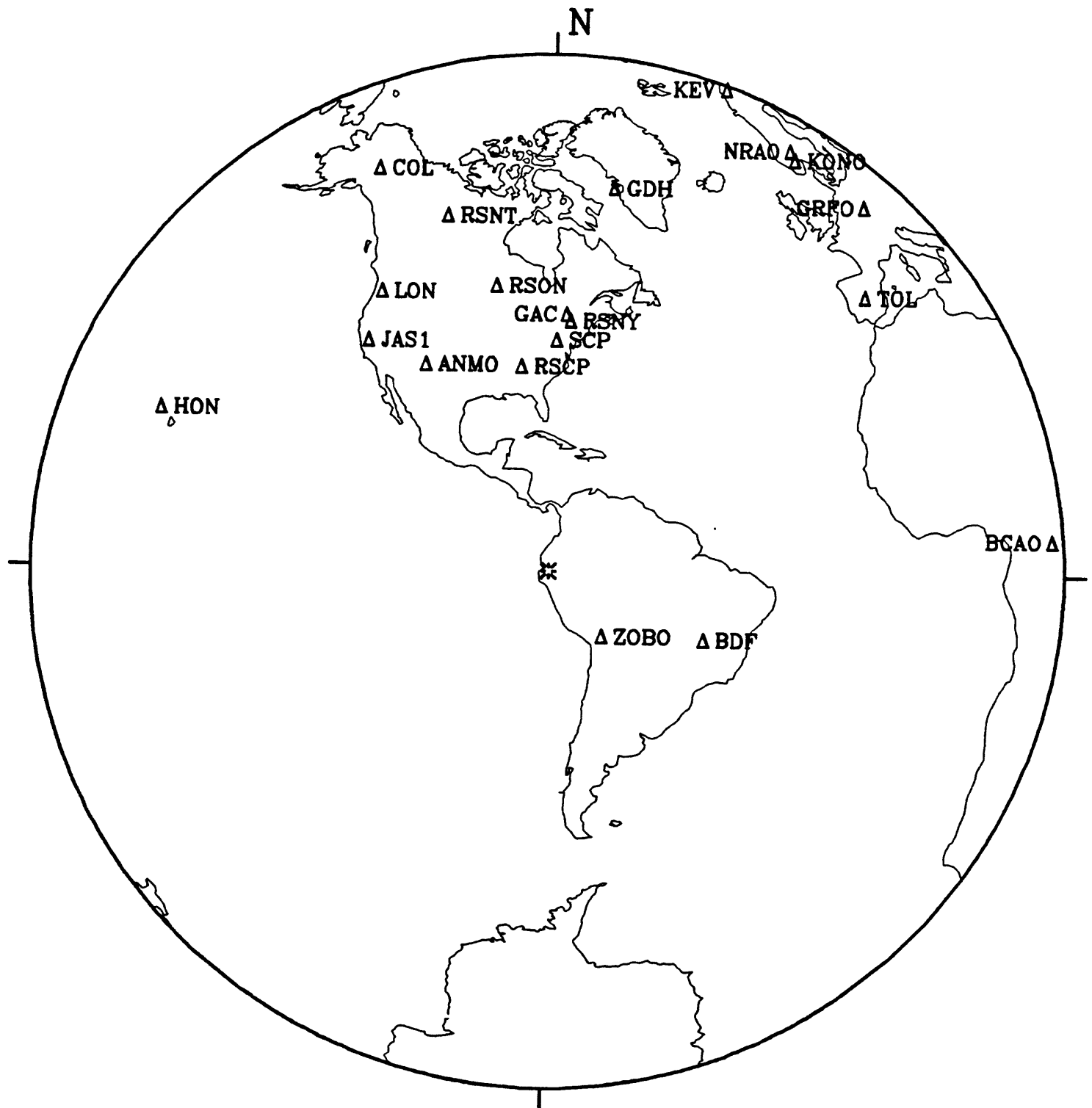
10 January 1986 22:16:22.41

LPZ

Southwest of Africa $h=10.0$ $m_b=5.5$ $M_{sz}=5.1$ 

12 January 1986 06:38:21.38

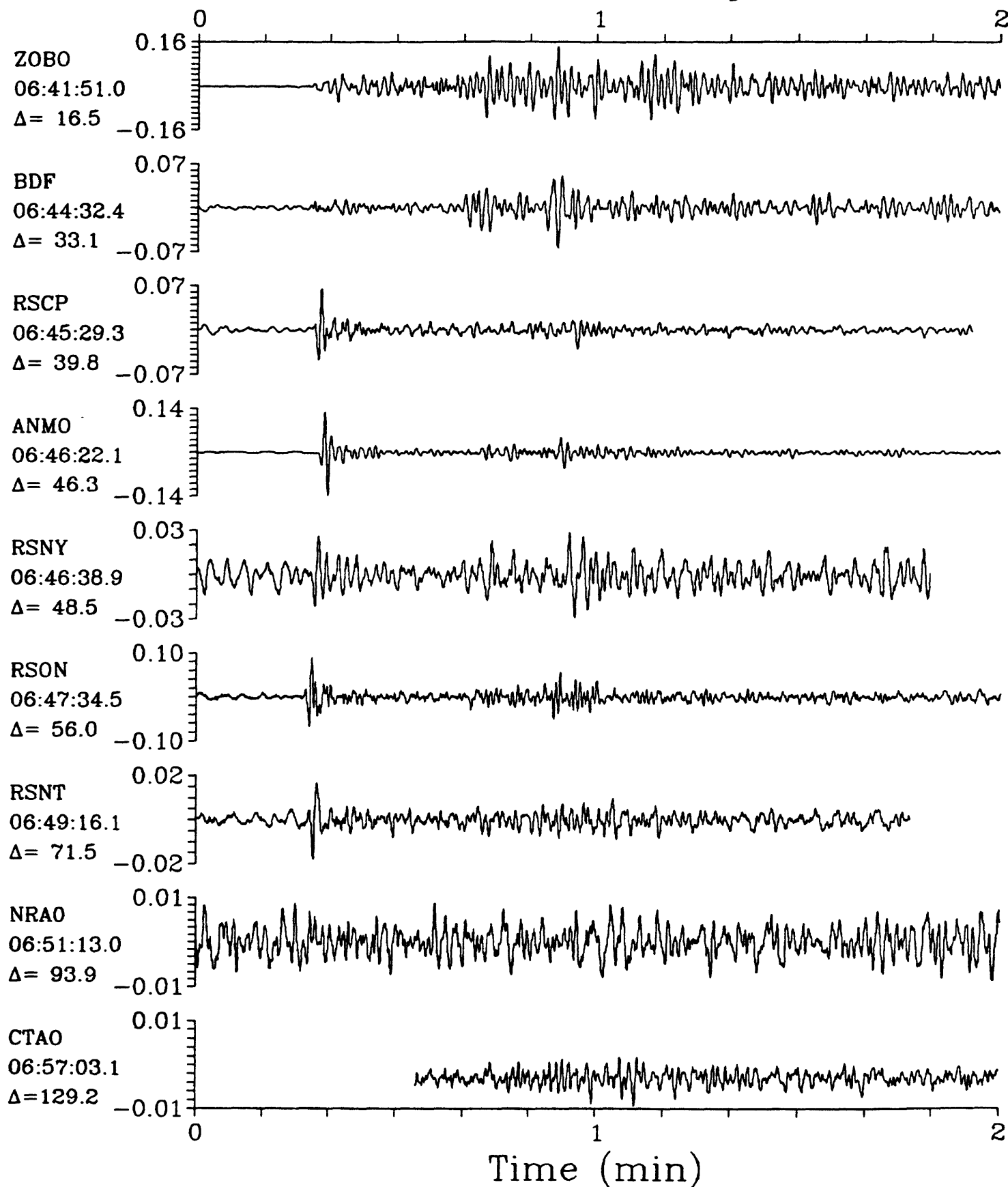
Near Coast of Ecuador

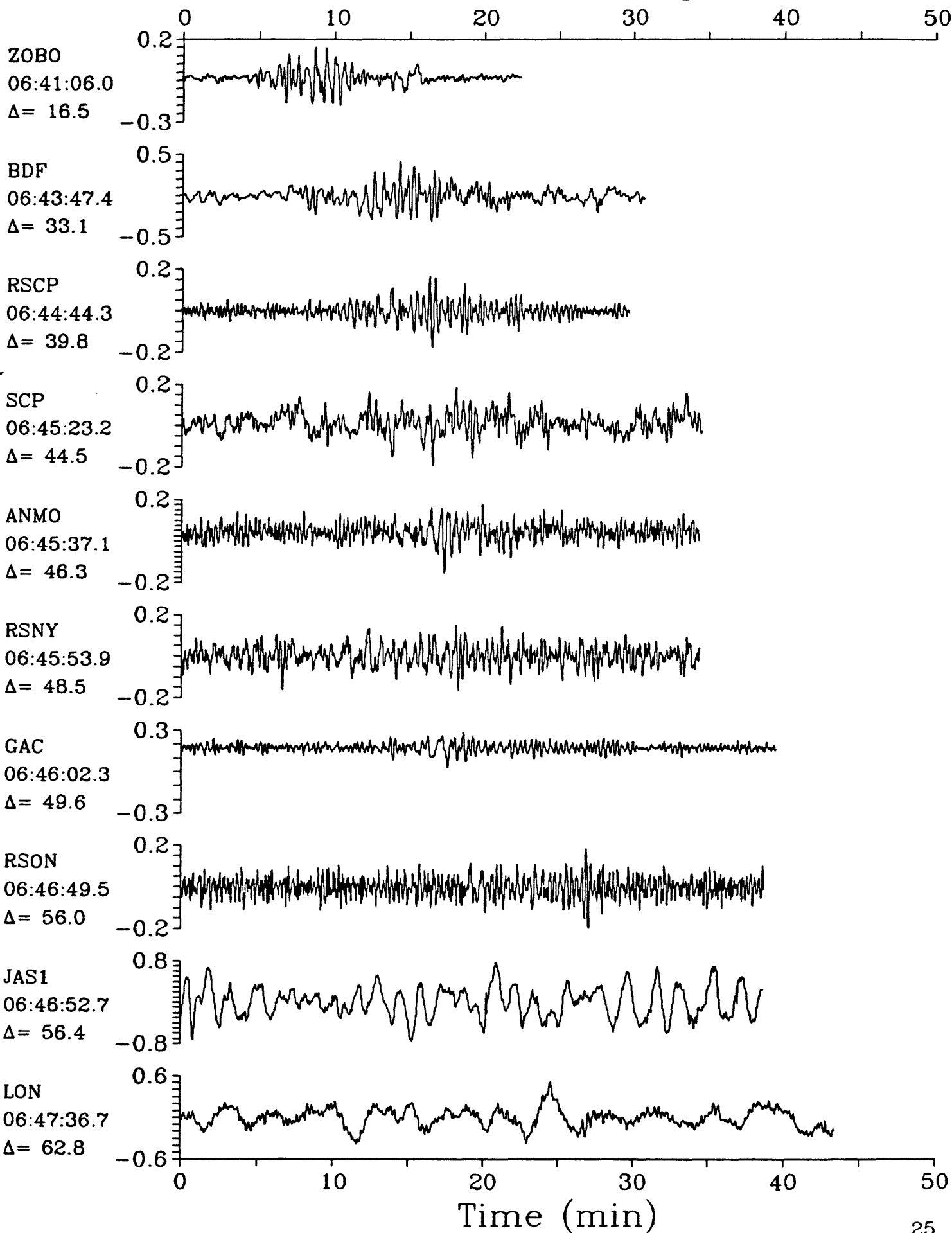


SPZ

12 January 1986 06:38:21.38
Near Coast of Ecuador $h=103.3$ $m_b=5.5$

SPZ

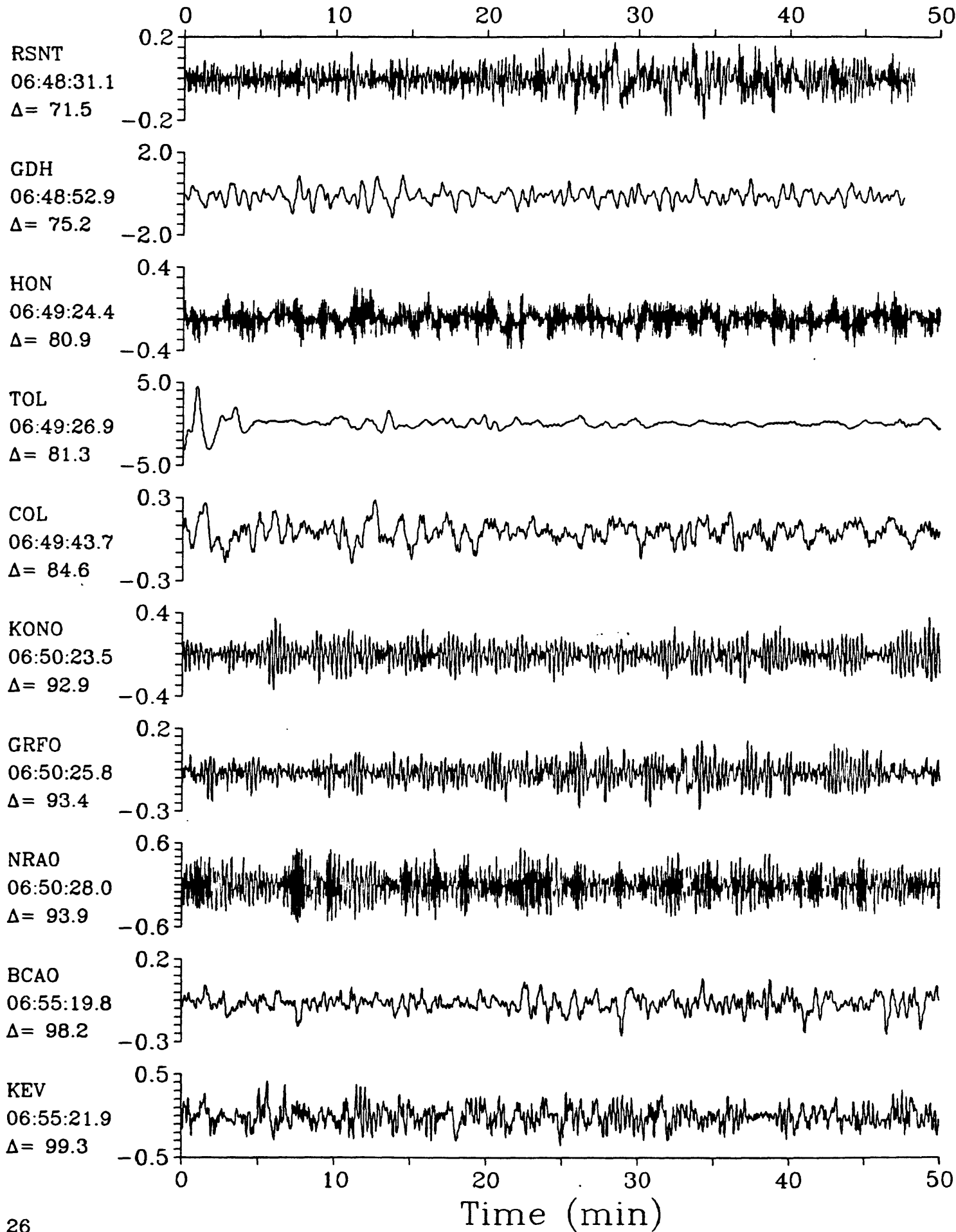




LPZ

12 January 1986 06:38:21.38
Near Coast of Ecuador $h=103.3$ $m_b=5.5$

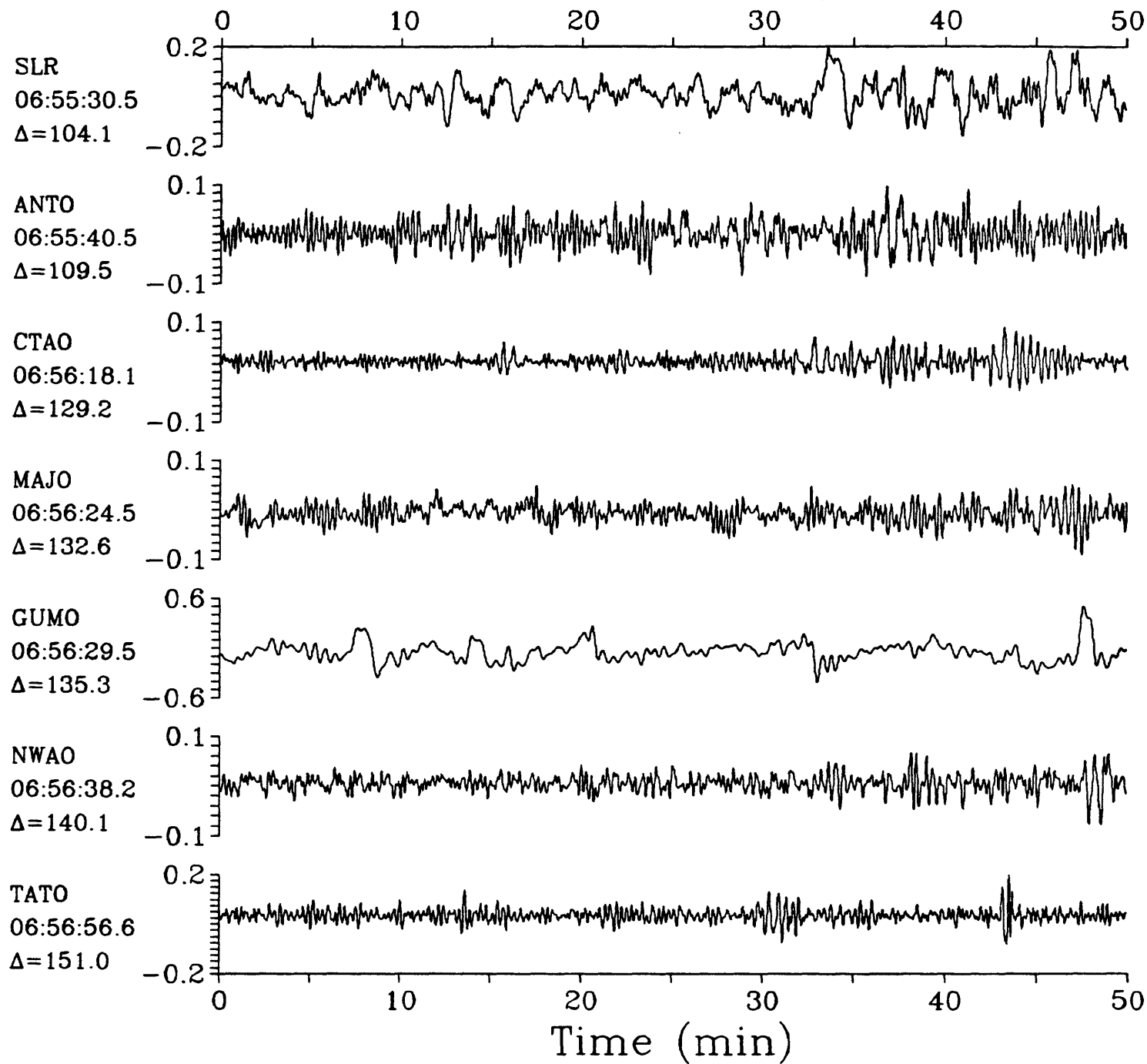
LPZ



LPZ

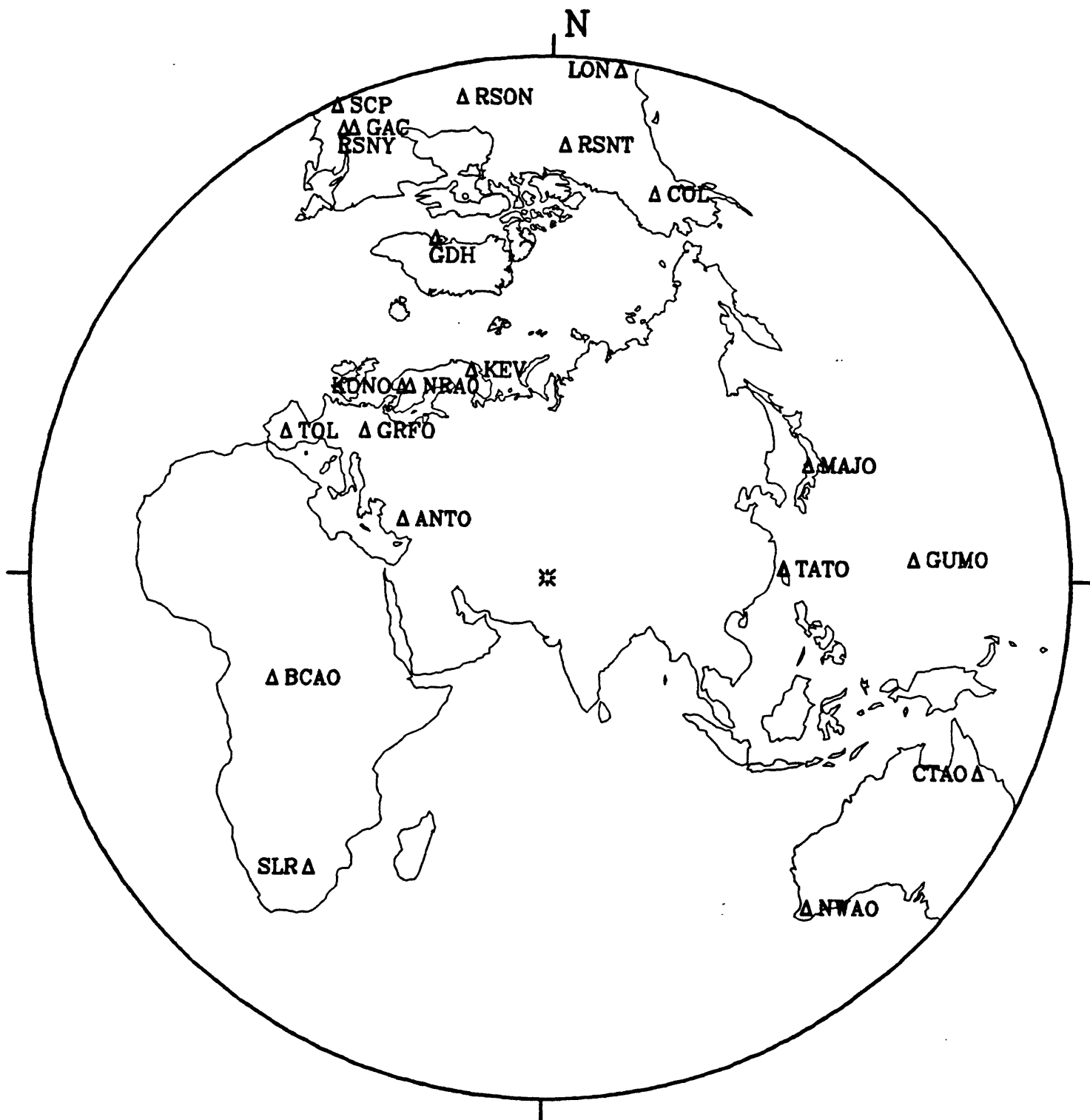
12 January 1986 06:38:21.38

LPZ

Near Coast of Ecuador $h=103.3$ $m_b=5.5$ 

12 January 1986 20:14:53.72

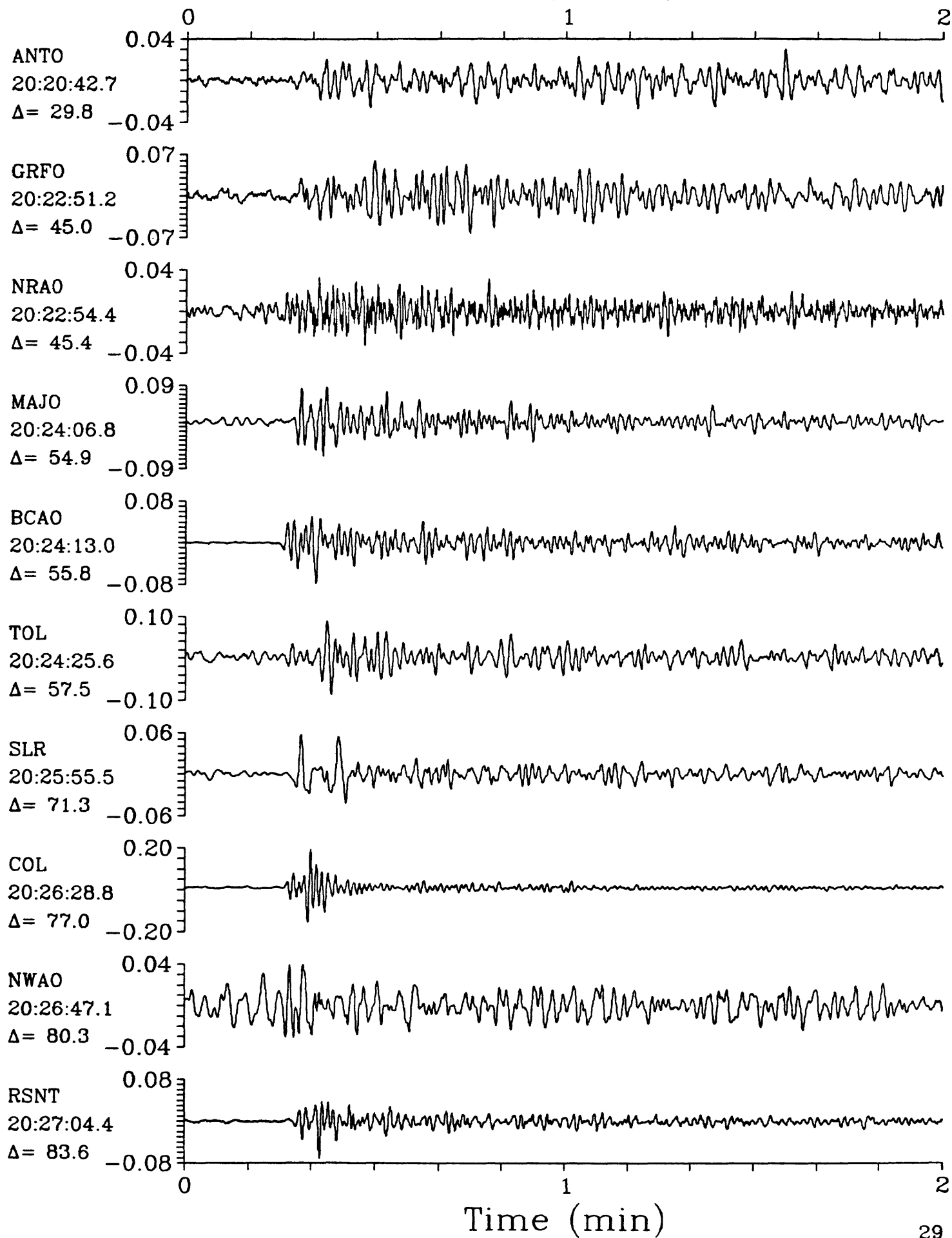
Afghanistan



SPZ

12 January 1986 20:14:53.72
Afghanistan $h=33.0$ $m_b=5.3$ $M_{sz}=5.5$

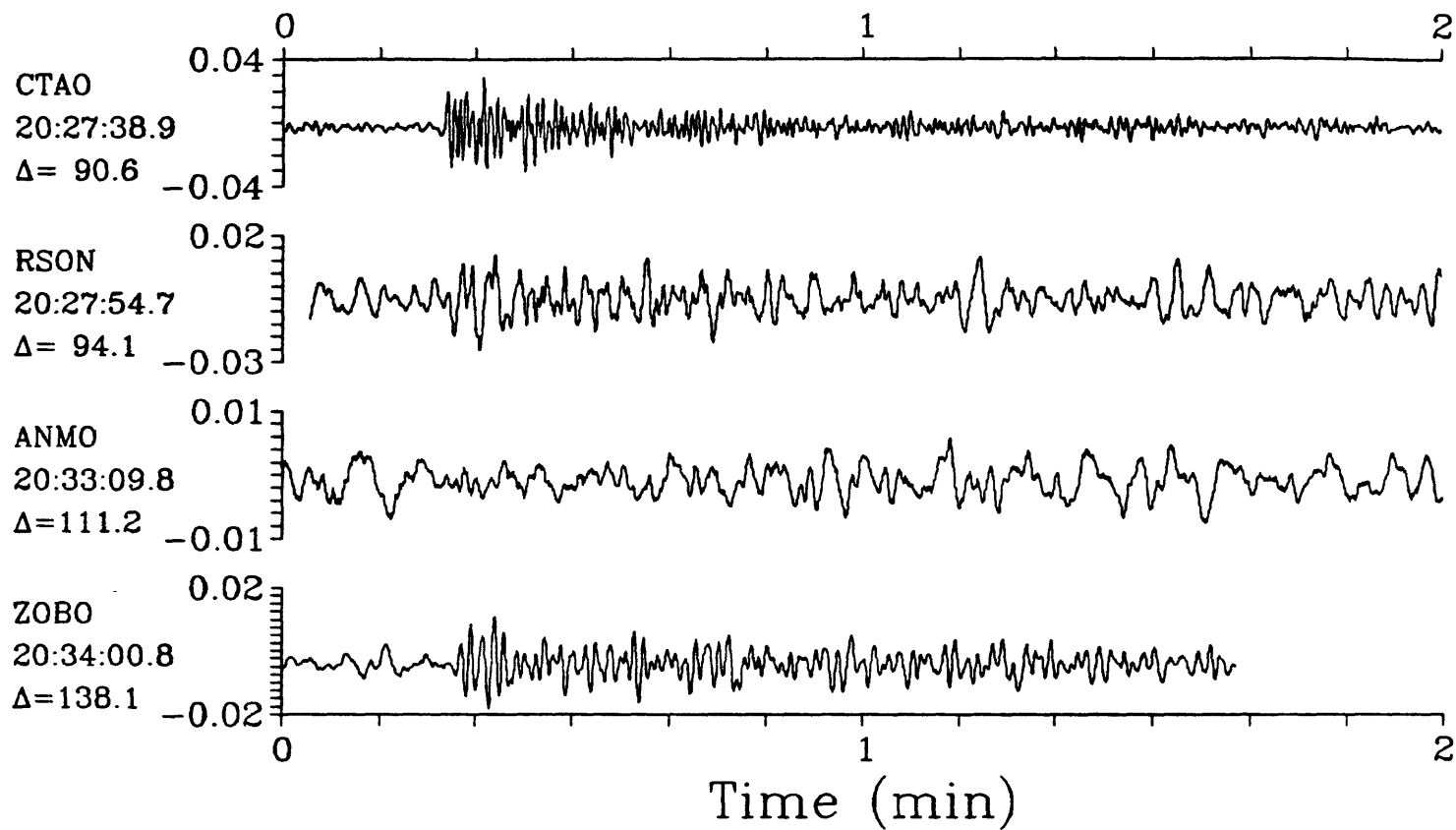
SPZ



SPZ

12 January 1986 20:14:53.72
Afghanistan $h=33.0$ $m_b=5.3$ $M_{sz}=5.5$

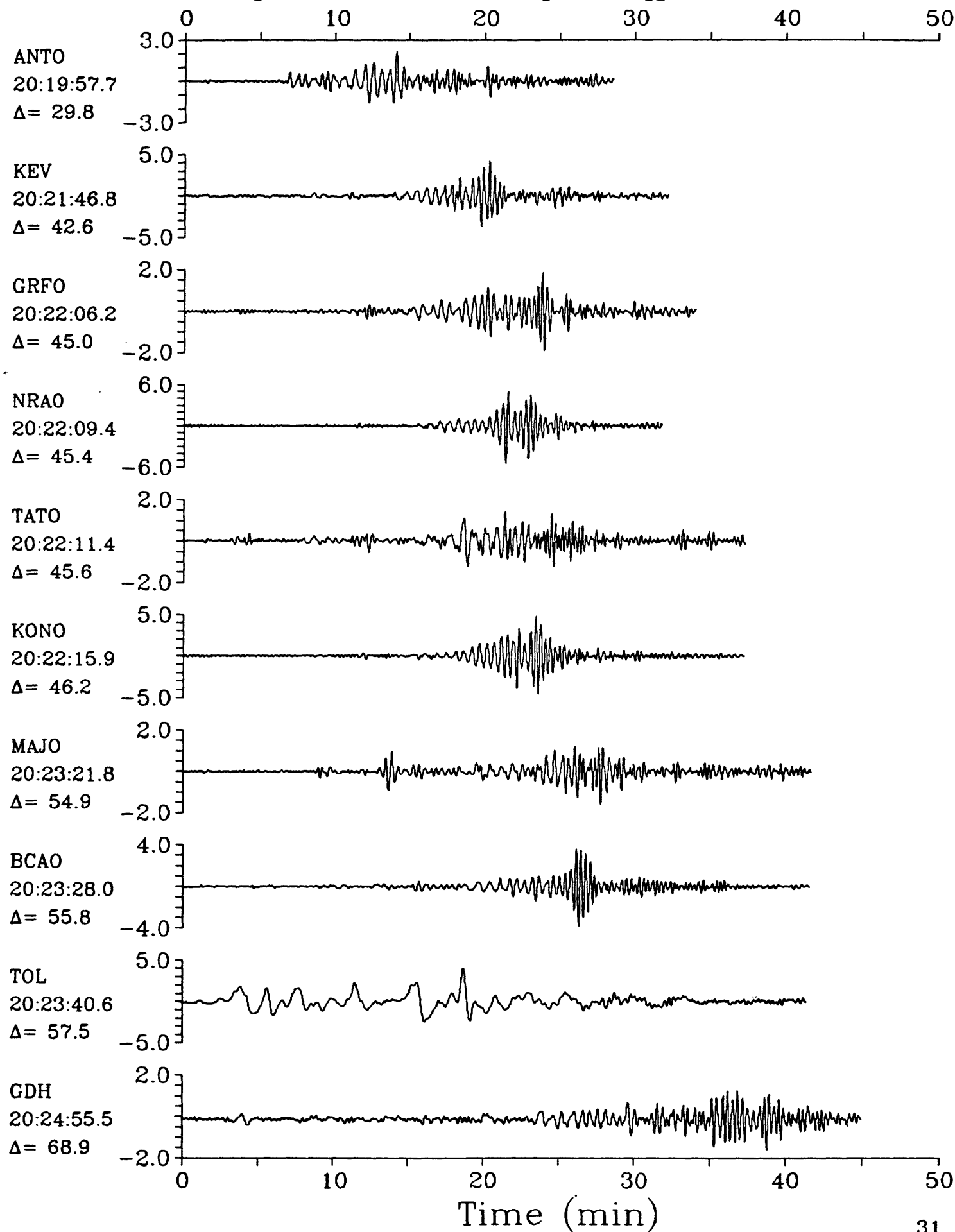
SPZ



LPZ

12 January 1986 20:14:53.72
Afghanistan $h=33.0$ $m_b=5.3$ $M_{sz}=5.5$

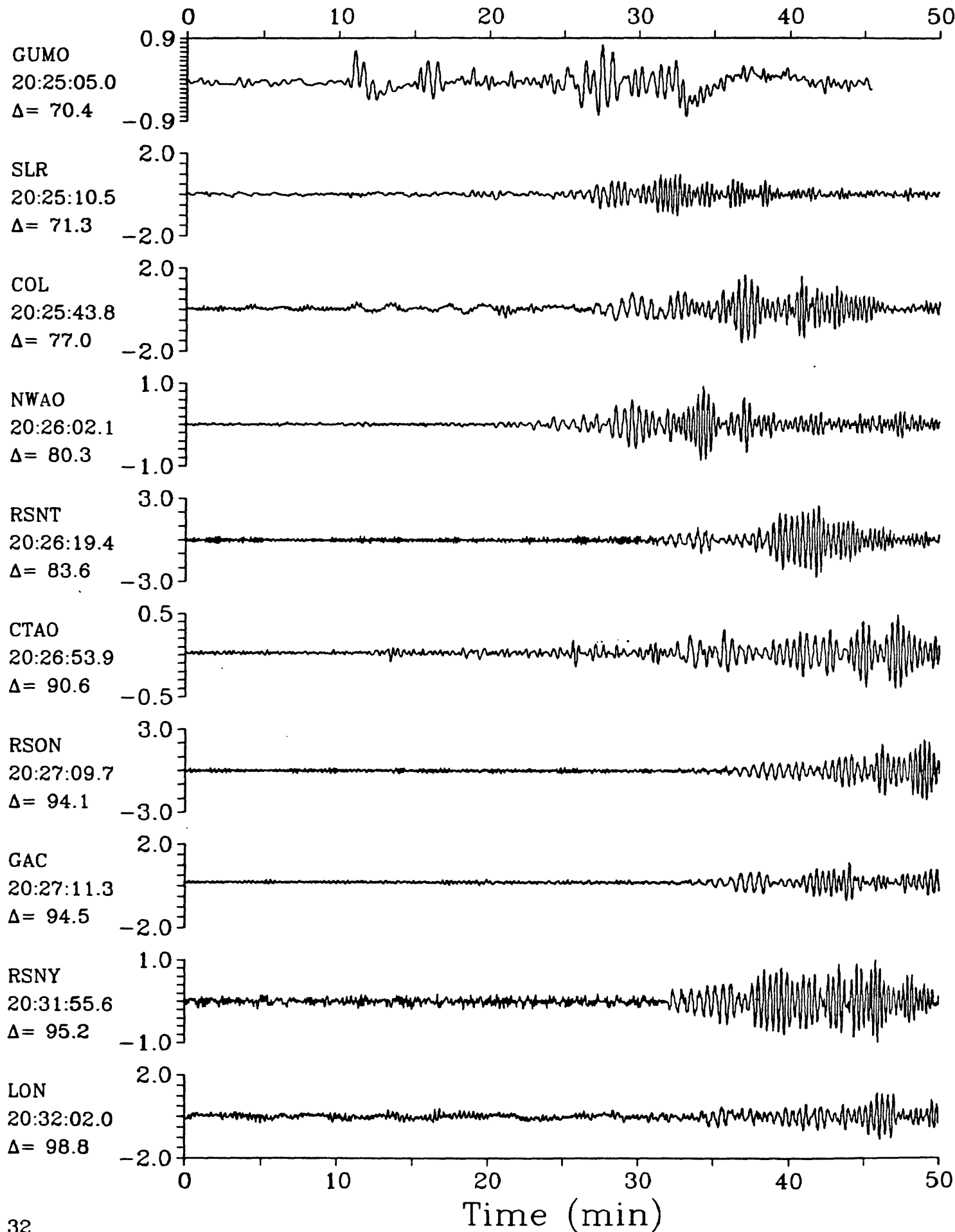
LPZ



LPZ

12 January 1986 20:14:53.72
Afghanistan $h=33.0$ $m_b=5.3$ $M_{sz}=5.5$

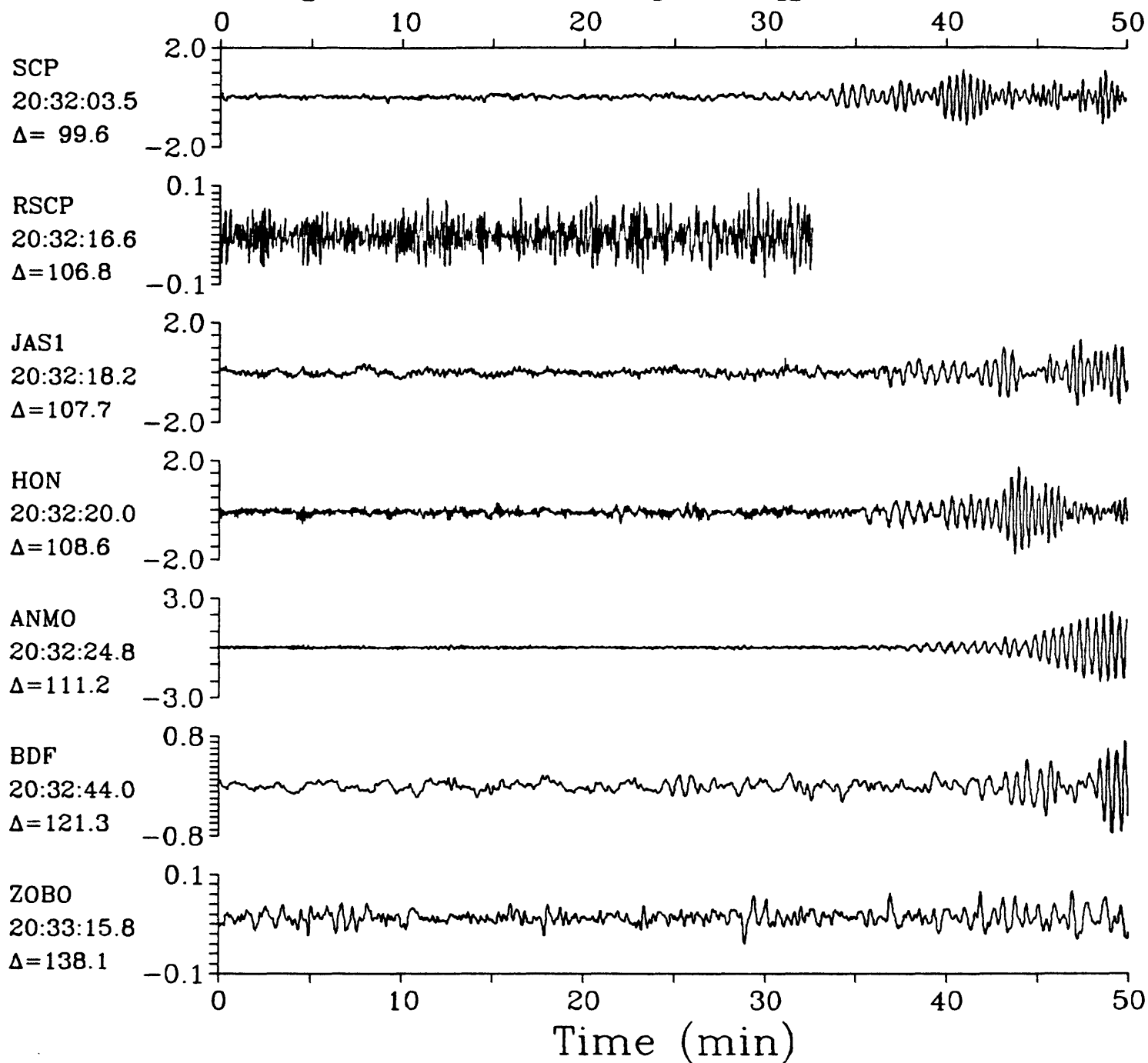
LPZ



LPZ

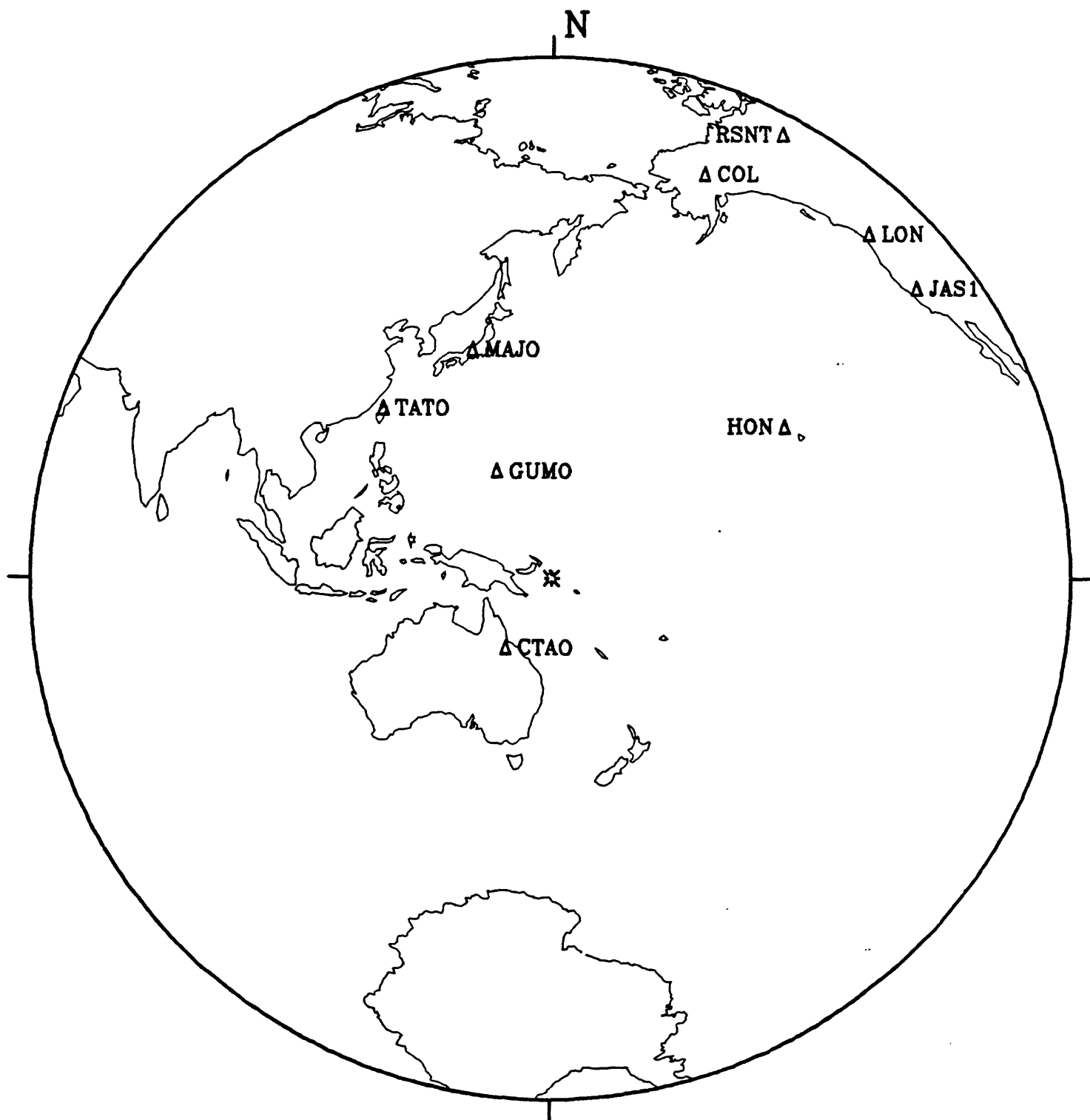
12 January 1986 20:14:53.72
Afghanistan $h=33.0$ $m_b=5.3$ $M_{sz}=5.5$

LPZ



14 January 1986 10:34:00.82

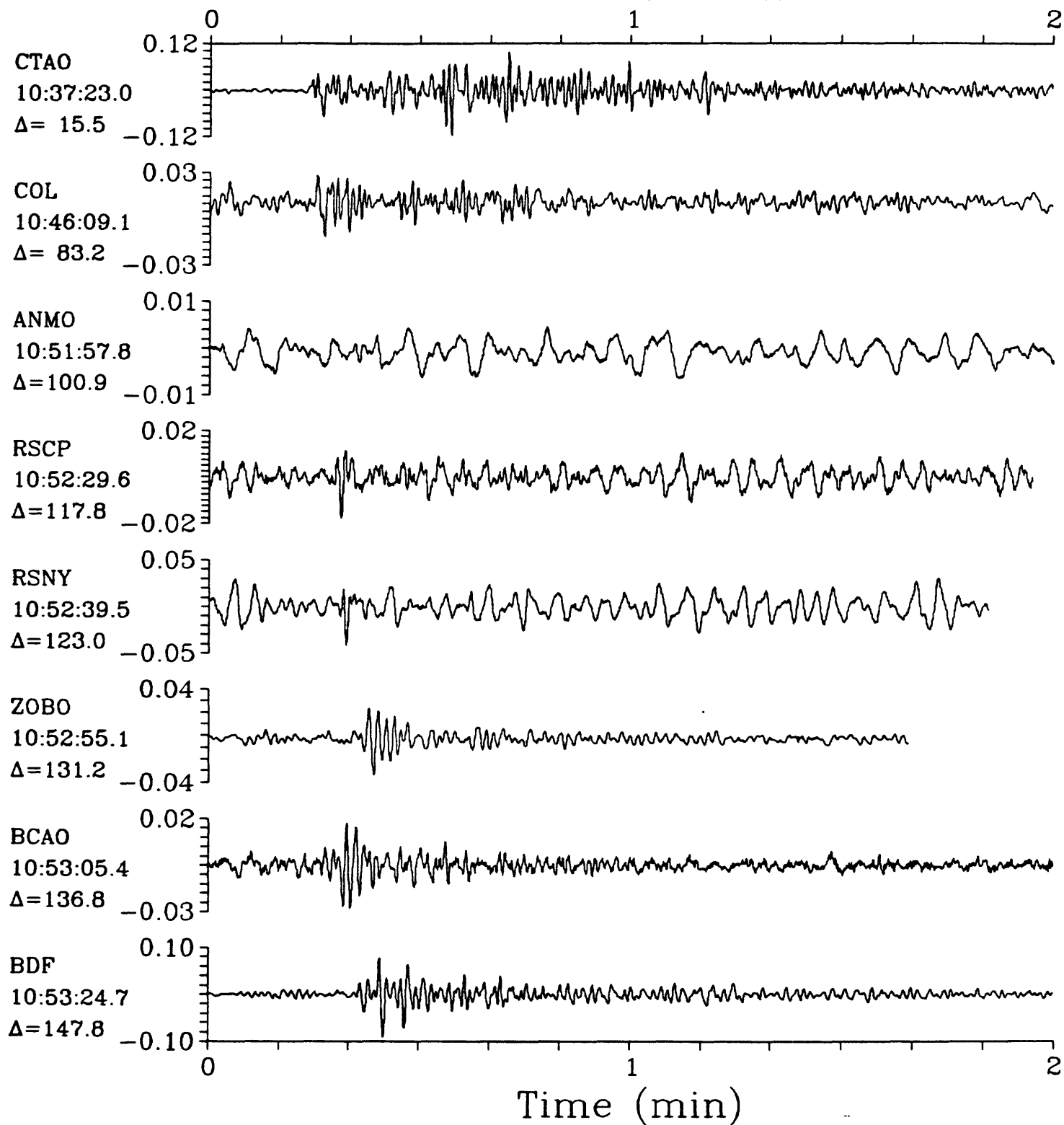
Solomon Islands



SPZ

14 January 1986 10:34:00.82

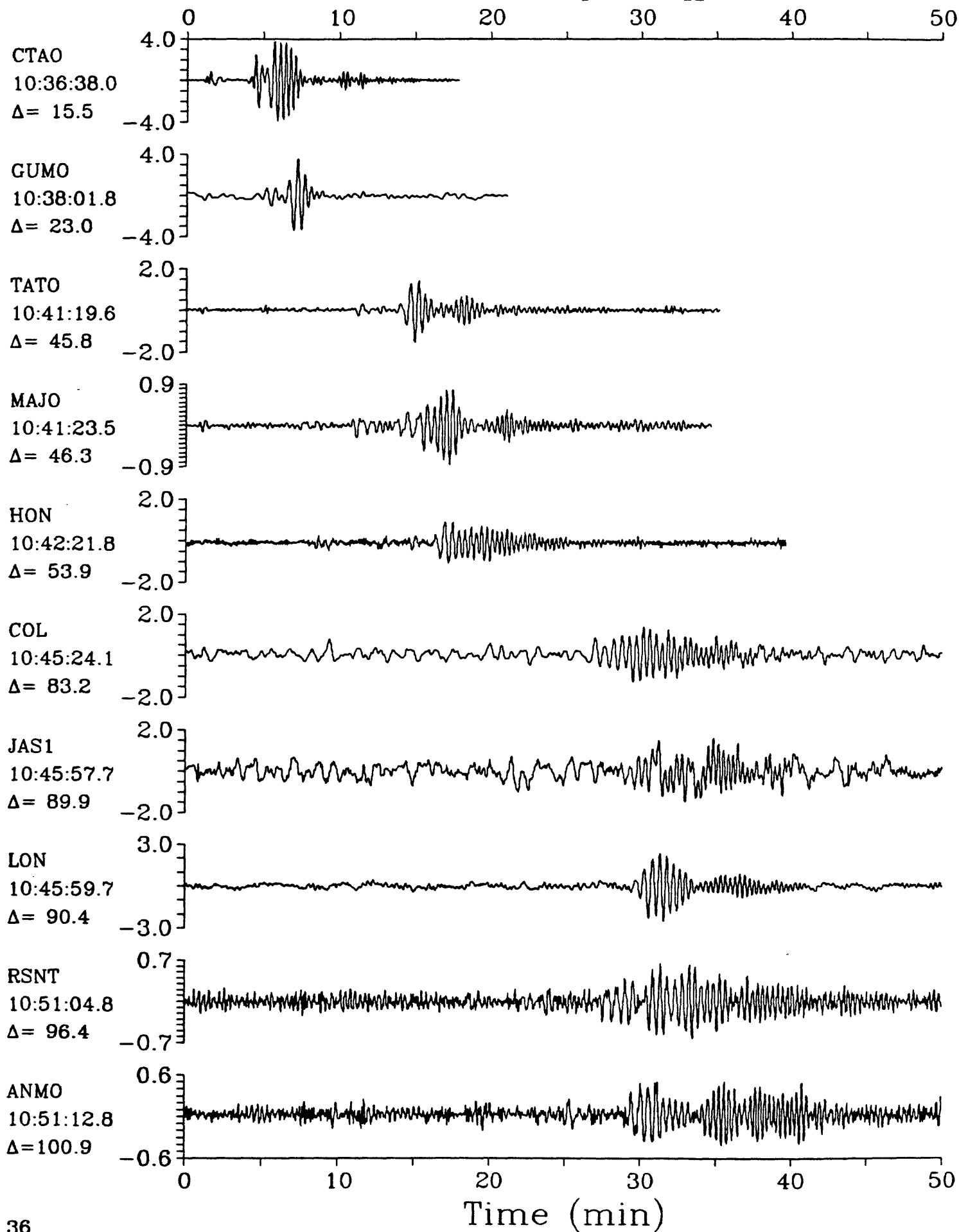
SPZ

Solomon Islands $h=33.0$ $m_b=5.6$ $M_{sz}=4.7$ 

LPZ

14 January 1986 10:34:00.82
Solomon Islands $h=33.0$ $m_b=5.6$ $M_{sz}=4.7$

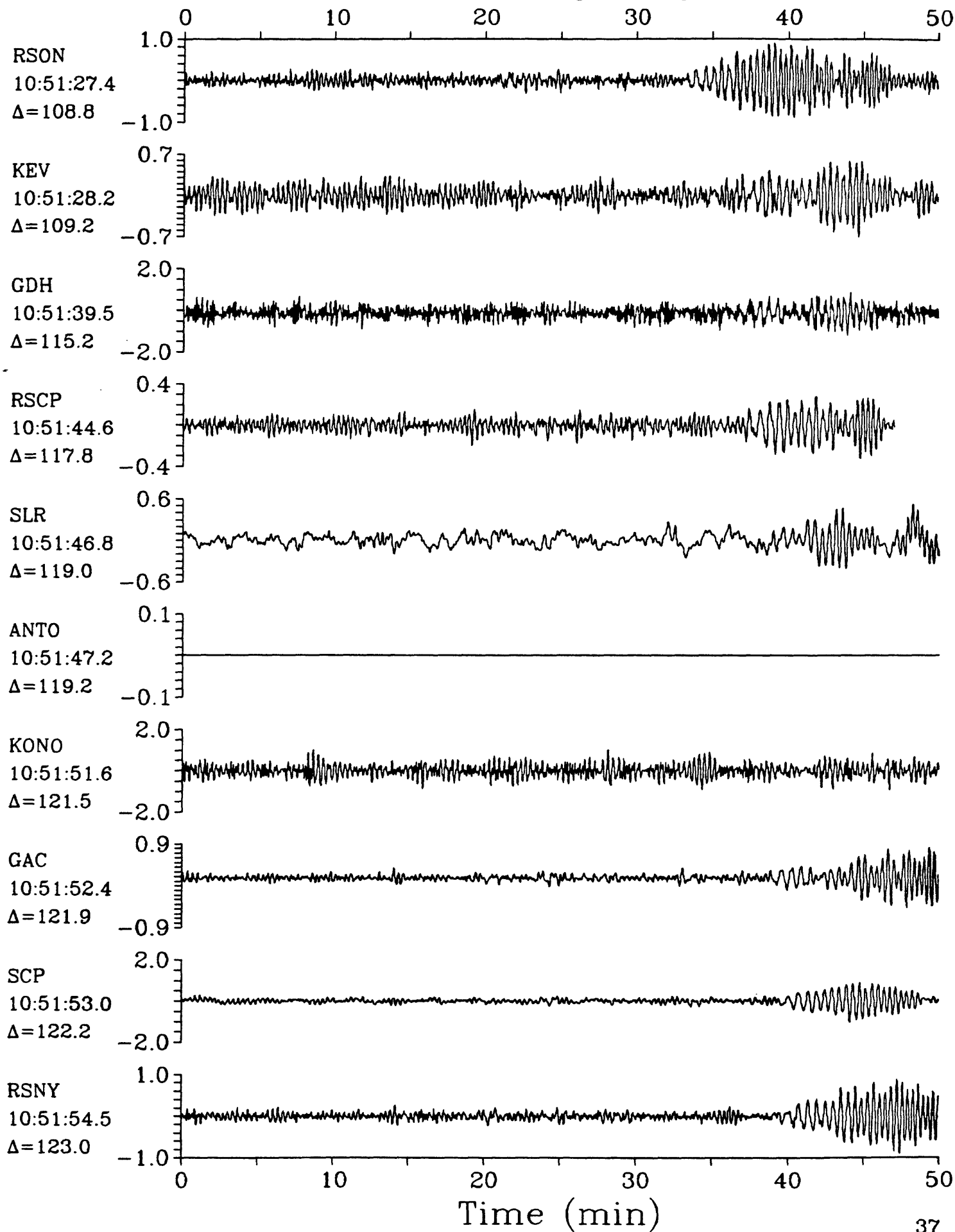
LPZ



LPZ

14 January 1986 10:34:00.82
Solomon Islands $h=33.0$ $m_b=5.6$ $M_{sz}=4.7$

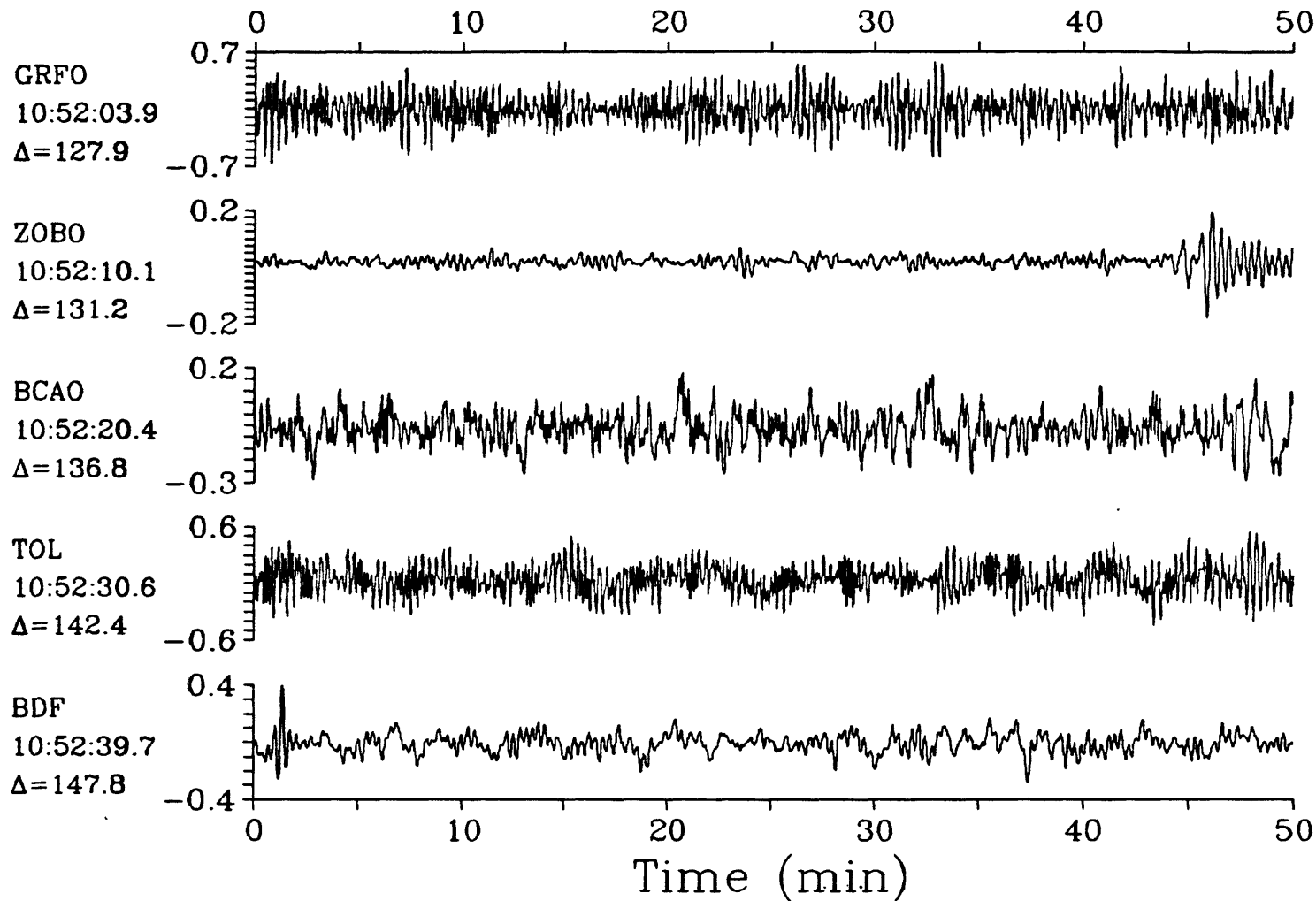
LPZ



LPZ

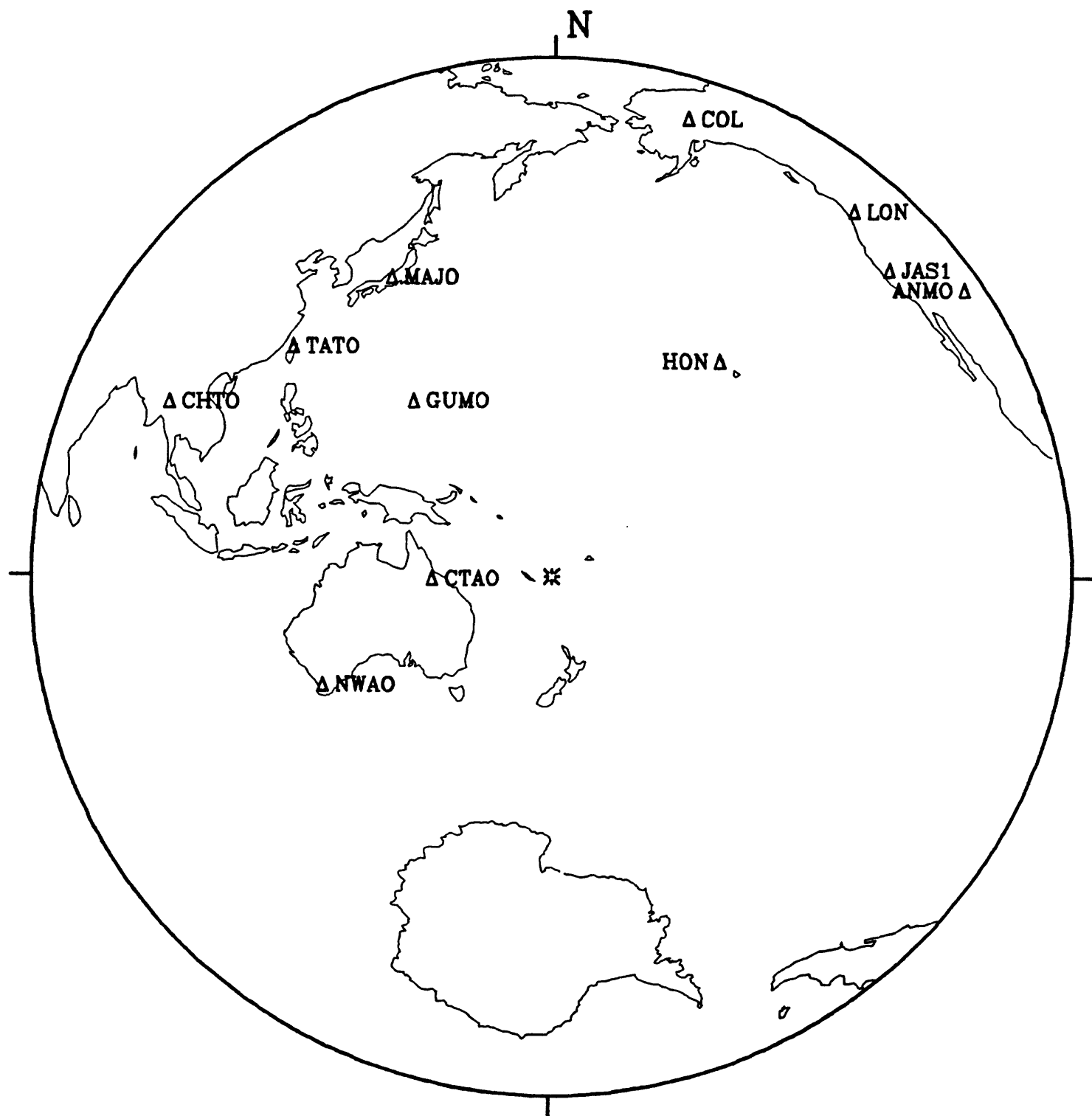
14 January 1986 10:34:00.82

LPZ

Solomon Islands $h=33.0$ $m_b=5.6$ $M_{sz}=4.7$ 

15 January 1986 20:17:31.41

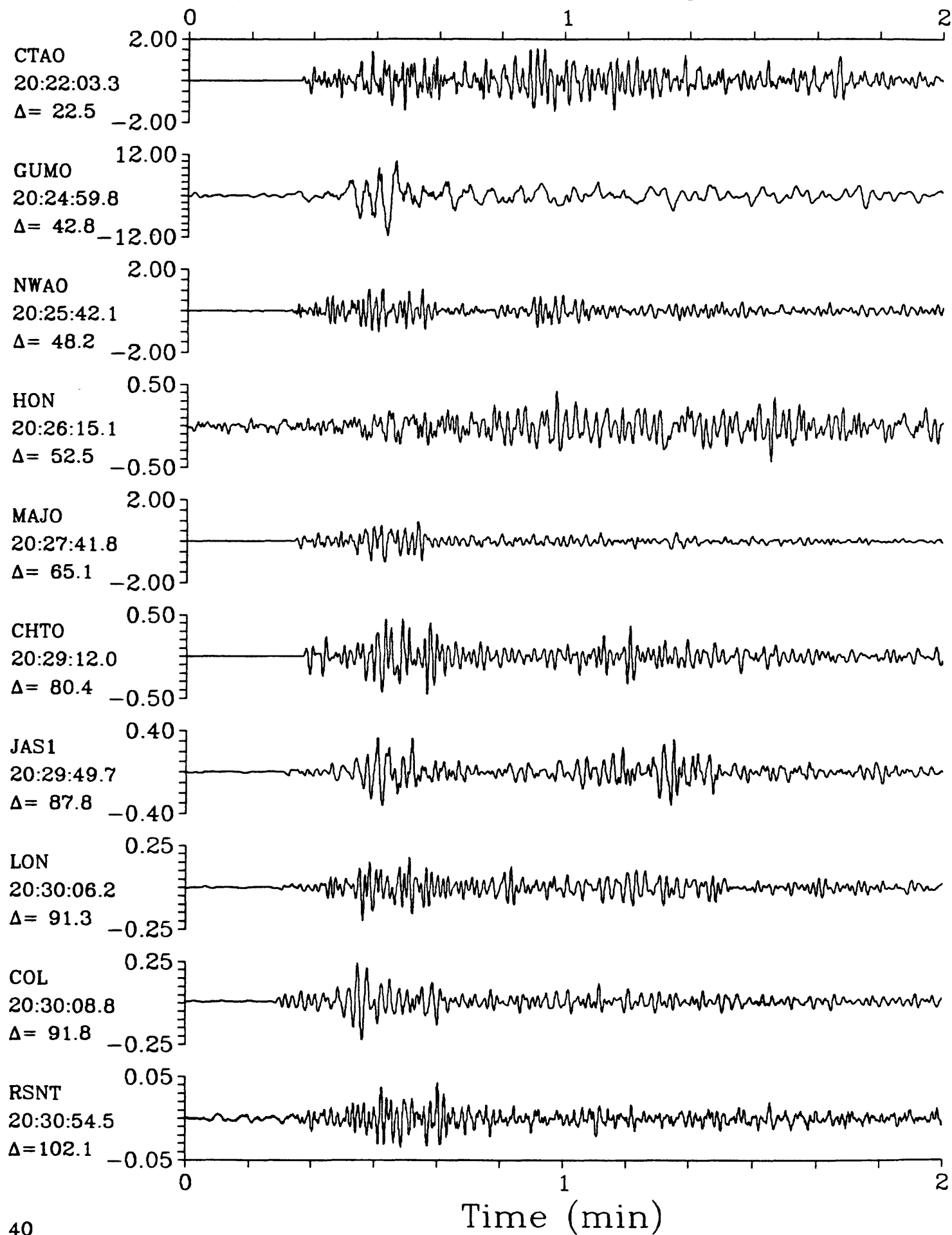
Loyalty Islands Region



SPZ

15 January 1986 20:17:31.41
Loyalty Islands Region $h=145.0$ $m_b=6.1$

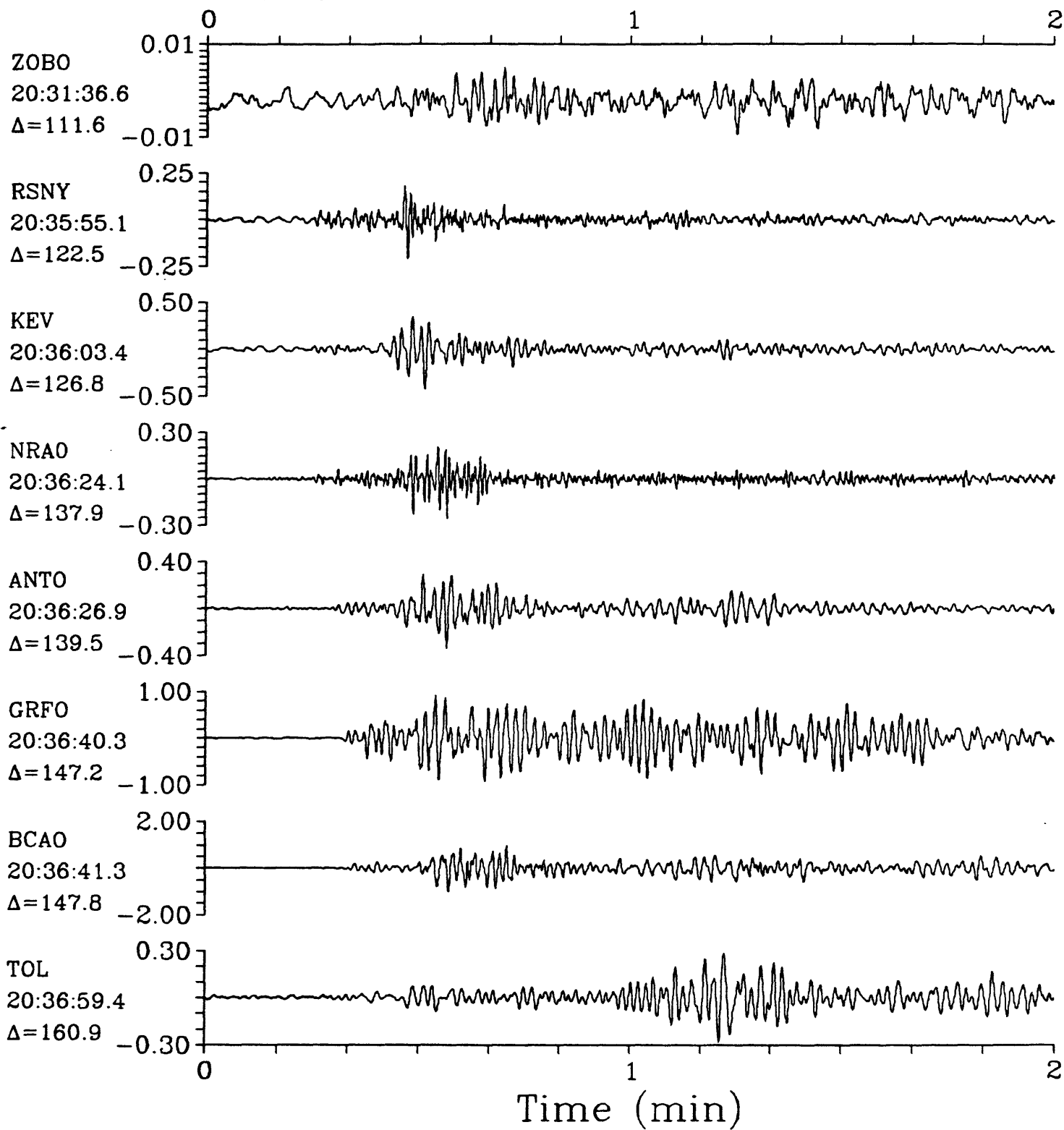
SPZ



SPZ

15 January 1986 20:17:31.41

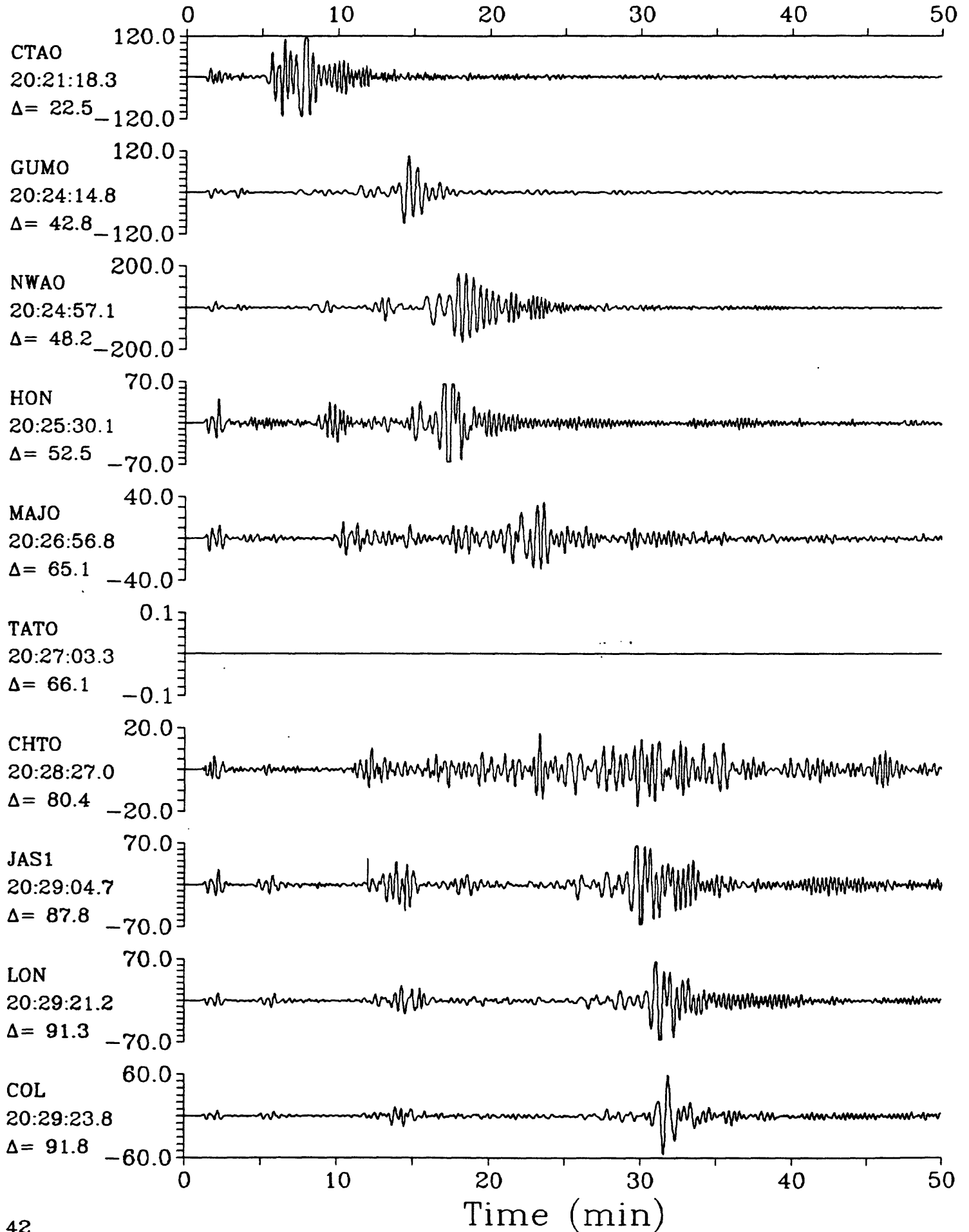
SPZ

Loyalty Islands Region $h=145.0$ $m_b=6.1$ 

LPZ

15 January 1986 20:17:31.41
Loyalty Islands Region $h=145.0$ $m_b=6.1$

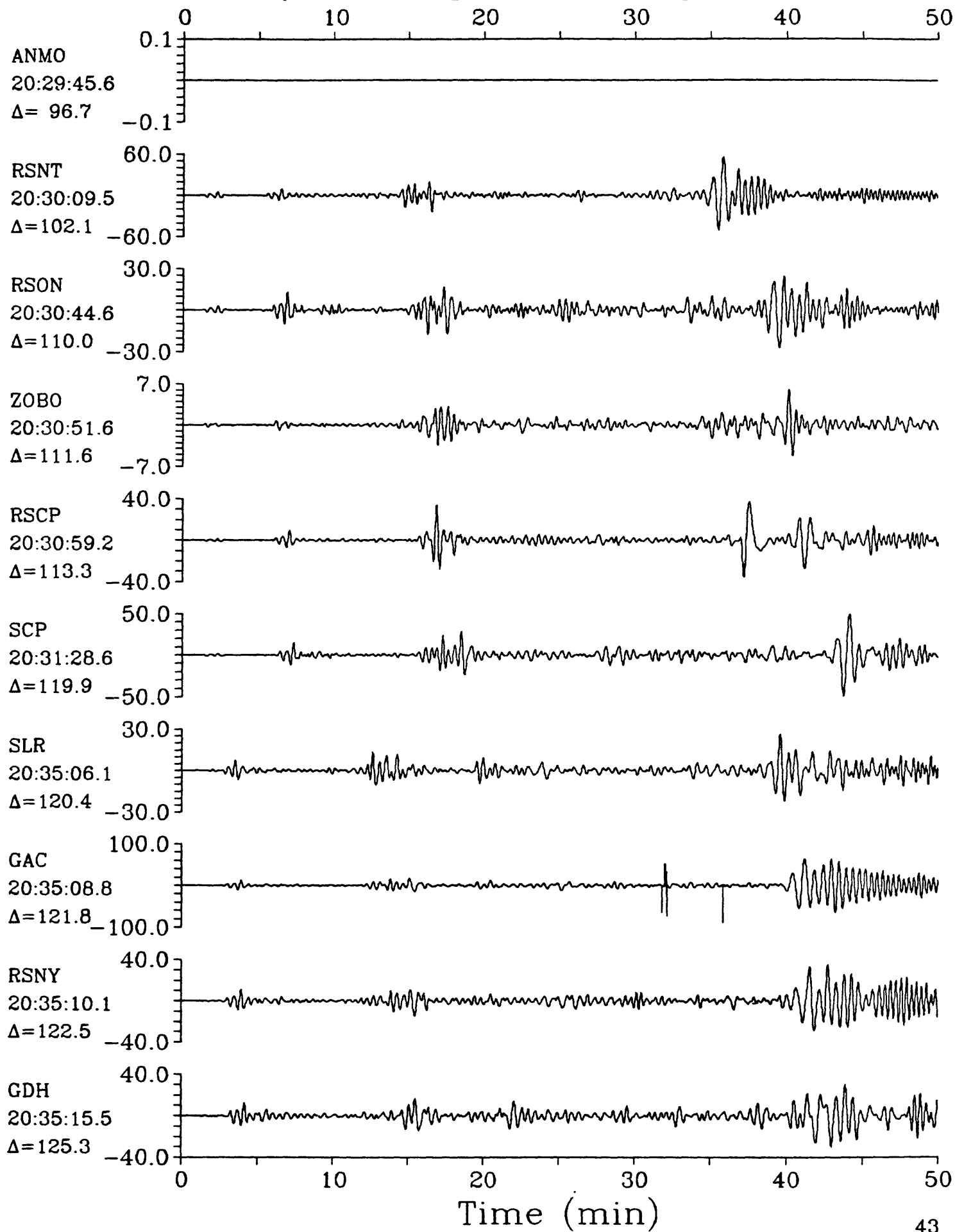
LPZ

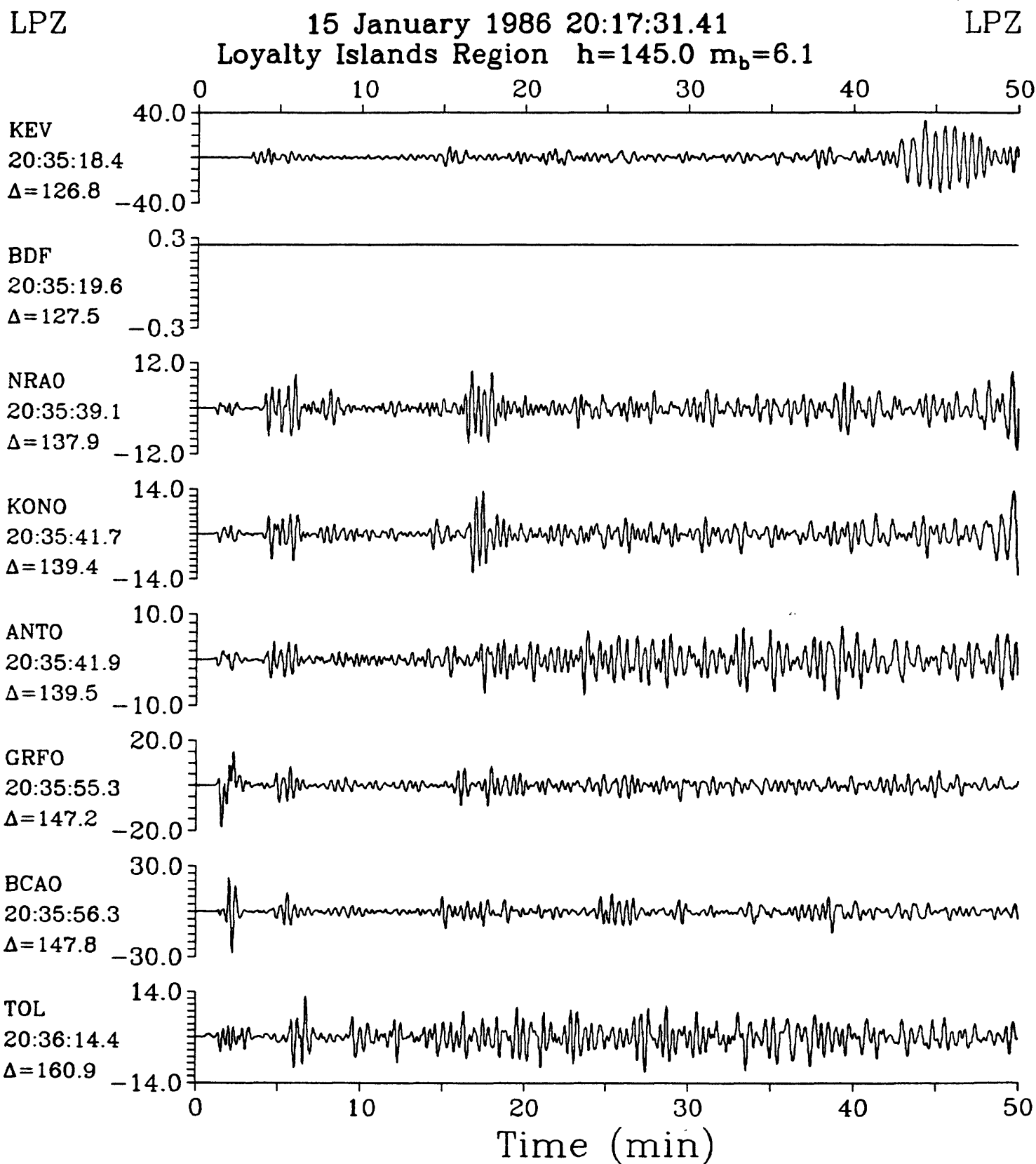


LPZ

15 January 1986 20:17:31.41
Loyalty Islands Region $h=145.0$ $m_b=6.1$

LPZ

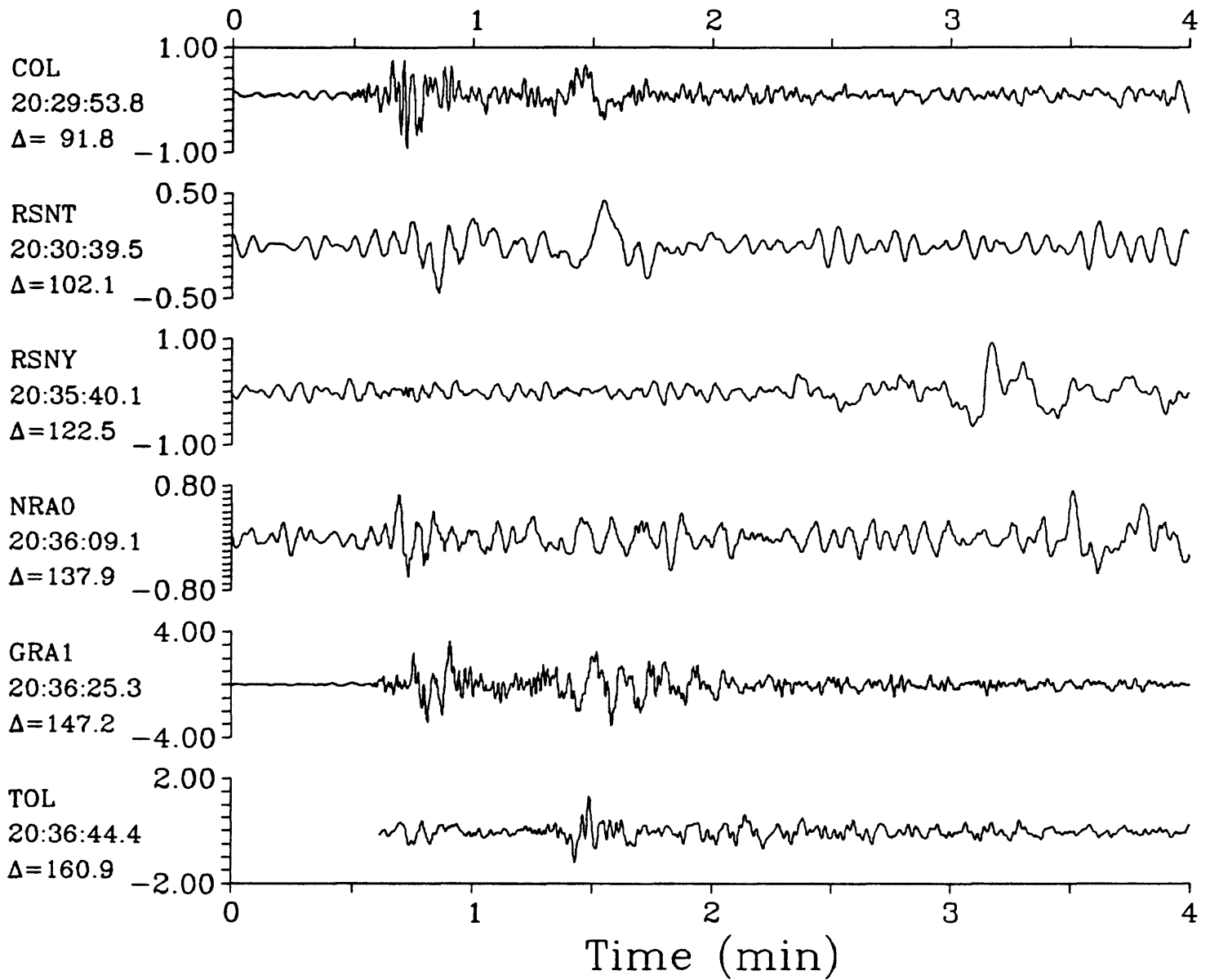




IPZ

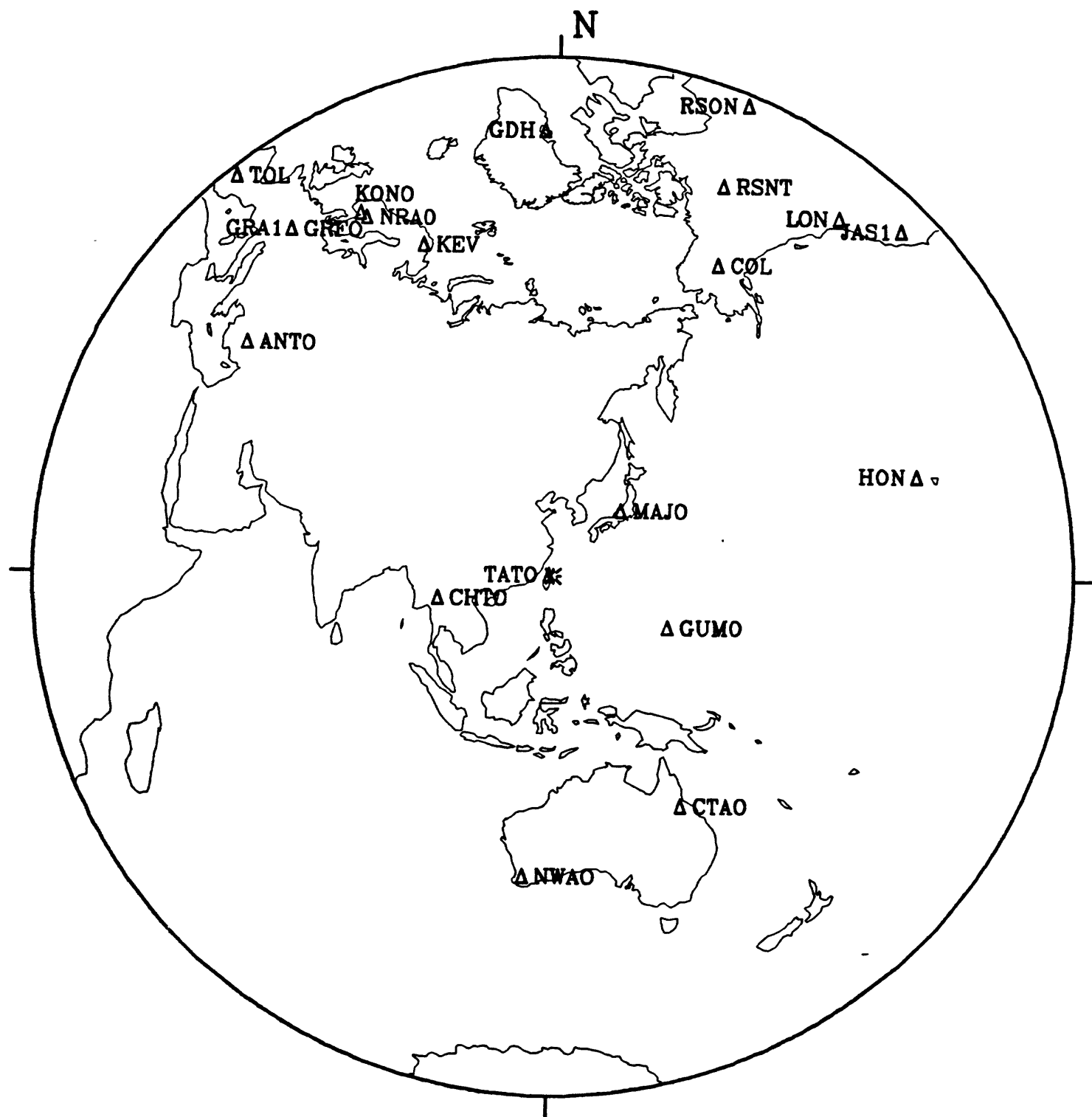
15 January 1986 20:17:31.41

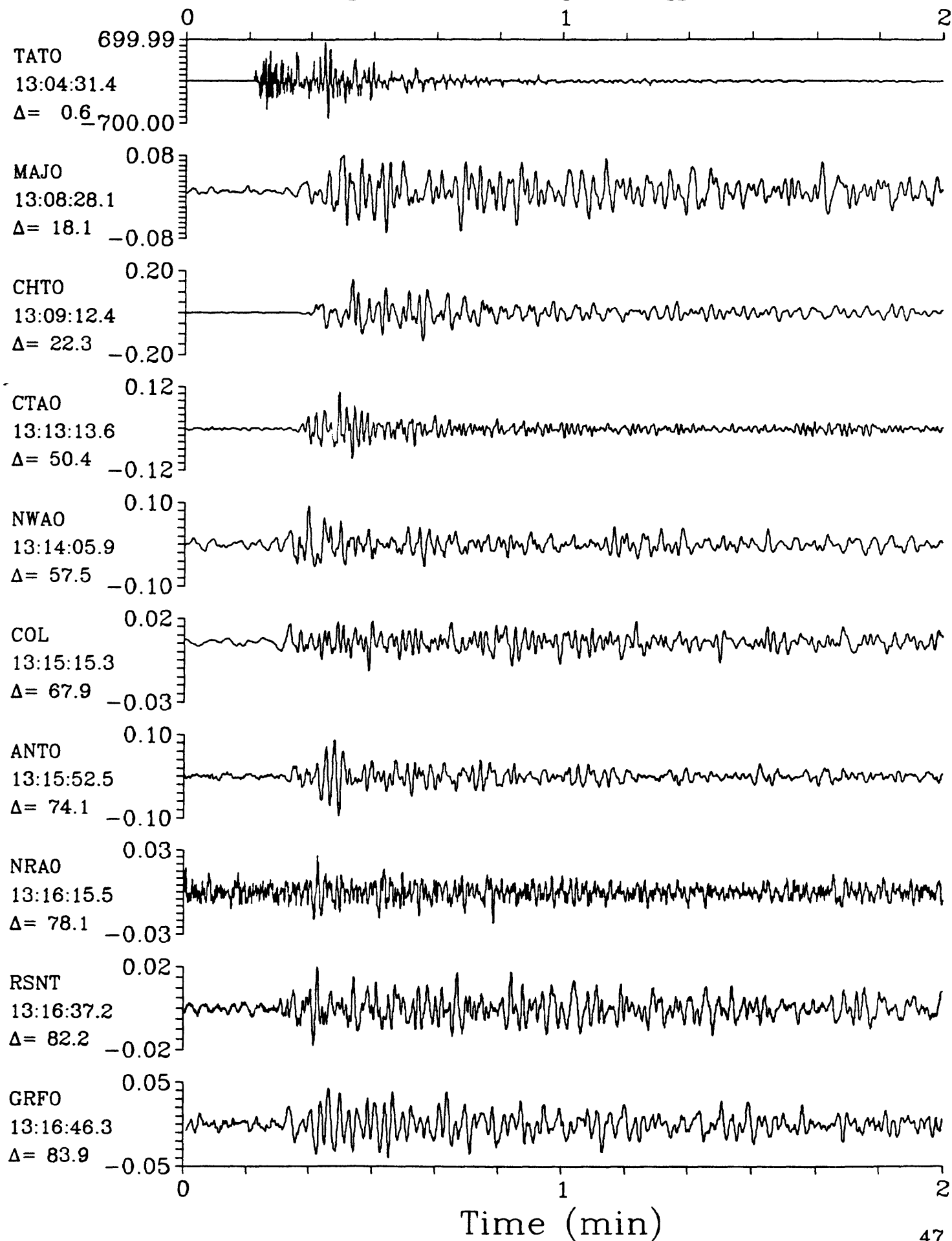
IPZ

Loyalty Islands Region $h=145.0$ $m_b=6.1$ 

16 January 1986 13:04:34.19

Taiwan Region

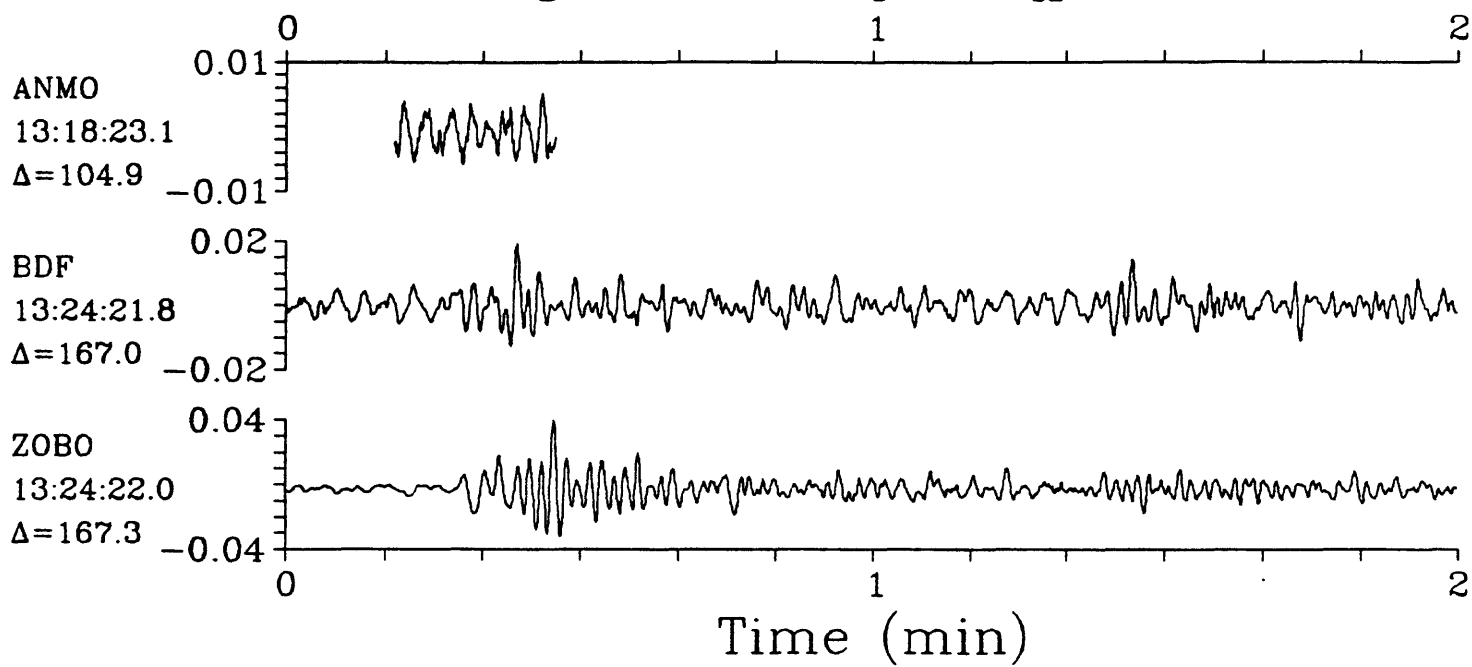




SPZ

16 January 1986 13:04:34.19
Taiwan Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.9$

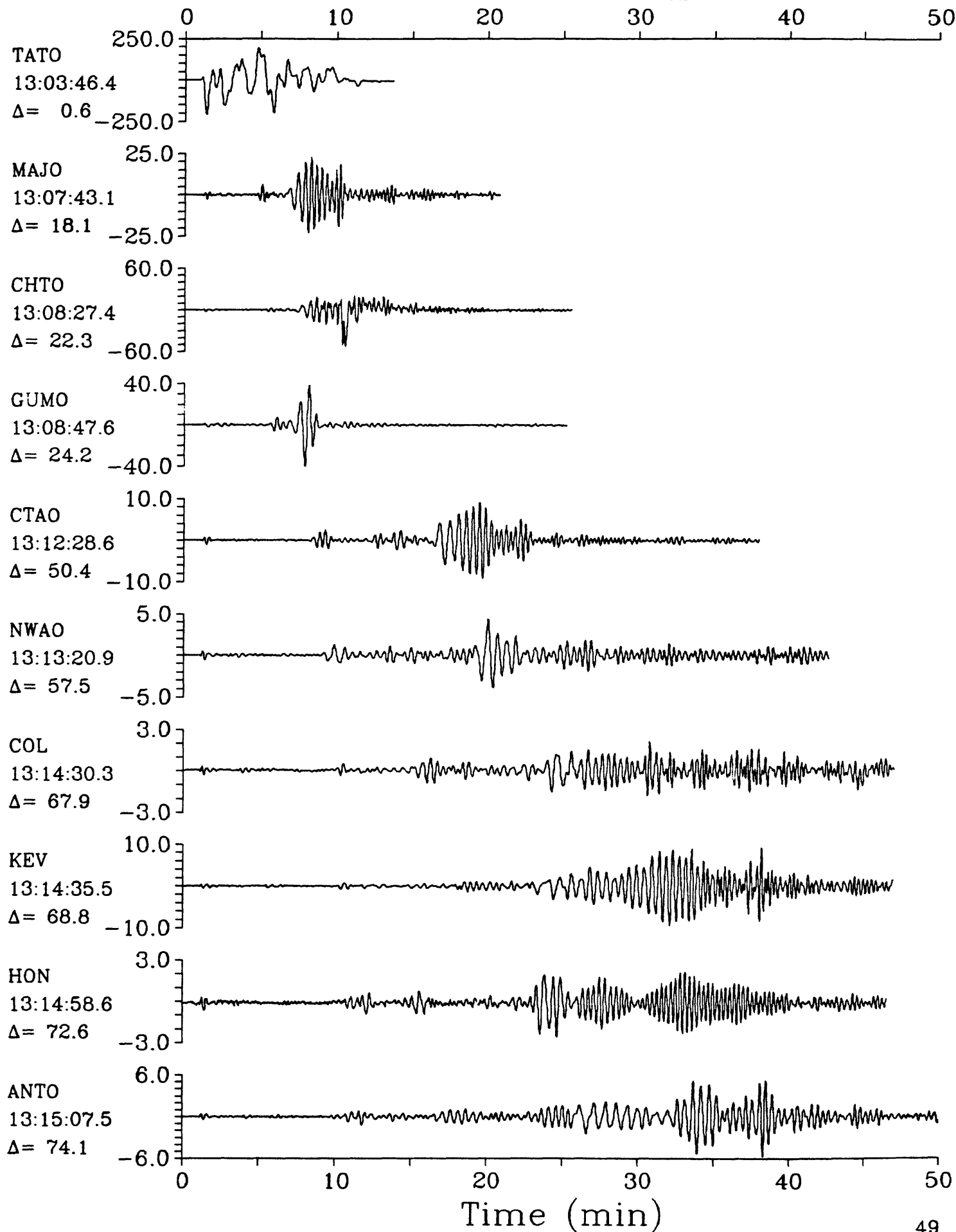
SPZ

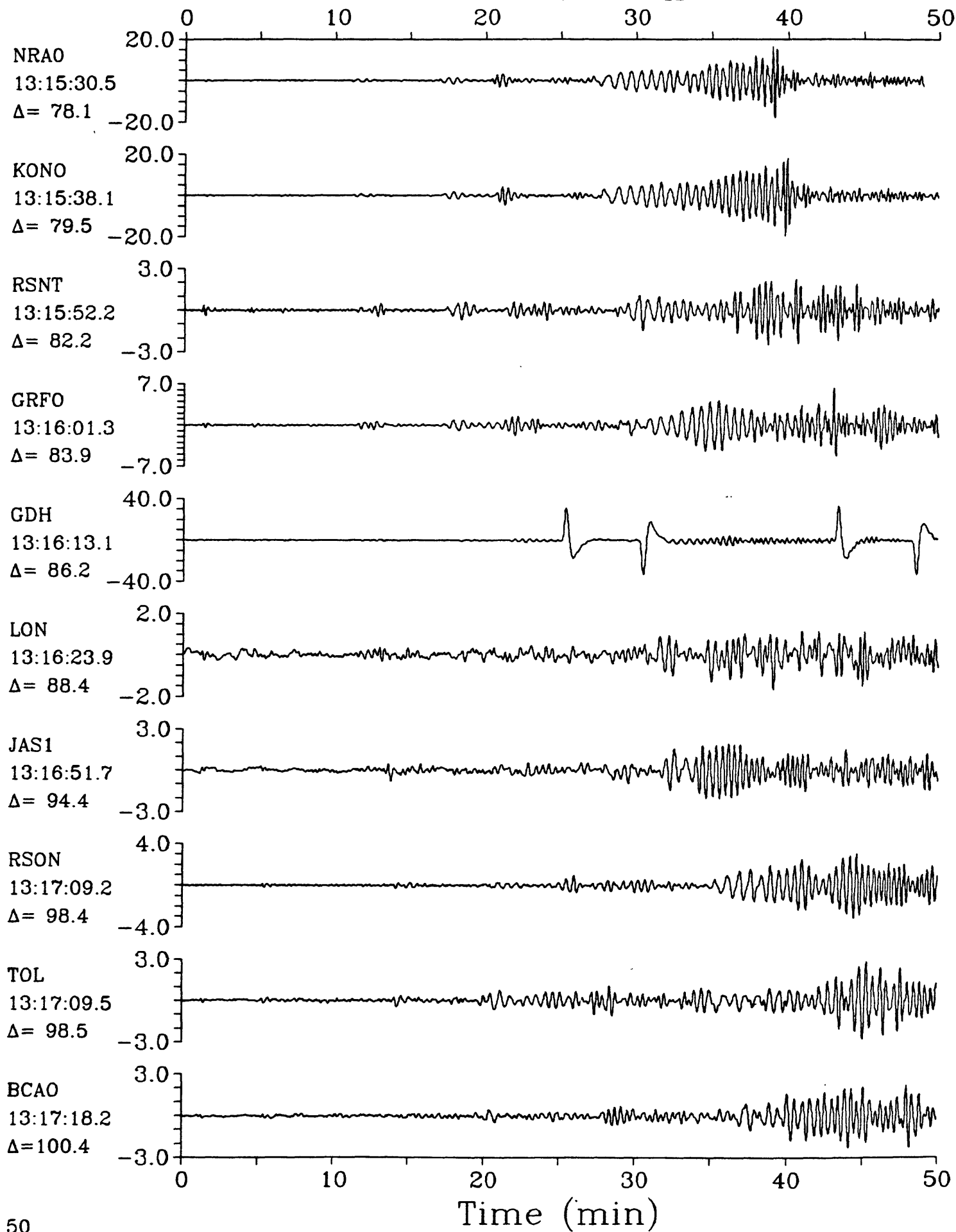


LPZ

16 January 1986 13:04:34.19
Taiwan Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.9$

LPZ

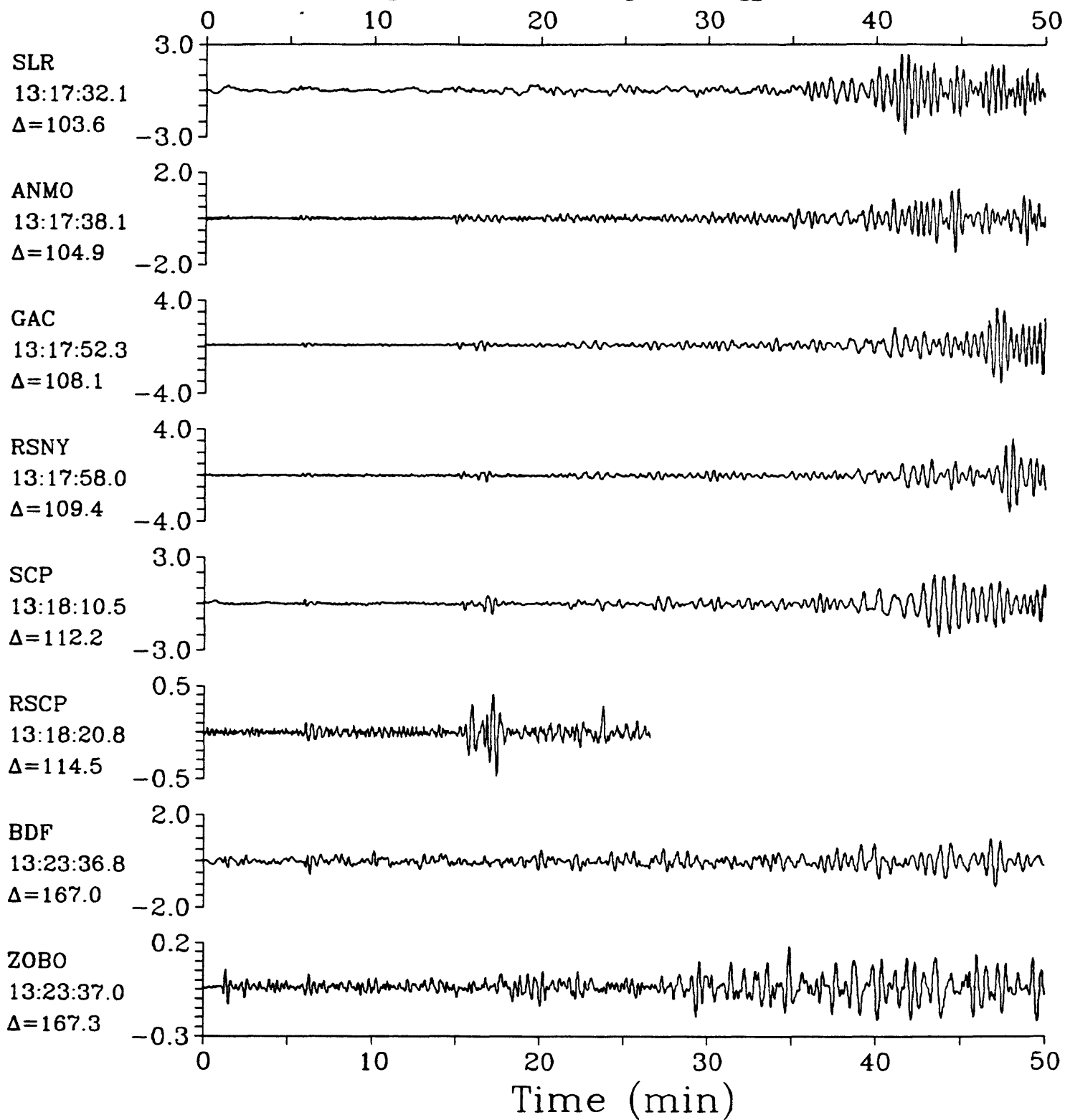


Taiwan Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.9$ 

LPZ

16 January 1986 13:04:34.19

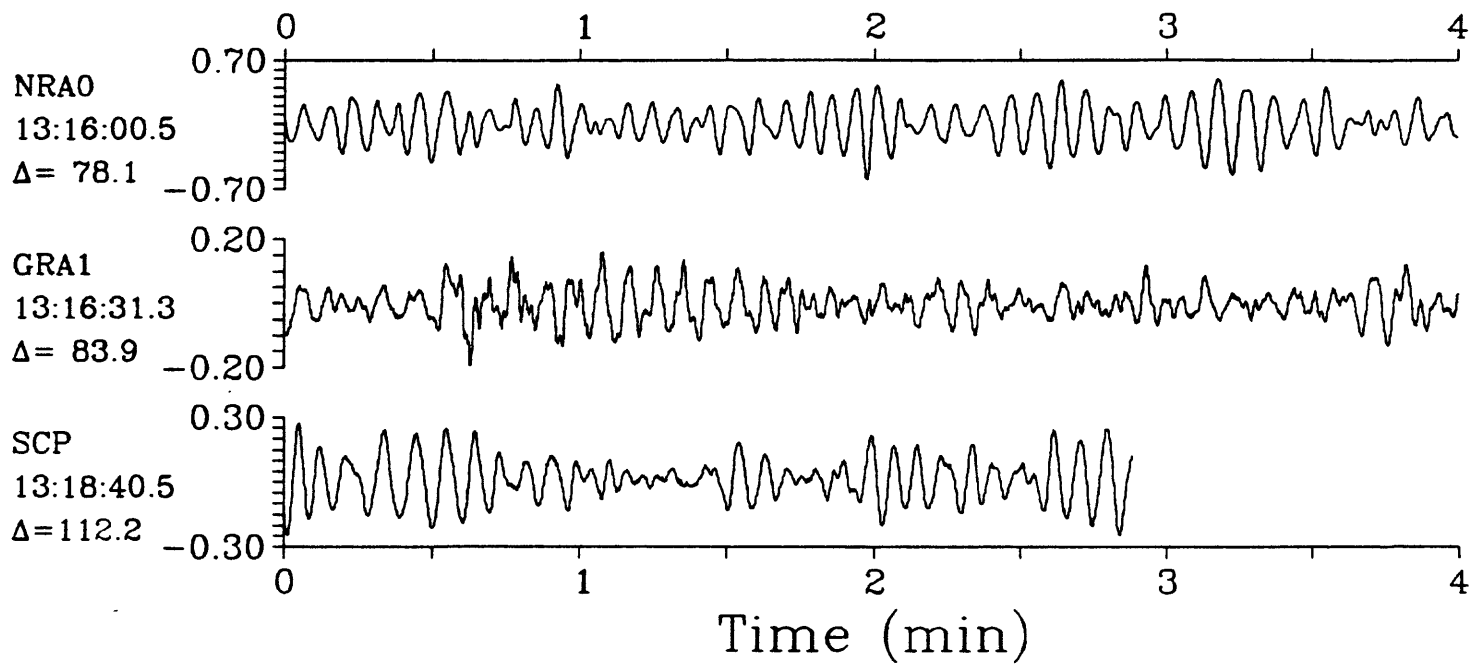
LPZ

Taiwan Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.9$ 

IPZ

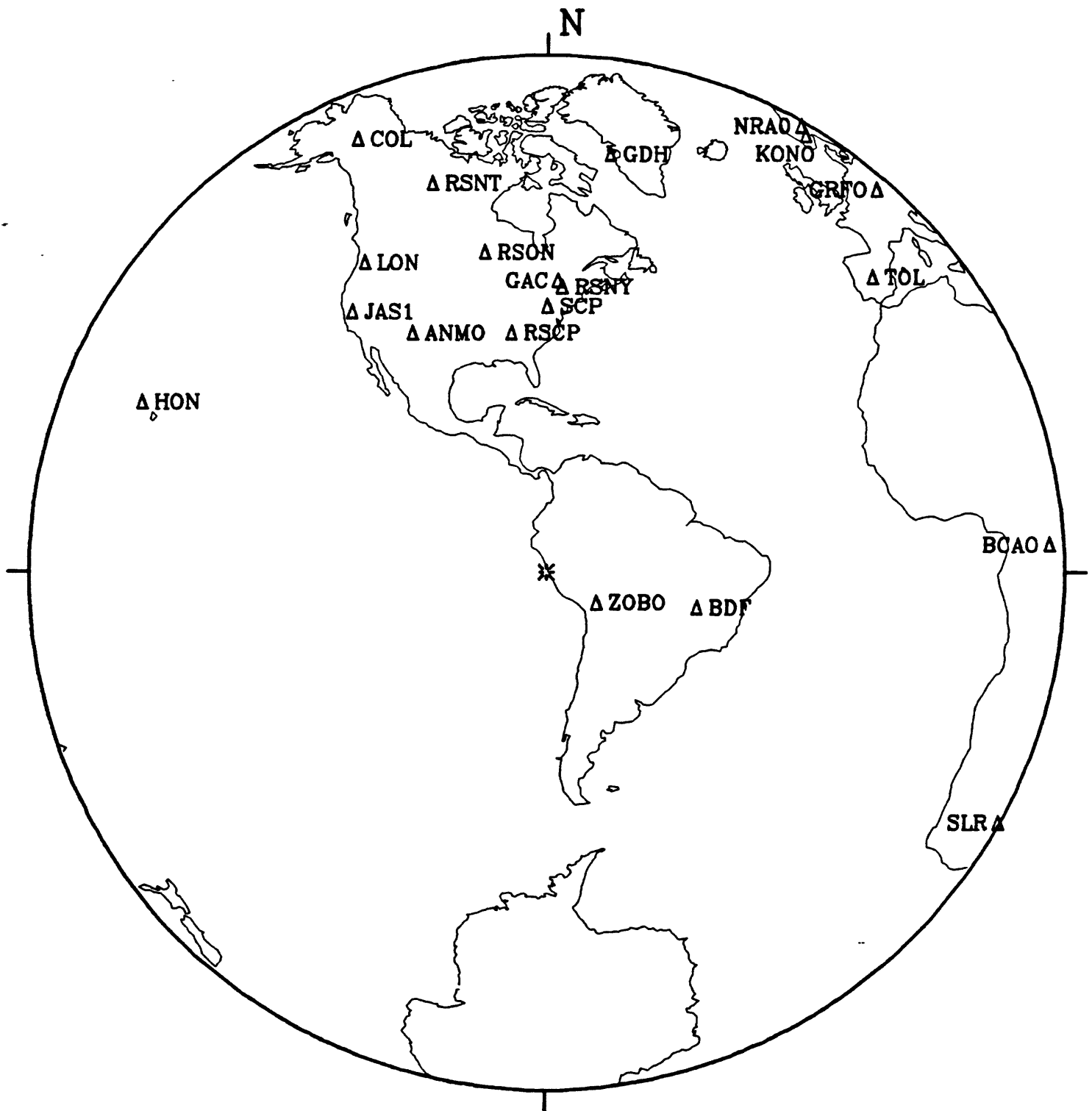
16 January 1986 13:04:34.19

IPZ

Taiwan Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.9$ 

17 January 1986 04:15:00.01

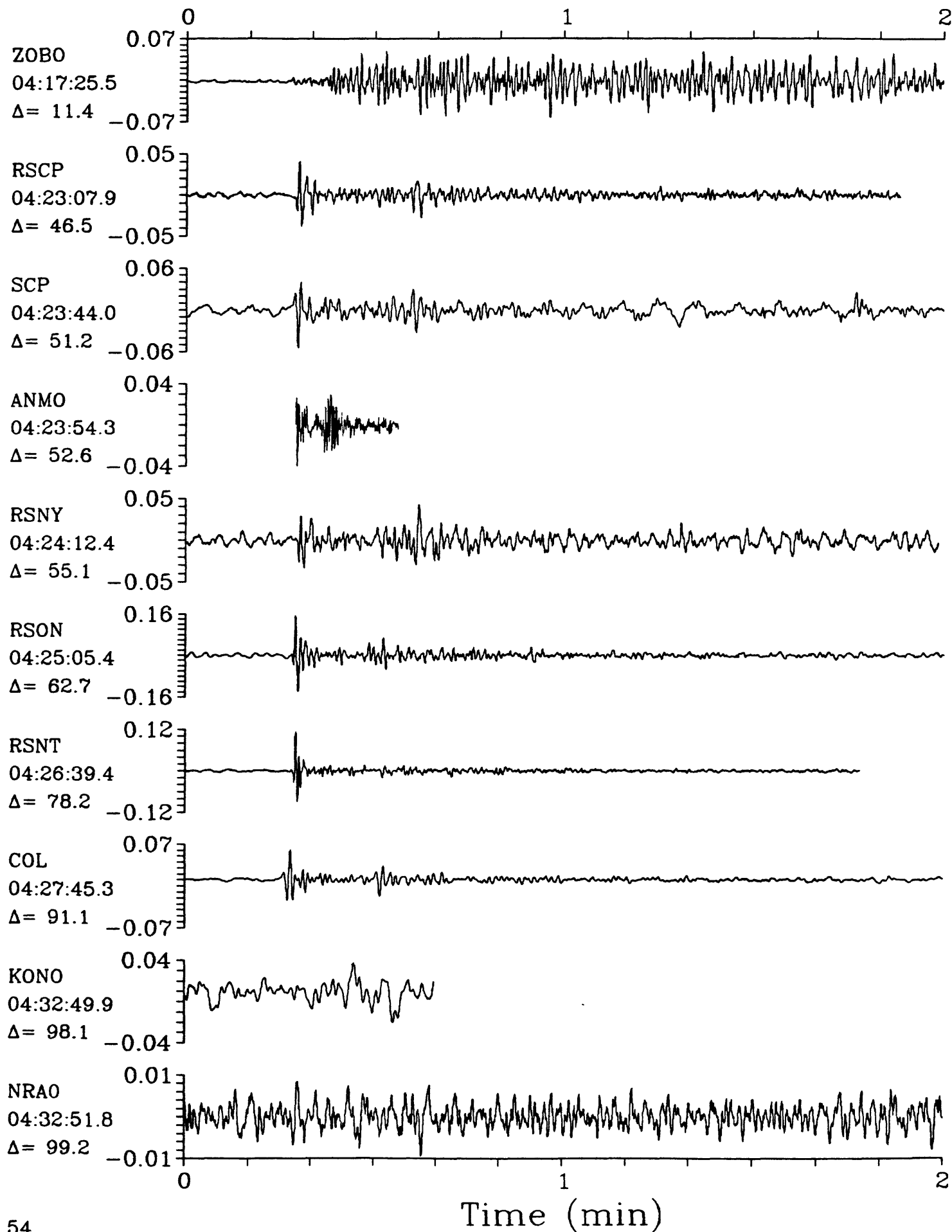
Near Coast of Peru



SPZ

17 January 1986 04:15:00.01
Near Coast of Peru $h=50.2$ $m_b=5.6$

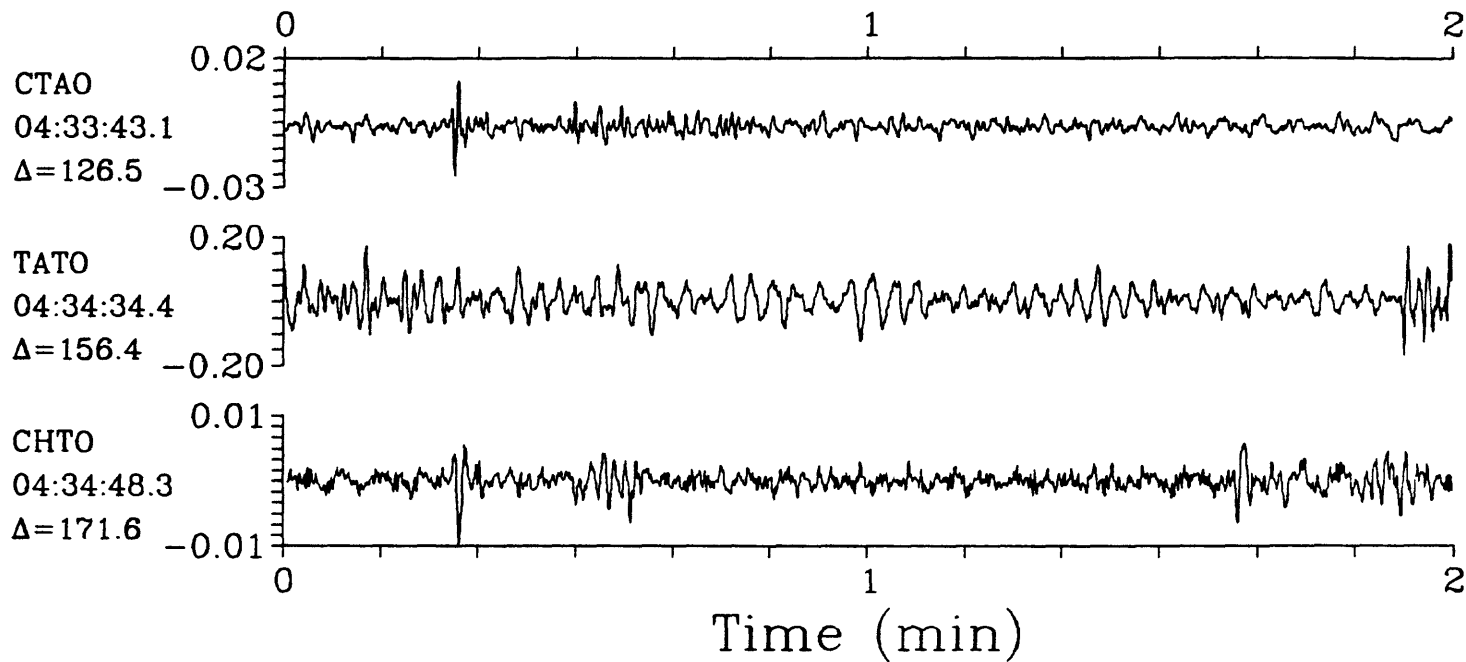
SPZ

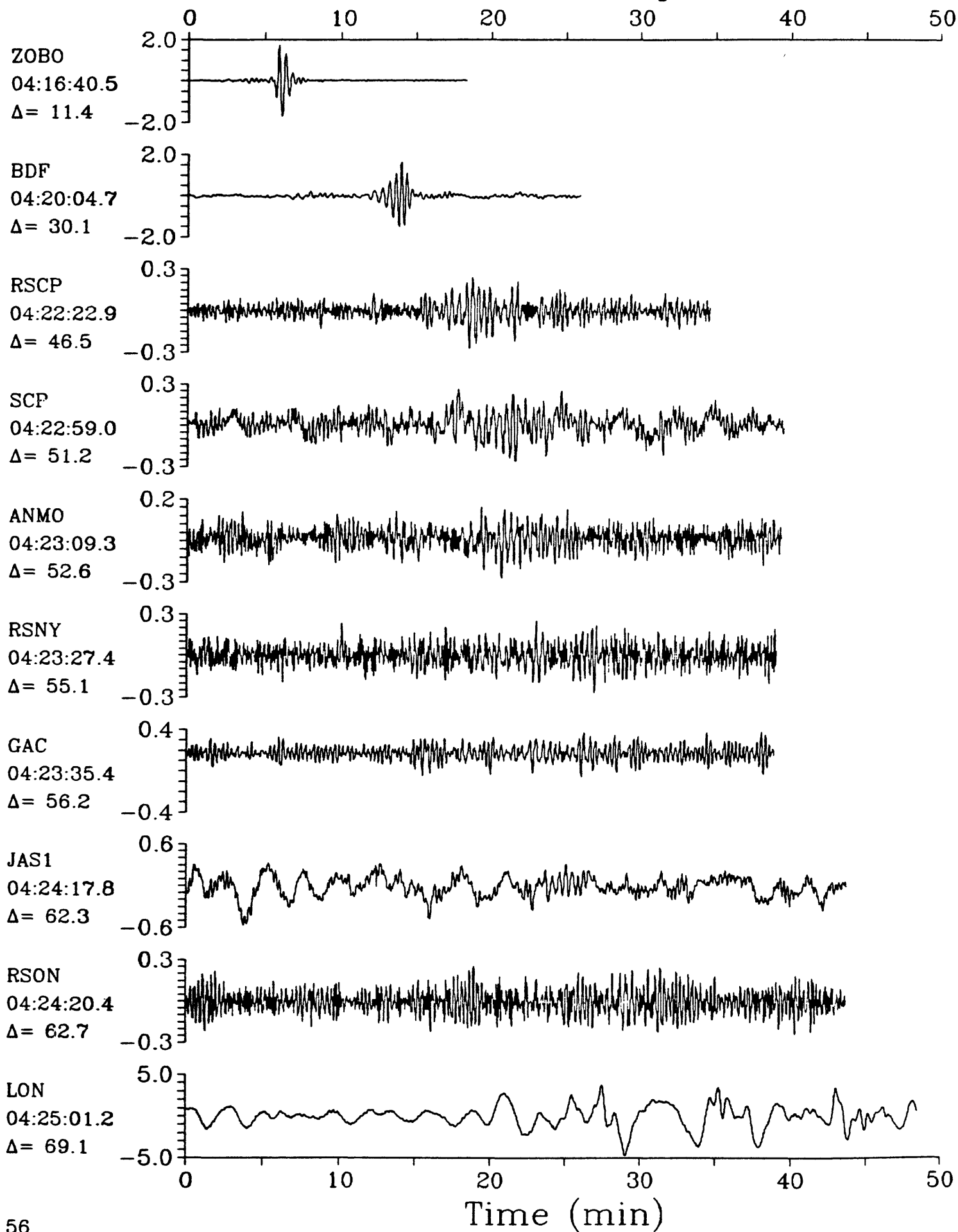


SPZ

17 January 1986 04:15:00.01
Near Coast of Peru $h=50.2$ $m_b=5.6$

SPZ

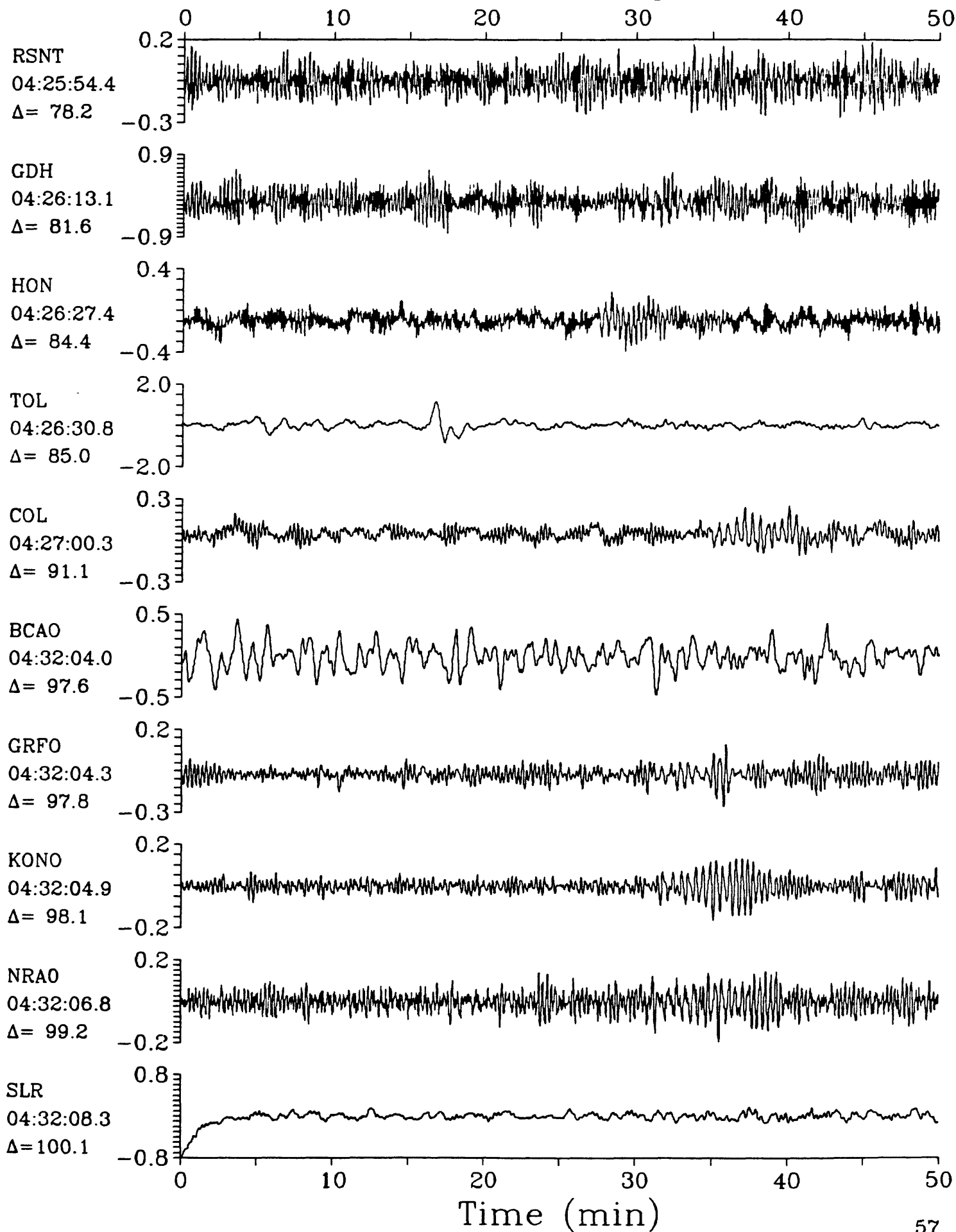


Near Coast of Peru $h=50.2$ $m_b=5.6$ 

LPZ

17 January 1986 04:15:00.01
Near Coast of Peru $h=50.2$ $m_b=5.6$

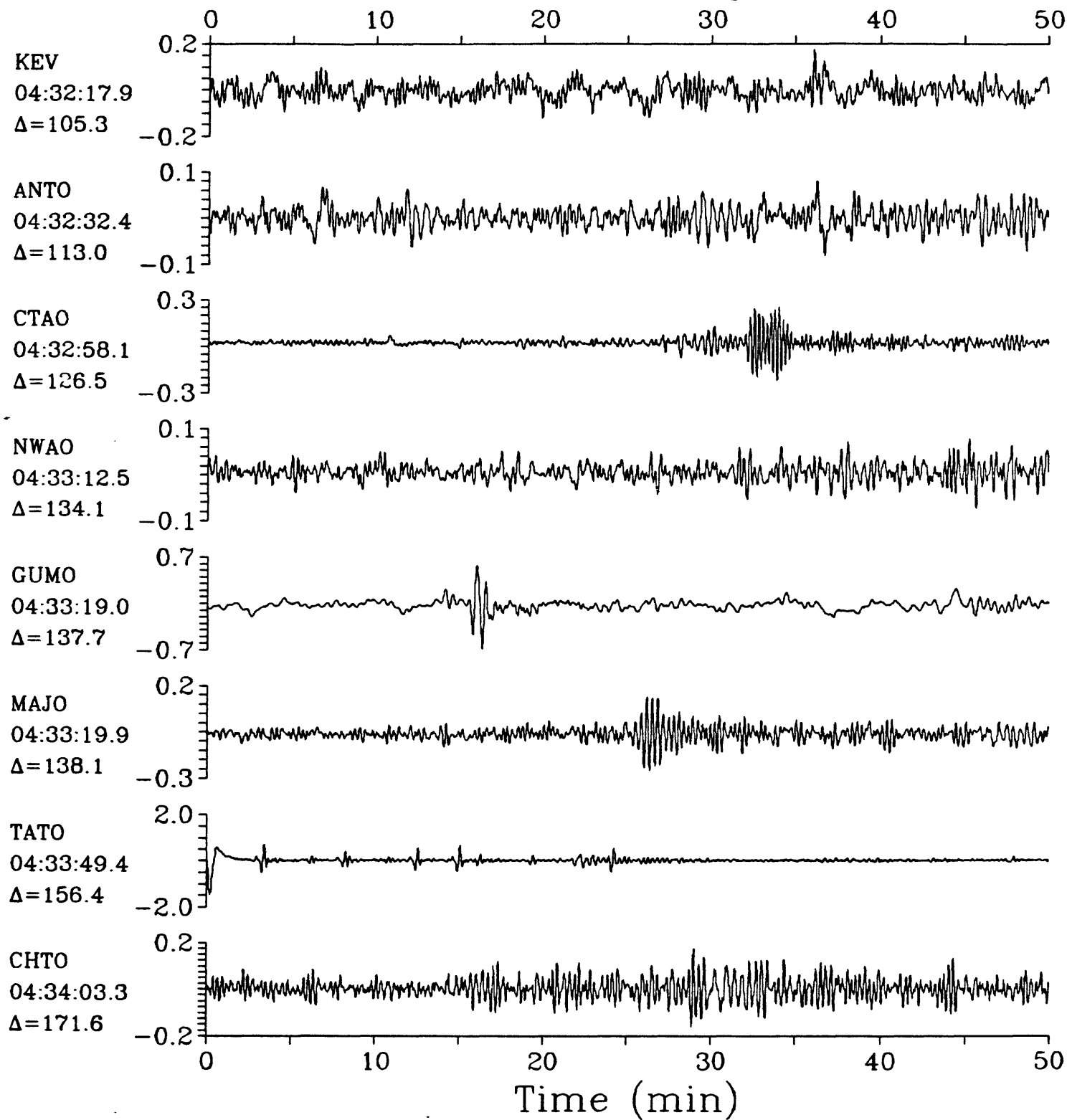
LPZ



LPZ

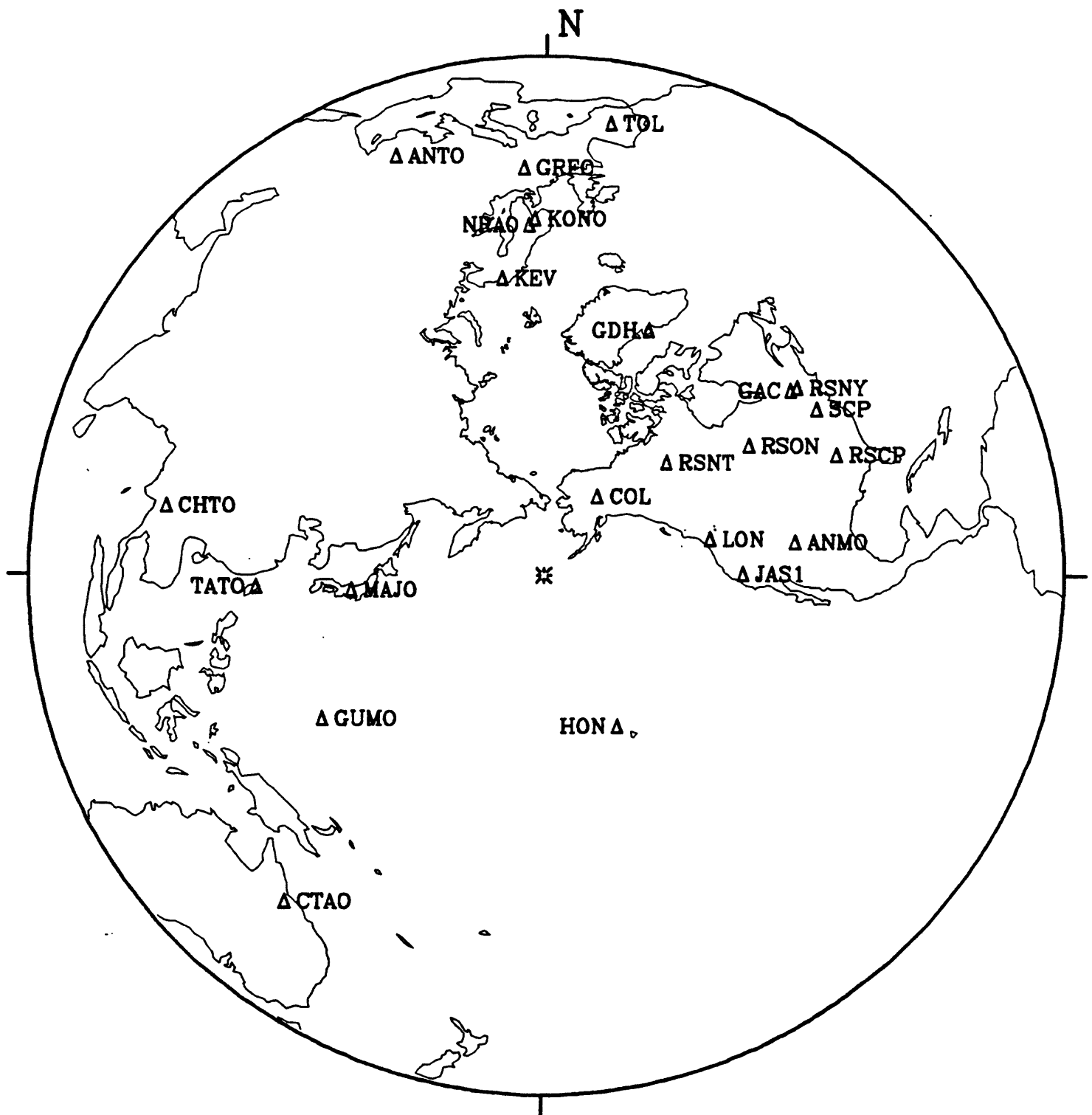
17 January 1986 04:15:00.01

LPZ

Near Coast of Peru $h=50.2$ $m_b=5.6$ 

18 January 1986 01:59:05.21

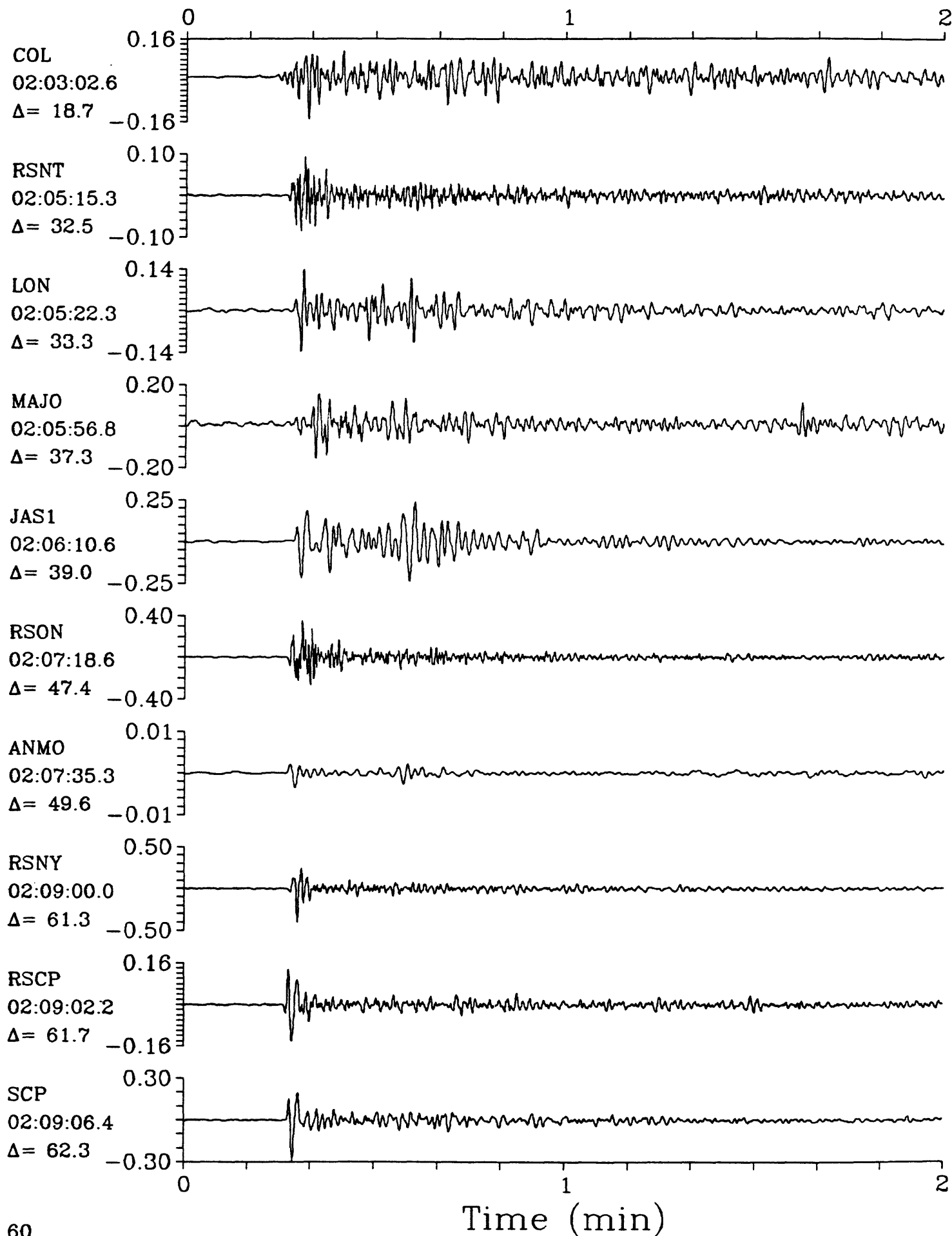
Andreanof Islands, Aleutian Is.



SPZ

18 January 1986 01:59:05.21

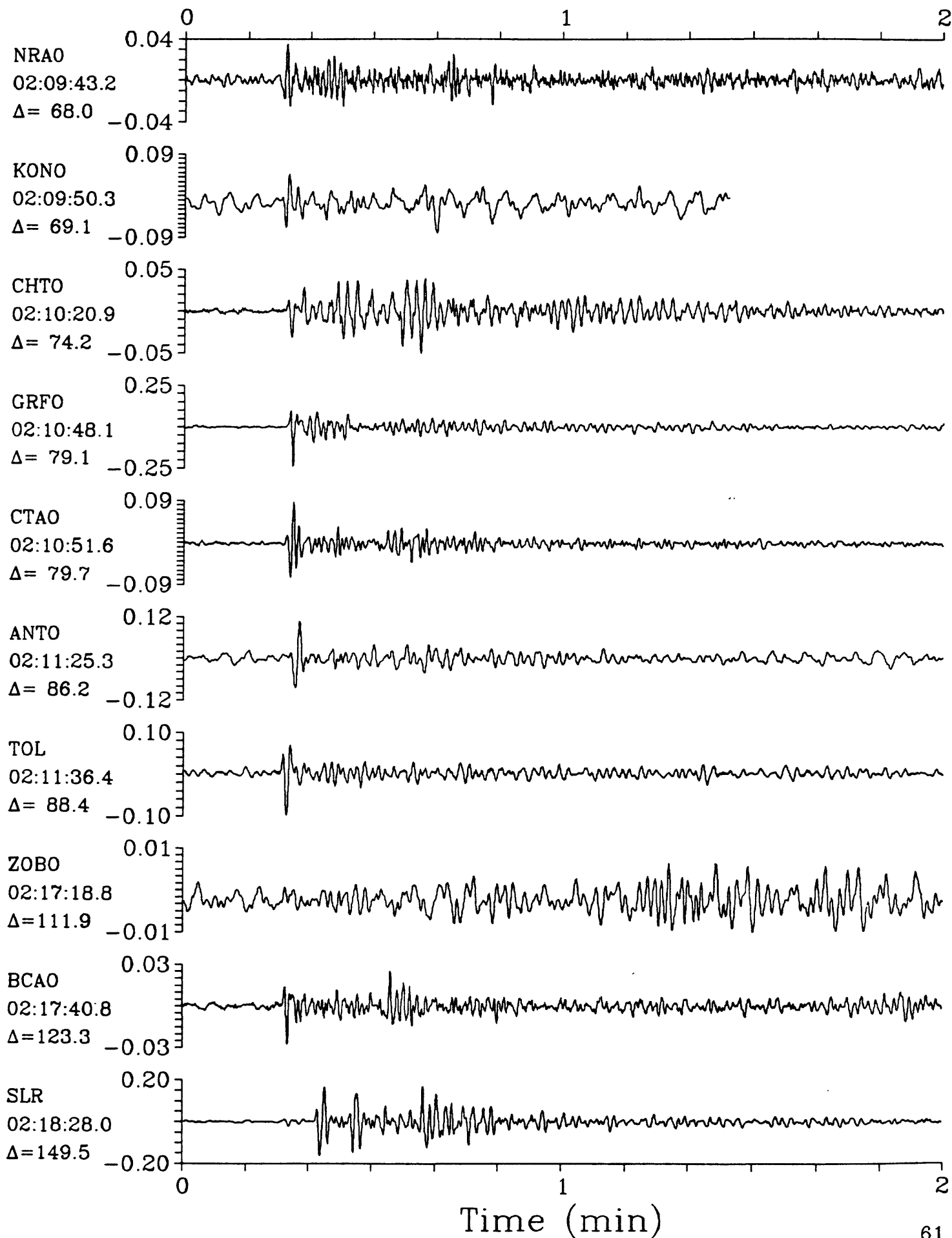
SPZ

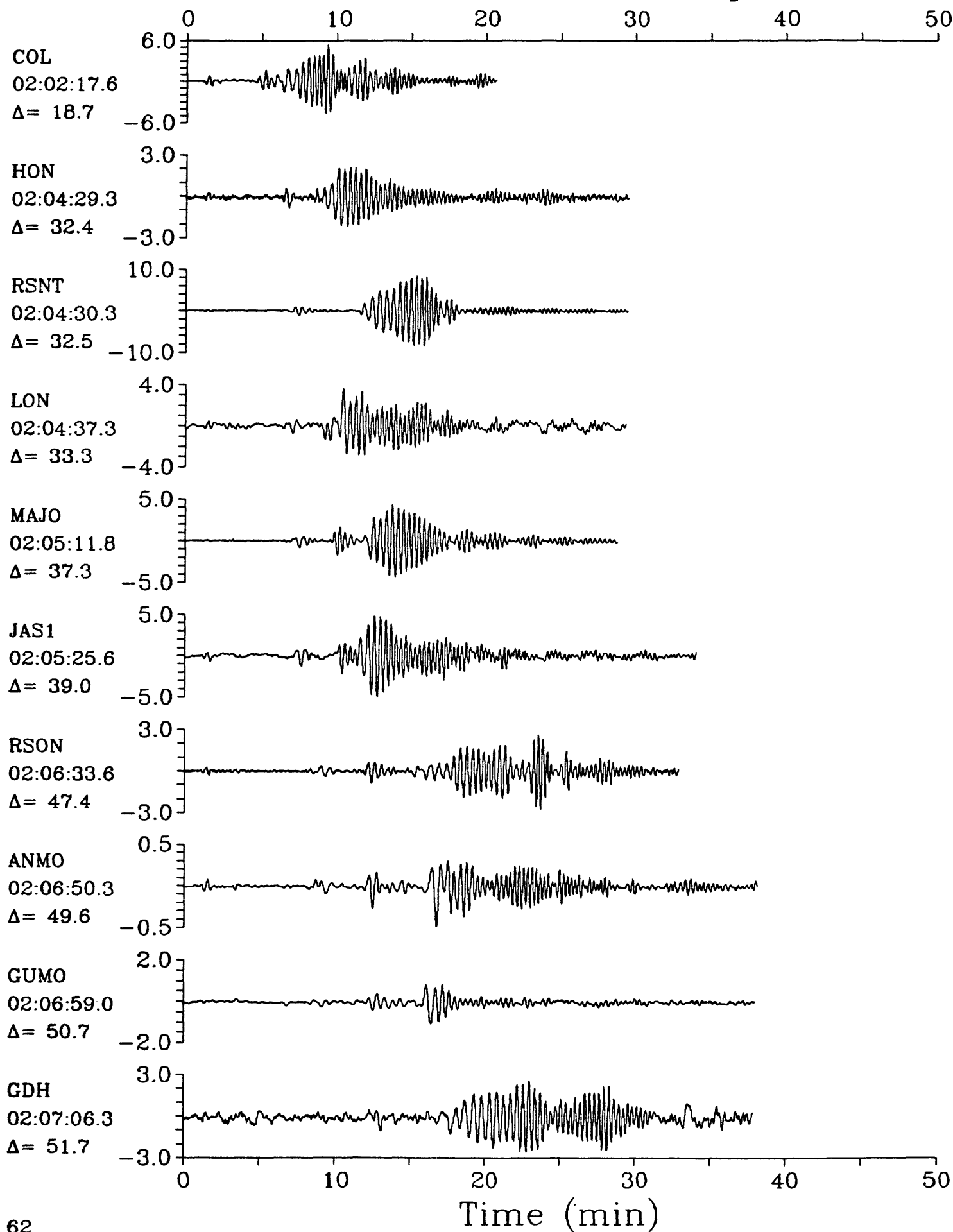
Andreanof Islands, Aleutian Is. $h=62.9$ $m_b=5.7$ 

SPZ

18 January 1986 01:59:05.21

SPZ

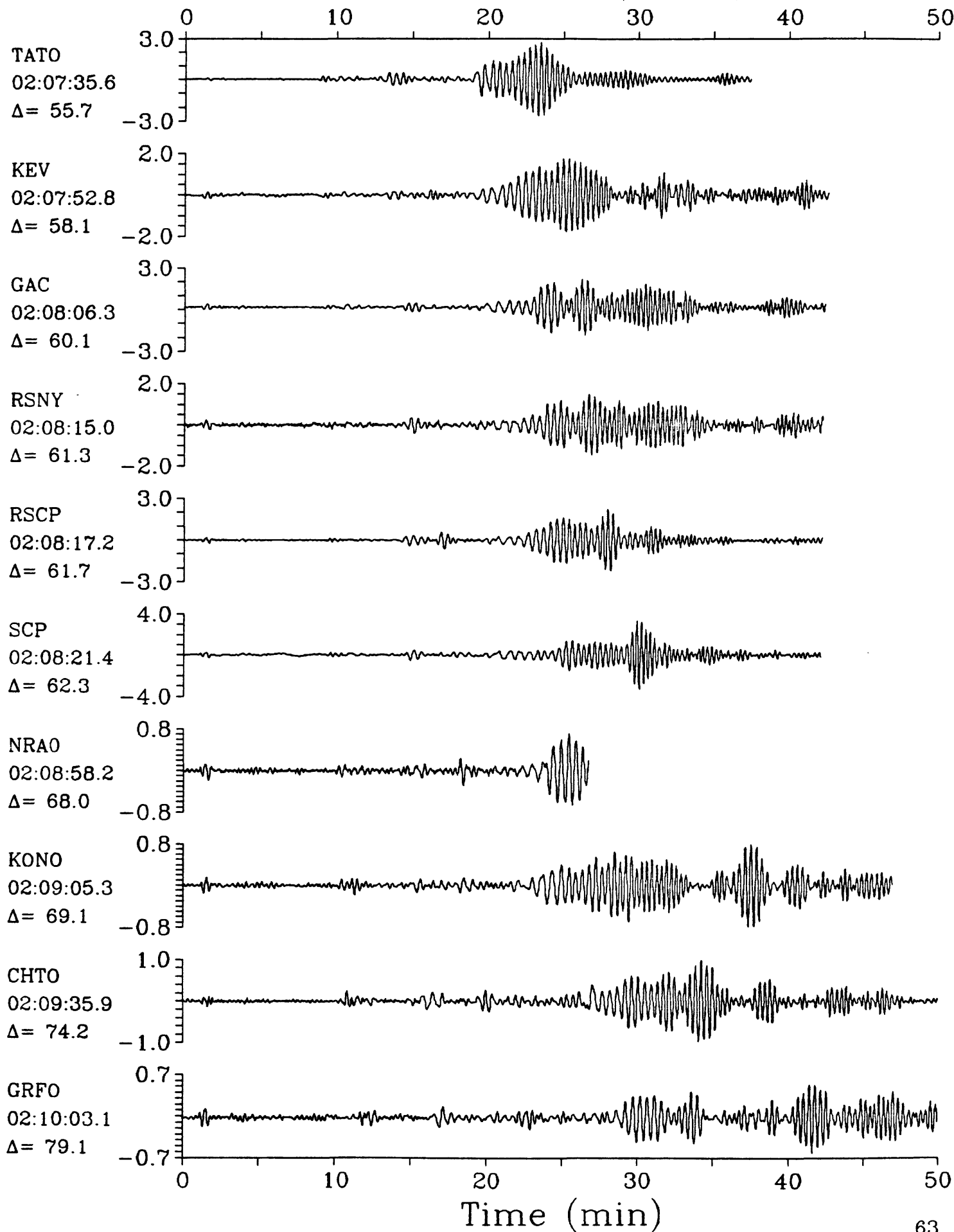
Andreanof Islands, Aleutian Is. $h=62.9$ $m_b=5.7$ 

Andreanof Islands, Aleutian Is. $h=62.9$ $m_b=5.7$ 

LPZ

18 January 1986 01:59:05.21

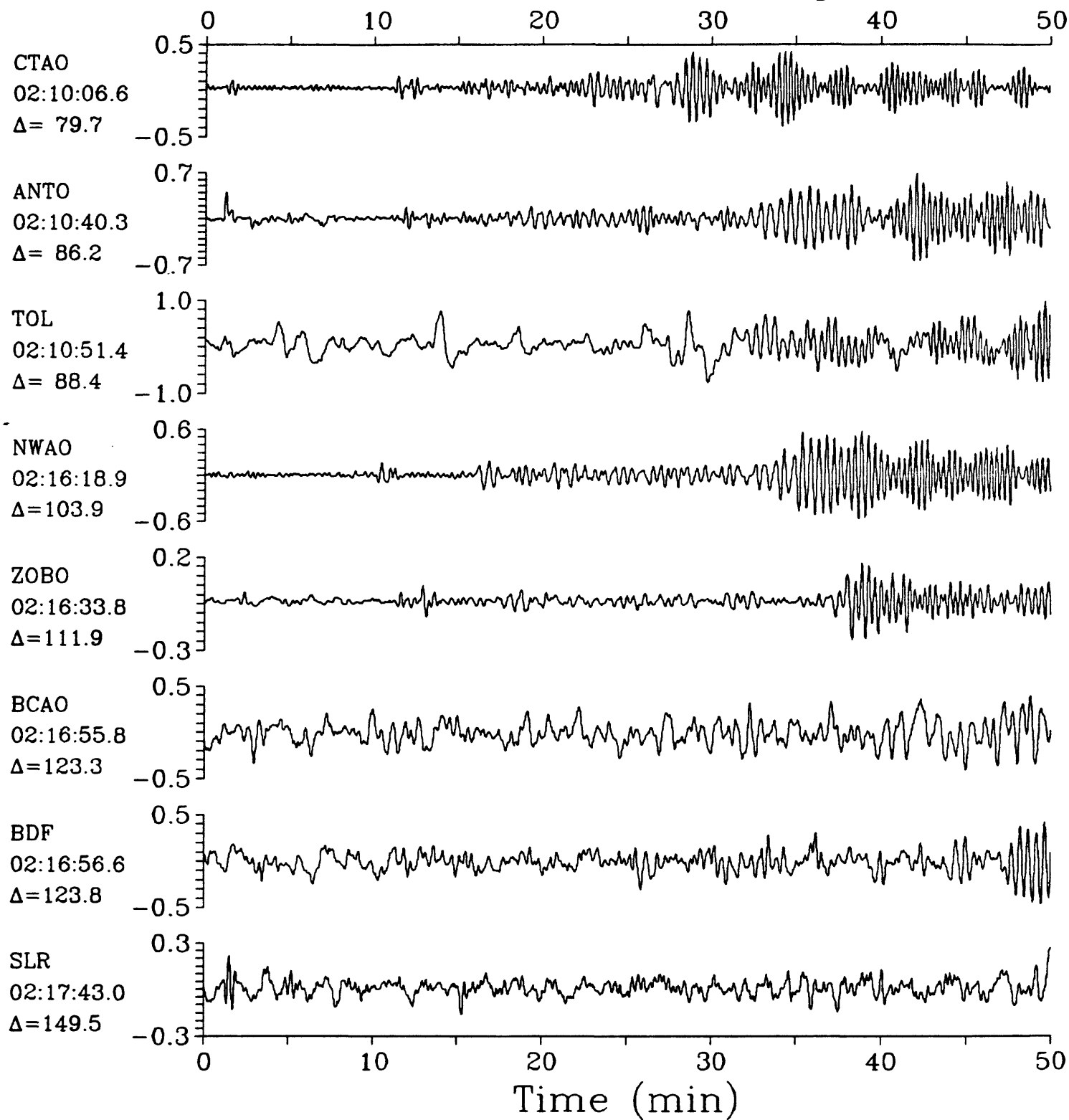
LPZ

Andreanof Islands, Aleutian Is. $h=62.9$ $m_b=5.7$ 

LPZ

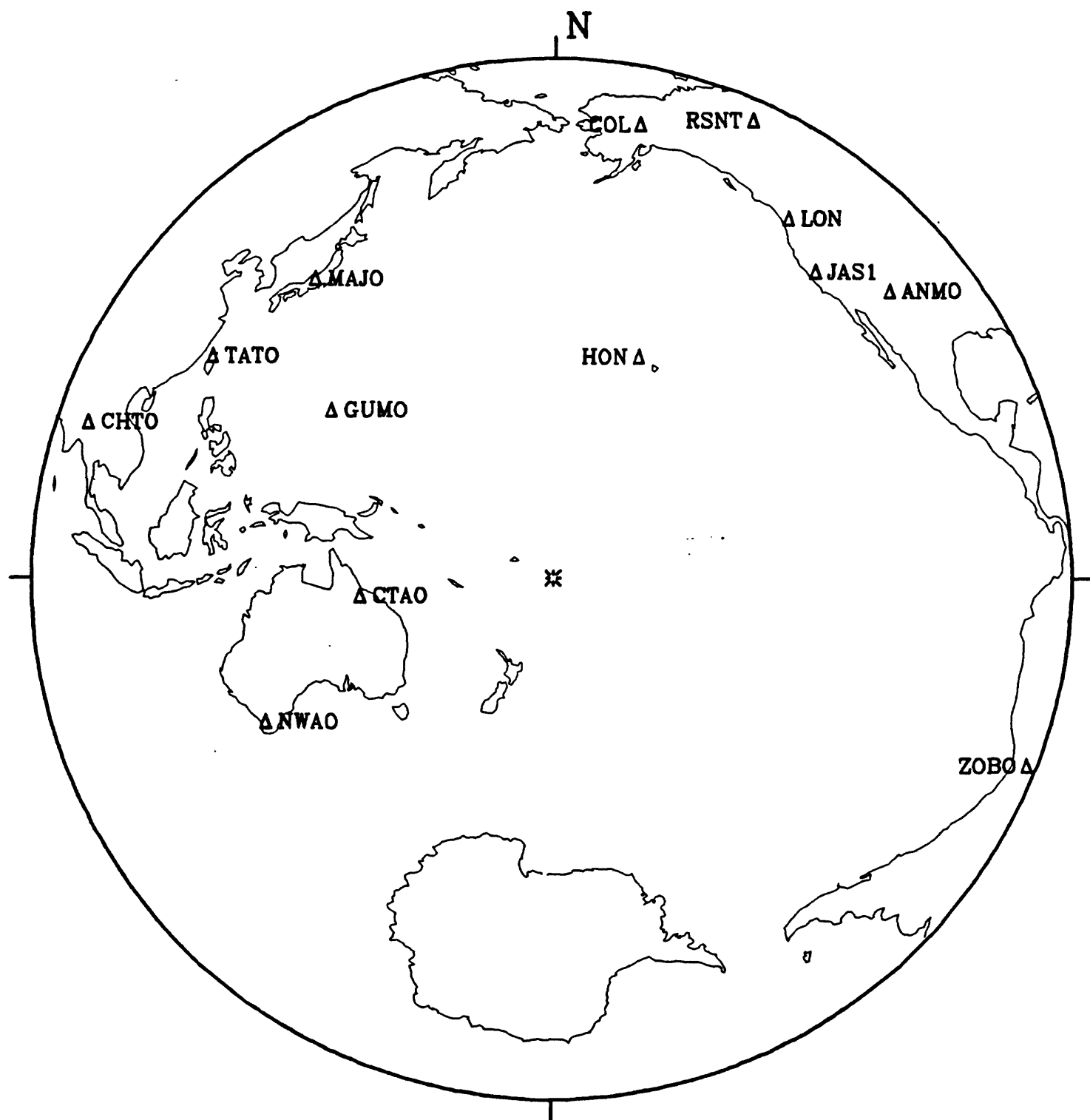
18 January 1986 01:59:05.21

LPZ

Andreanof Islands, Aleutian Is. $h=62.9$ $m_b=5.7$ 

21 January 1986 05:24:22.48

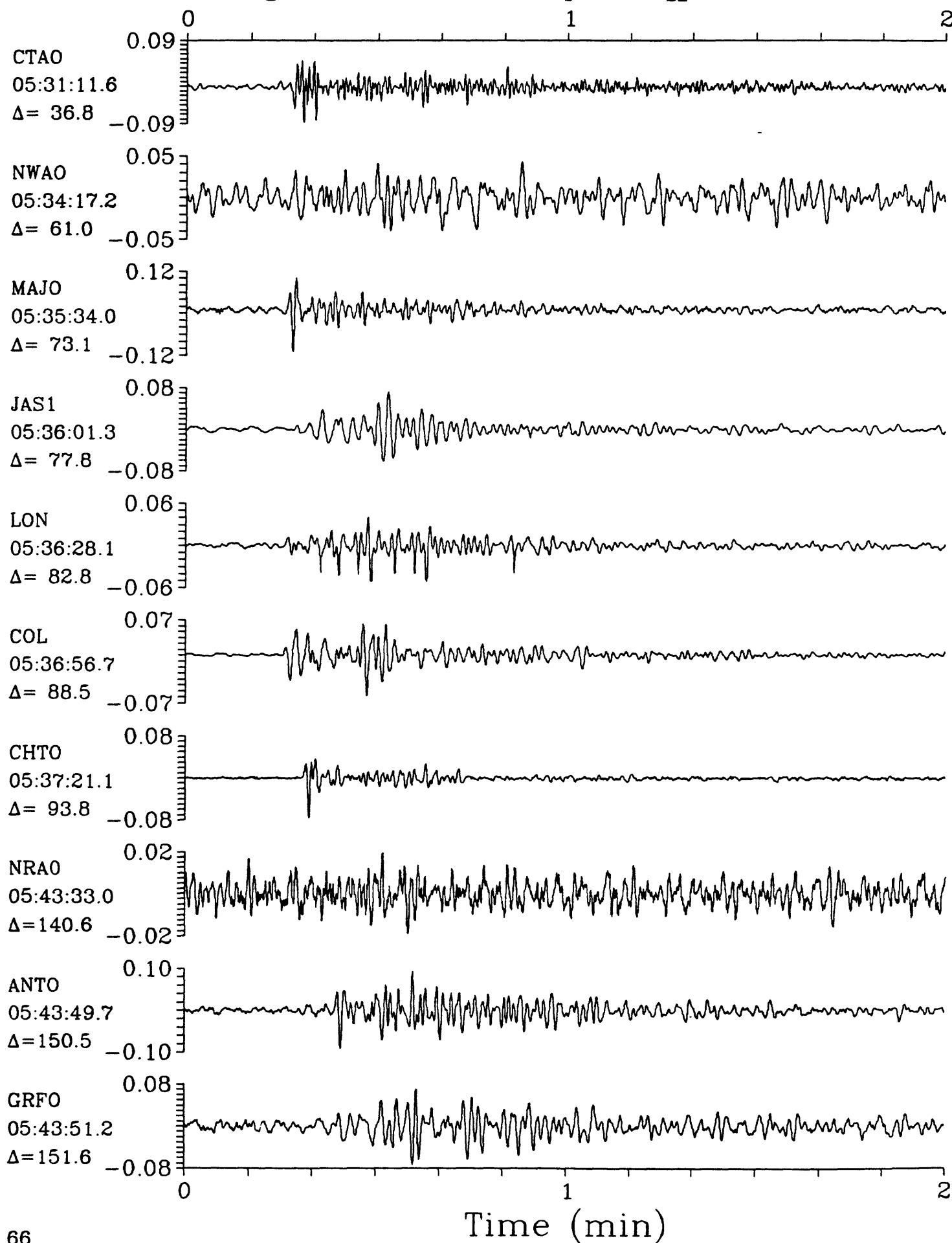
Tonga Islands



SPZ

21 January 1986 05:24:22.48
Tonga Islands $h=40.4$ $m_b=5.7$ $M_{SZ}=5.2$

SPZ

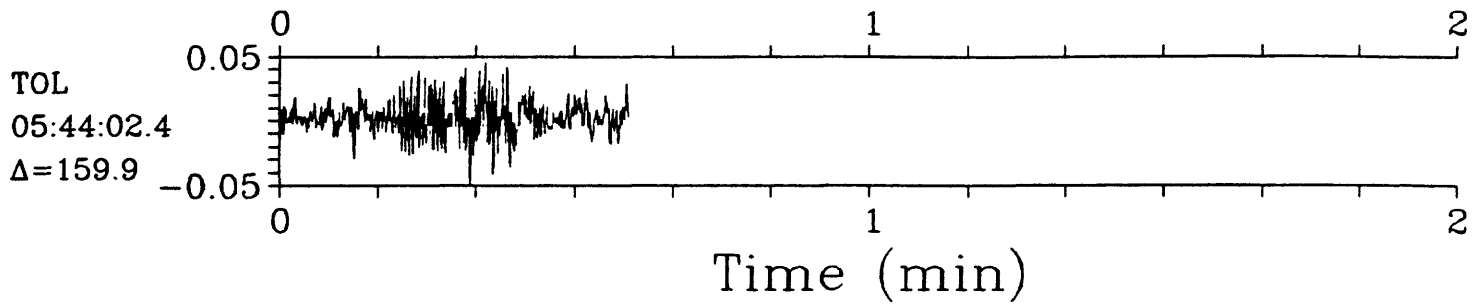


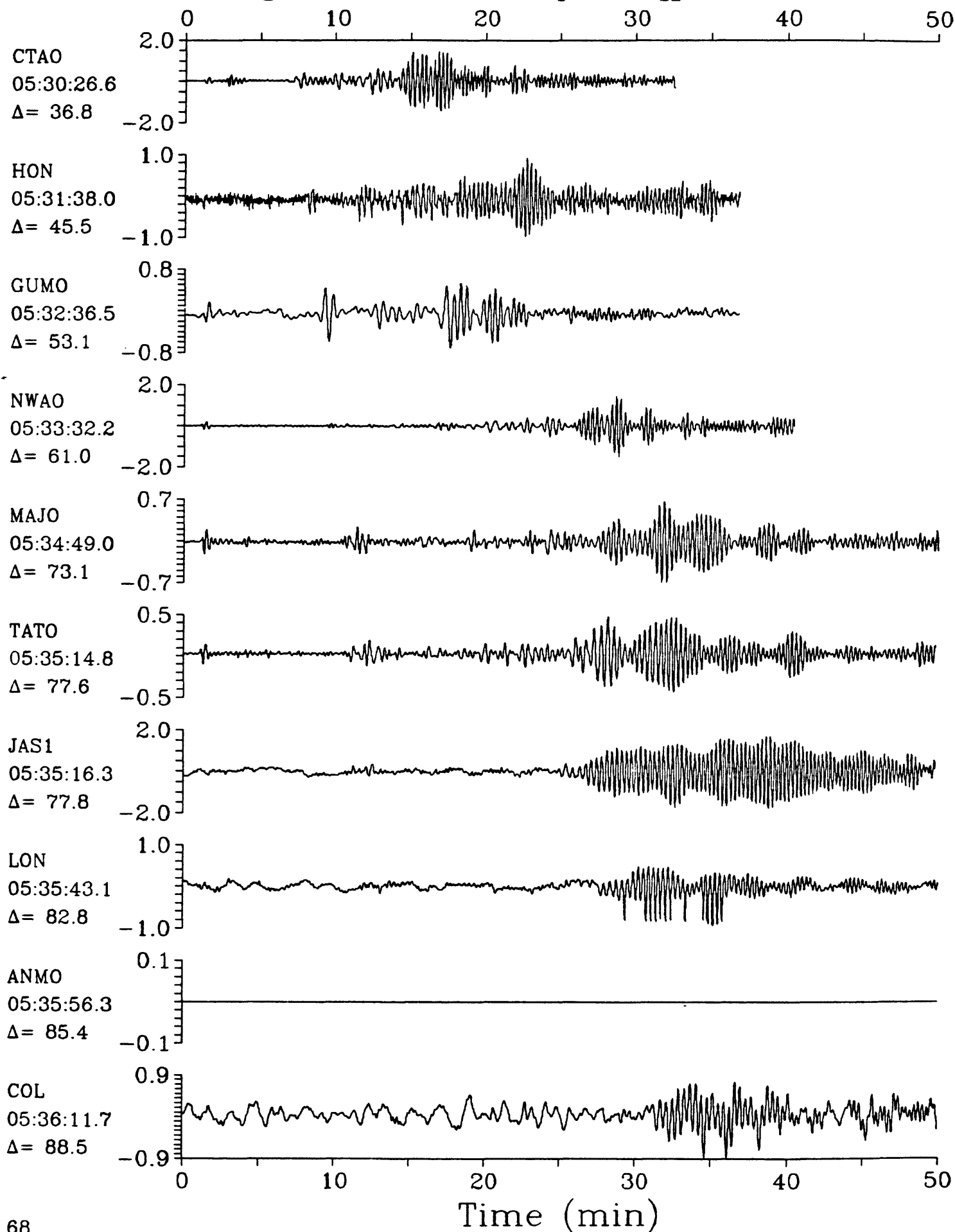
SPZ

21 January 1986 05:24:22.48

SPZ

Tonga Islands $h=40.4$ $m_b=5.7$ $M_{sz}=5.2$

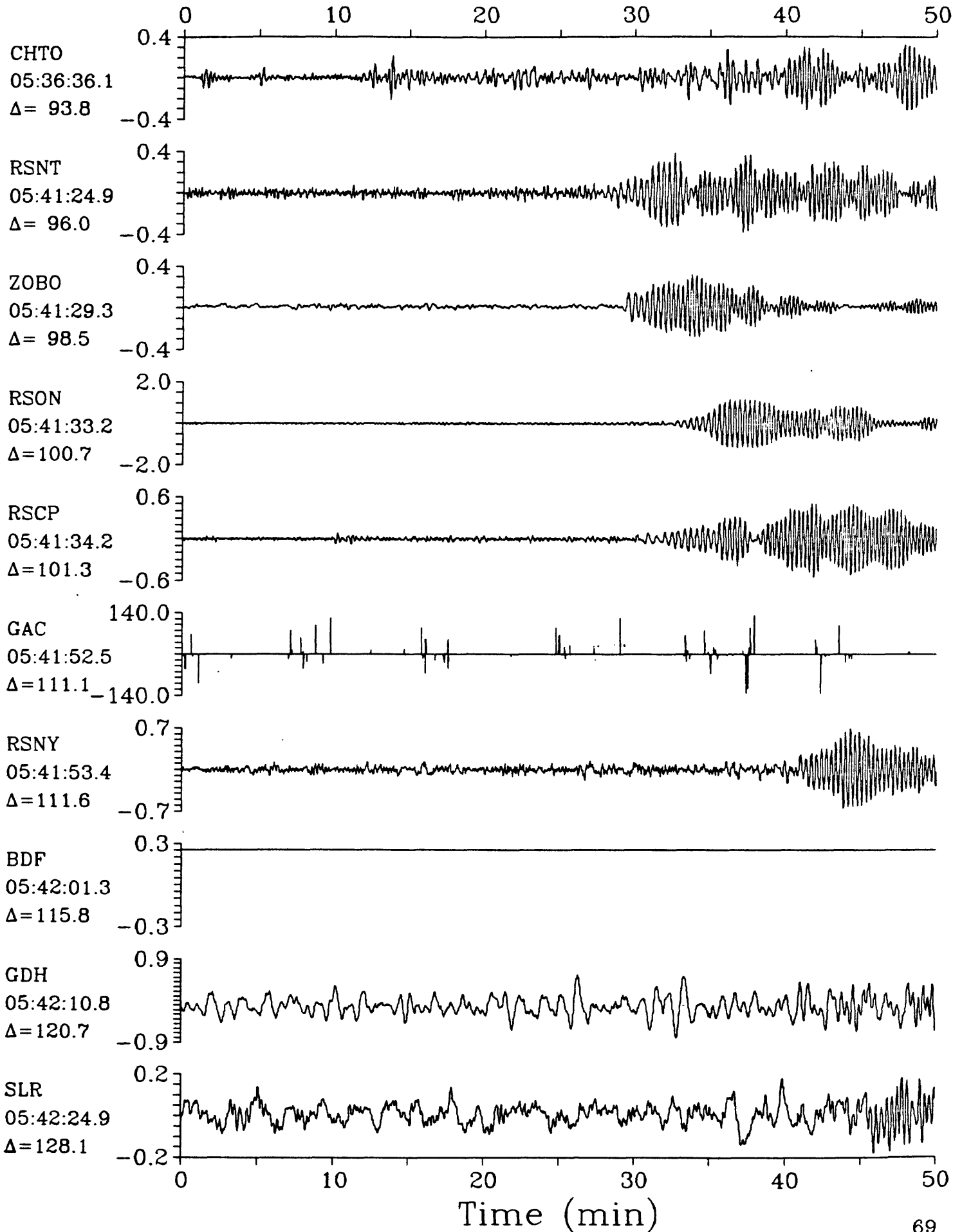




LPZ

21 January 1986 05:24:22.48

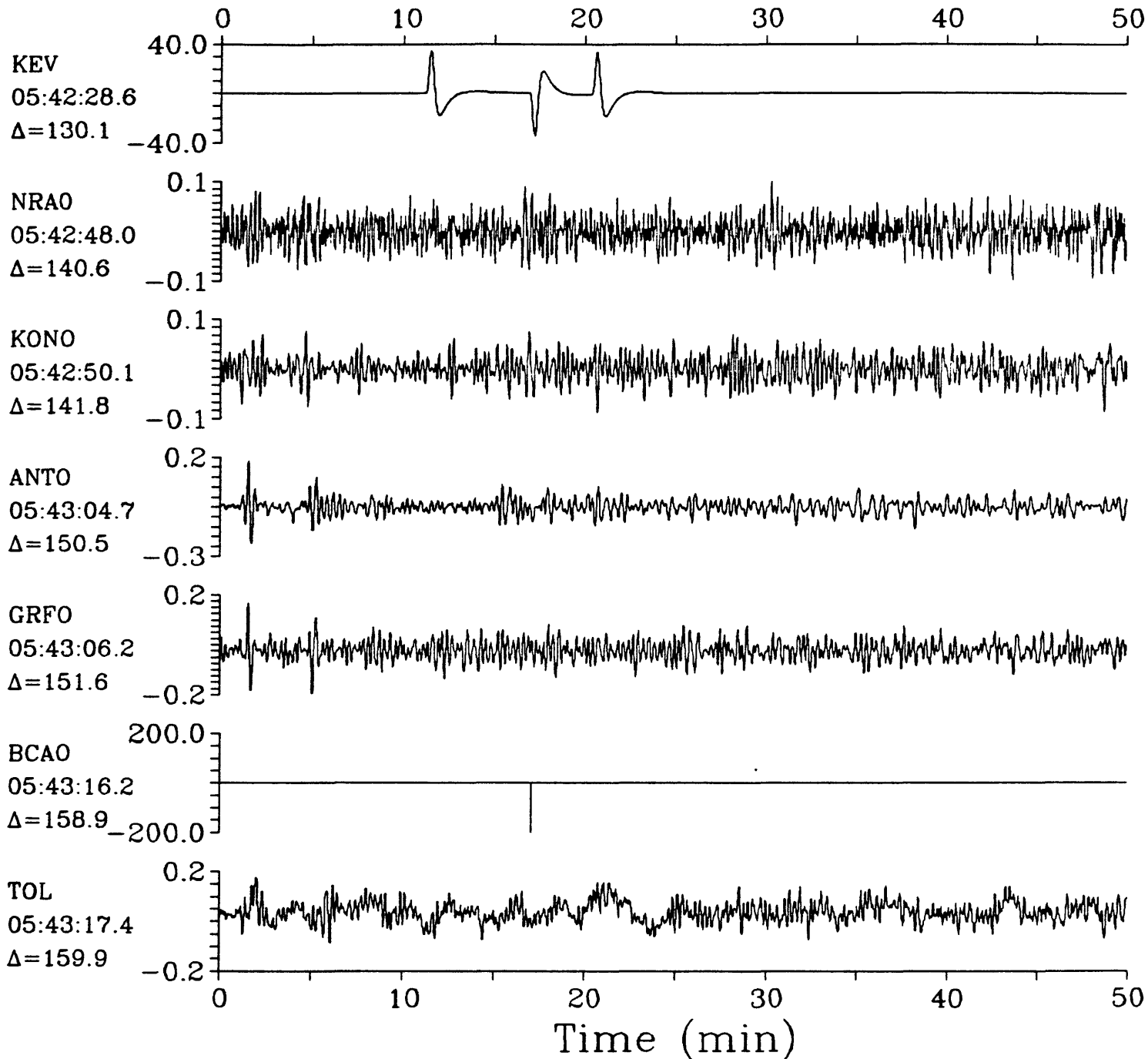
LPZ

Tonga Islands $h=40.4$ $m_b=5.7$ $M_{SZ}=5.2$ 

LPZ

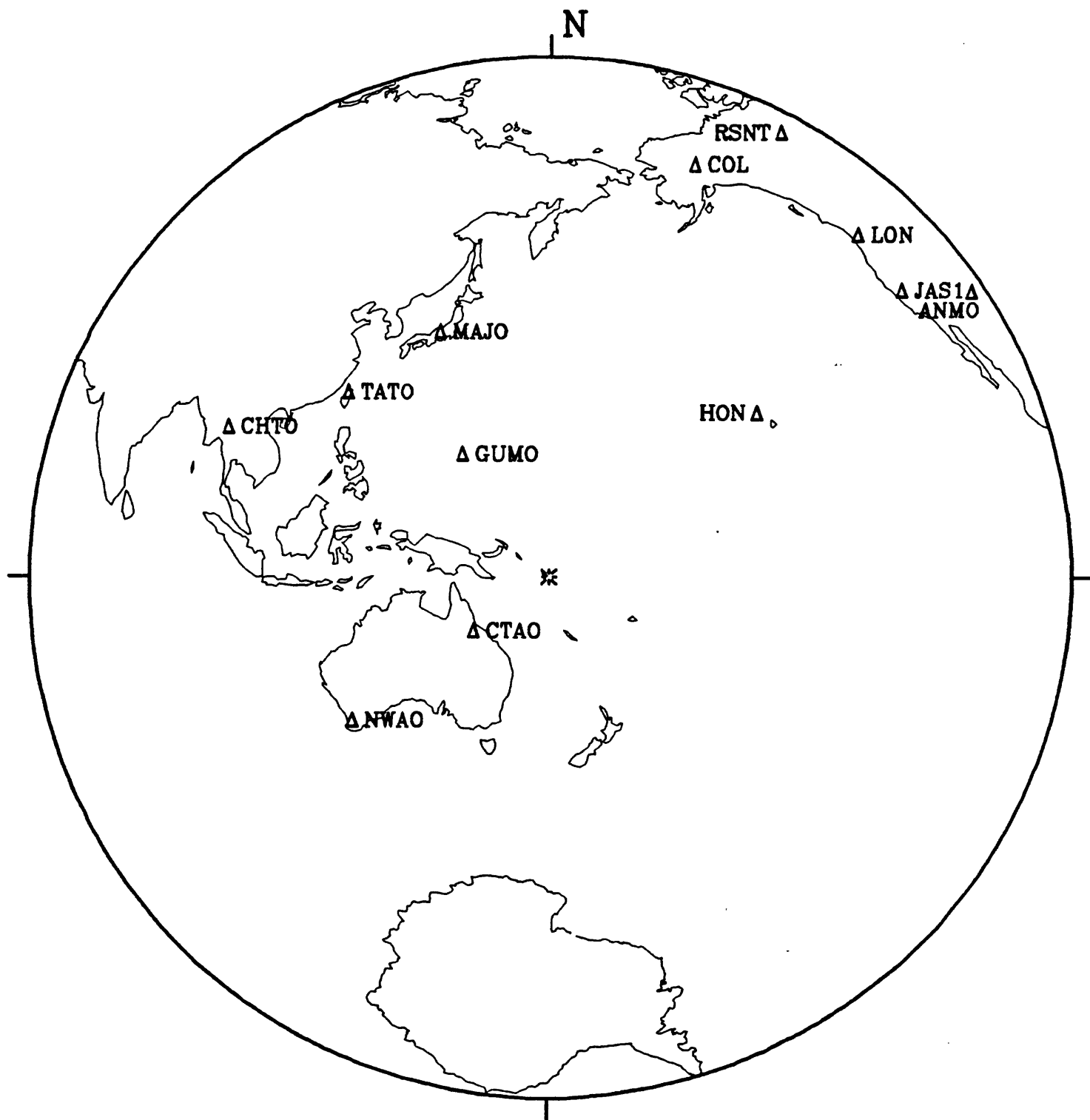
21 January 1986 05:24:22.48
Tonga Islands $h=40.4$ $m_b=5.7$ $M_{sz}=5.2$

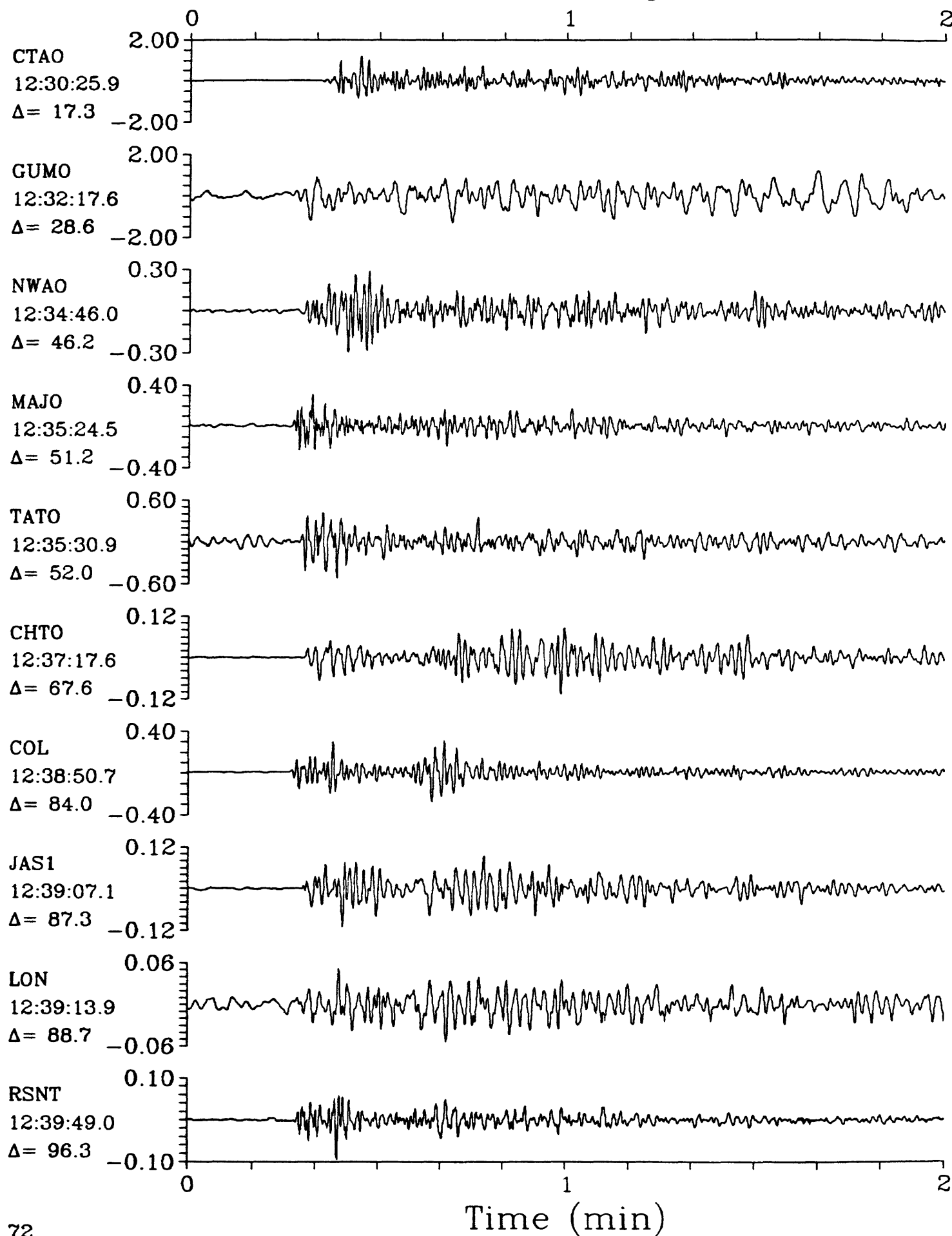
LPZ



22 January 1986 12:26:45.93

Solomon Islands

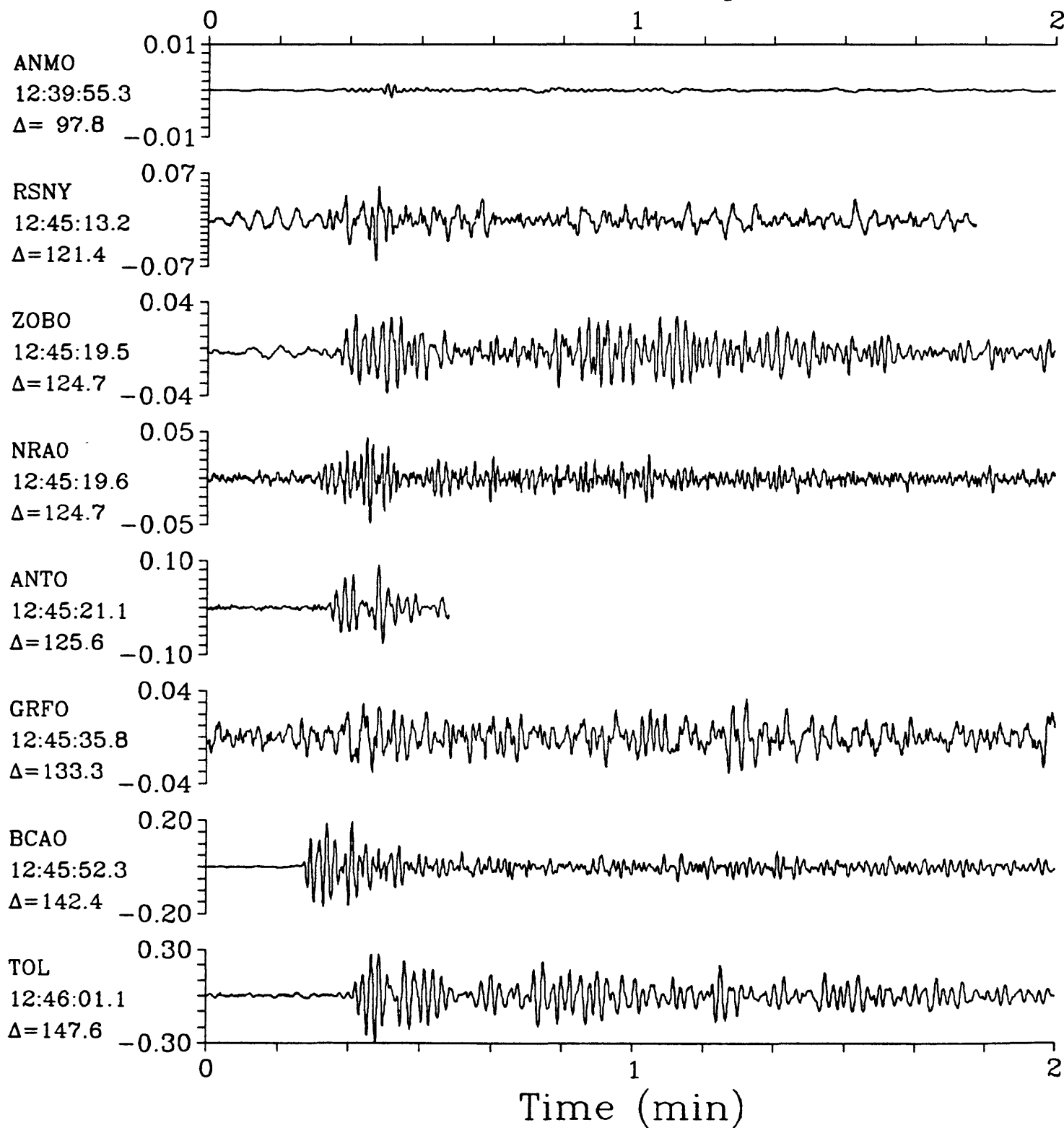




SPZ

22 January 1986 12:26:45.93
Solomon Islands $h=100.0$ $m_b=5.9$

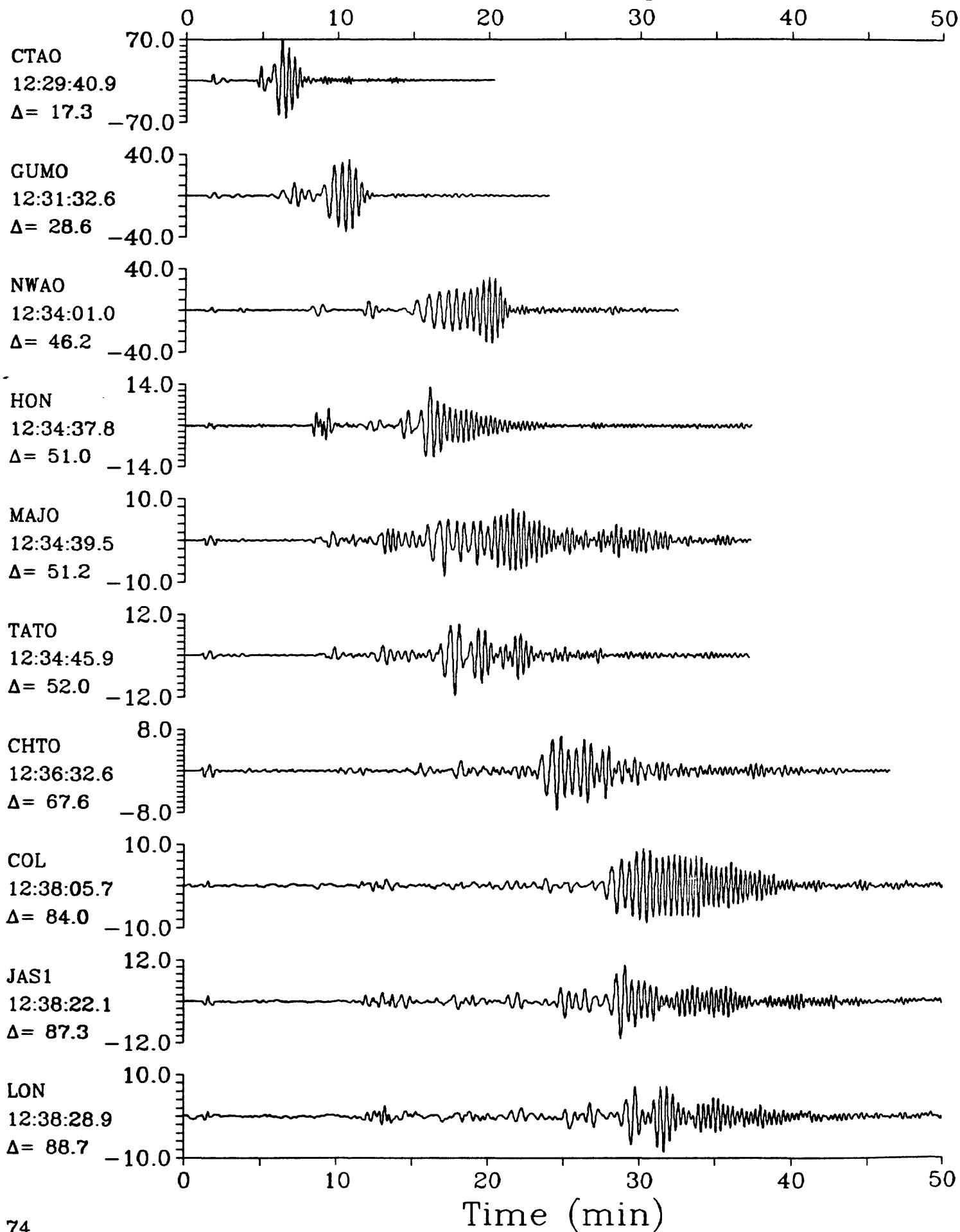
SPZ



LPZ

22 January 1986 12:26:45.93
Solomon Islands $h=100.0$ $m_b=5.9$

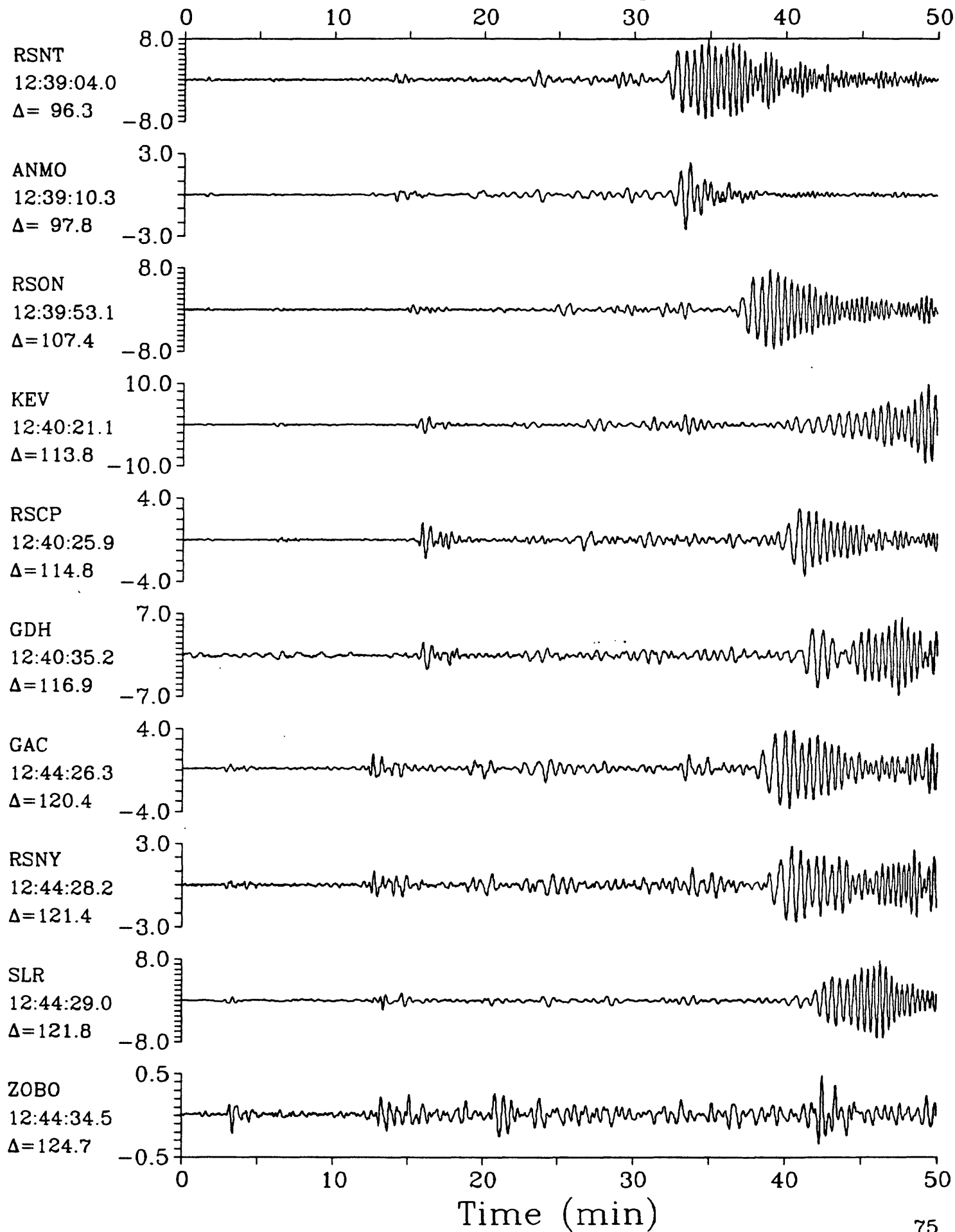
LPZ



LPZ

22 January 1986 12:26:45.93
Solomon Islands $h=100.0$ $m_b=5.9$

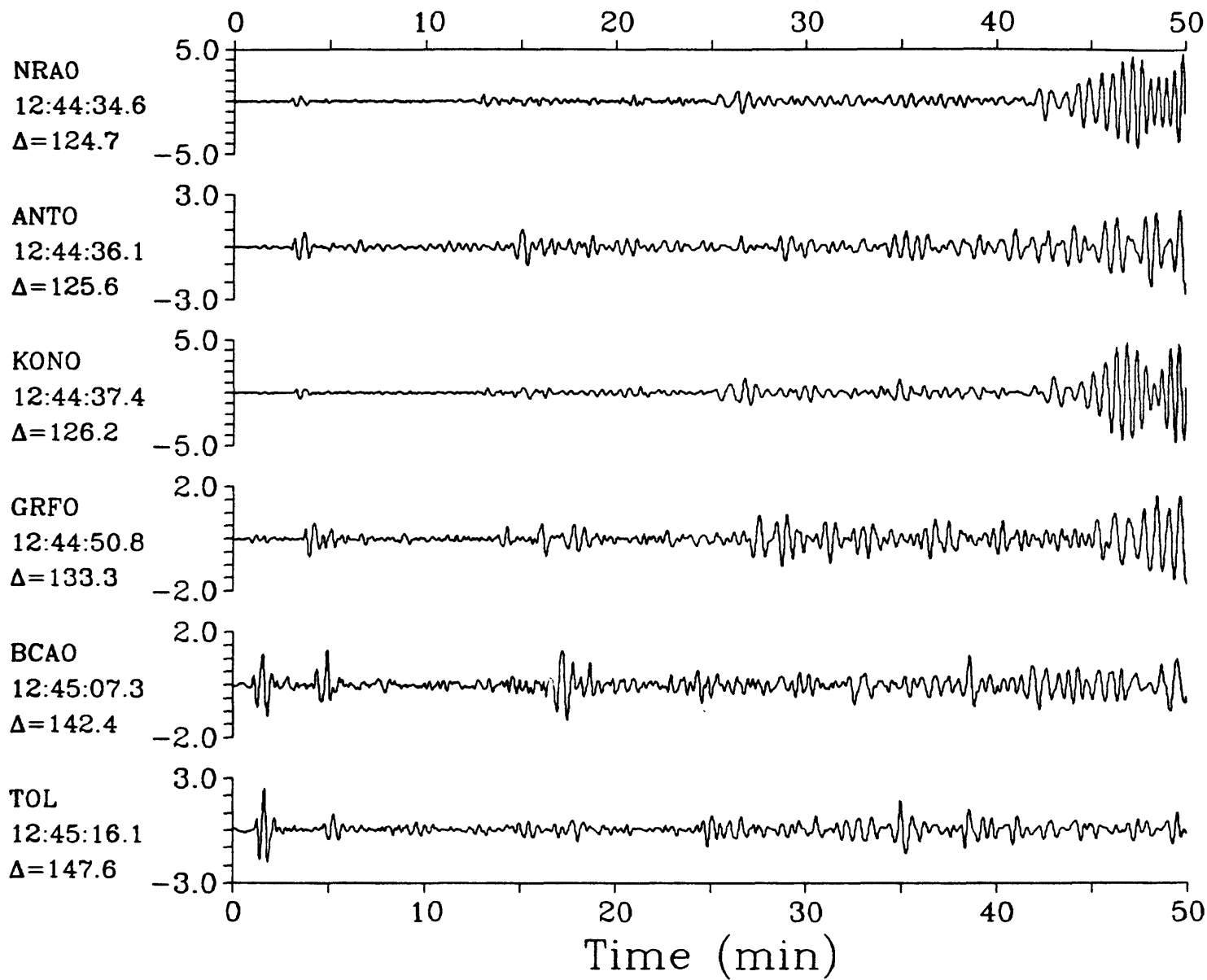
LPZ



LPZ

22 January 1986 12:26:45.93
Solomon Islands $h=100.0$ $m_b=5.9$

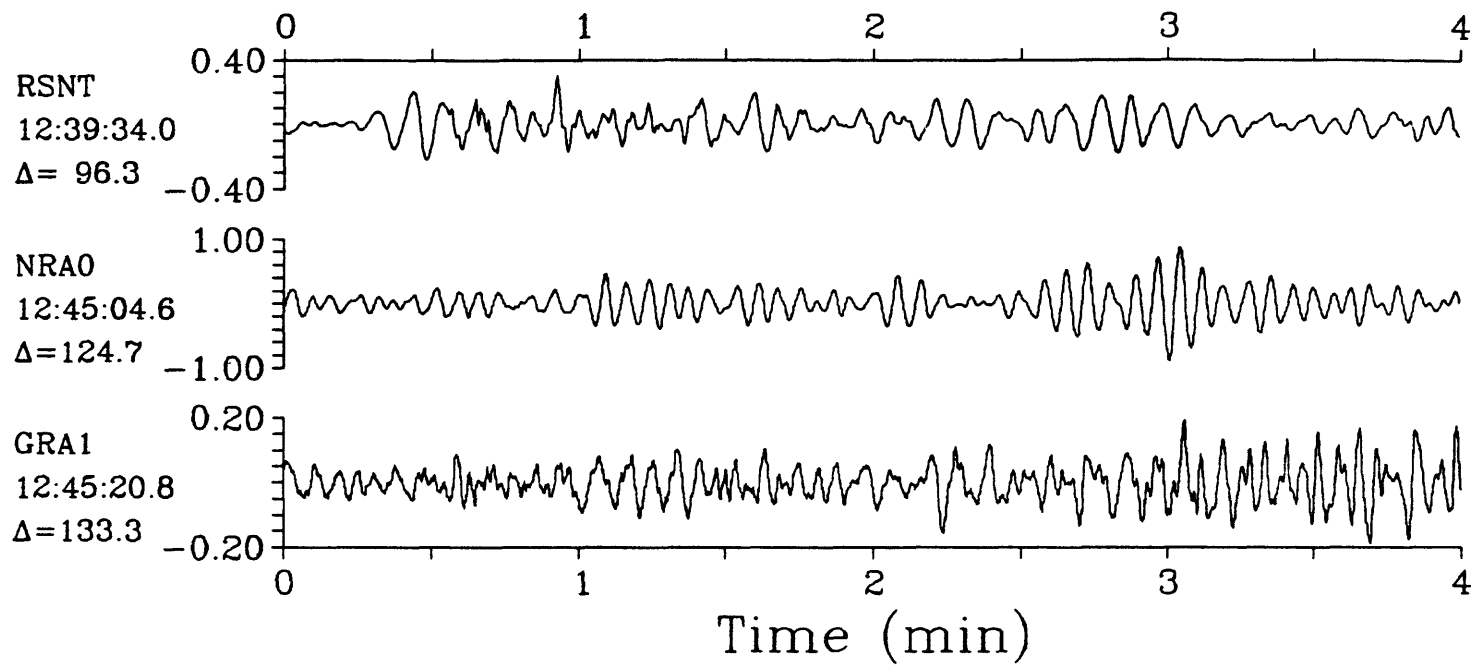
LPZ



IPZ

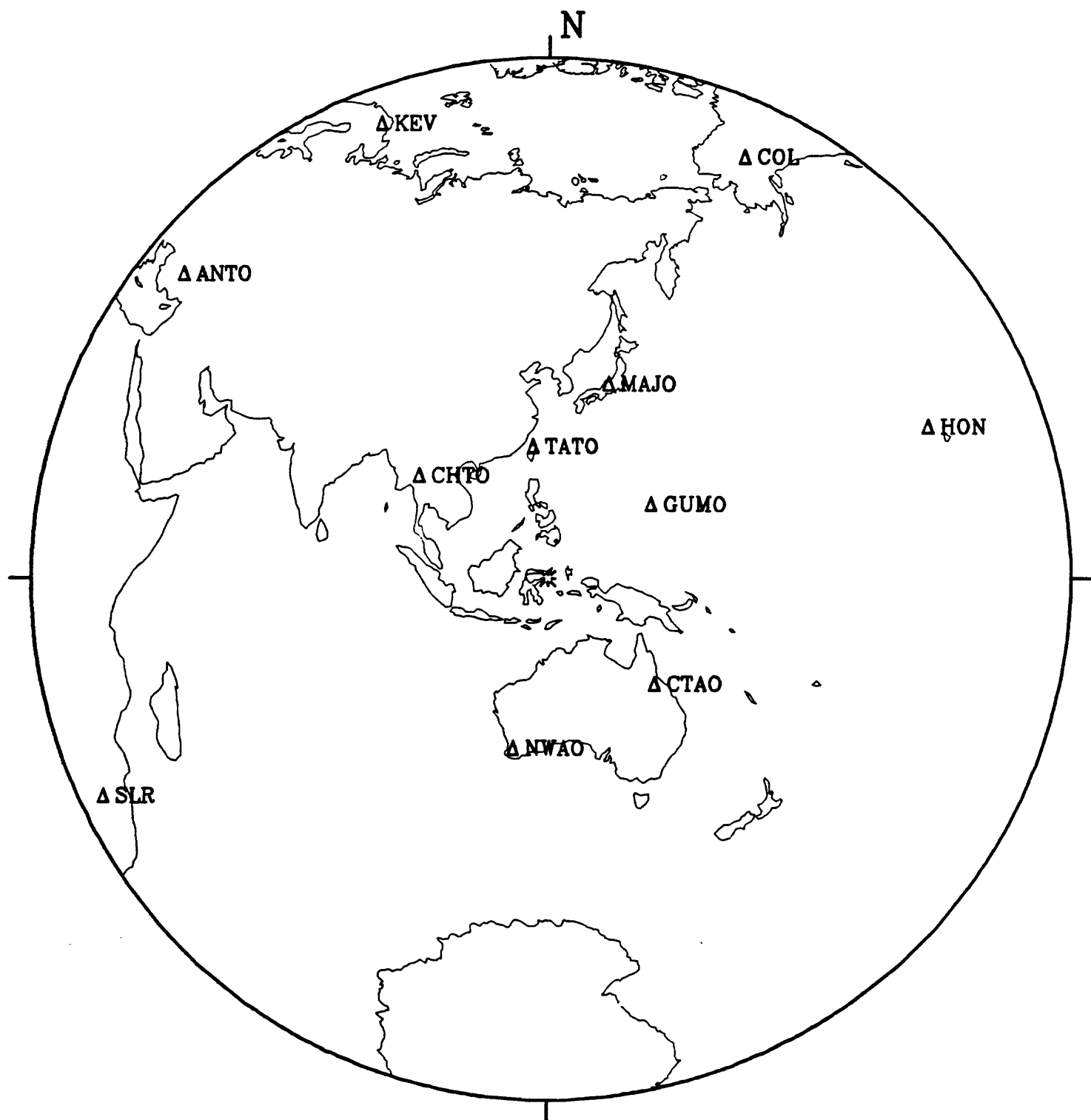
22 January 1986 12:26:45.93
Solomon Islands $h=100.0$ $m_b=5.9$

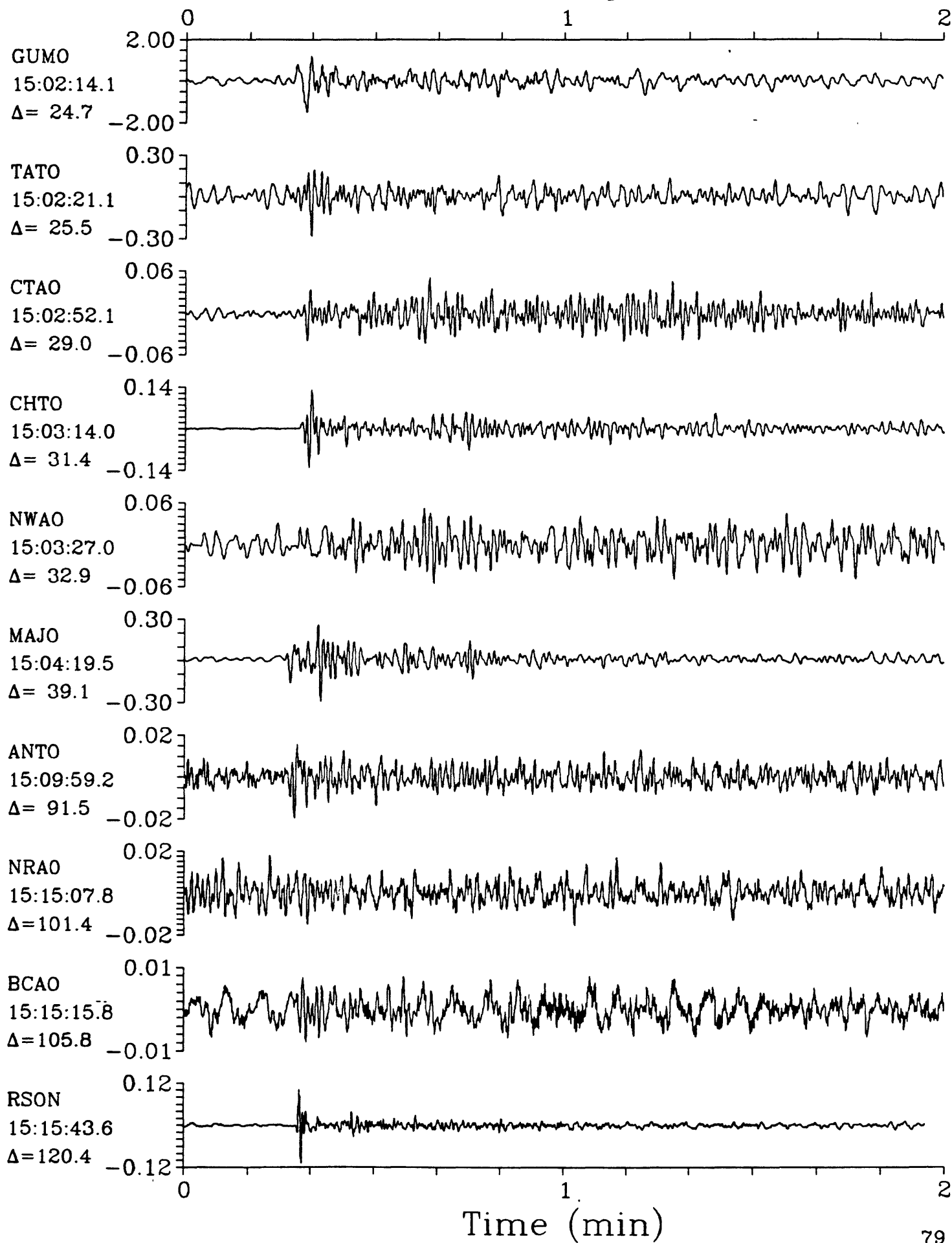
IPZ



22 January 1986 14:57:12.95

Molucca Sea

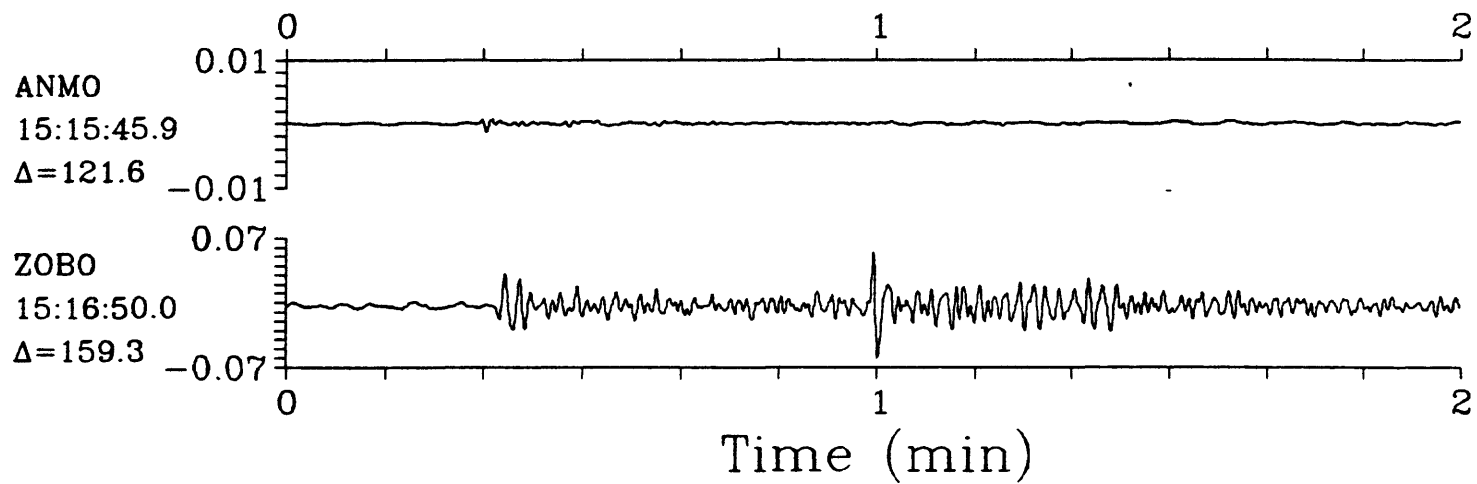




SPZ

22 January 1986 14:57:12.95
Molucca Sea $h=57.7$ $m_b=5.7$

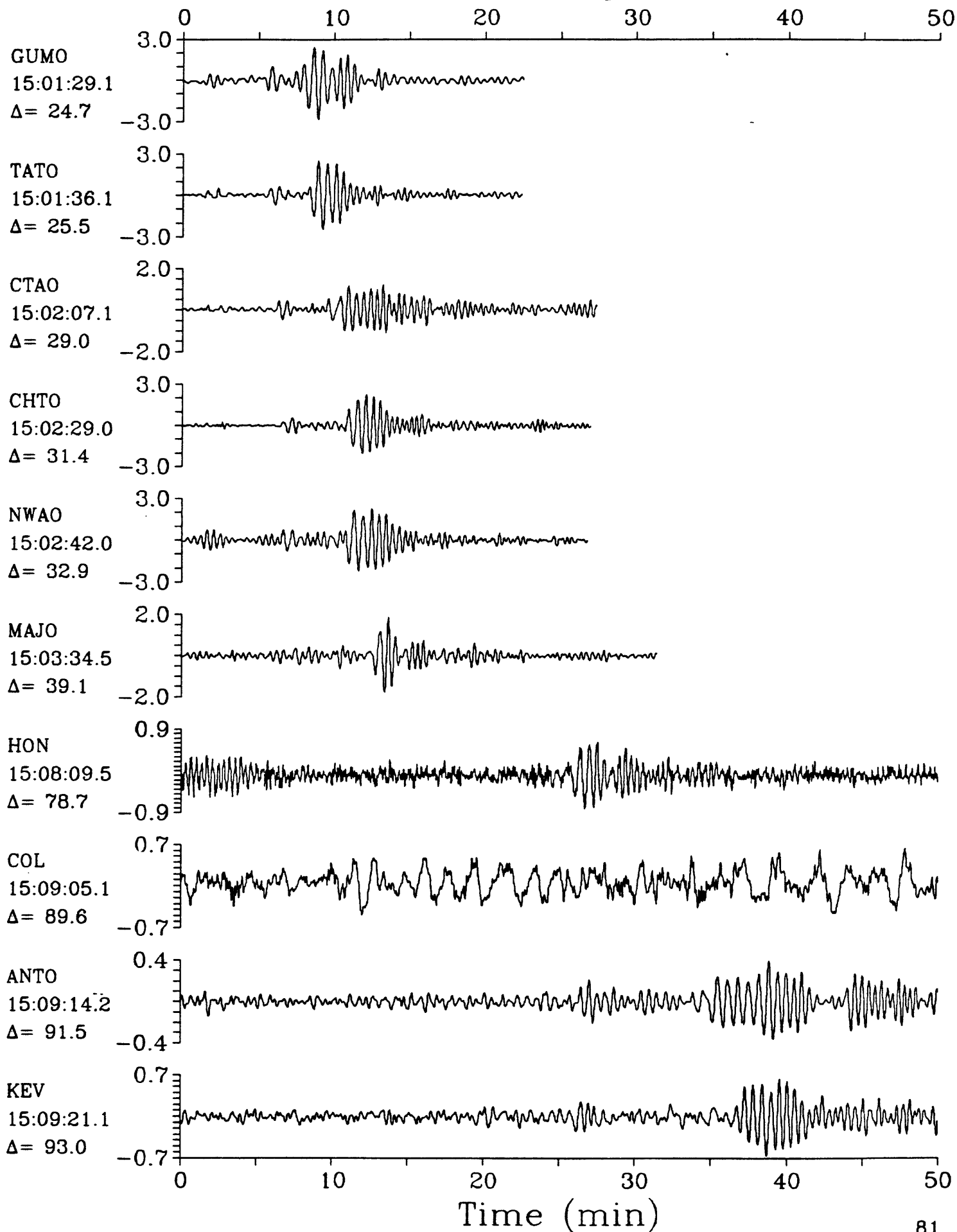
SPZ



LPZ

22 January 1986 14:57:12.95
Molucca Sea $h=57.7$ $m_b=5.7$

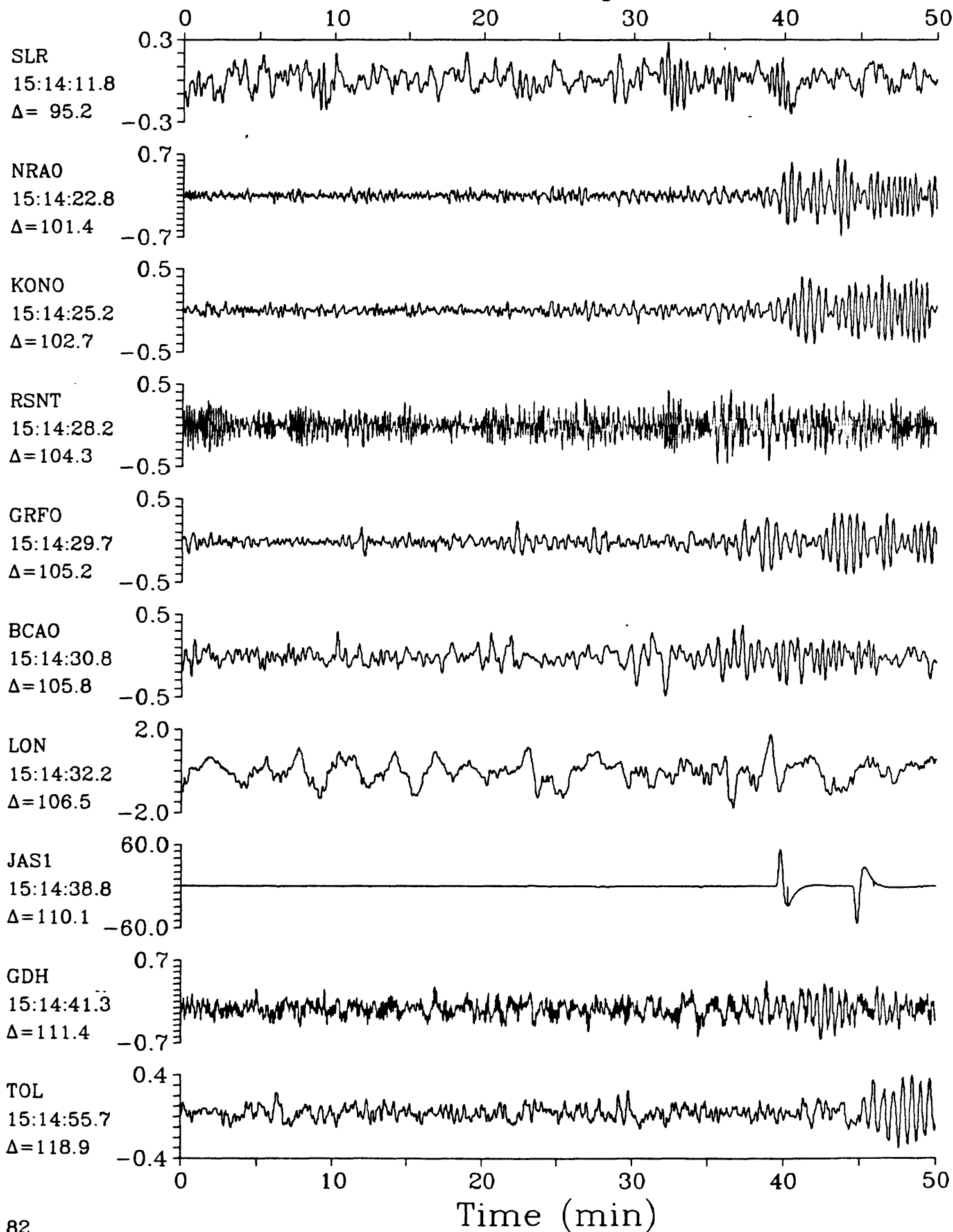
LPZ



LPZ

22 January 1986 14:57:12.95
Molucca Sea $h=57.7$ $m_b=5.7$

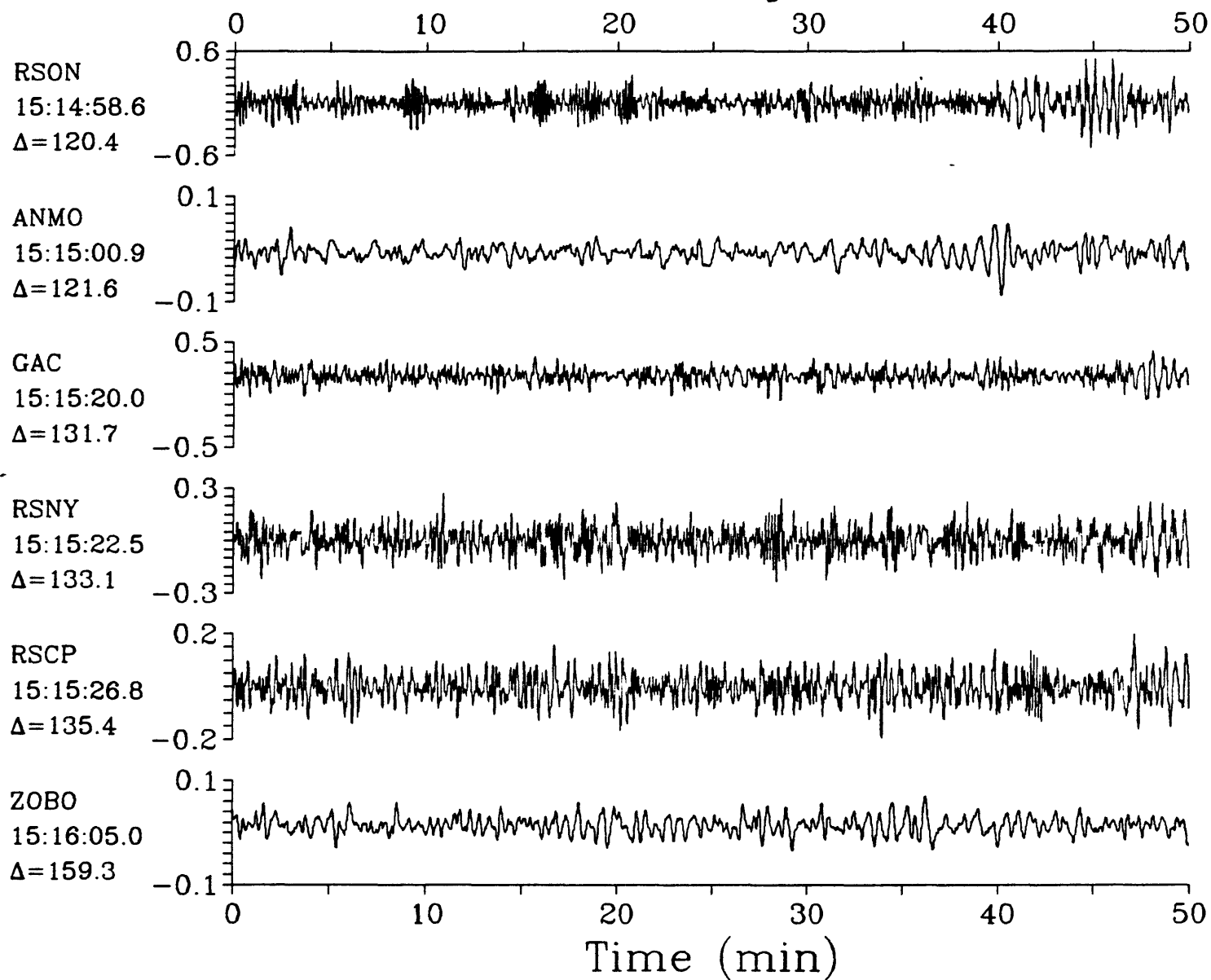
LPZ



LPZ

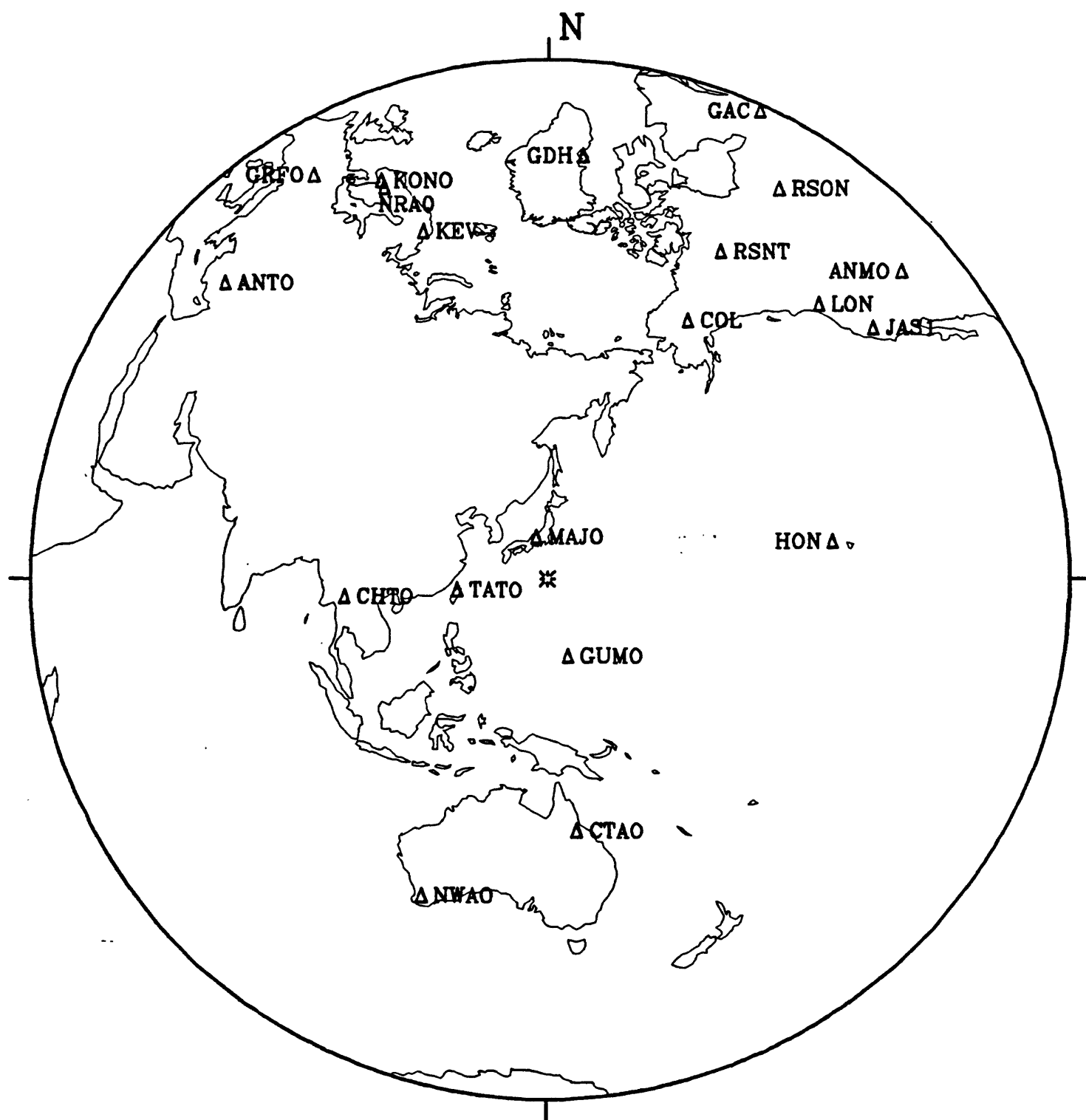
22 January 1986 14:57:12.95
Molucca Sea $h=57.7$ $m_b=5.7$

LPZ



22 January 1986 20:38:25.56

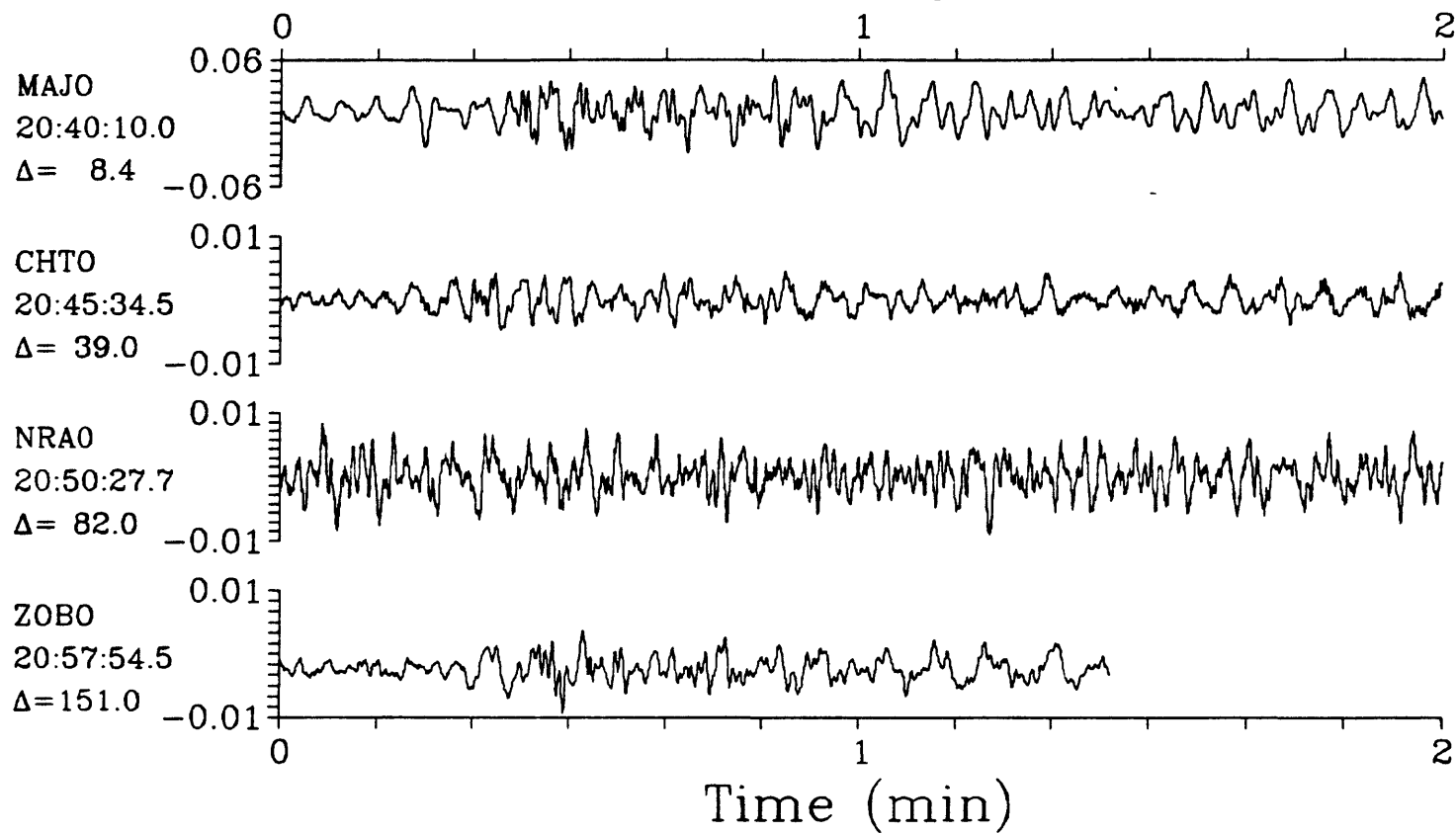
Bonin Islands Region



SPZ

22 January 1986 20:38:25.56

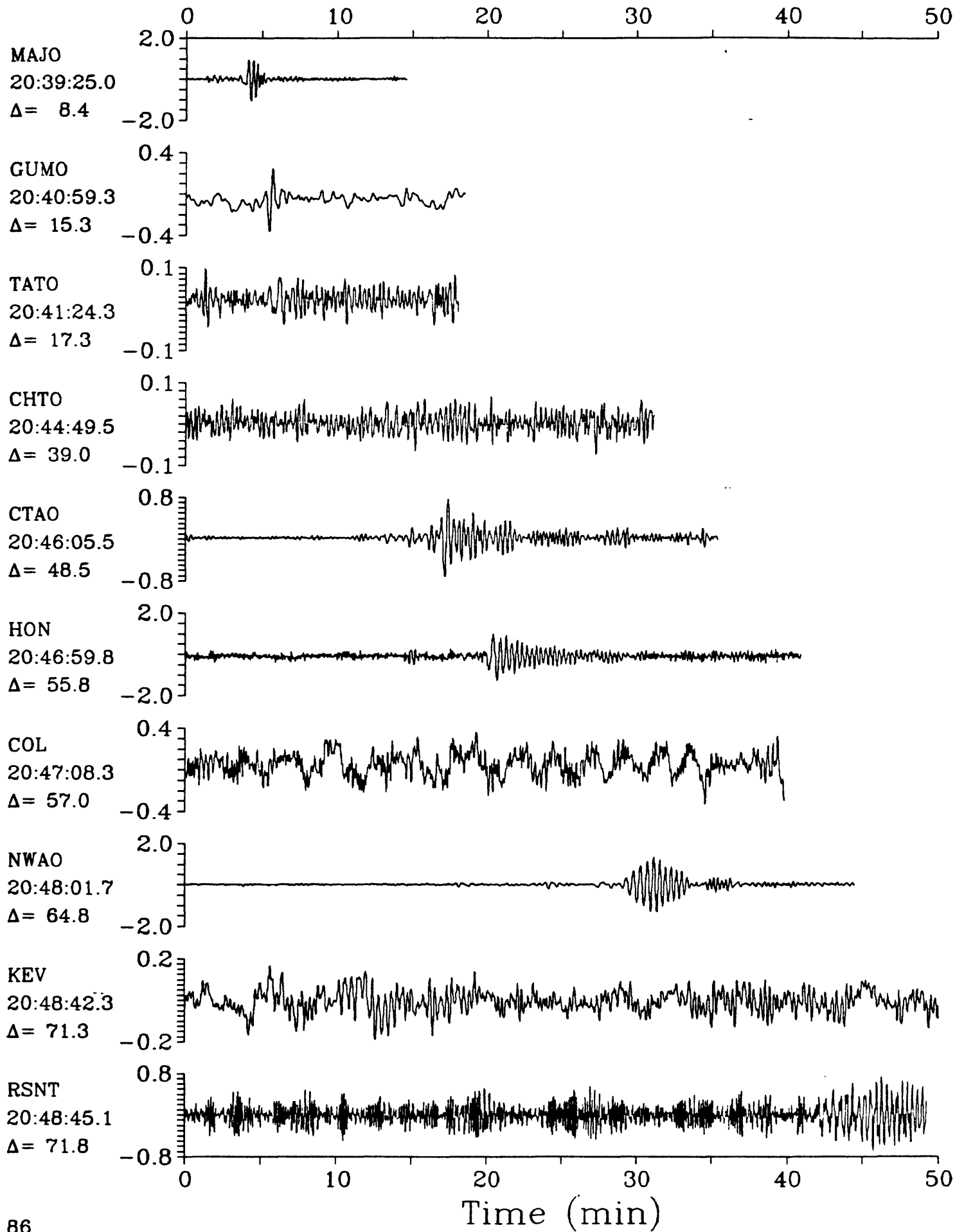
SPZ

Bonin Islands Region $h=33.0$ $m_b=4.7$ $M_{sz}=5.5$ 

LPZ

22 January 1986 20:38:25.56

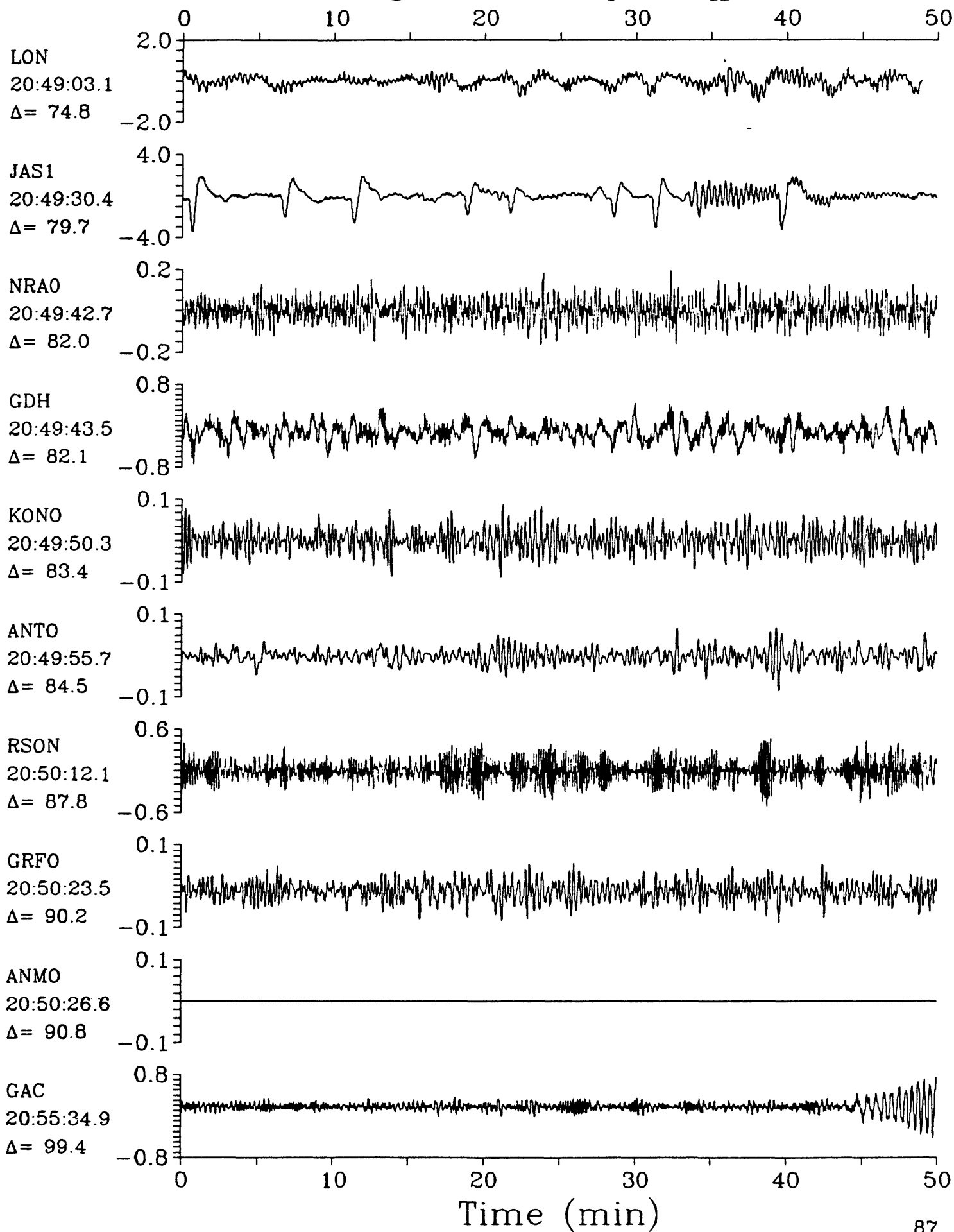
LPZ

Bonin Islands Region $h=33.0$ $m_b=4.7$ $M_{SZ}=5.5$ 

LPZ

22 January 1986 20:38:25.56

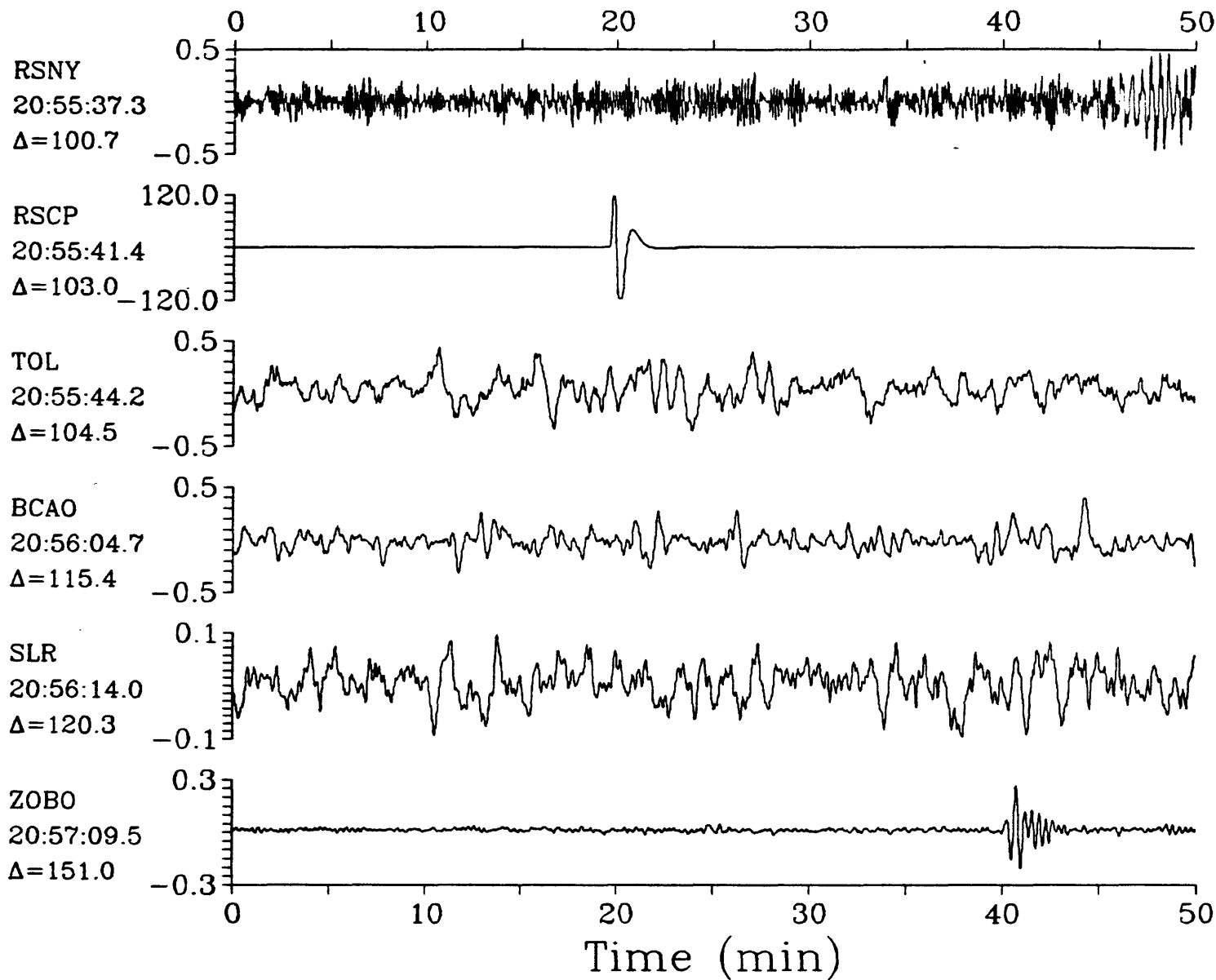
LPZ

Bonin Islands Region $h=33.0$ $m_b=4.7$ $M_{sz}=5.5$ 

LPZ

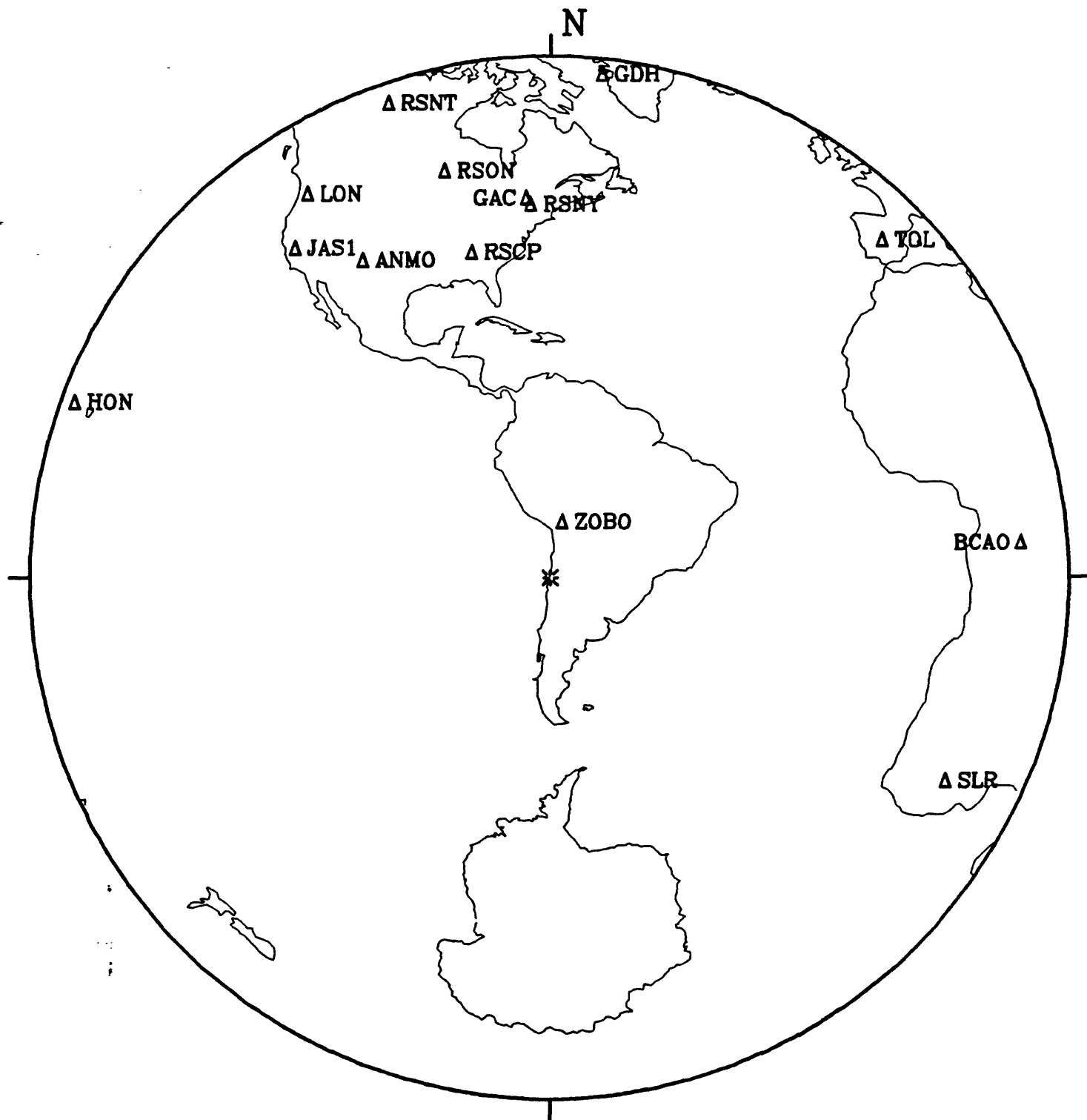
22 January 1986 20:38:25.56

LPZ

Bonin Islands Region $h=33.0$ $m_b=4.7$ $M_{sz}=5.5$ 

26 January 1986 07:48:22.94

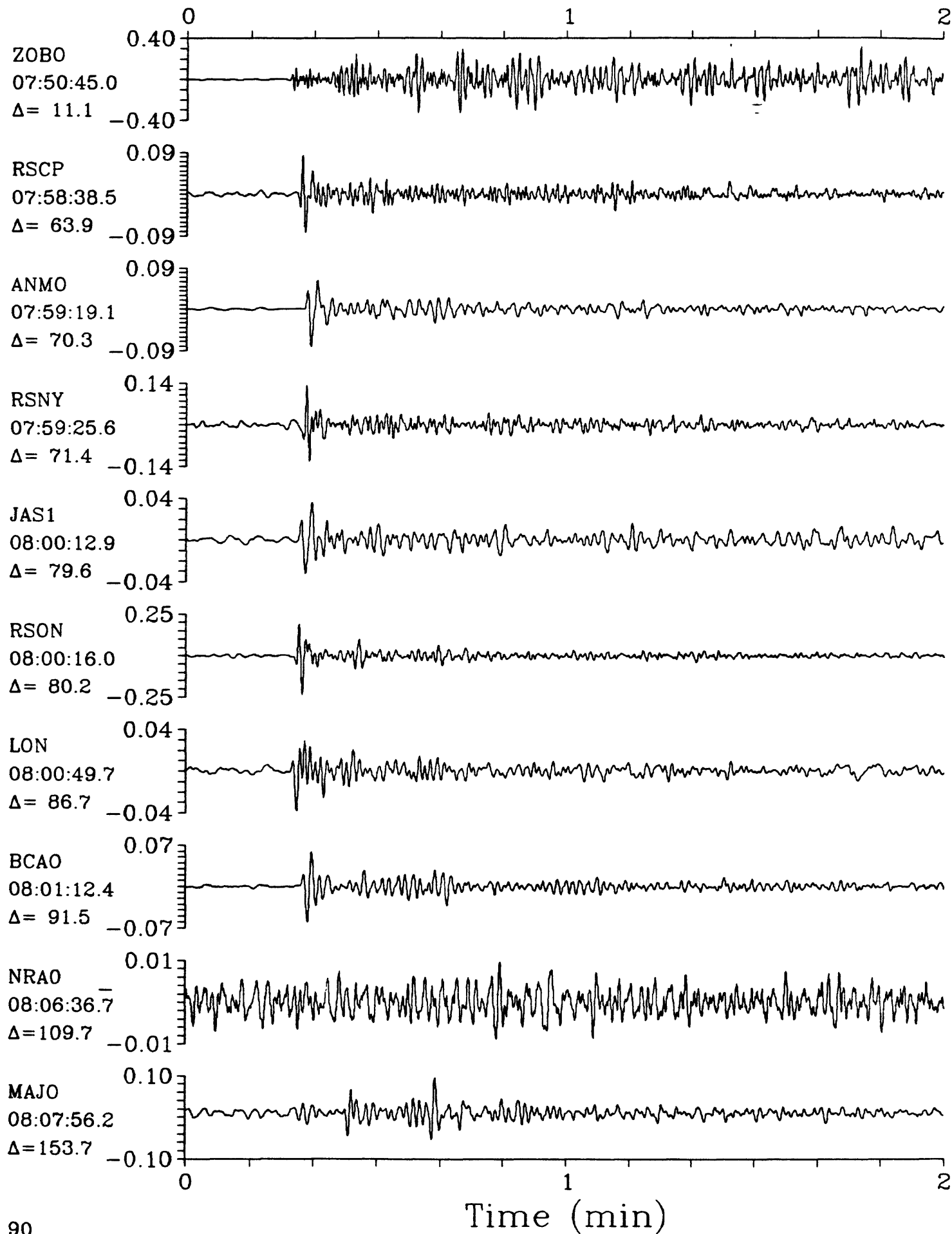
Near Coast of Northern Chile



SPZ

26 January 1986 07:48:22.94

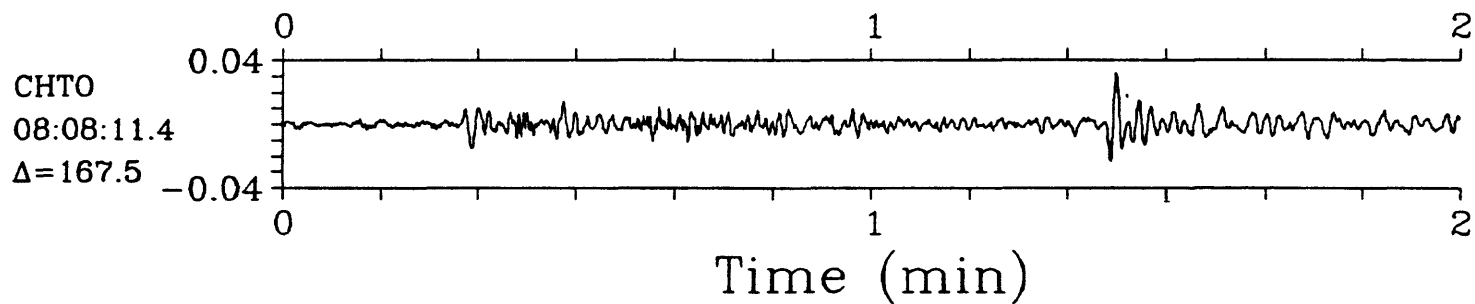
SPZ

Near Coast of Northern Chile $h=30.0$ $m_b=5.7$ $M_{sz}=4.8$ 

SPZ

26 January 1986 07:48:22.94

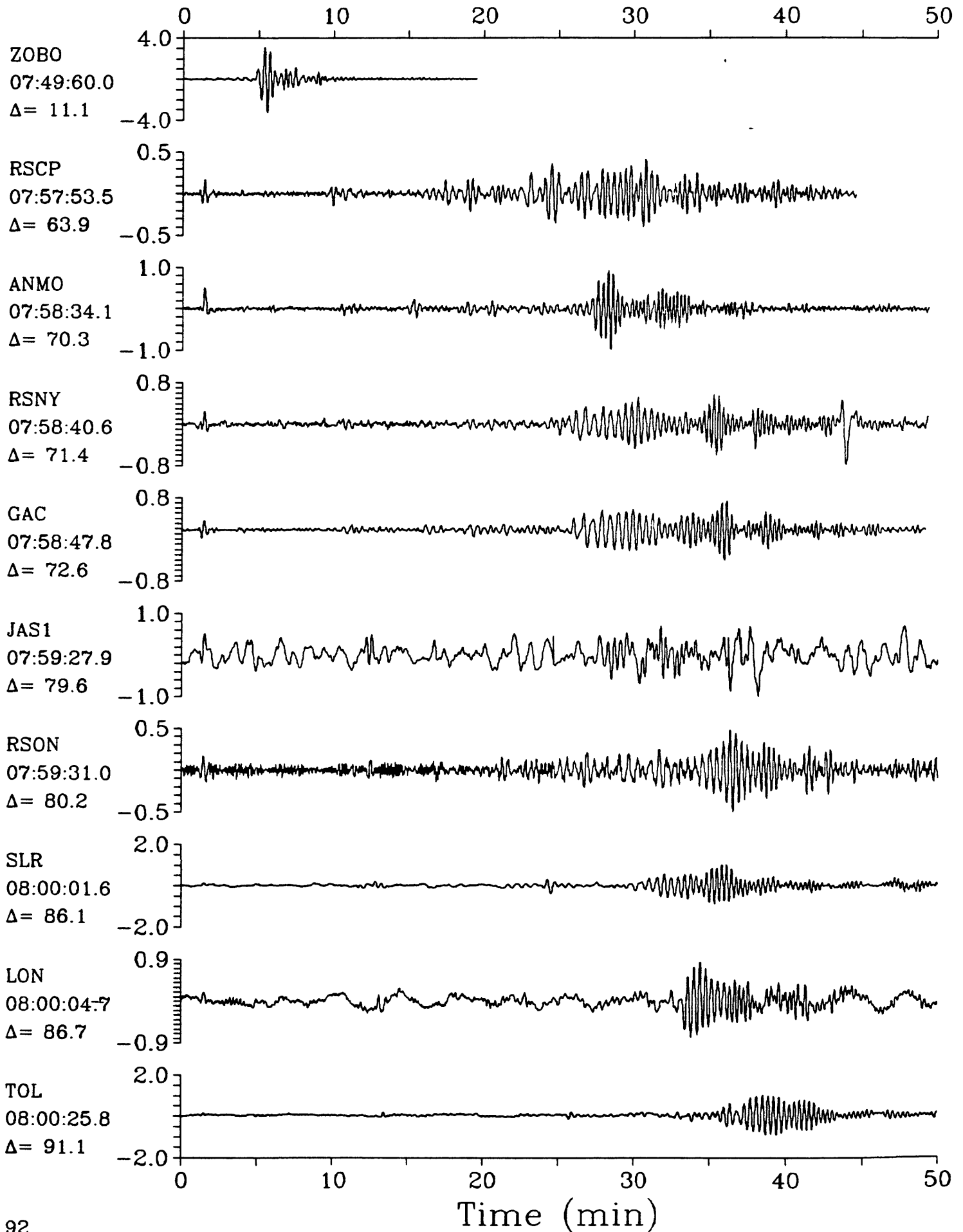
SPZ

Near Coast of Northern Chile $h=30.0$ $m_b=5.7$ $M_{sz}=4.8$ 

LPZ

26 January 1986 07:48:22.94

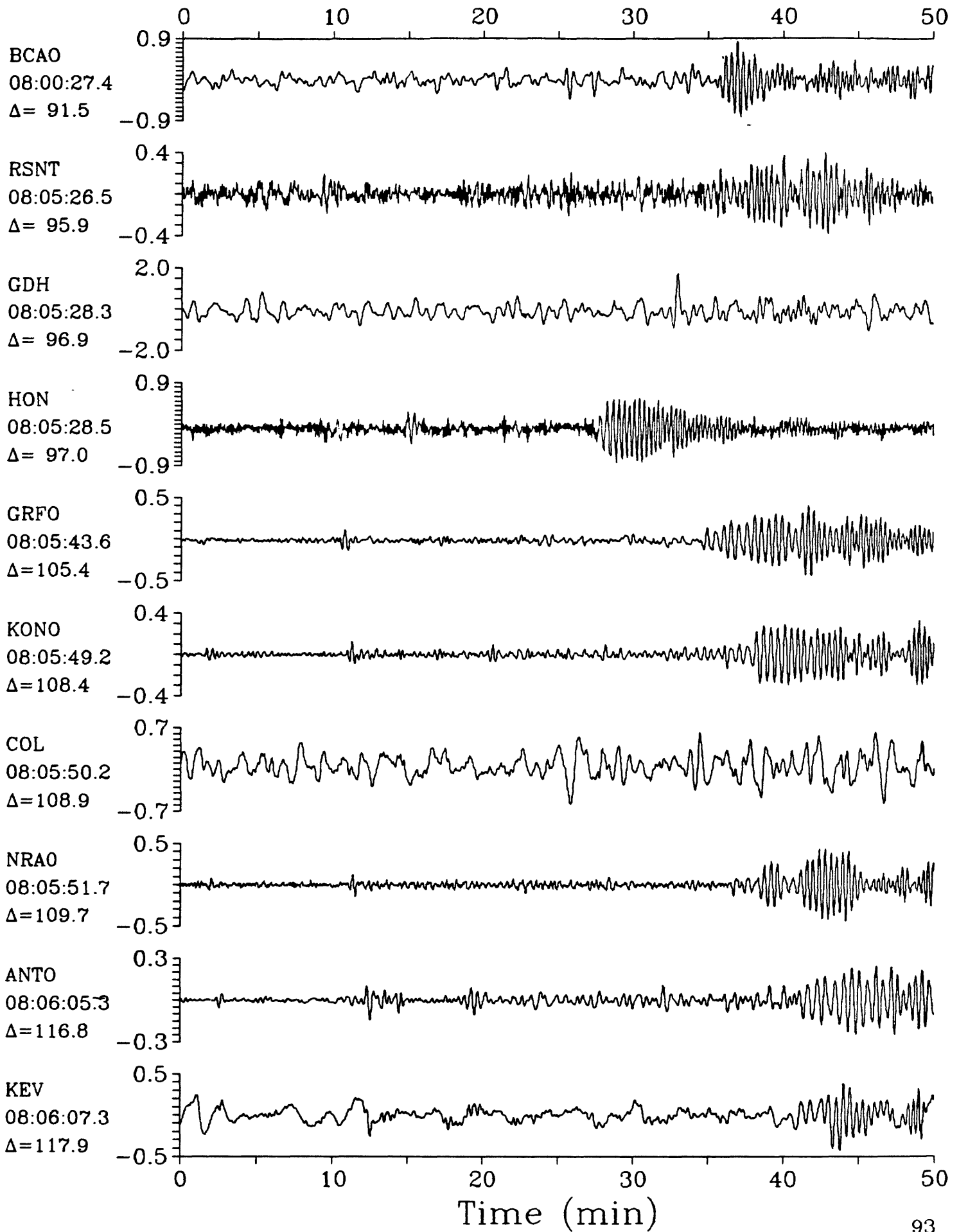
LPZ

Near Coast of Northern Chile $h=30.0$ $m_b=5.7$ $M_{sz}=4.8$ 

LPZ

26 January 1986 07:48:22.94

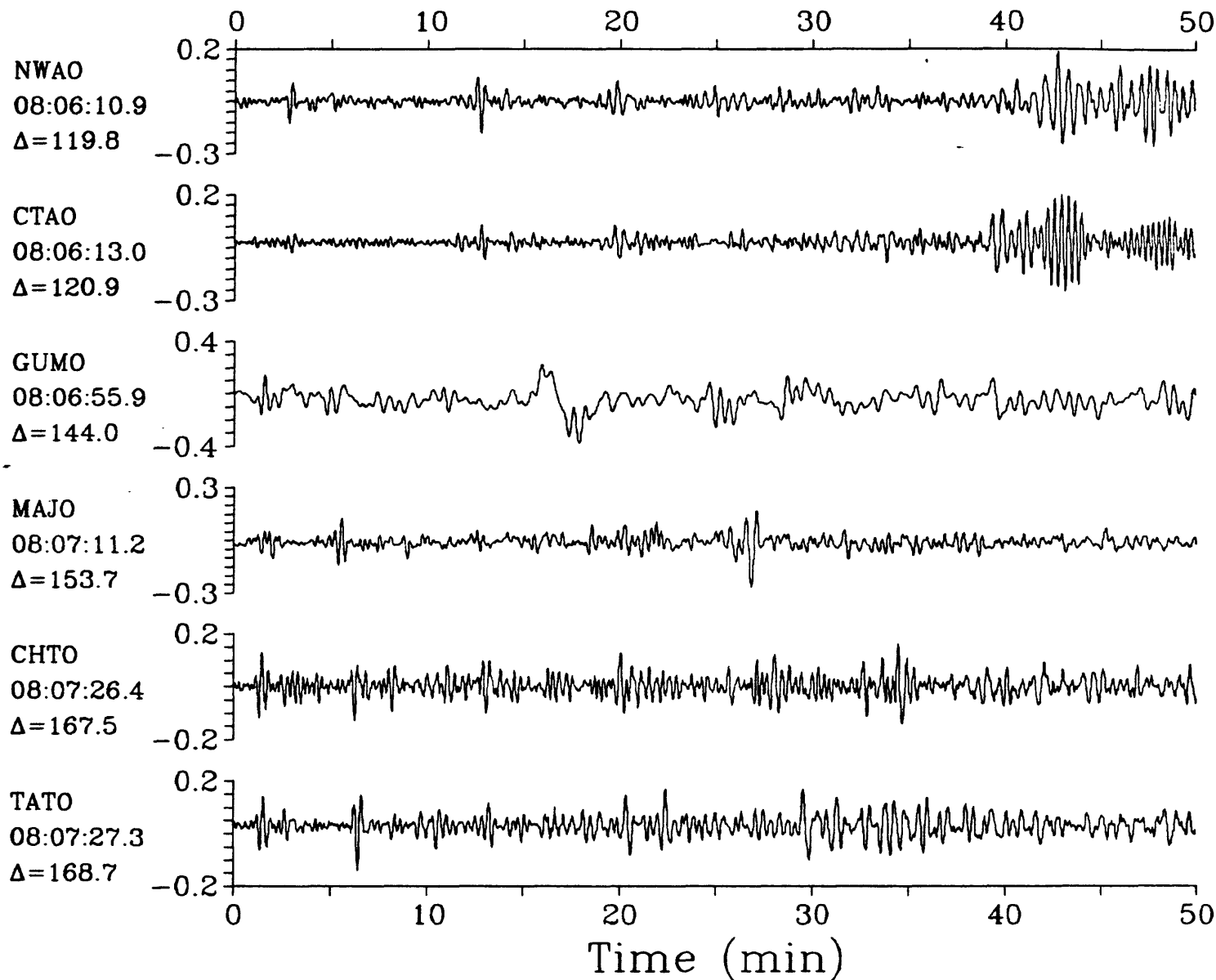
LPZ

Near Coast of Northern Chile $h=30.0$ $m_b=5.7$ $M_{SZ}=4.8$ 

LPZ

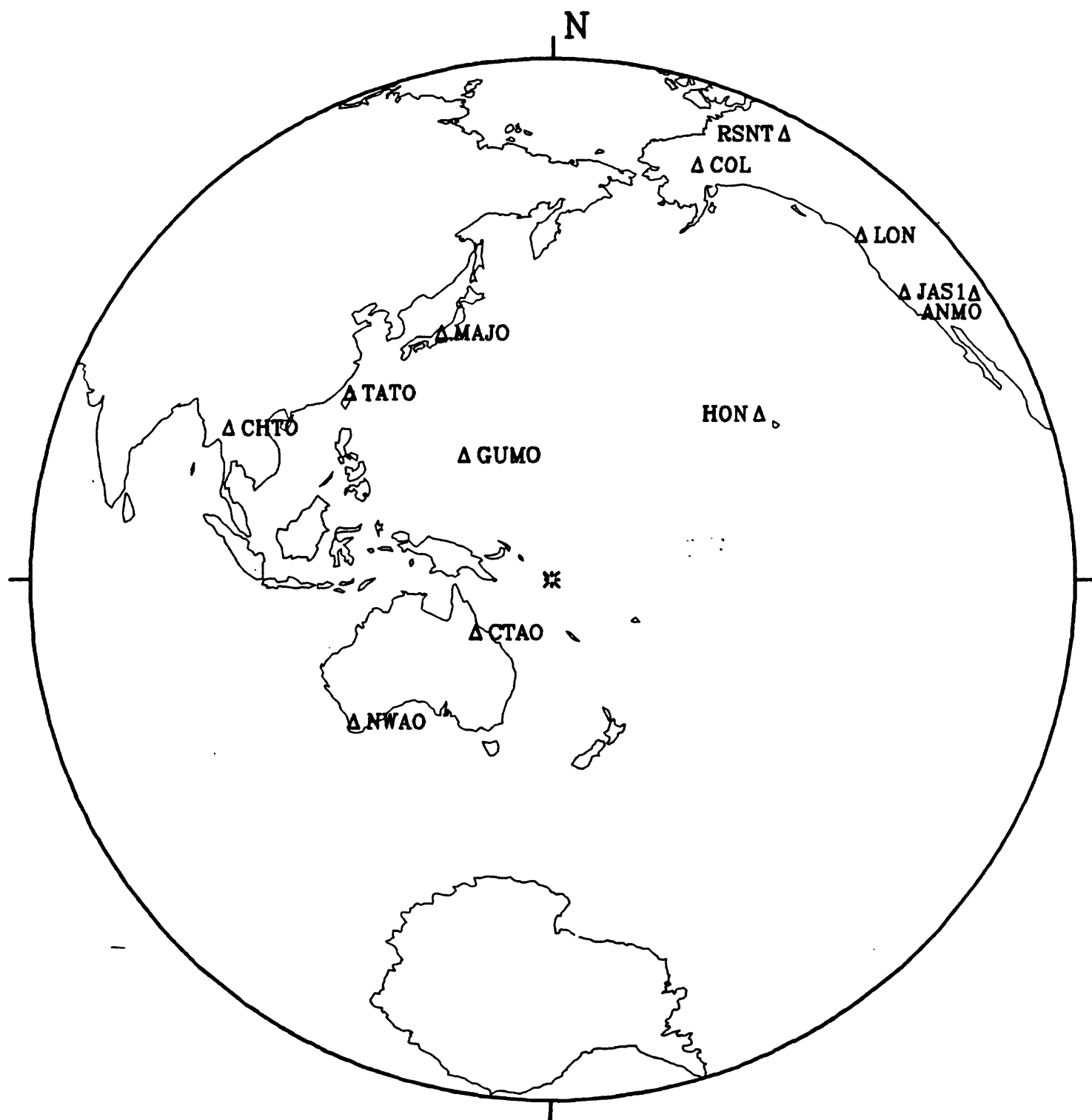
26 January 1986 07:48:22.94

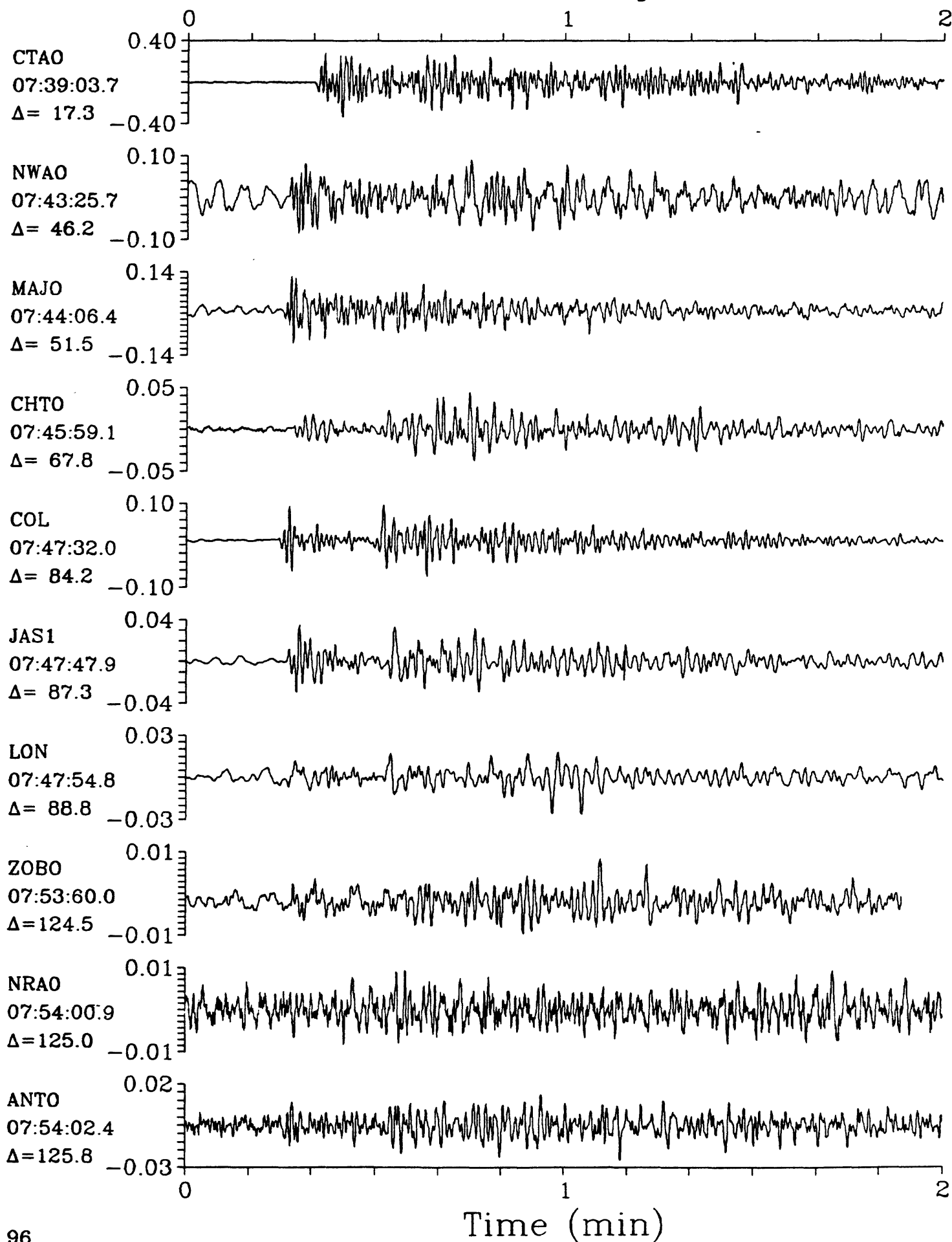
LPZ

Near Coast of Northern Chile $h=30.0$ $m_b=5.7$ $M_{sz}=4.8$ 

27 January 1986 07:35:21.28

Solomon Islands

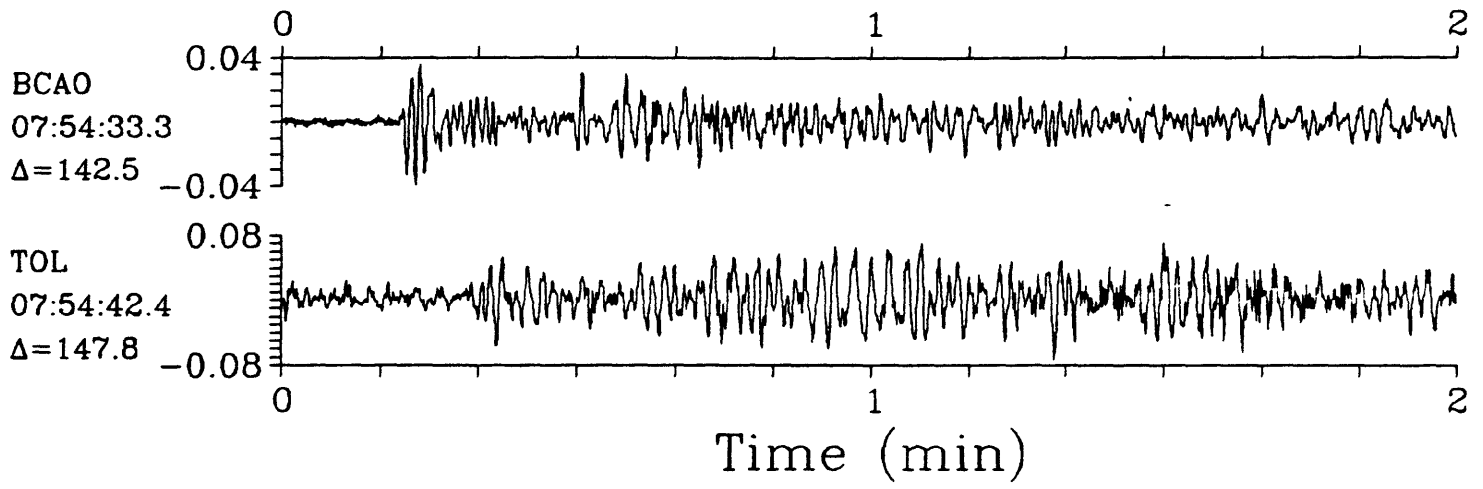


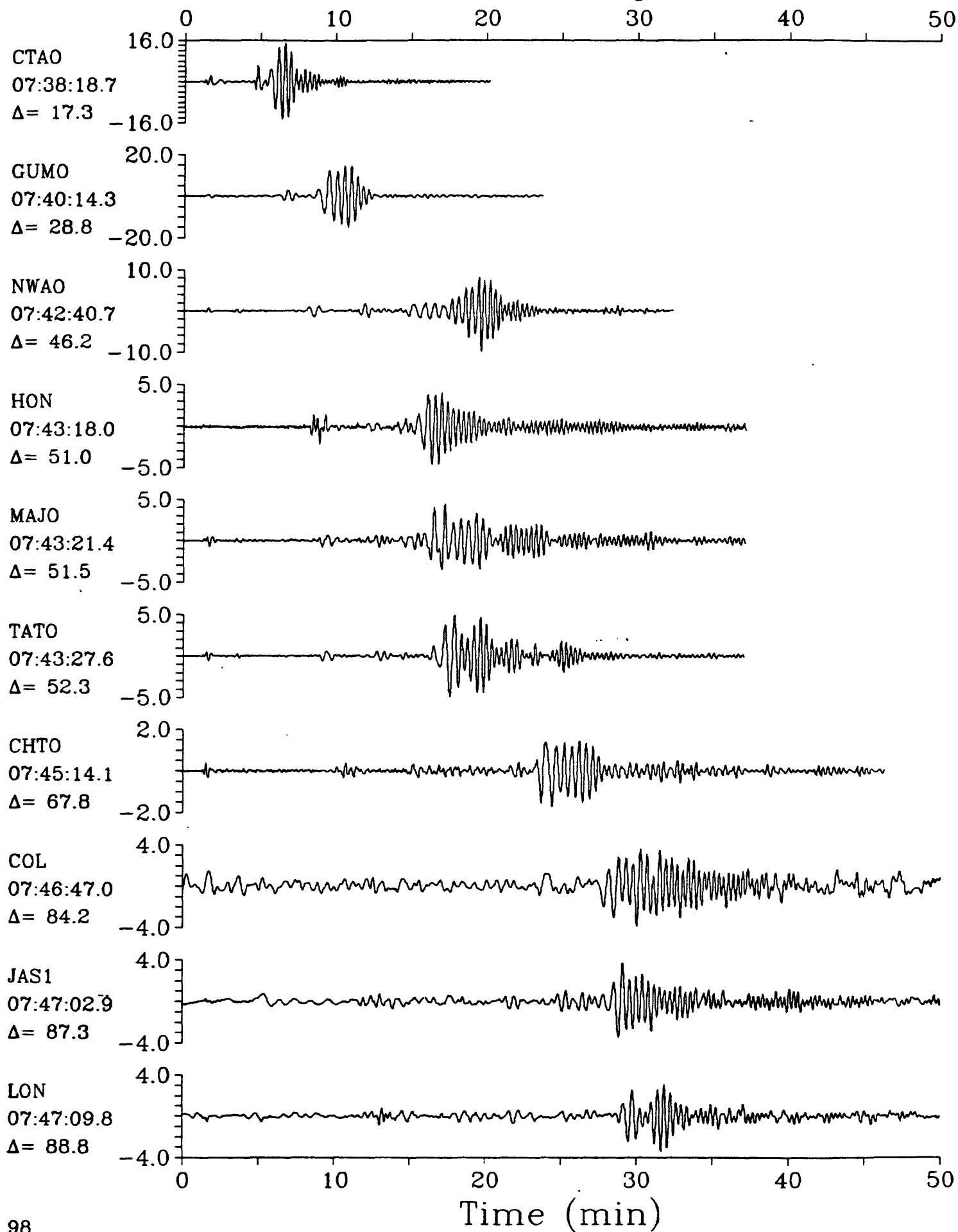


SPZ

27 January 1986 07:35:21.28
Solomon Islands $h=55.2$ $m_b=5.6$

SPZ

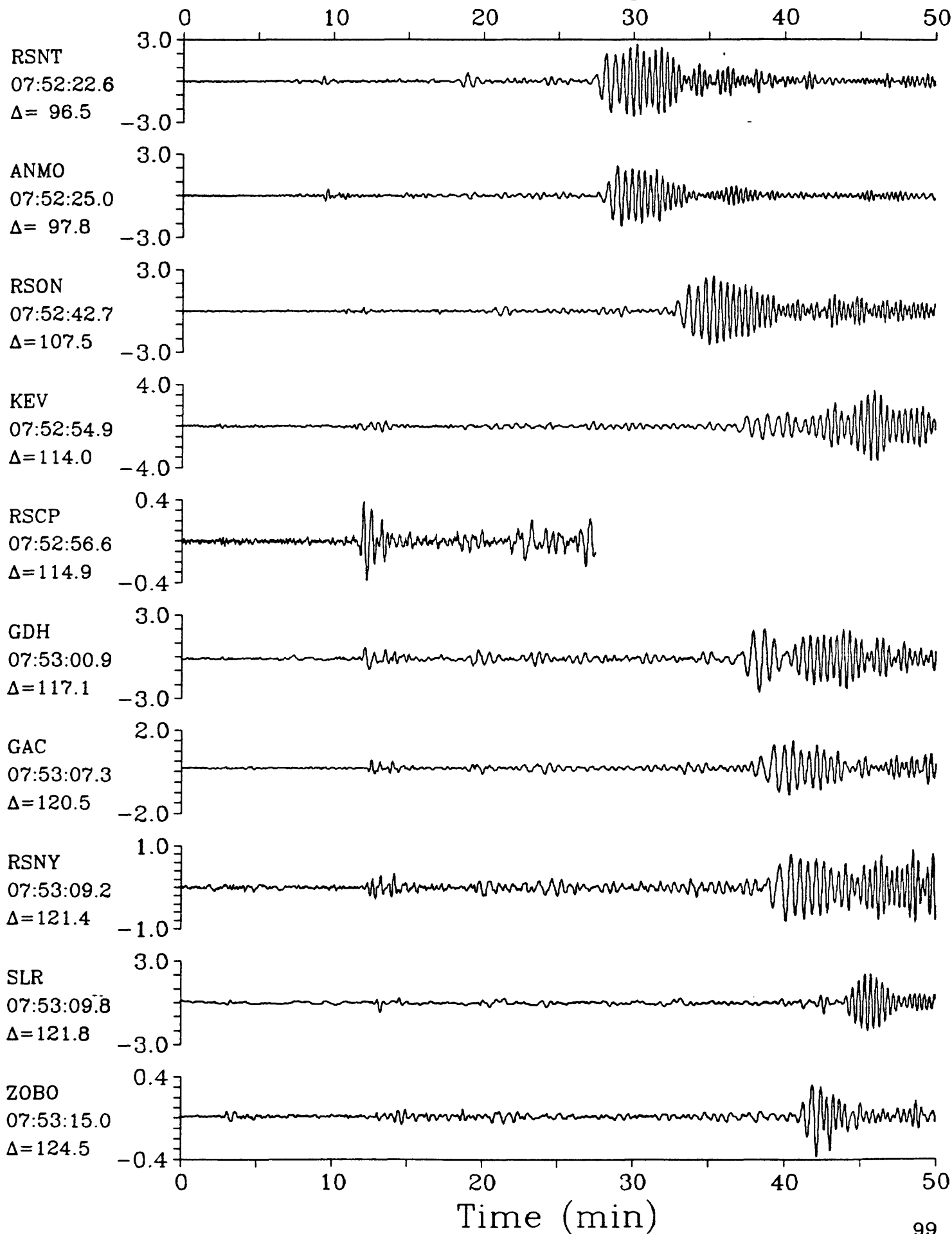




LPZ

27 January 1986 07:35:21.28
Solomon Islands $h=55.2$ $m_b=5.6$

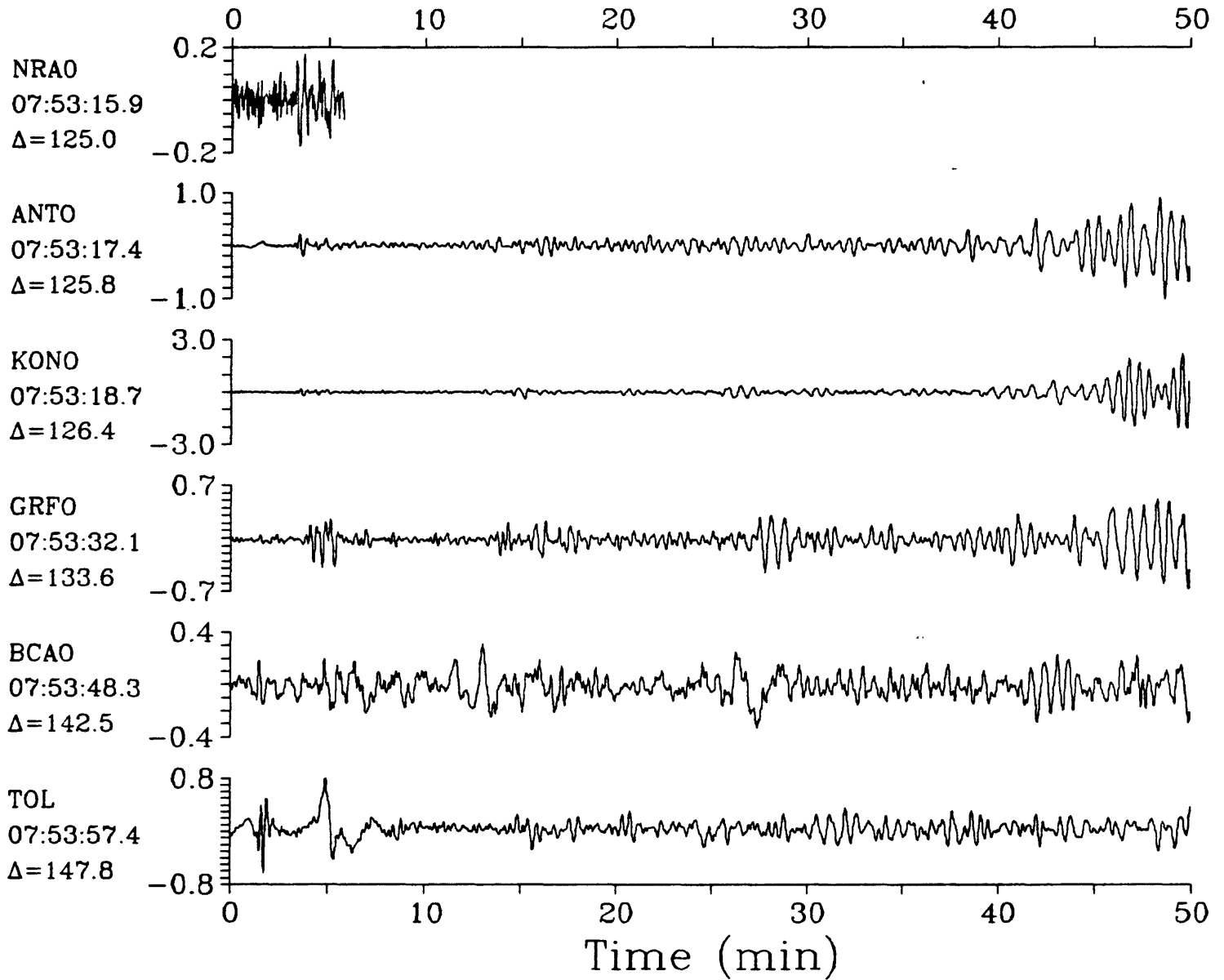
LPZ



LPZ

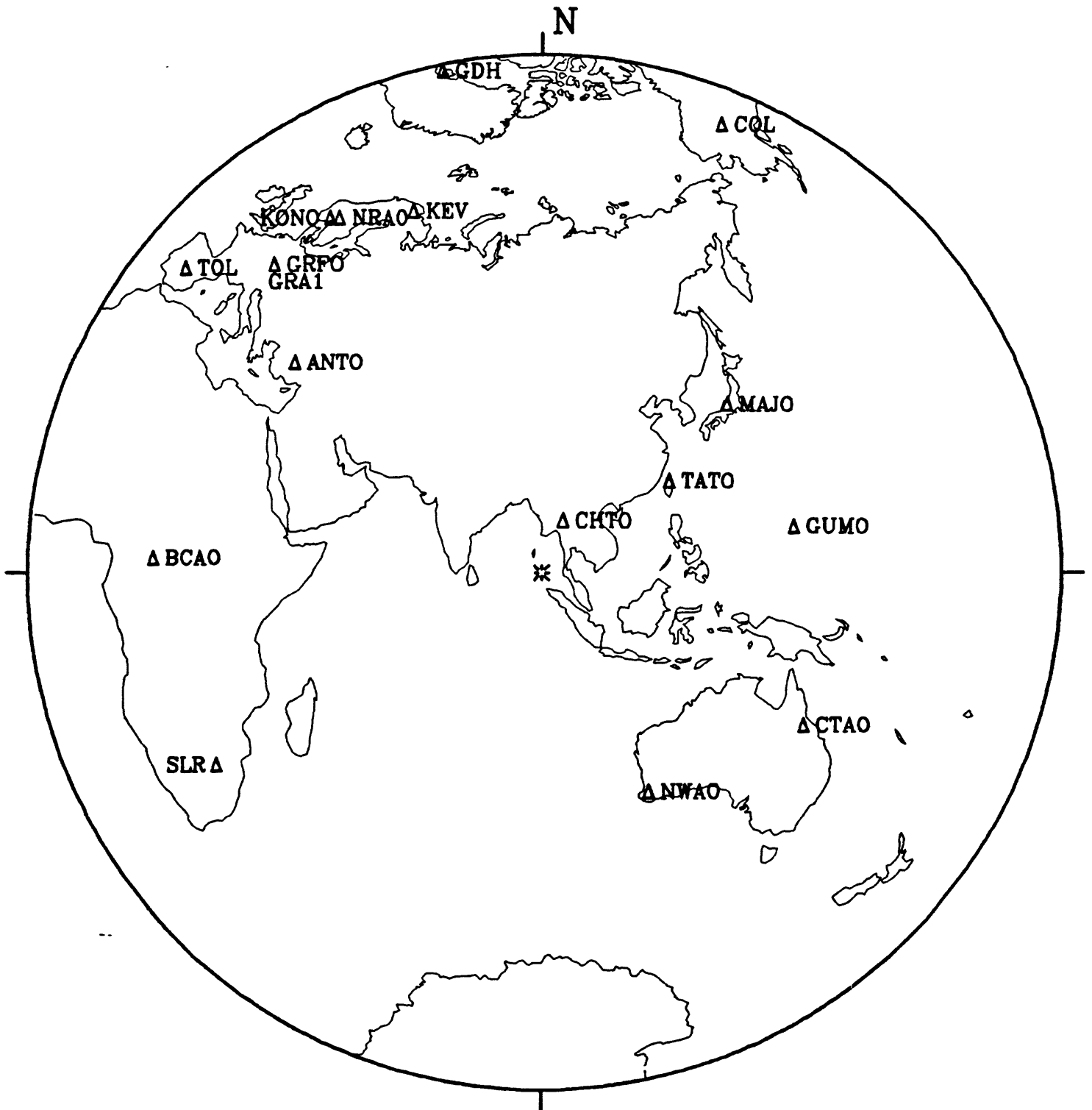
27 January 1986 07:35:21.28
Solomon Islands $h=55.2$ $m_b=5.6$

LPZ



28 January 1986 12:32:17.46

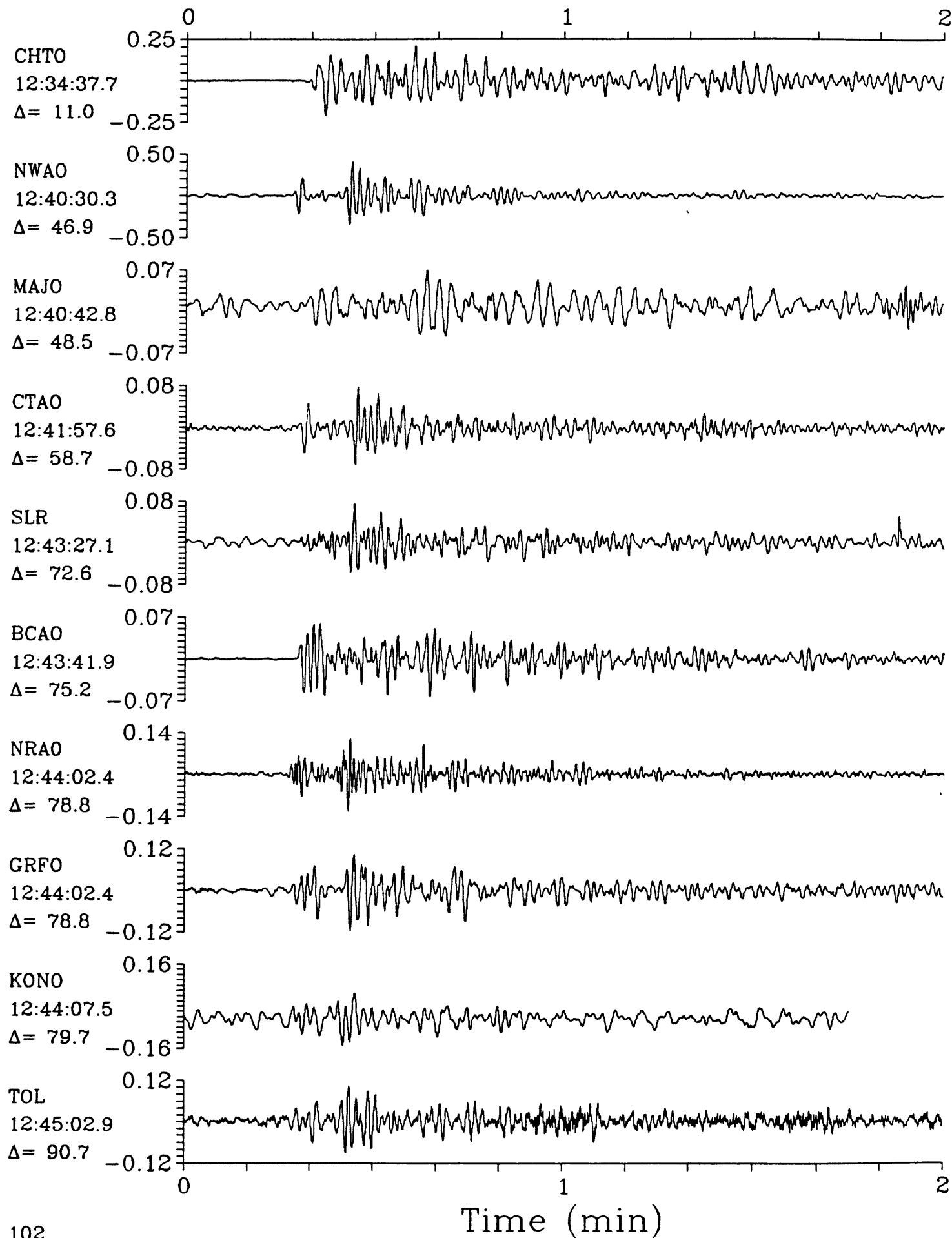
Nicobar Islands Region



SPZ

28 January 1986 12:32:17.46

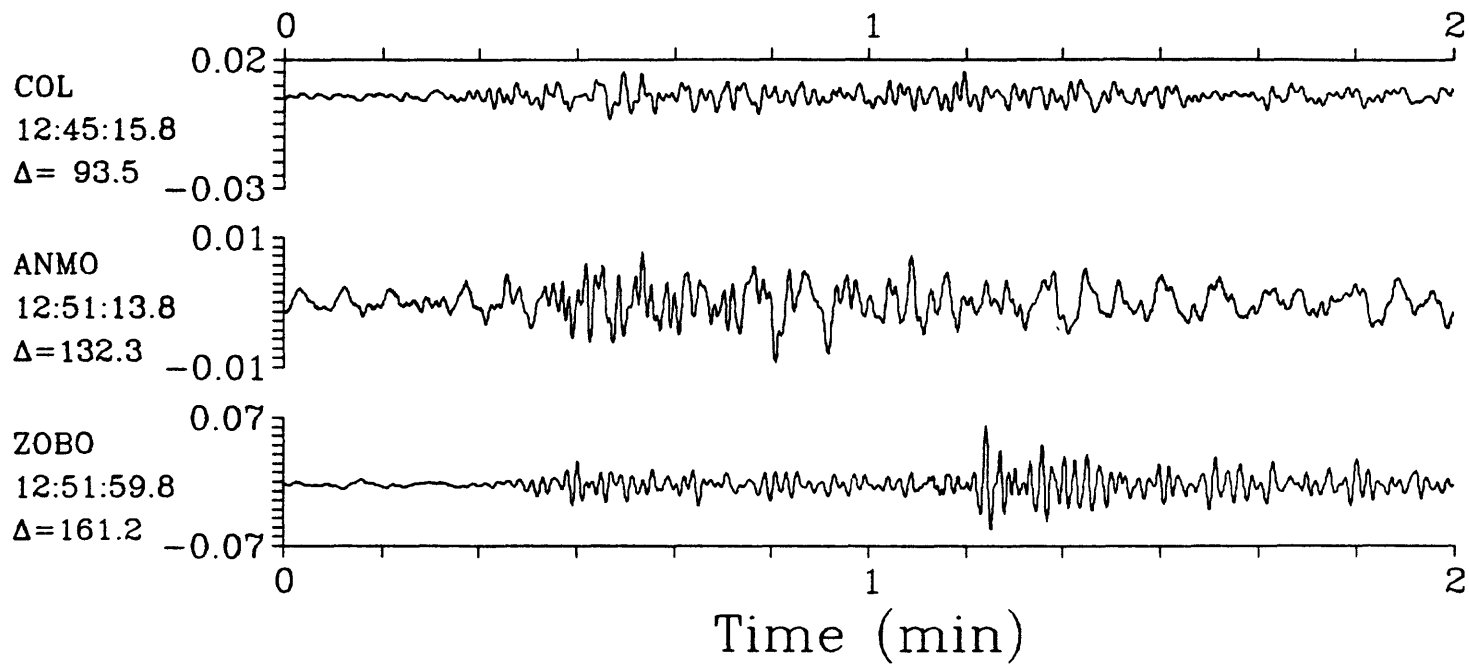
SPZ

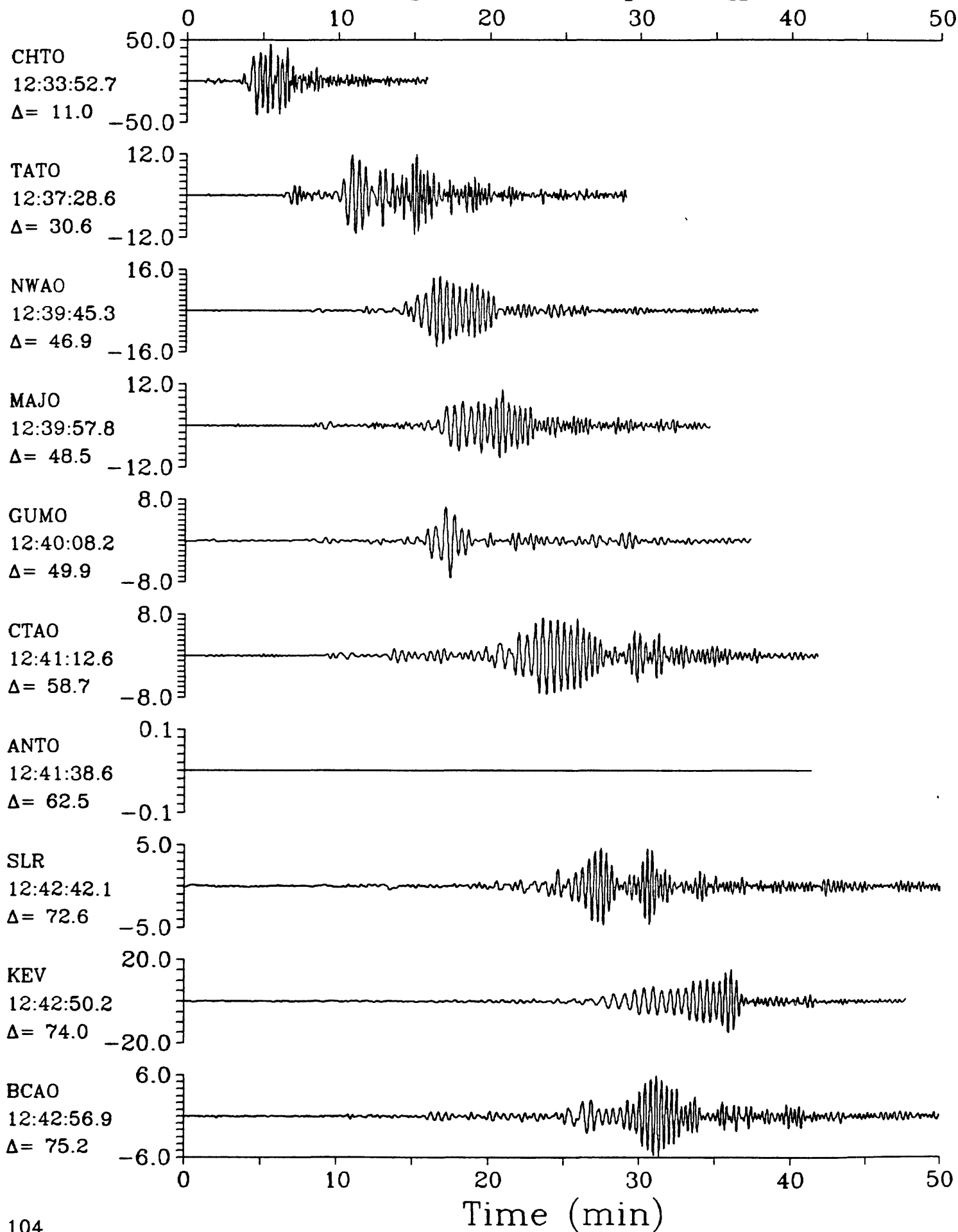
Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.8$ 

SPZ

28 January 1986 12:32:17.46

SPZ

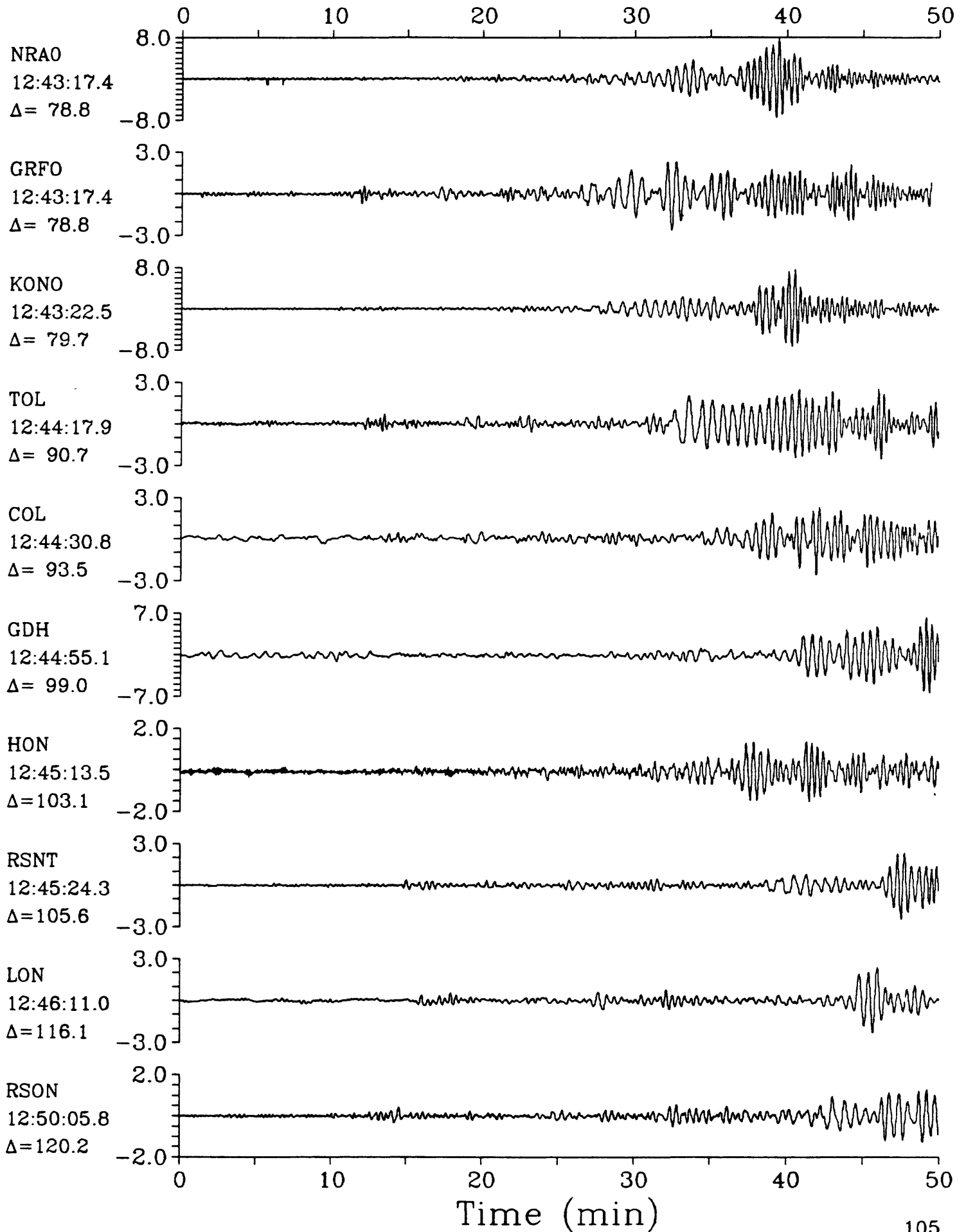
Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.8$ 

Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.8$ 

LPZ

28 January 1986 12:32:17.46

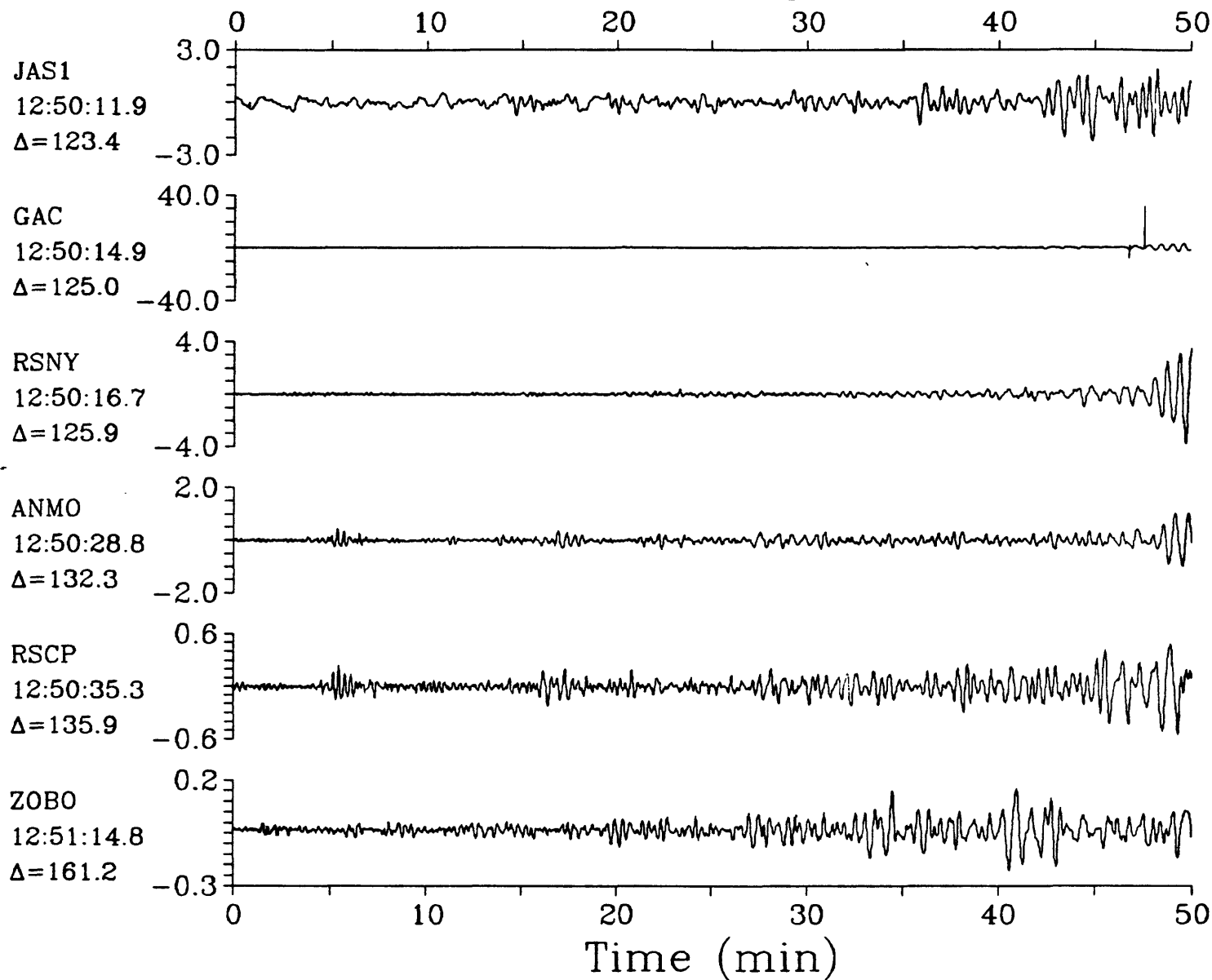
LPZ

Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.8$ 

LPZ

28 January 1986 12:32:17.46

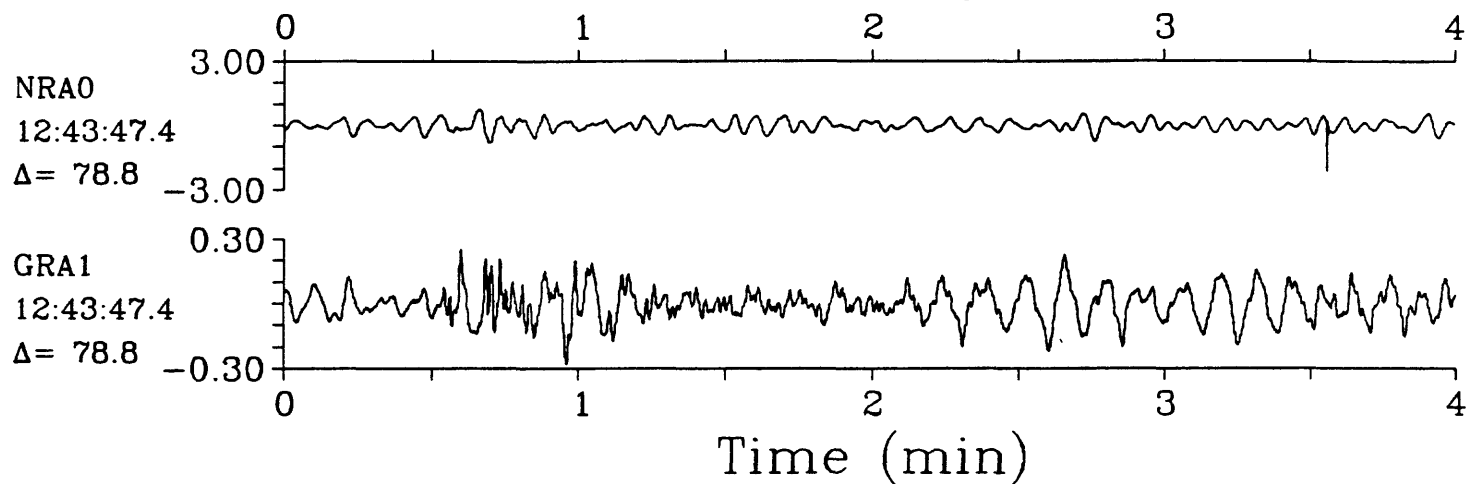
LPZ

Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.8$ 

IPZ

28 January 1986 12:32:17.46

IPZ

Nicobar Islands Region $h=33.0$ $m_b=5.7$ $M_{SZ}=5.8$ 

29 January 1986 13:34:09.66

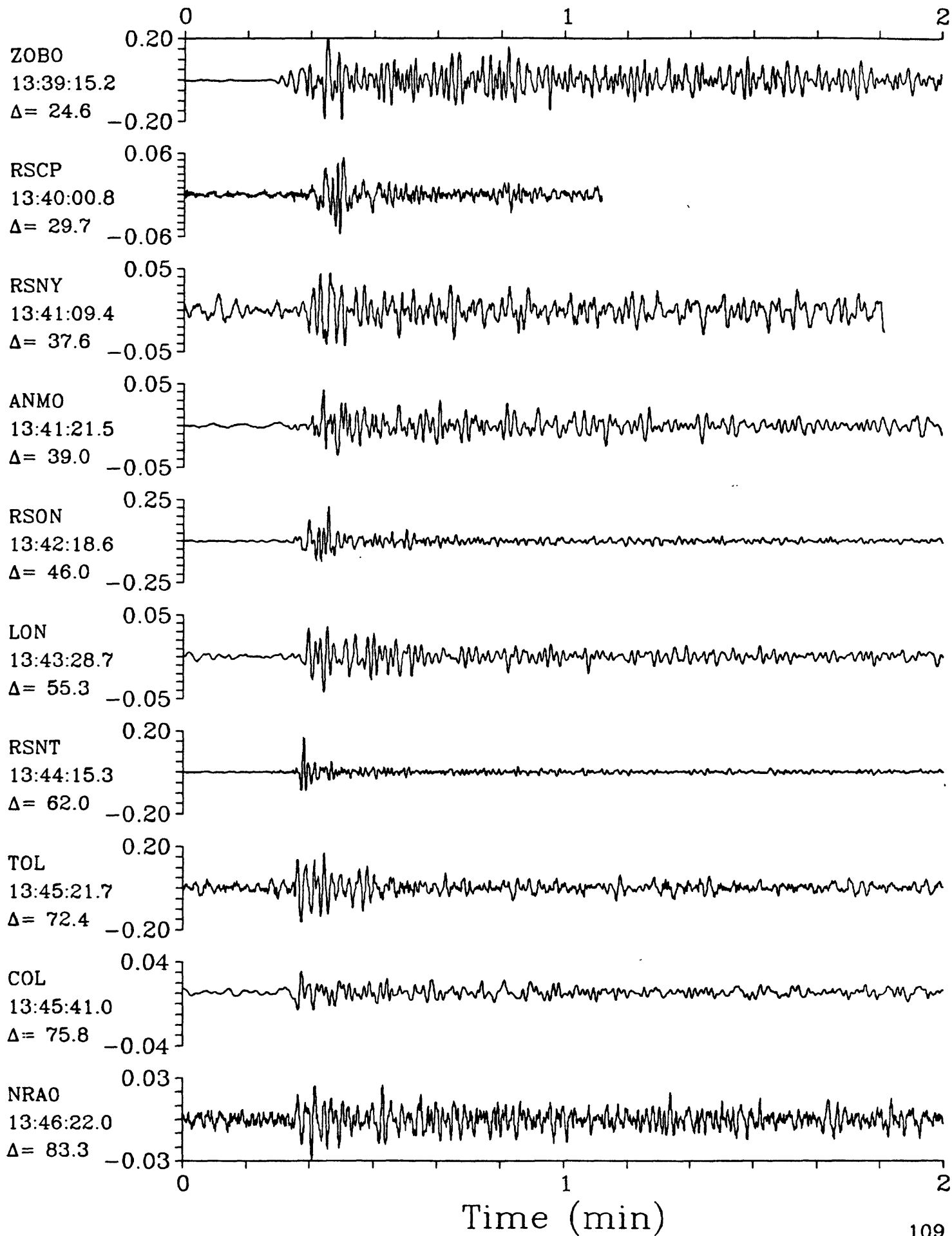
Northern Colombia



SPZ

29 January 1986 13:34:09.66

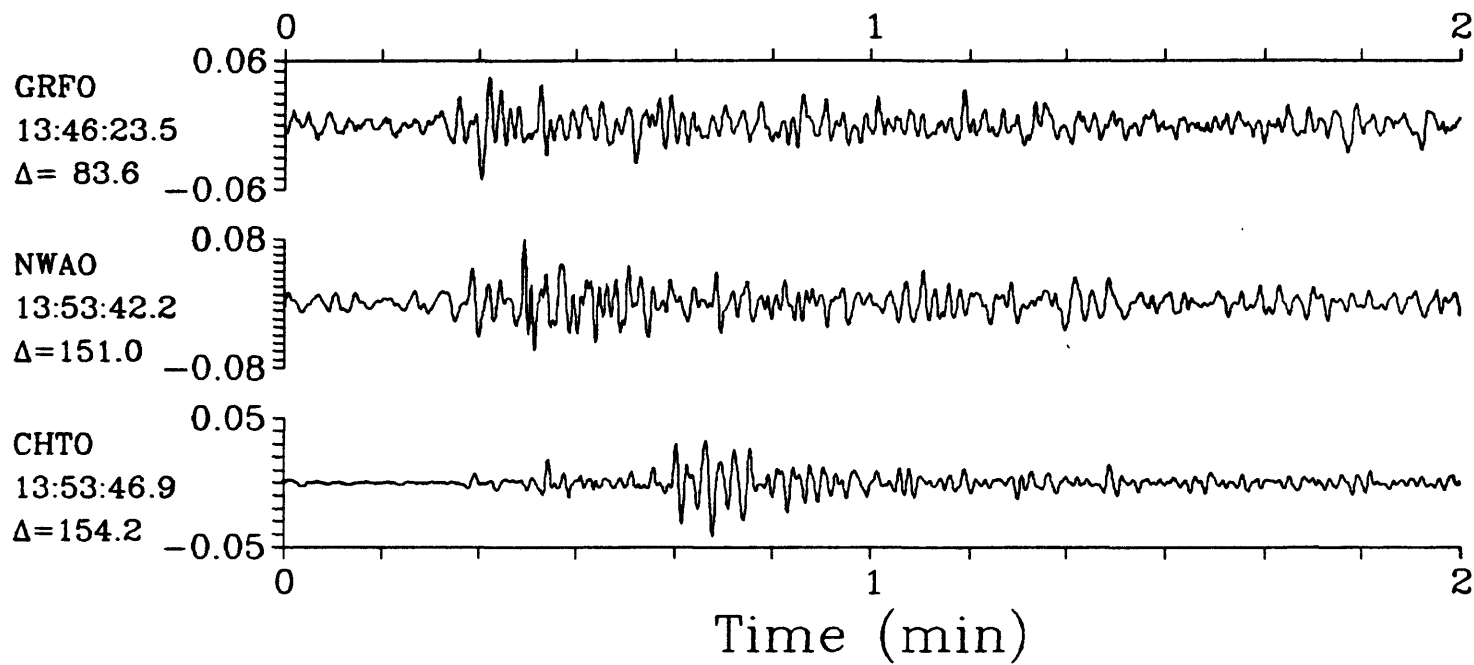
SPZ

Northern Colombia $h=10.0$ $m_b=5.6$ $M_{sz}=5.3$ 

SPZ

29 January 1986 13:34:09.66

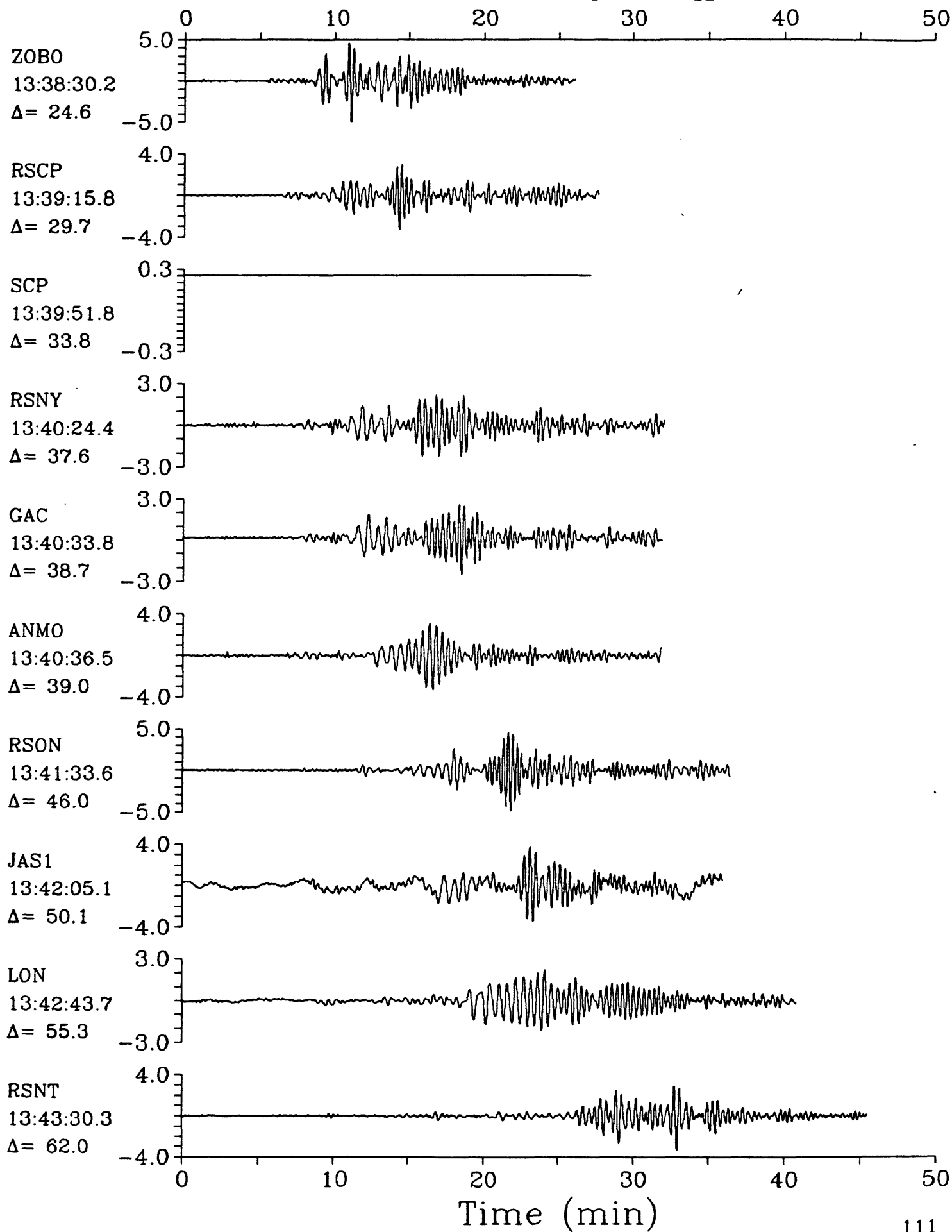
SPZ

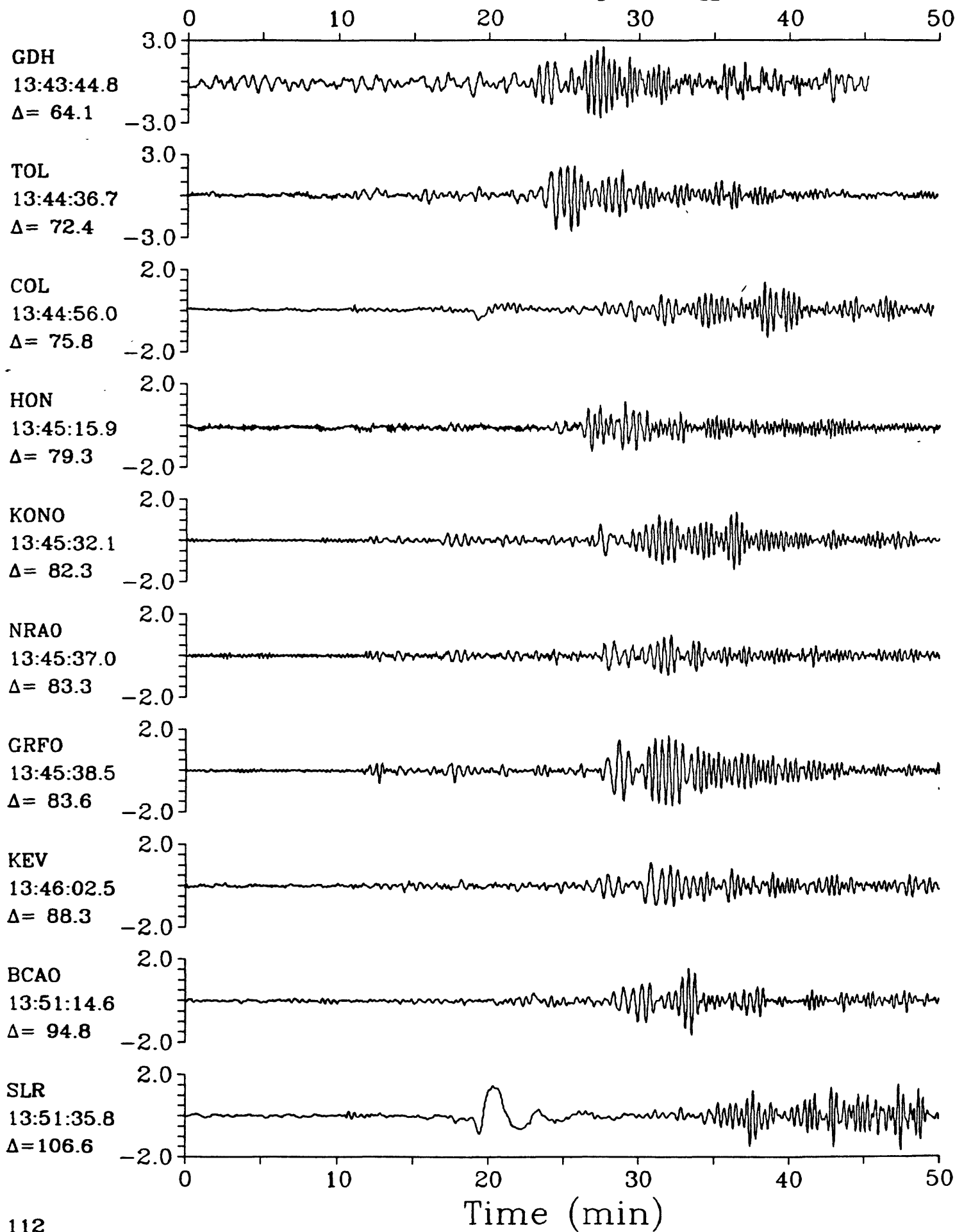
Northern Colombia $h=10.0$ $m_b=5.6$ $M_{sz}=5.3$ 

LPZ

29 January 1986 13:34:09.66

LPZ

Northern Colombia $h=10.0$ $m_b=5.6$ $M_{sz}=5.3$ 



LPZ

29 January 1986 13:34:09.66

LPZ

Northern Colombia $h=10.0$ $m_b=5.6$ $M_{sz}=5.3$ 