

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

**National Earthquake Information Center
Waveform Catalog
April 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 PKP_{df}, 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 April 1985 with magnitudes ≥ 5.5

	Origin Time UTC	Latitude	Longitude	Depth (km)	M _b	M _{sz}	Flinn-Engdahl Region Name
1.	1985 04 02 20:00:00.09	37.095° N	116.032° W	0.0	5.7	4.7	Southern Nevada
2.	1985 04 03 08:18:07.06	51.877° N	158.765° E	33.9	5.5	5.2	Near East Coast of Kamchatka
3.	1985 04 03 13:06:19.87	32.622° S	71.611° W	33.0	5.7	6.1	Near Coast of Central Chile
4.	1985 04 03 18:12:26.59	33.141° S	179.345° W	33.0	5.6	5.3	South of Kermadec Islands
5.	1985 04 03 20:21:35.64	28.287° N	139.334° E	461.0	5.9		Bonin Islands Region
6.	1985 04 05 13:00:22.51	1.809° N	127.498° E	132.2	5.5		Halmahera
7.	1985 04 07 00:19:33.86	56.118° S	122.244° W	10.0	5.5	6.1	Easter Island Cordillera
8.	1985 04 07 09:31:18.23	4.509° N	127.987° E	80.3	5.5		Talau Islands
9.	1985 04 08 16:17:12.66	5.751° S	154.110° E	48.8	5.2	5.6	Solomon Islands
10.	1985 04 08 19:15:09.14	4.095° S	136.315° E	33.0	5.7	5.9	West Irian Region
11.	1985 04 09 01:56:58.64	34.168° S	71.543° W	33.0	6.3	7.2	Near Coast of Central Chile
12.	1985 04 09 05:15:34.74	34.073° N	140.729° E	32.8	5.1	5.8	Near East Coast of Honshu, Japan
13.	1985 04 10 16:26:18.64	29.979° N	138.790° E	397.6	5.8		South of Honshu, Japan
14.	1985 04 10 20:37:34.50	49.954° N	159.420° E	33.0	5.5	5.0	Kuril Islands Region
15.	1985 04 11 11:55:07.12	35.487° S	179.015° E	33.0	5.8	5.1	Off E. Coast of N. Island, N.Z.
16.	1985 04 12 06:12:44.89	11.291° S	165.671° E	33.0	5.7	5.9	Santa Cruz Islands
17.	1985 04 13 01:05:52.44	9.237° S	114.150° E	33.0	6.3	5.2	South of Bali Island
18.	1985 04 13 03:00:04.45	1.662° N	126.572° E	33.0	6.4	6.8	Molucca Passage
19.	1985 04 18 00:06:32.93	52.135° N	159.744° E	33.0	5.6	5.4	Off East Coast of Kamchatka
20.	1985 04 18 05:52:52.71	25.898° N	102.870° E	5.0	5.7	5.8	Yunnan Province, China
21.	1985 04 20 18:23:48.26	8.979° N	77.527° W	40.4	5.6	5.9	Panama-Colombia Border Region
22.	1985 04 21 13:53:00.45	5.222° S	130.445° E	78.5	6.0		Banda Sea
23.	1985 04 22 09:36:52.12	0.038° N	124.163° E	93.3	5.5		Minahassa Peninsula
24.	1985 04 23 16:15:11.03	15.286° N	120.603° E	181.2	6.4		Luzon, Philippine Islands
25.	1985 04 24 01:07:14.60	16.480° N	120.831° E	33.0	5.6	6.0	Luzon, Philippine Islands
26.	1985 04 25 00:57:06.56	49.907° N	78.932° E	0.0	5.9	4.1	Eastern Kazakh SSR
27.	1985 04 25 23:27:08.27	25.573° S	177.738° W	33.0	5.4	5.5	South of Fiji Islands
28.	1985 04 27 00:33:12.99	15.721° S	173.567° W	79.5	5.7		Tonga Islands
29.	1985 04 27 01:31:27.42	38.578° N	73.158° E	103.3	5.6		Tajik-Xinjiang Border Region
30.	1985 04 27 10:11:45.01	20.928° S	176.985° W	279.5	5.7		Fiji Islands Region
31.	1985 04 28 08:30:32.66	39.701° S	75.612° W	33.0	6.0	5.5	Off Coast of Central Chile
32.	1985 04 28 22:56:51.14	55.521° S	26.122° W	33.0	5.7	5.6	South Sandwich Islands Region
33.	1985 04 29 02:19:59.64	41.496° N	142.121° E	70.0	5.7		Hokkaido, Japan Region
34.	1985 04 30 08:45:28.64	24.810° N	125.330° E	51.2	5.3	6.0	Southwestern Ryukyu Islands
35.	1985 04 30 18:14:11.61	39.247° N	22.791° E	19.2	5.4	5.6	Greece

Table 2. Current network-event tape station list

Code	ID	Station	Latitude	Longitude	Elevation (m)	Type*
AFI	69	Afiamalua, 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
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
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
JAS	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
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
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

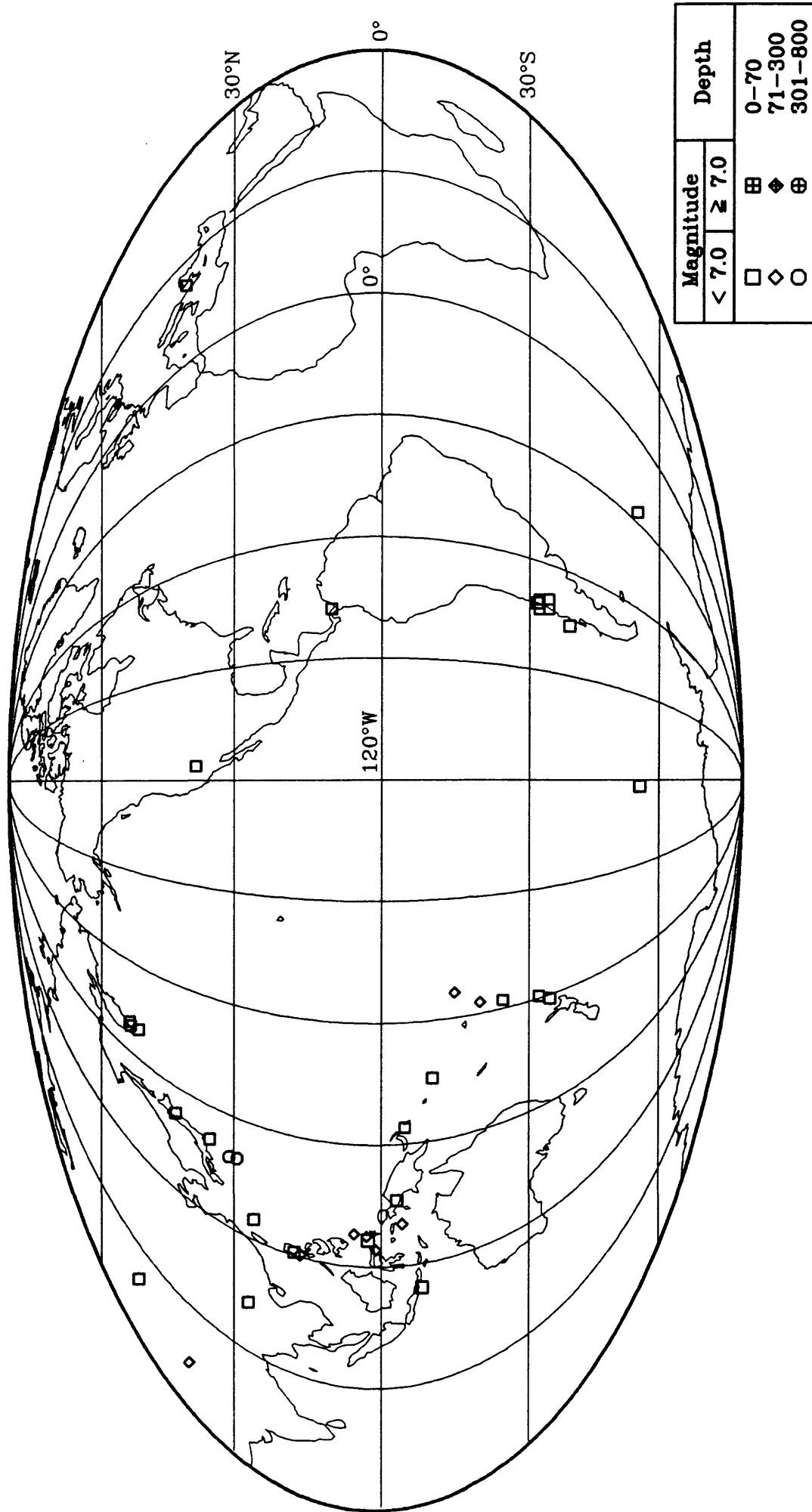
* SRO - Seismic Research Observatory

ASRO - Abbreviated Seismic Research Observatory

DWWSSN - Digital World Wide Standardized Seismograph Network

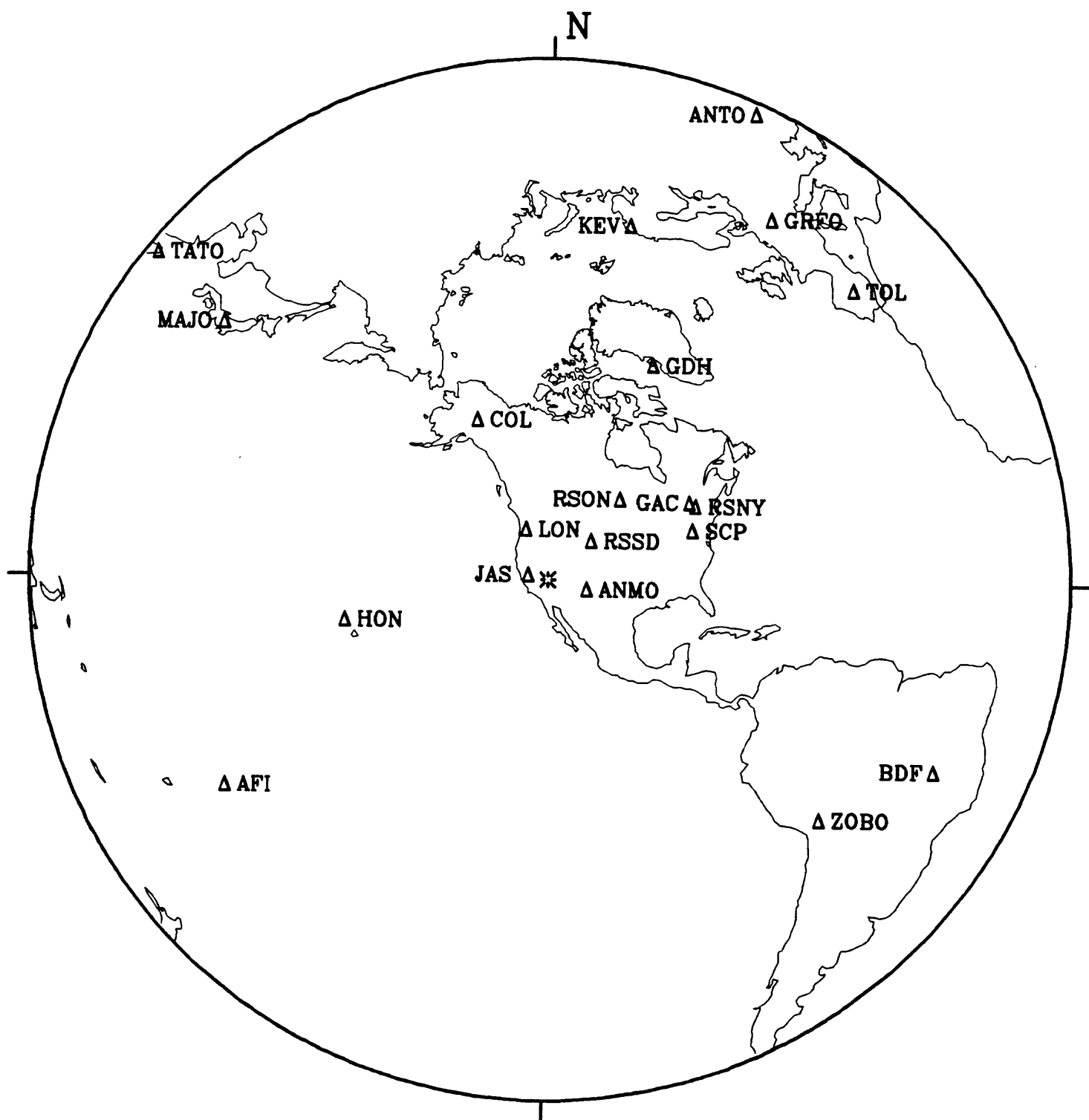
RSTN - Regional Seismic Test Network

EARTHQUAKES – April 1985 – MAGNITUDE ≥ 5.5



02 April 1985 20:00:00.09

Southern Nevada

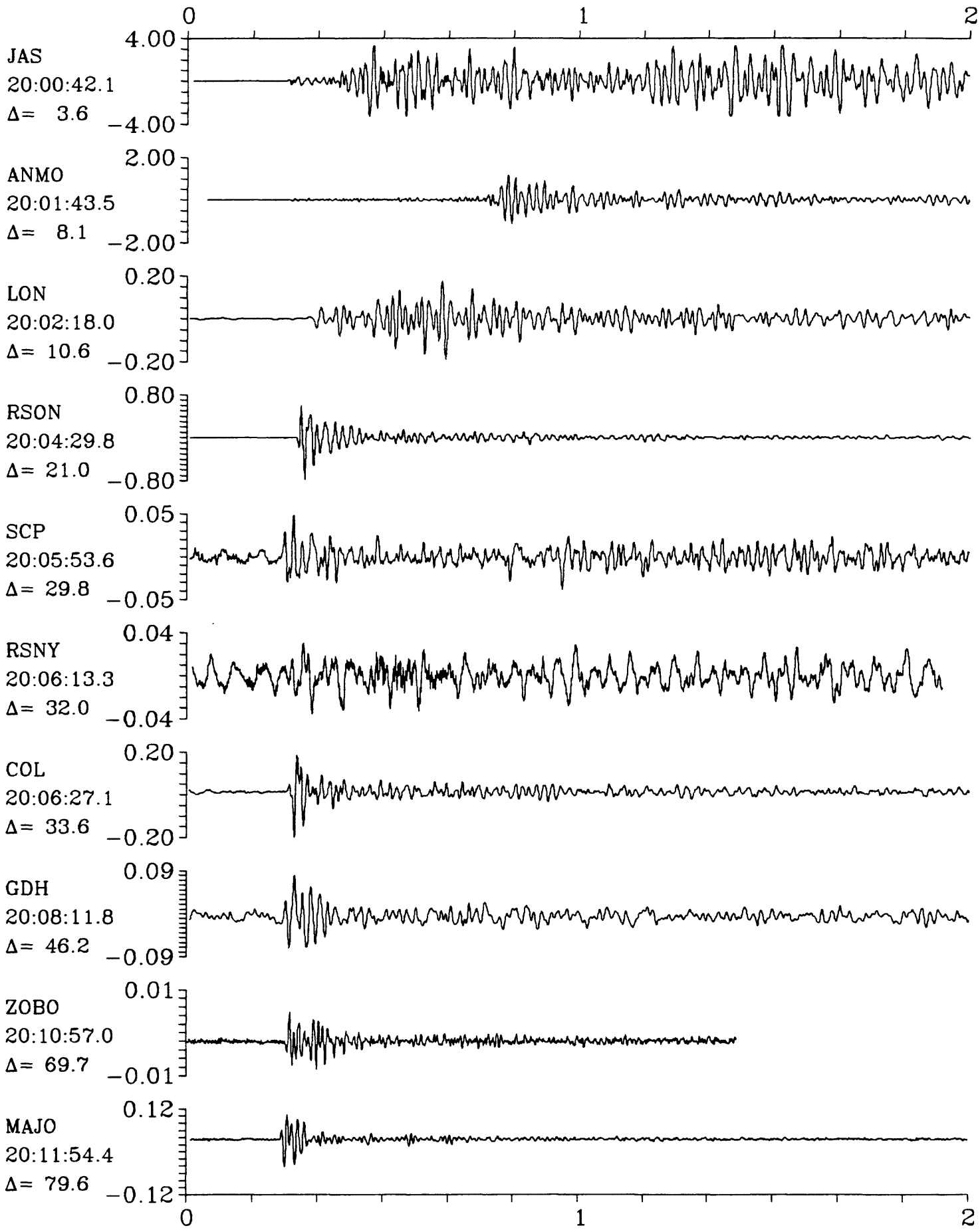


starting :

SPZ

02 April 1985 20:00:00.09
Southern Nevada $h=0.0$ $m_b=5.7$ $M_{sz}=4.7$

SPZ

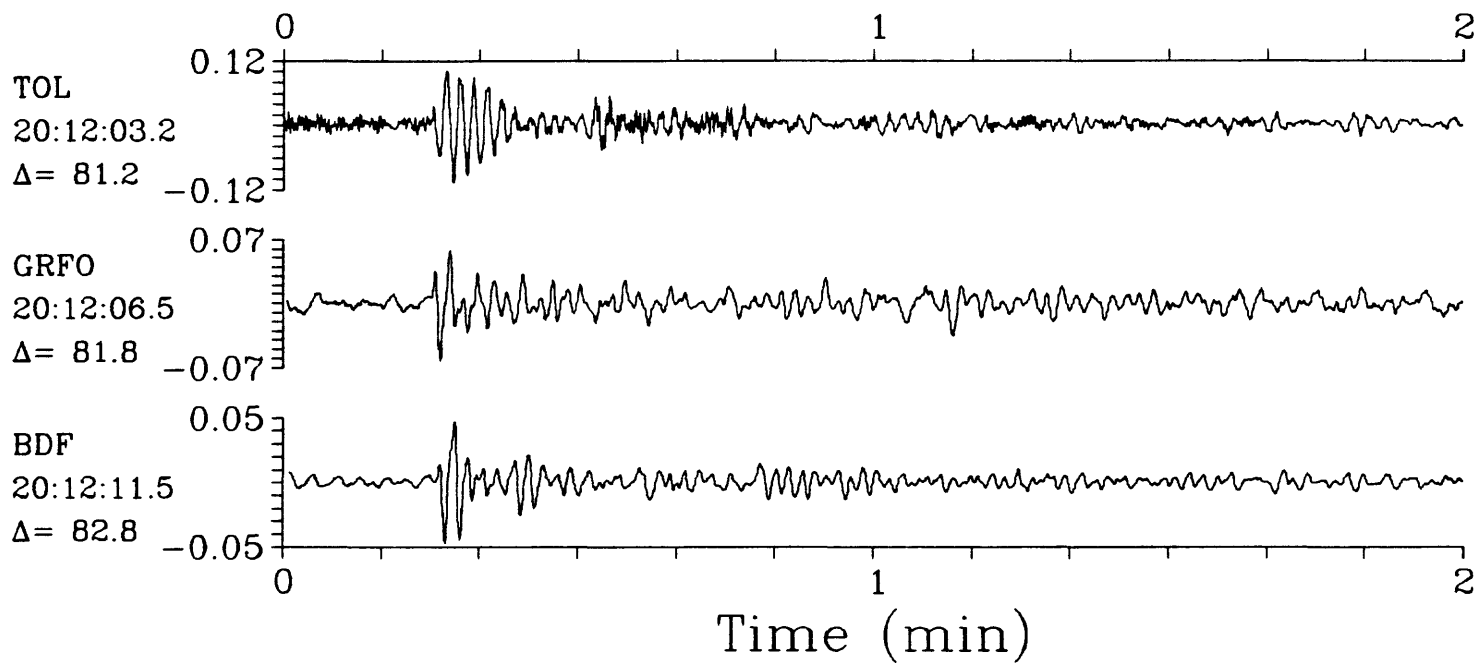


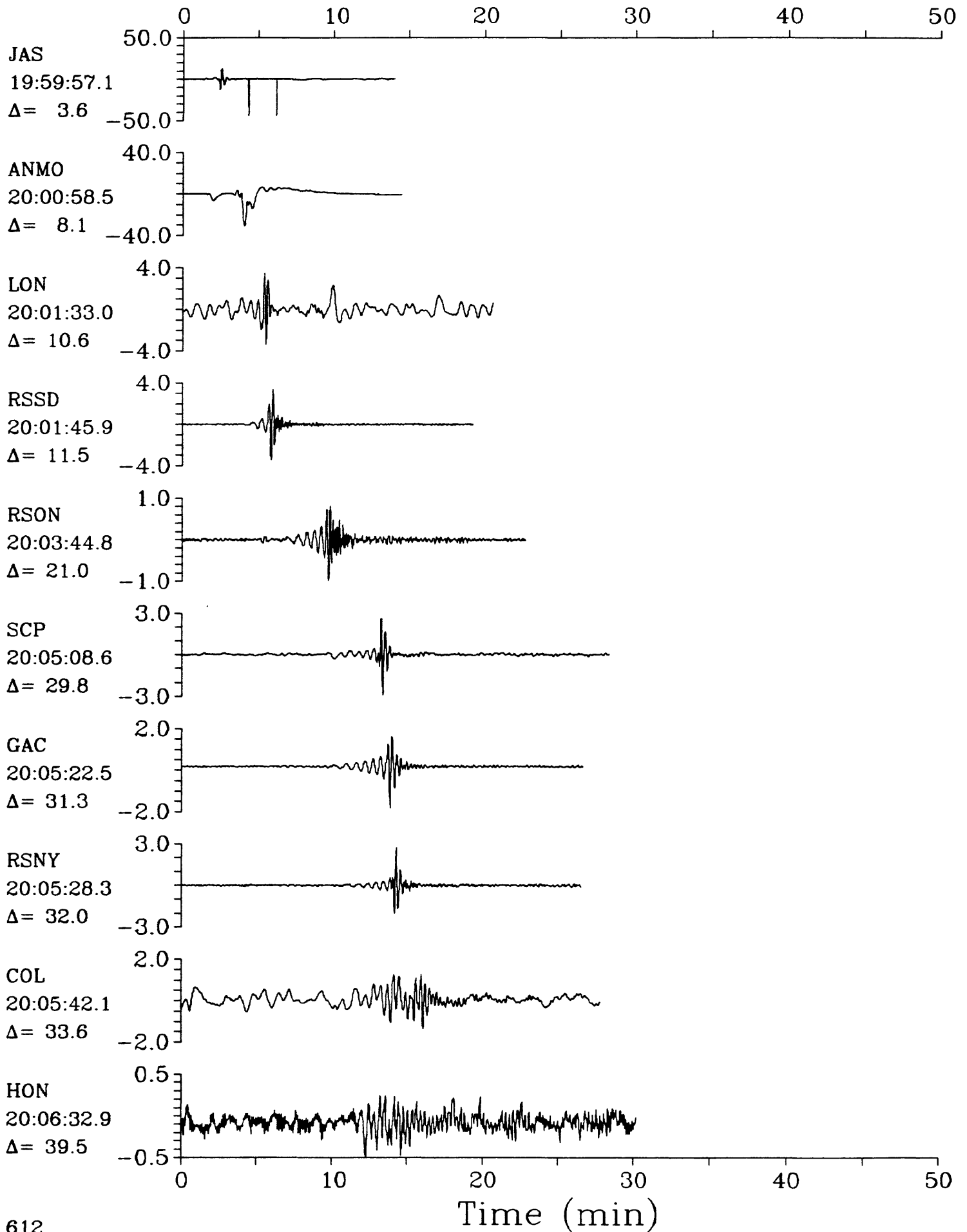
Time (min)

SPZ

02 April 1985 20:00:00.09

SPZ

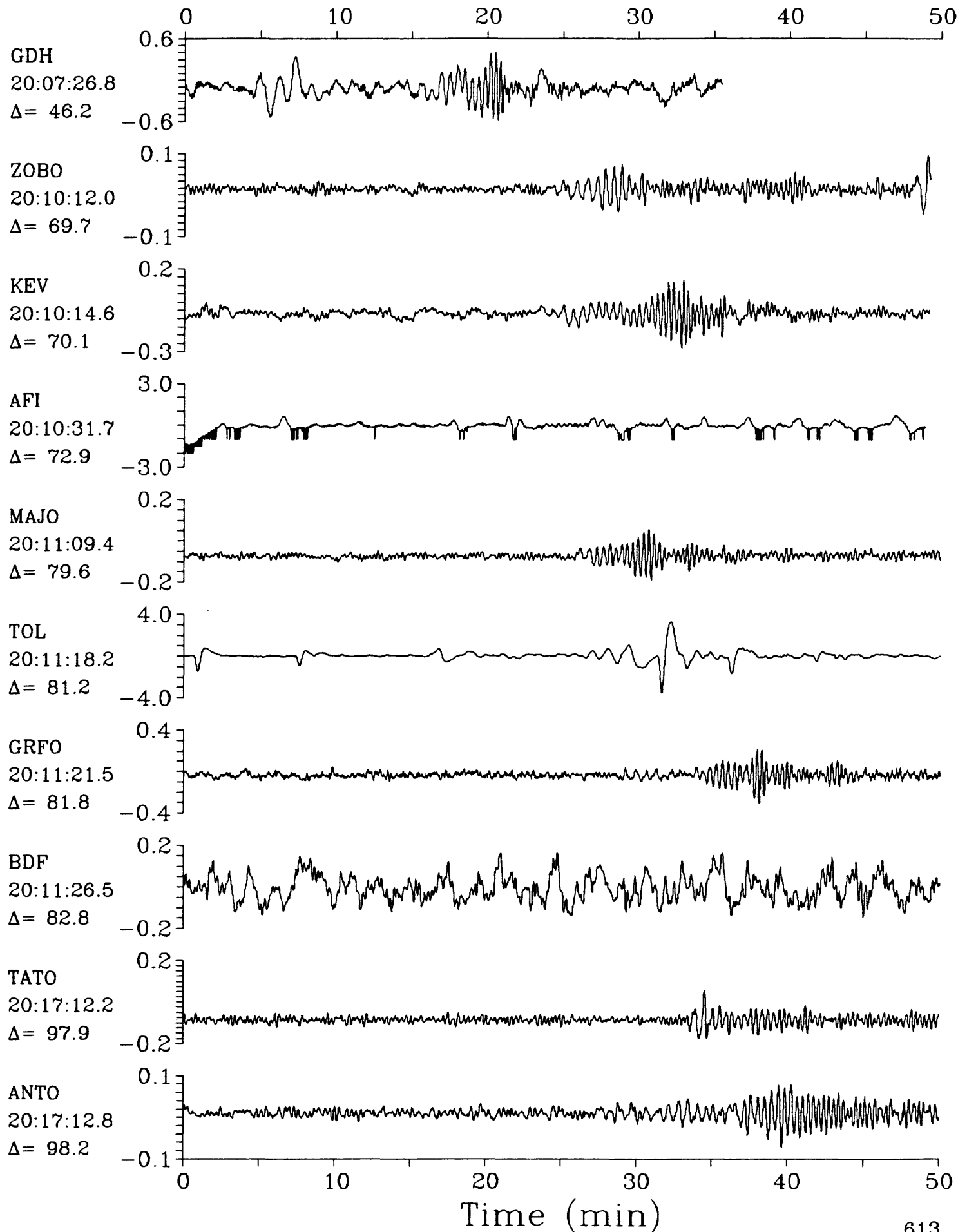
Southern Nevada $h=0.0$ $m_b=5.7$ $M_{sz}=4.7$ 



LPZ

02 April 1985 20:00:00.09

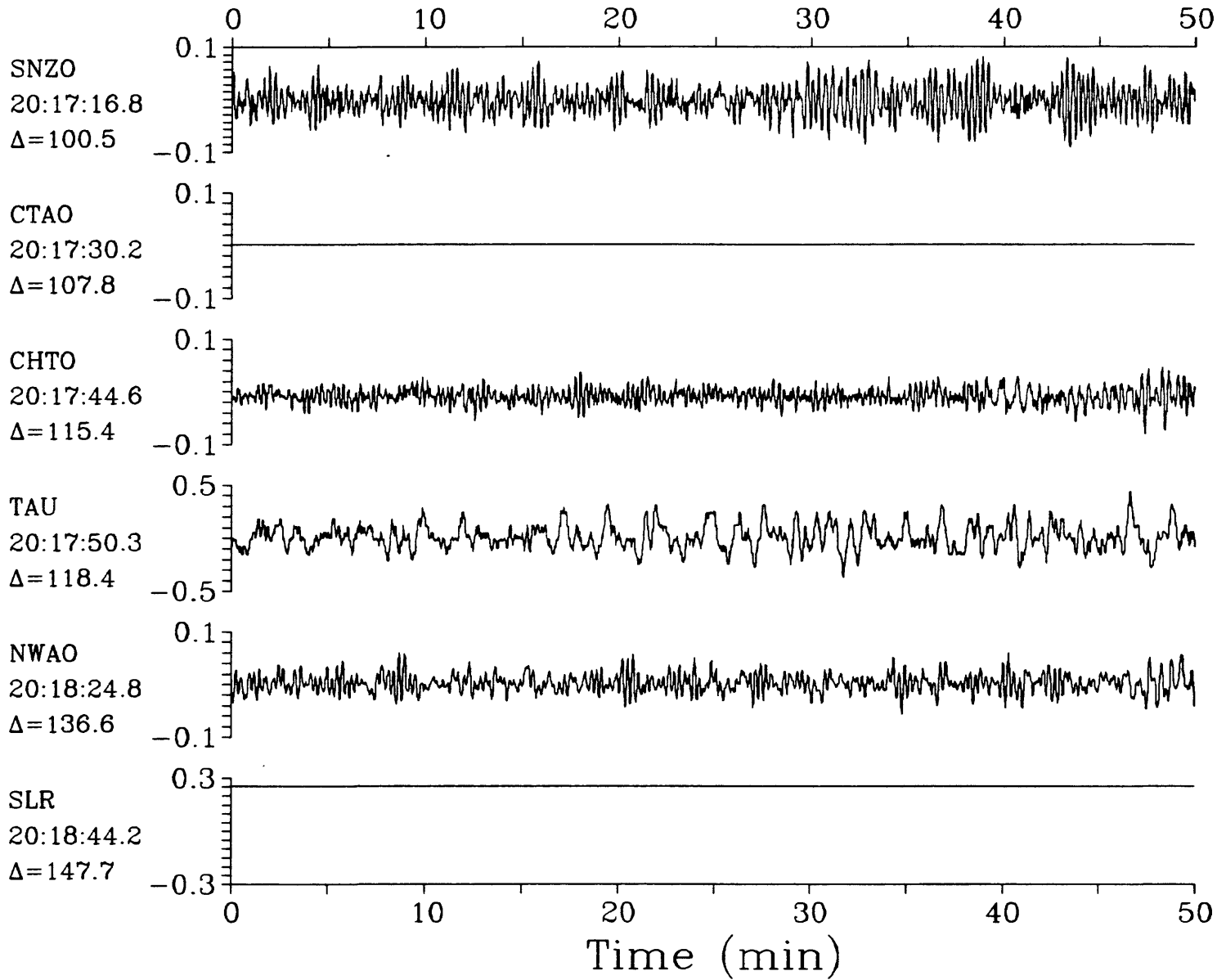
LPZ

Southern Nevada $h=0.0$ $m_b=5.7$ $M_{sz}=4.7$ 

LPZ

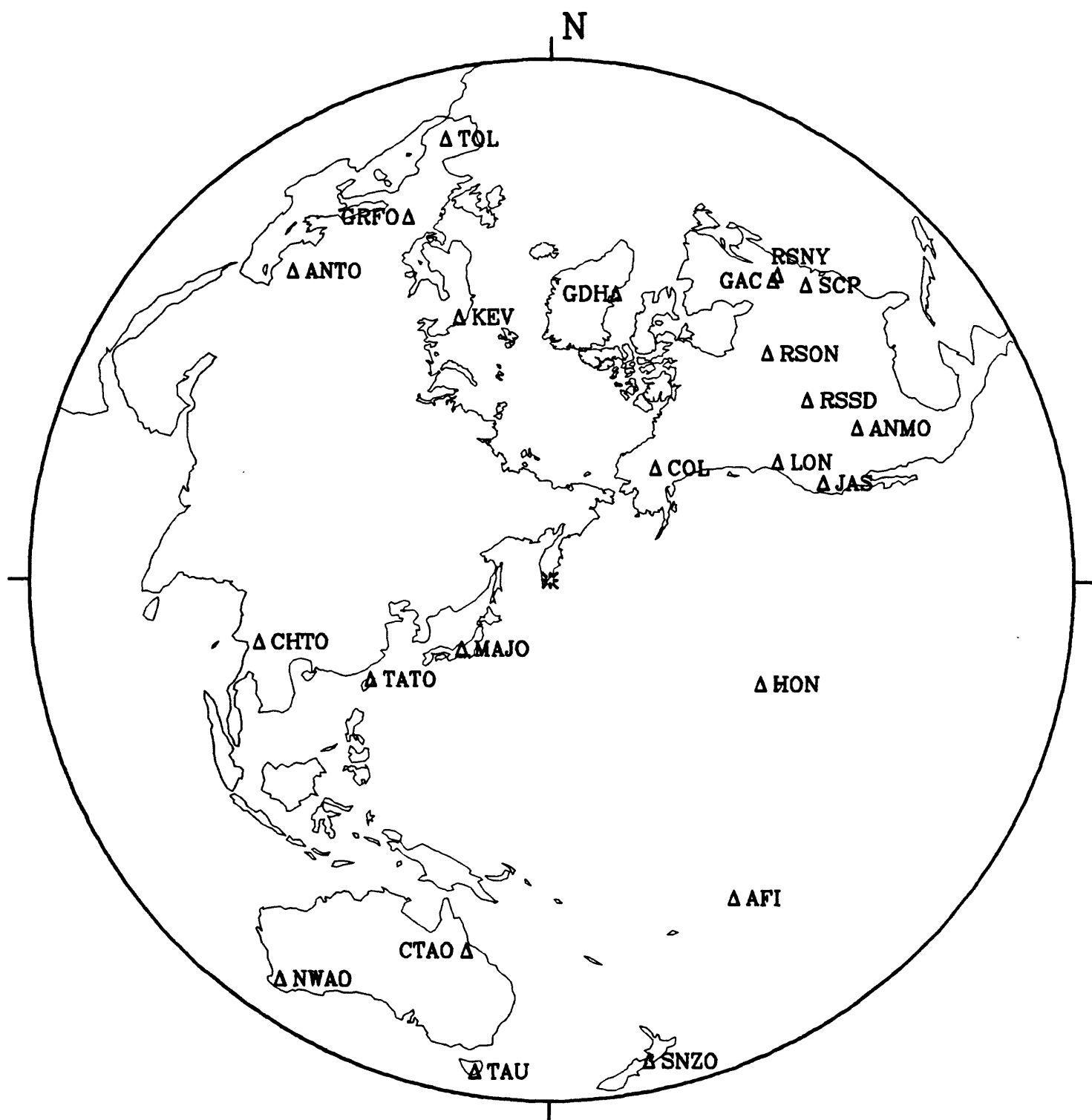
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LPZ

Southern Nevada $h=0.0$ $m_b=5.7$ $M_{sz}=4.7$ 

03 April 1985 08:18:07.06

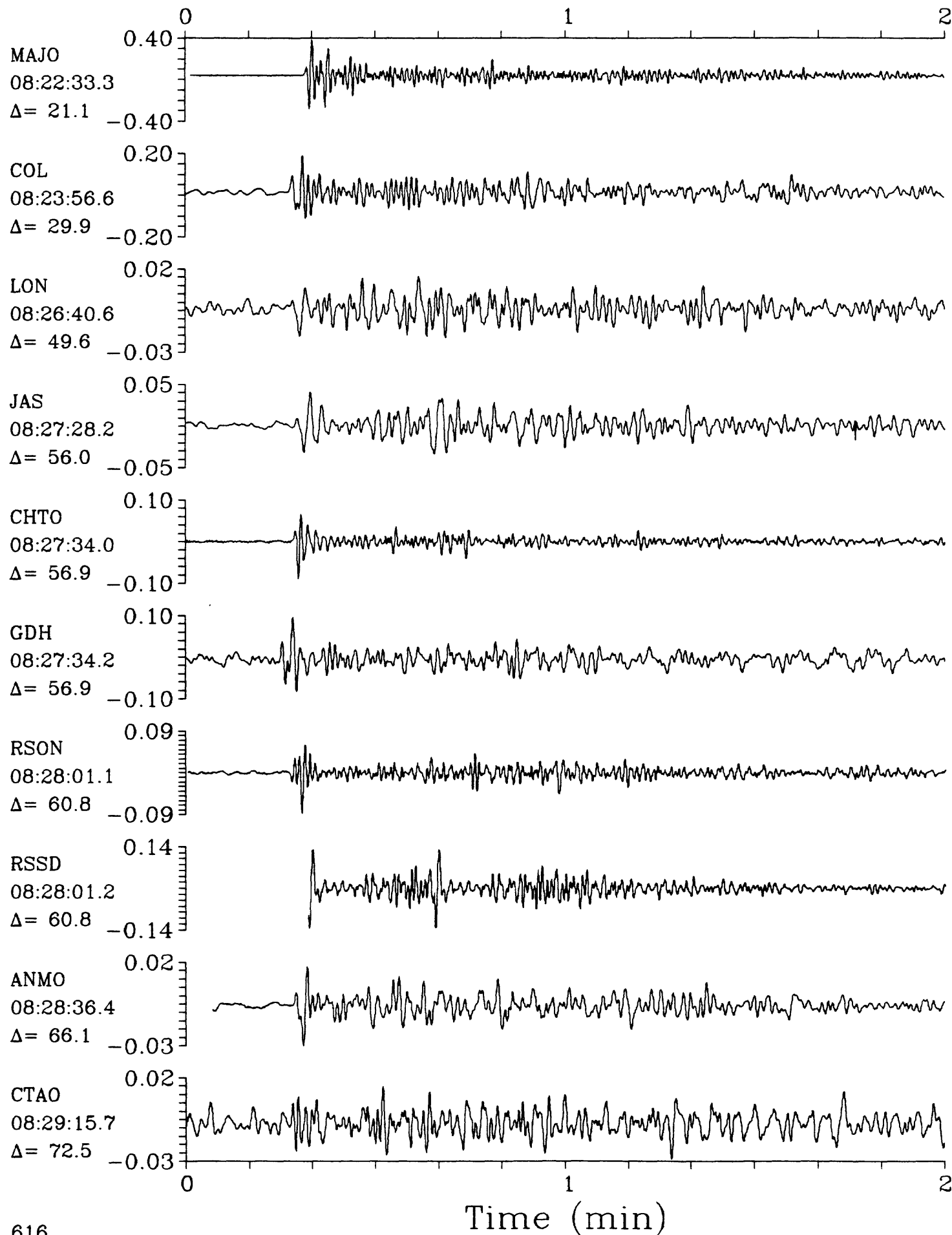
Near East Coast of Kamchatka



SPZ

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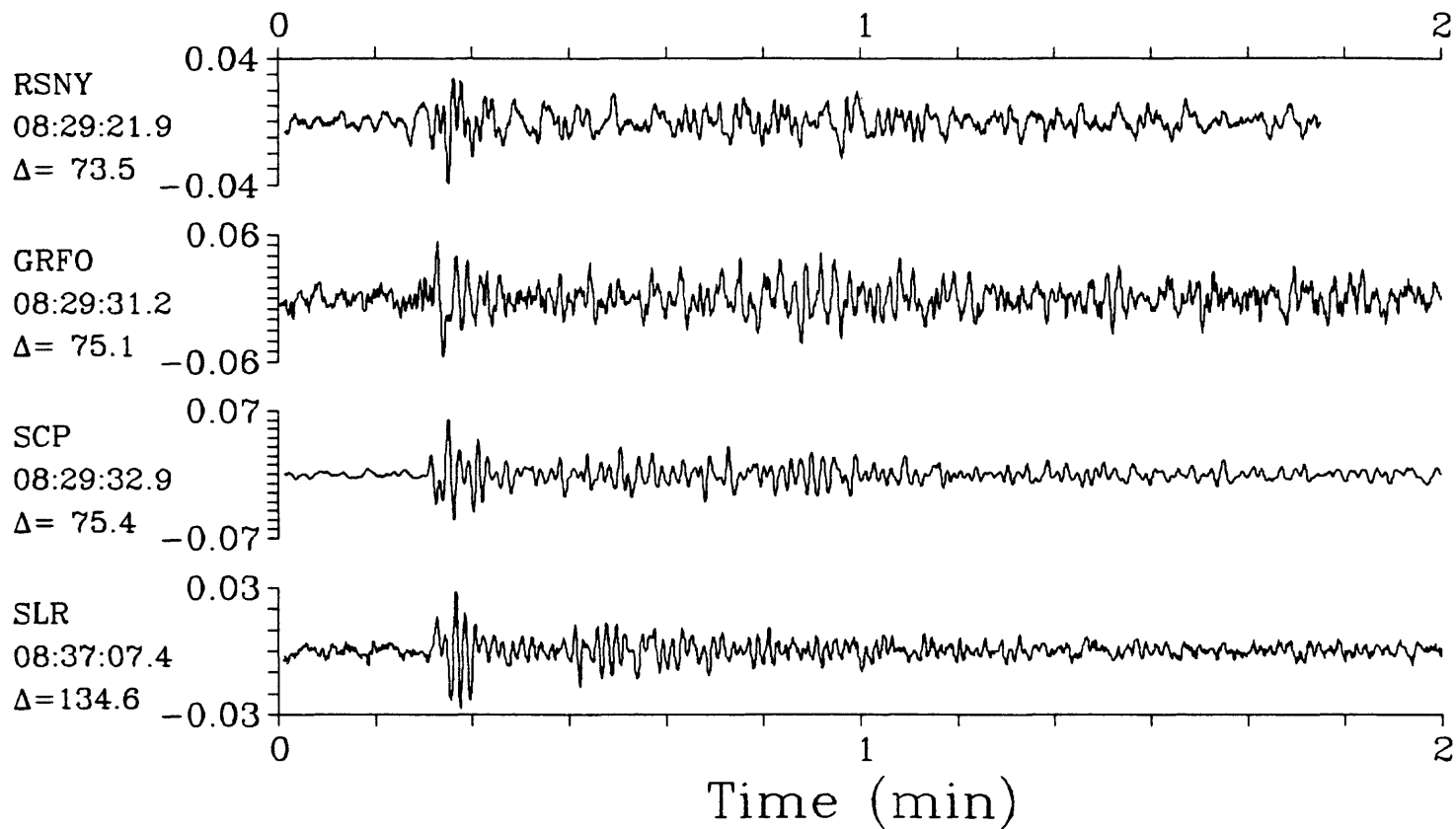
SPZ

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SPZ

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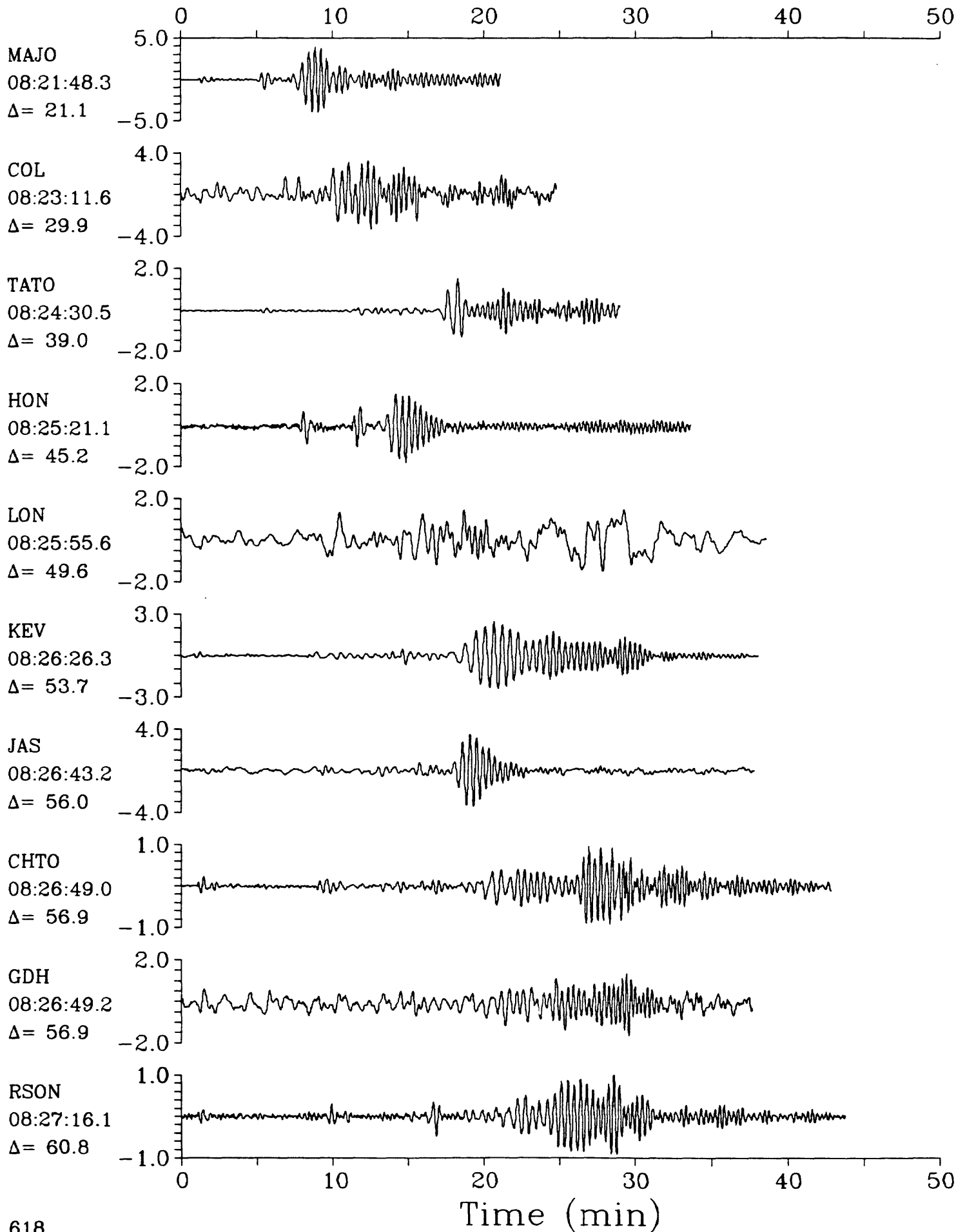
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Near East Coast of Kamchatka $h=33.9$ $m_b=5.5$ $M_{sz}=5.2$ 

LPZ

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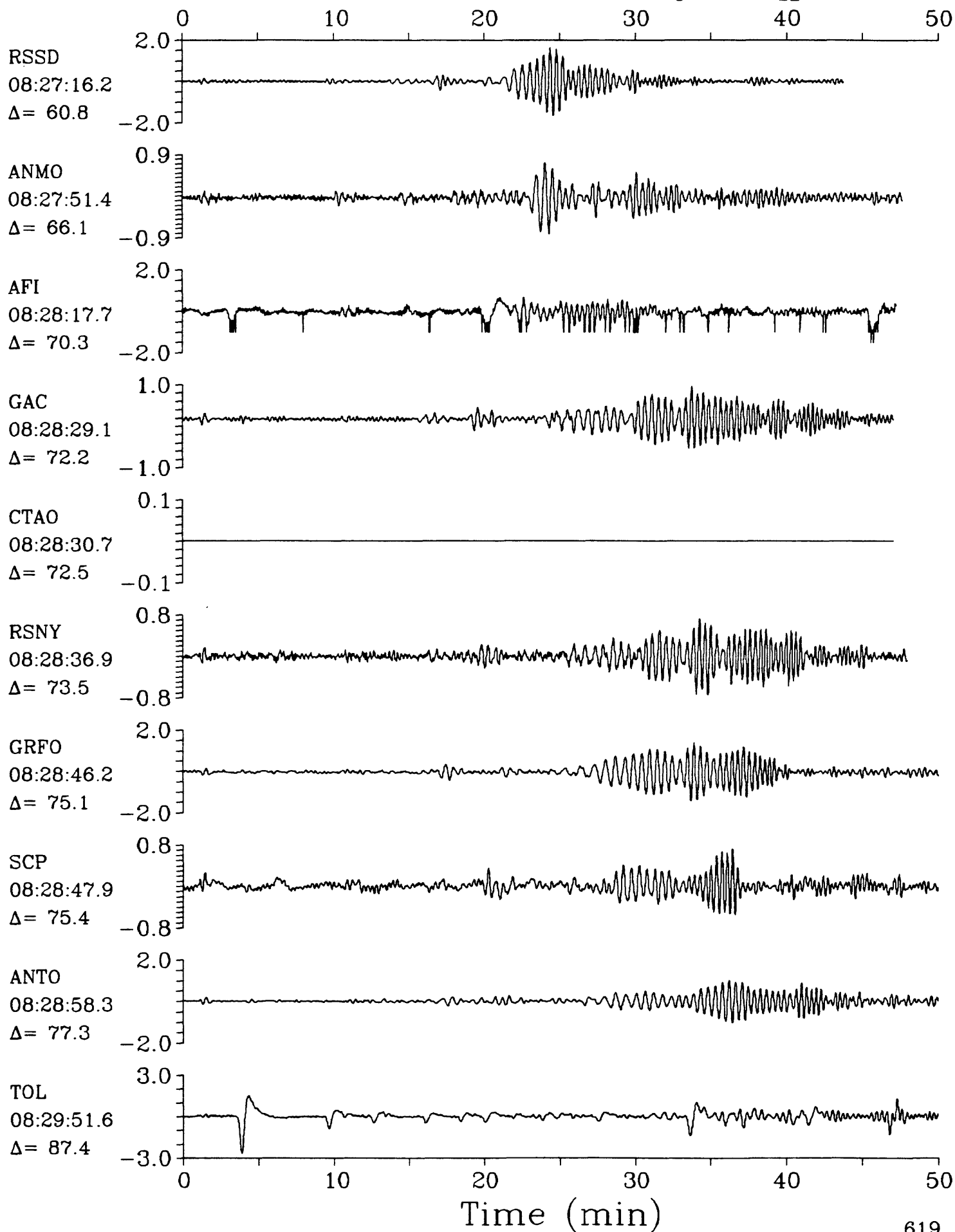
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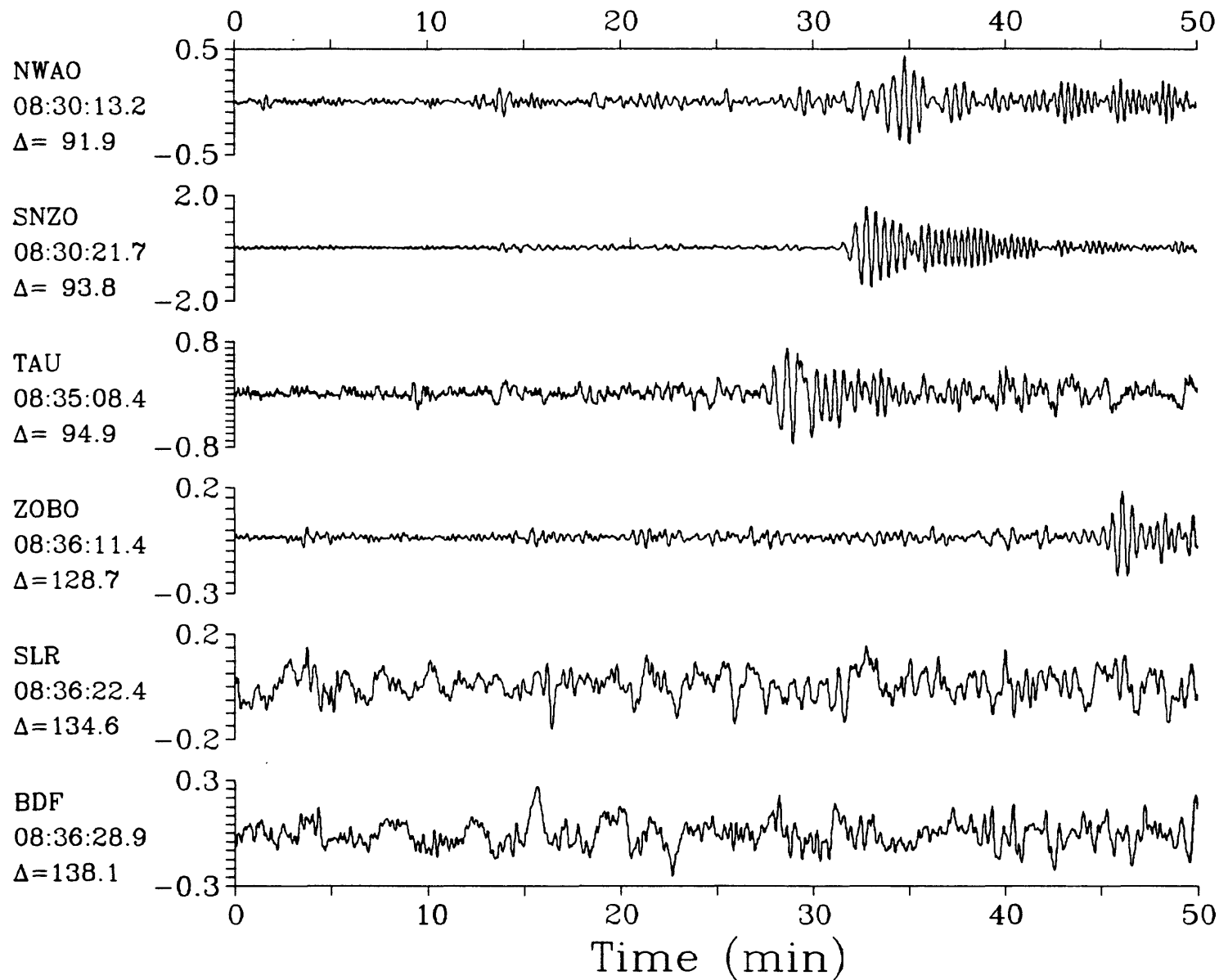
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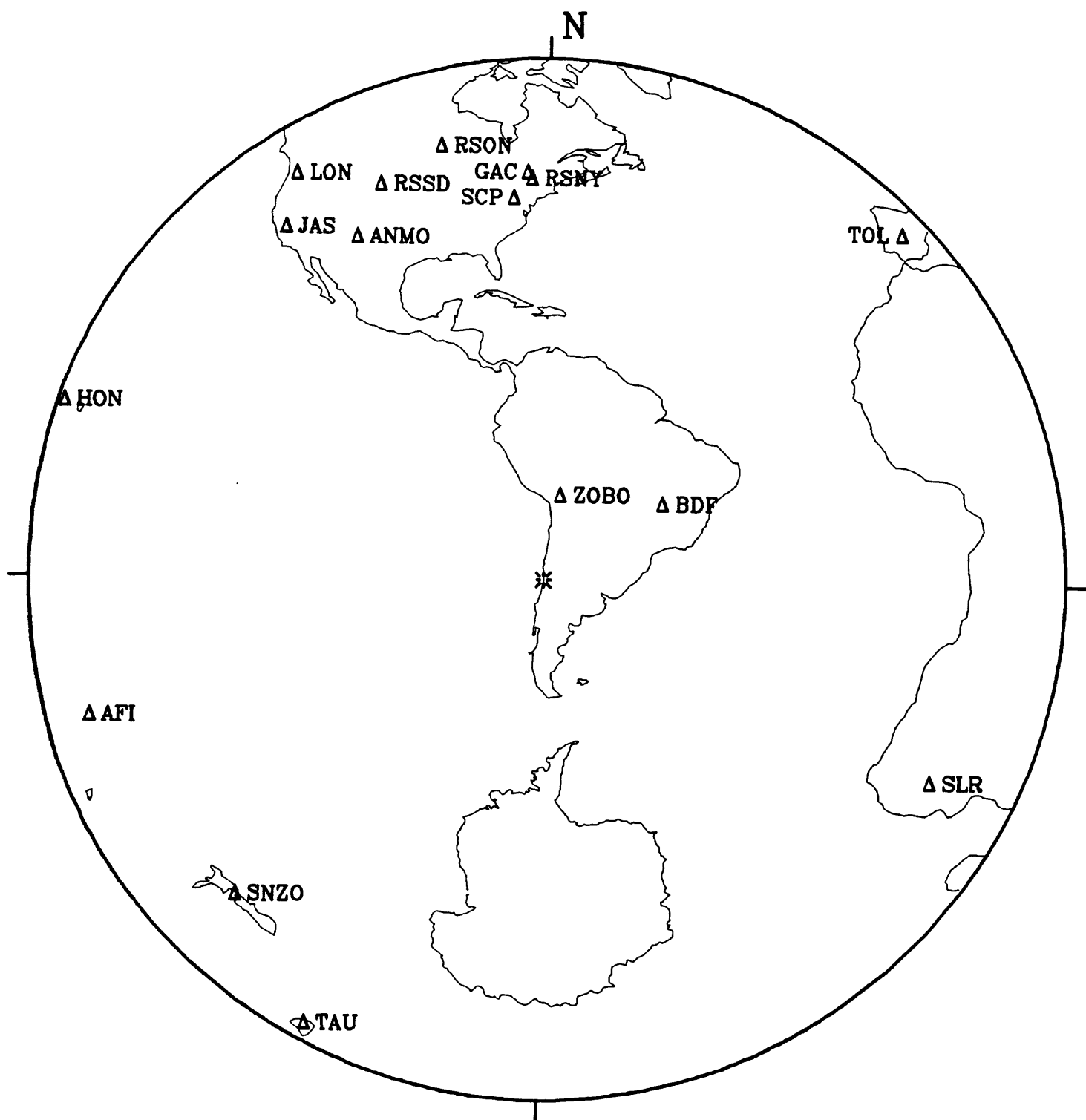
03 April 1985 08:18:07.06

LPZ

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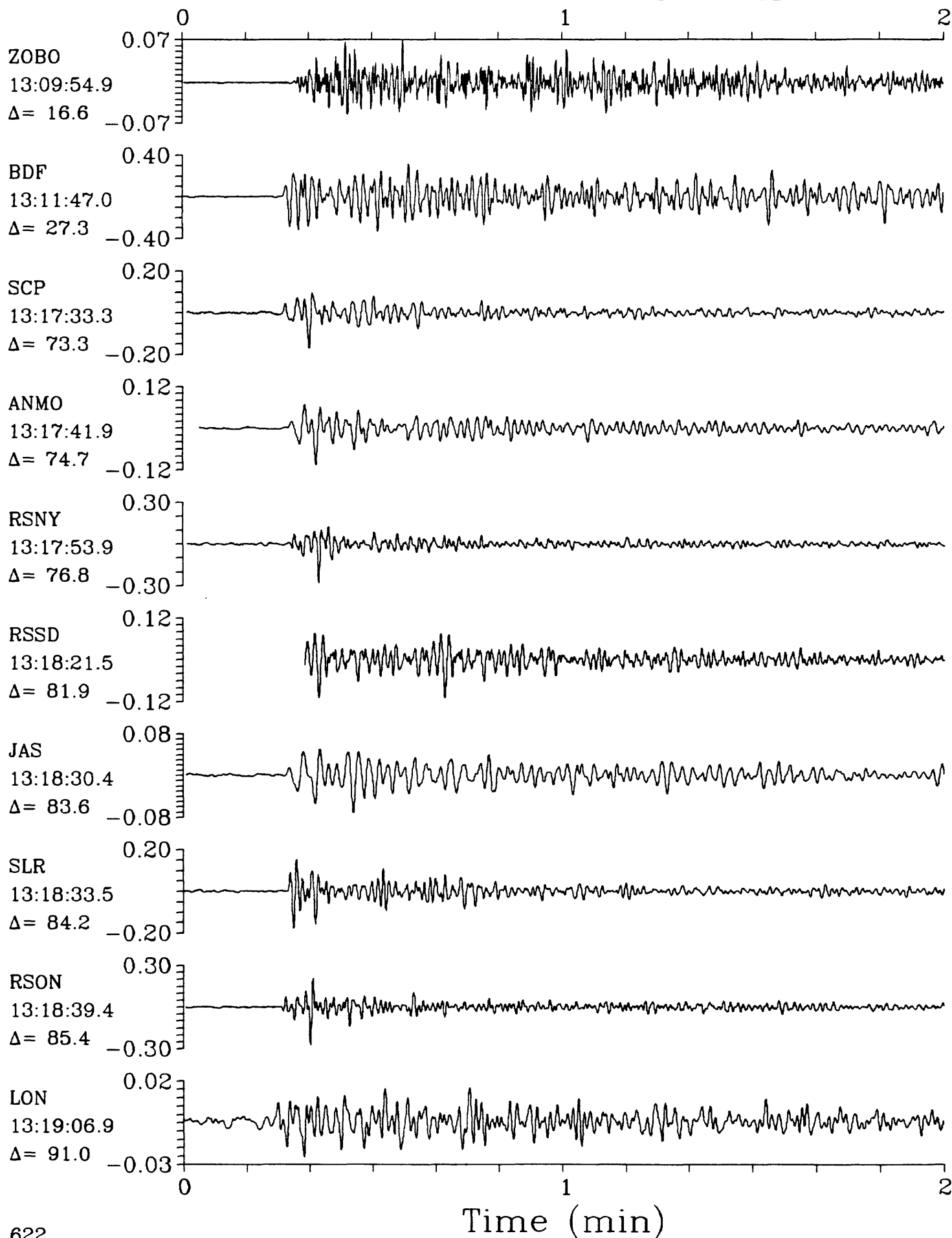
Near Coast of Central Chile



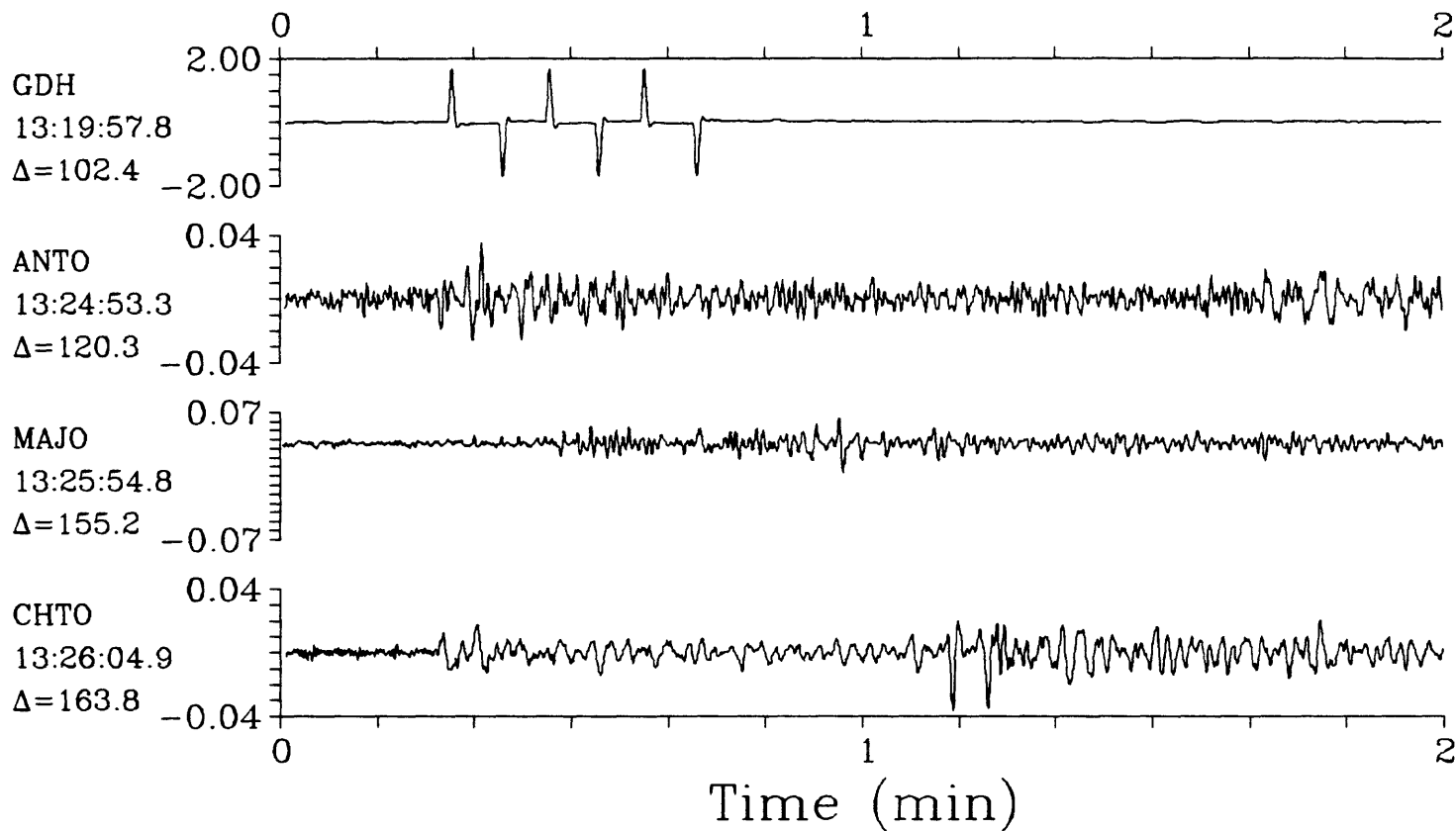
SPZ

03 April 1985 13:06:19.87

SPZ

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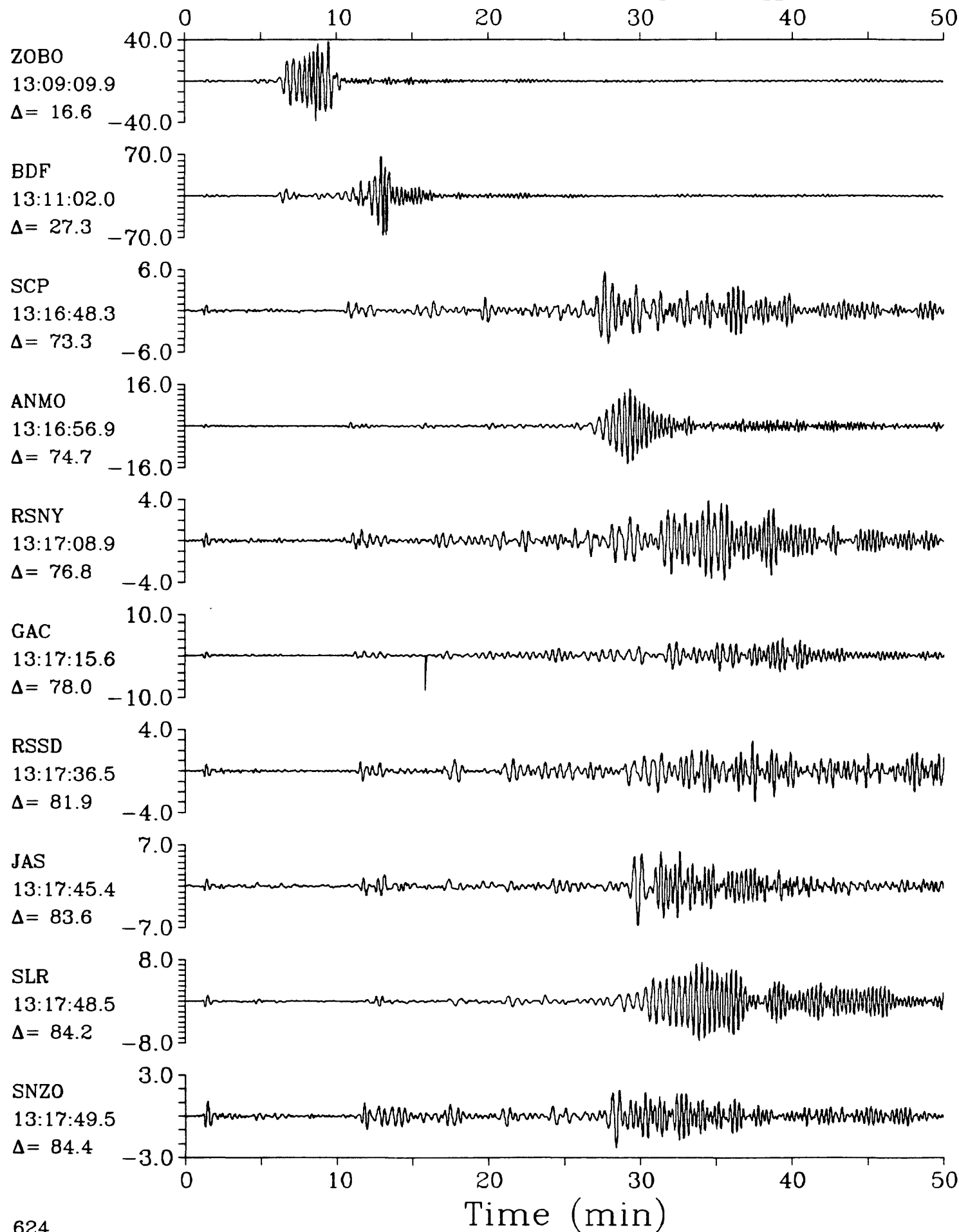
Near Coast of Central Chile $h=33.0$ $m_b=5.7$ $M_{sz}=6.1$



LPZ

03 April 1985 13:06:19.87

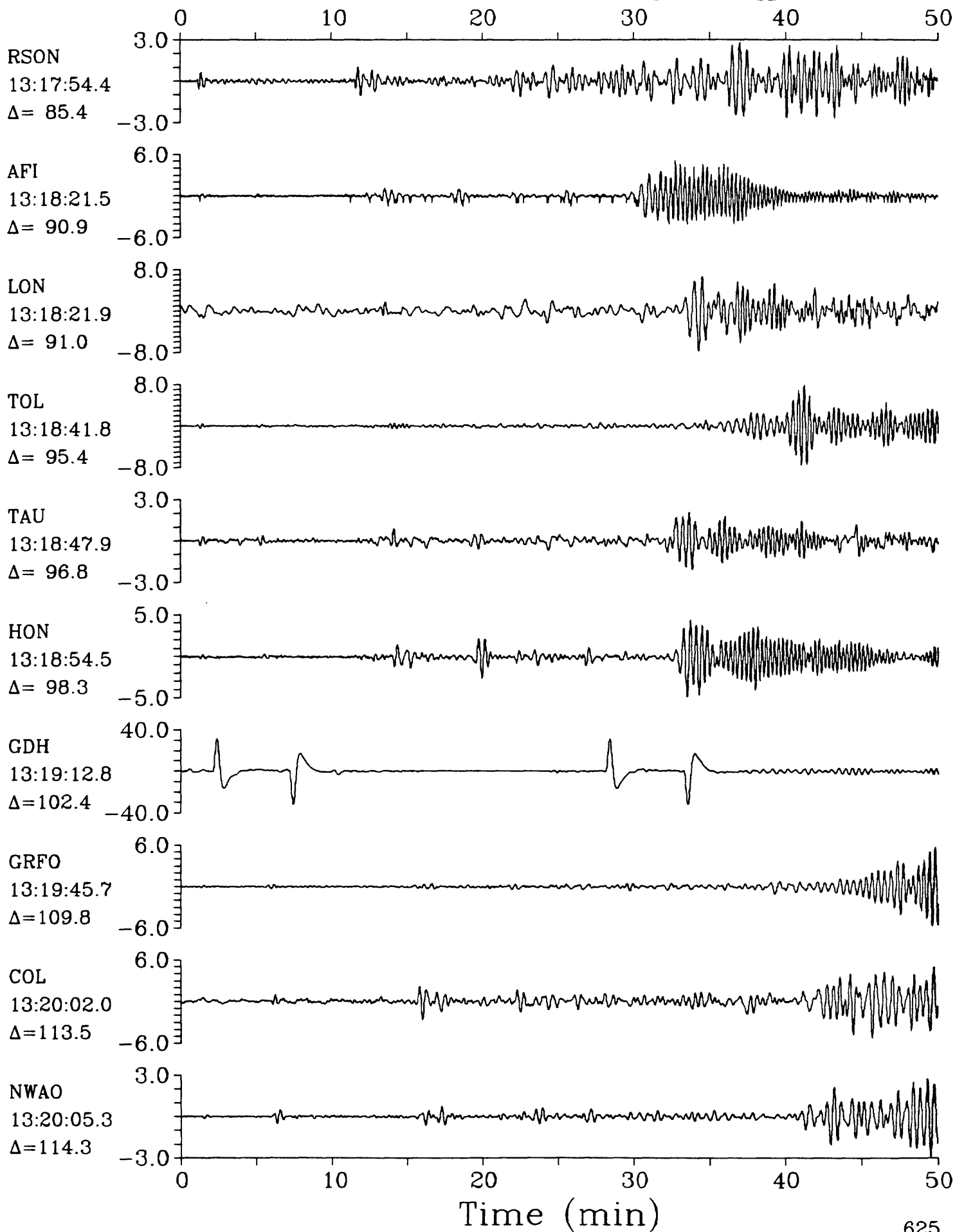
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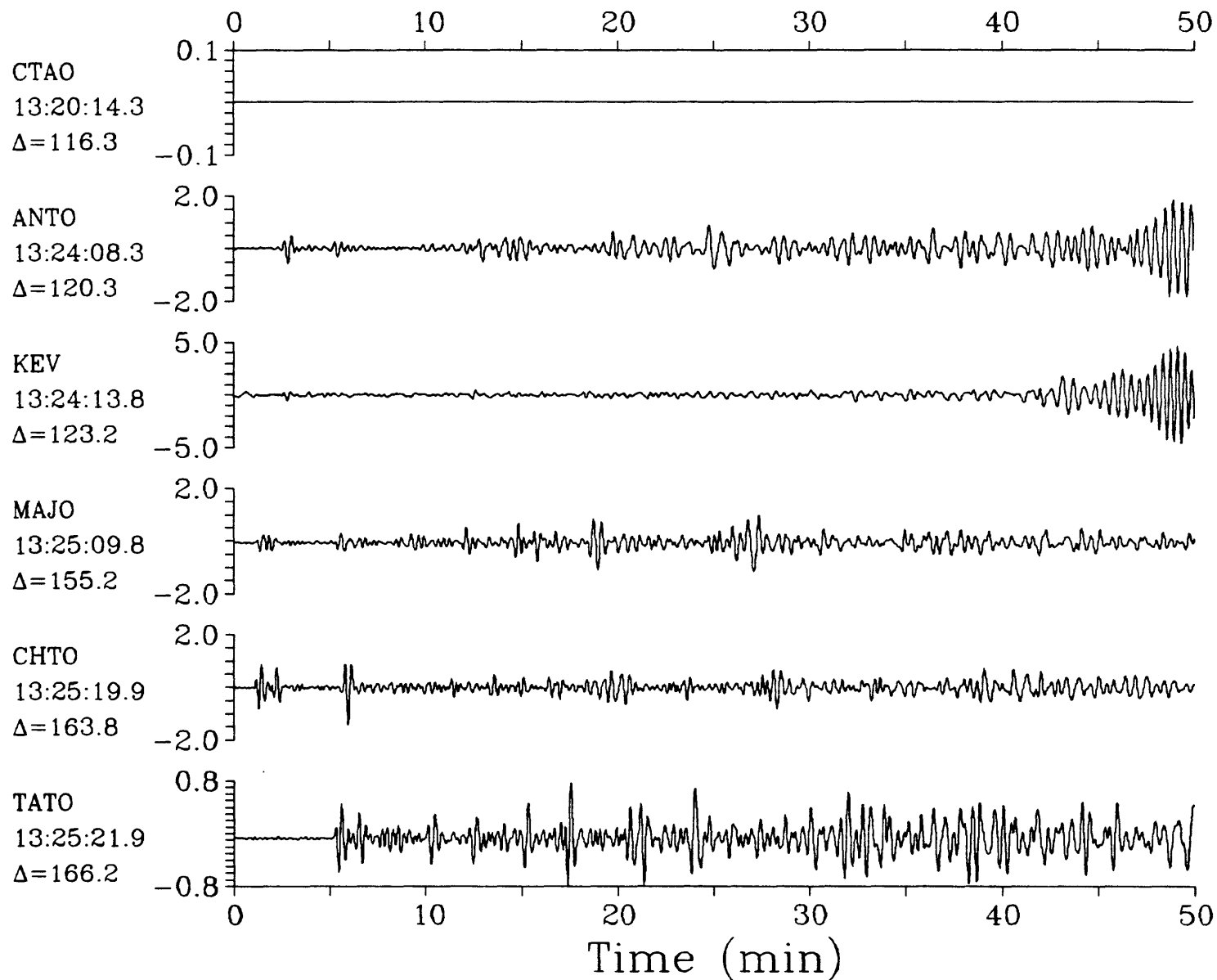
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LPZ

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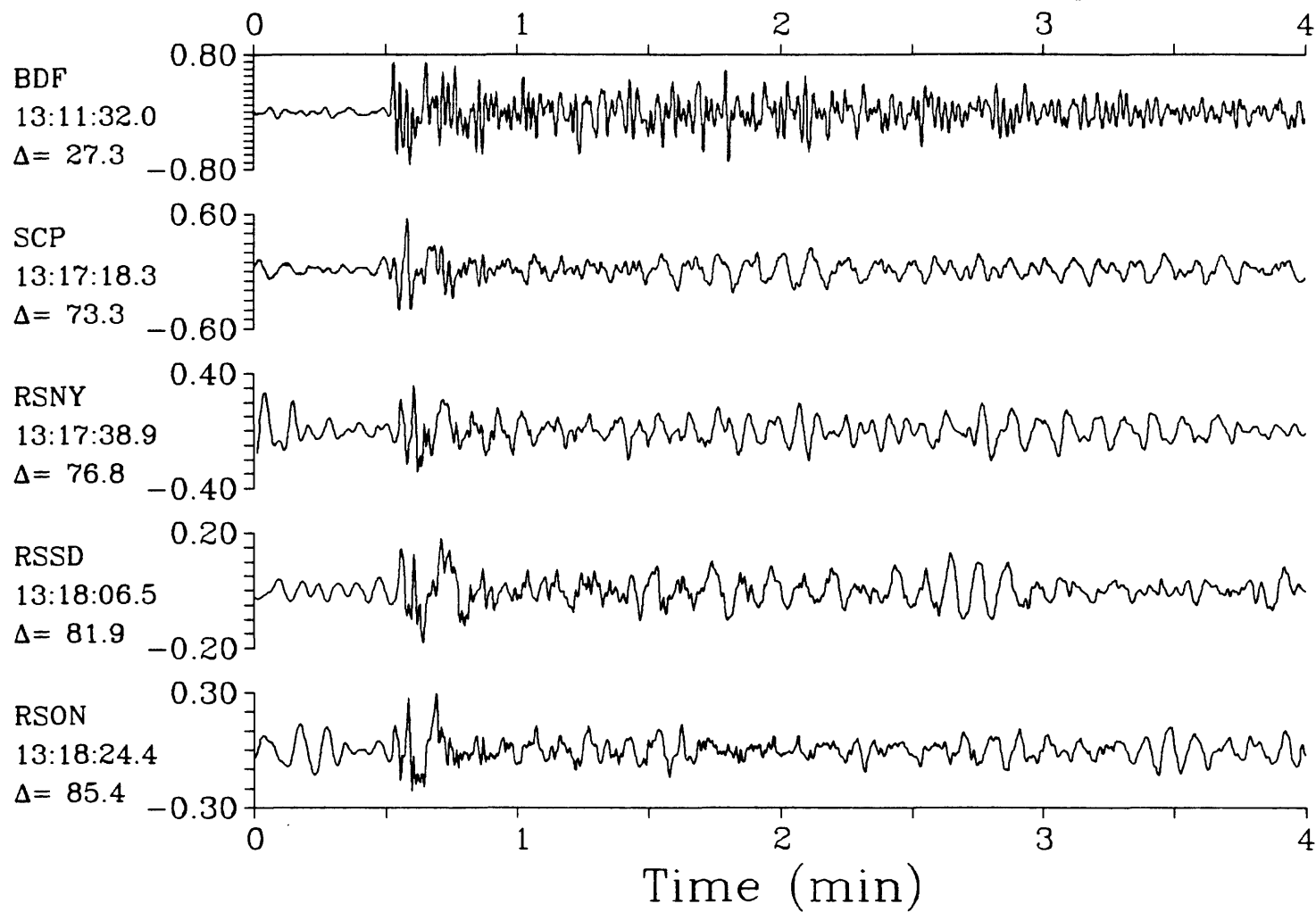
LPZ

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IPZ

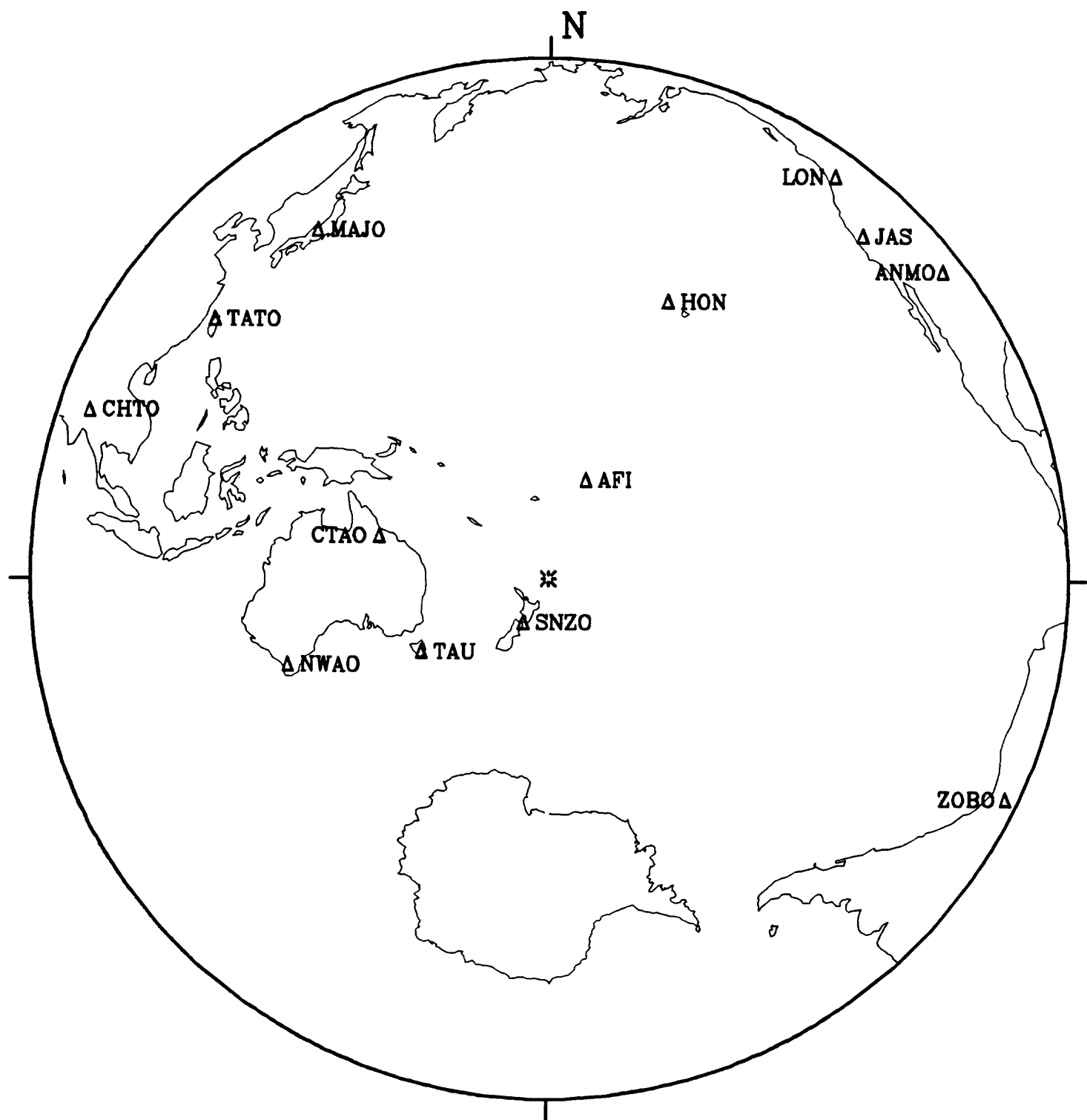
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IPZ

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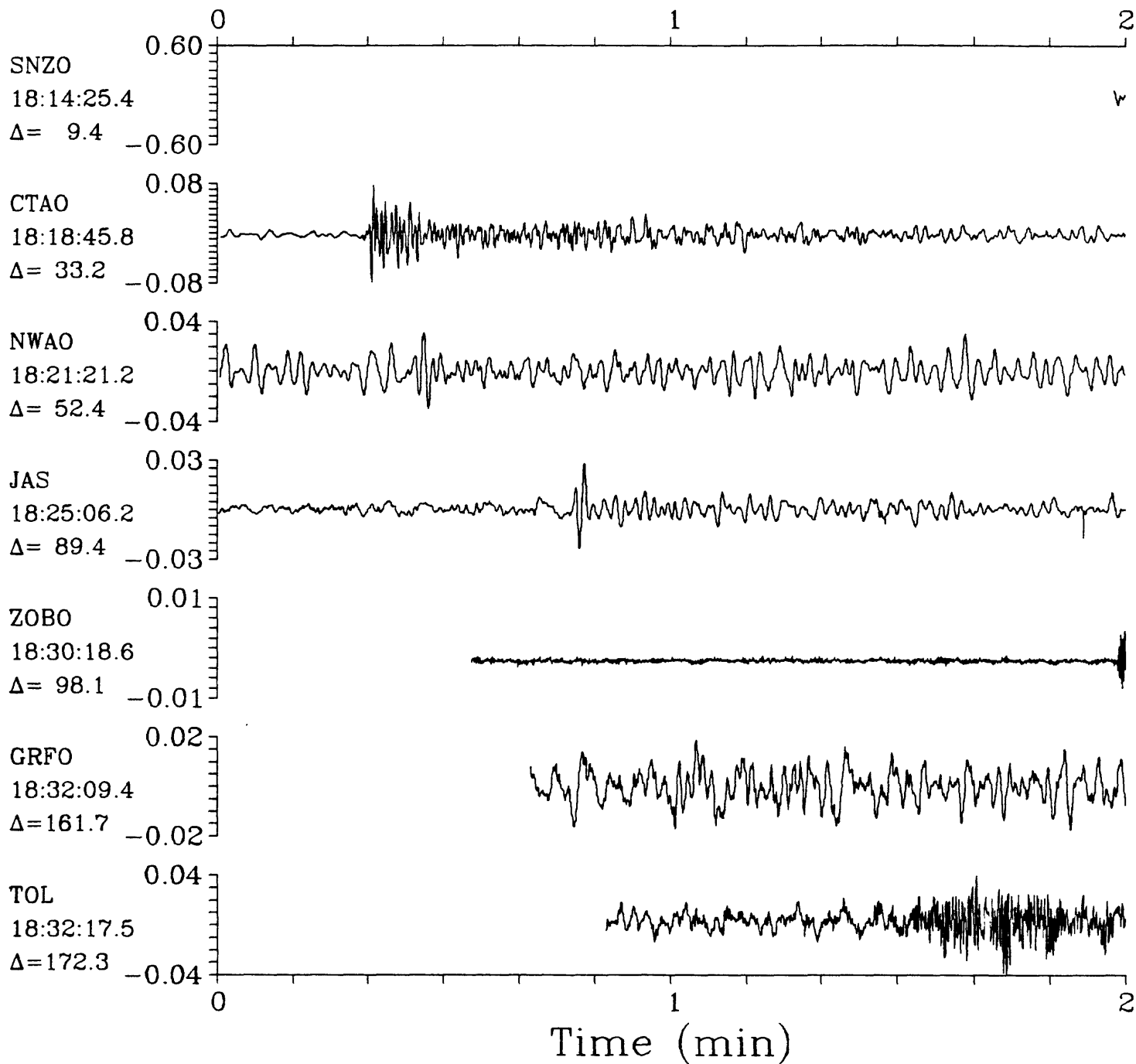
South of Kermadec Islands



SPZ

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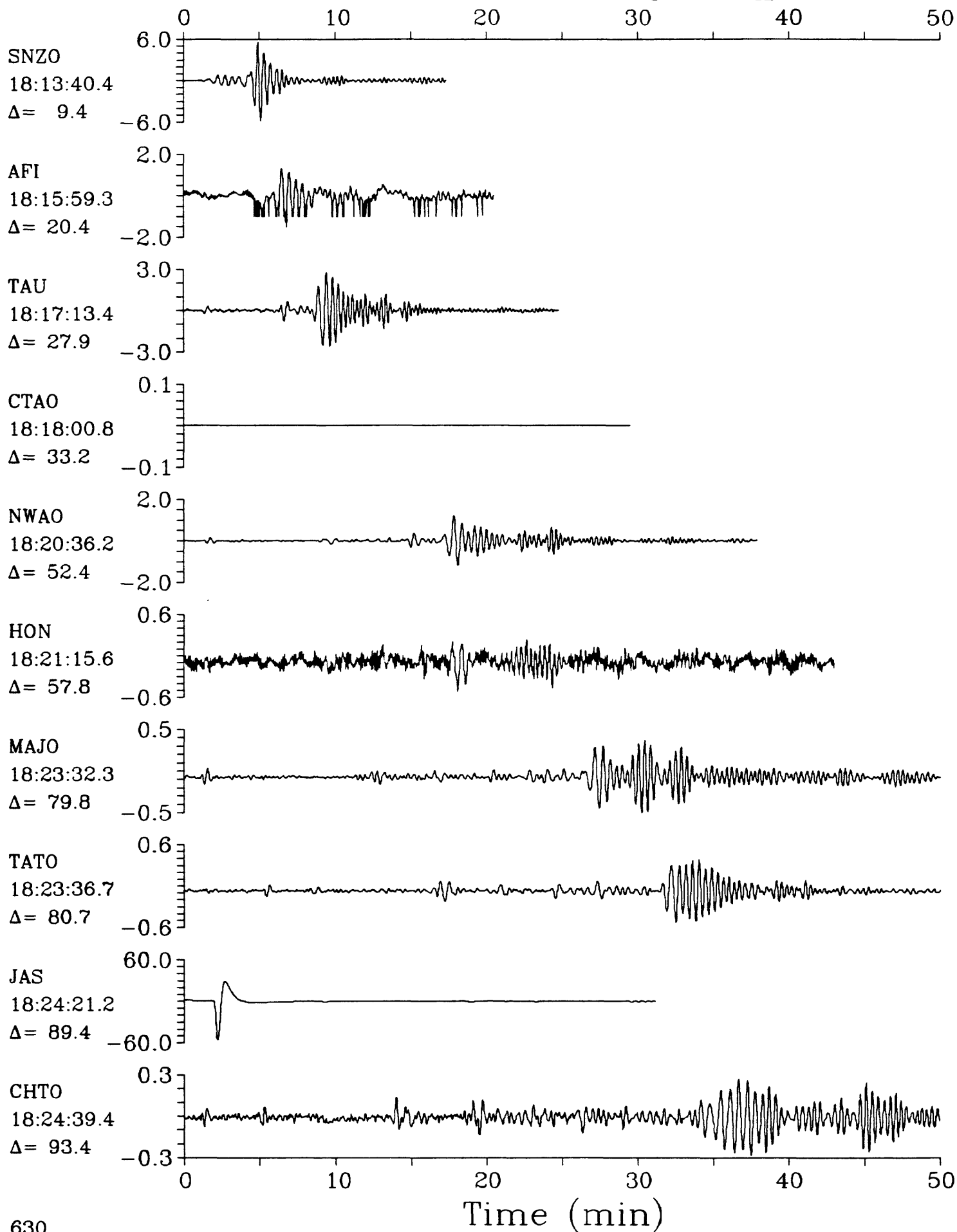
SPZ

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LPZ

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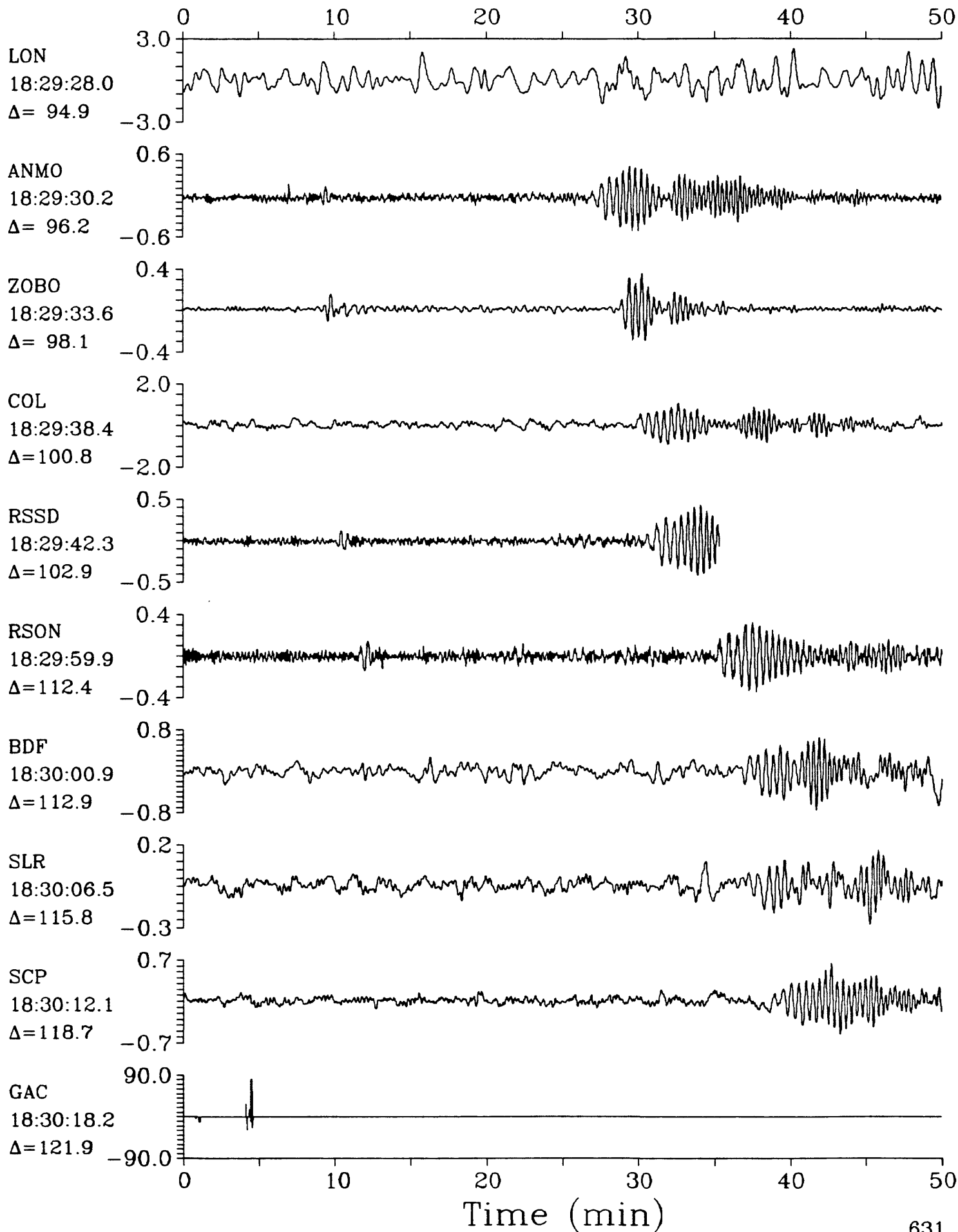
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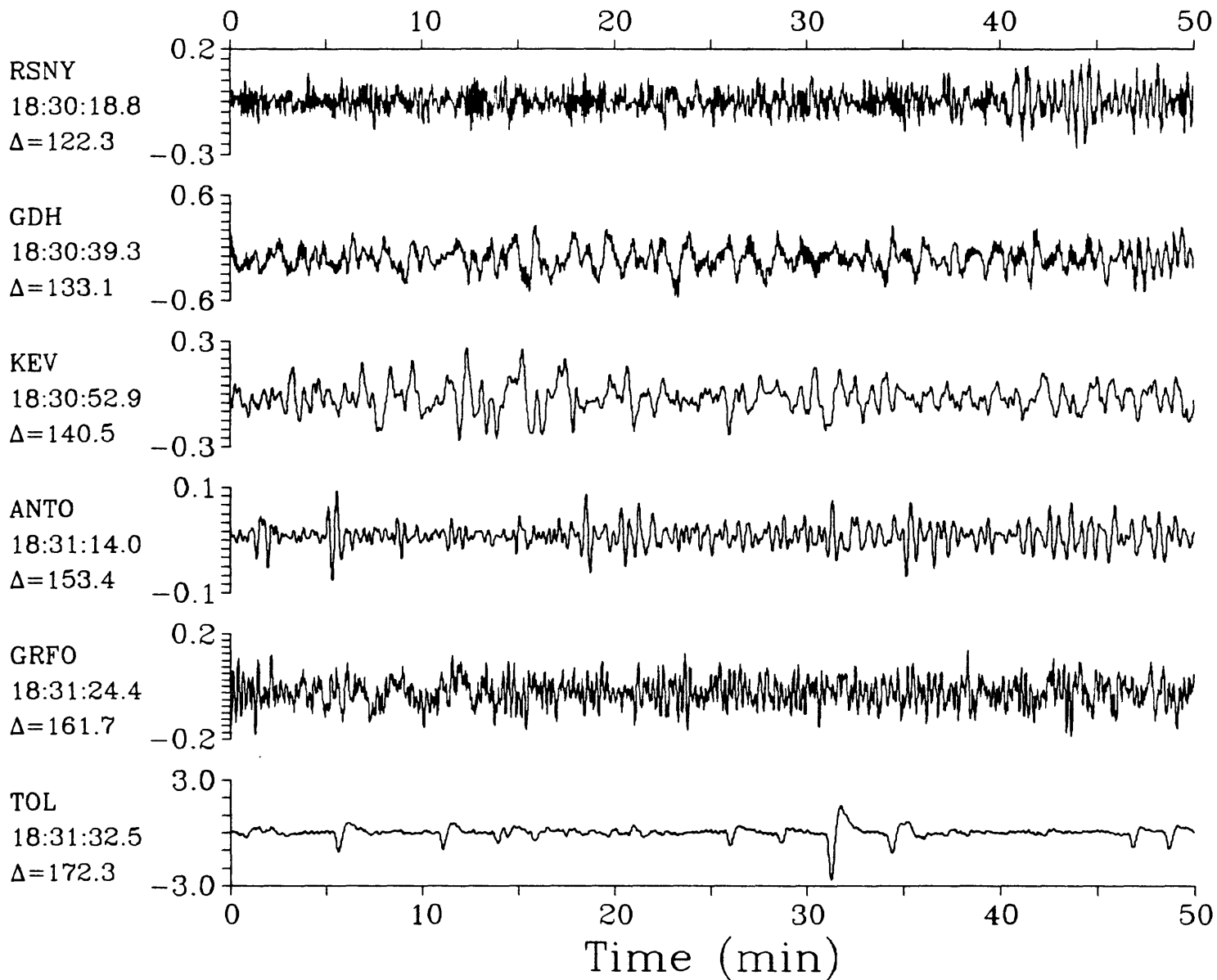
LPZ

South of Kermadec Islands $h=33.0$ $m_b=5.6$ $M_{sz}=5.3$ 

LPZ

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LPZ

South of Kermadec Islands $h=33.0$ $m_b=5.6$ $M_{sz}=5.3$ 

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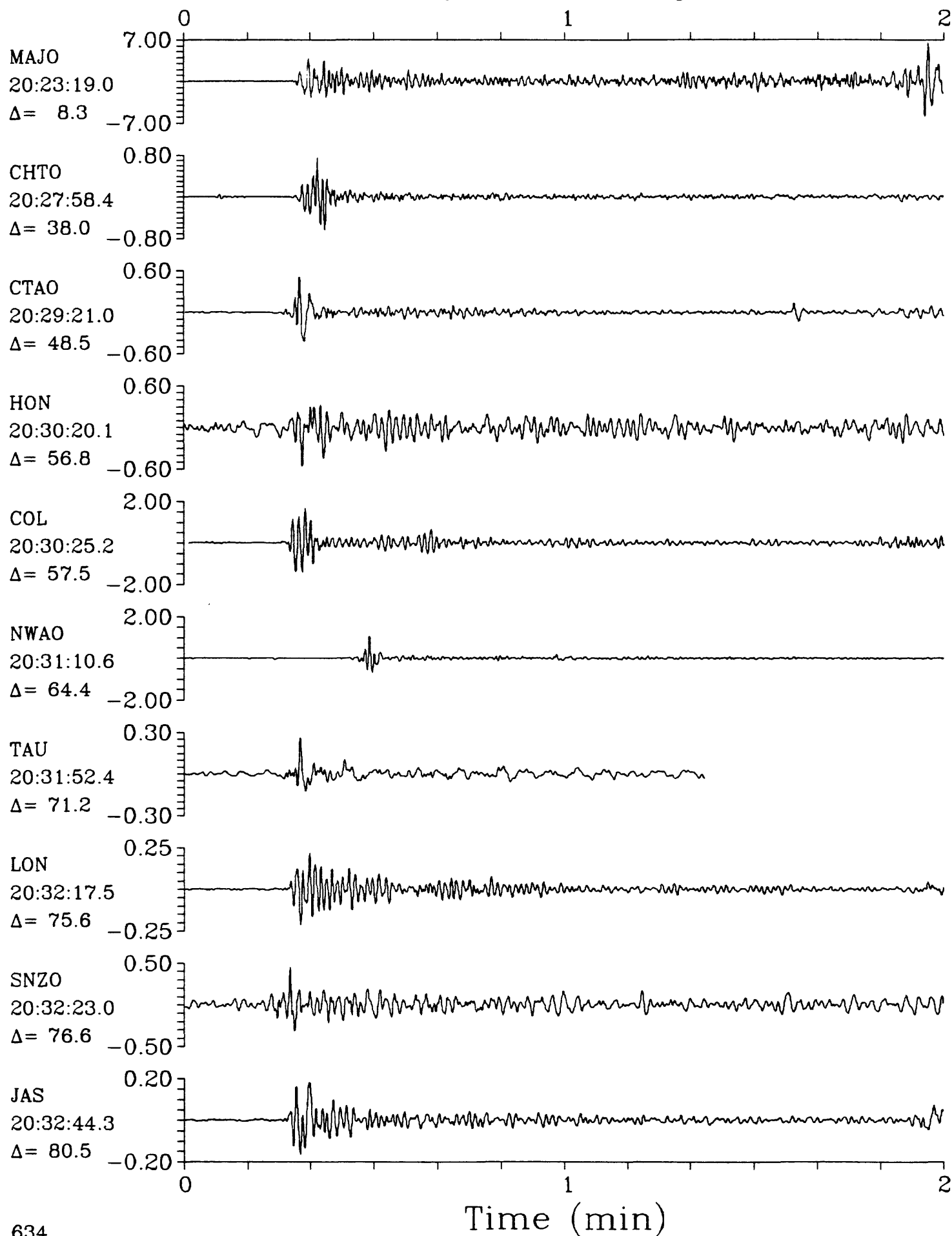
Bonin Islands Region



SPZ

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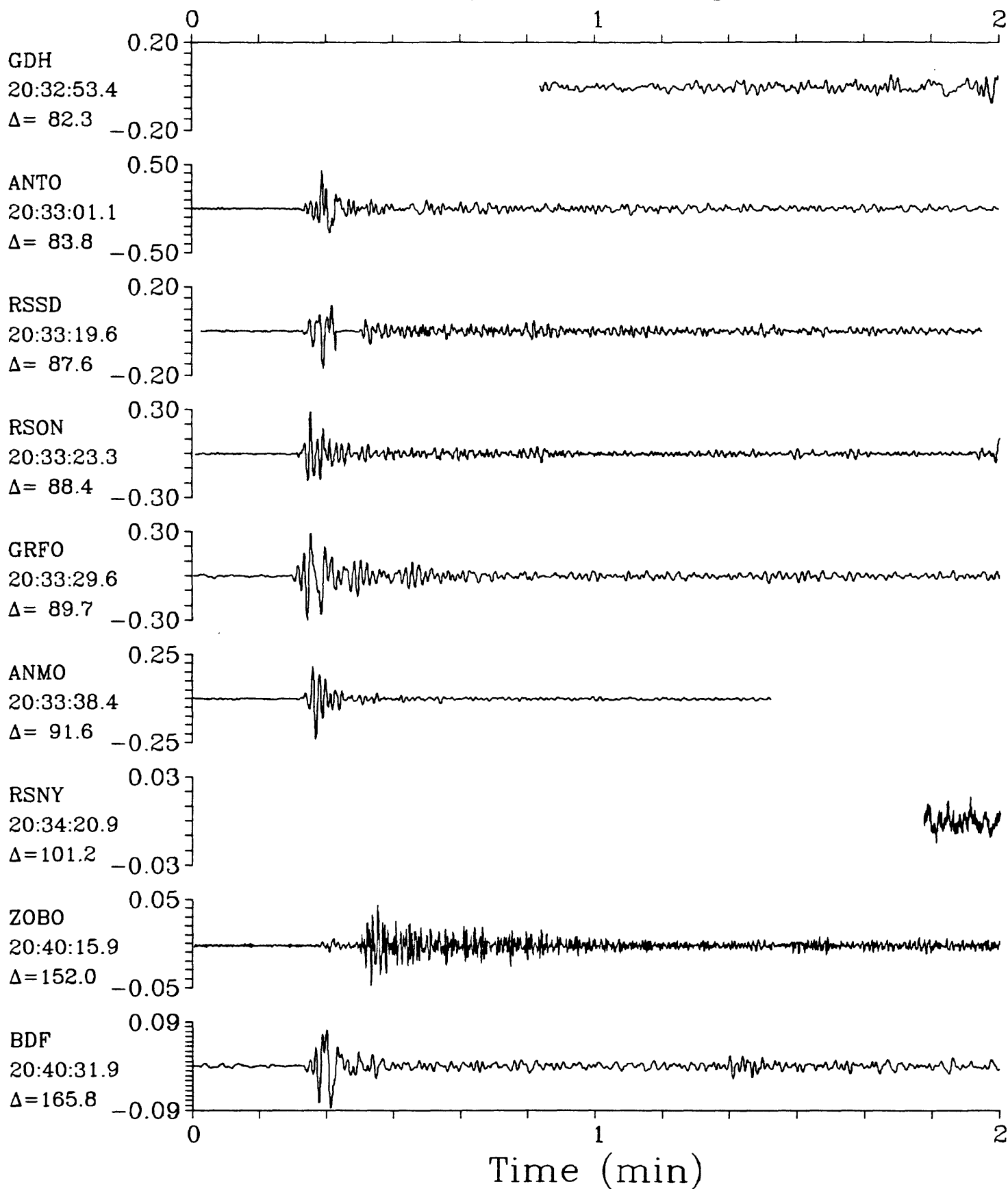
SPZ



SPZ

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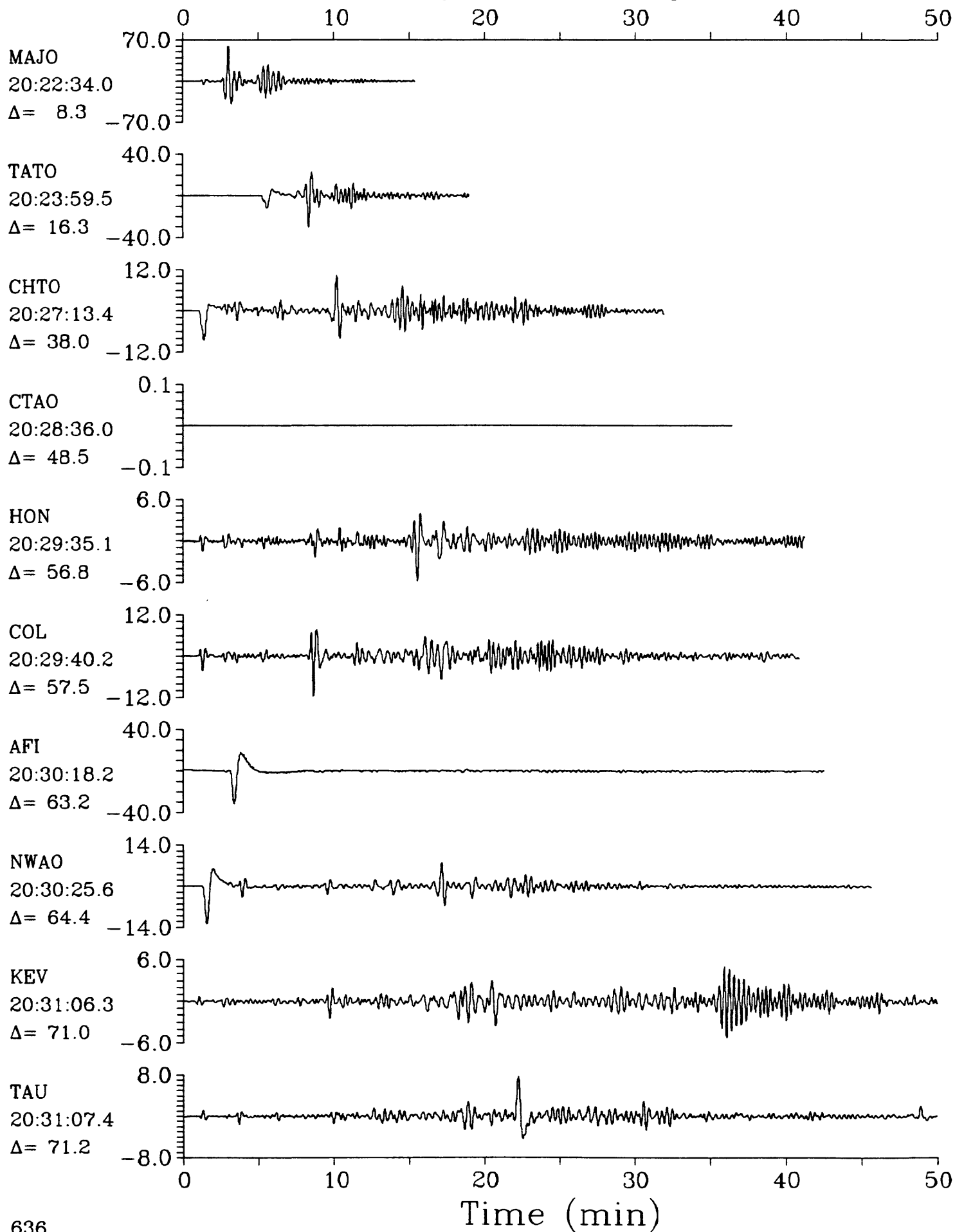
SPZ

Bonin Islands Region $h=461.0$ $m_b=5.9$ 

LPZ

03 April 1985 20:21:35.64

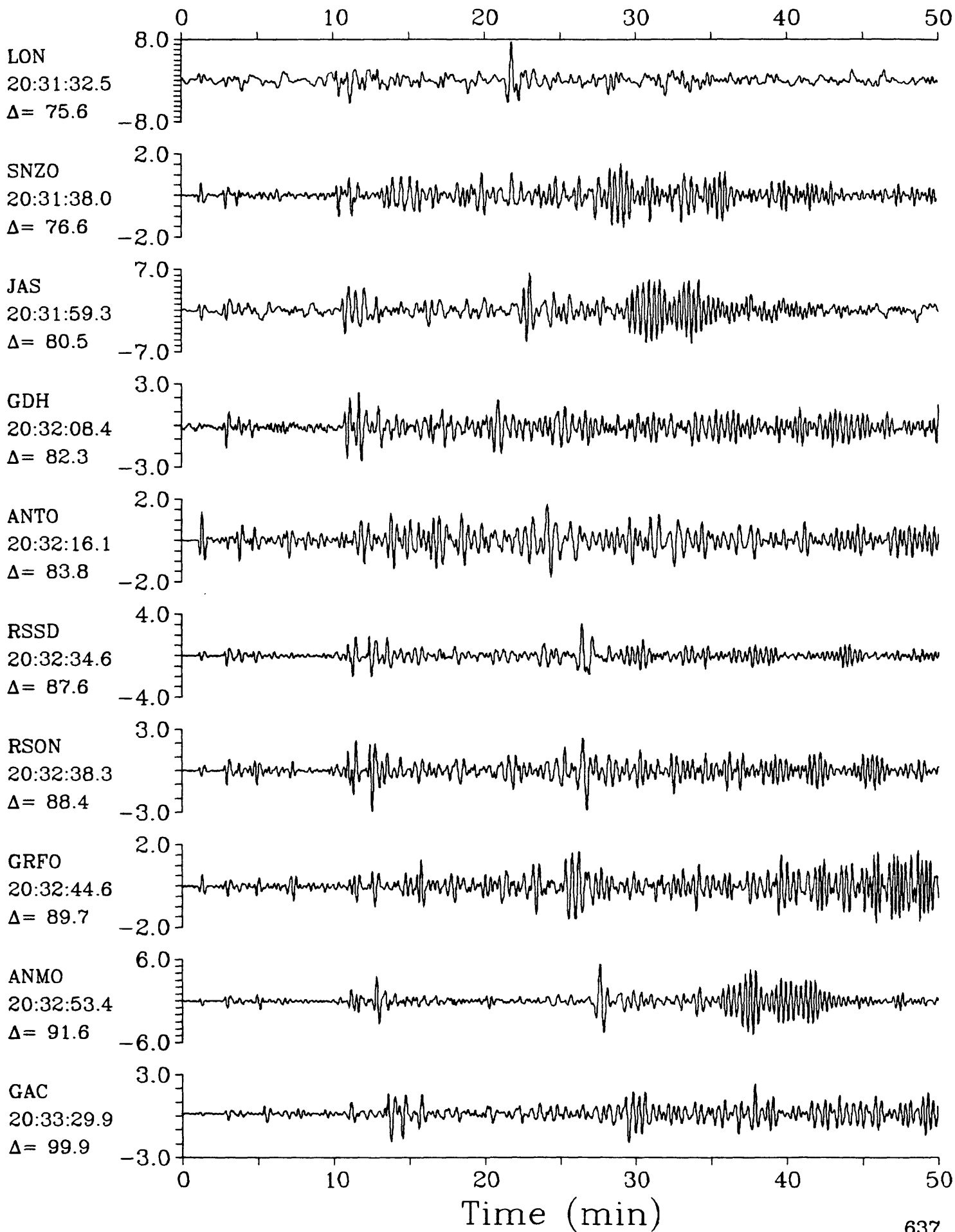
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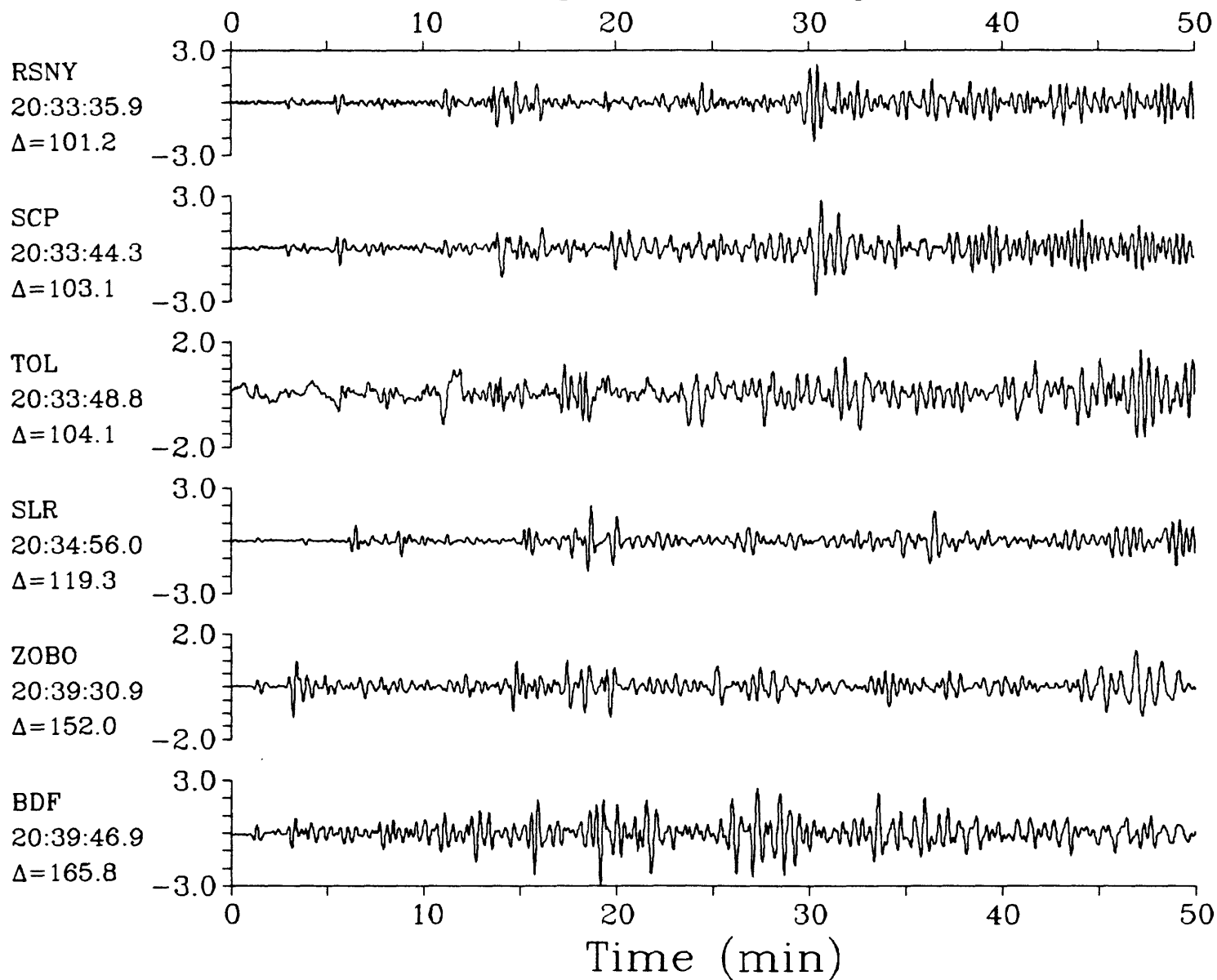
Bonin Islands Region $h=461.0$ $m_b=5.9$ 

LPZ

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LPZ

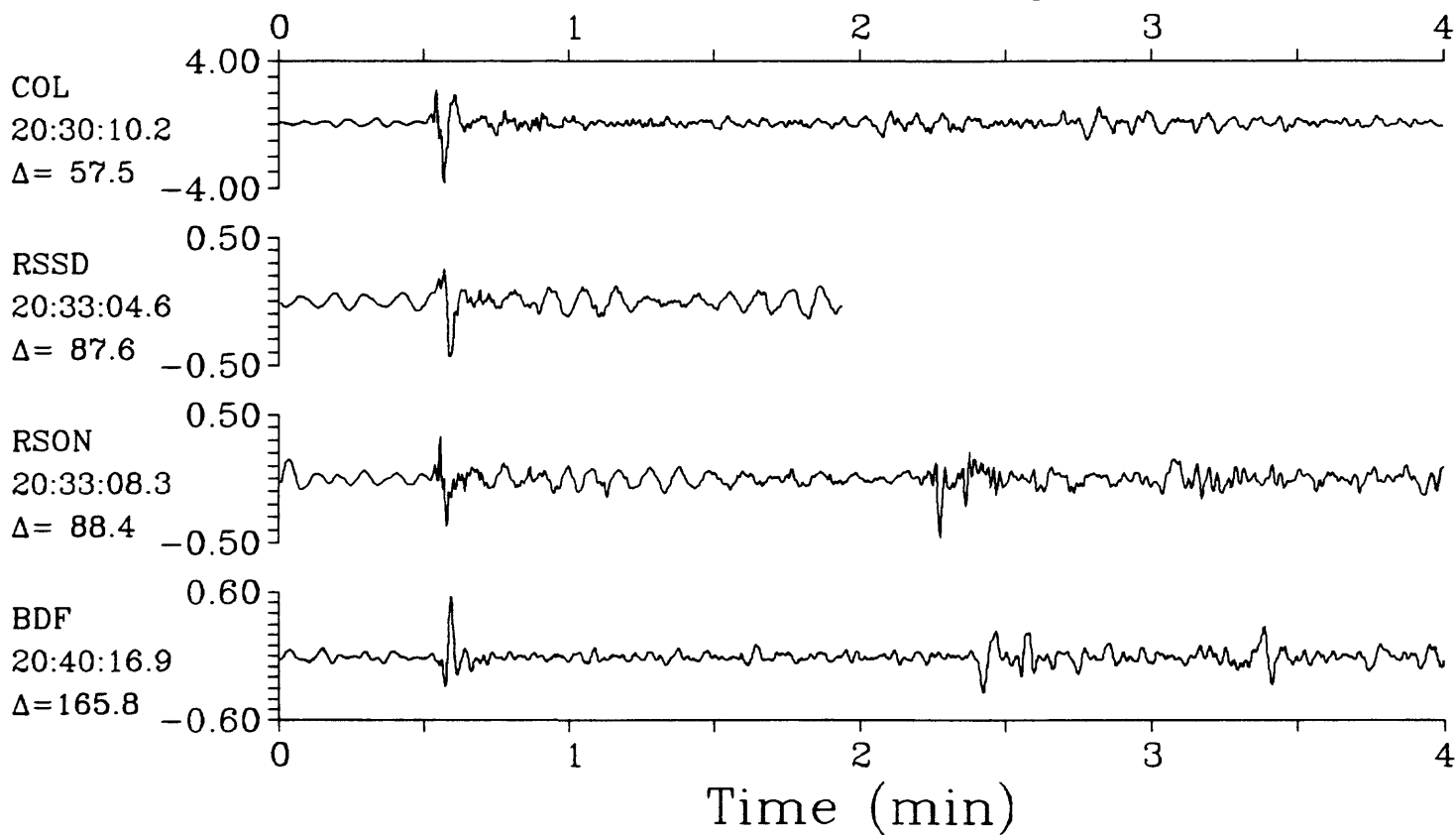
Bonin Islands Region $h=461.0$ $m_b=5.9$ 

Bonin Islands Region $h=461.0$ $m_b=5.9$ 

IPZ

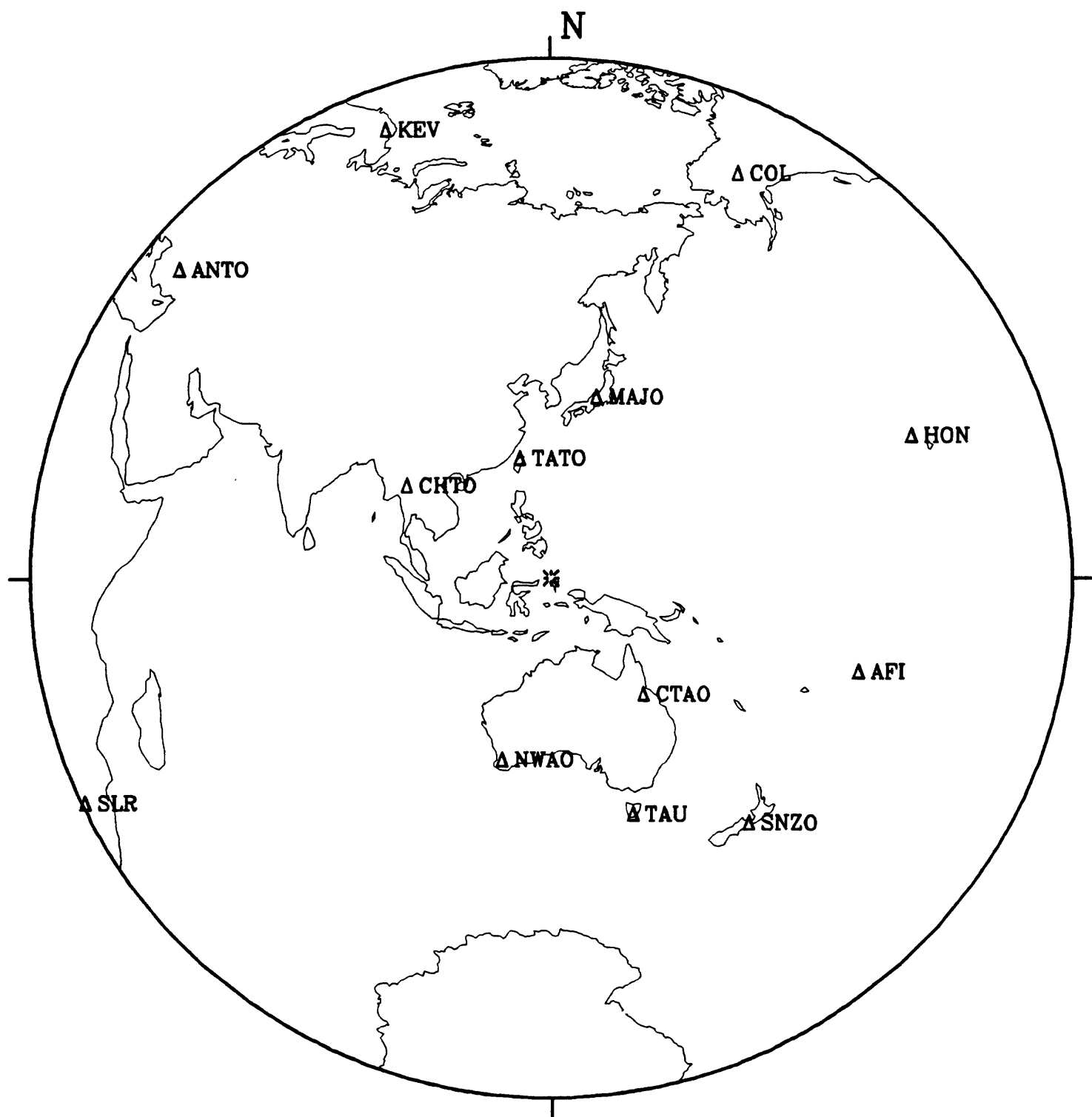
03 April 1985 20:21:35.64

IPZ

Bonin Islands Region $h=461.0$ $m_b=5.9$ 

05 April 1985 13:00:22.51

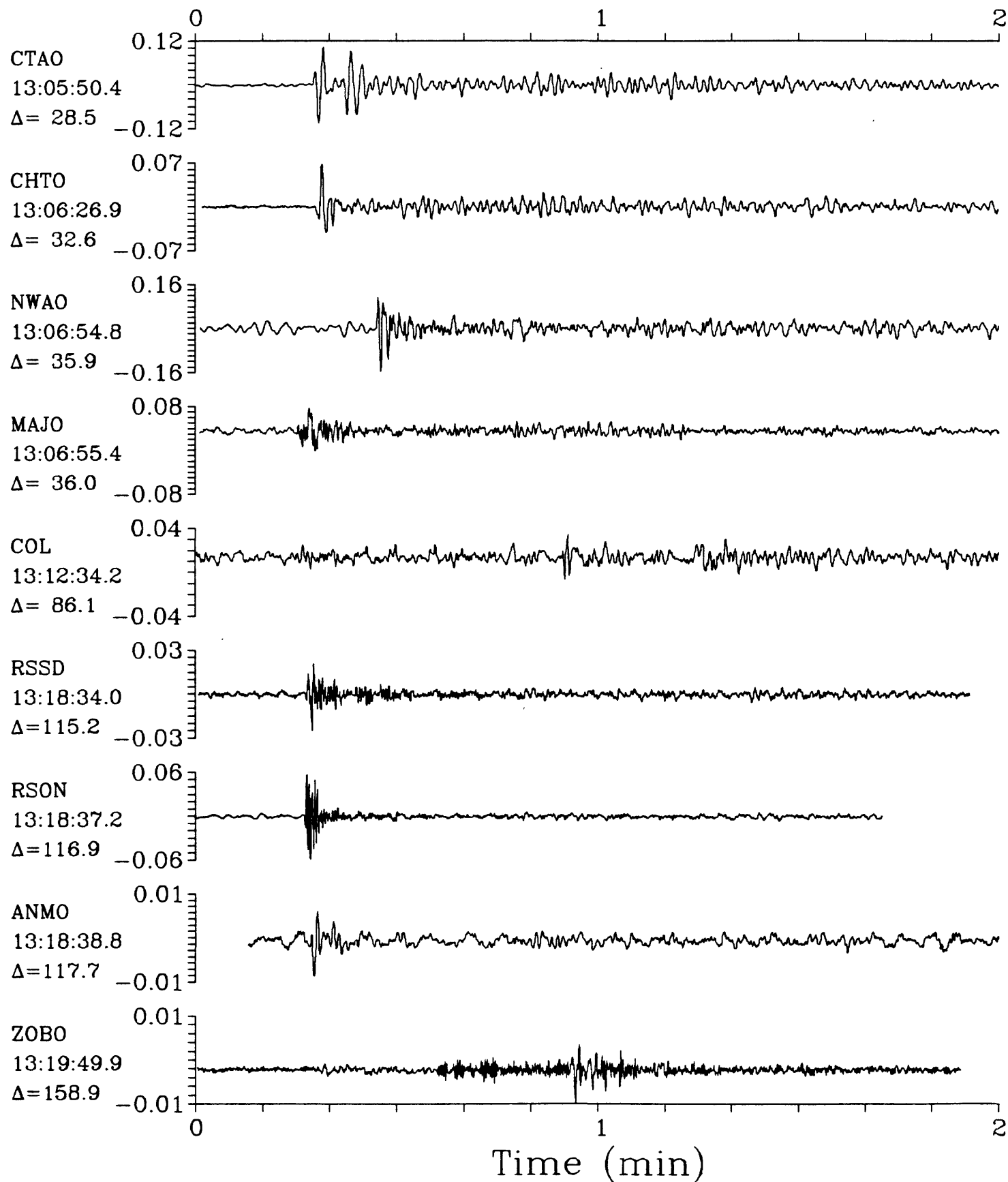
Halmahera



SPZ

05 April 1985 13:00:22.51
Halmahera $h=132.2$ $m_b=5.5$

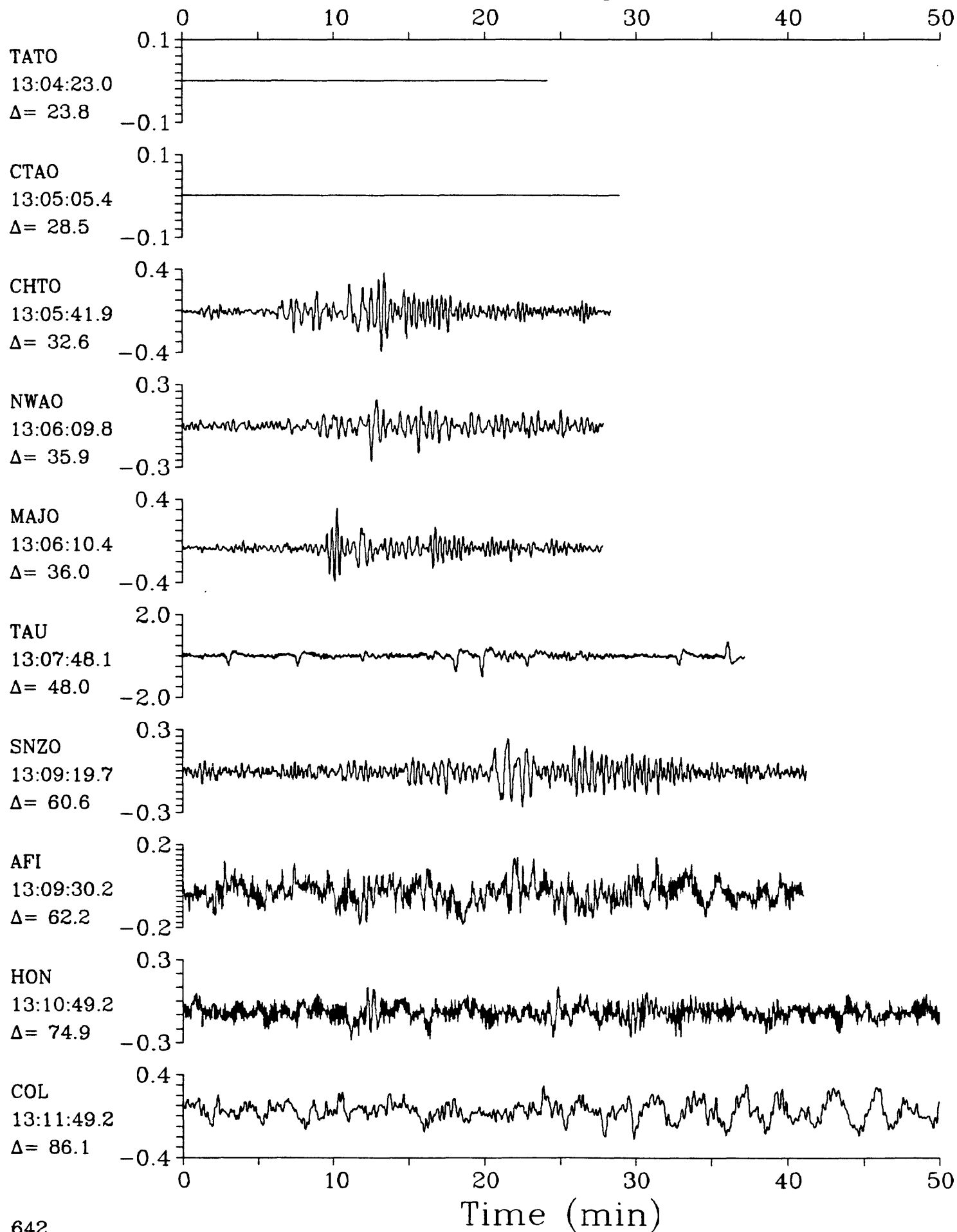
SPZ



LPZ

05 April 1985 13:00:22.51
Halmahera $h=132.2$ $m_b=5.5$

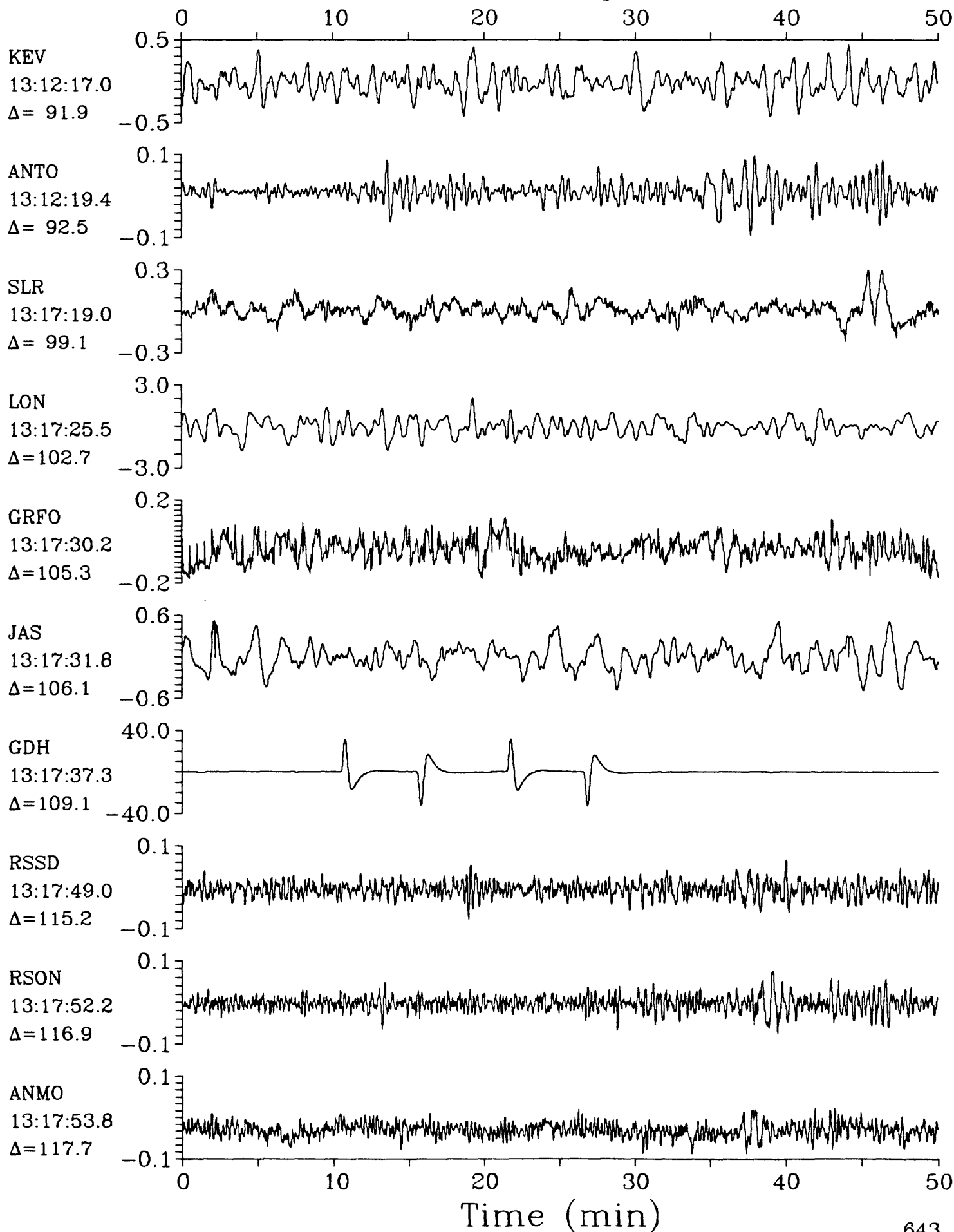
LPZ



LPZ

05 April 1985 13:00:22.51
Halmahera $h=132.2$ $m_b=5.5$

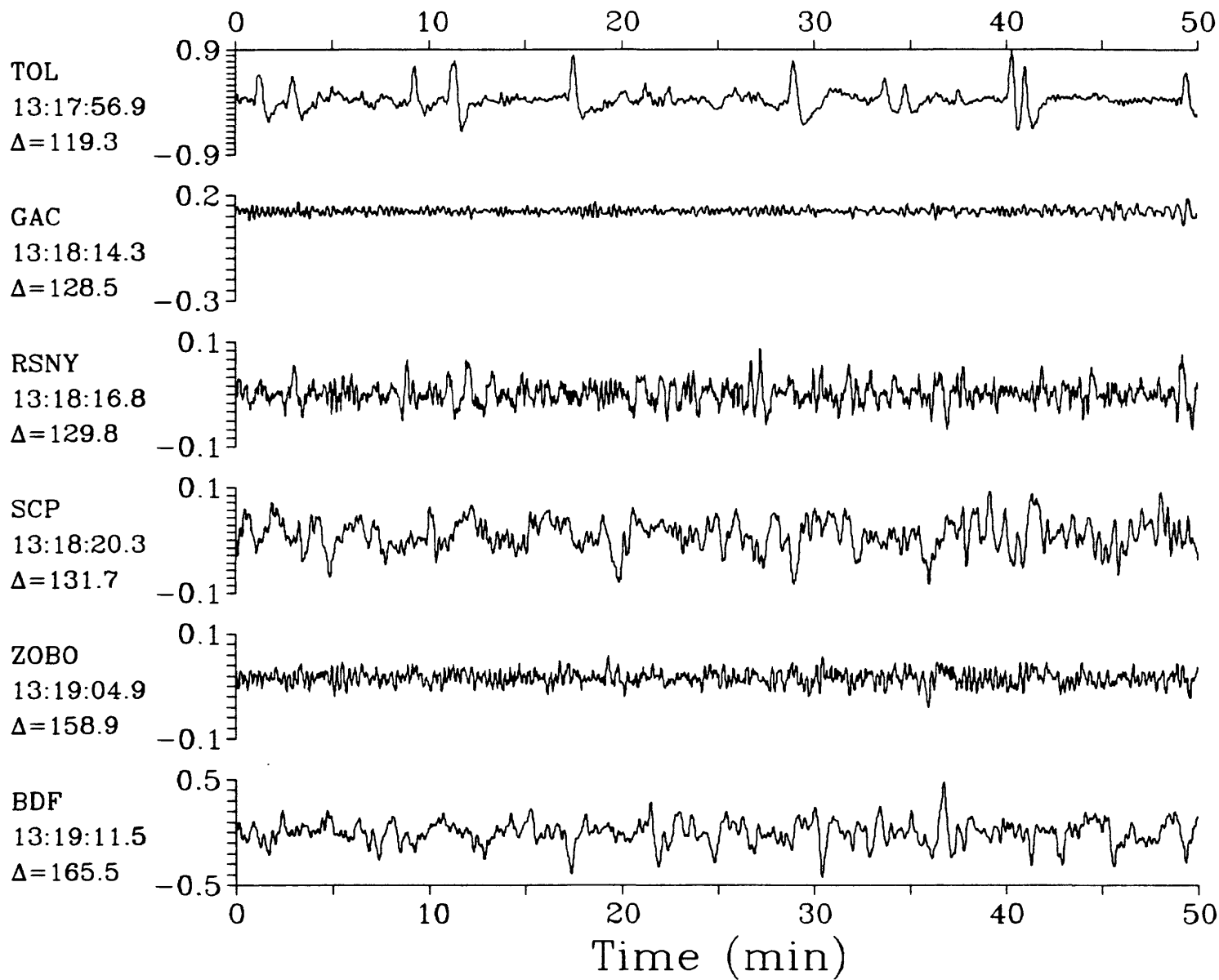
LPZ



LPZ

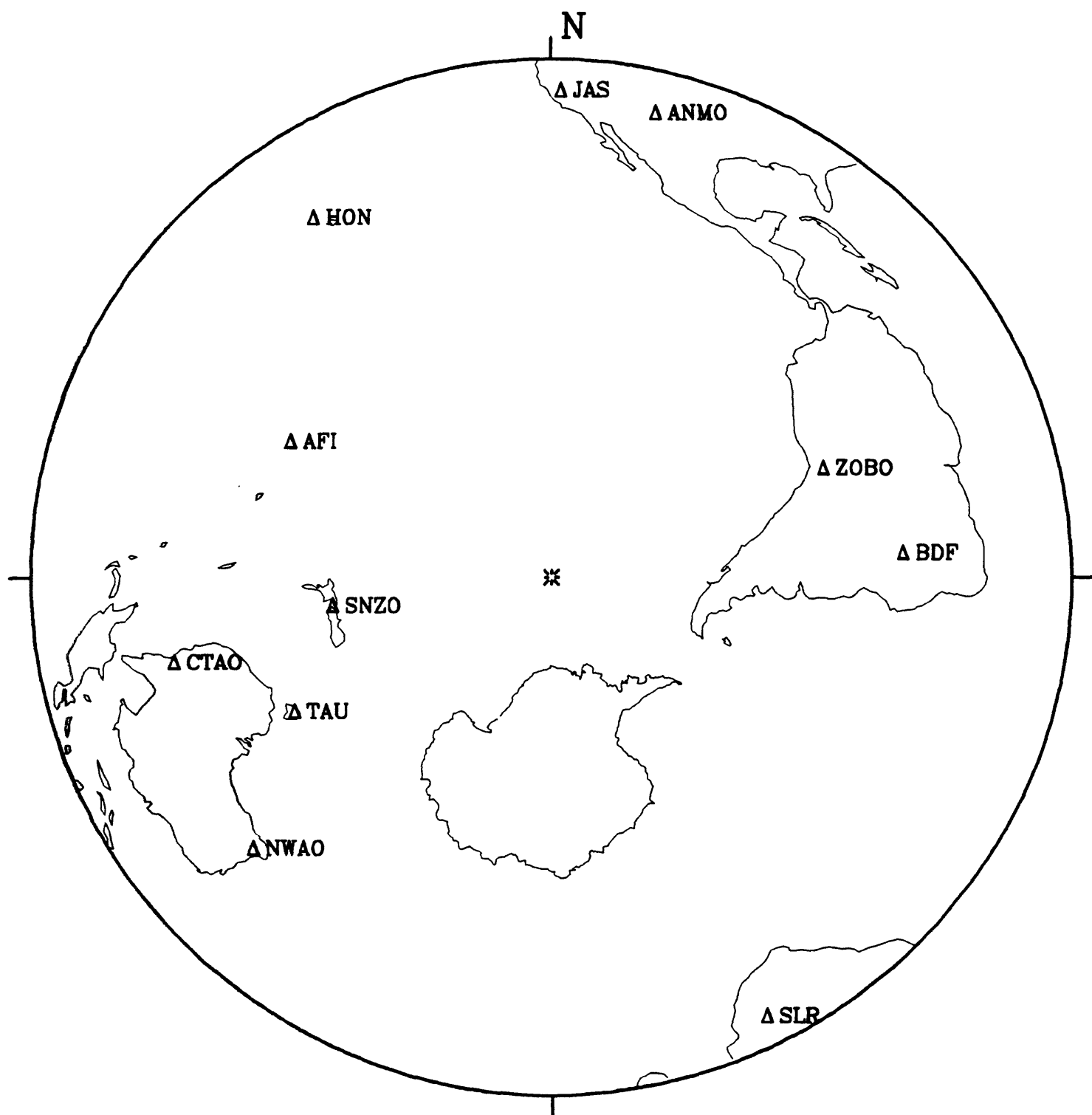
05 April 1985 13:00:22.51
Halmahera $h=132.2$ $m_b=5.5$

LPZ



07 April 1985 00:19:33.86

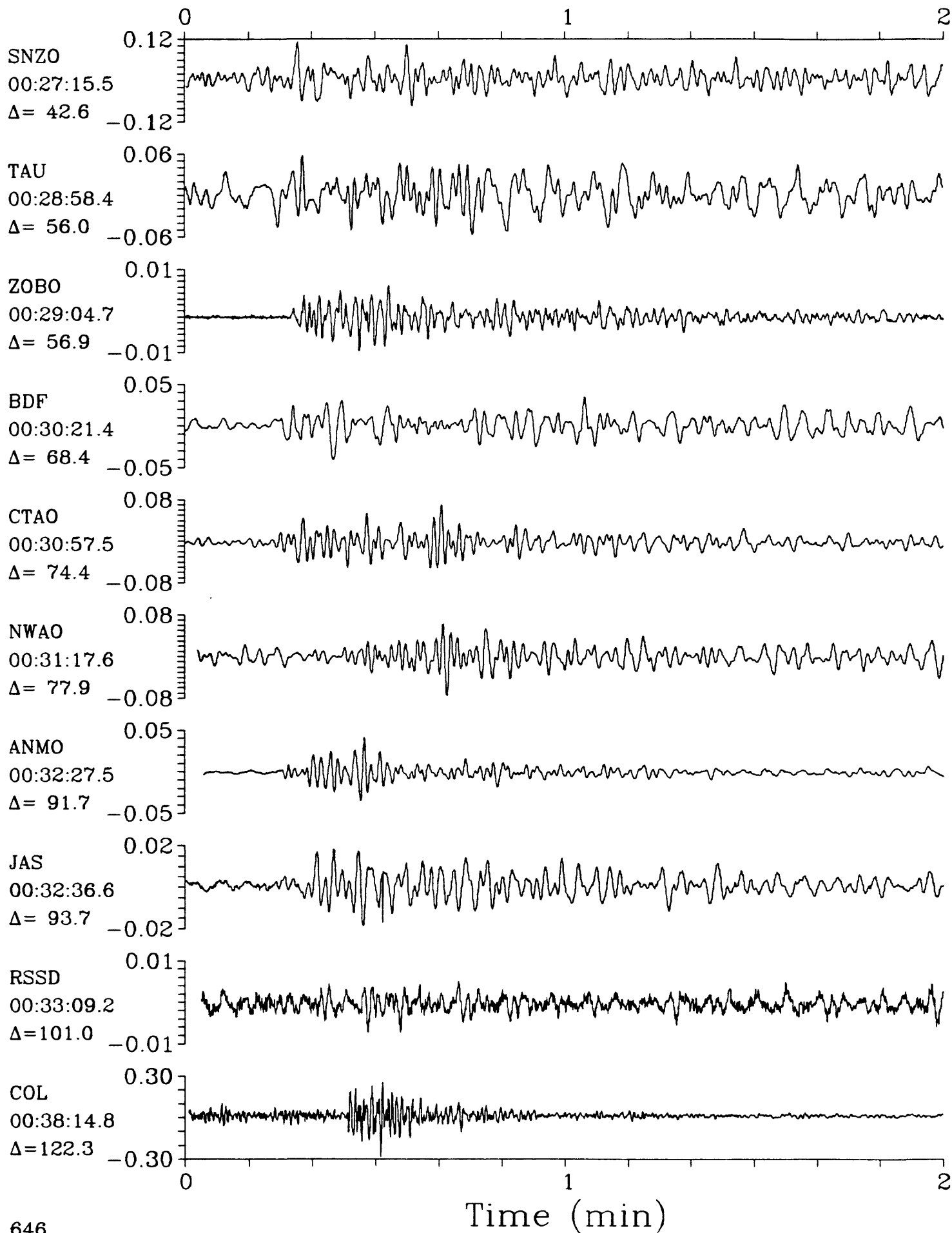
Easter Island Cordillera



SPZ

07 April 1985 00:19:33.86

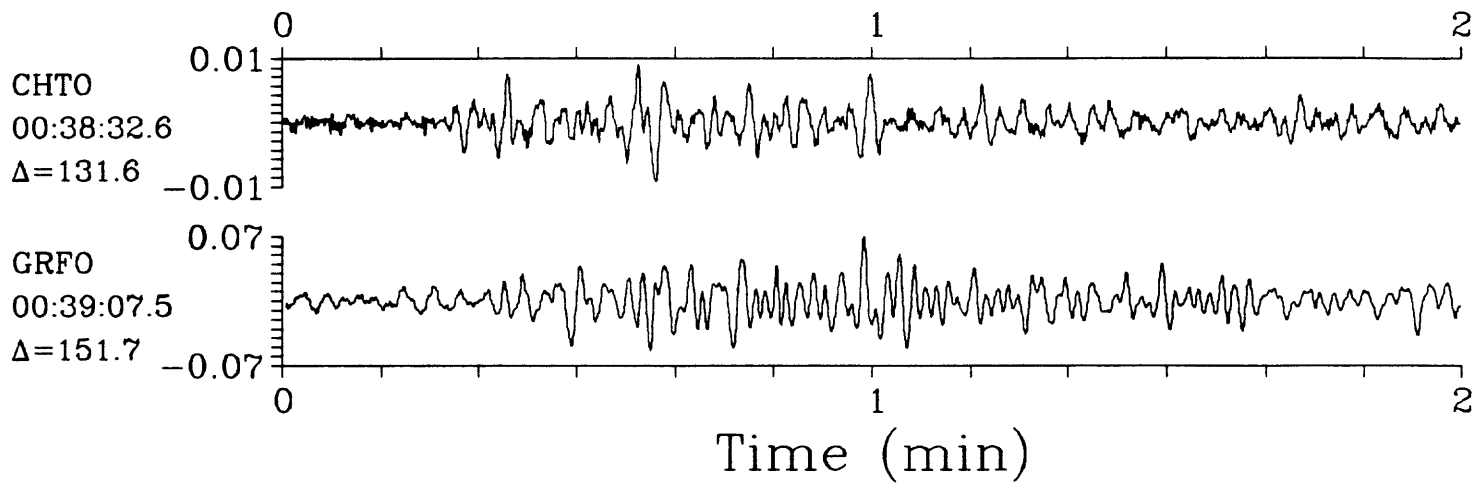
SPZ

Easter Island Cordillera $h=10.0$ $m_b=5.5$ $M_{sz}=6.1$ 

SPZ

07 April 1985 00:19:33.86

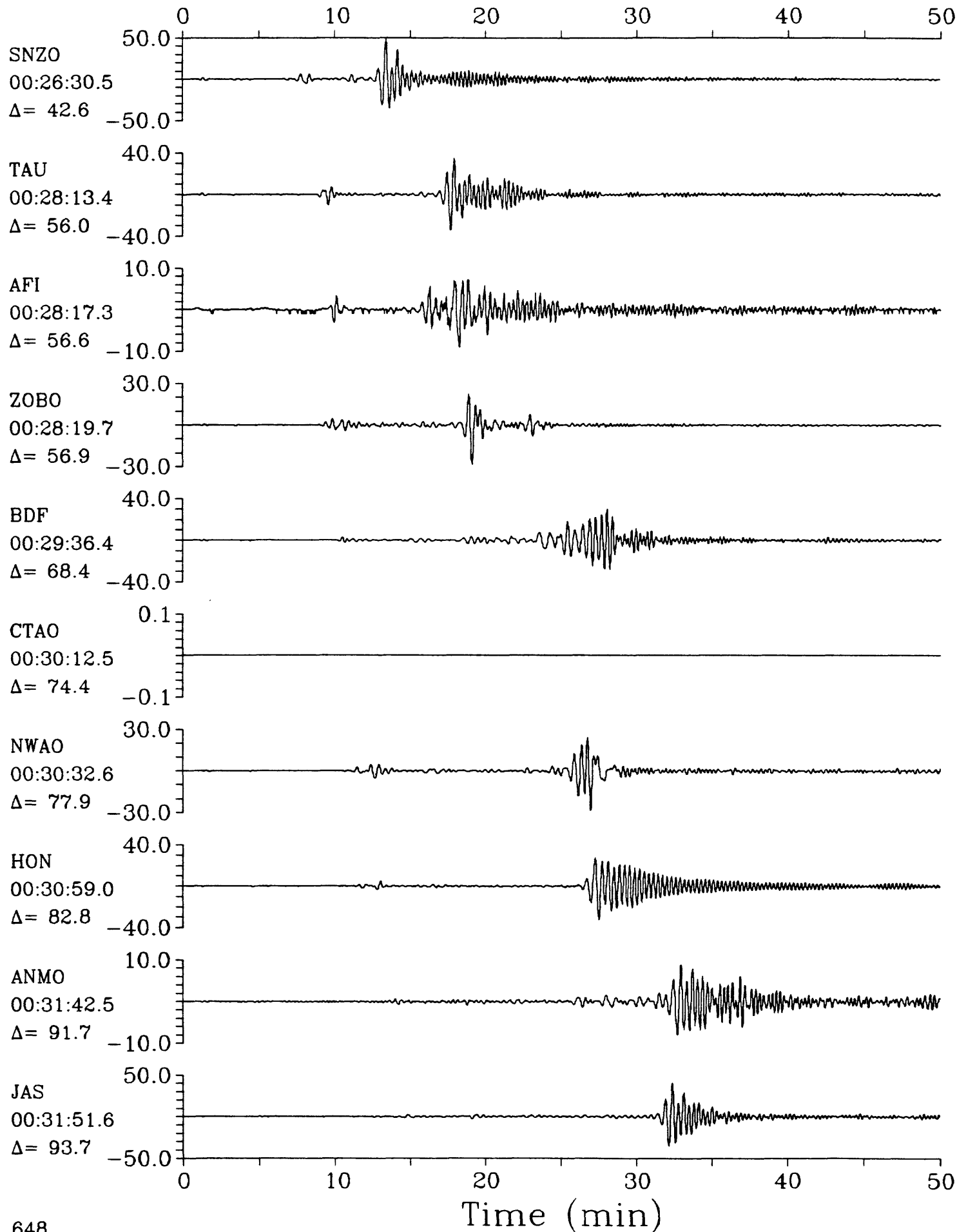
SPZ

Easter Island Cordillera $h=10.0$ $m_b=5.5$ $M_{sz}=6.1$ 

LPZ

07 April 1985 00:19:33.86

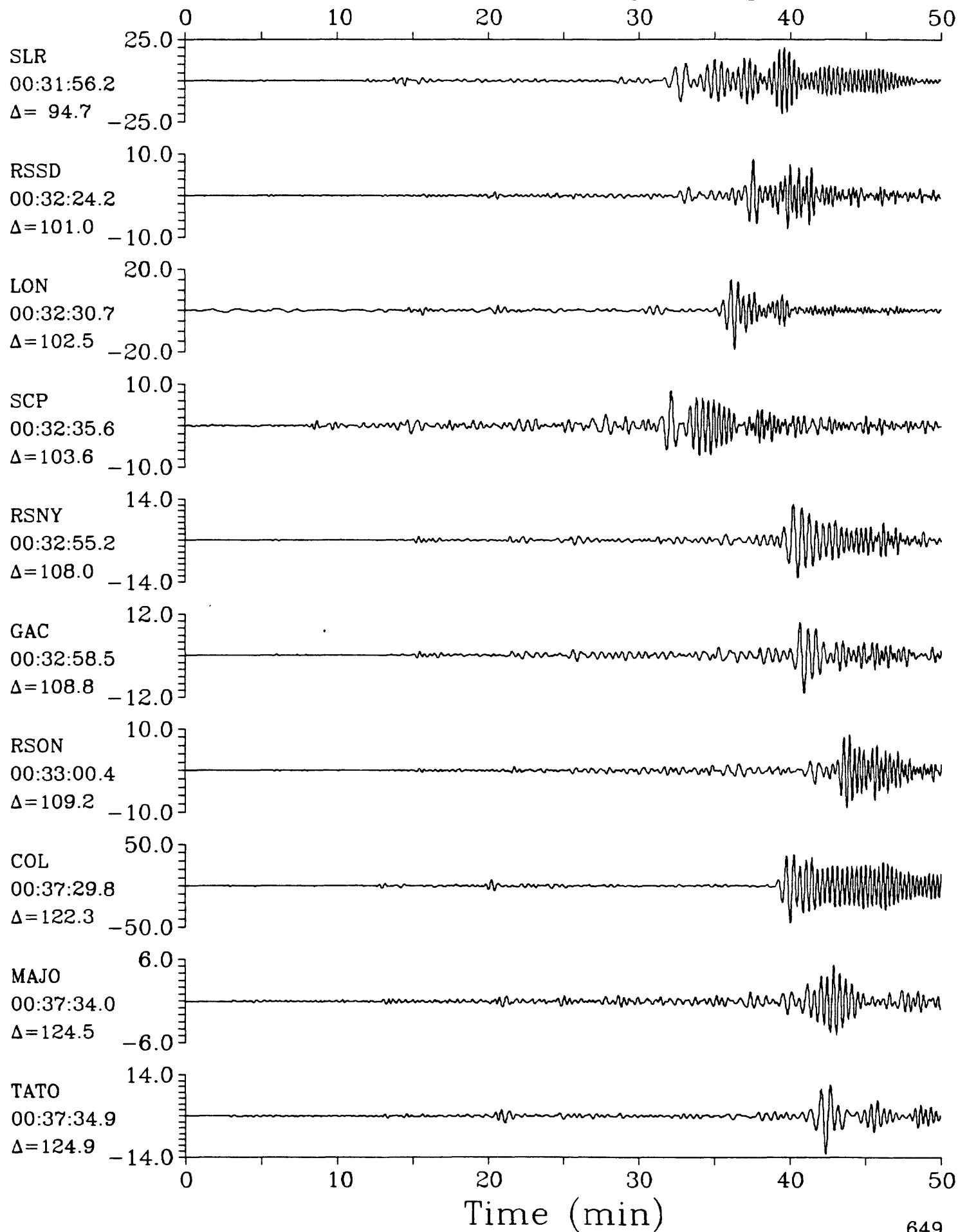
LPZ

Easter Island Cordillera $h=10.0$ $m_b=5.5$ $M_{sz}=6.1$ 

LPZ

07 April 1985 00:19:33.86

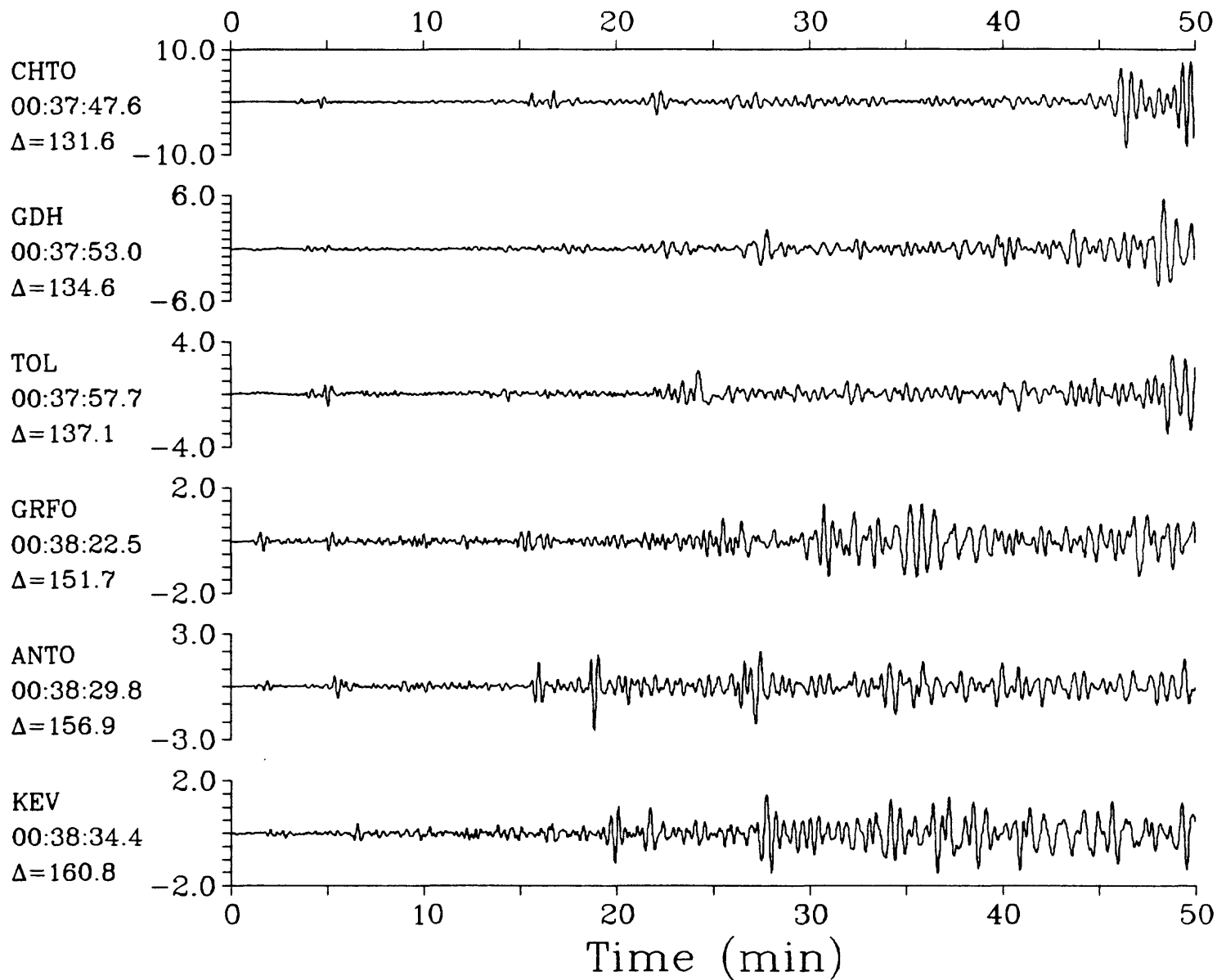
LPZ

Easter Island Cordillera $h=10.0$ $m_b=5.5$ $M_{SZ}=6.1$ 

LPZ

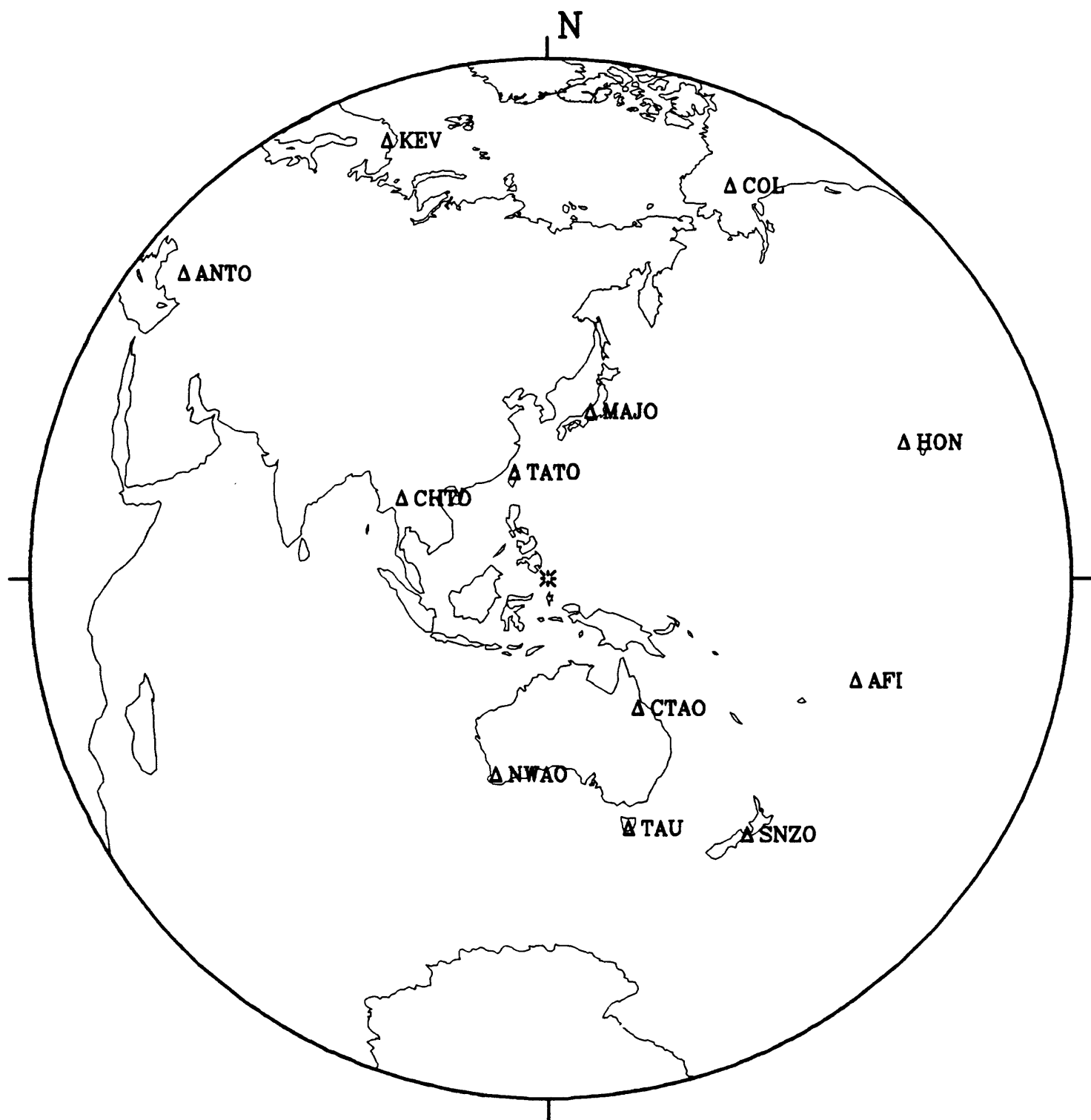
07 April 1985 00:19:33.86

LPZ

Easter Island Cordillera $h=10.0$ $m_b=5.5$ $M_{sz}=6.1$ 

07 April 1985 09:31:18.23

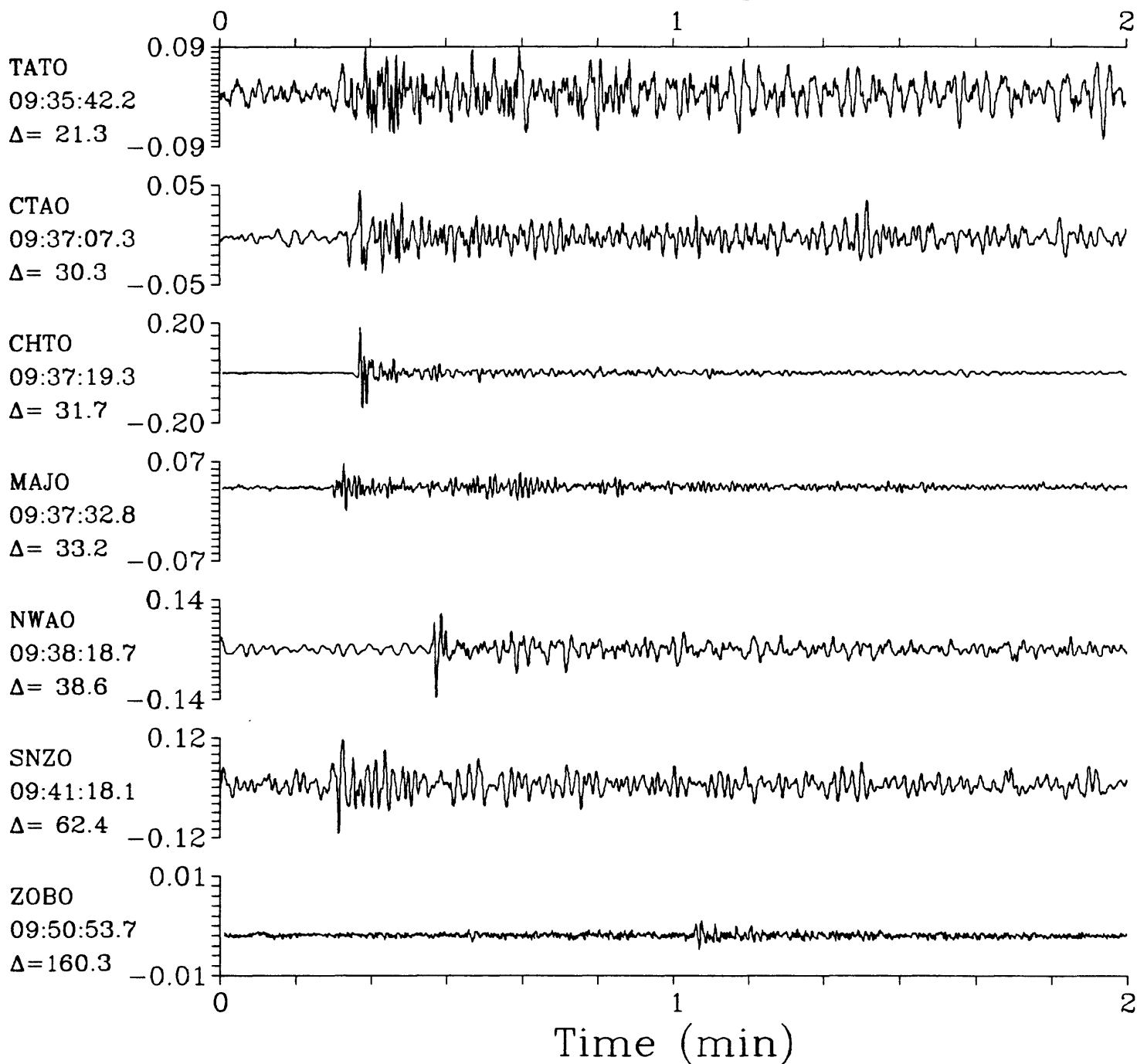
Talau Islands



SPZ

07 April 1985 09:31:18.23
Talaud Islands $h=80.3$ $m_b=5.5$

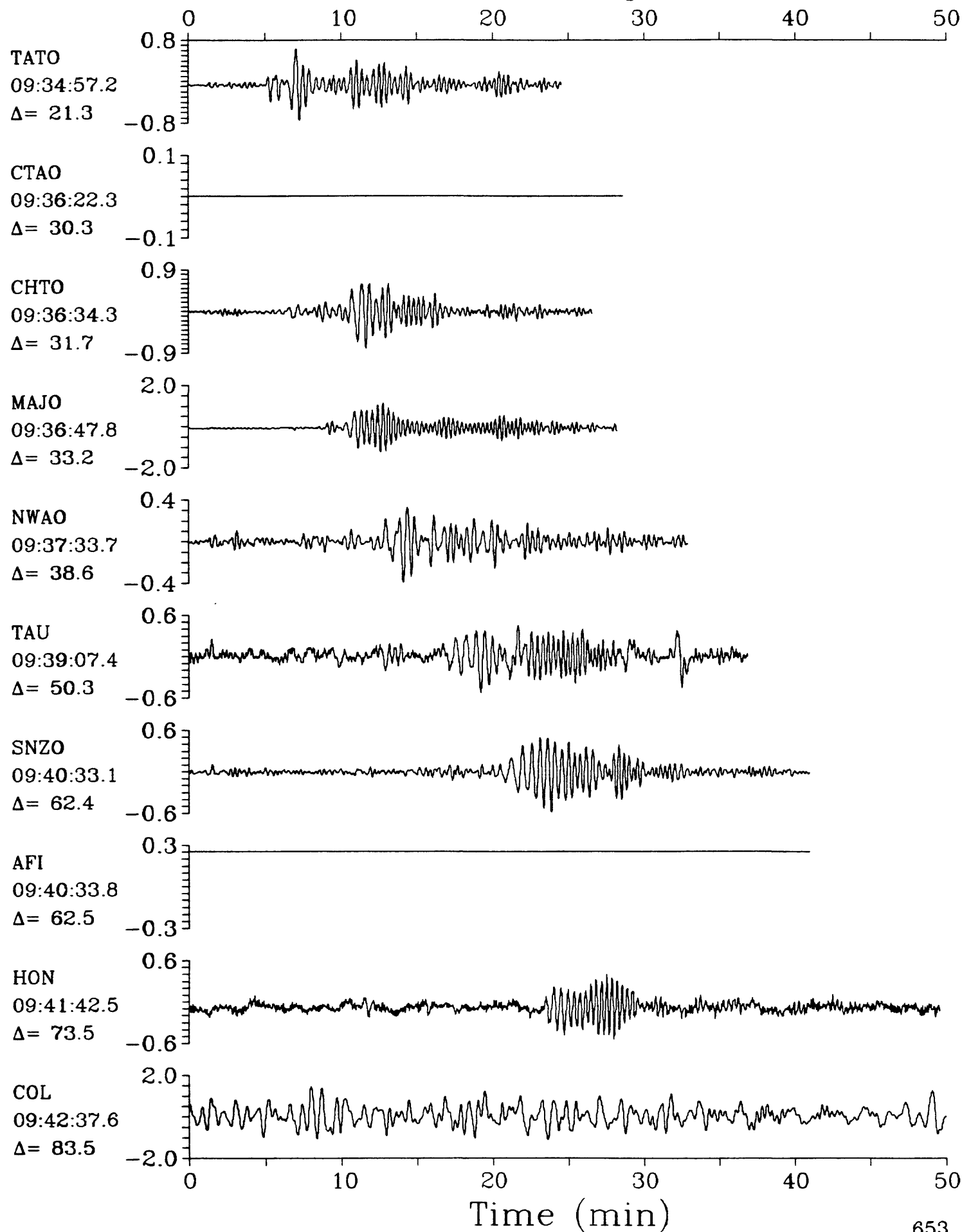
SPZ



LPZ

07 April 1985 09:31:18.23
Talaud Islands $h=80.3$ $m_b=5.5$

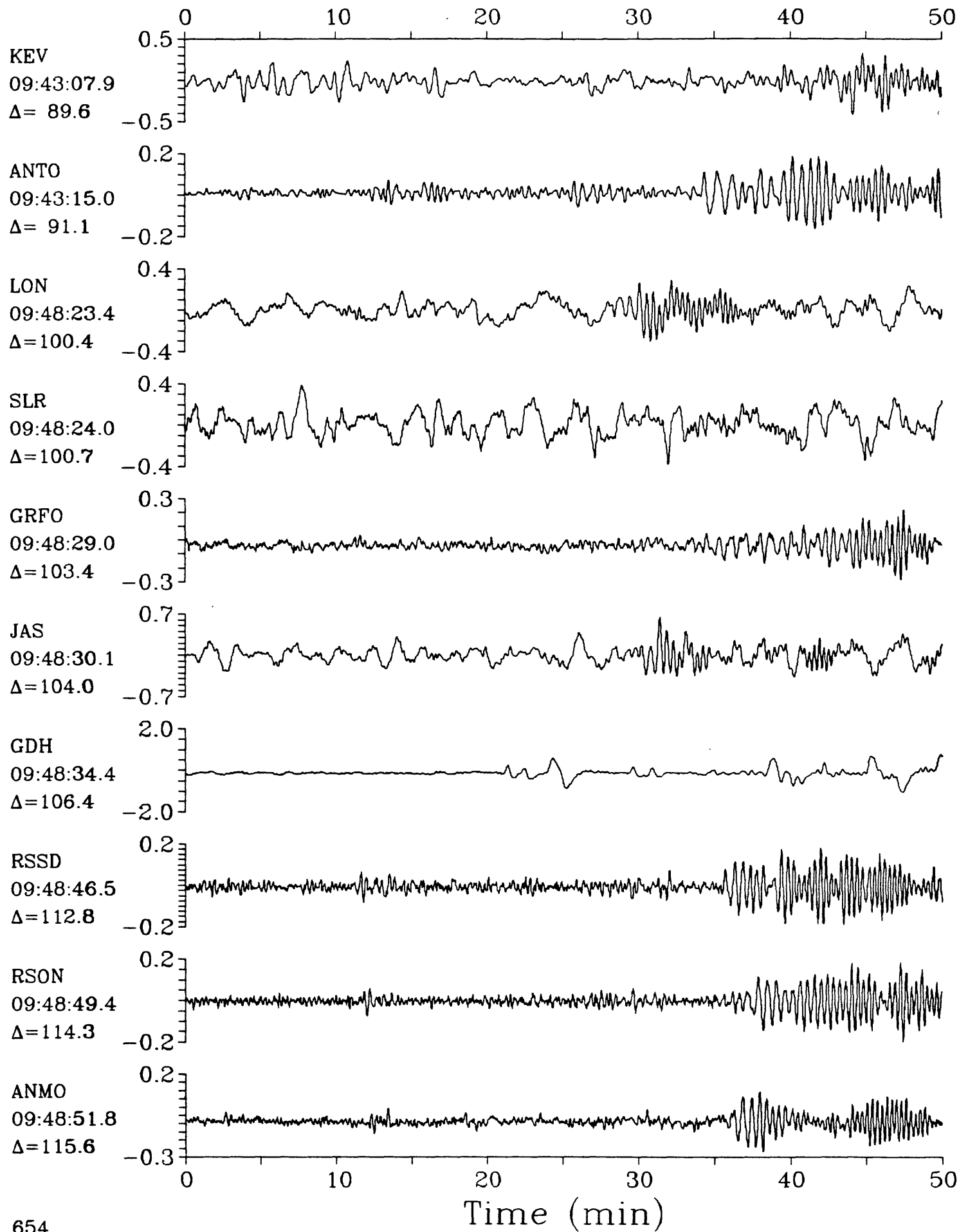
LPZ



LPZ

07 April 1985 09:31:18.23
Talaud Islands $h=80.3$ $m_b=5.5$

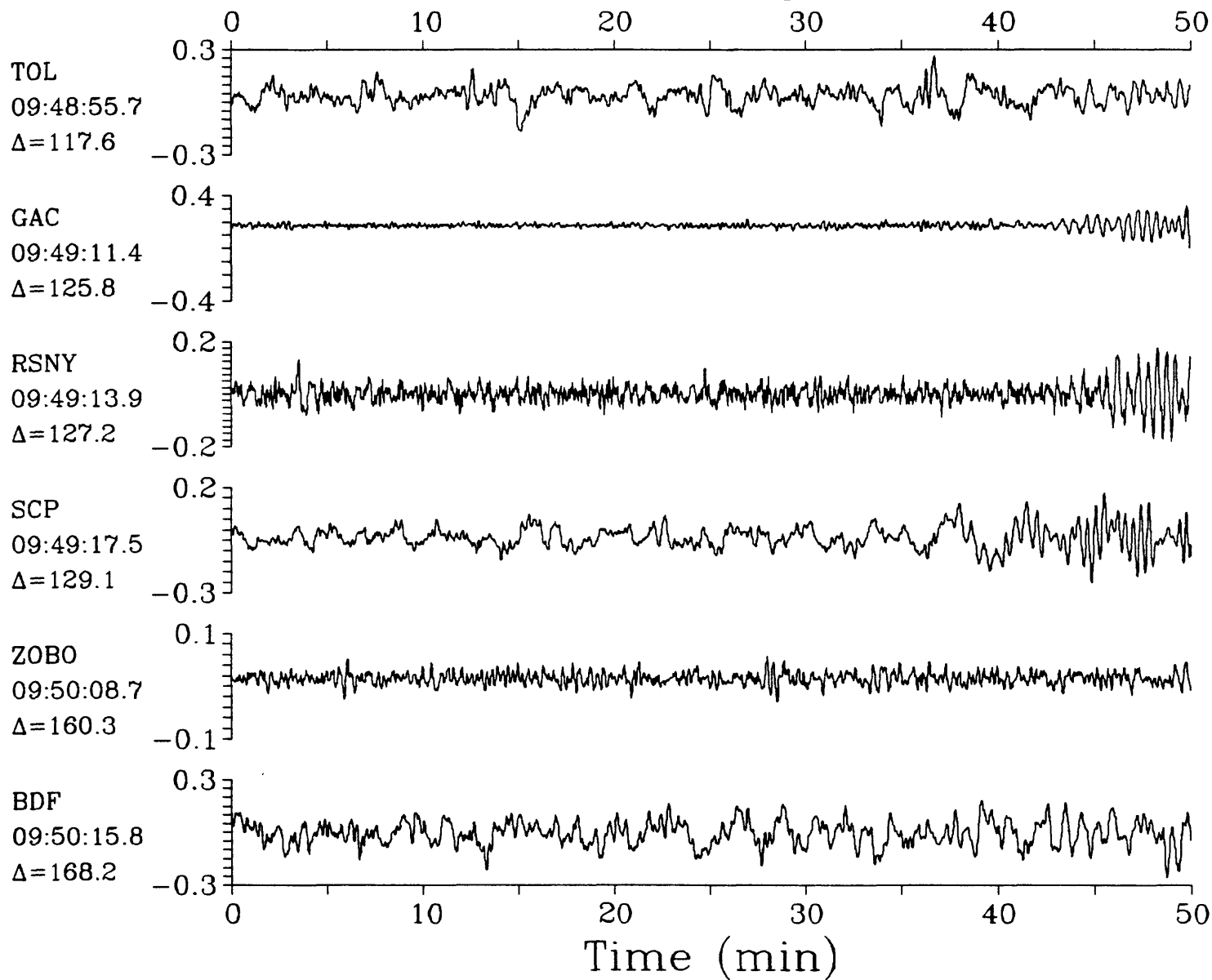
LPZ



LPZ

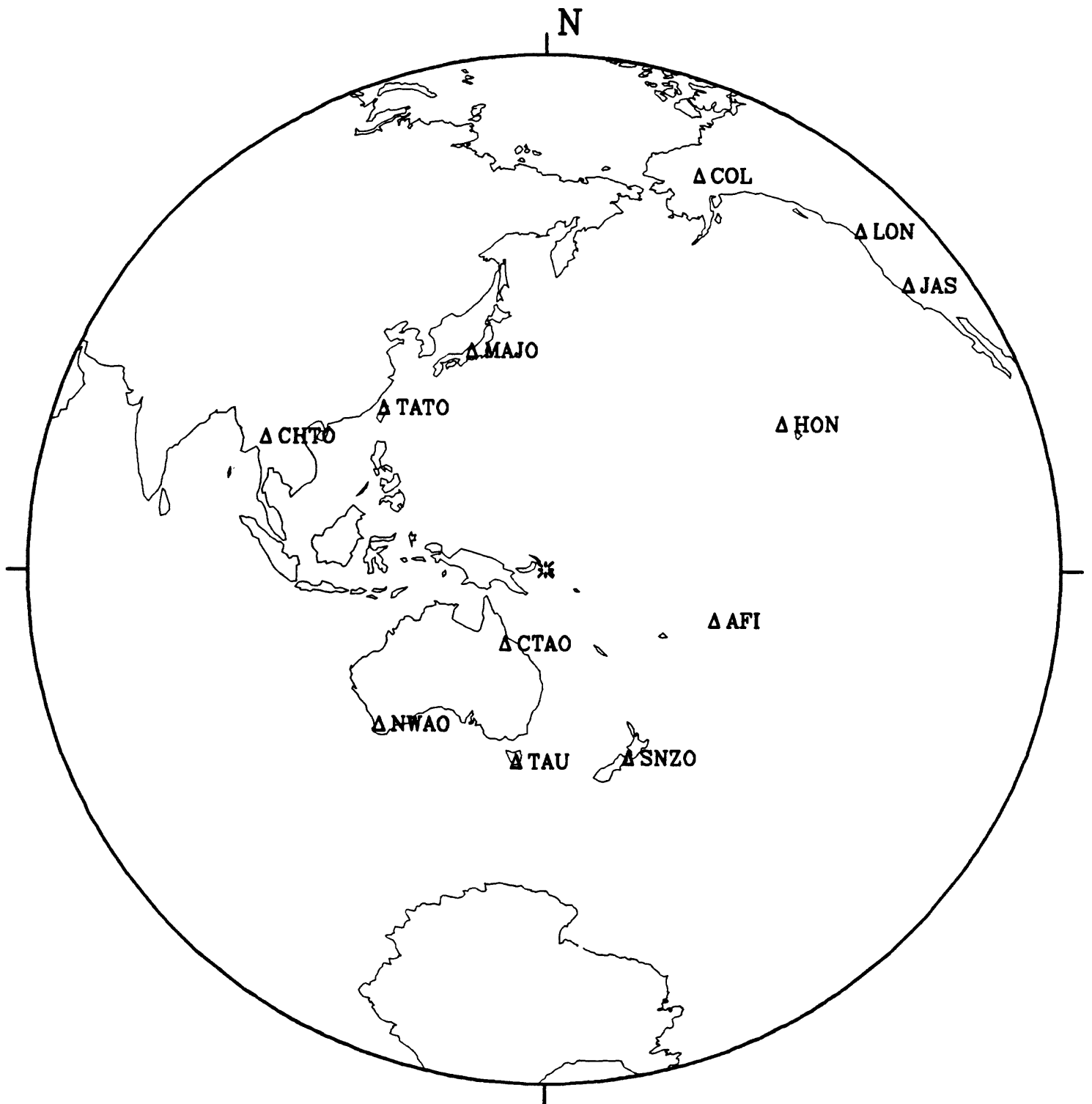
07 April 1985 09:31:18.23
Talaud Islands $h=80.3$ $m_b=5.5$

LPZ



08 April 1985 16:17:12.66

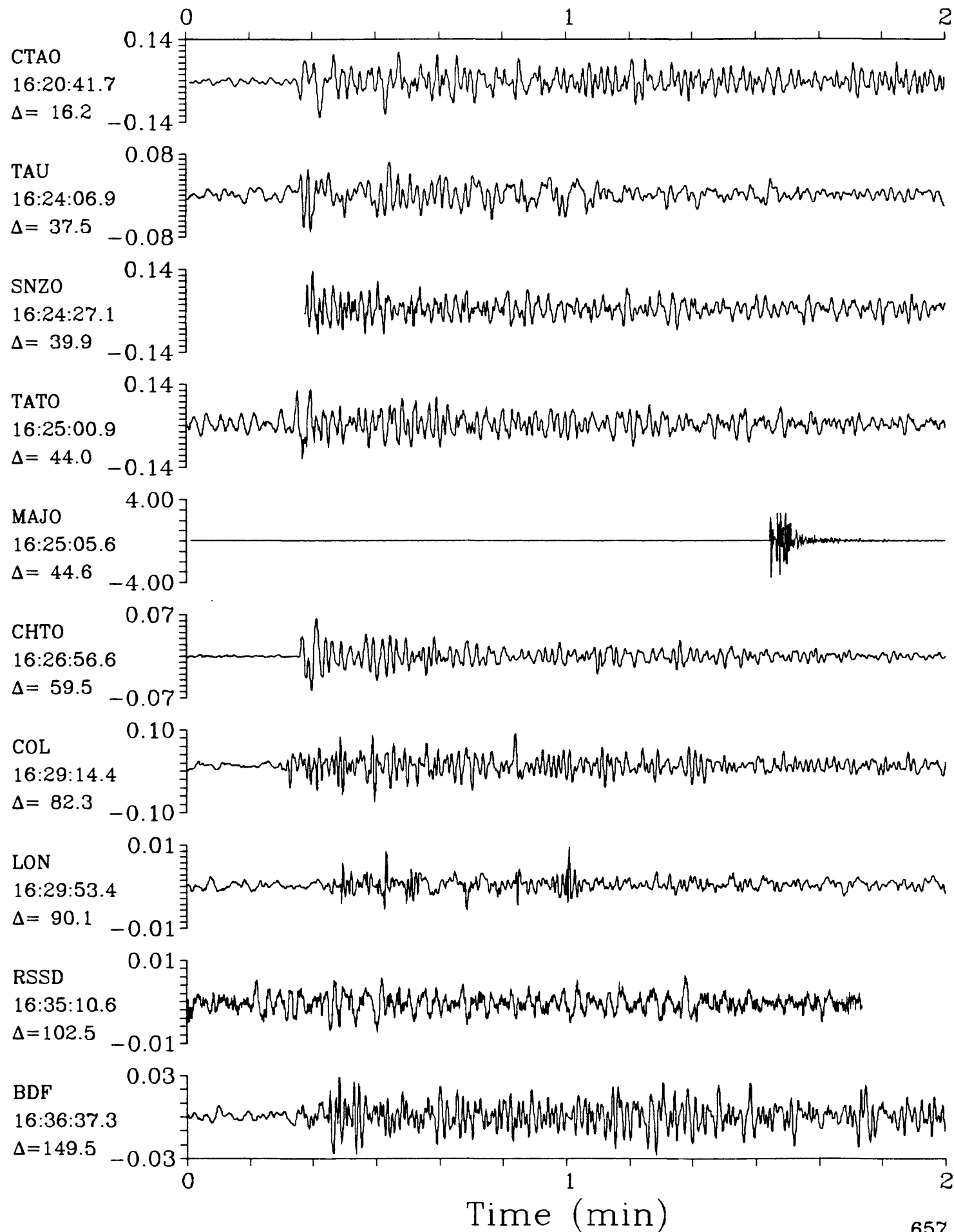
Solomon Islands



SPZ

08 April 1985 16:17:12.66

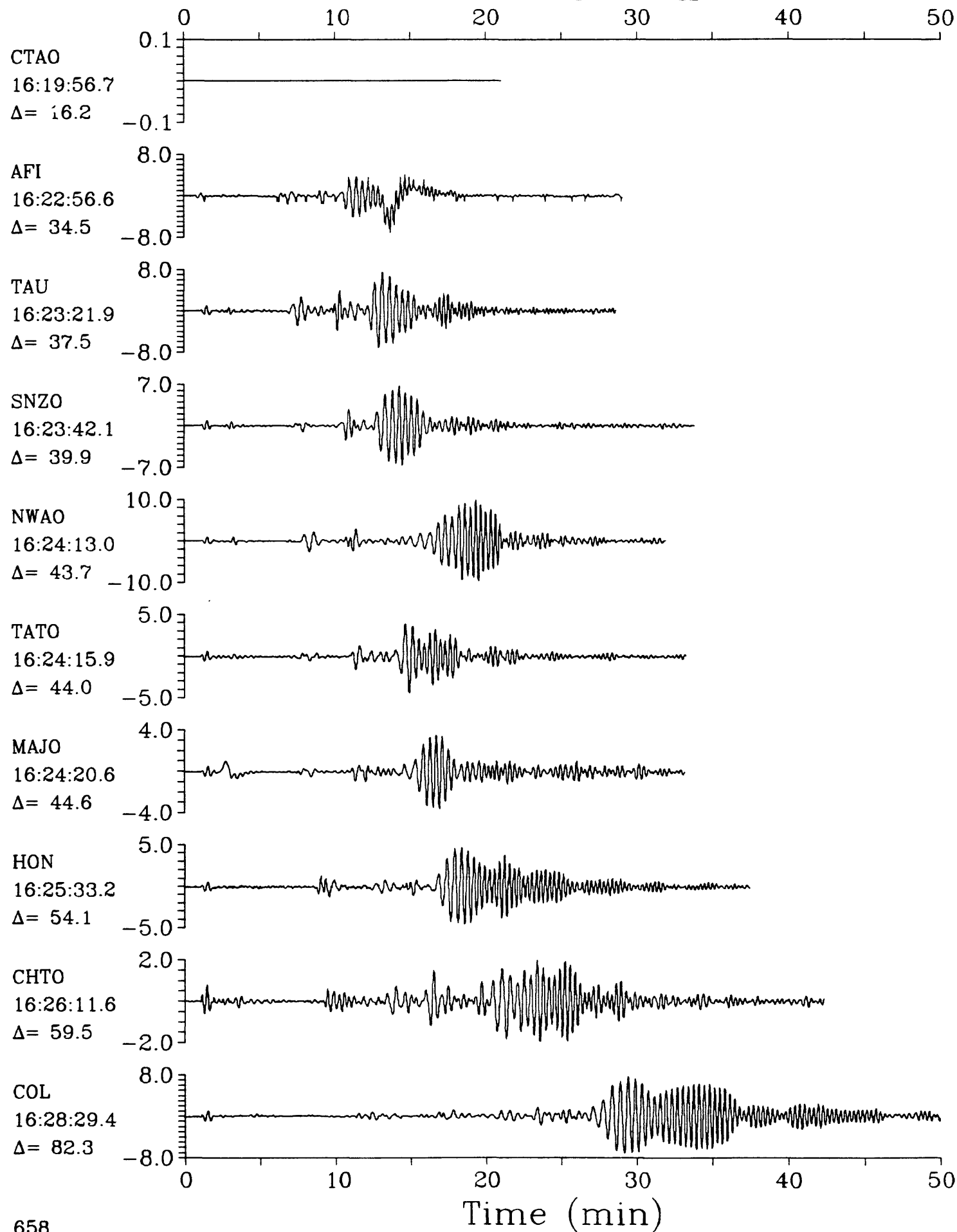
SPZ

Solomon Islands $h=48.8$ $m_b=5.2$ $M_{sz}=5.6$ 

LPZ

08 April 1985 16:17:12.66

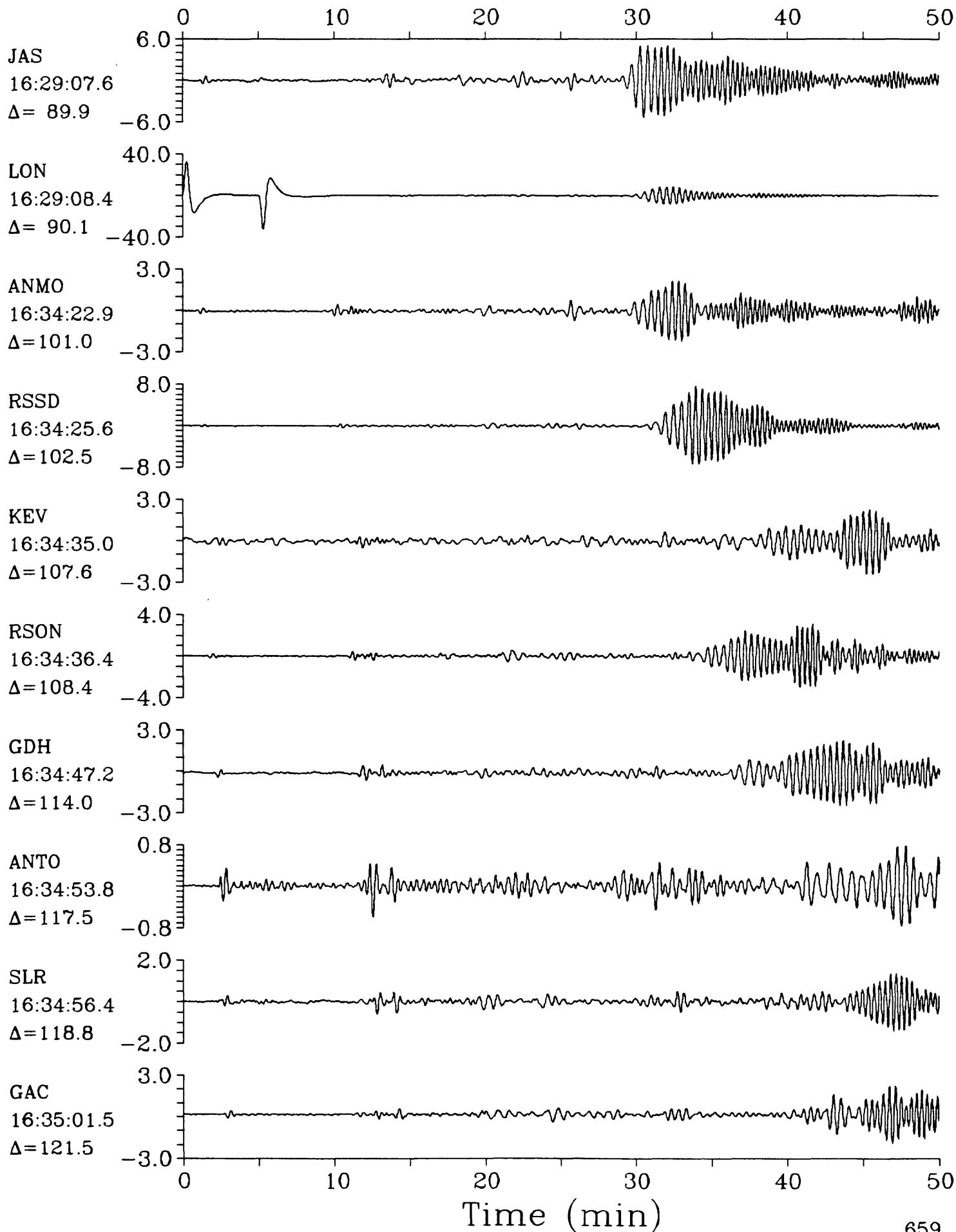
LPZ

Solomon Islands $h=48.8$ $m_b=5.2$ $M_{sz}=5.6$ 

LPZ

08 April 1985 16:17:12.66

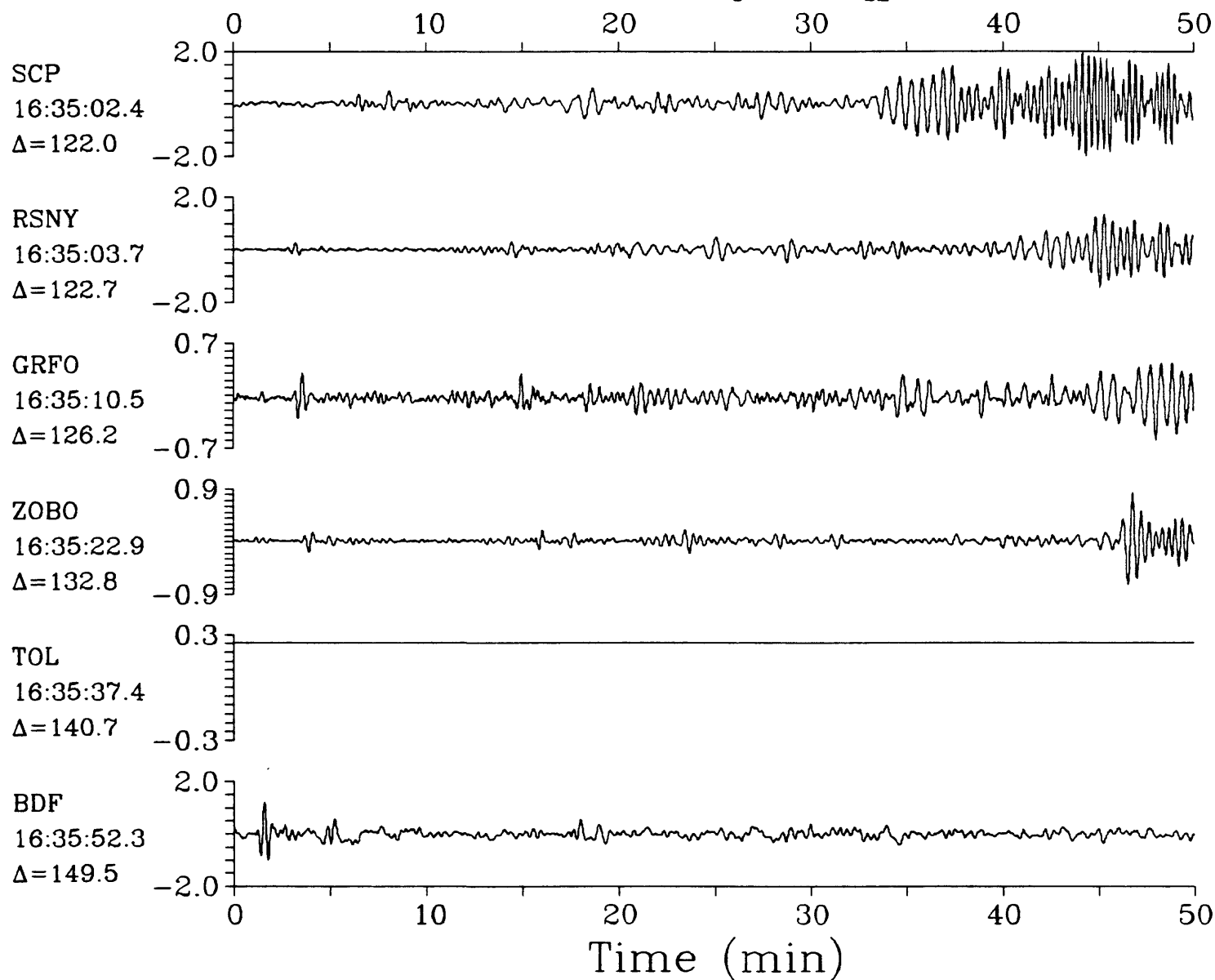
LPZ

Solomon Islands $h=48.8$ $m_b=5.2$ $M_{sz}=5.6$ 

LPZ

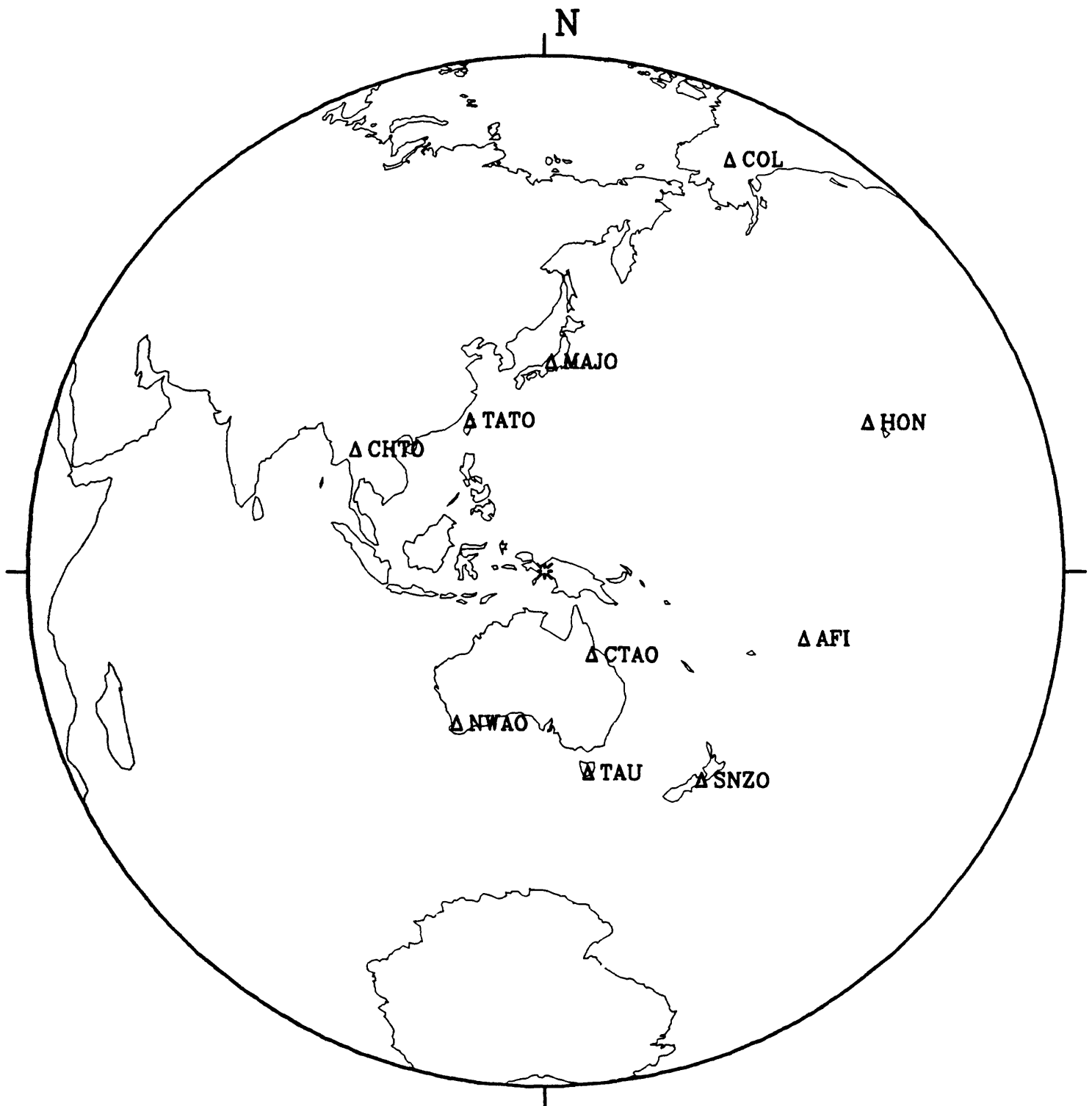
08 April 1985 16:17:12.66

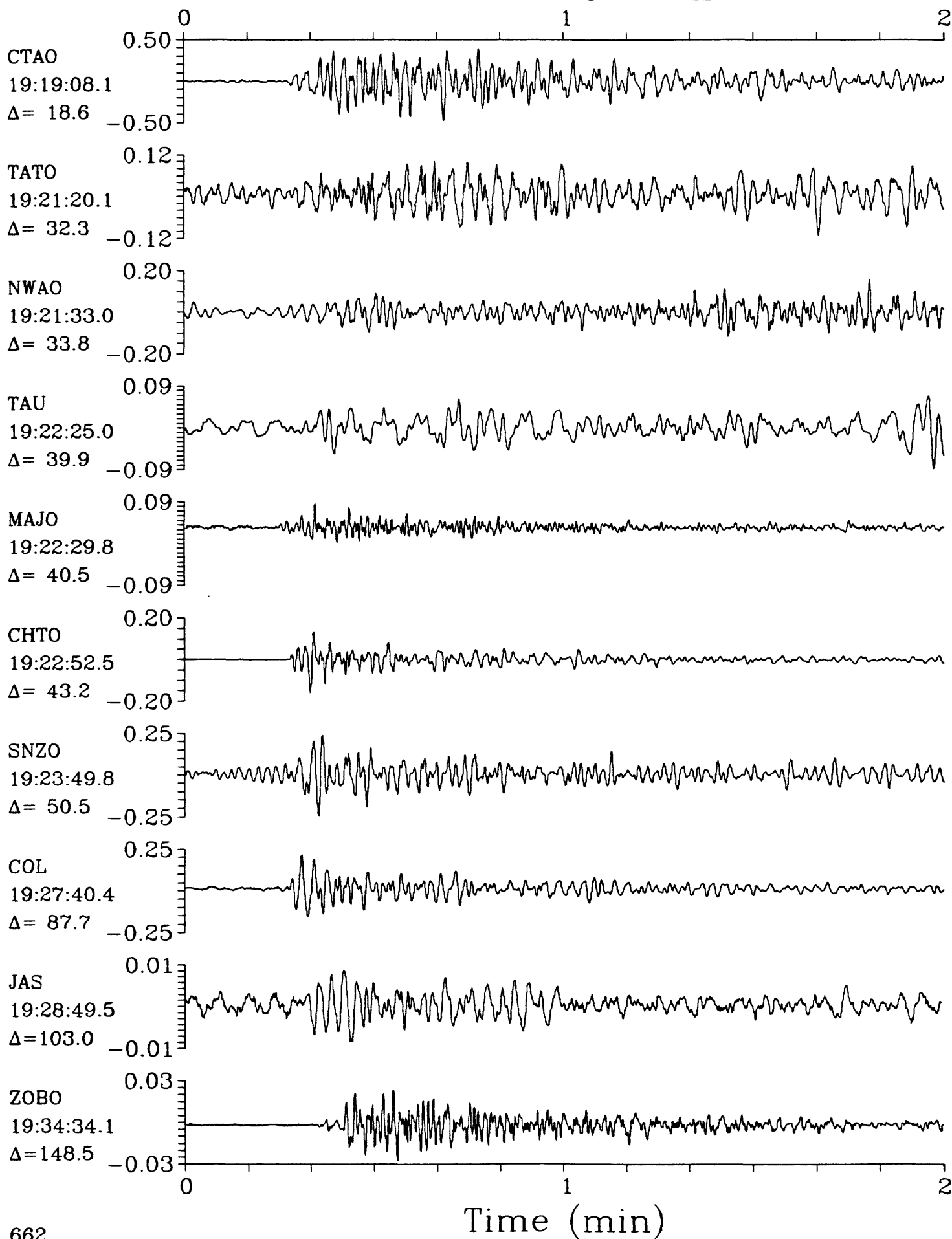
LPZ

Solomon Islands $h=48.8$ $m_b=5.2$ $M_{sz}=5.6$ 

08 April 1985 19:15:09.14

West Irian Region

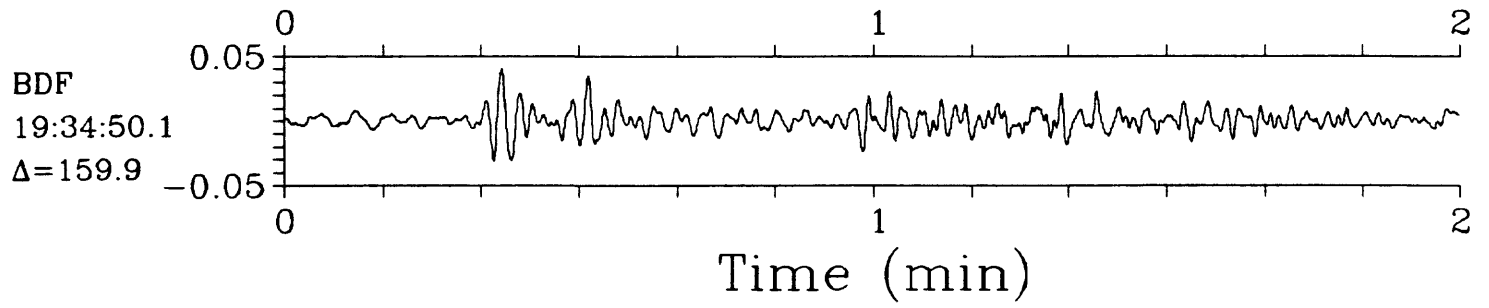


West Irian Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

SPZ

08 April 1985 19:15:09.14

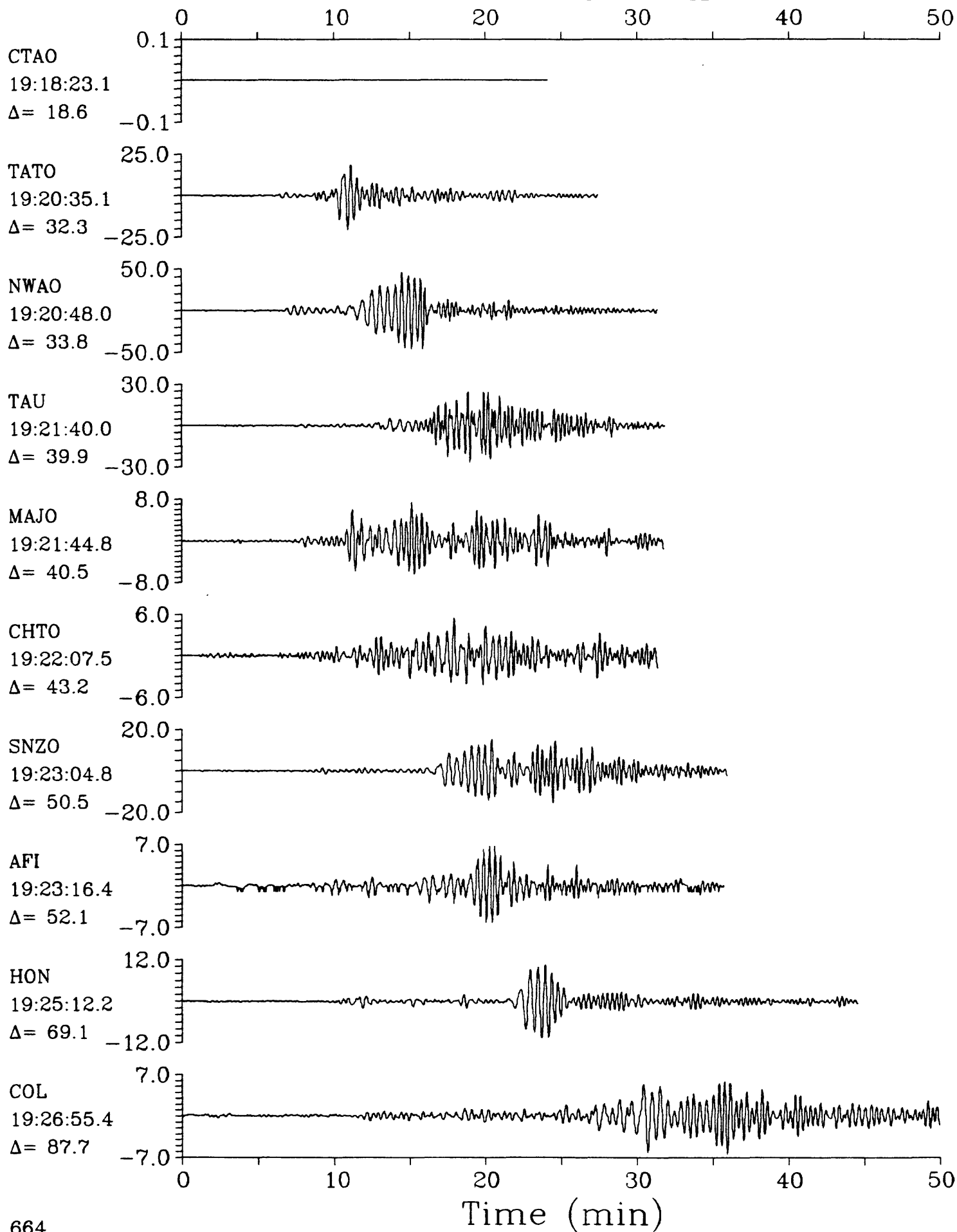
SPZ

West Irian Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

08 April 1985 19:15:09.14

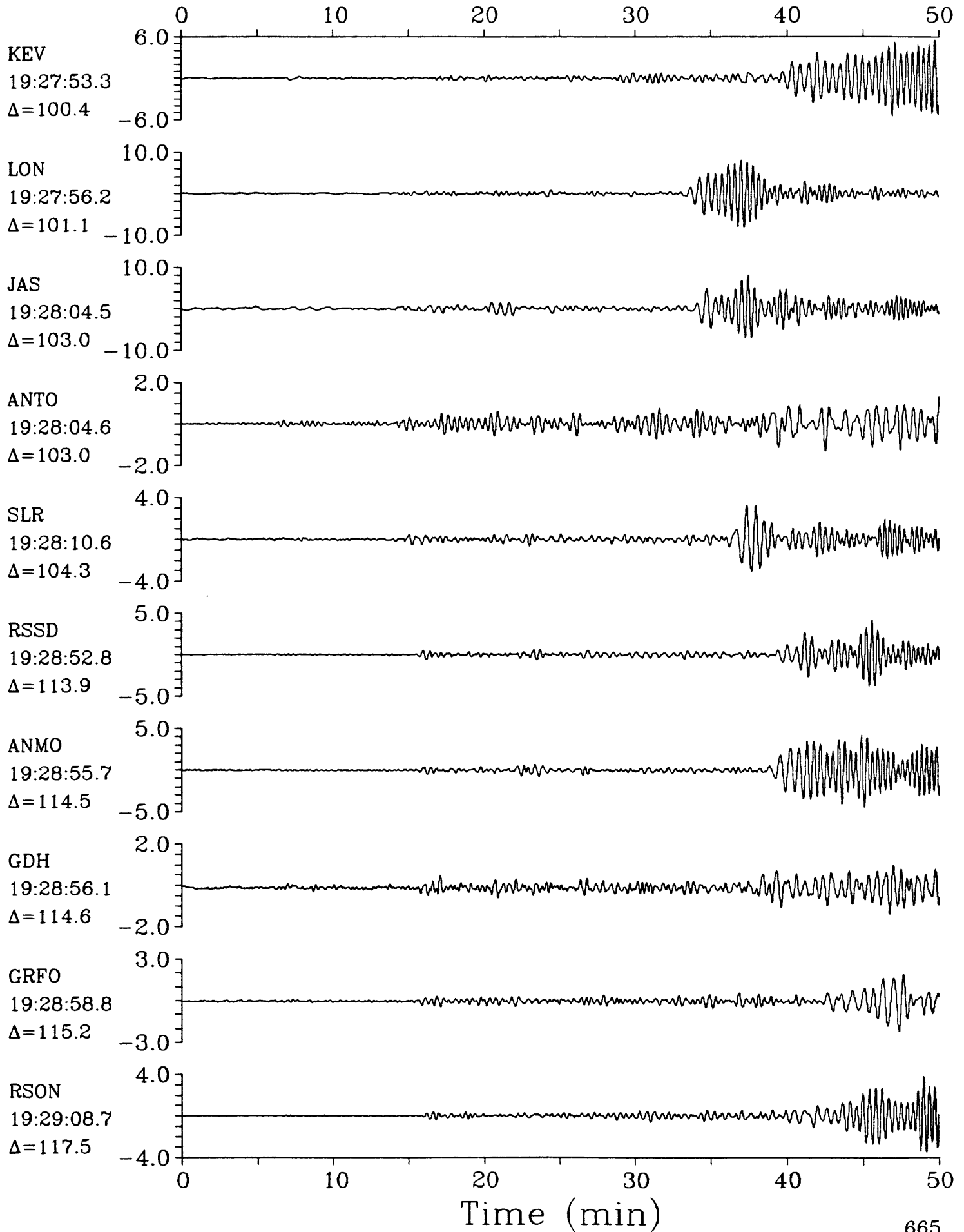
LPZ

West Irian Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

08 April 1985 19:15:09.14

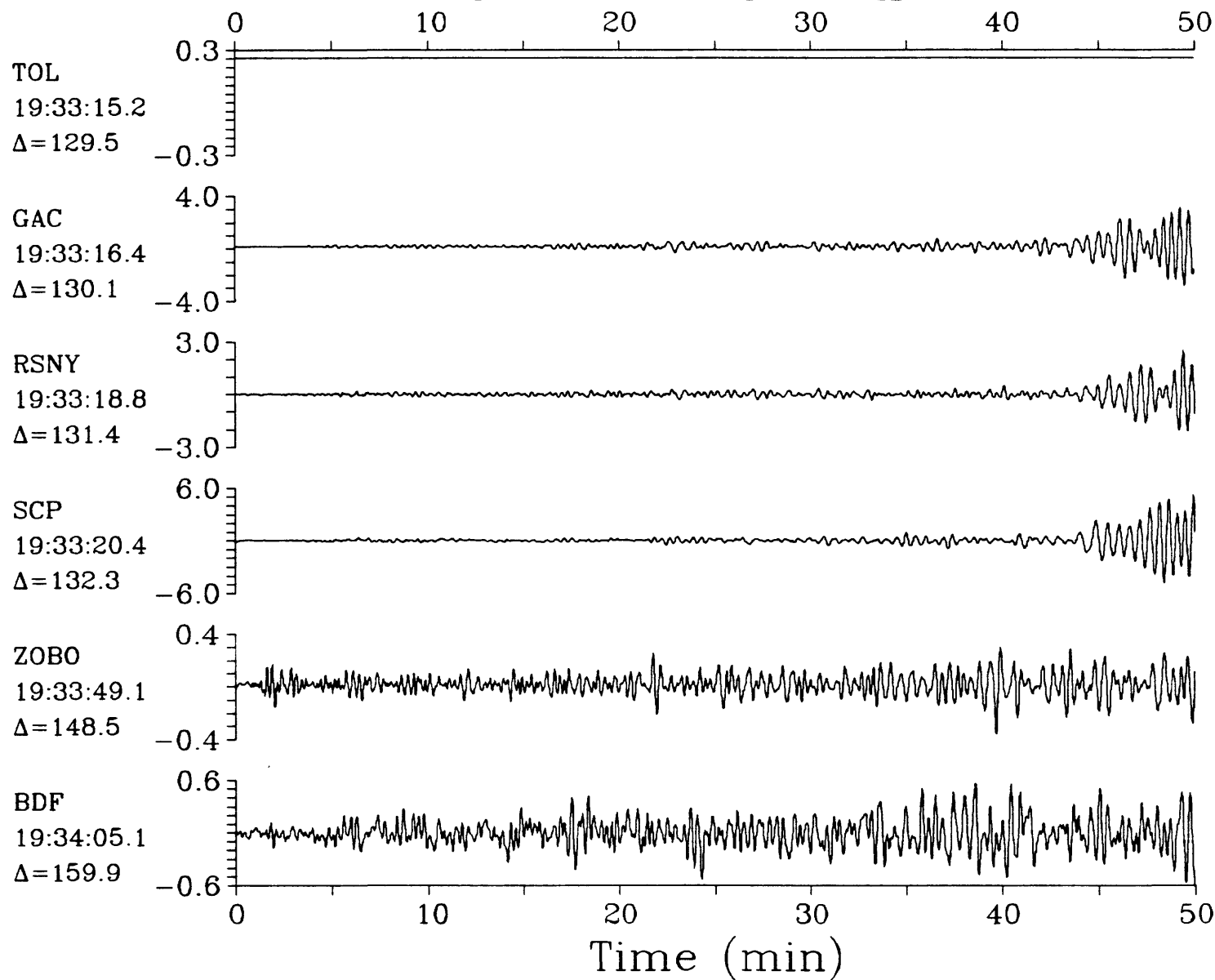
LPZ

West Irian Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

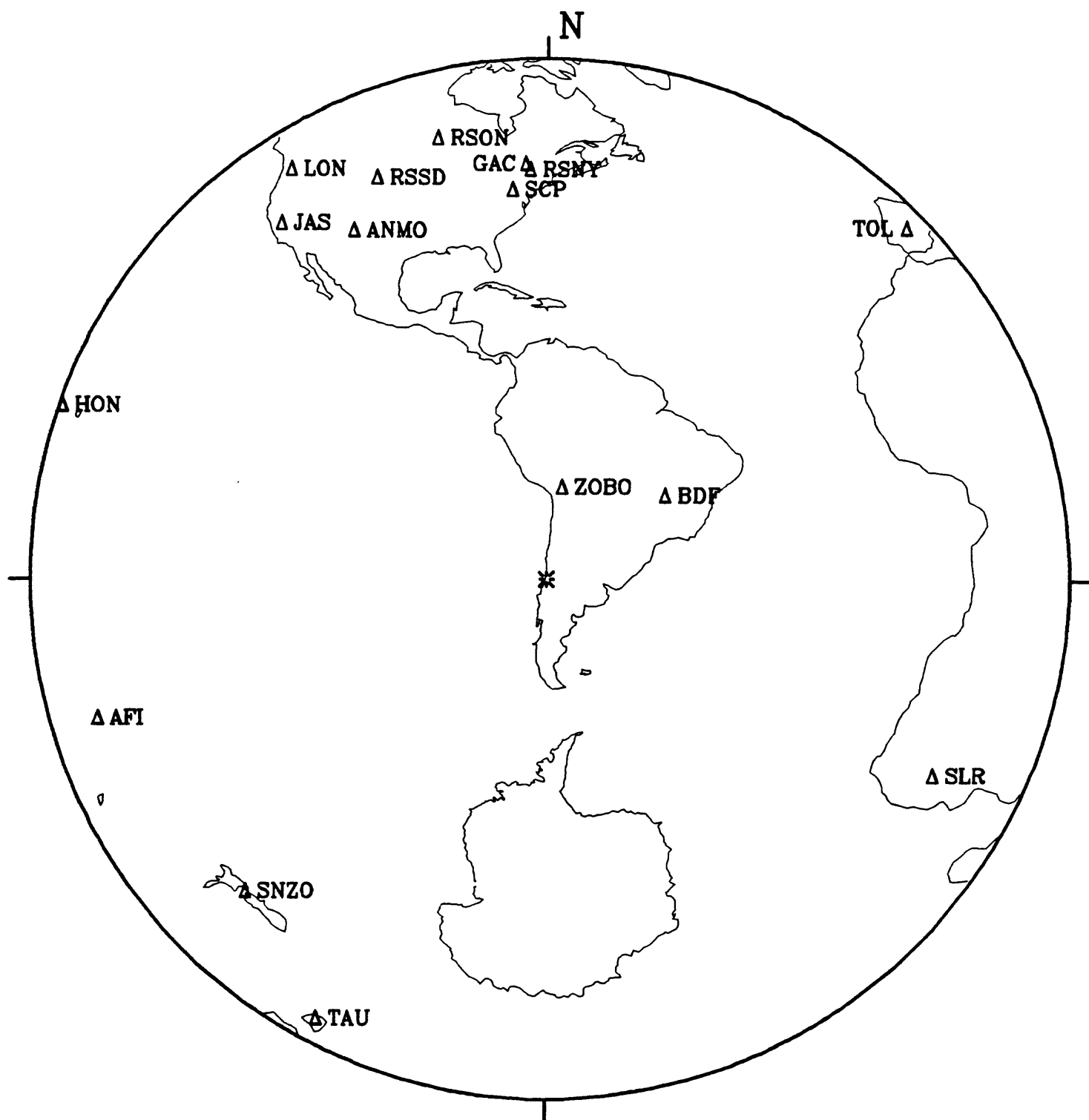
08 April 1985 19:15:09.14

LPZ

West Irian Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

09 April 1985 01:56:58.64

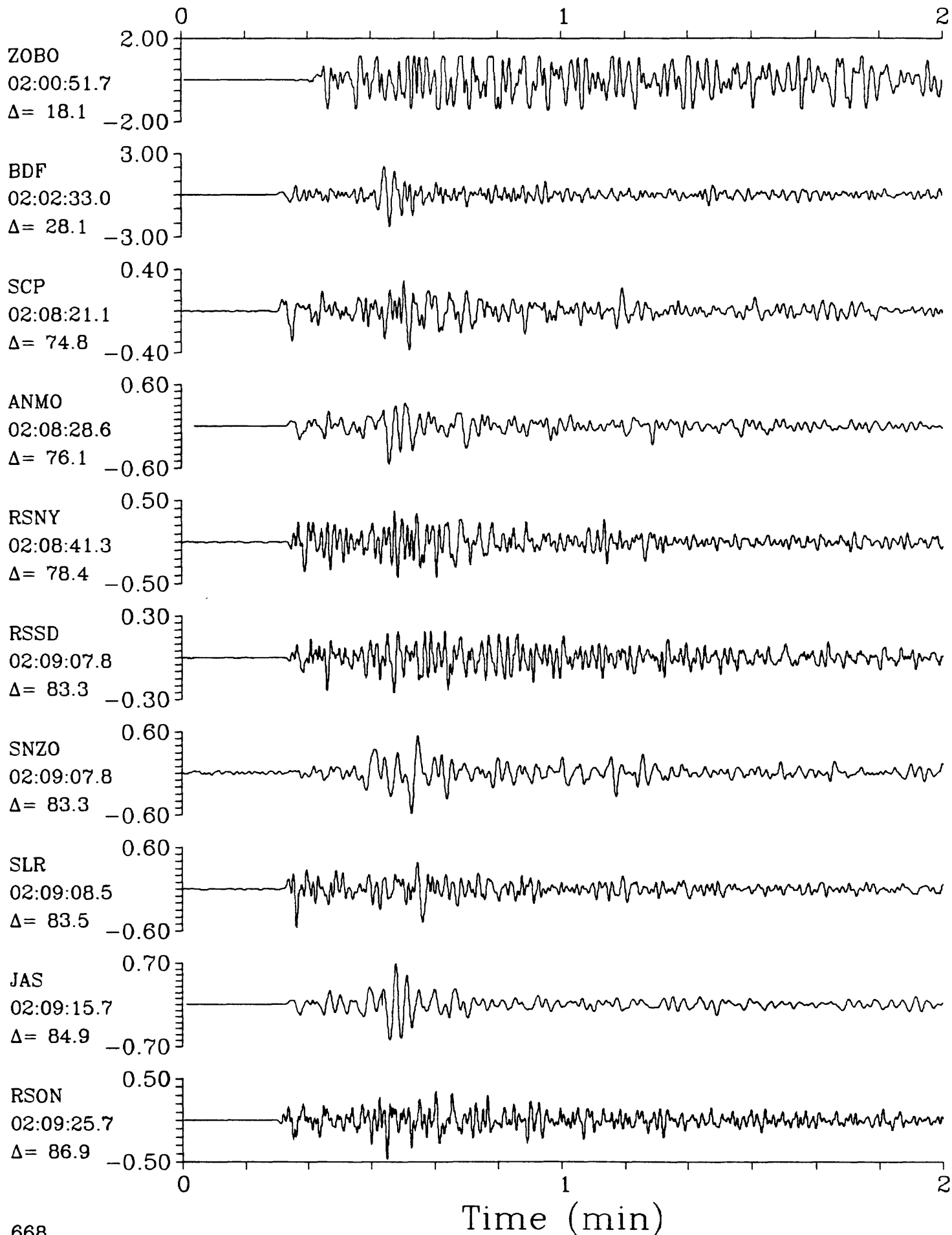
Near Coast of Central Chile



SPZ

09 April 1985 01:56:58.64

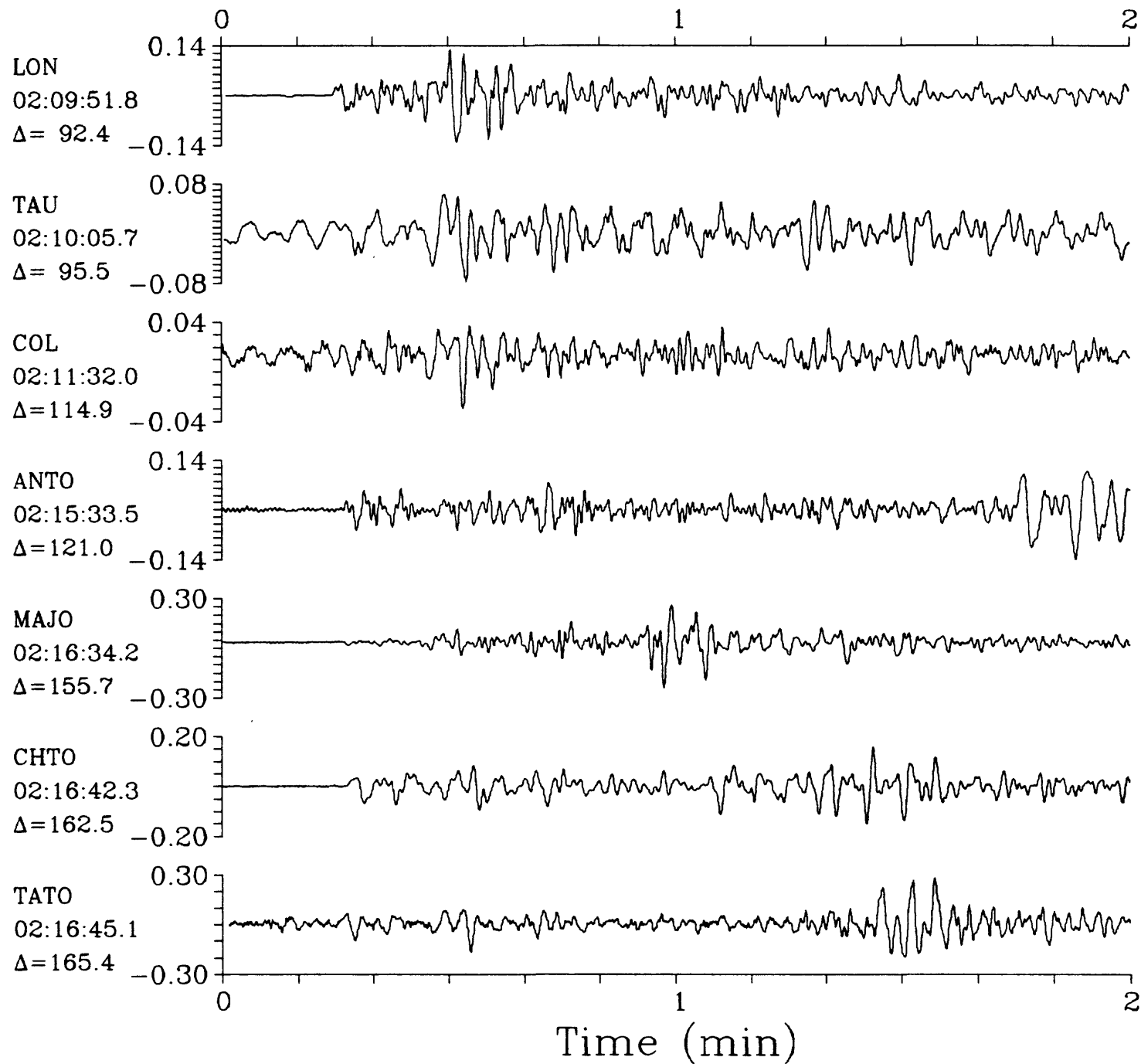
SPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

SPZ

09 April 1985 01:56:58.64

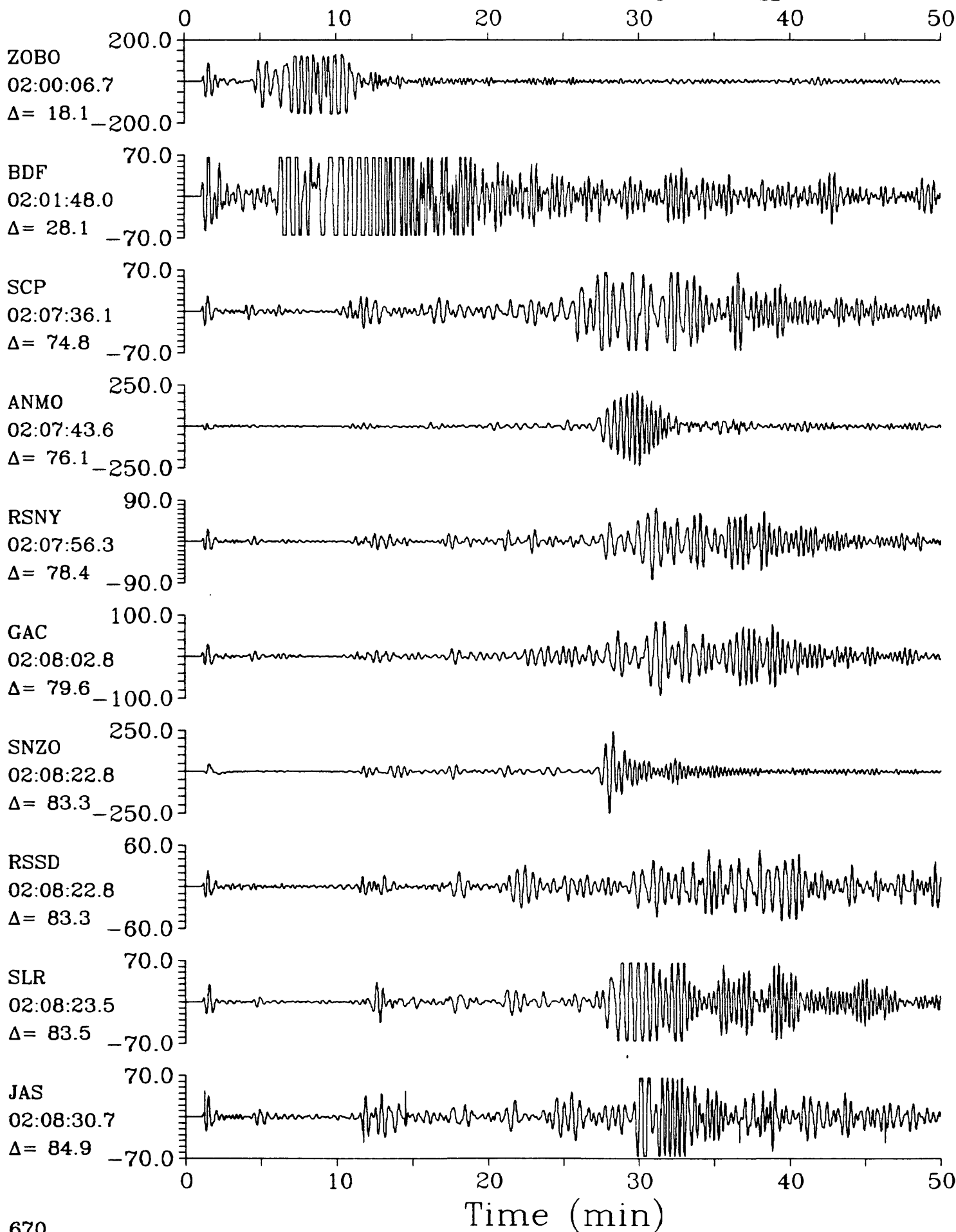
SPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

LPZ

09 April 1985 01:56:58.64

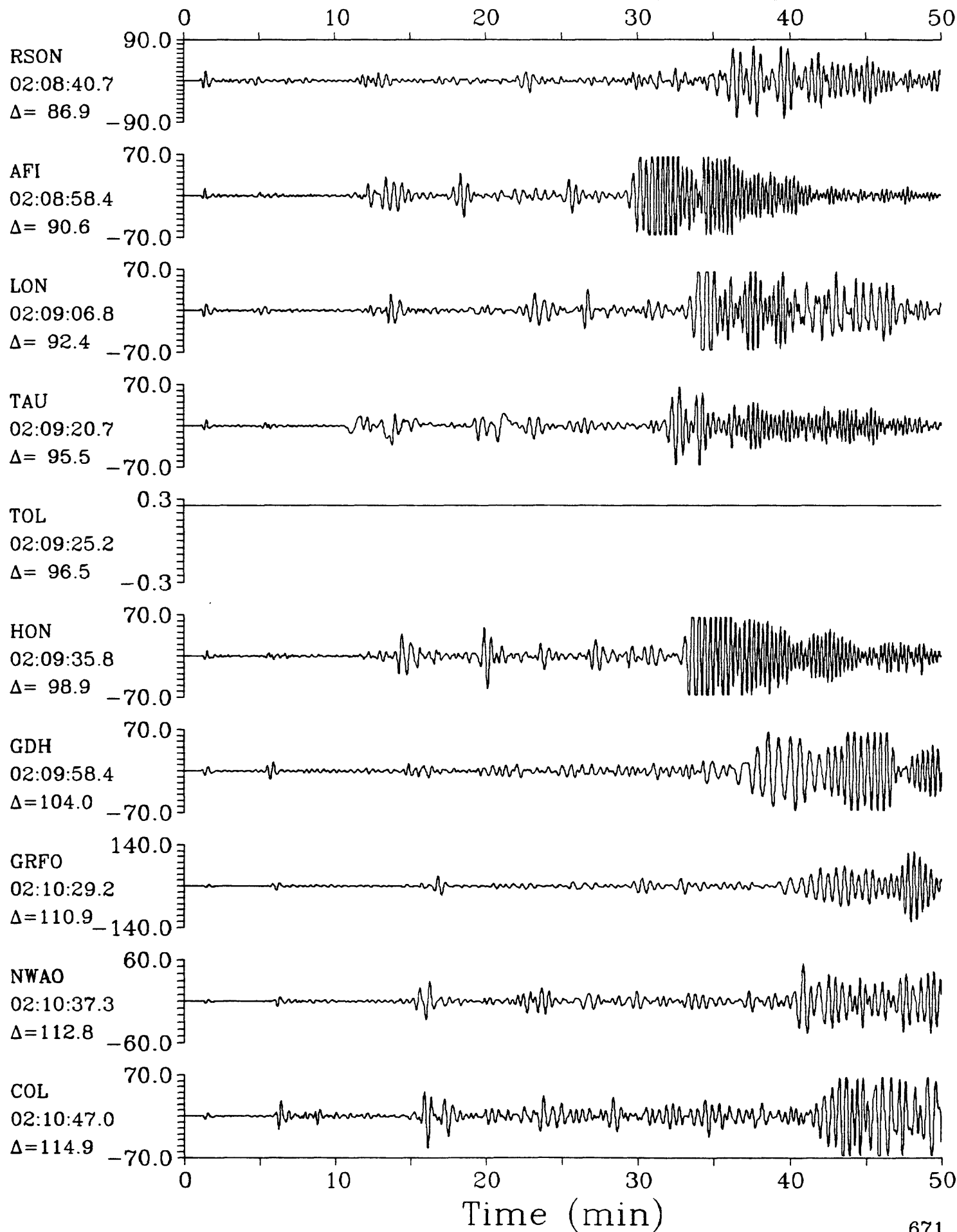
LPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

LPZ

09 April 1985 01:56:58.64

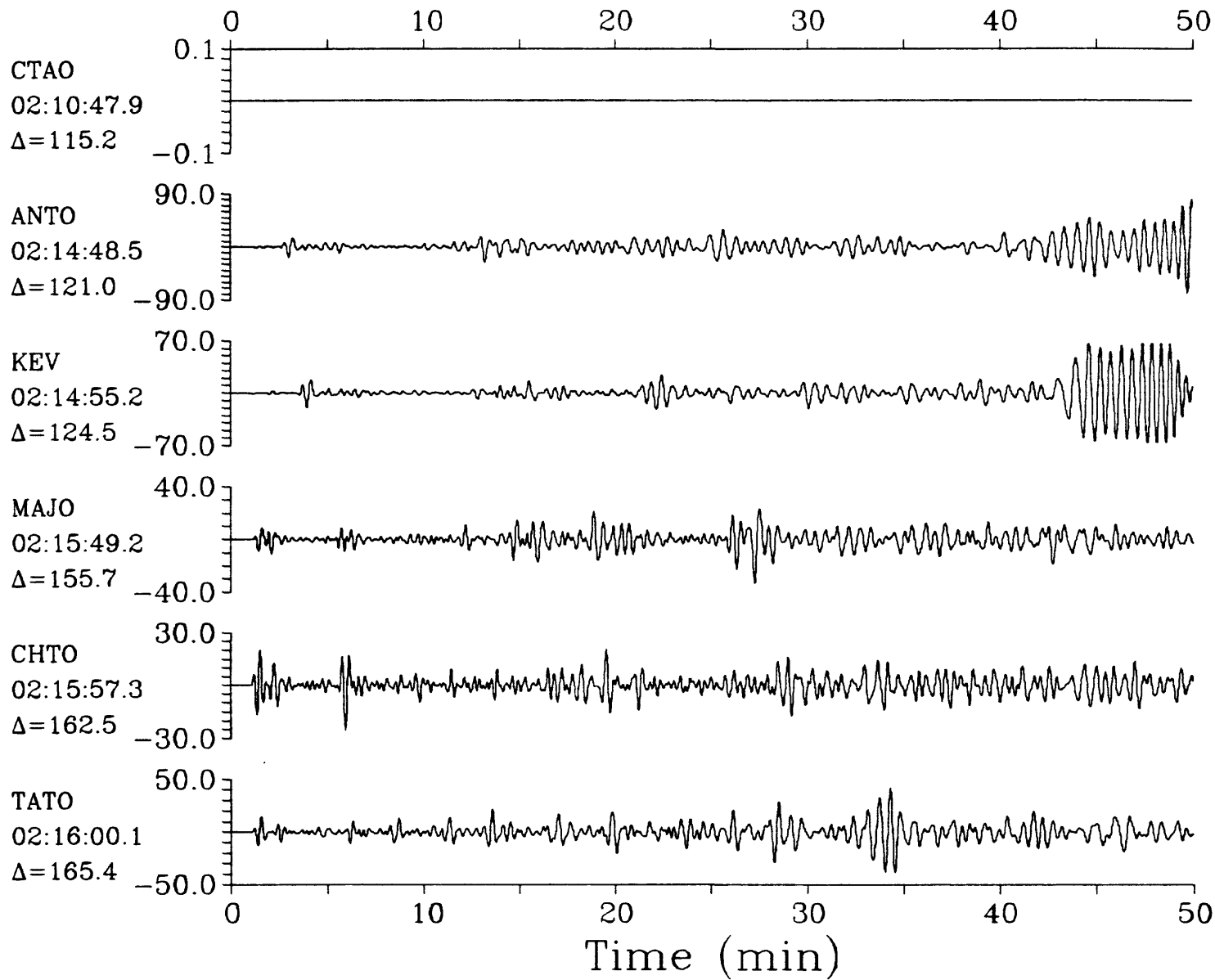
LPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

LPZ

09 April 1985 01:56:58.64

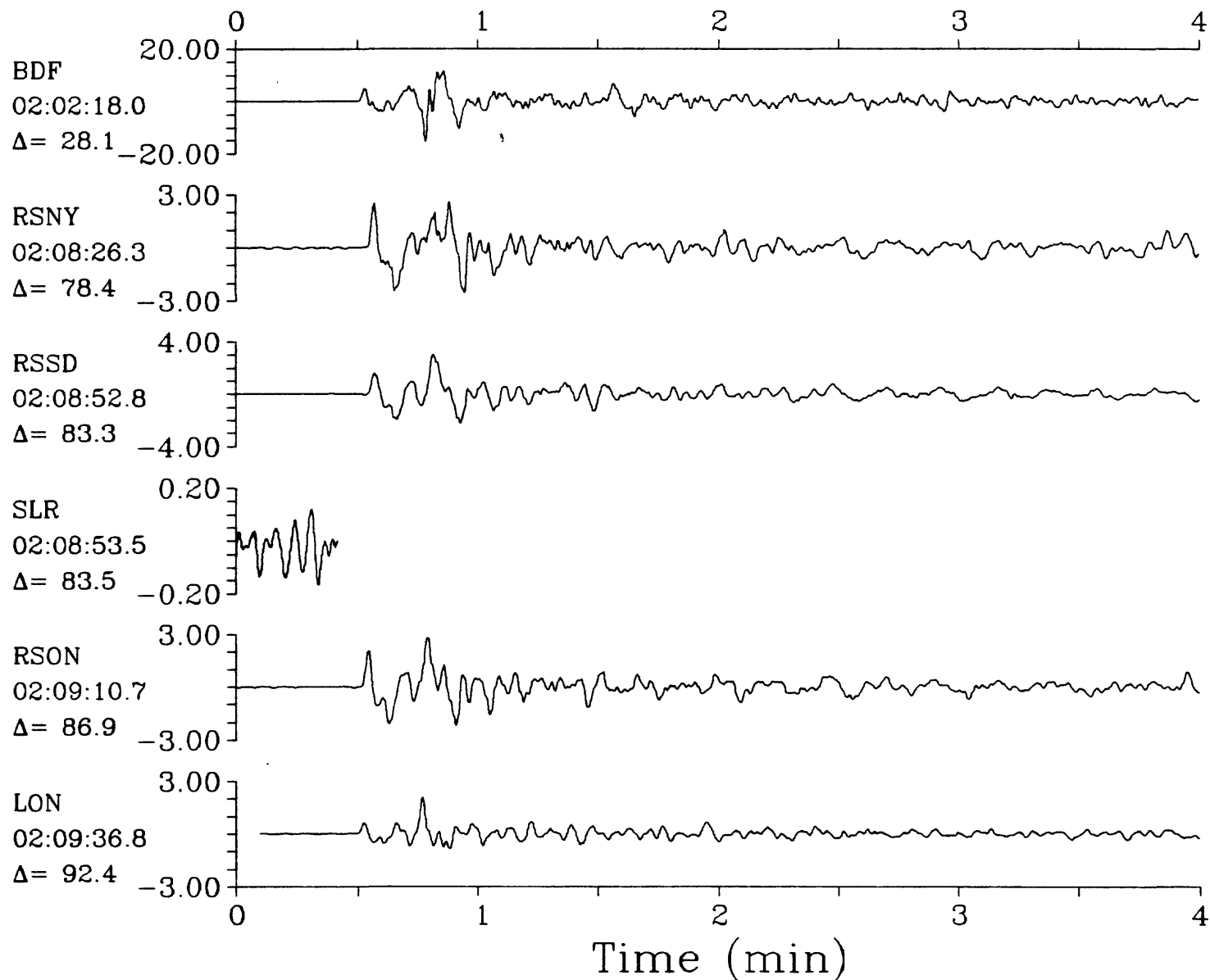
LPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

IPZ

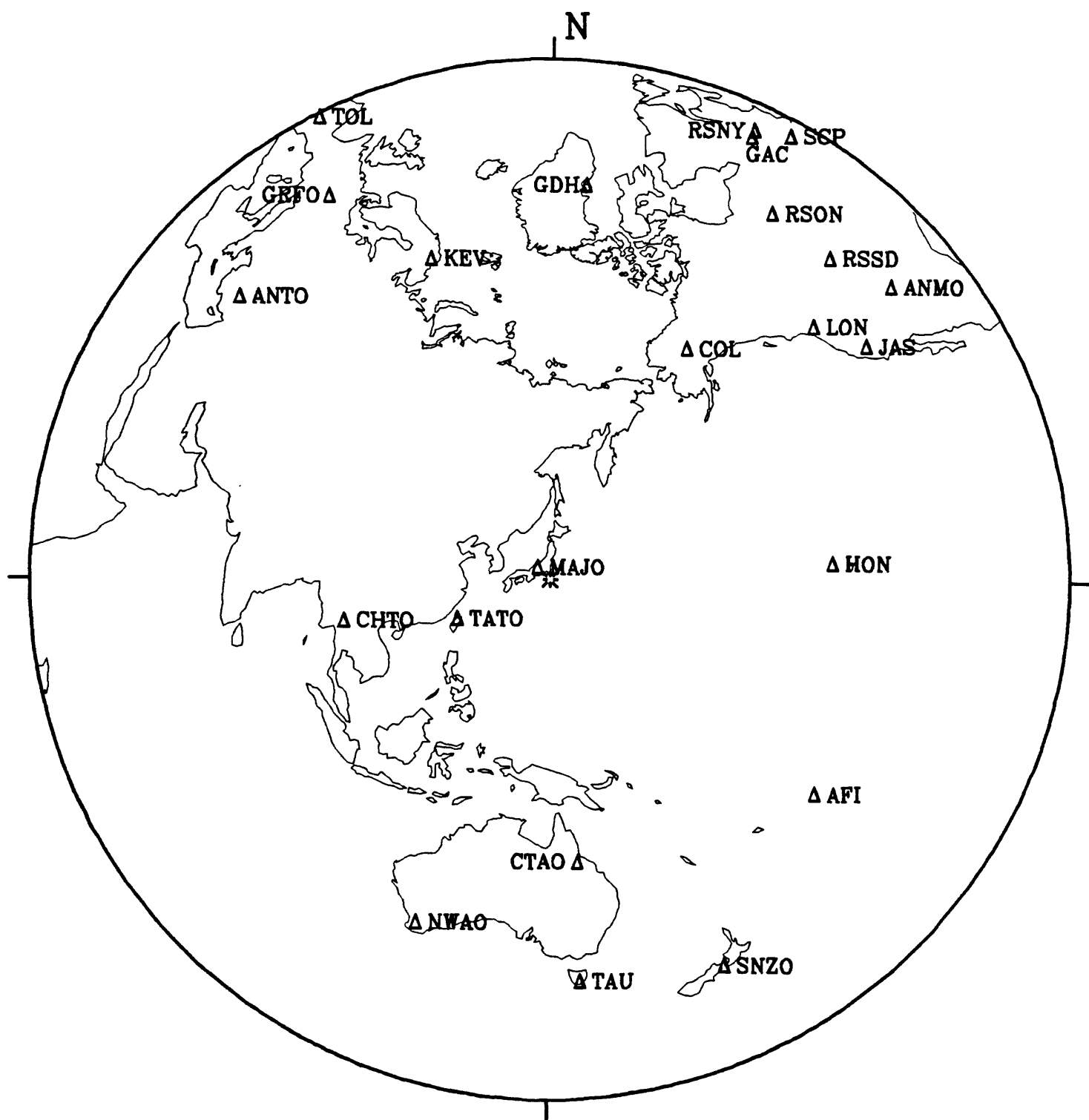
09 April 1985 01:56:58.64

IPZ

Near Coast of Central Chile $h=33.0$ $m_b=6.3$ $M_{sz}=7.2$ 

09 April 1985 05:15:34.74

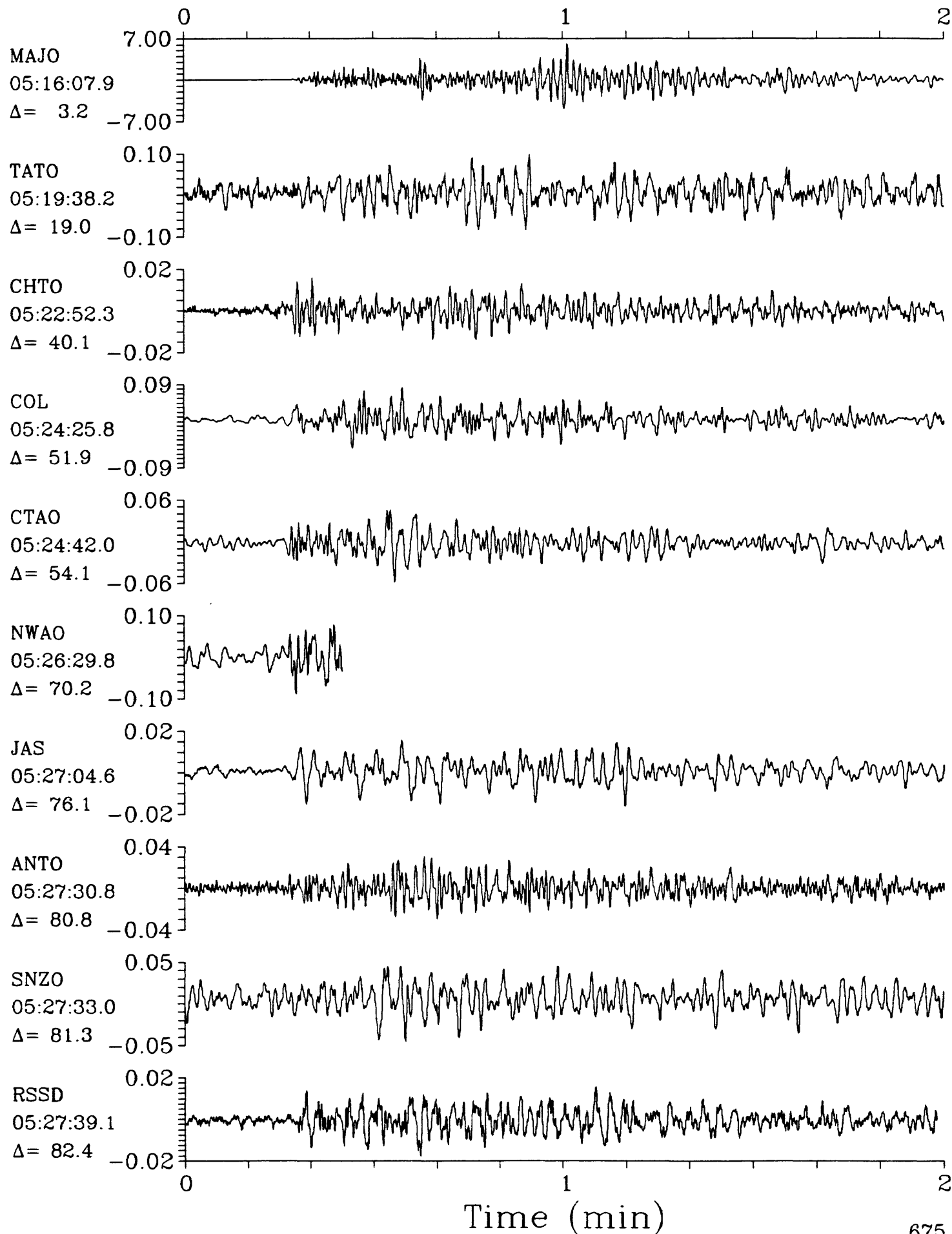
Near East Coast of Honshu, Japan



SPZ

09 April 1985 05:15:34.74

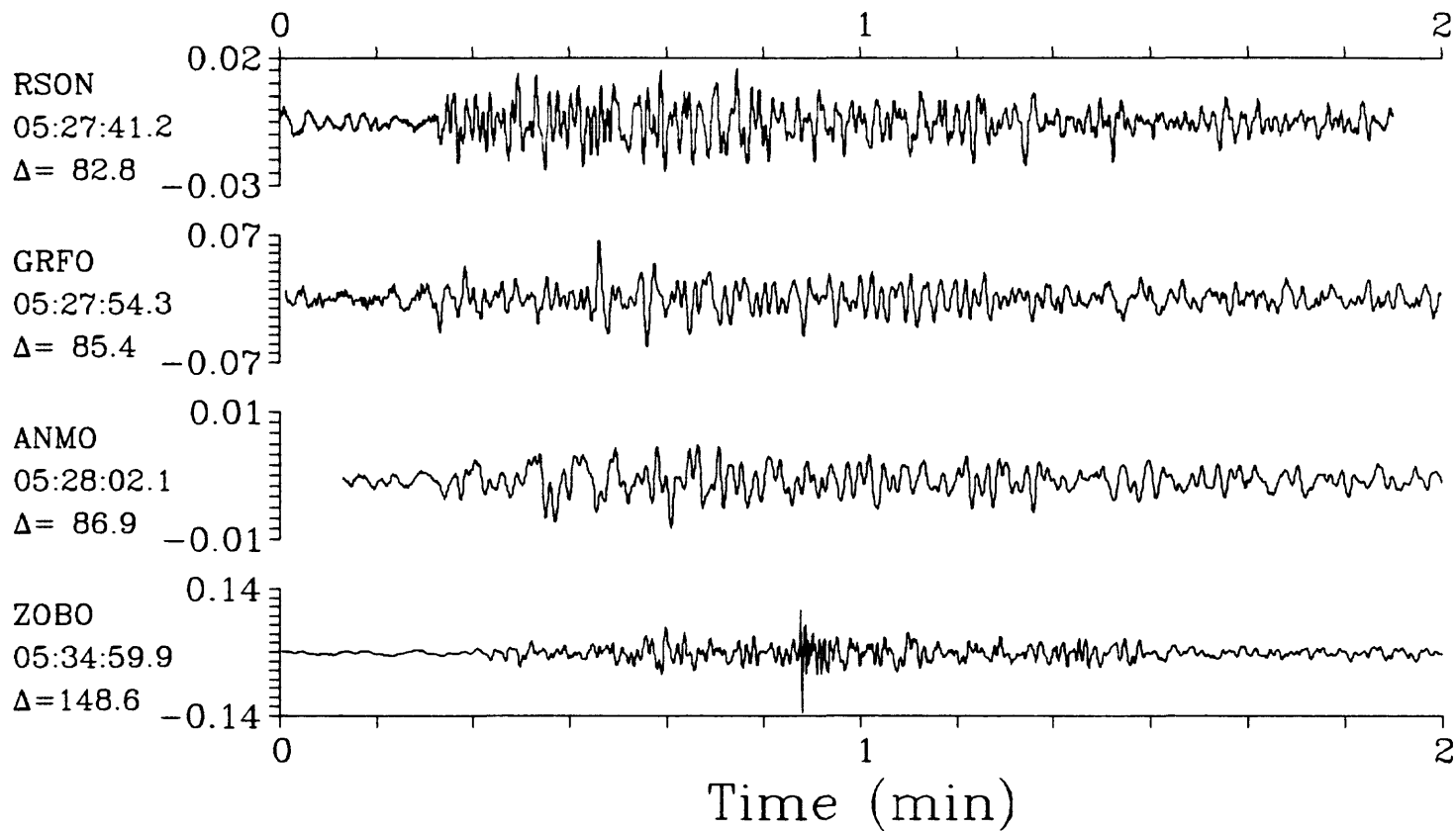
SPZ

Near East Coast of Honshu, Japan $h=32.8$ $m_b=5.1$ $M_{sz}=5.8$ 

SPZ

09 April 1985 05:15:34.74

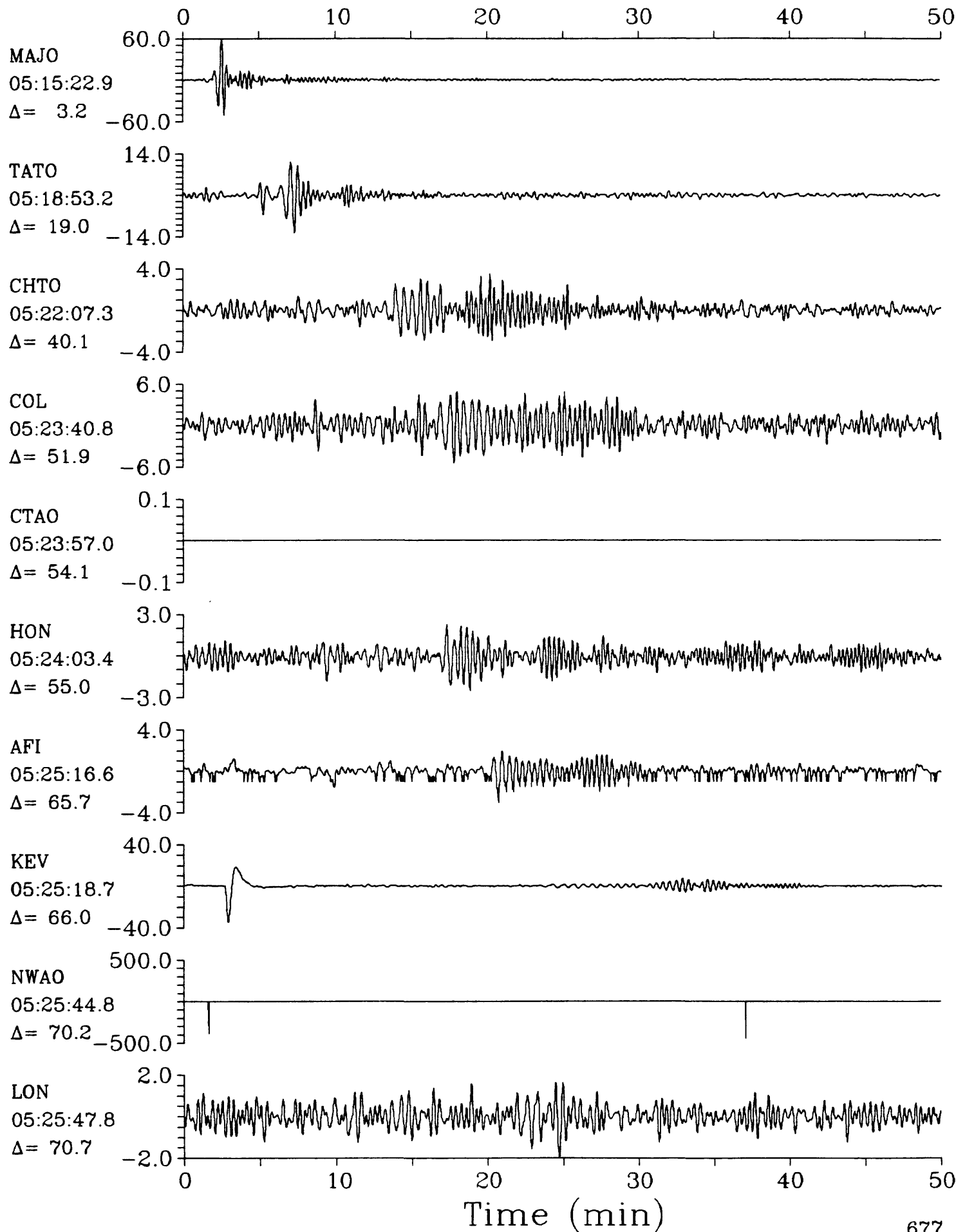
SPZ

Near East Coast of Honshu, Japan $h=32.8$ $m_b=5.1$ $M_{sz}=5.8$ 

LPZ

09 April 1985 05:15:34.74

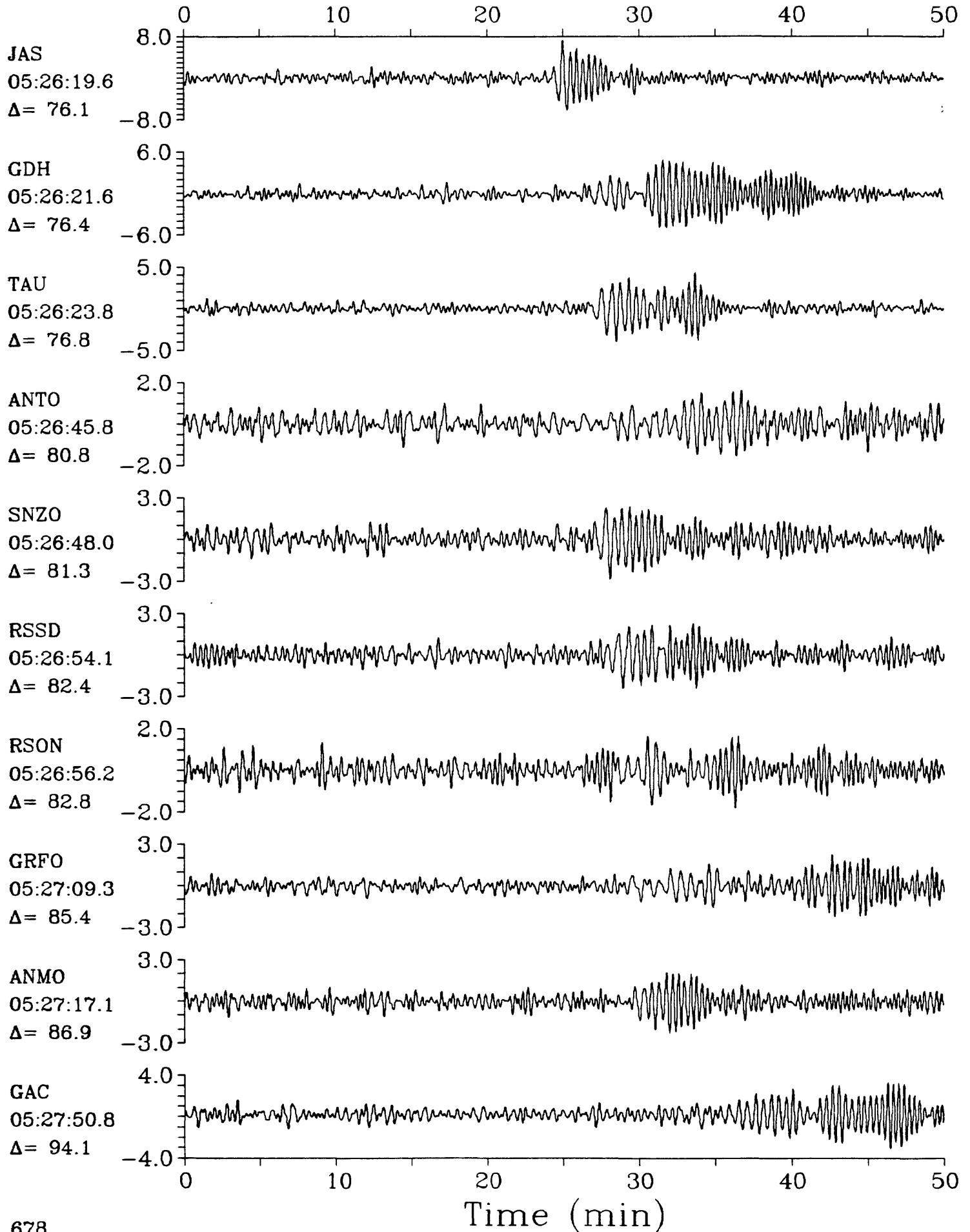
LPZ

Near East Coast of Honshu, Japan $h=32.8$ $m_b=5.1$ $M_{sz}=5.8$ 

LPZ

09 April 1985 05:15:34.74

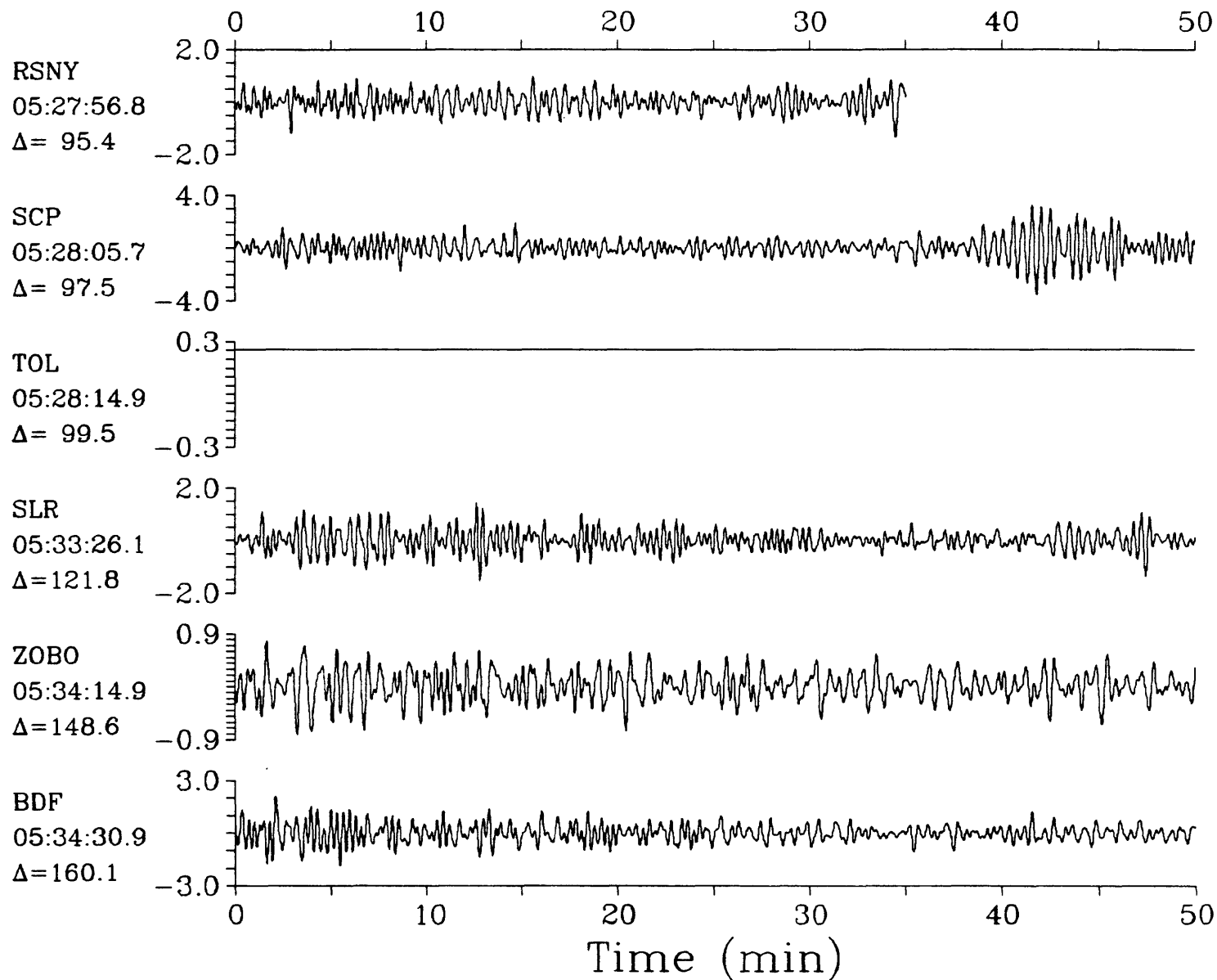
LPZ

Near East Coast of Honshu, Japan $h=32.8$ $m_b=5.1$ $M_{sz}=5.8$ 

LPZ

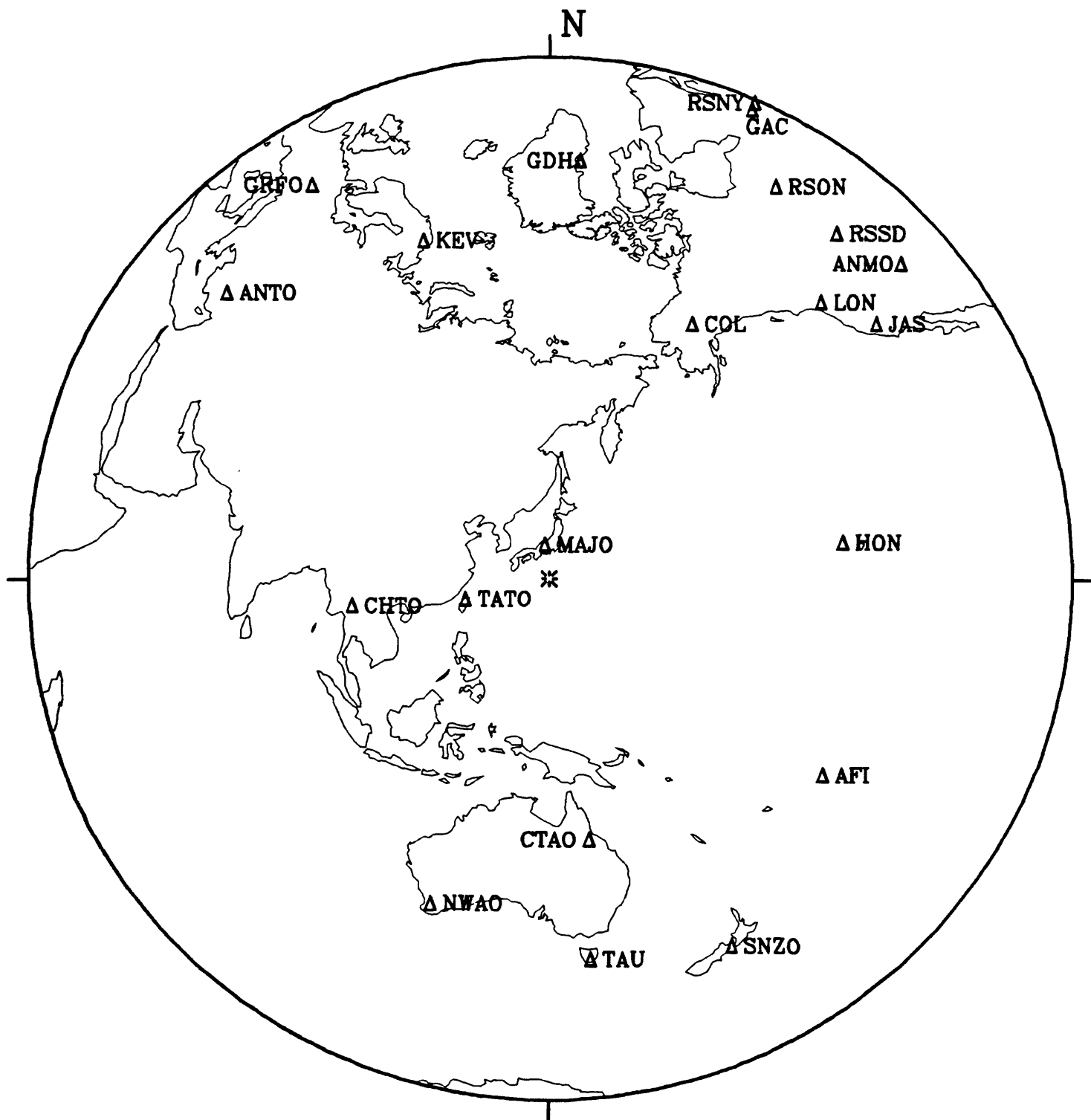
09 April 1985 05:15:34.74

LPZ

Near East Coast of Honshu, Japan $h=32.8$ $m_b=5.1$ $M_{sz}=5.8$ 

10 April 1985 16:26:18.64

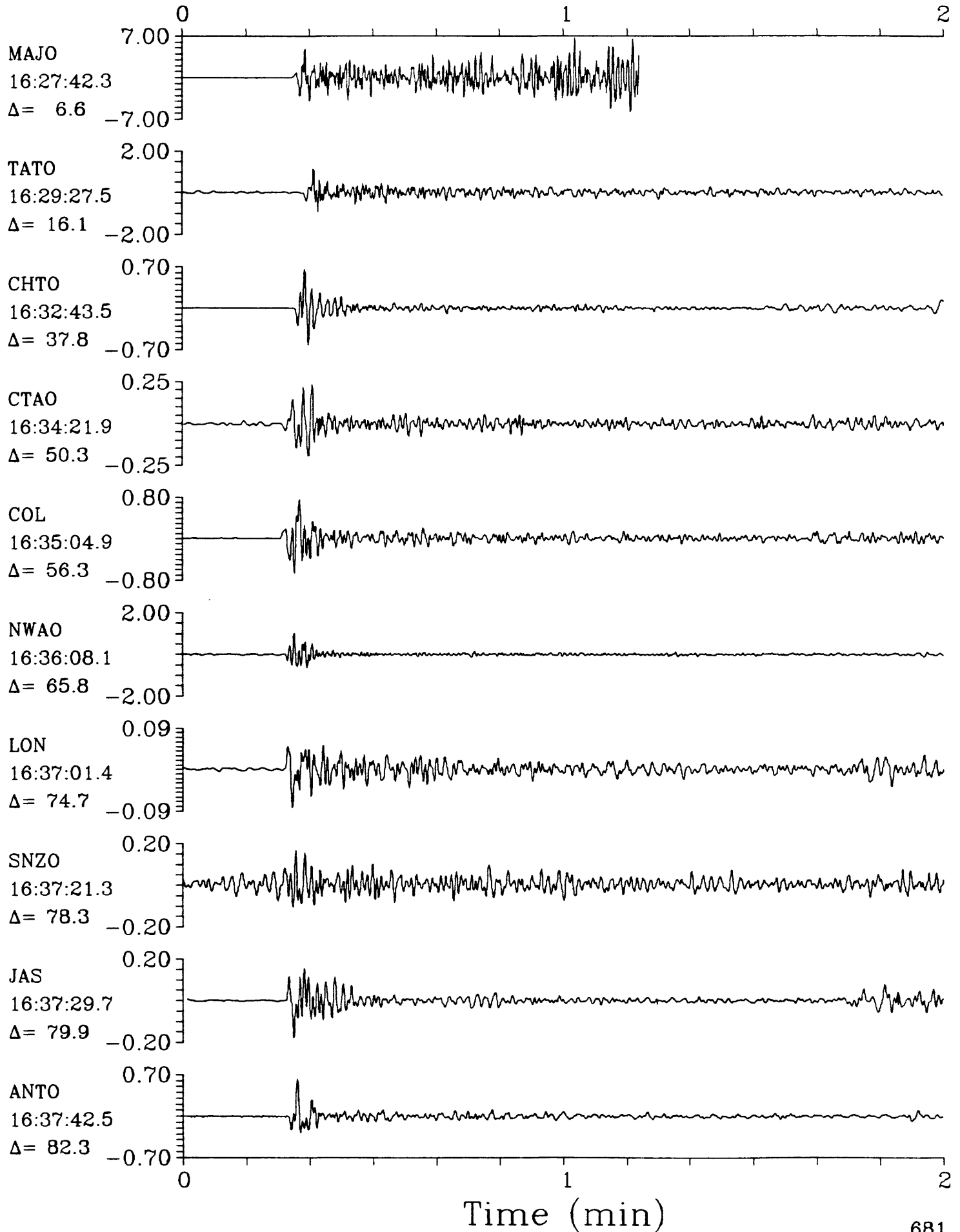
South of Honshu, Japan



SPZ

10 April 1985 16:26:18.64

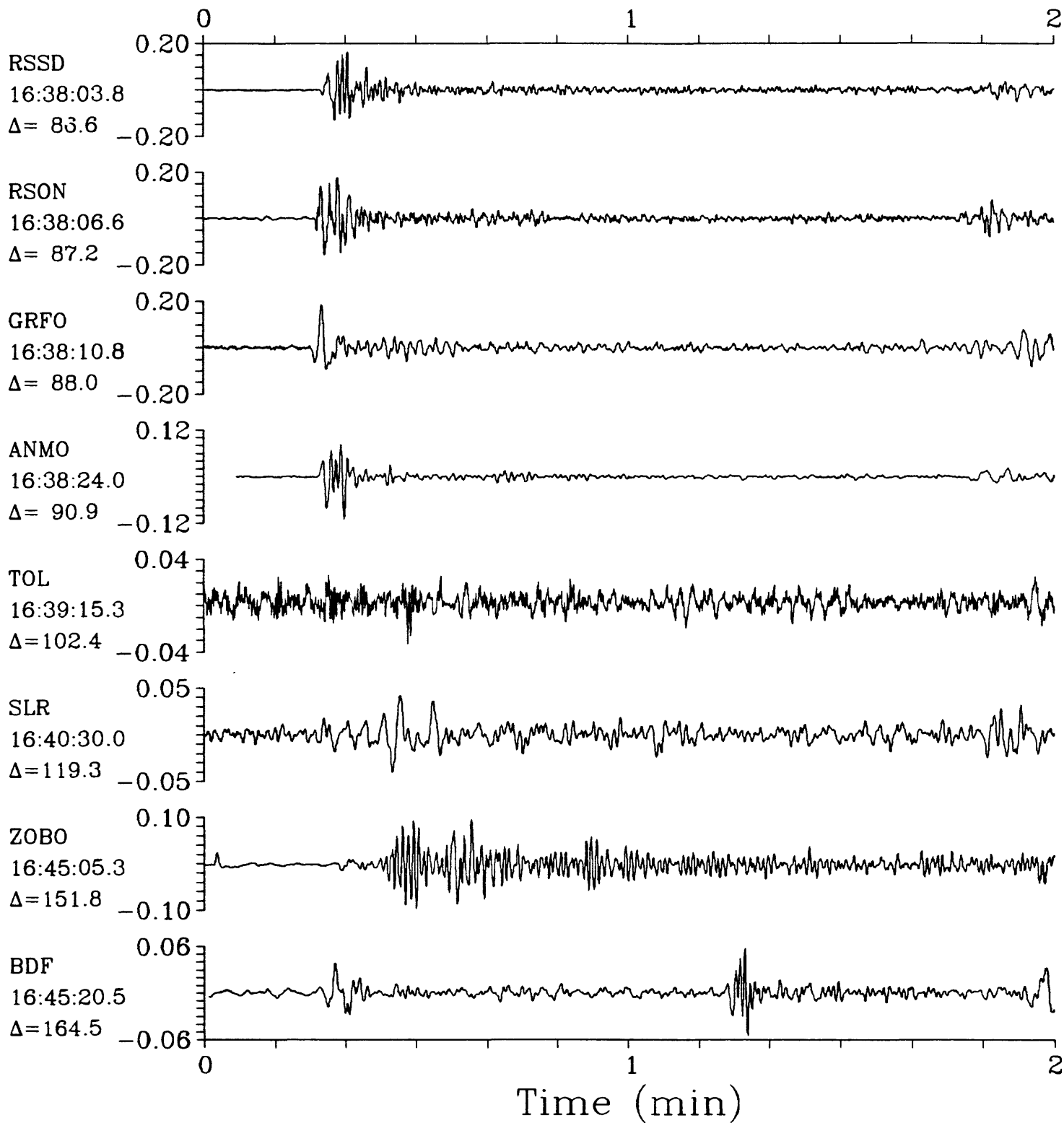
SPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

SPZ

10 April 1985 16:26:18.64

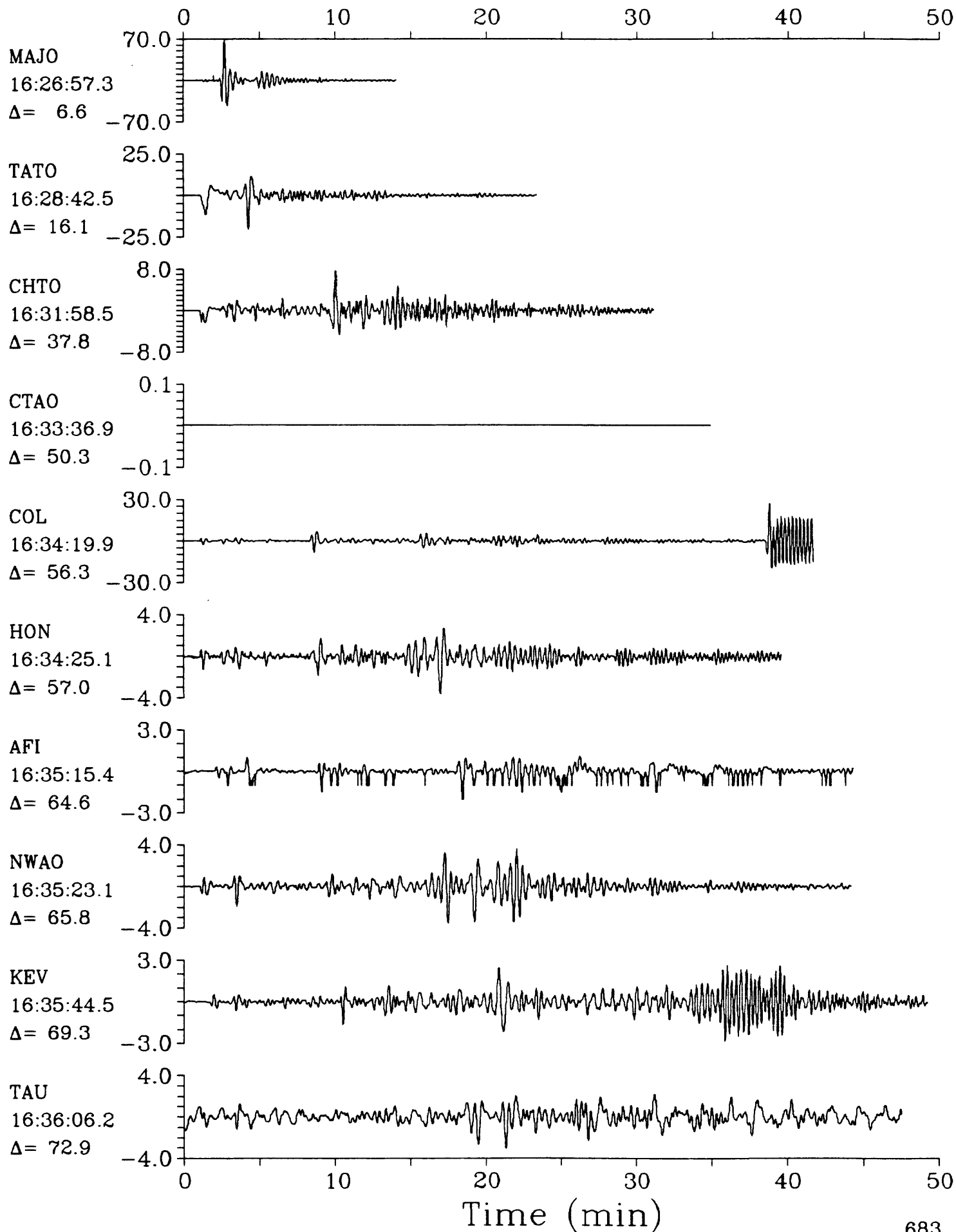
SPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

LPZ

10 April 1985 16:26:18.64

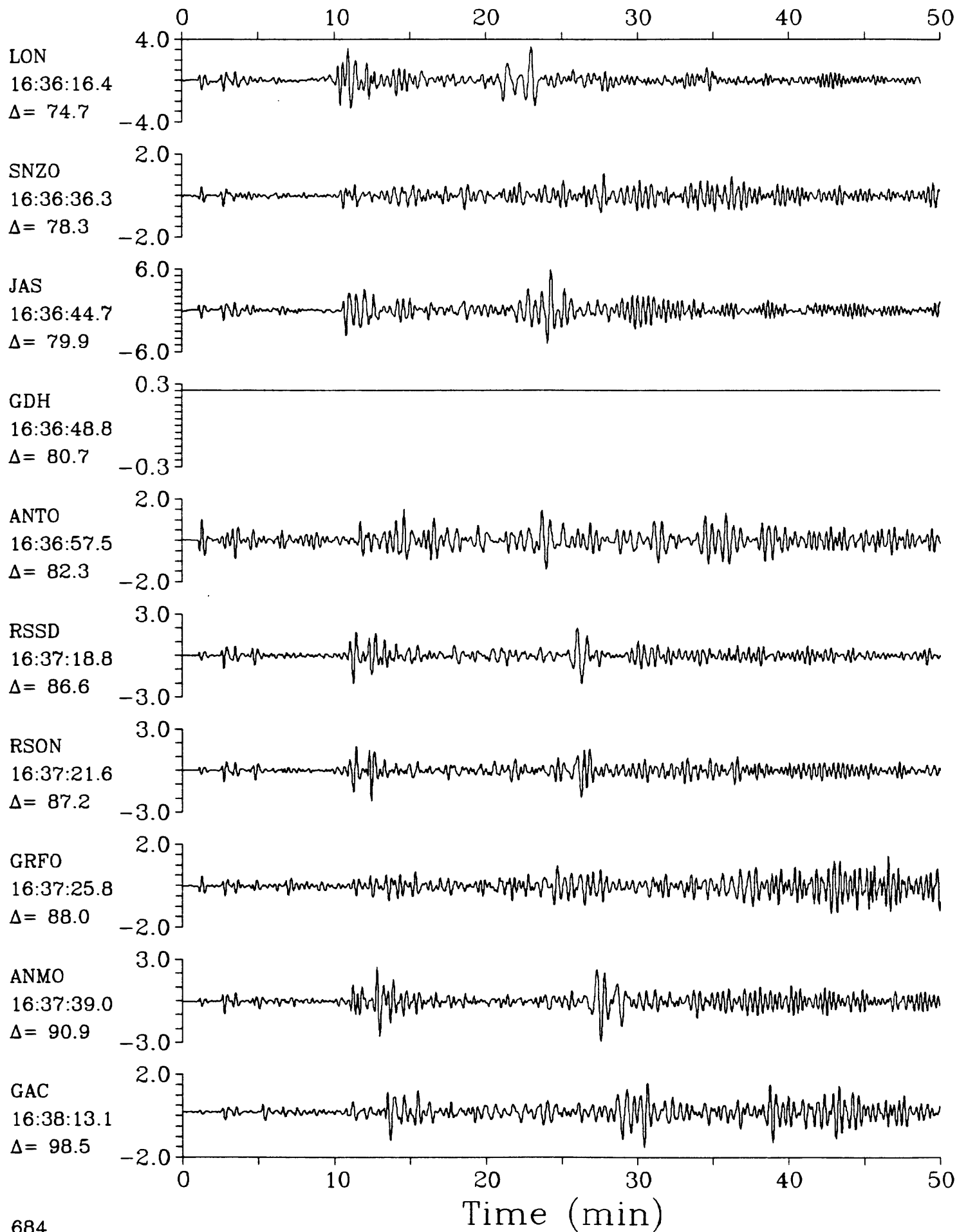
LPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

LPZ

10 April 1985 16:26:18.64

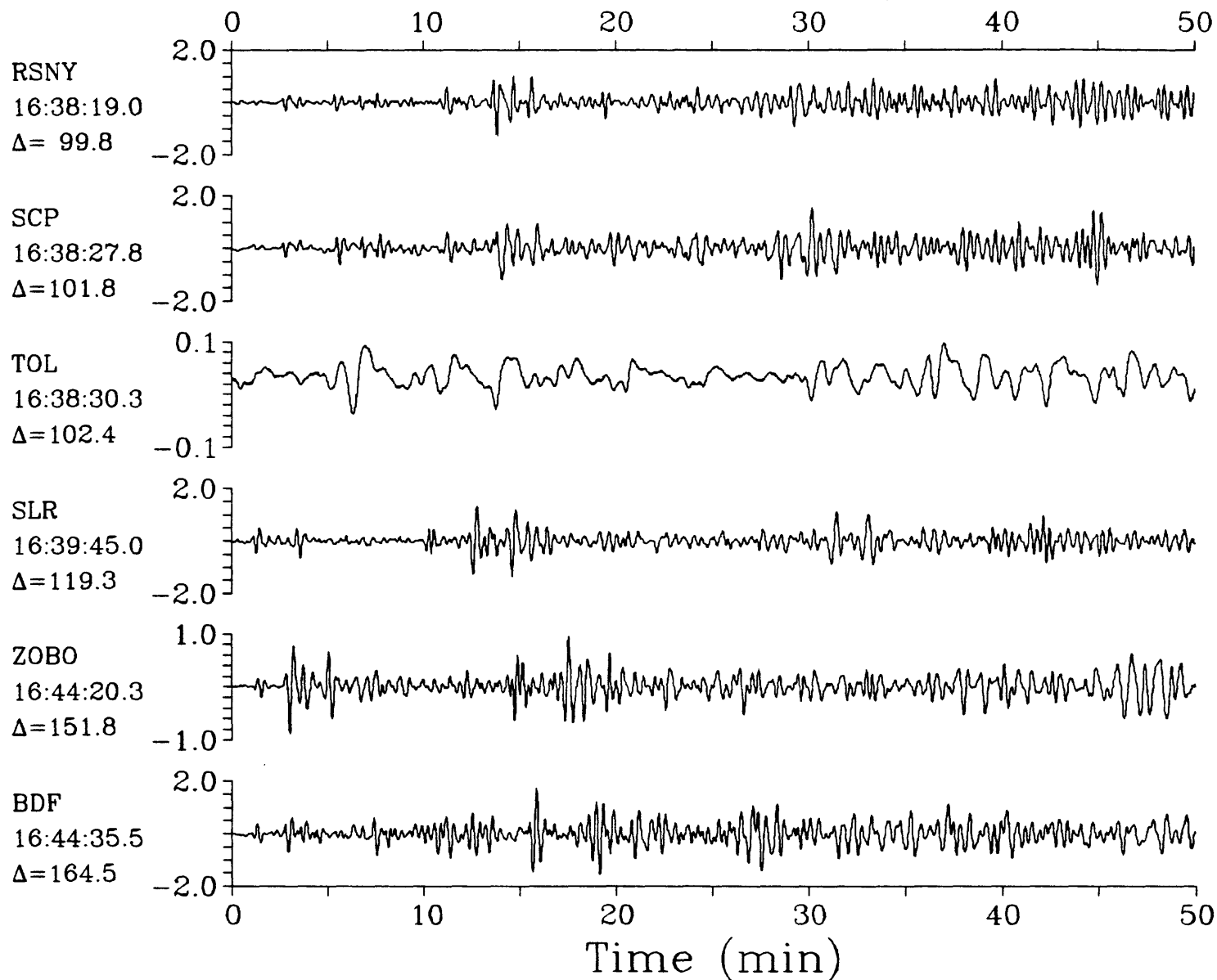
LPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

LPZ

10 April 1985 16:26:18.64

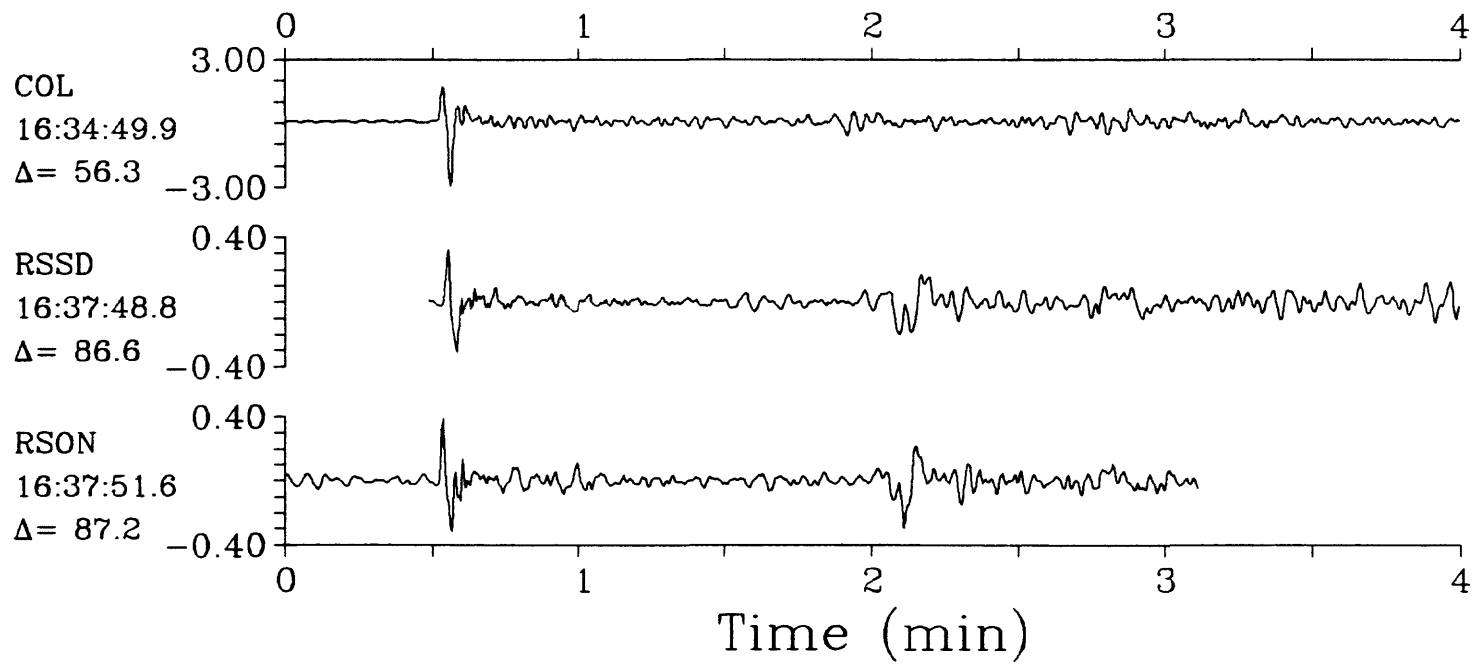
LPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

IPZ

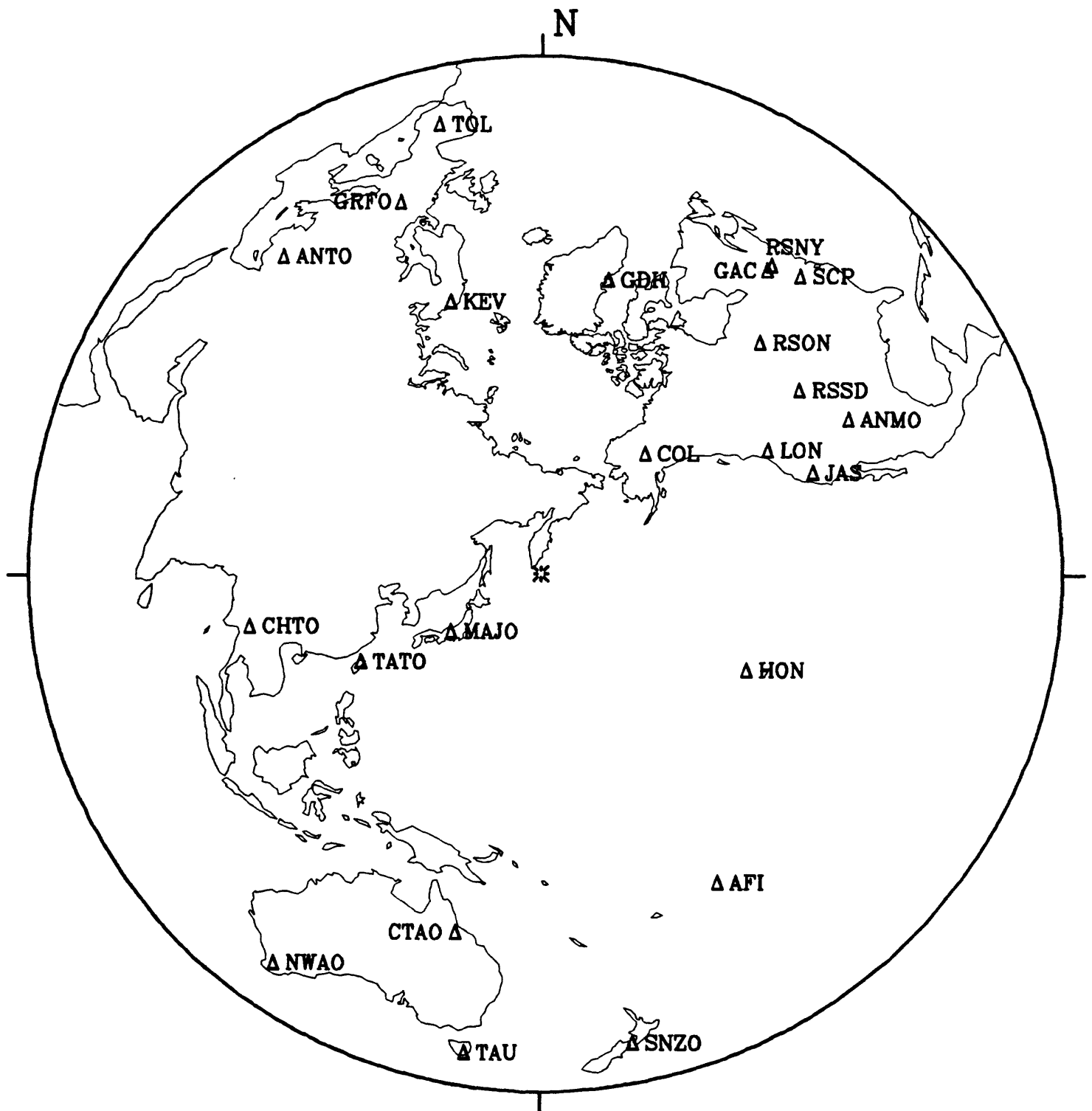
10 April 1985 16:26:18.64

IPZ

South of Honshu, Japan $h=397.6$ $m_b=5.8$ 

10 April 1985 20:37:34.50

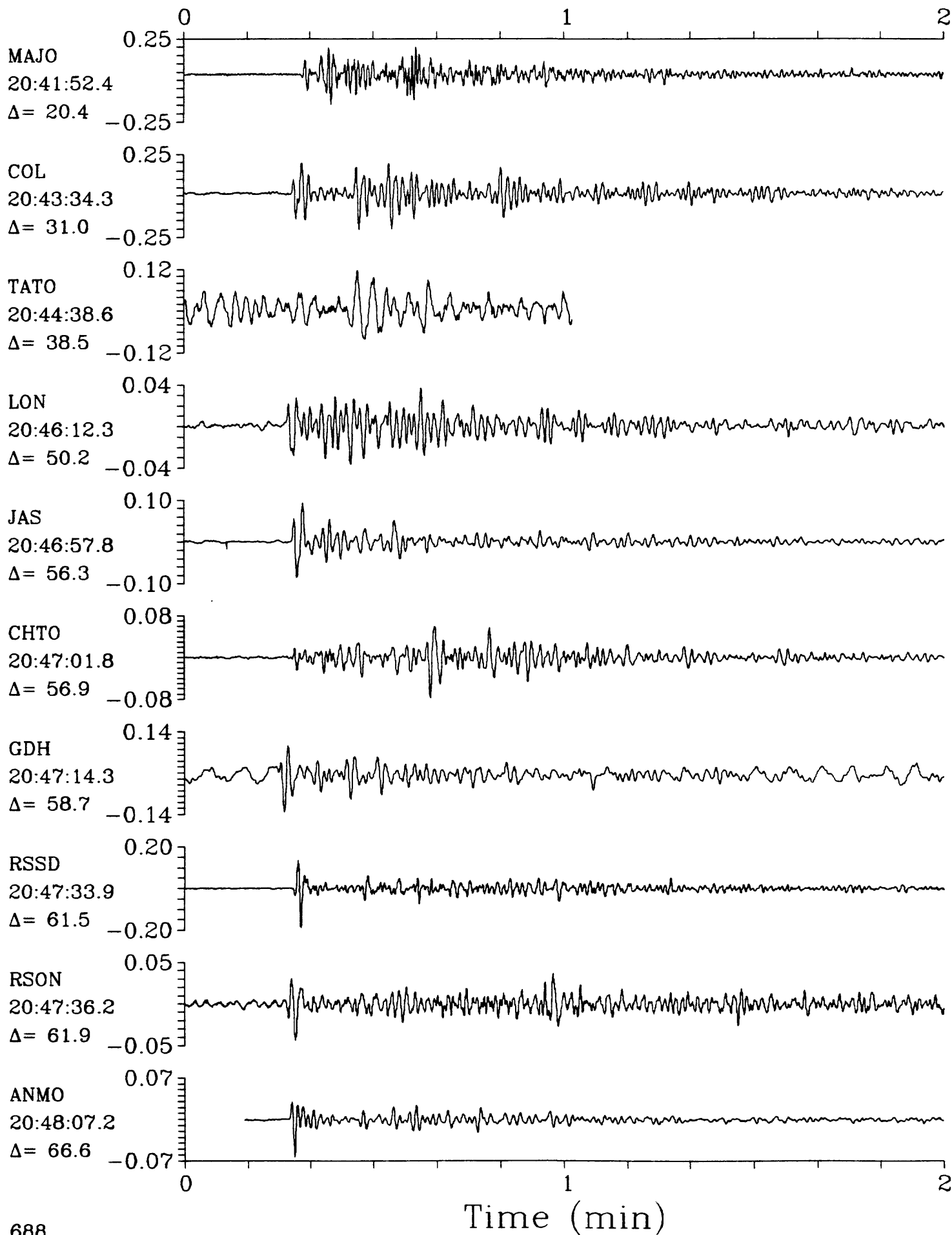
Kuril Islands Region



SPZ

10 April 1985 20:37:34.50

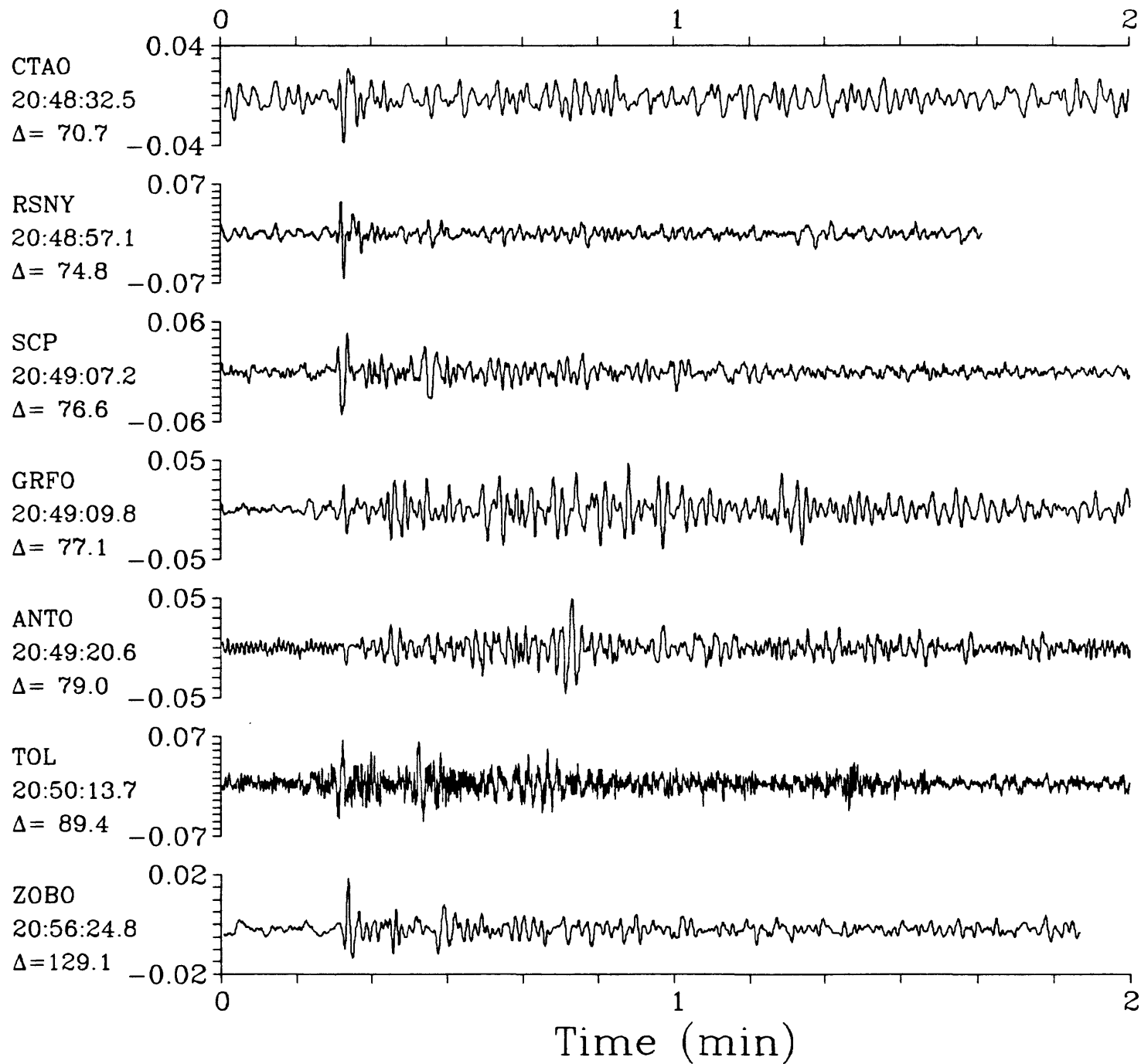
SPZ

Kuril Islands Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

SPZ

10 April 1985 20:37:34.50

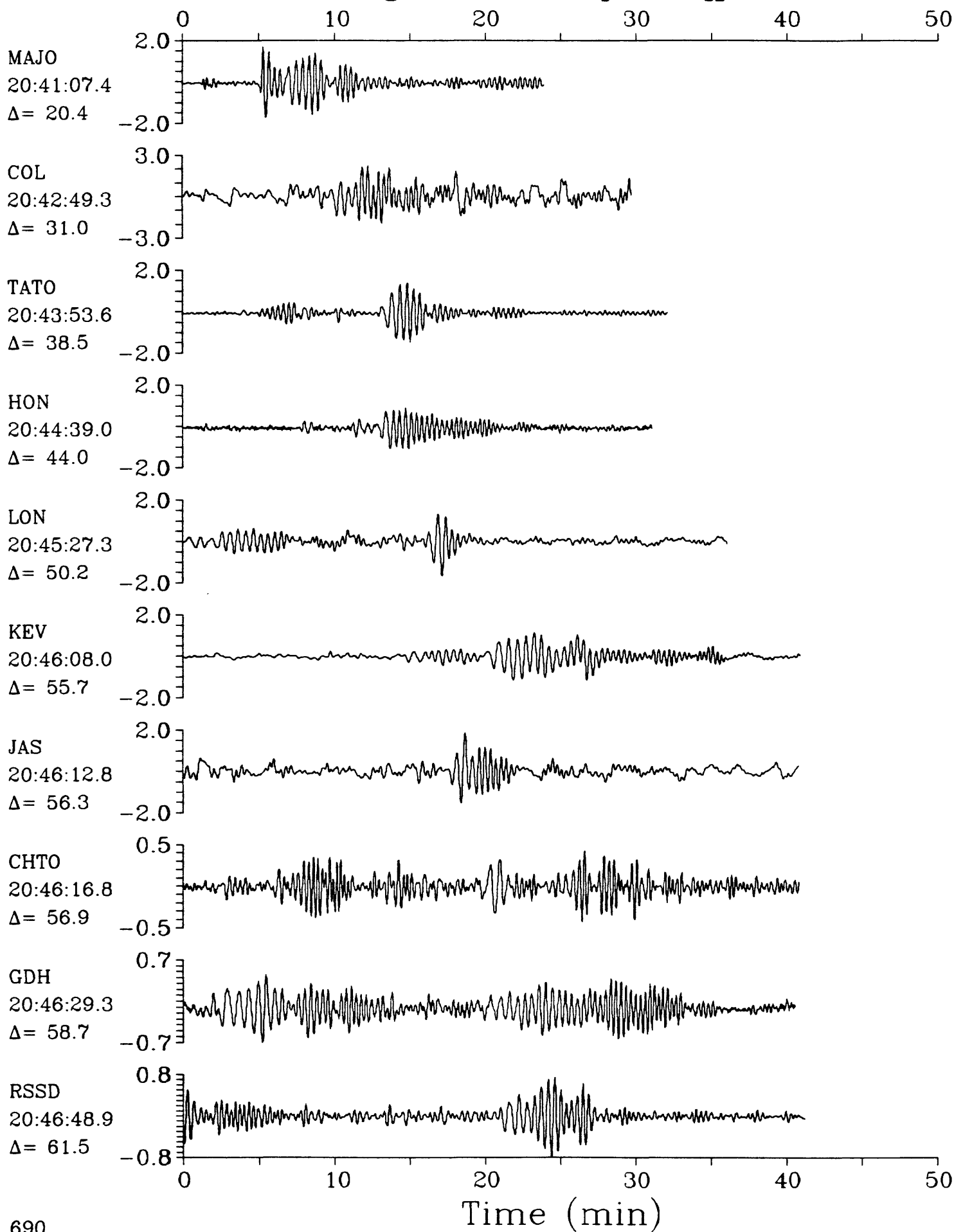
SPZ

Kuril Islands Region $h=33.0$ $m_b=5.5$ $M_{SZ}=5.0$ 

LPZ

10 April 1985 20:37:34.50

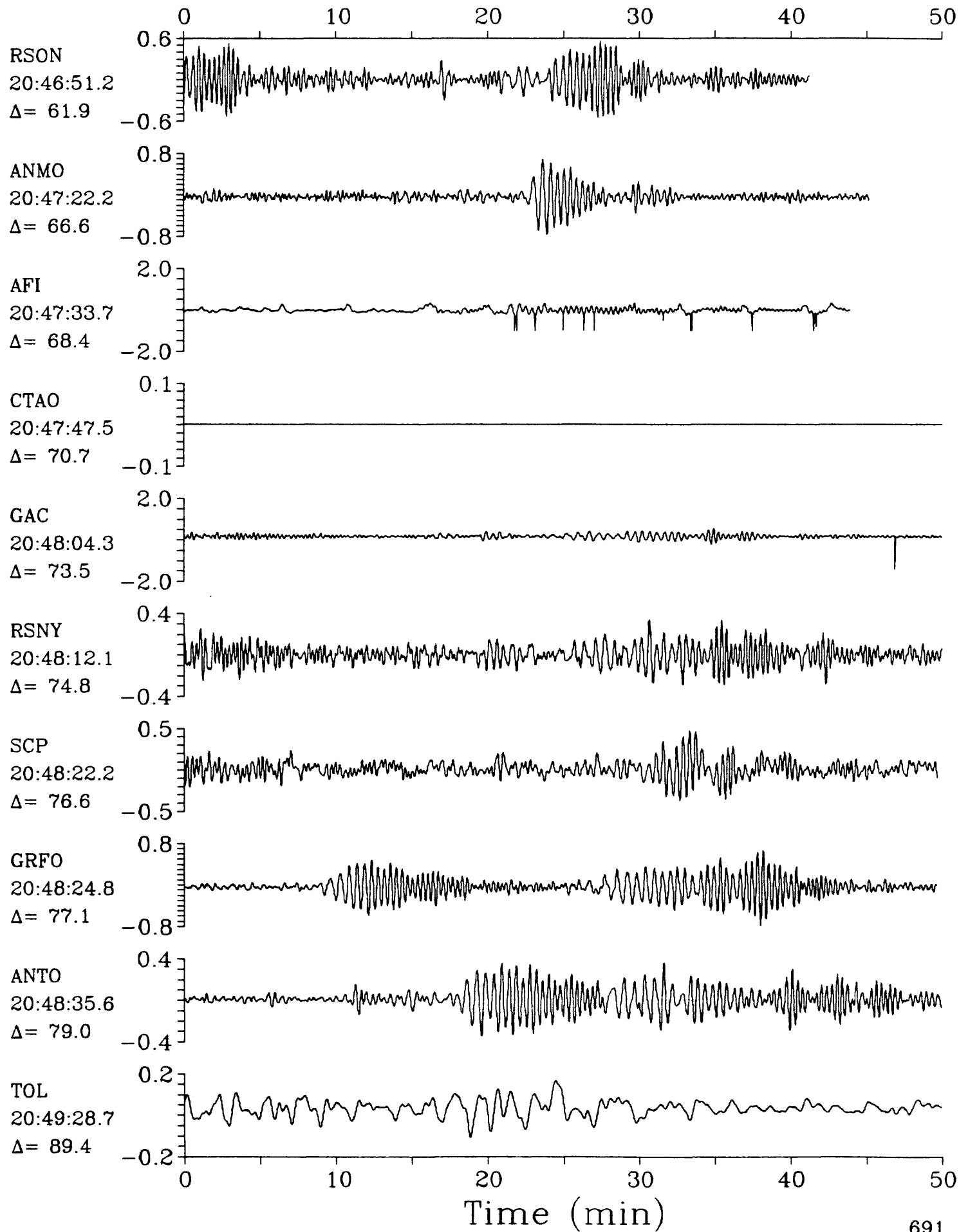
LPZ

Kuril Islands Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

LPZ

10 April 1985 20:37:34.50

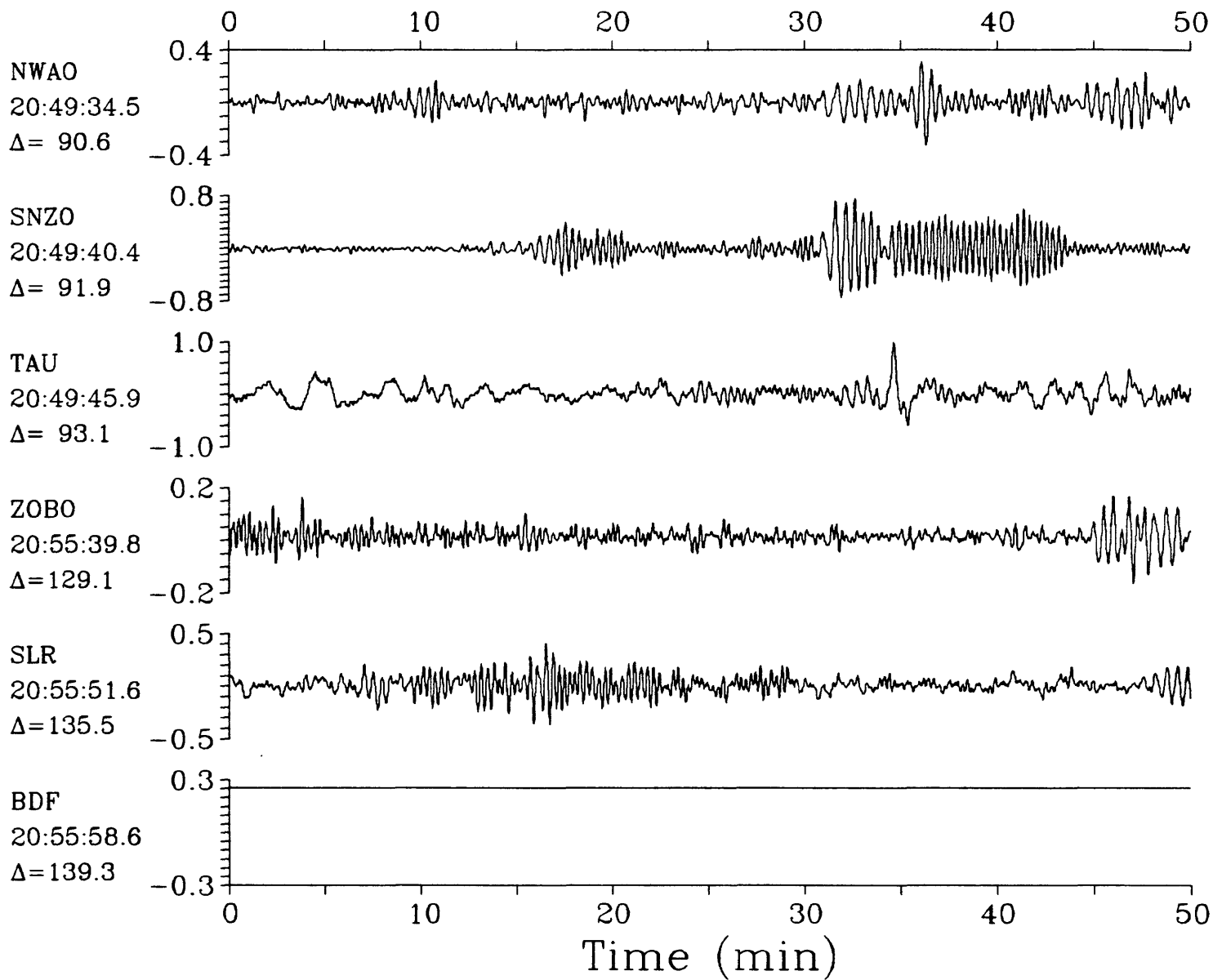
LPZ

Kuril Islands Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

LPZ

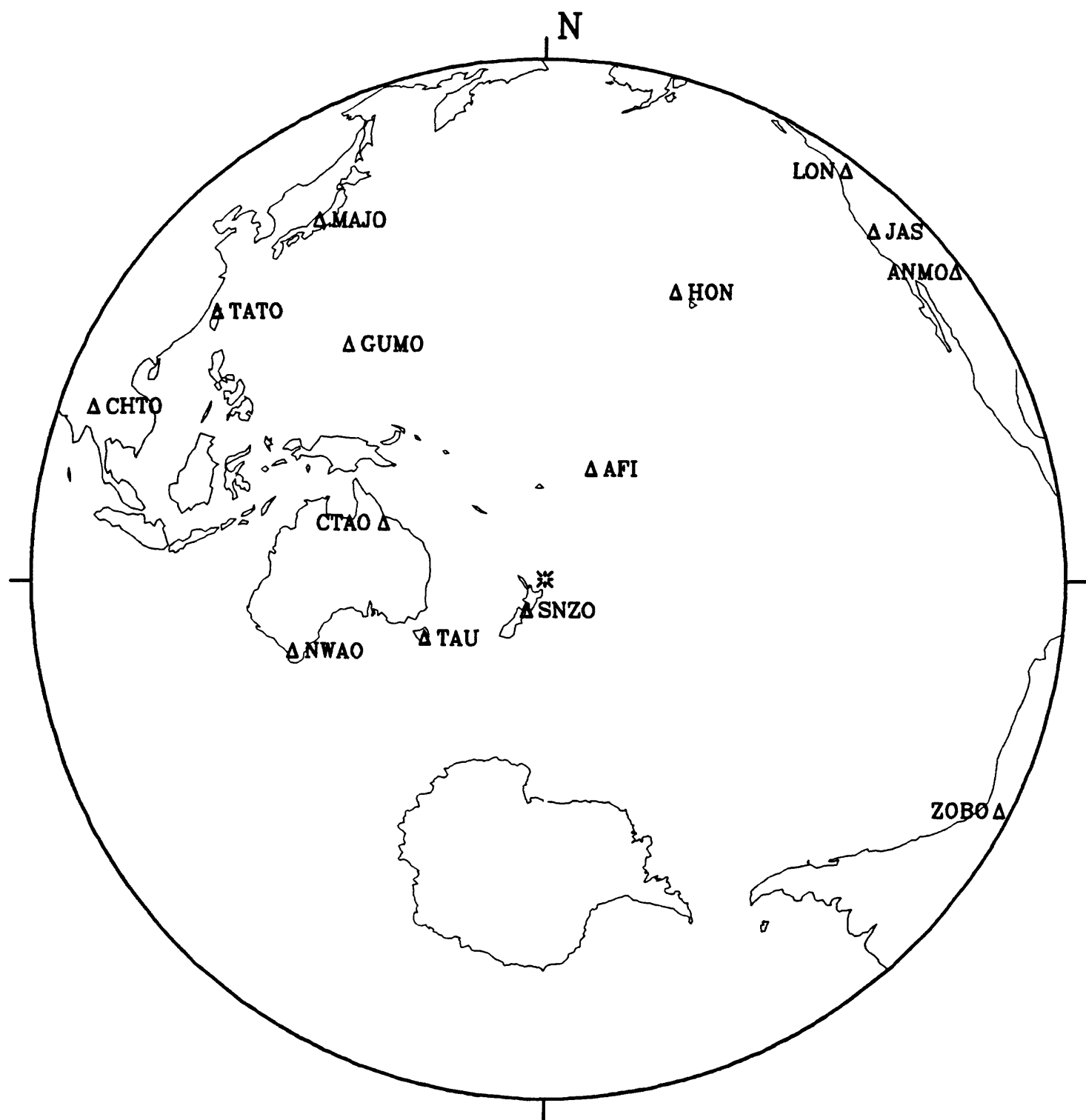
10 April 1985 20:37:34.50

LPZ

Kuril Islands Region $h=33.0$ $m_b=5.5$ $M_{sz}=5.0$ 

11 April 1985 11:55:07.12

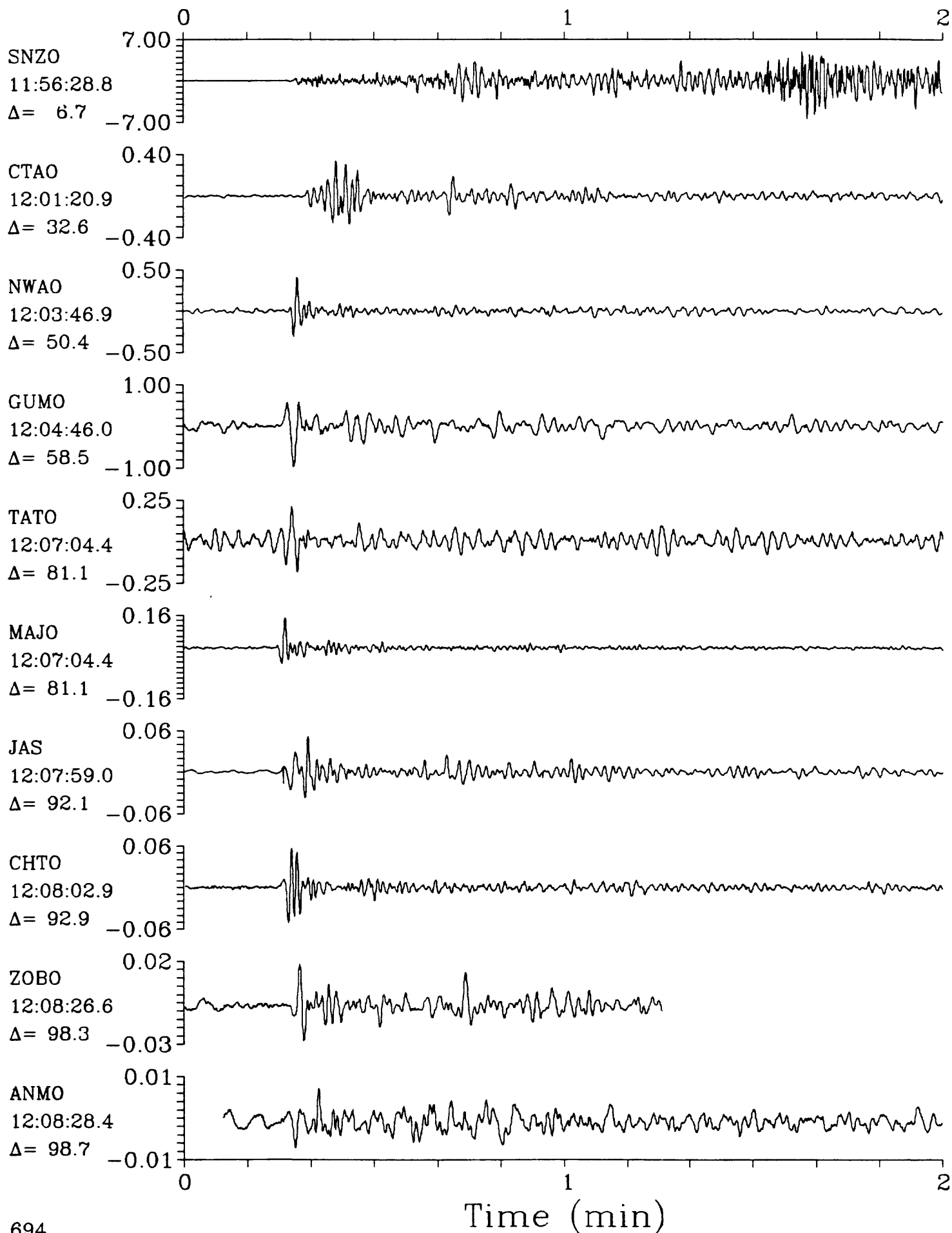
Off E. Coast of N. Island, N.Z.



SPZ

11 April 1985 11:55:07.12

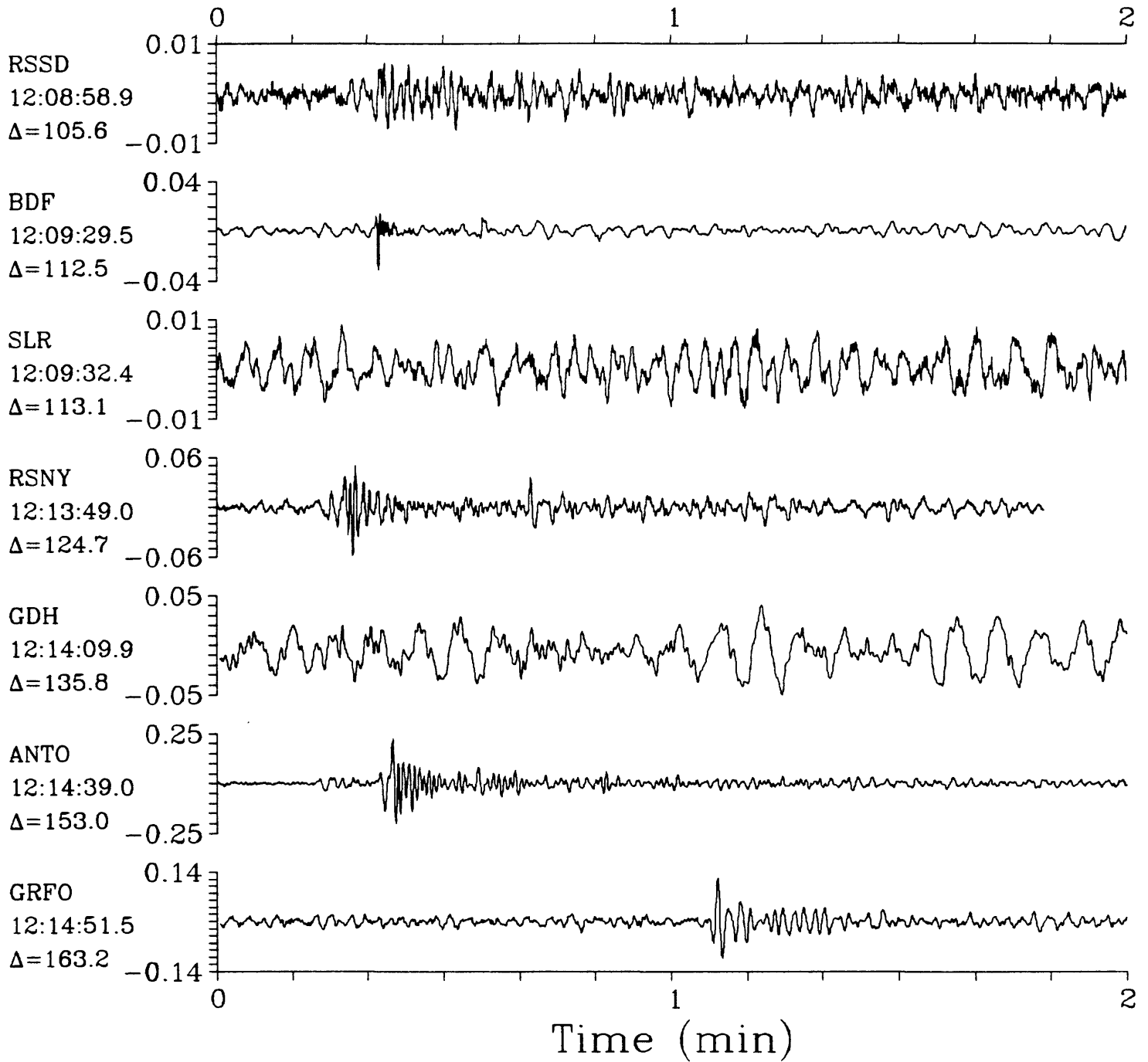
SPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.8$ $M_{sz}=5.1$ 

SPZ

11 April 1985 11:55:07.12

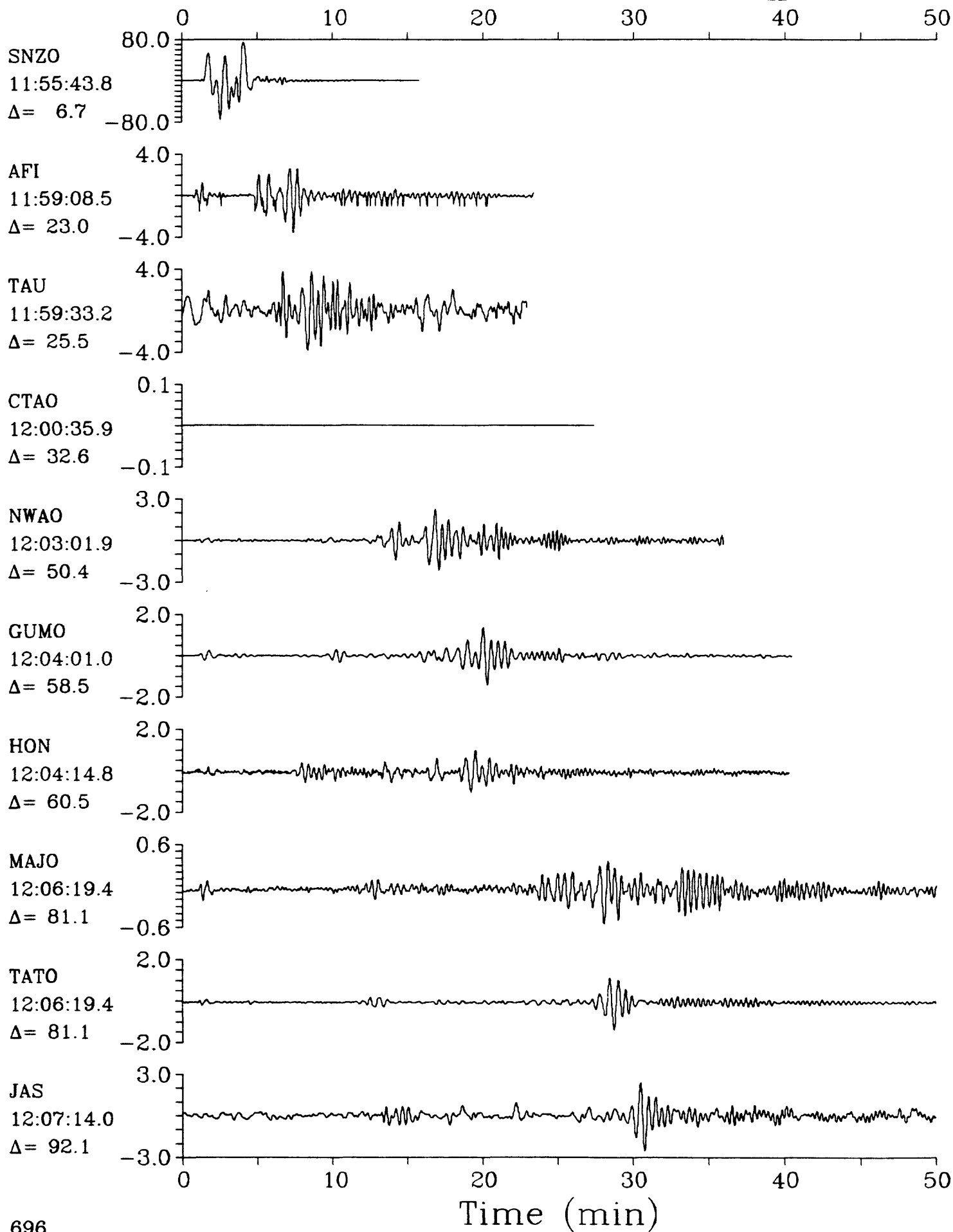
SPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.8$ $M_{sz}=5.1$ 

LPZ

11 April 1985 11:55:07.12

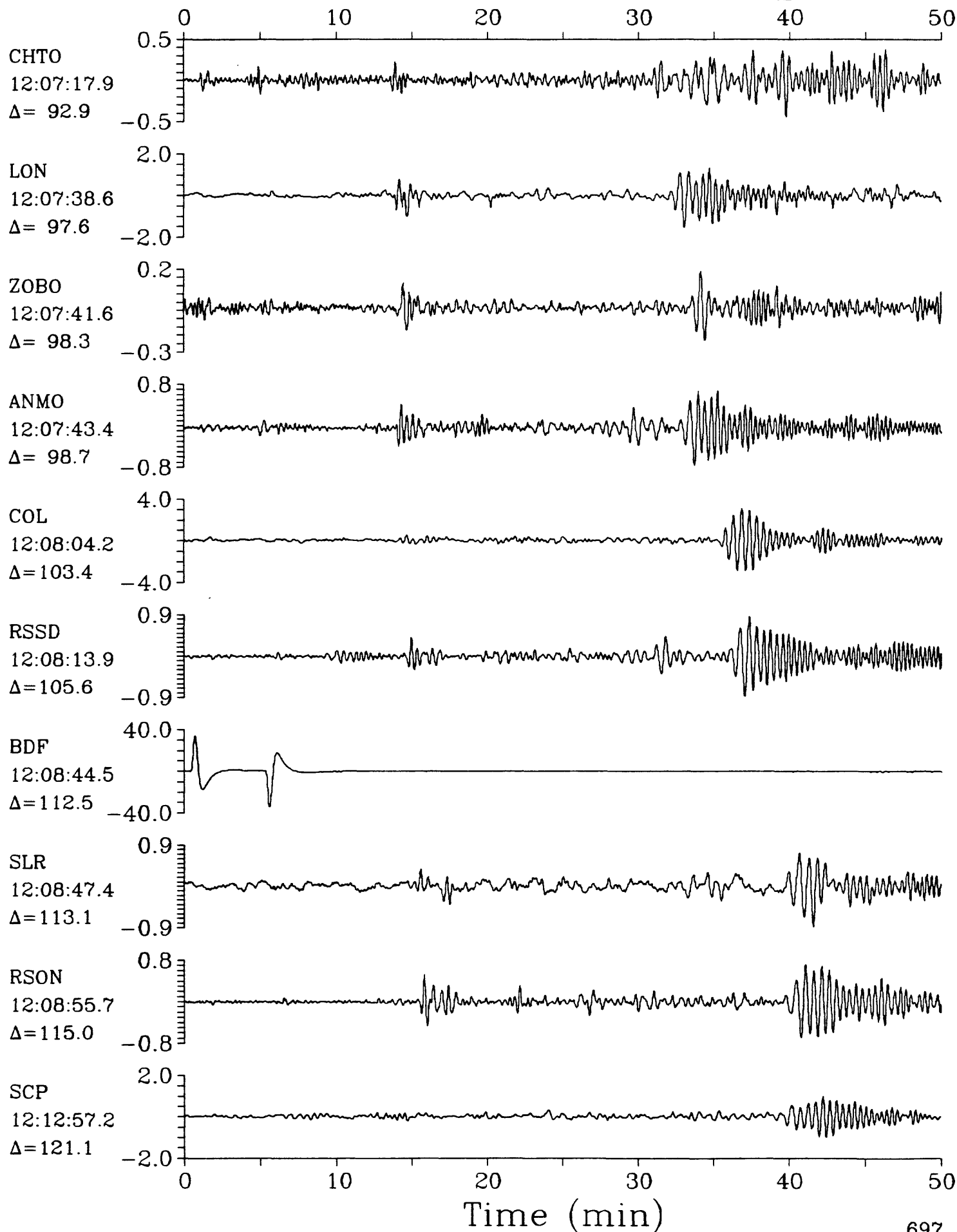
LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.8$ $M_{SZ}=5.1$ 

LPZ

11 April 1985 11:55:07.12

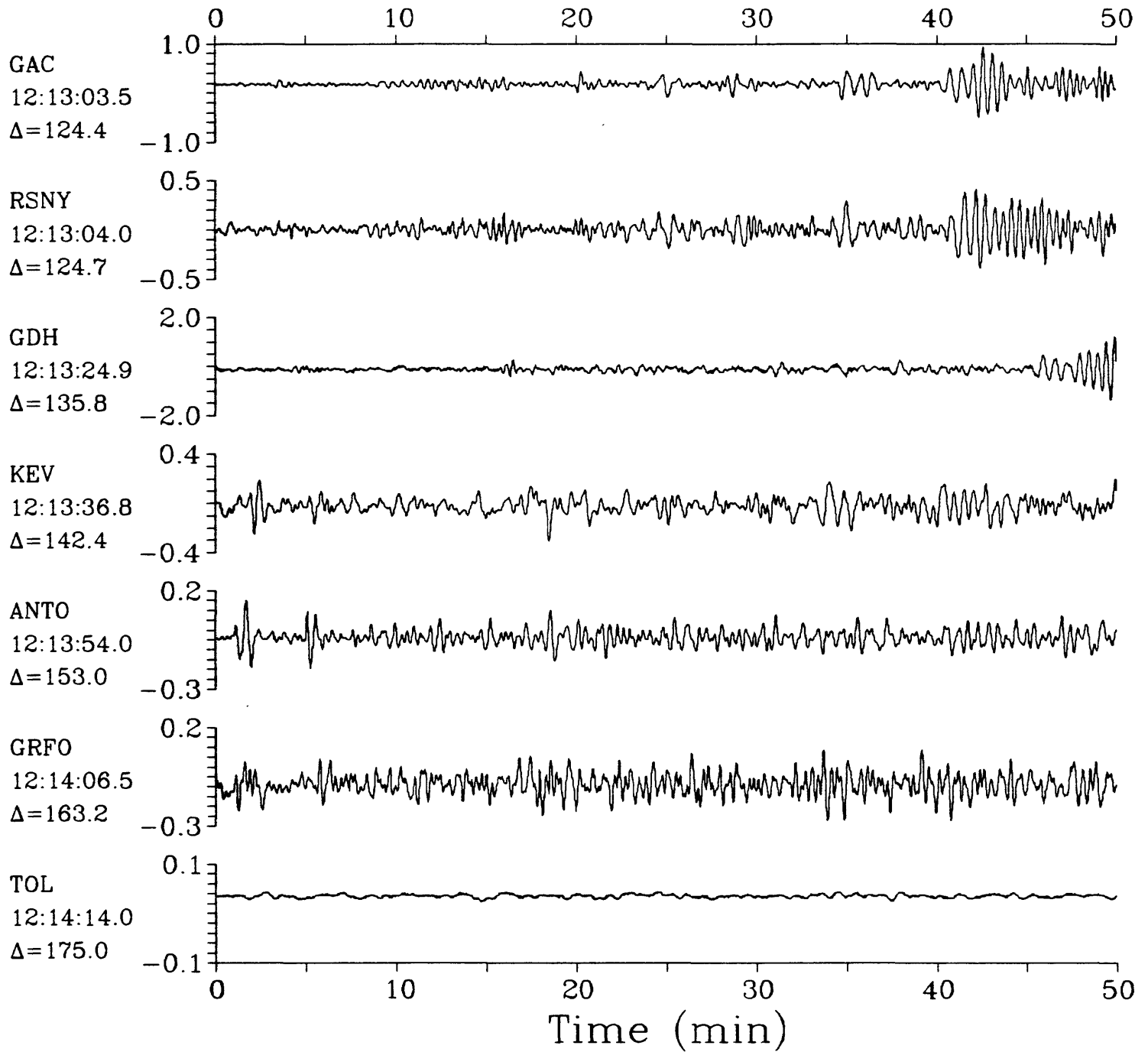
LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.8$ $M_{sz}=5.1$ 

LPZ

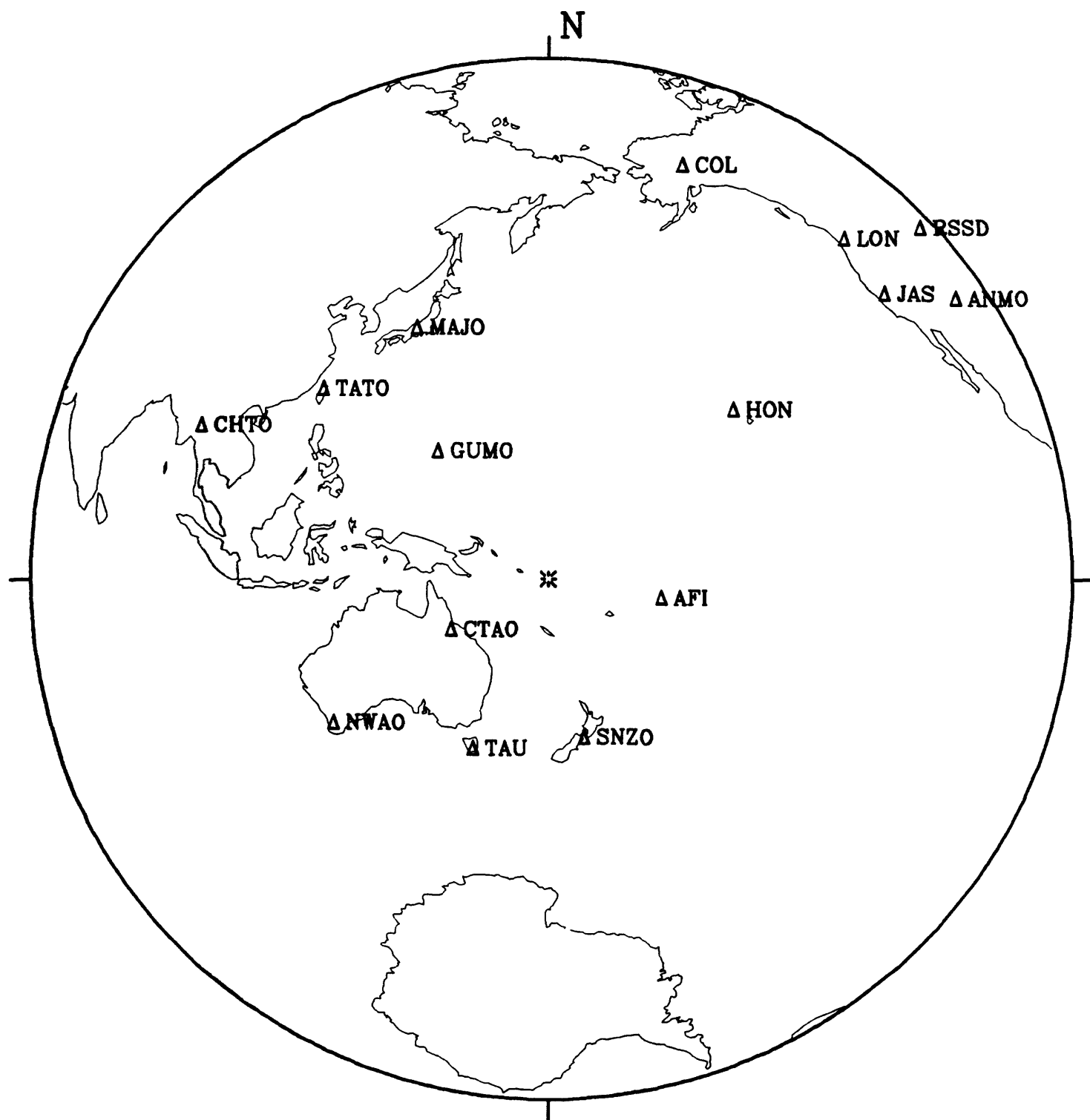
11 April 1985 11:55:07.12

LPZ

Off E. Coast of N. Island, N.Z. $h=33.0$ $m_b=5.8$ $M_{sz}=5.1$ 

12 April 1985 06:12:44.89

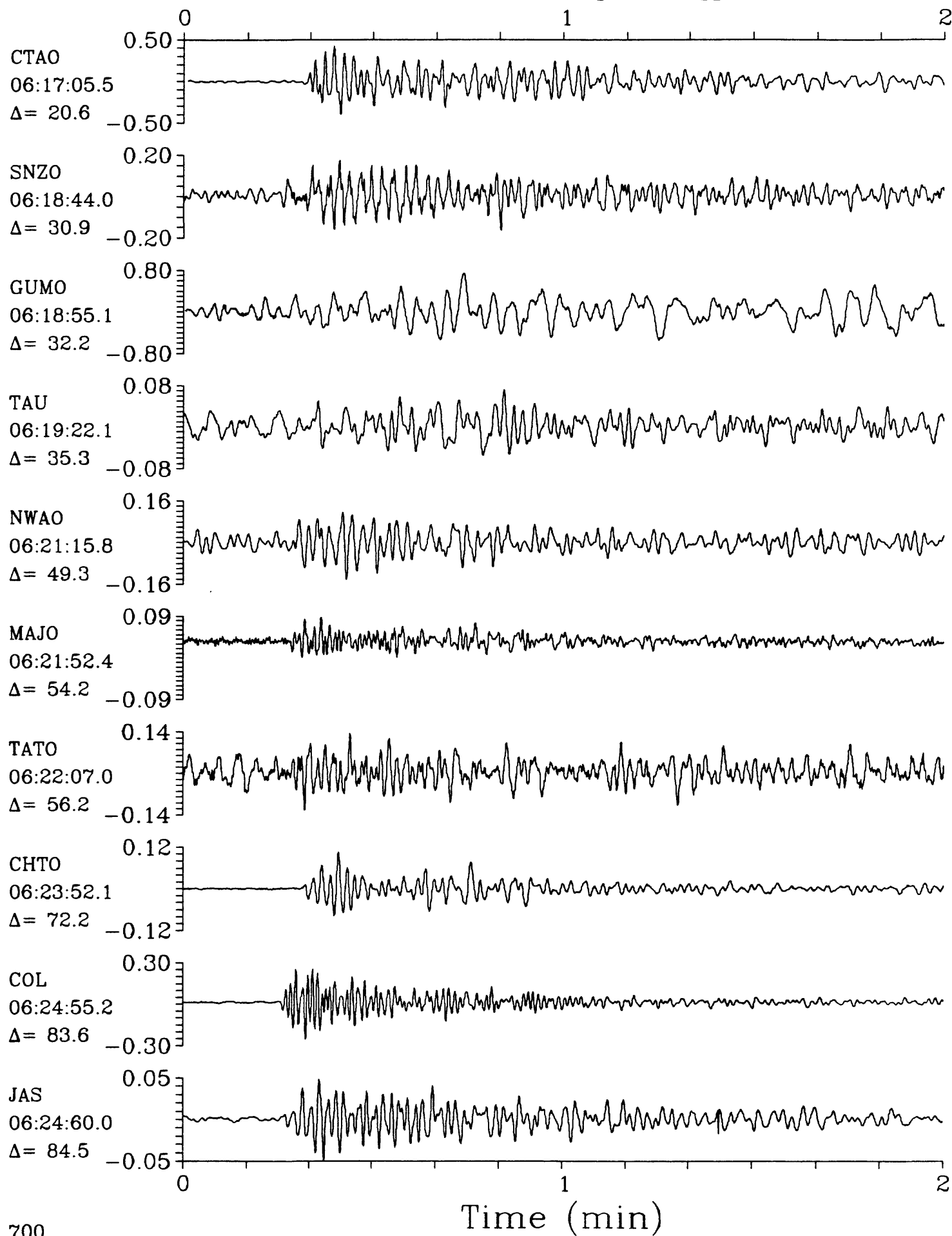
Santa Cruz Islands



SPZ

12 April 1985 06:12:44.89

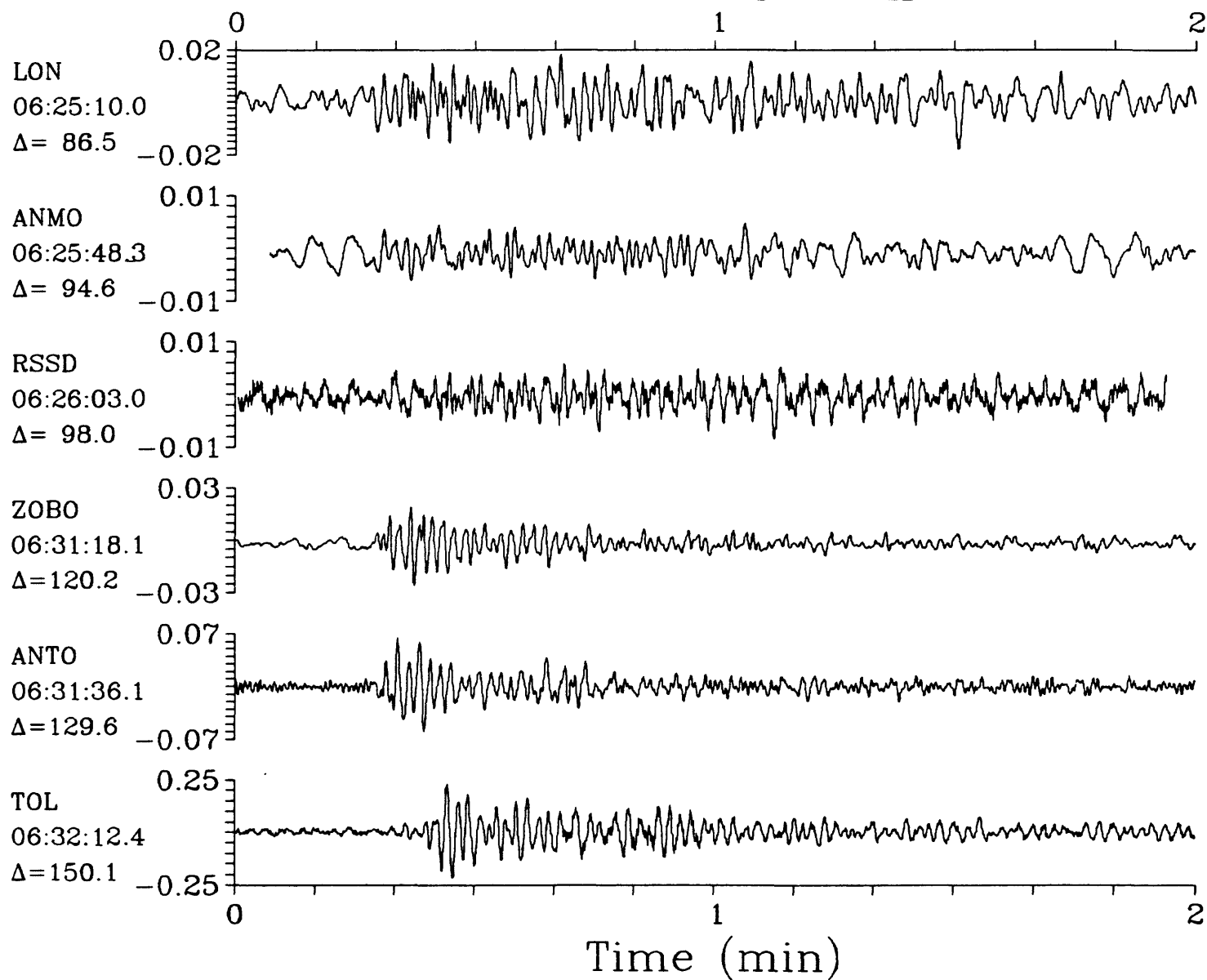
SPZ

Santa Cruz Islands $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

SPZ

12 April 1985 06:12:44.89

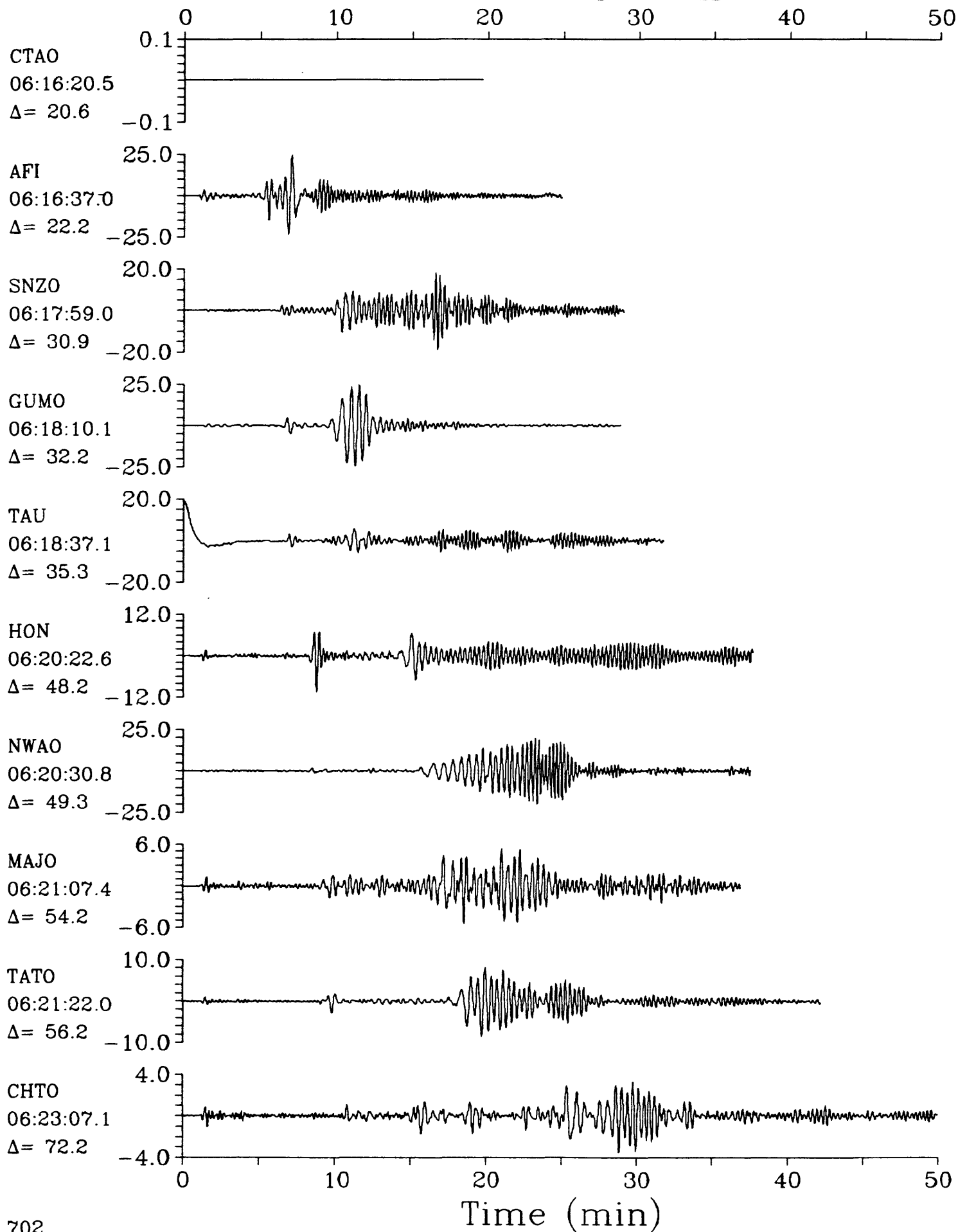
SPZ

Santa Cruz Islands $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

12 April 1985 06:12:44.89

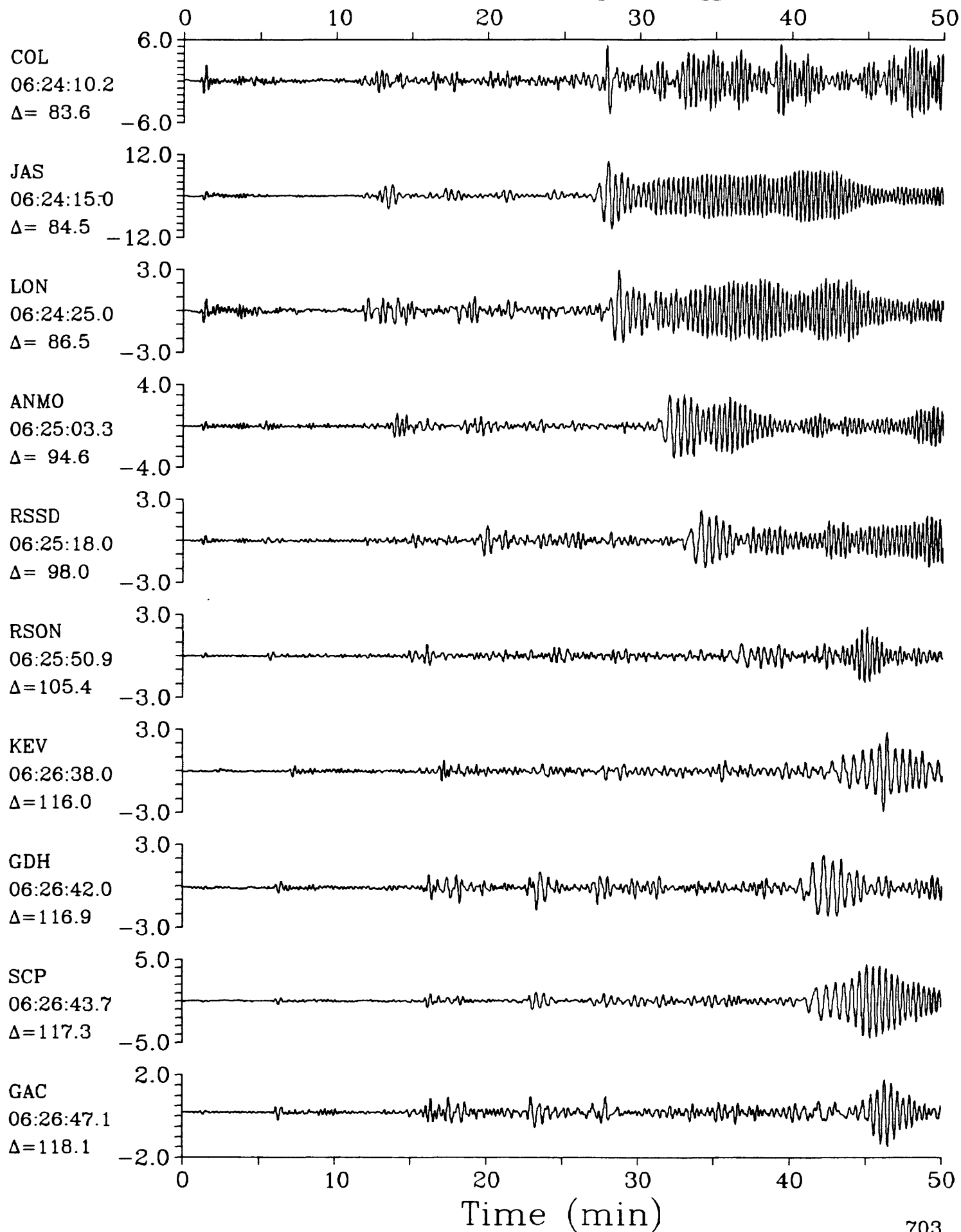
LPZ

Santa Cruz Islands $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

12 April 1985 06:12:44.89

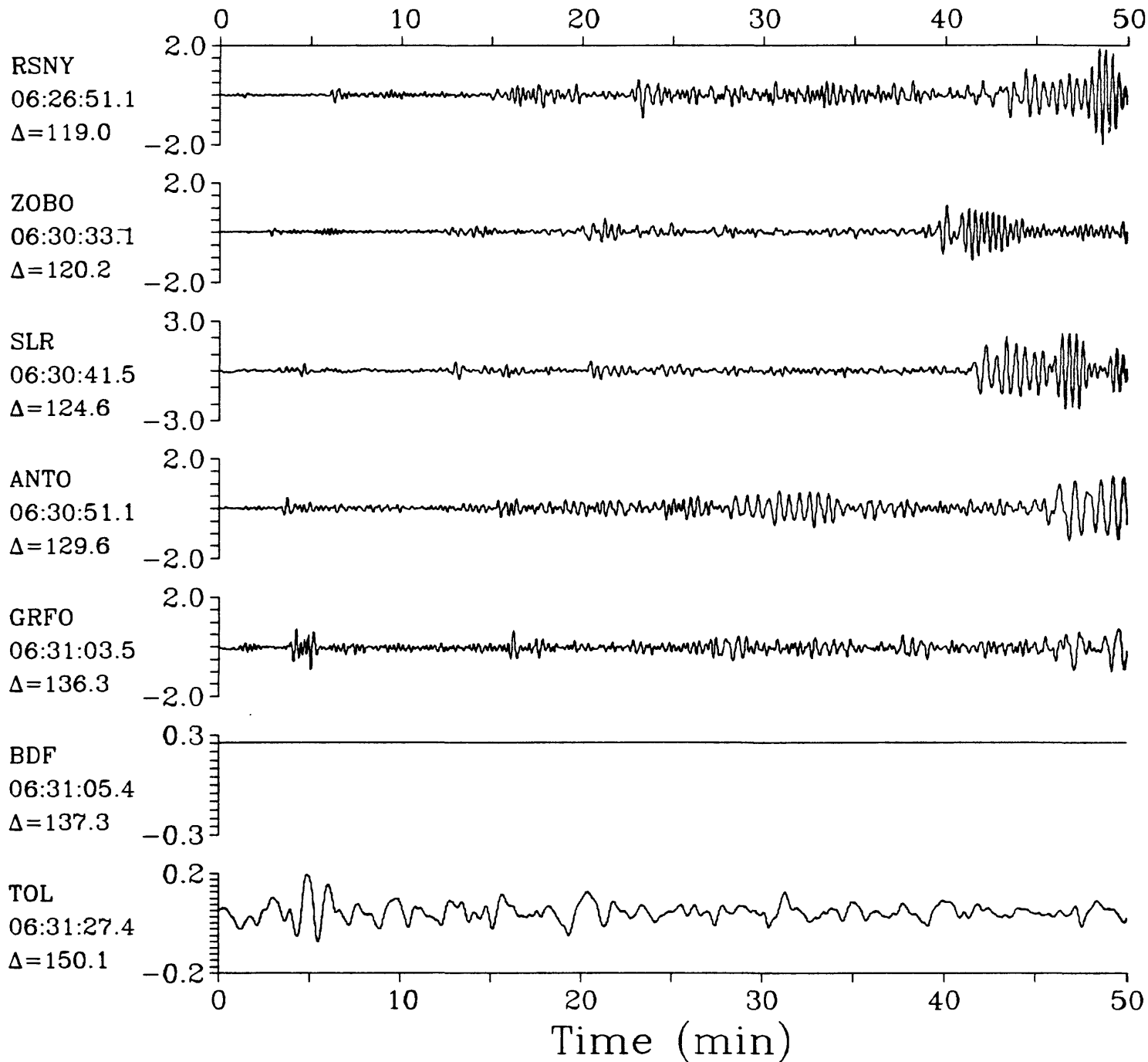
LPZ

Santa Cruz Islands $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

LPZ

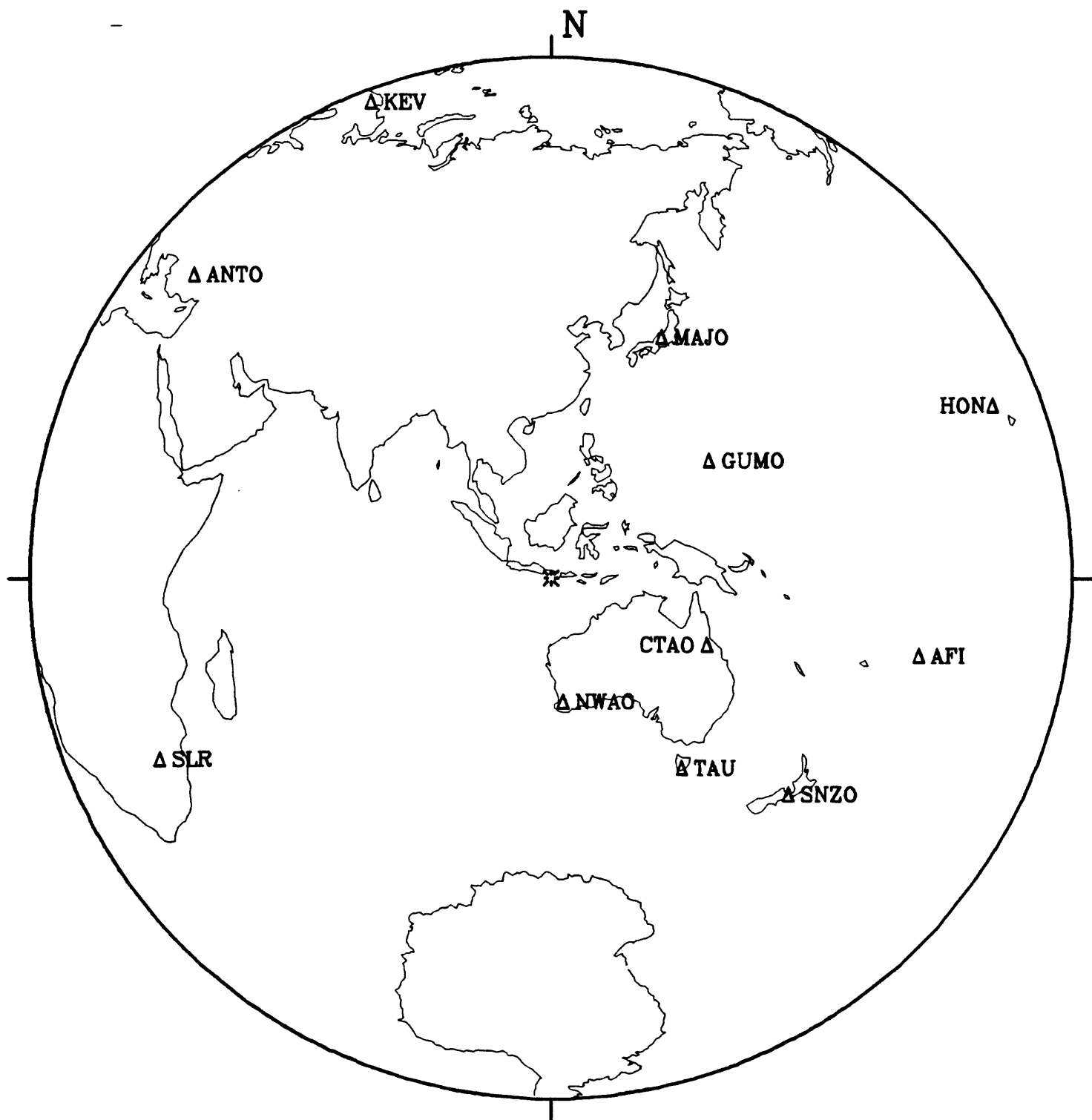
12 April 1985 06:12:44.89

LPZ

Santa Cruz Islands $h=33.0$ $m_b=5.7$ $M_{sz}=5.9$ 

13 April 1985 01:05:52.44

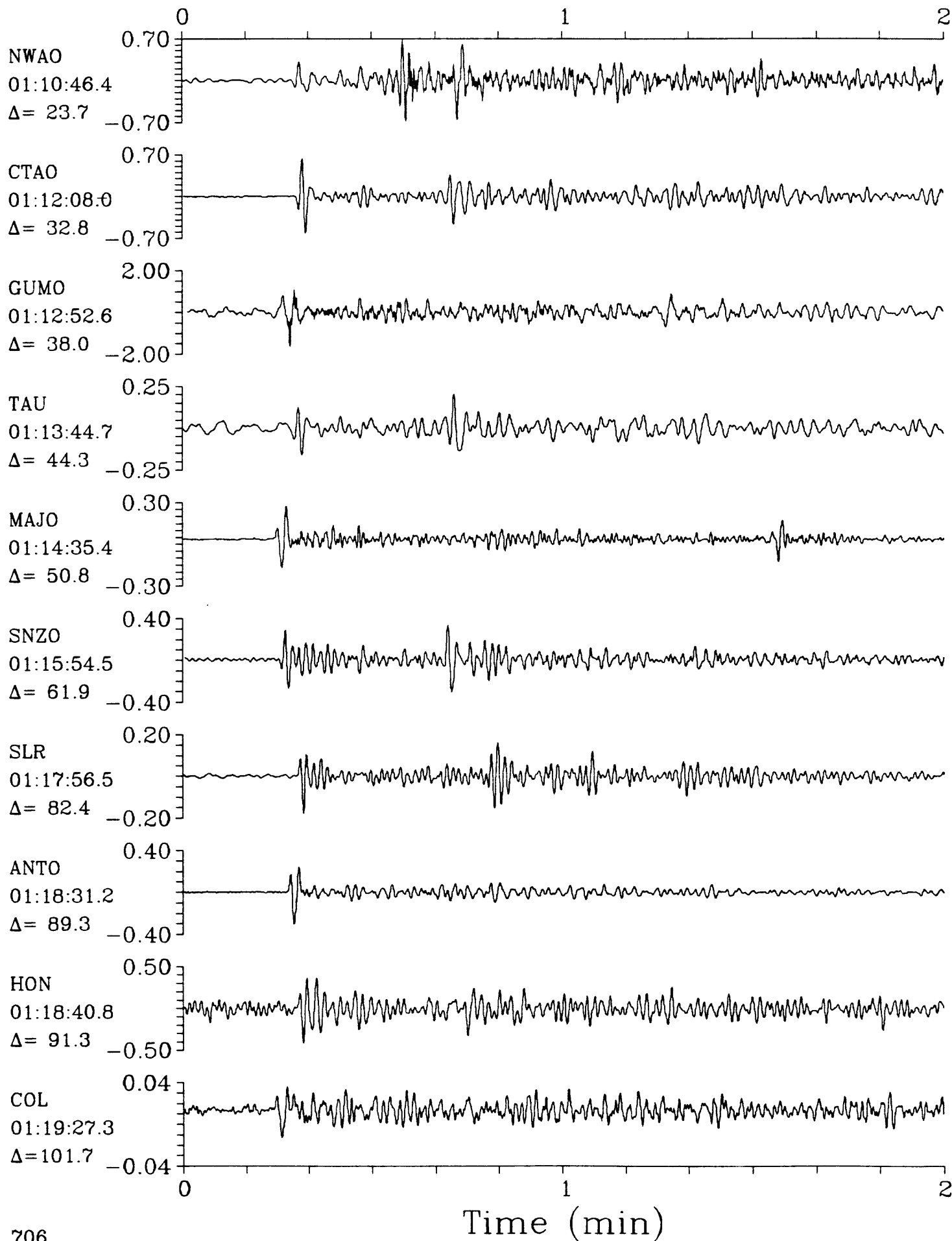
South of Bali Island



SPZ

13 April 1985 01:05:52.44

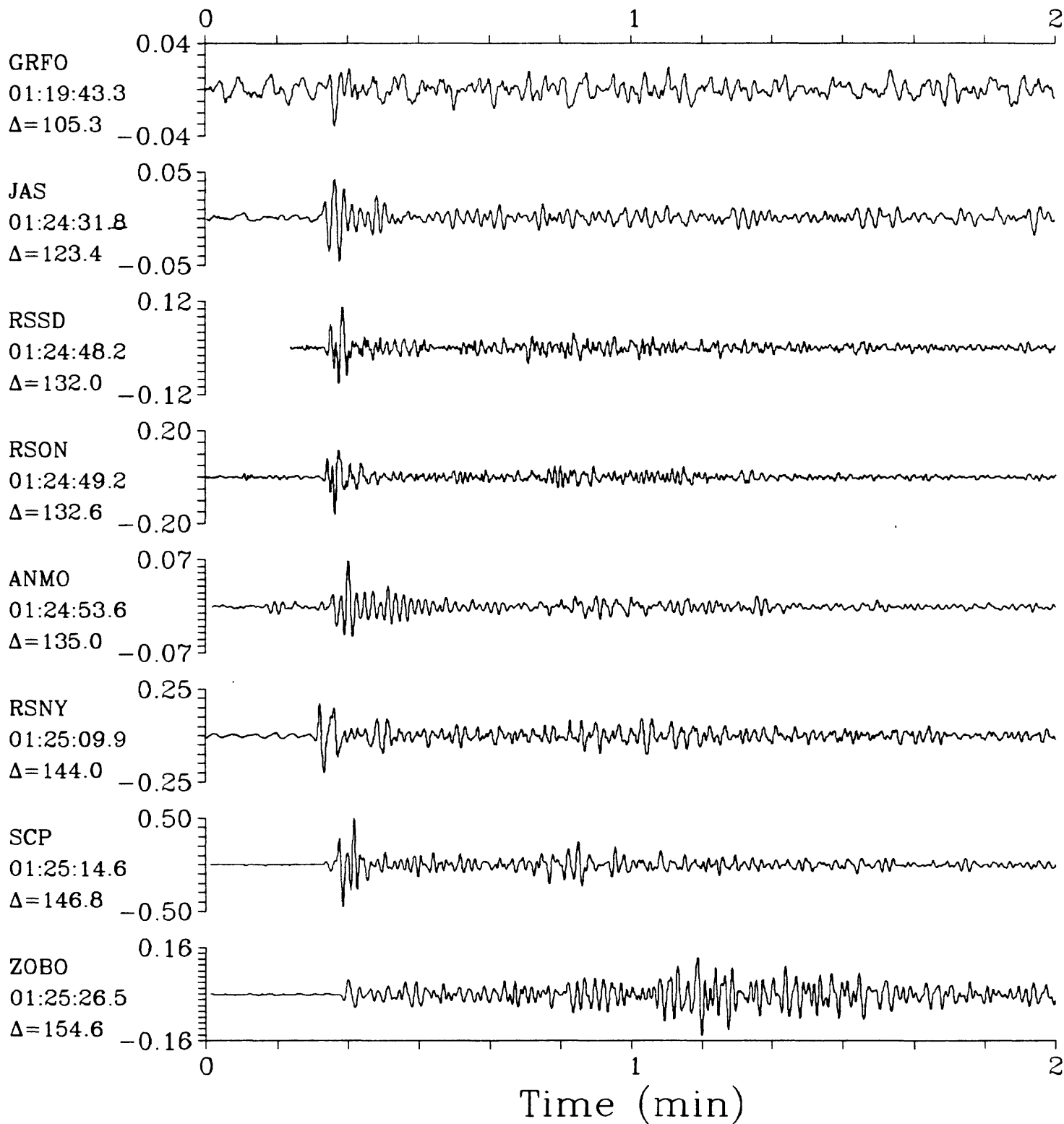
SPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$ 

SPZ

13 April 1985 01:05:52.44

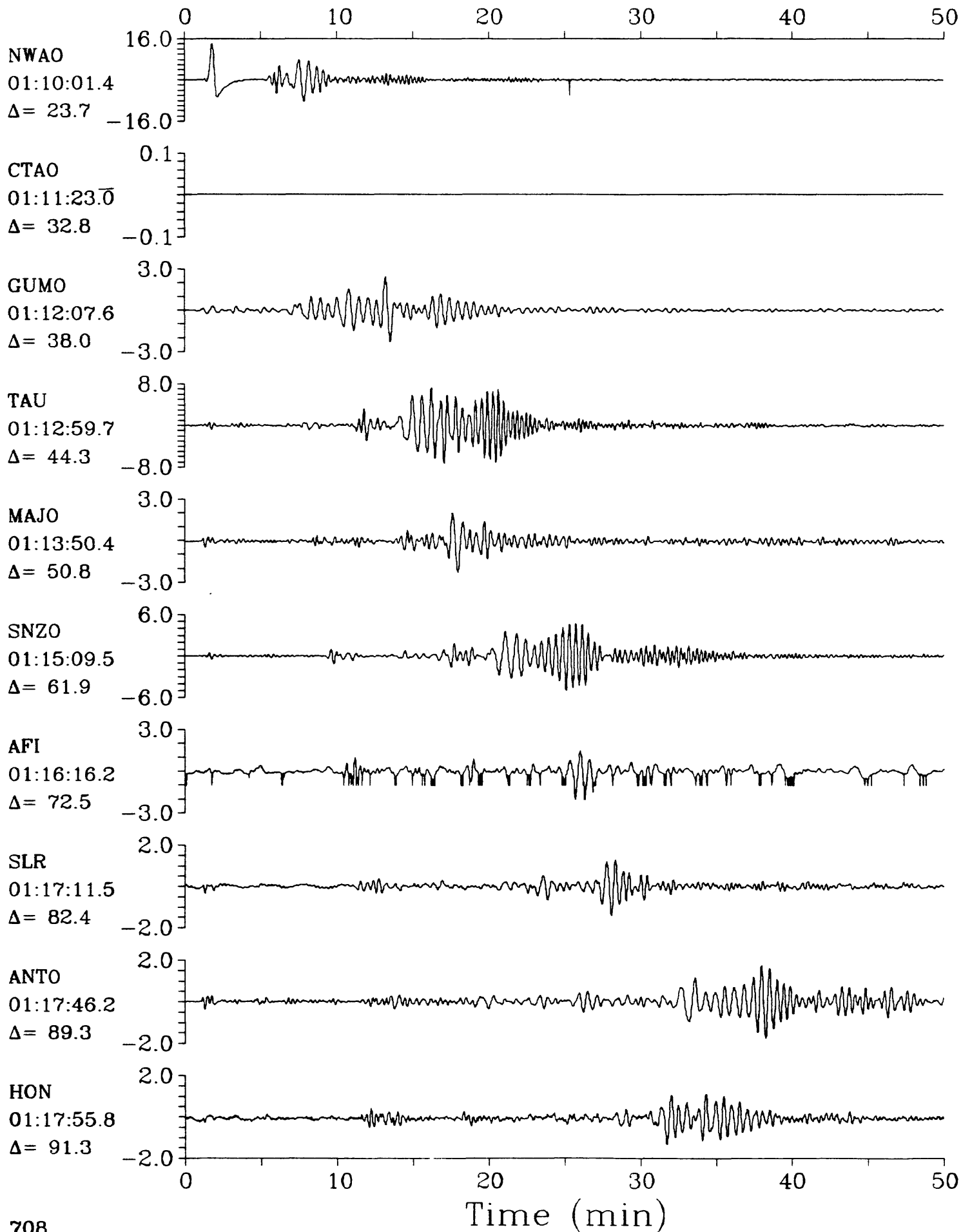
SPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$ 

LPZ

13 April 1985 01:05:52.44

LPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$ 

LPZ

13 April 1985 01:05:52.44

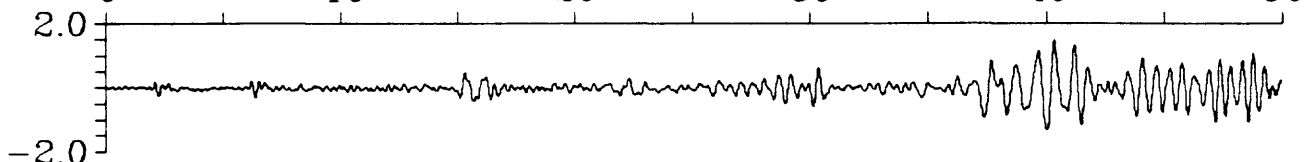
LPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$

0 10 20 30 40 50

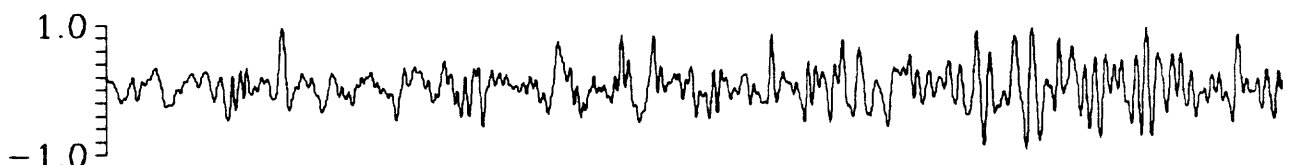
KEV

01:18:24.0

 $\Delta=97.6$ 

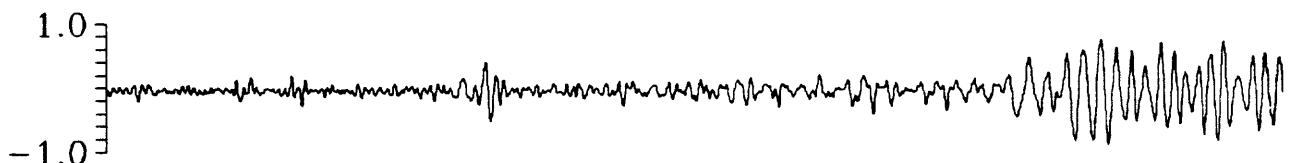
COL

01:18:42.3

 $\Delta=101.7$ 

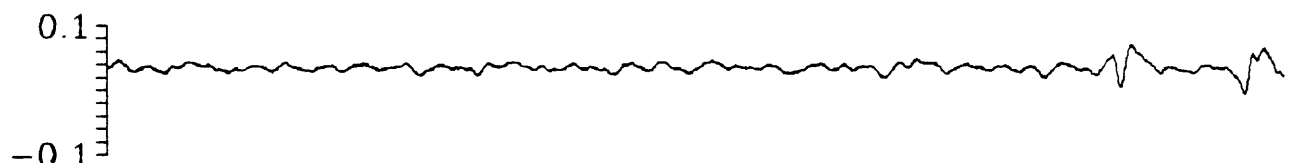
GRFO

01:18:58.3

 $\Delta=105.3$ 

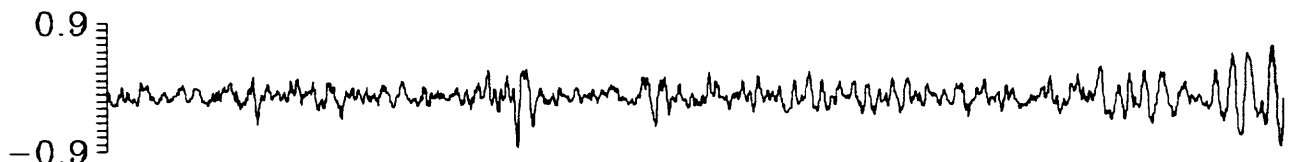
TOL

01:19:51.9

 $\Delta=117.4$ 

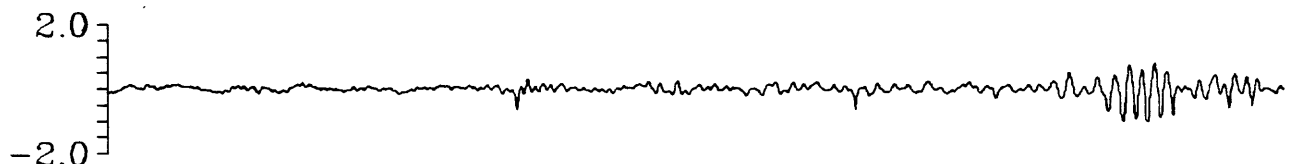
GDH

01:20:01.1

 $\Delta=119.5$ 

LON

01:20:02.0

 $\Delta=119.7$ 

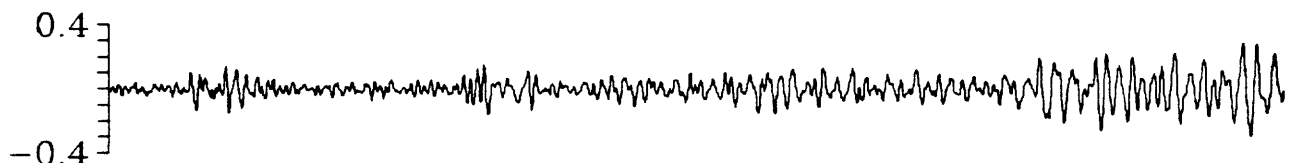
JAS

01:23:46.8

 $\Delta=123.4$ 

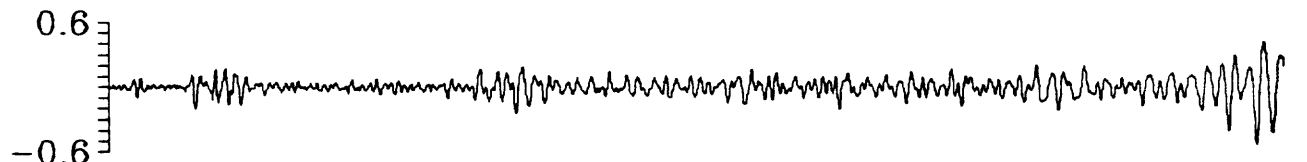
RSSD

01:24:03.2

 $\Delta=132.0$ 

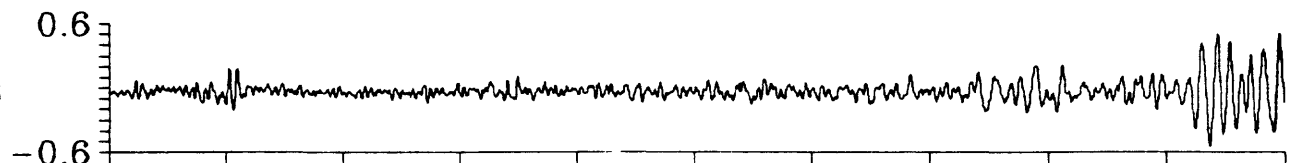
RSON

01:24:04.2

 $\Delta=132.6$ 

ANMO

01:24:08.6

 $\Delta=135.0$ 

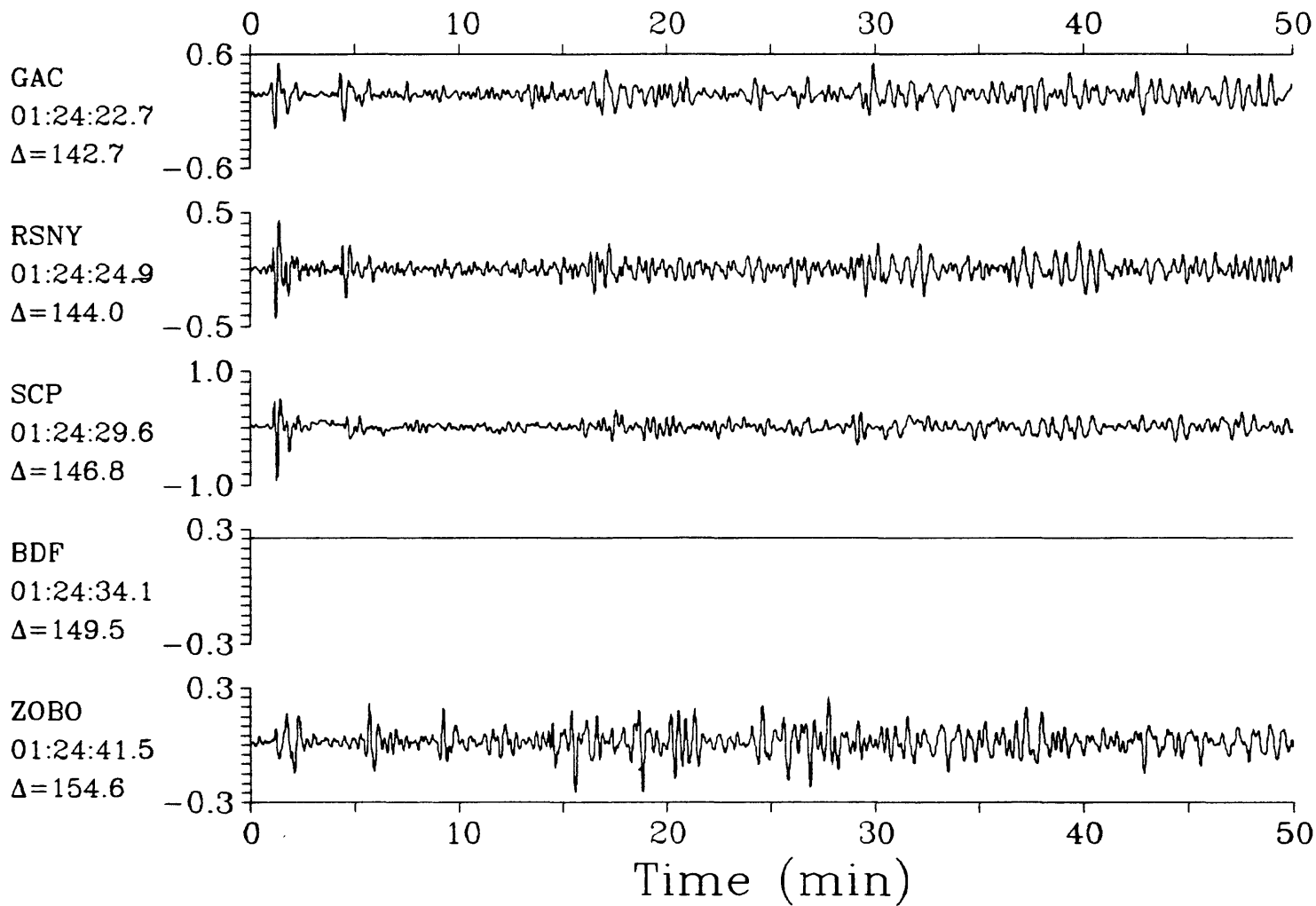
0 10 20 30 40 50

Time (min)

LPZ

13 April 1985 01:05:52.44

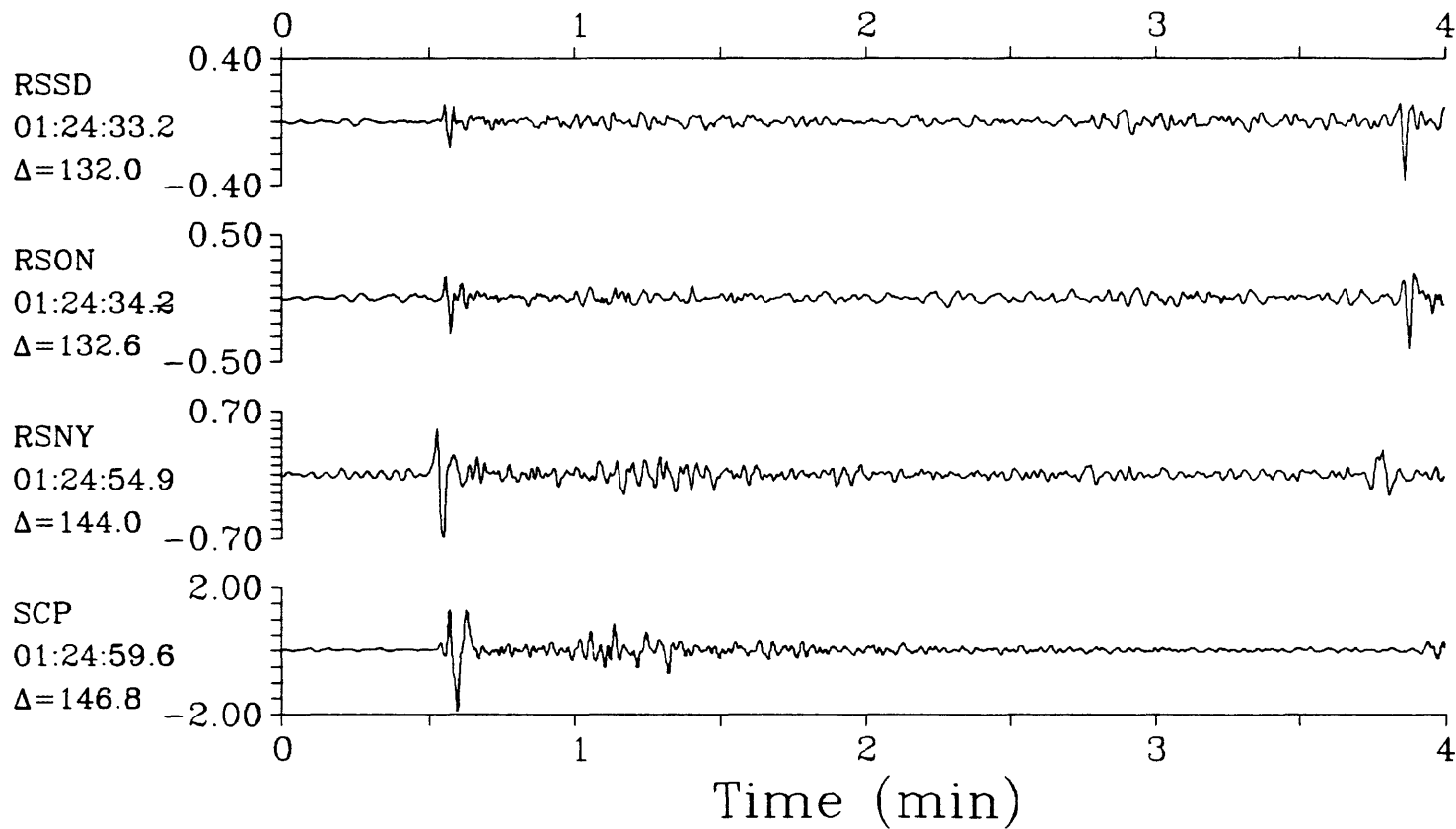
LPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$ 

IPZ

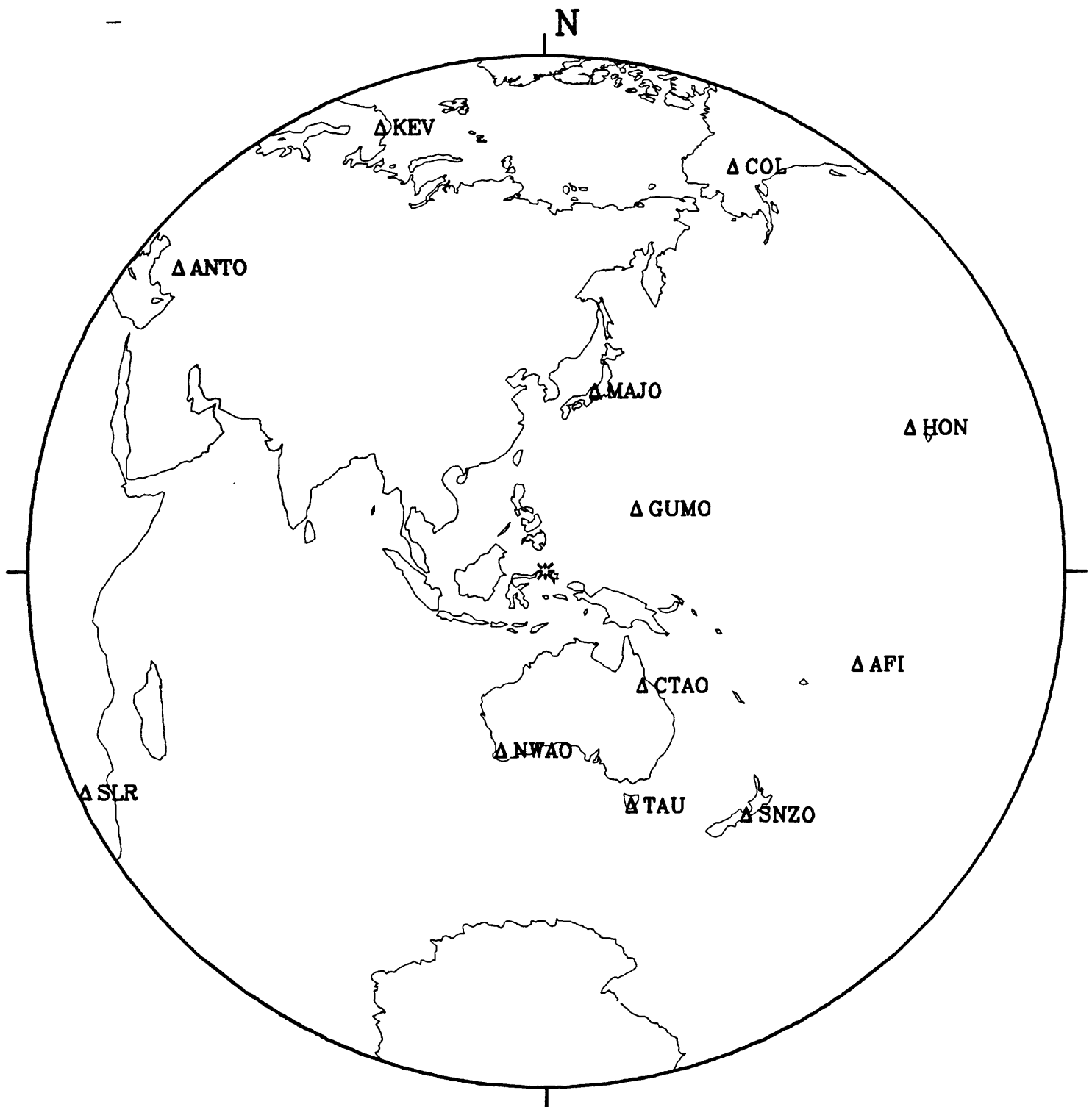
13 April 1985 01:05:52.44

IPZ

South of Bali Island $h=33.0$ $m_b=6.3$ $M_{sz}=5.2$ 

13 April 1985 03:00:04.45

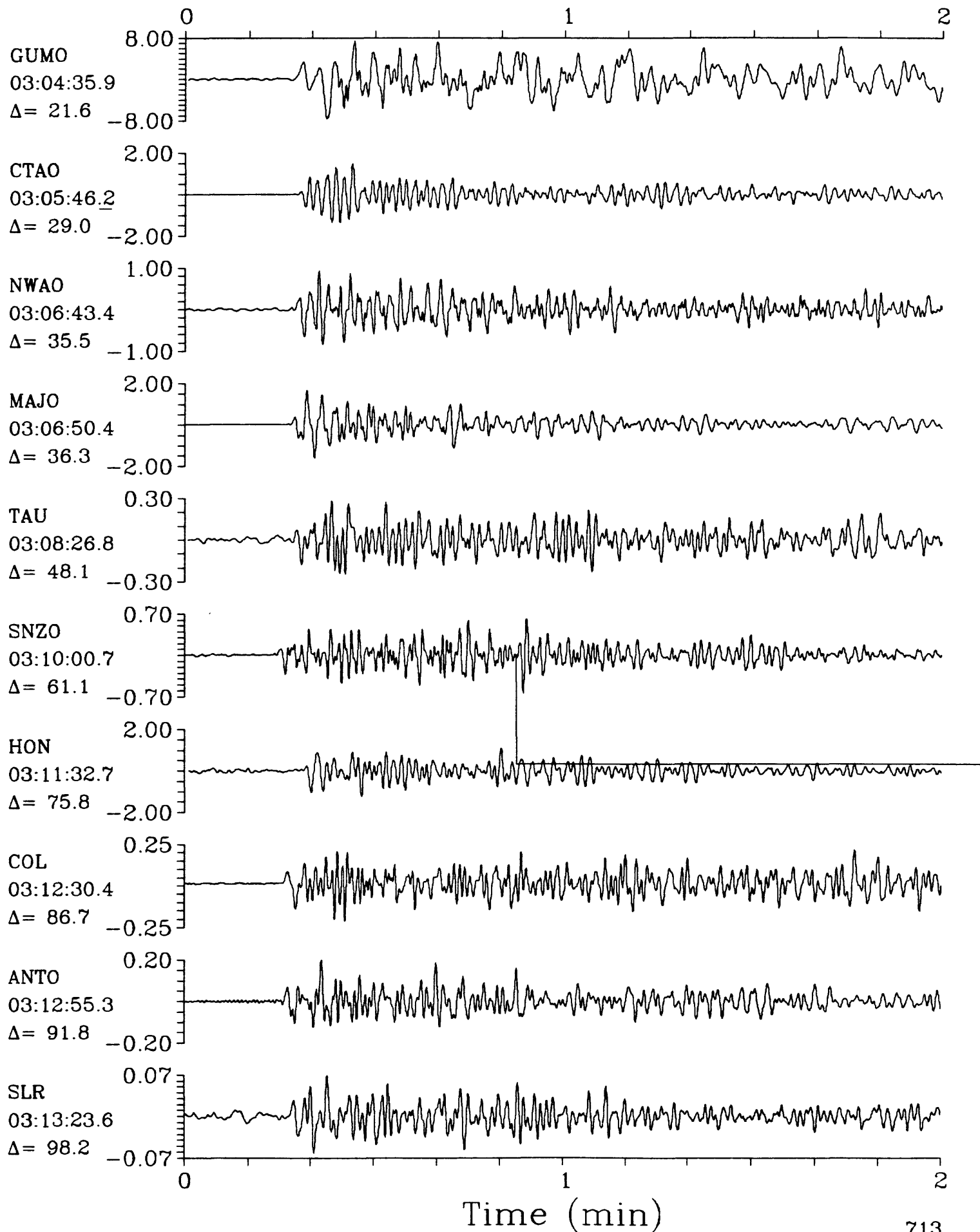
Molucca Passage



SPZ

13 April 1985 03:00:04.45

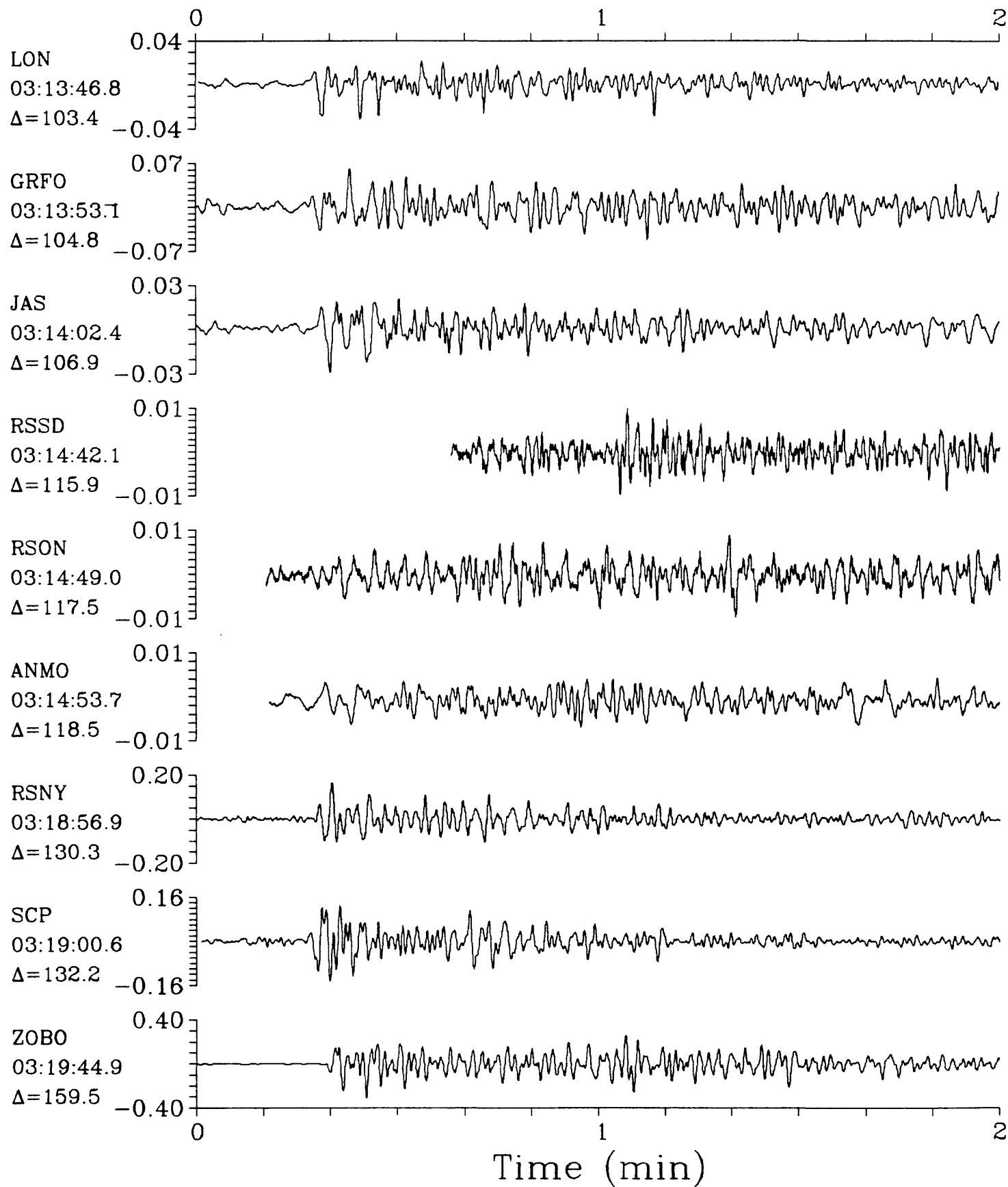
SPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{SZ}=6.8$ 

SPZ

13 April 1985 03:00:04.45

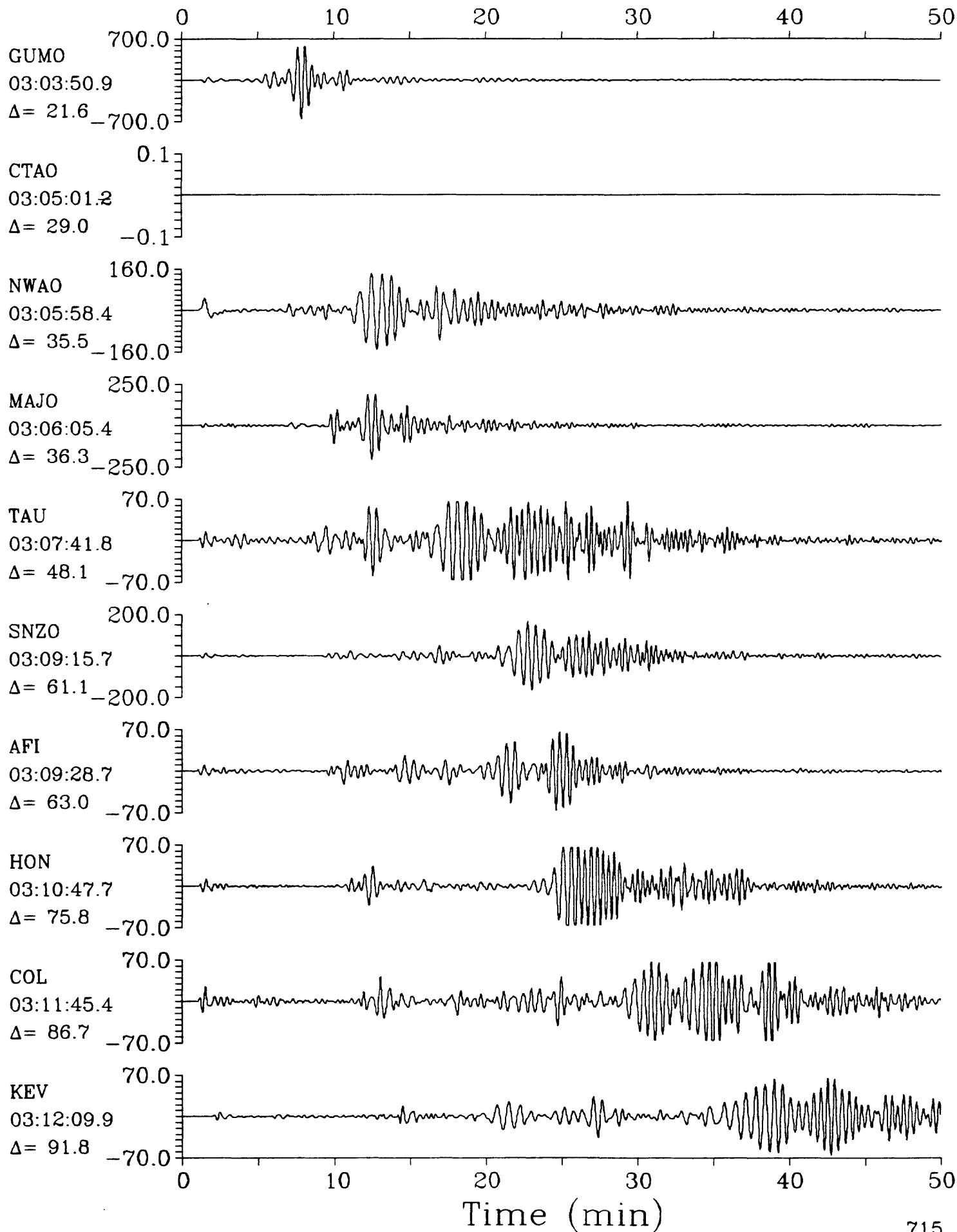
SPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{sz}=6.8$ 

LPZ

13 April 1985 03:00:04.45

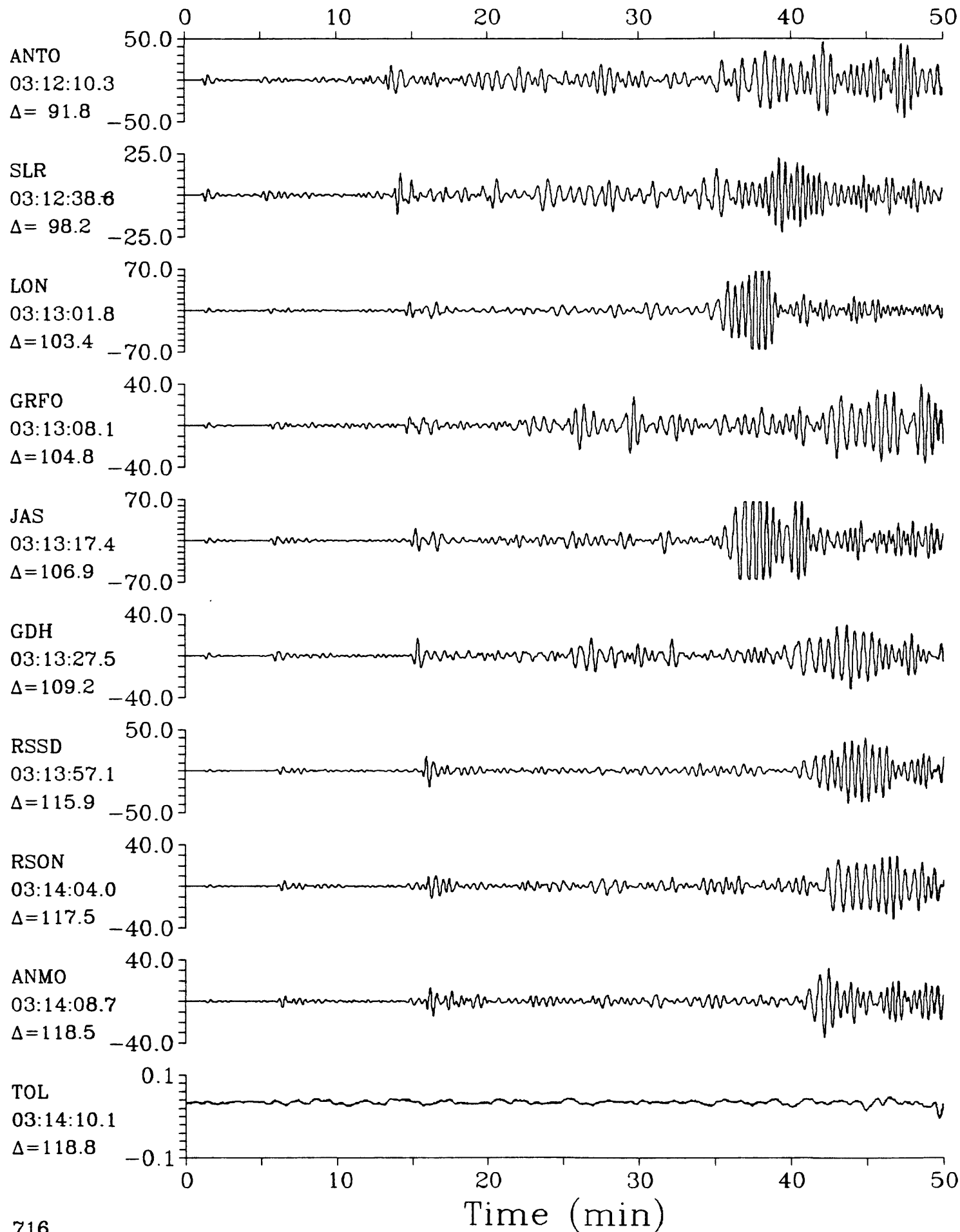
LPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{sz}=6.8$ 

LPZ

13 April 1985 03:00:04.45

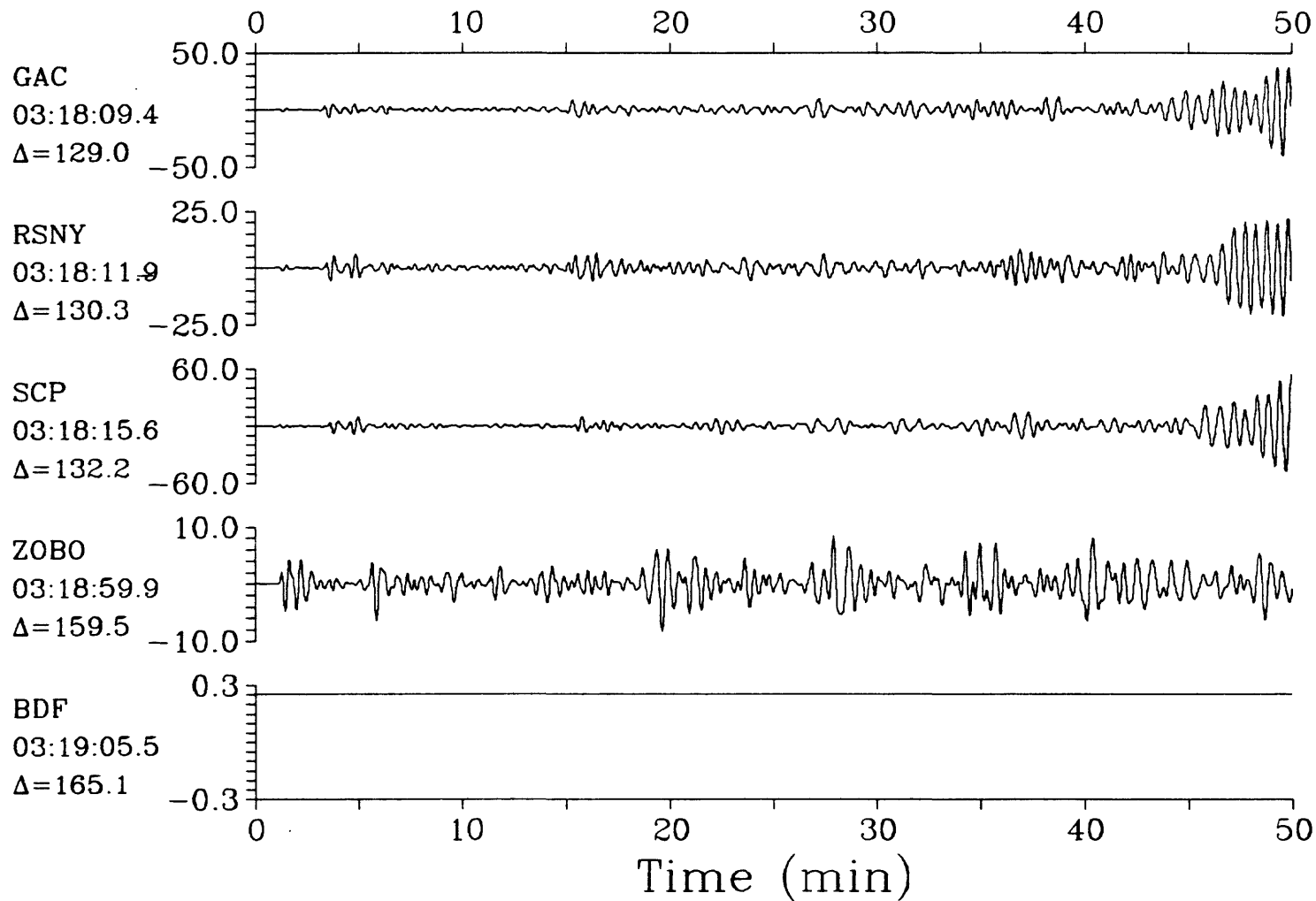
LPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{sz}=6.8$ 

LPZ

13 April 1985 03:00:04.45

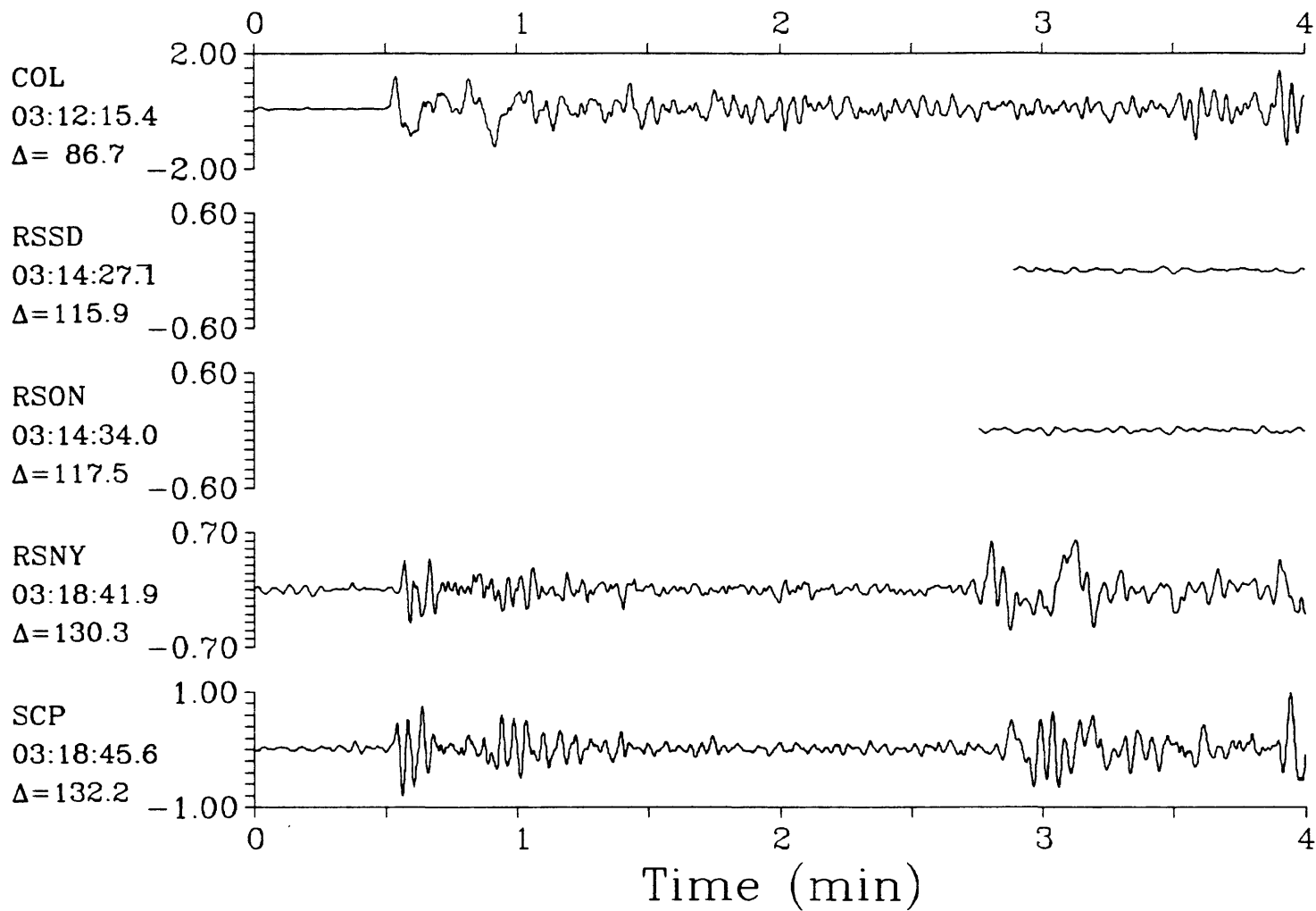
LPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{sz}=6.8$ 

IPZ

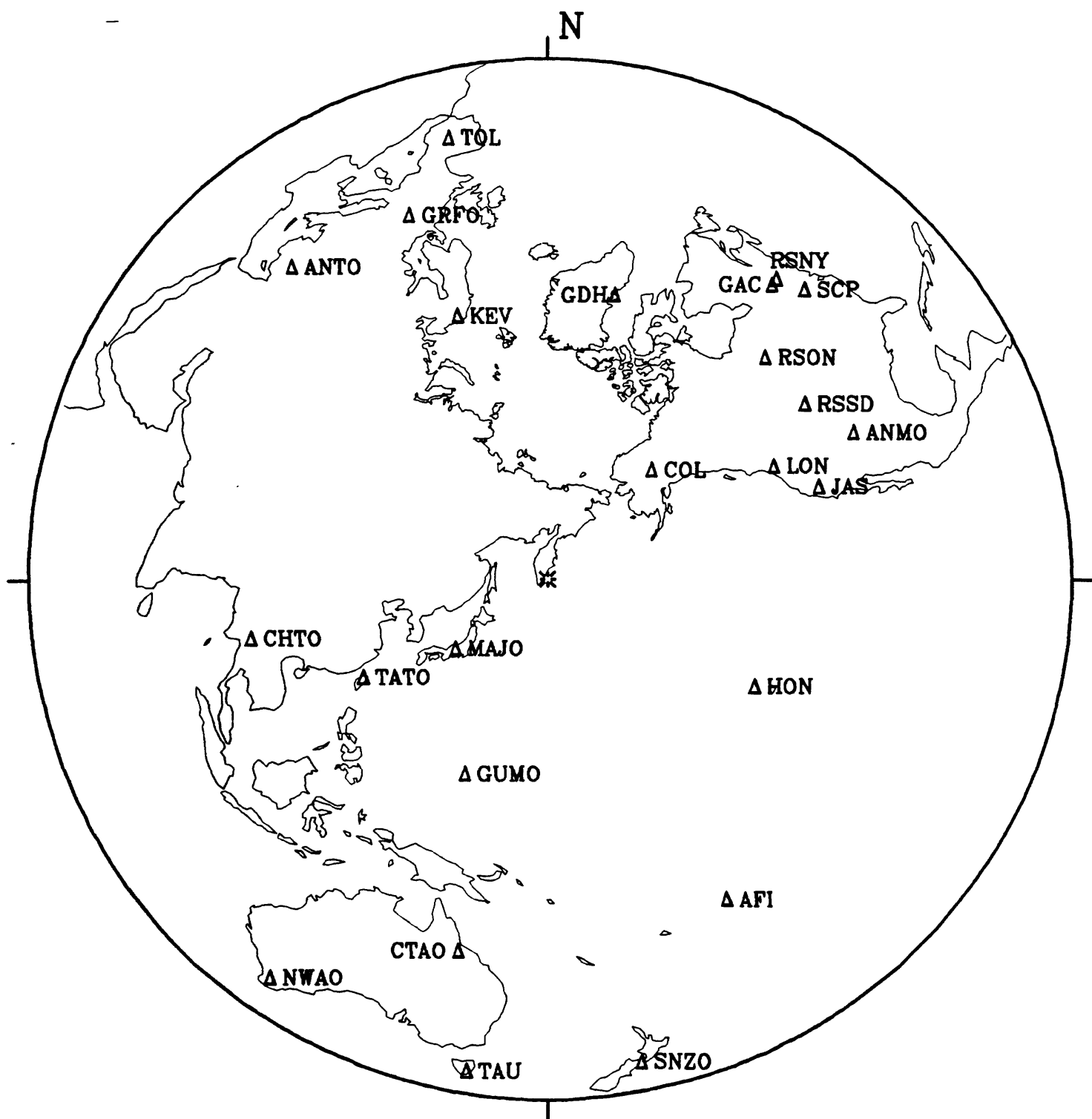
13 April 1985 03:00:04.45

IPZ

Molucca Passage $h=33.0$ $m_b=6.4$ $M_{sz}=6.8$ 

18 April 1985 00:06:32.93

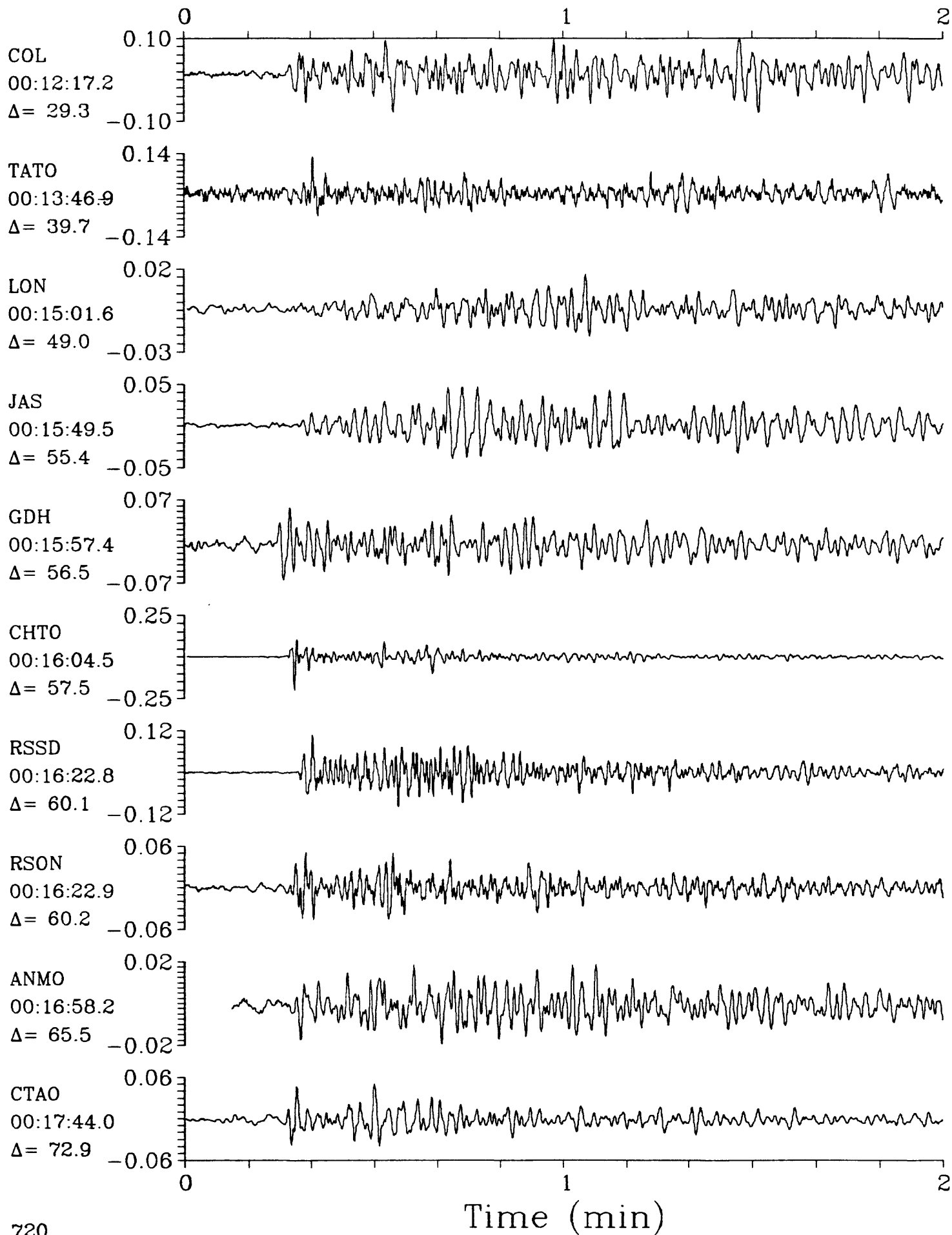
Off East Coast of Kamchatka



SPZ

18 April 1985 00:06:32.93

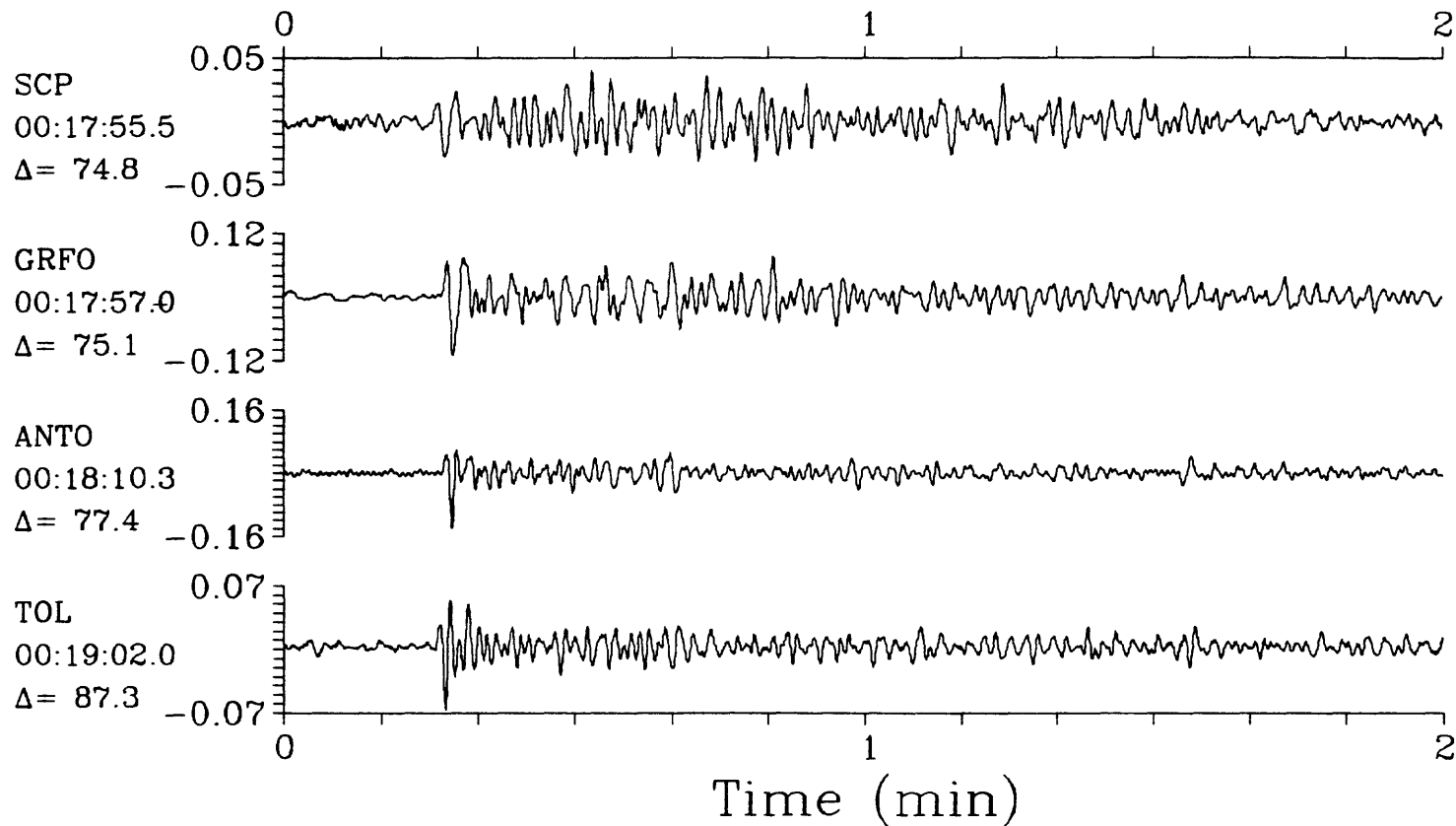
SPZ

Off East Coast of Kamchatka $h=33.0$ $m_b=5.6$ $M_{SZ}=5.4$ 

SPZ

18 April 1985 00:06:32.93

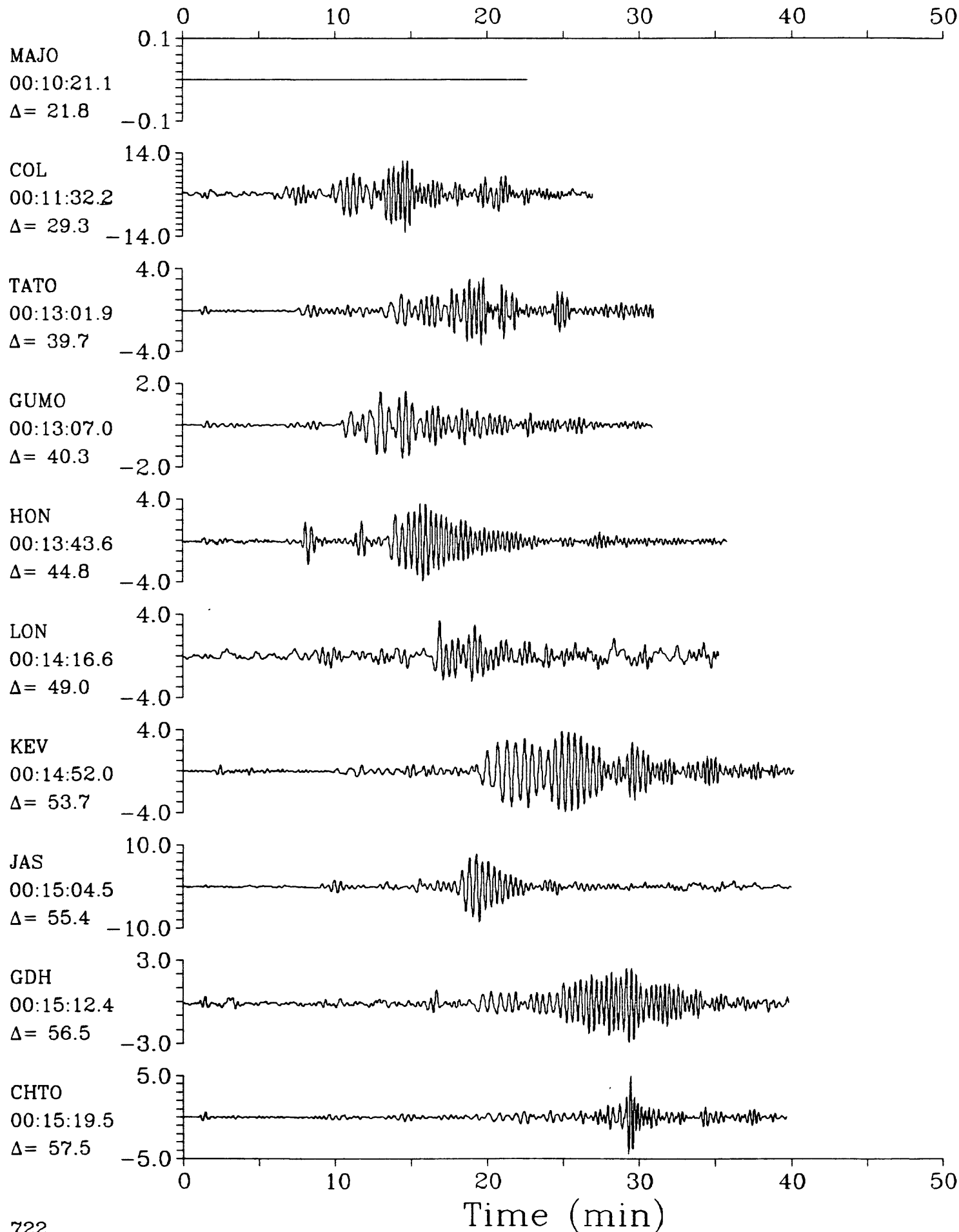
SPZ

Off East Coast of Kamchatka $h=33.0$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

18 April 1985 00:06:32.93

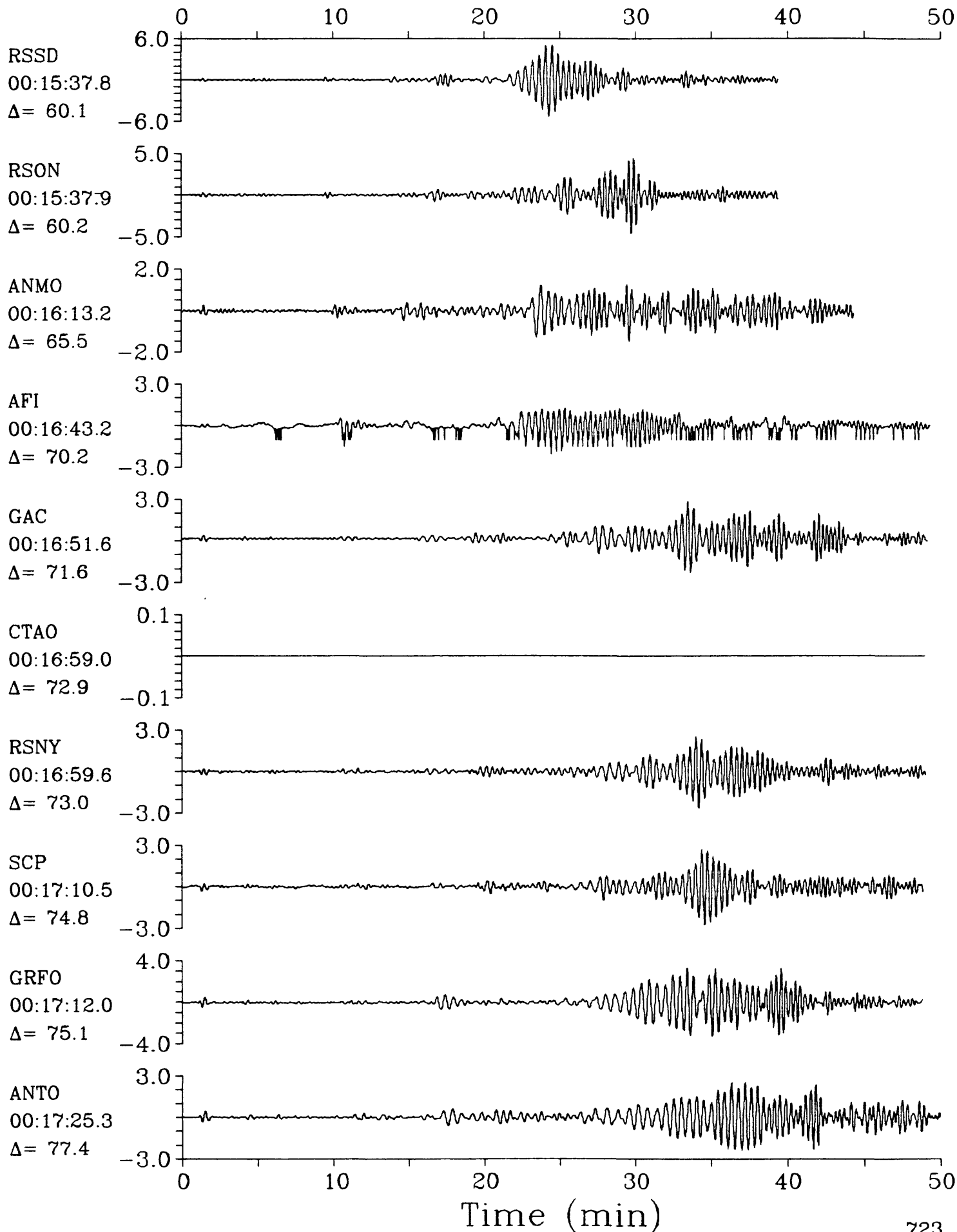
LPZ

Off East Coast of Kamchatka $h=33.0$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

18 April 1985 00:06:32.93

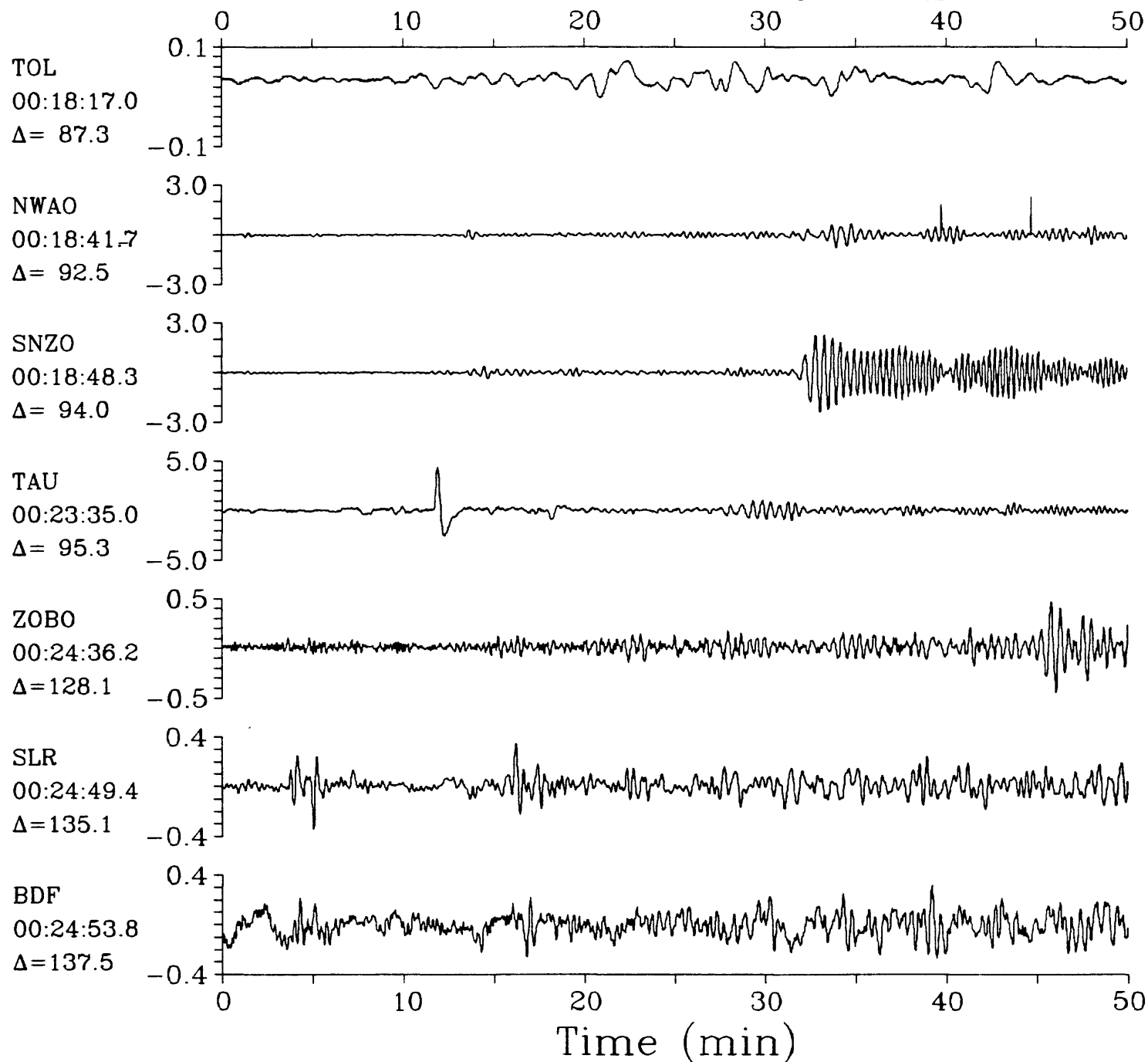
LPZ

Off East Coast of Kamchatka $h=33.0$ $m_b=5.6$ $M_{sz}=5.4$ 

LPZ

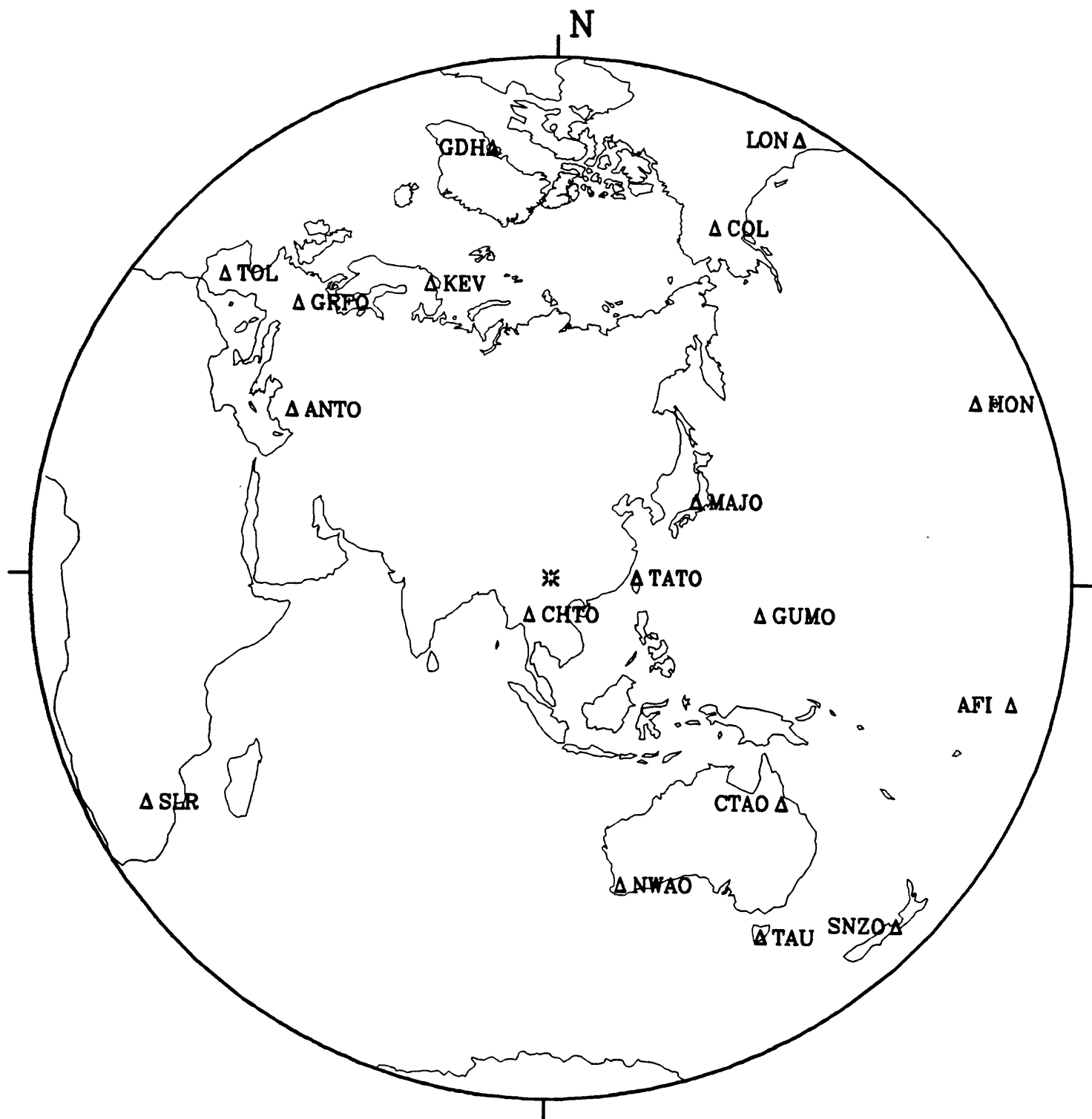
18 April 1985 00:06:32.93

LPZ

Off East Coast of Kamchatka $h=33.0$ $m_b=5.6$ $M_{sz}=5.4$ 

18 April 1985 05:52:52.71

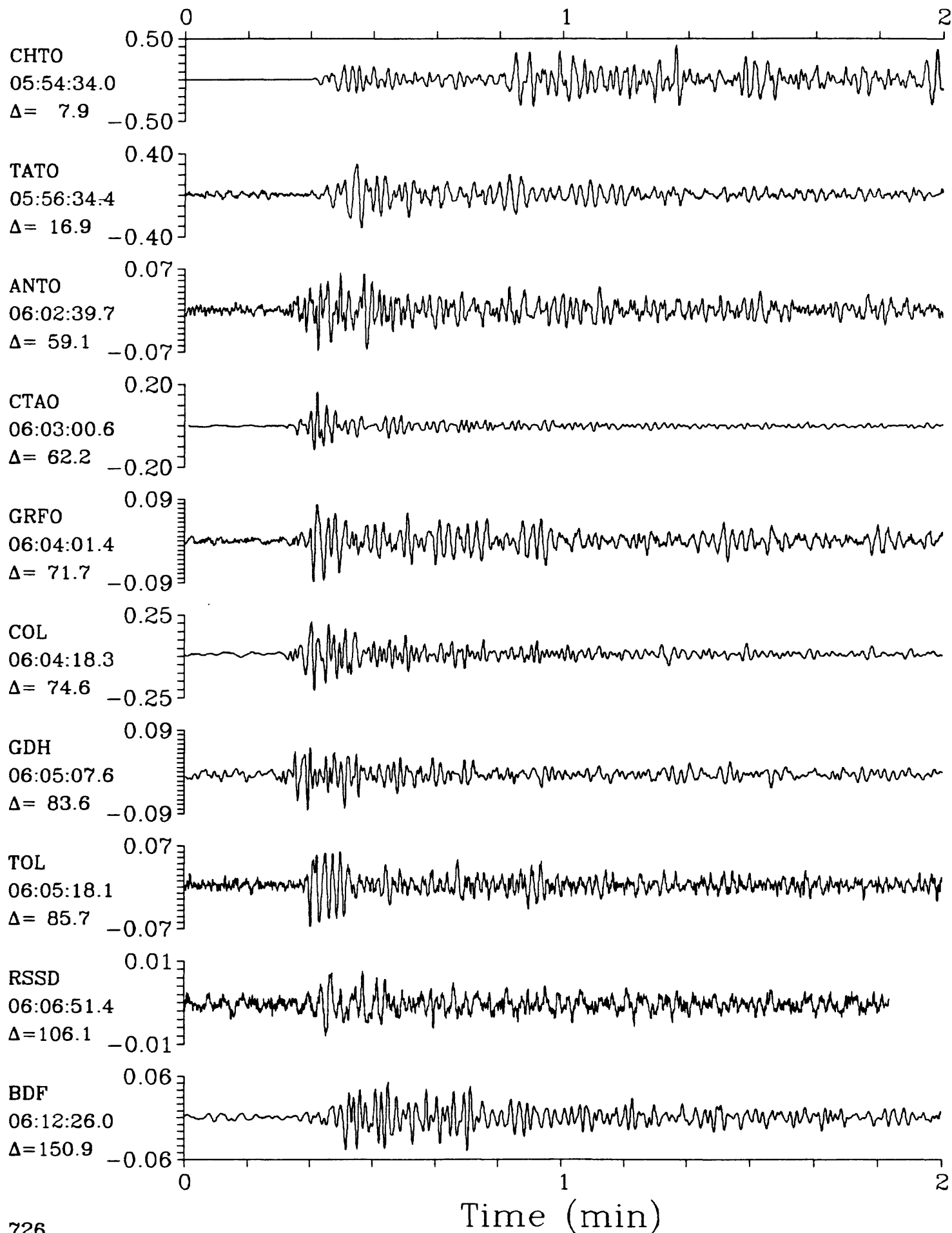
Yunnan Province, China



SPZ

18 April 1985 05:52:52.71

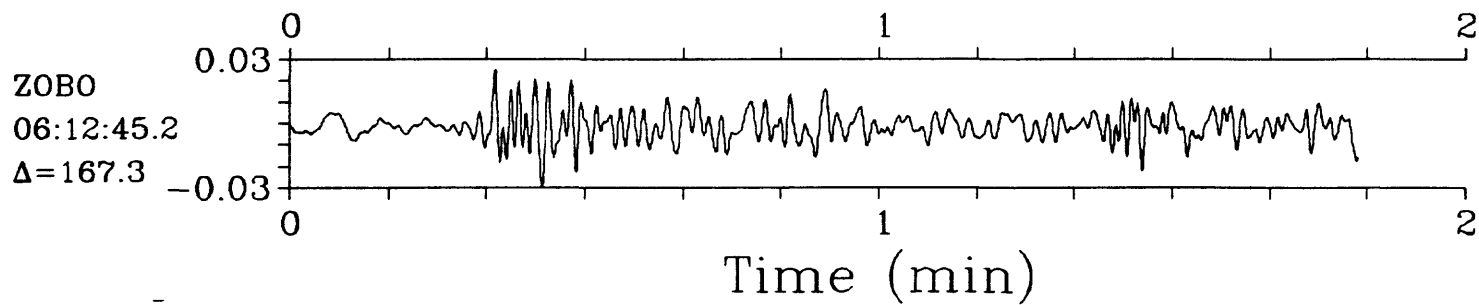
SPZ

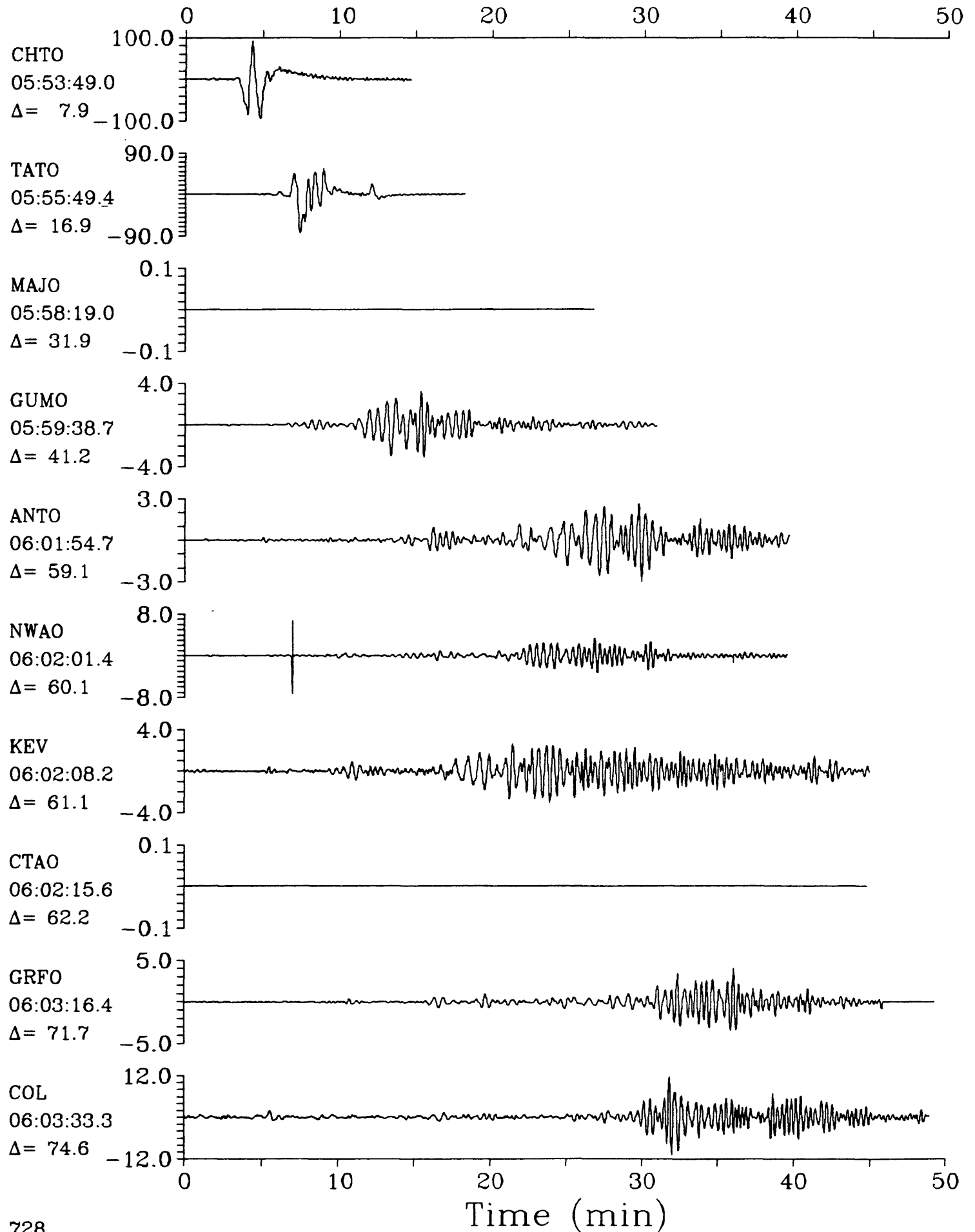
Yunnan Province, China $h=5.0$ $m_b=5.7$ $M_{sz}=5.8$ 

SPZ

18 April 1985 05:52:52.71

SPZ

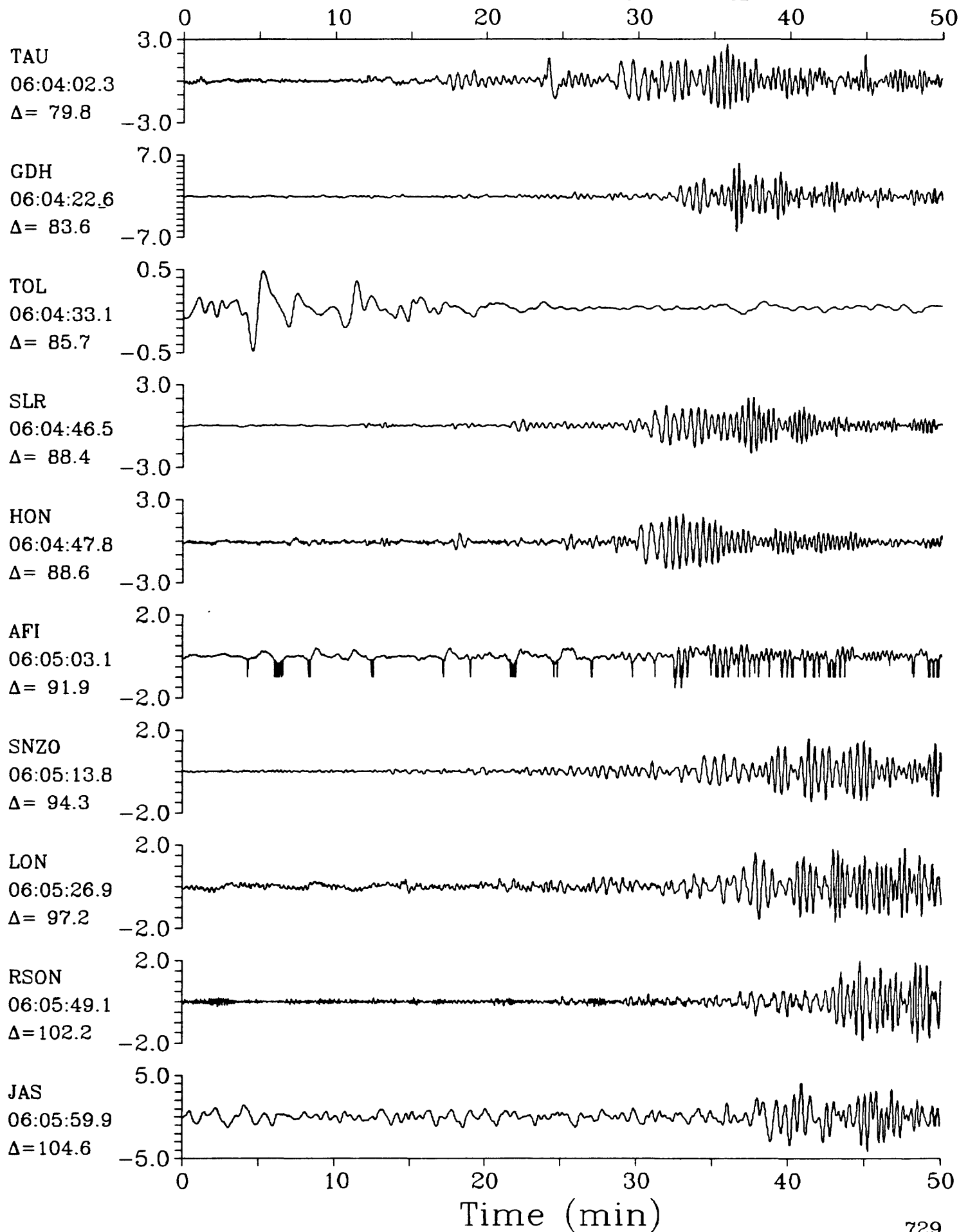
Yunnan Province, China $h=5.0$ $m_b=5.7$ $M_{sz}=5.8$ 

Yunnan Province, China $h=5.0$ $m_b=5.7$ $M_{sz}=5.8$ 

LPZ

18 April 1985 05:52:52.71

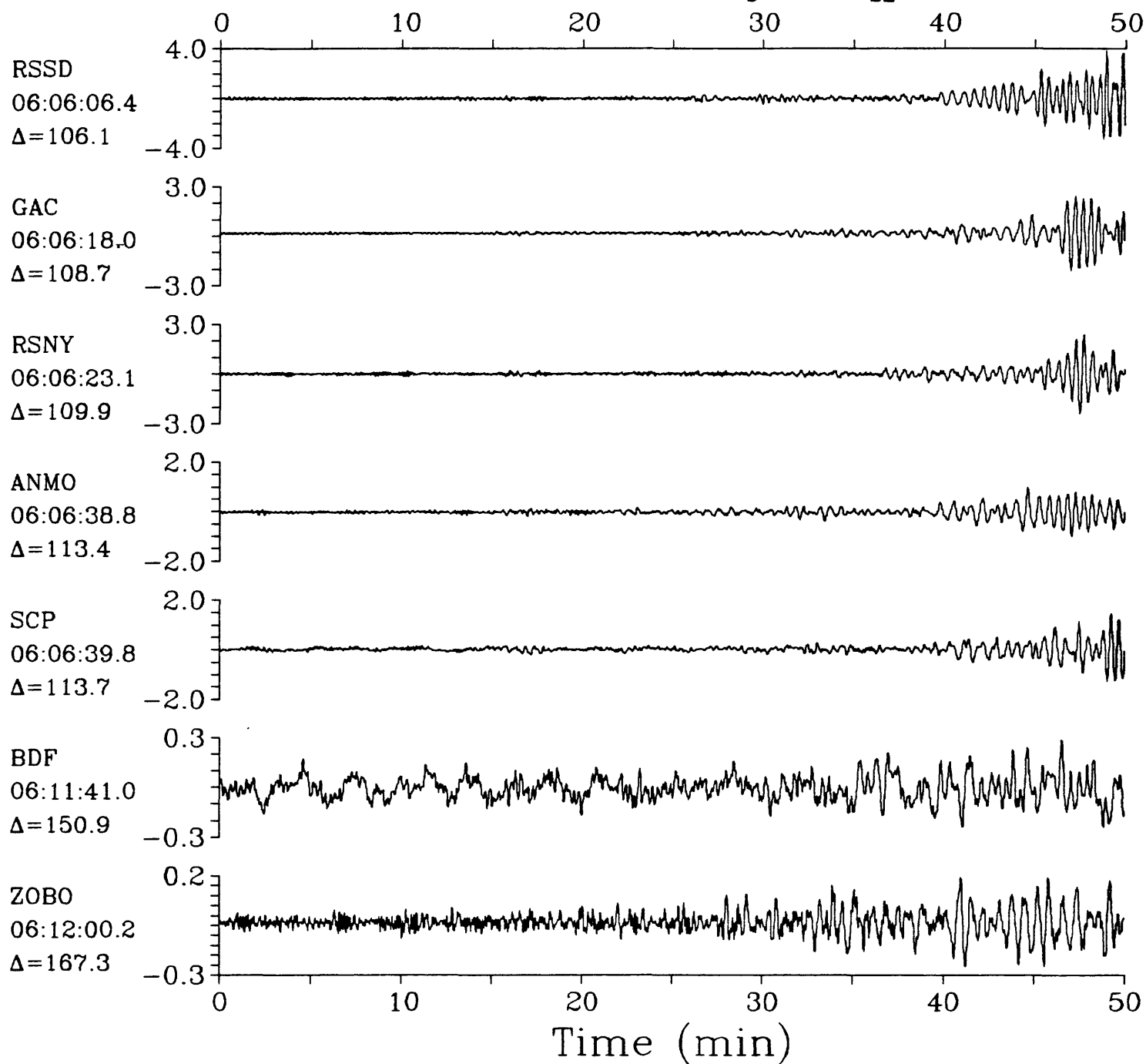
LPZ

Yunnan Province, China $h=5.0$ $m_b=5.7$ $M_{SZ}=5.8$ 

LPZ

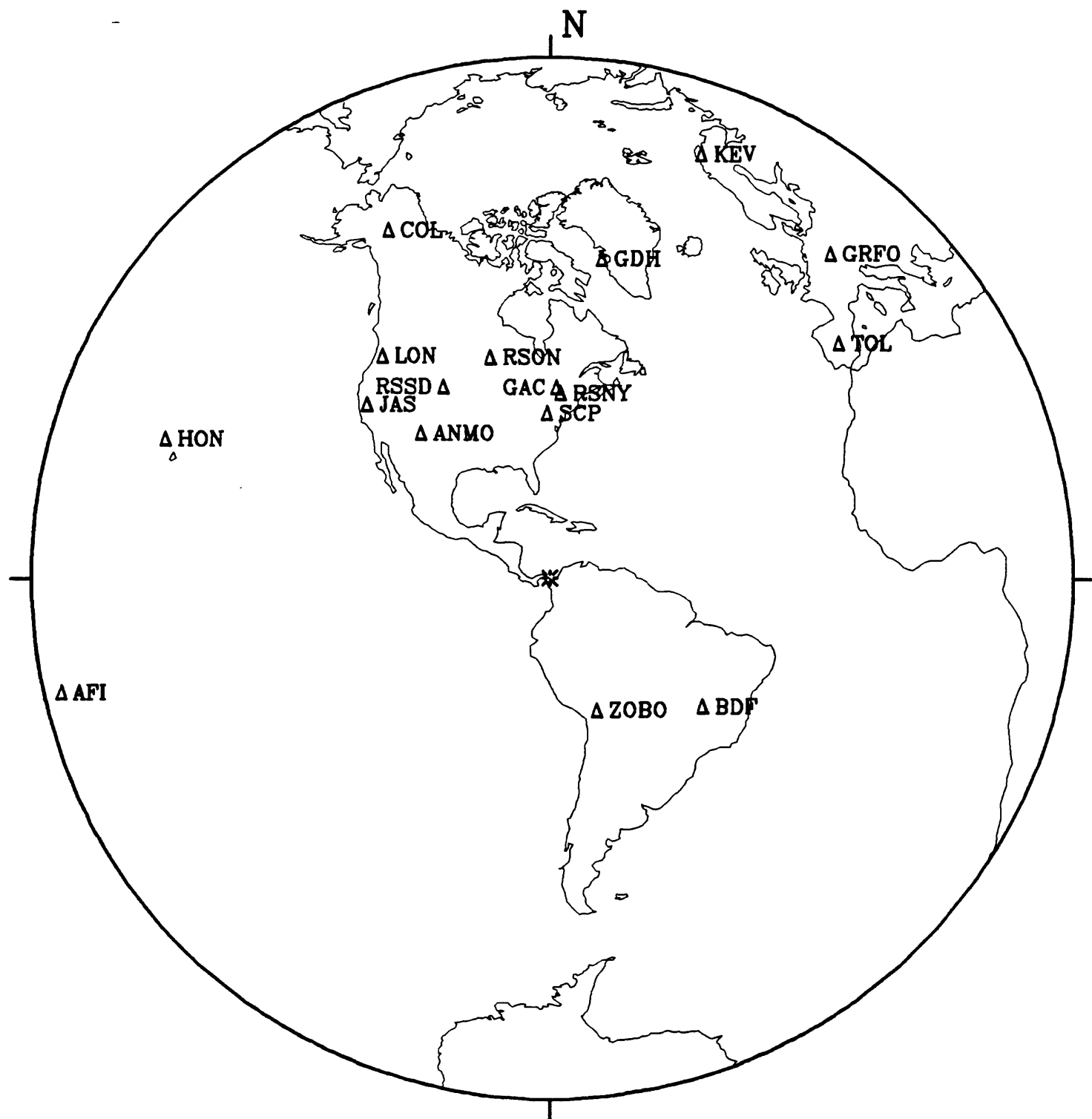
18 April 1985 05:52:52.71

LPZ

Yunnan Province, China $h=5.0$ $m_b=5.7$ $M_{sz}=5.8$ 

20 April 1985 18:23:48.26

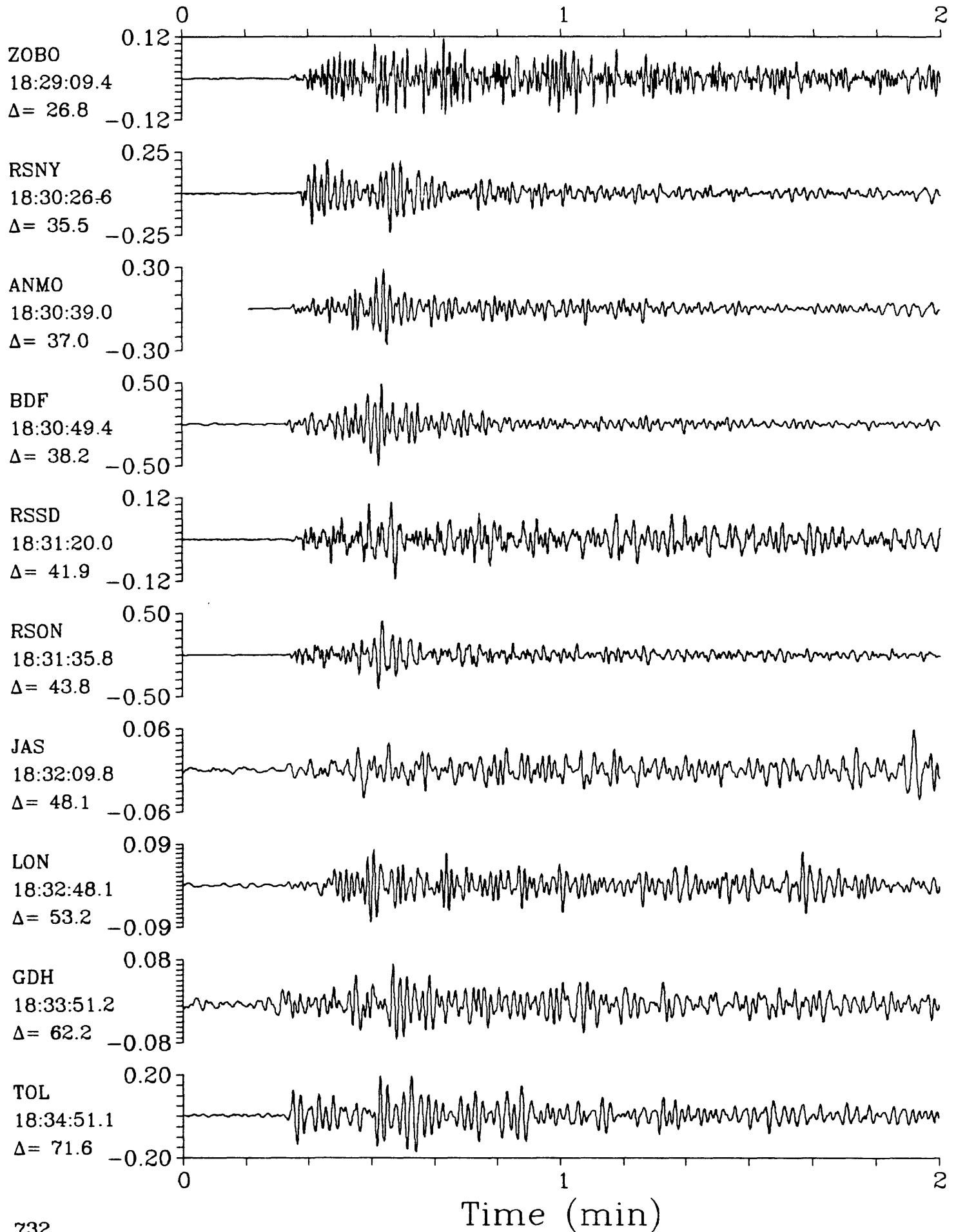
Panama-Colombia Border Region



SPZ

20 April 1985 18:23:48.26

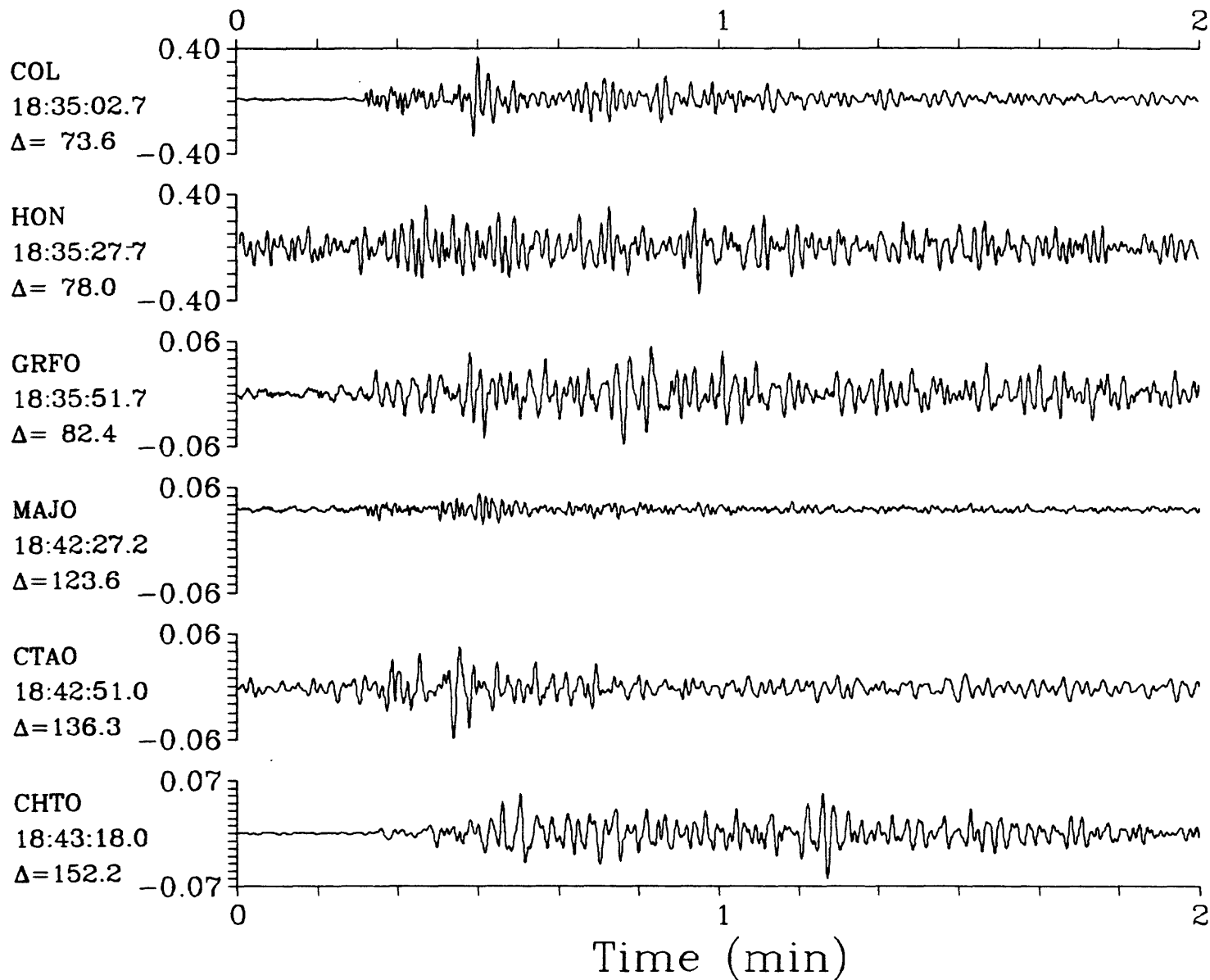
SPZ

Panama-Colombia Border Region $h=40.4$ $m_b=5.6$ $M_{sz}=5.9$ 

SPZ

20 April 1985 18:23:48.26

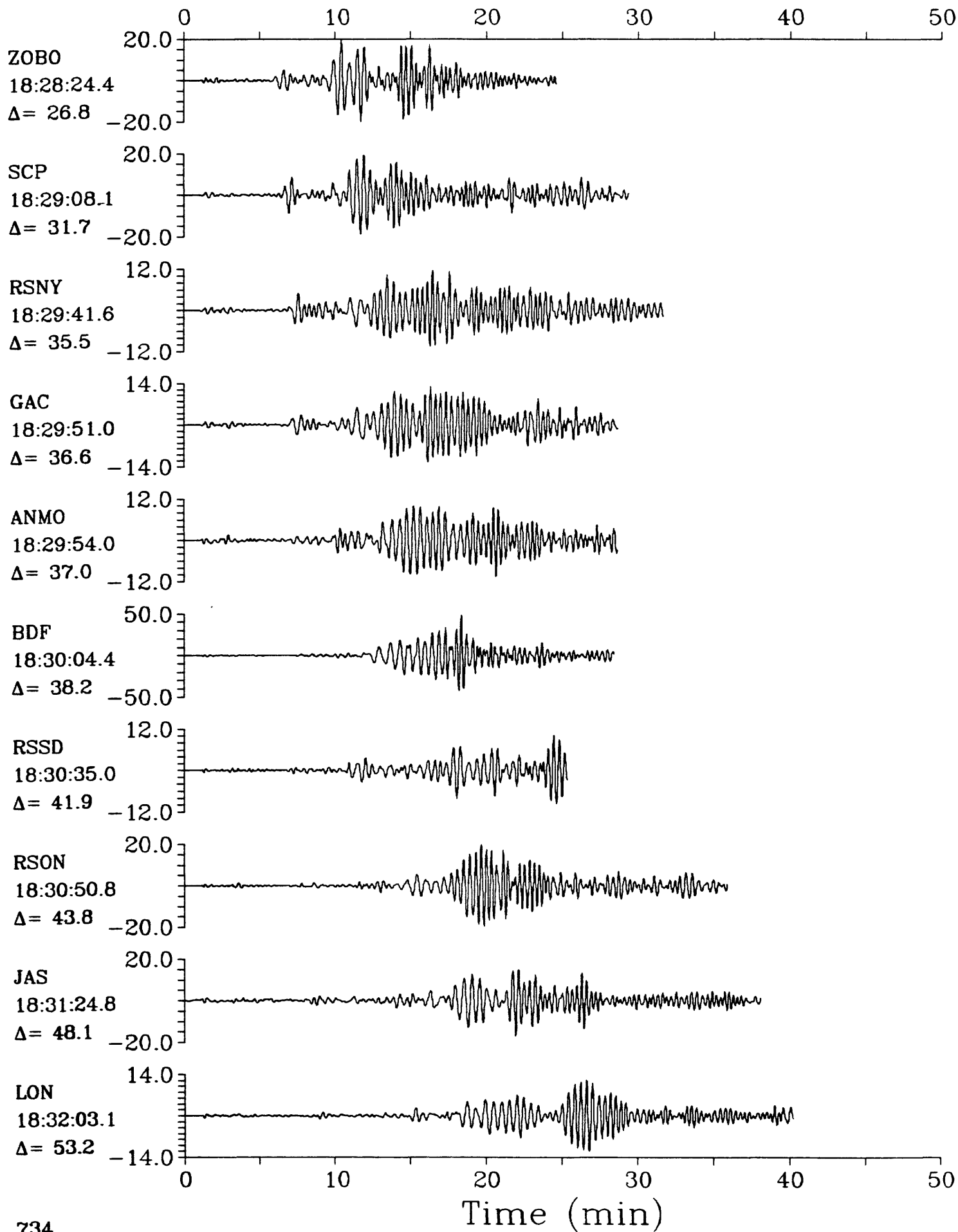
SPZ

Panama-Colombia Border Region $h=40.4$ $m_b=5.6$ $M_{sz}=5.9$ 

LPZ

20 April 1985 18:23:48.26

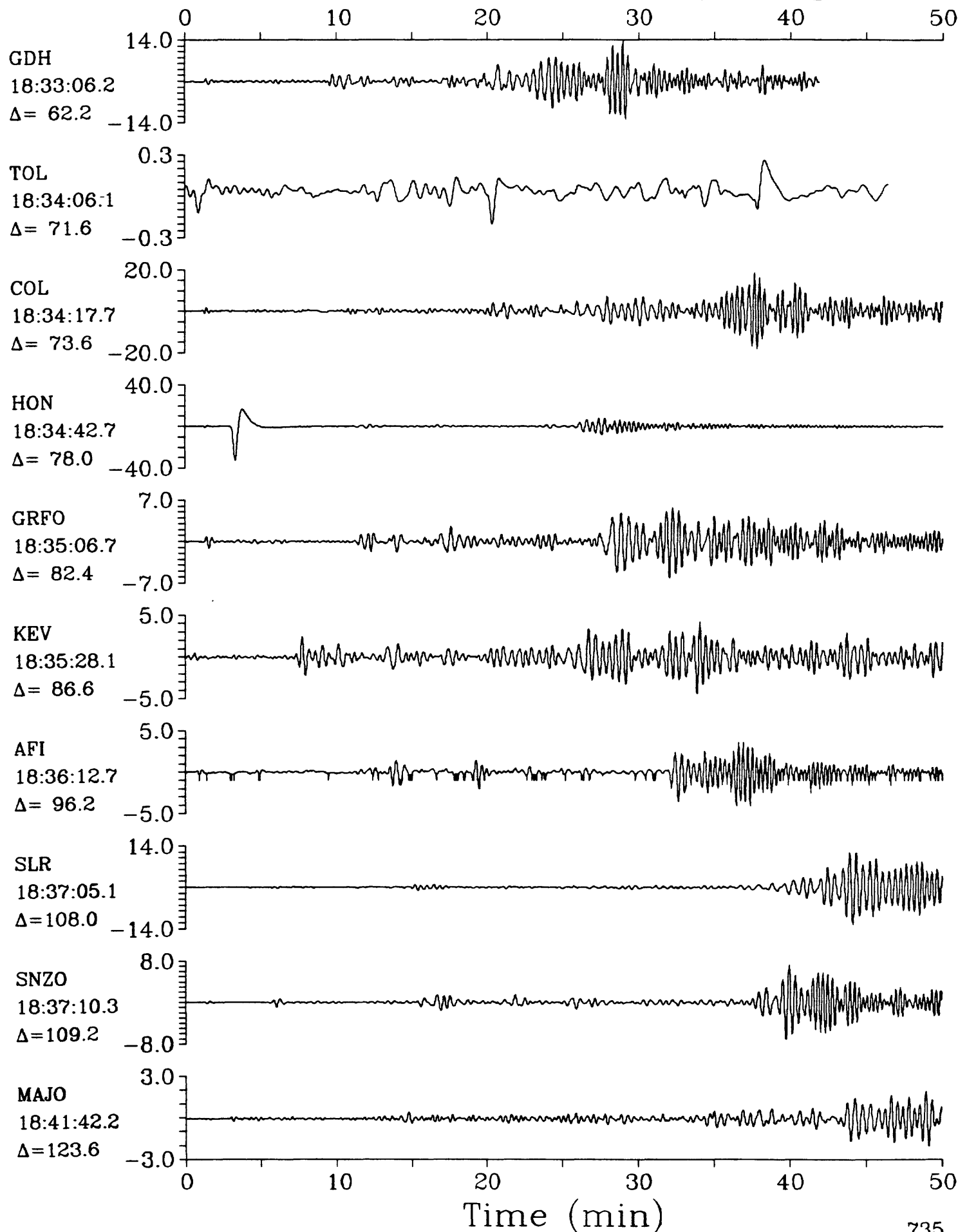
LPZ

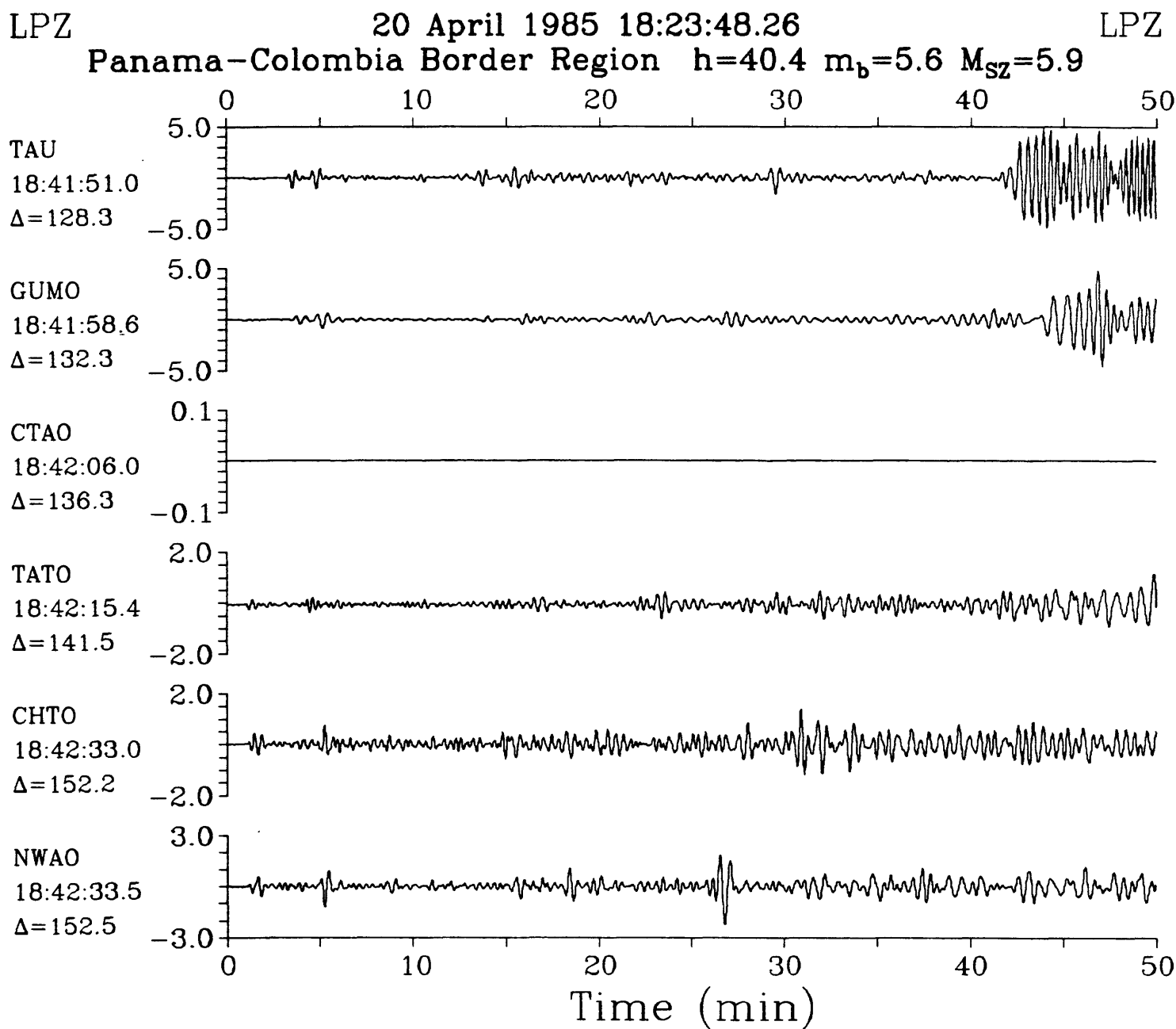
Panama-Colombia Border Region $h=40.4$ $m_b=5.6$ $M_{sz}=5.9$ 

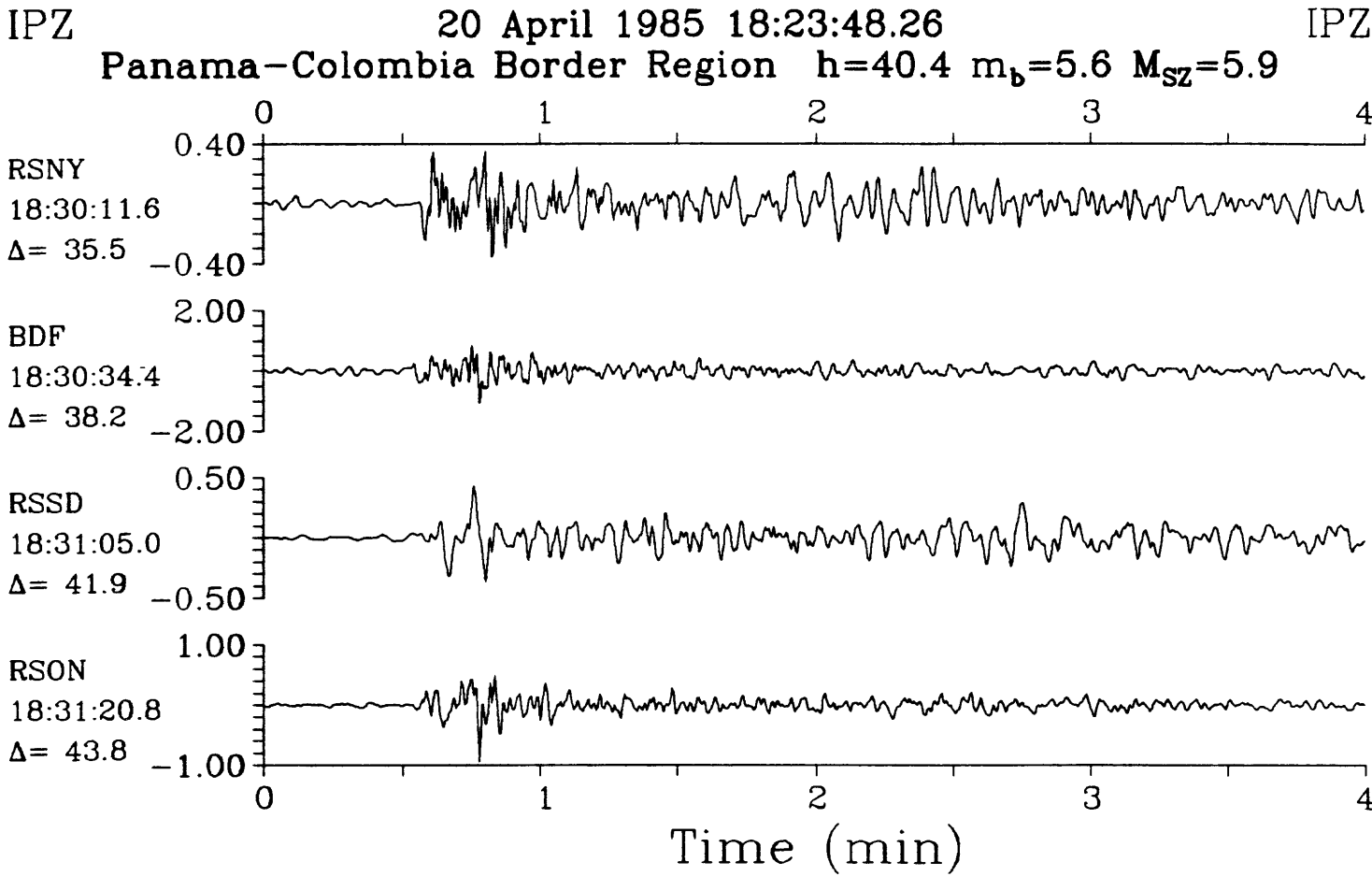
LPZ

20 April 1985 18:23:48.26

LPZ

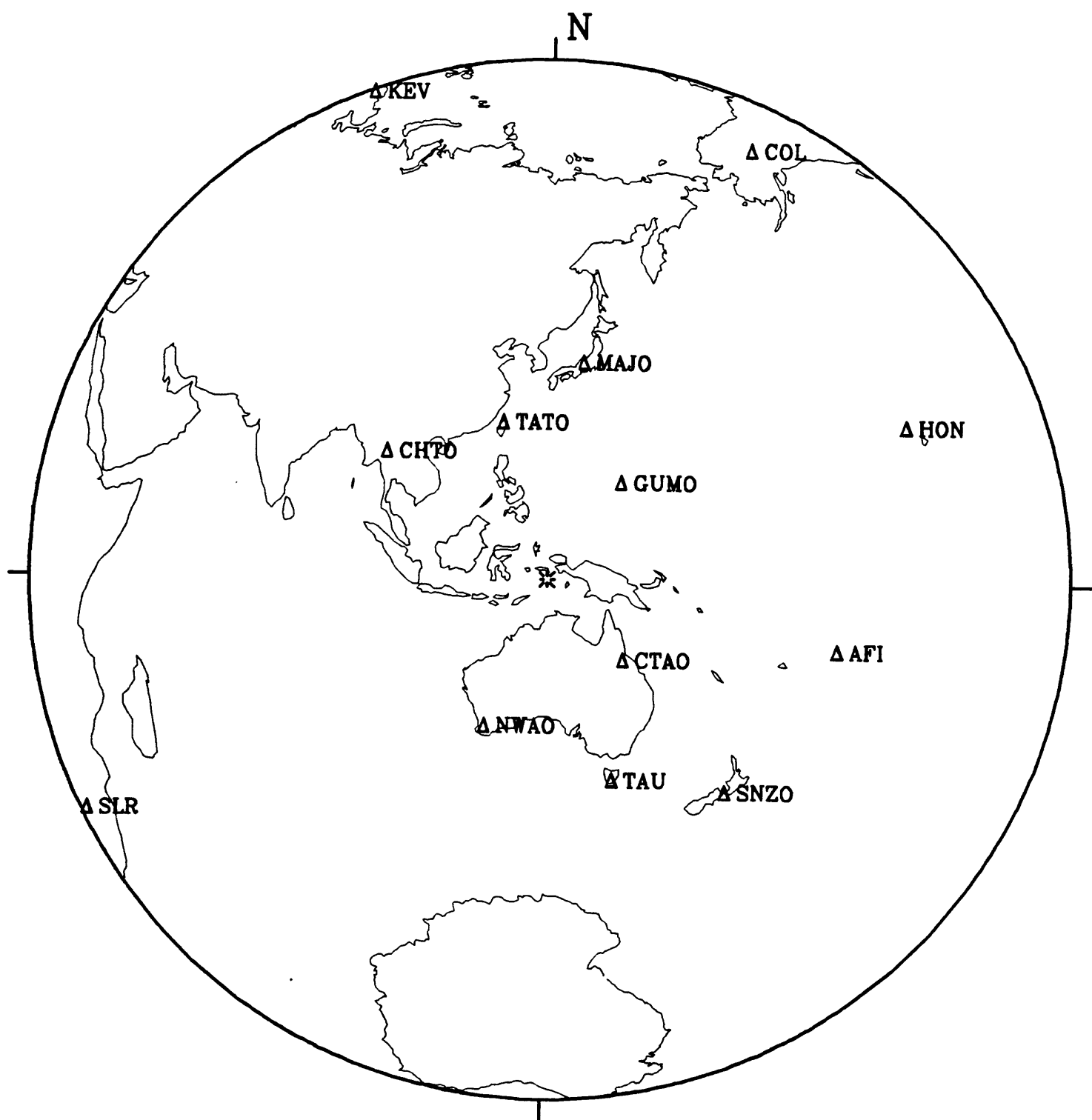
Panama-Colombia Border Region $h=40.4$ $m_b=5.6$ $M_{sz}=5.9$ 





21 April 1985 13:53:00.45

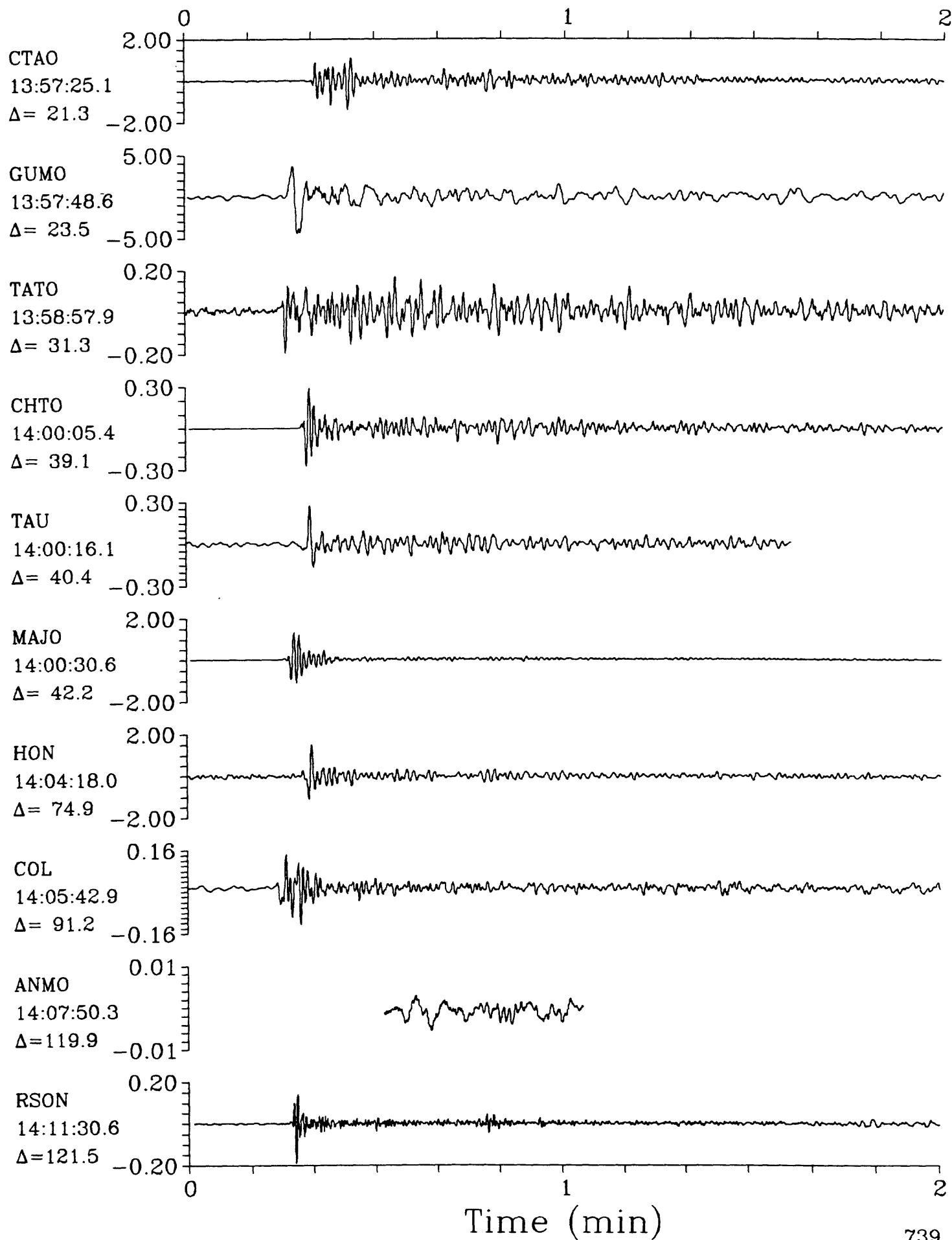
Banda Sea



SPZ

21 April 1985 13:53:00.45
Banda Sea $h=78.5$ $m_b=6.0$

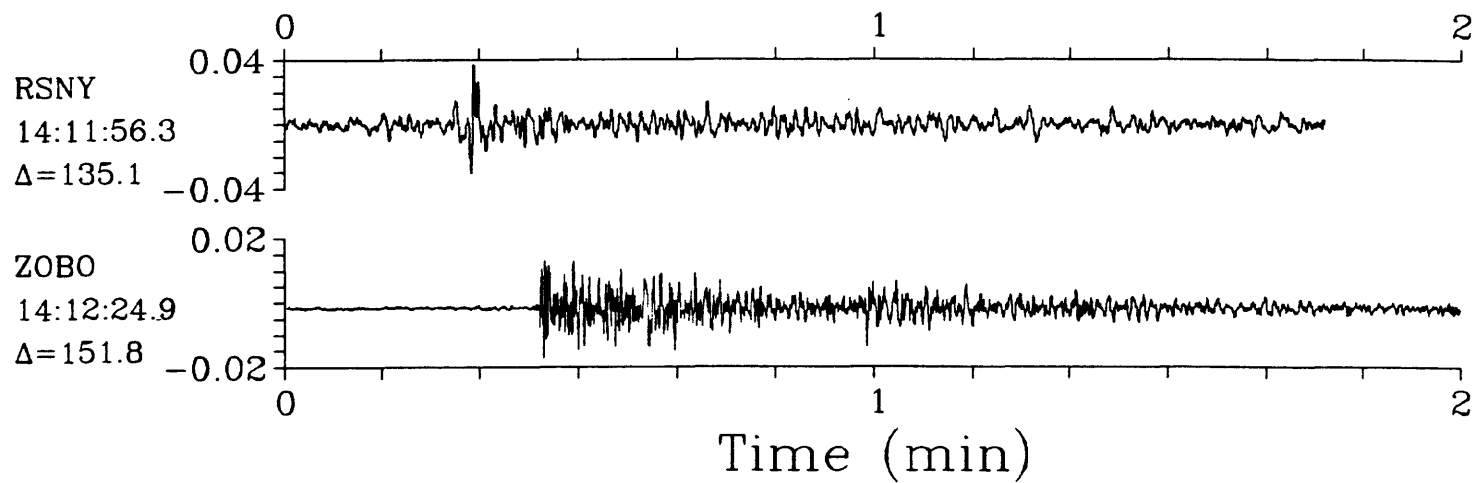
SPZ

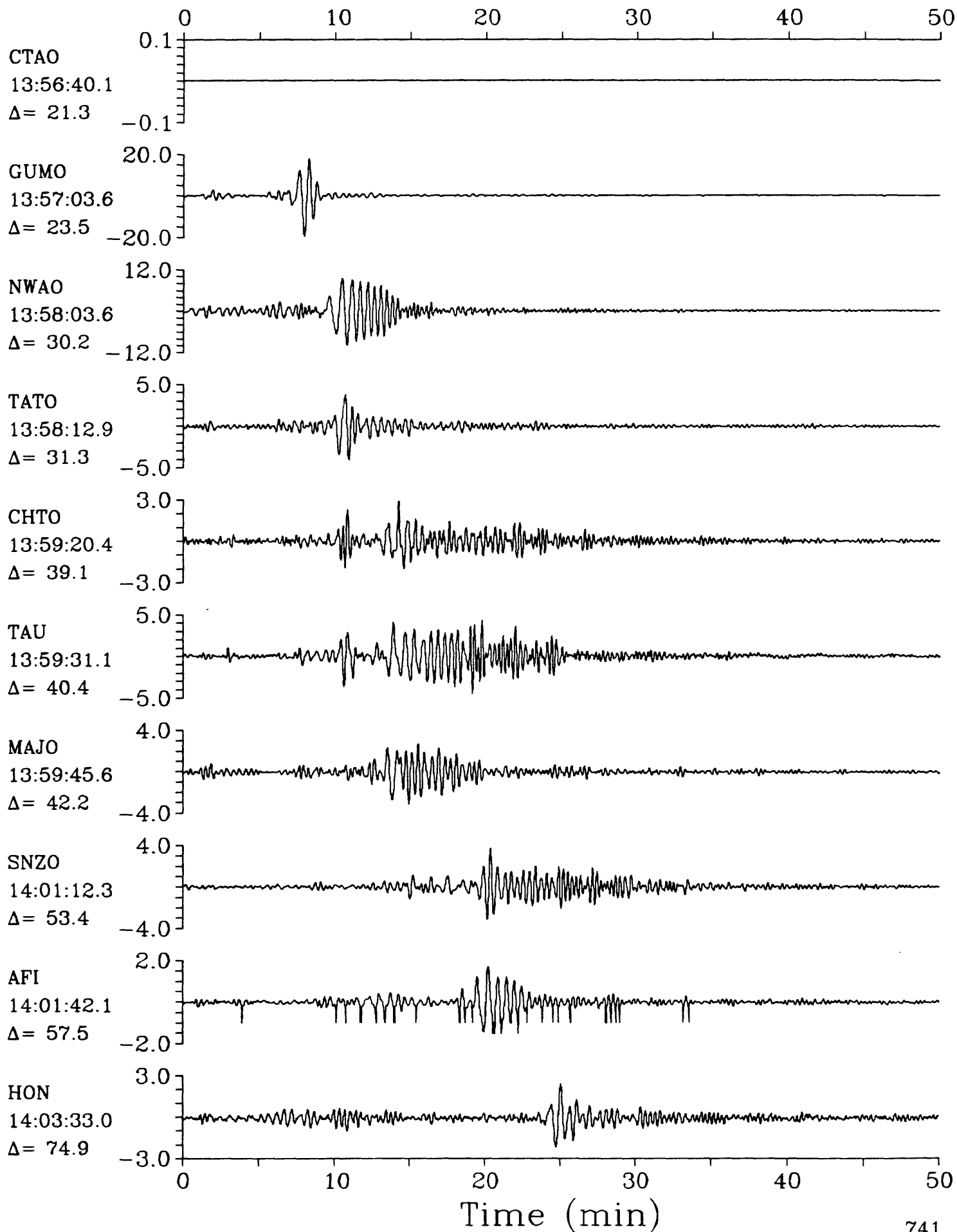


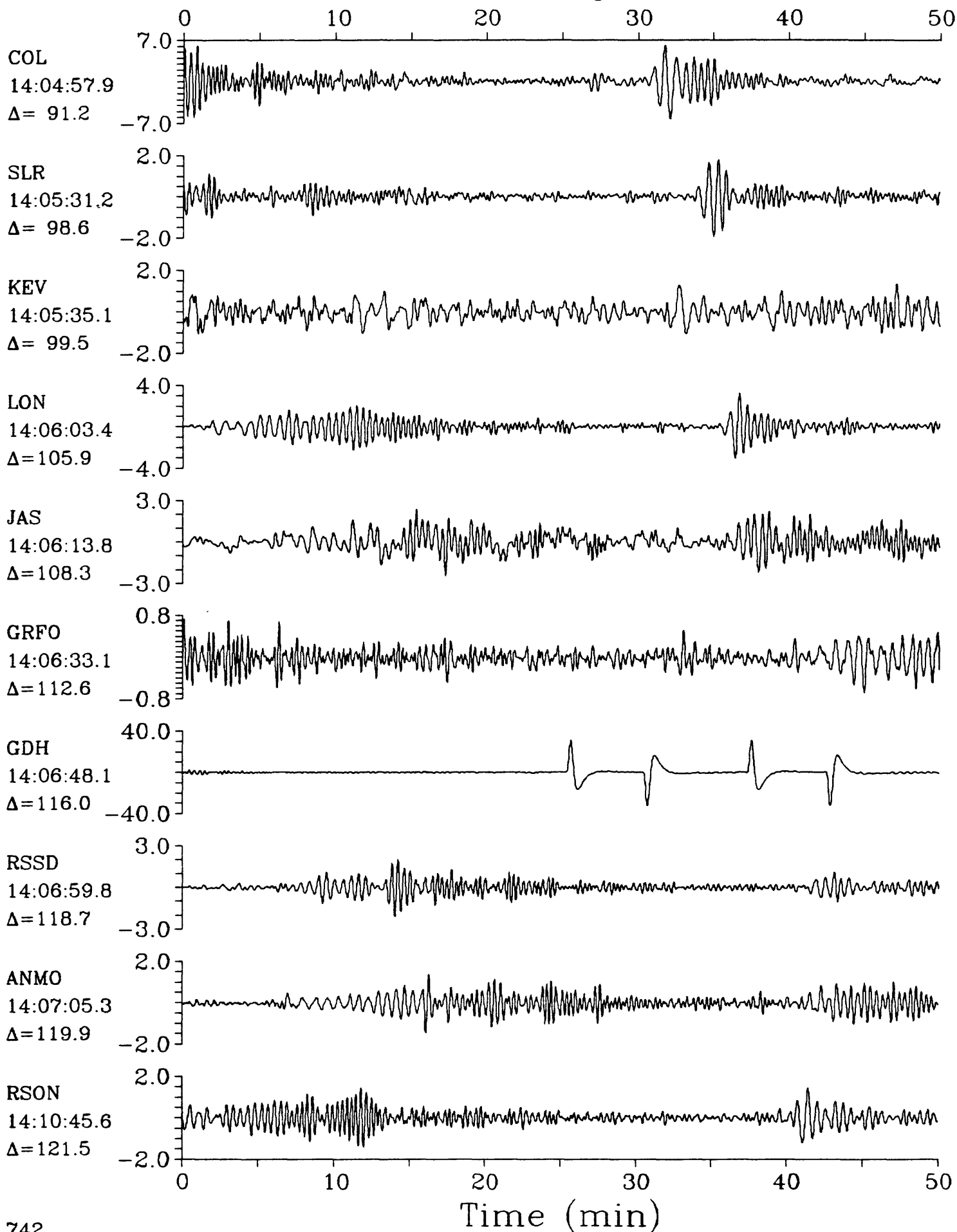
SPZ

21 April 1985 13:53:00.45
Banda Sea $h=78.5$ $m_b=6.0$

SPZ



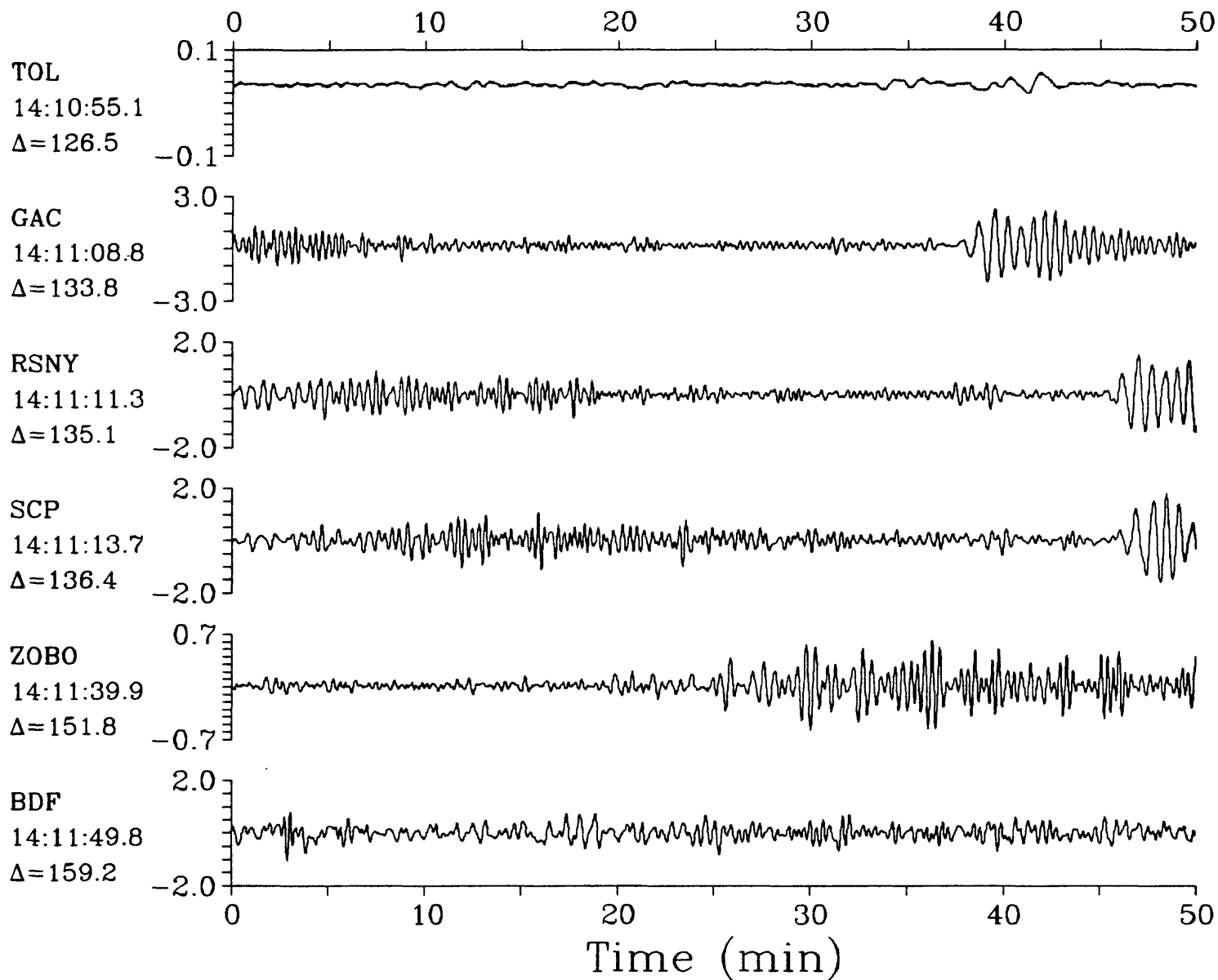




LPZ

21 April 1985 13:53:00.45
Banda Sea $h=78.5$ $m_b=6.0$

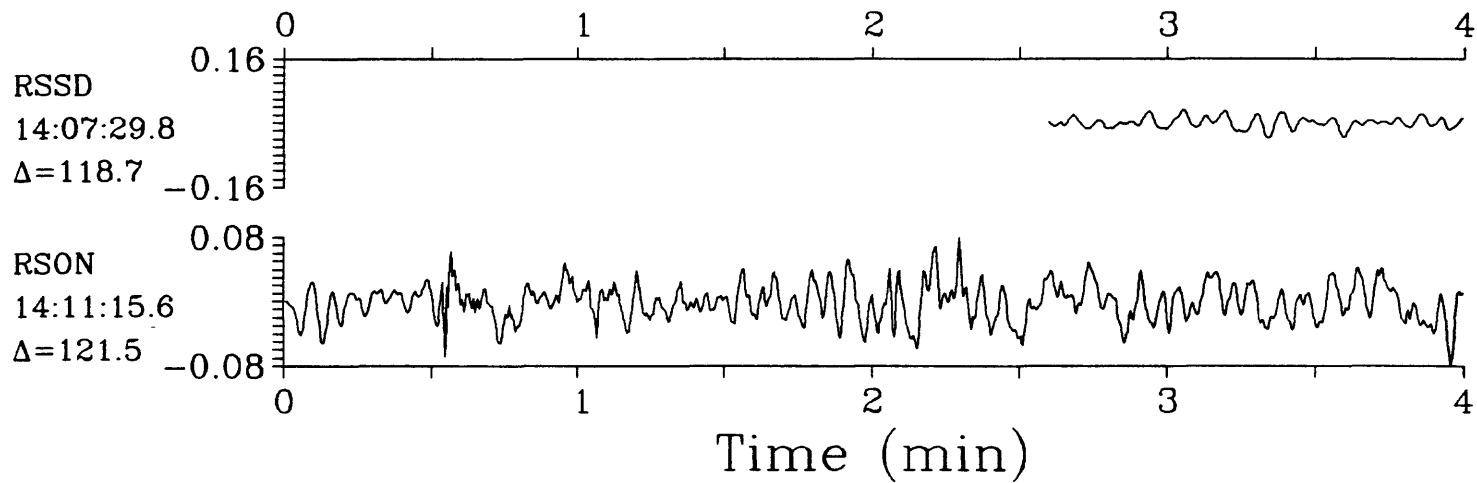
LPZ



IPZ

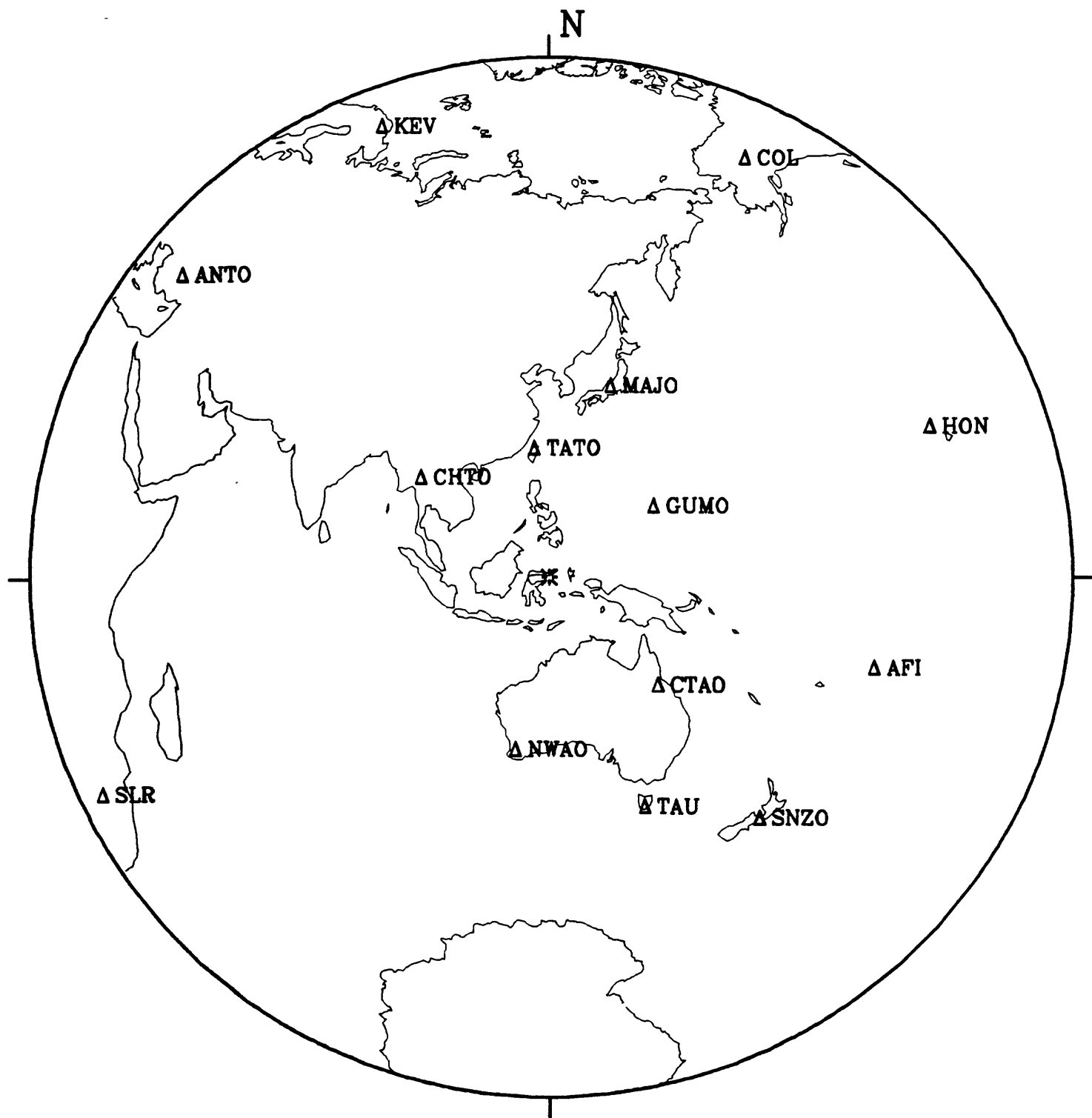
21 April 1985 13:53:00.45
Banda Sea $h=78.5$ $m_b=6.0$

IPZ



22 April 1985 09:36:52.12

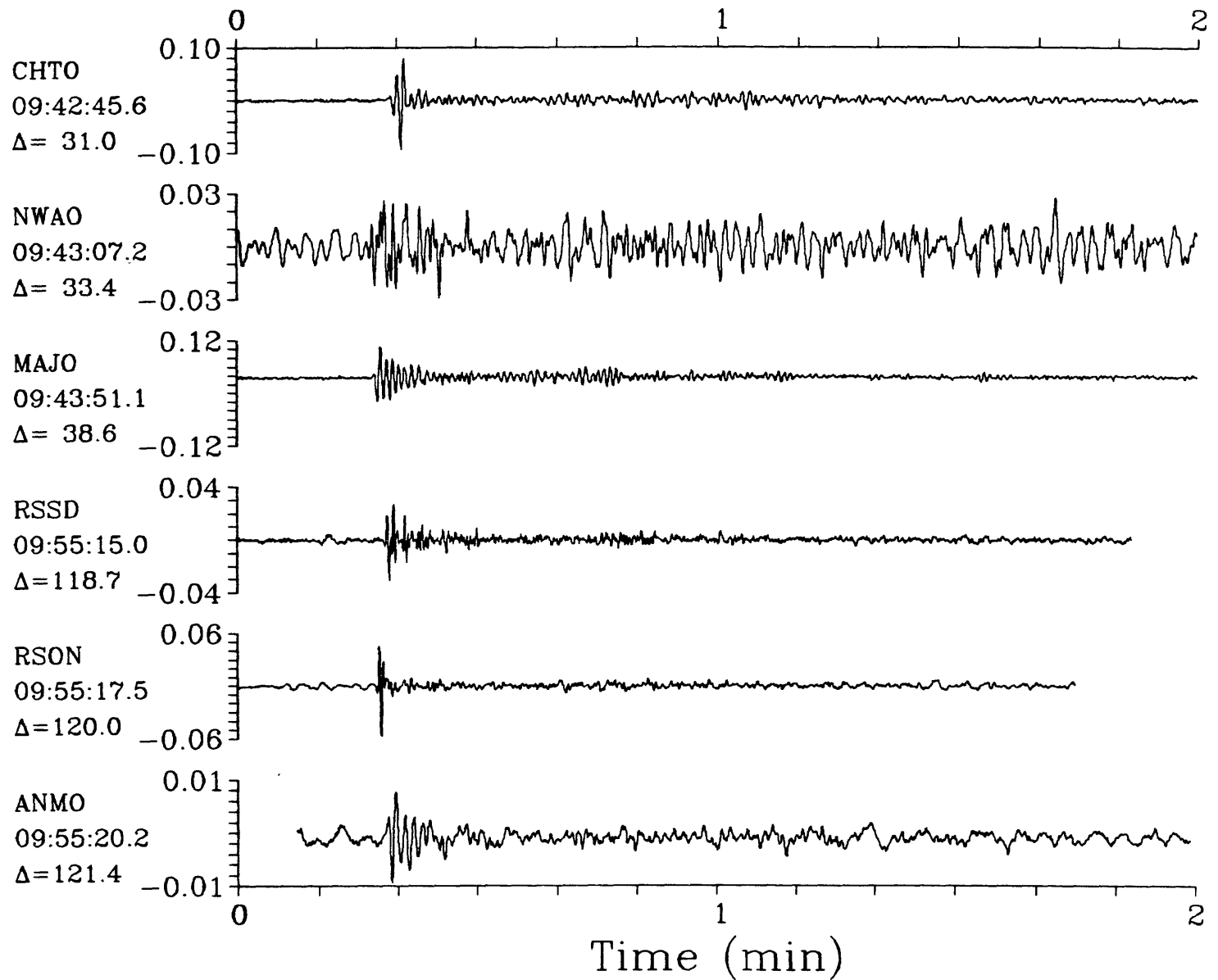
Minahassa Peninsula



SPZ

22 April 1985 09:36:52.12
Minahassa Peninsula $h=93.3$ $m_b=5.5$

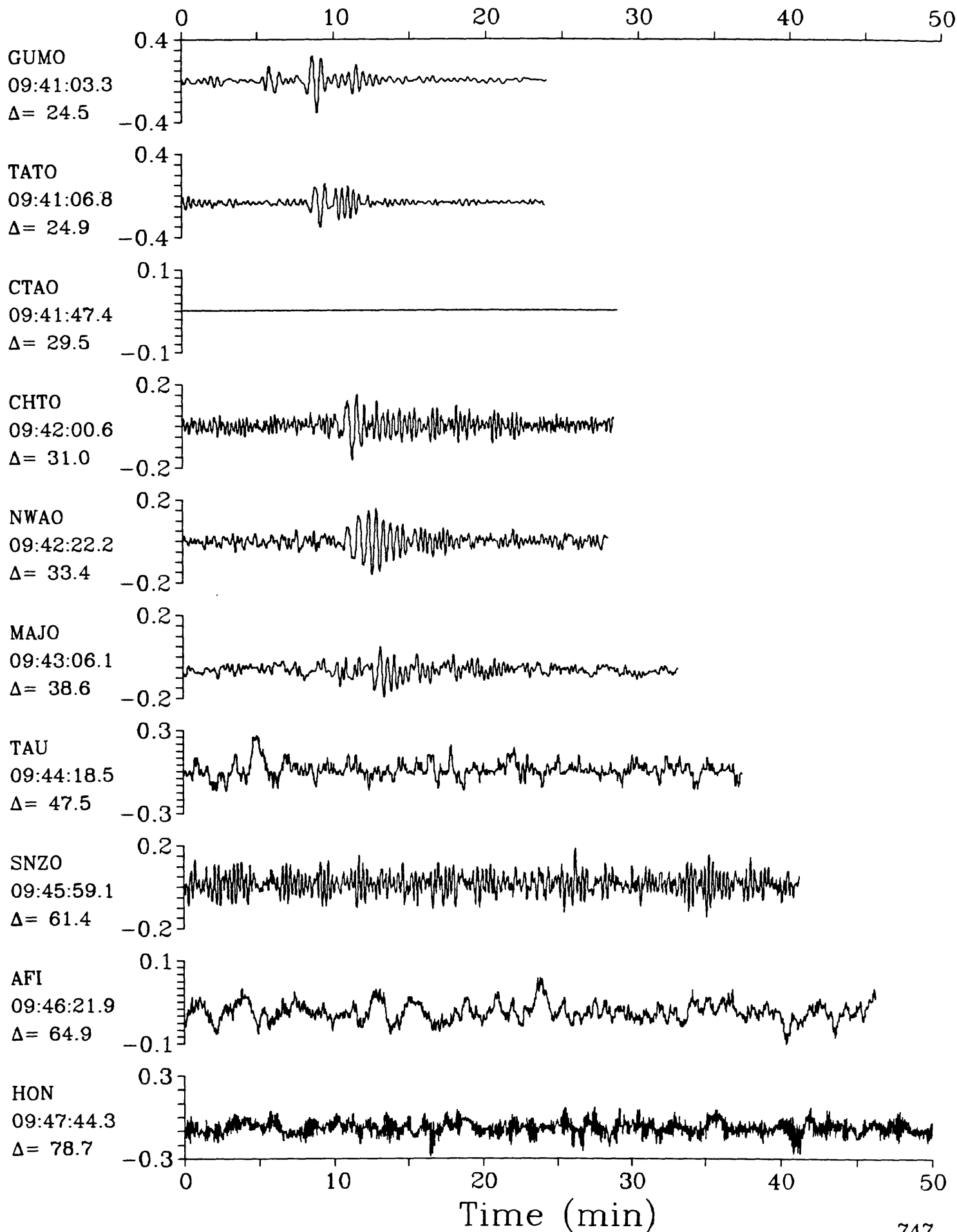
SPZ



LPZ

22 April 1985 09:36:52.12

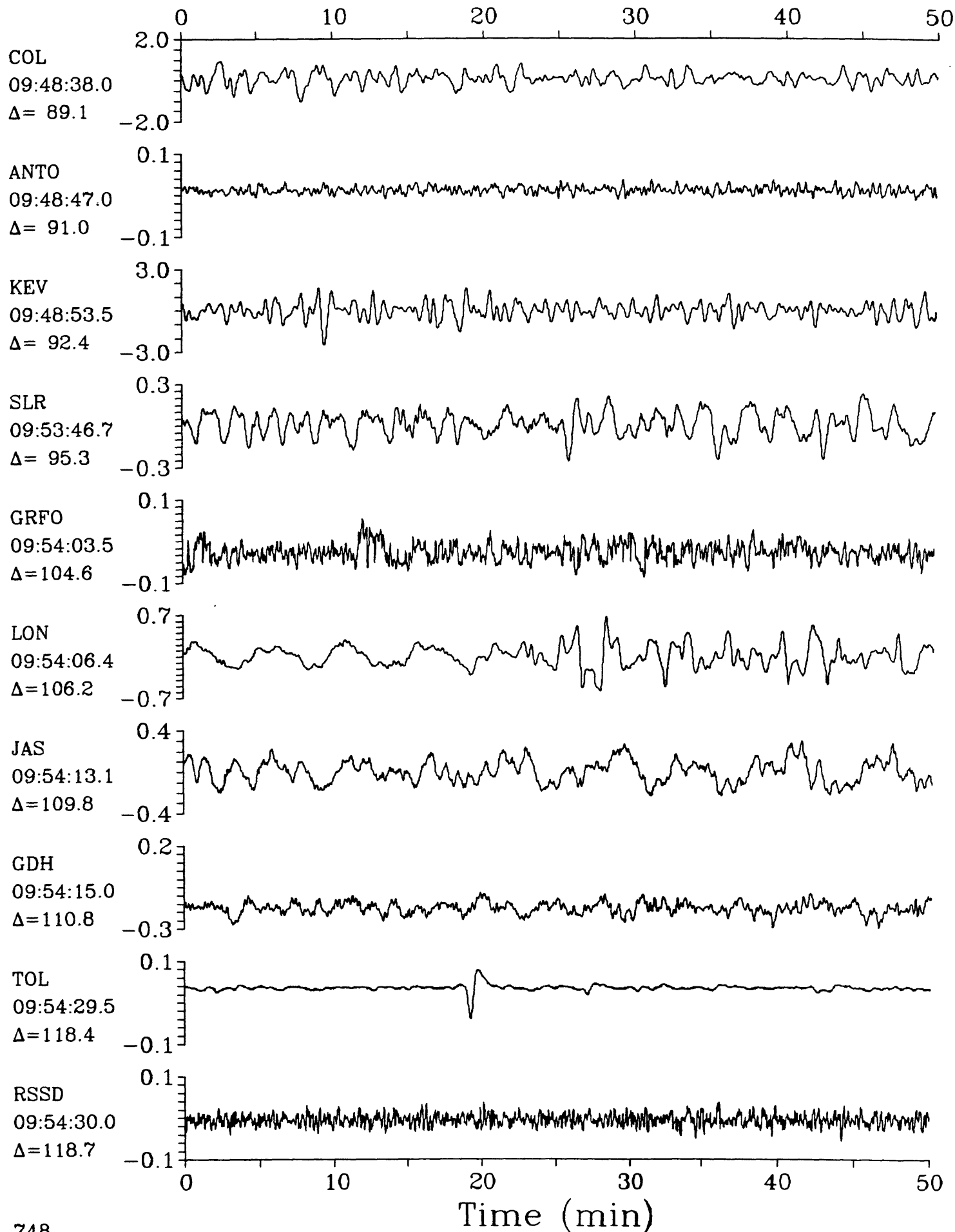
LPZ

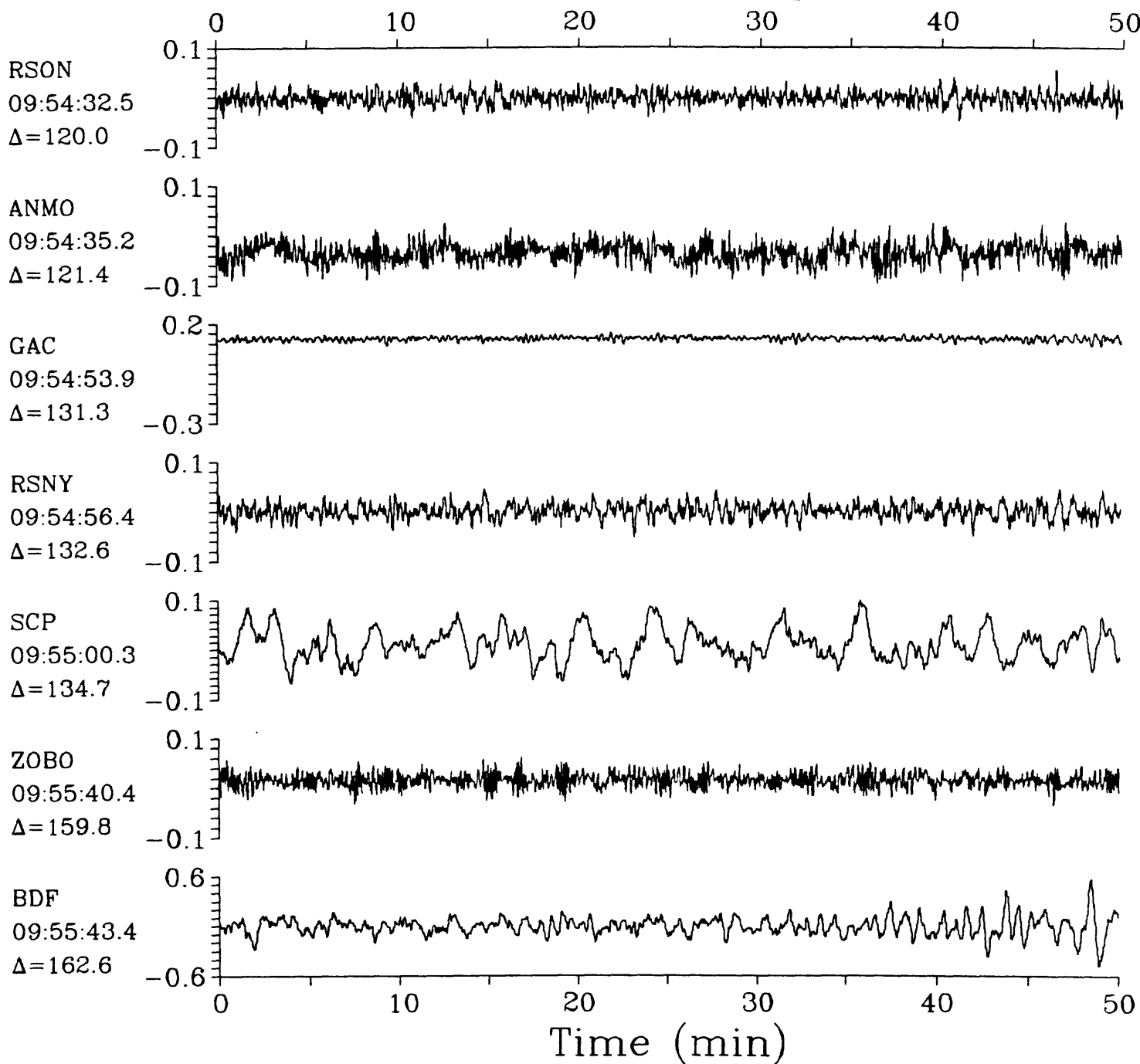
Minahassa Peninsula $h=93.3$ $m_b=5.5$ 

LPZ

22 April 1985 09:36:52.12

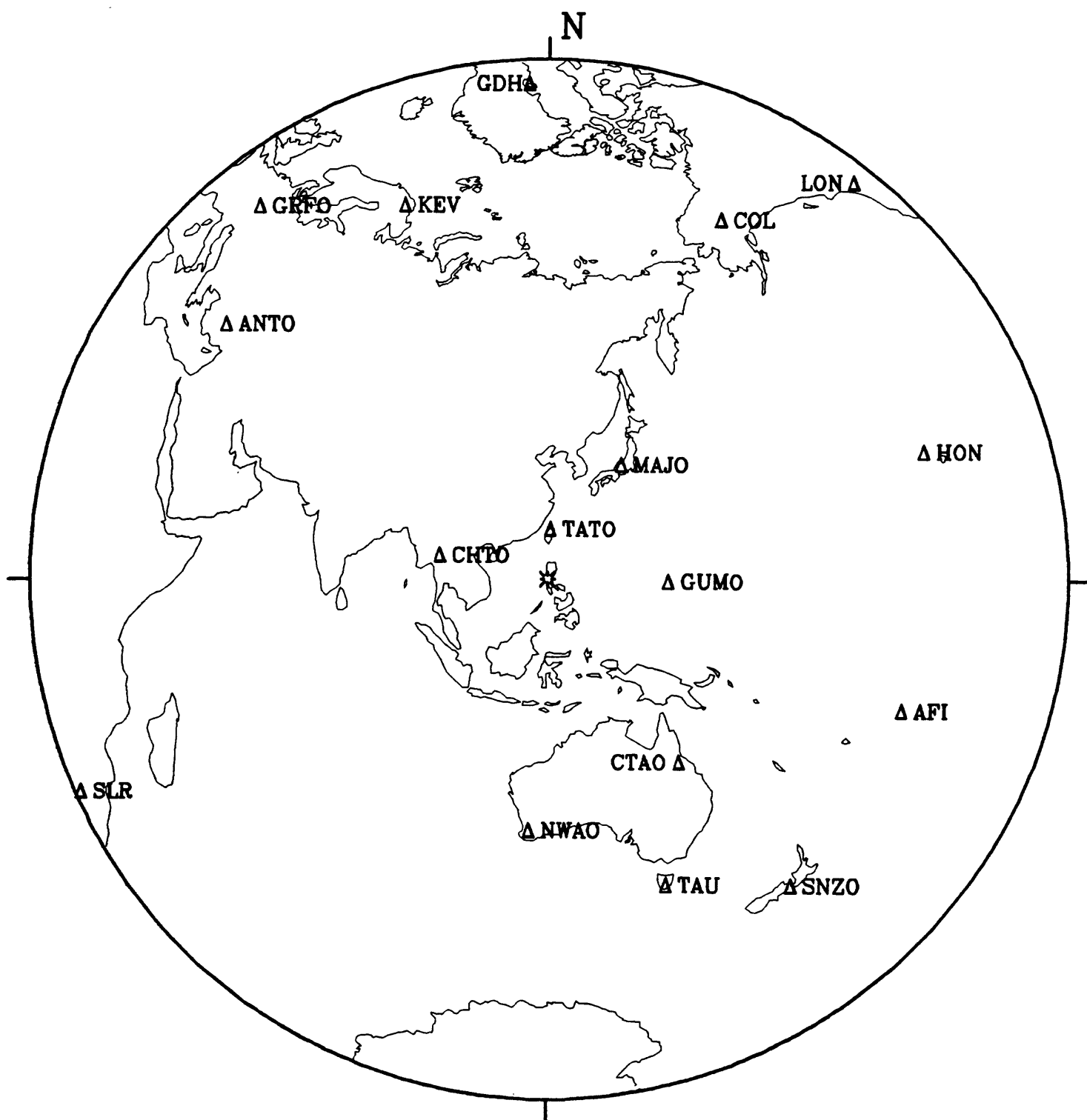
LPZ

Minahassa Peninsula $h=93.3$ $m_b=5.5$ 



23 April 1985 16:15:11.03

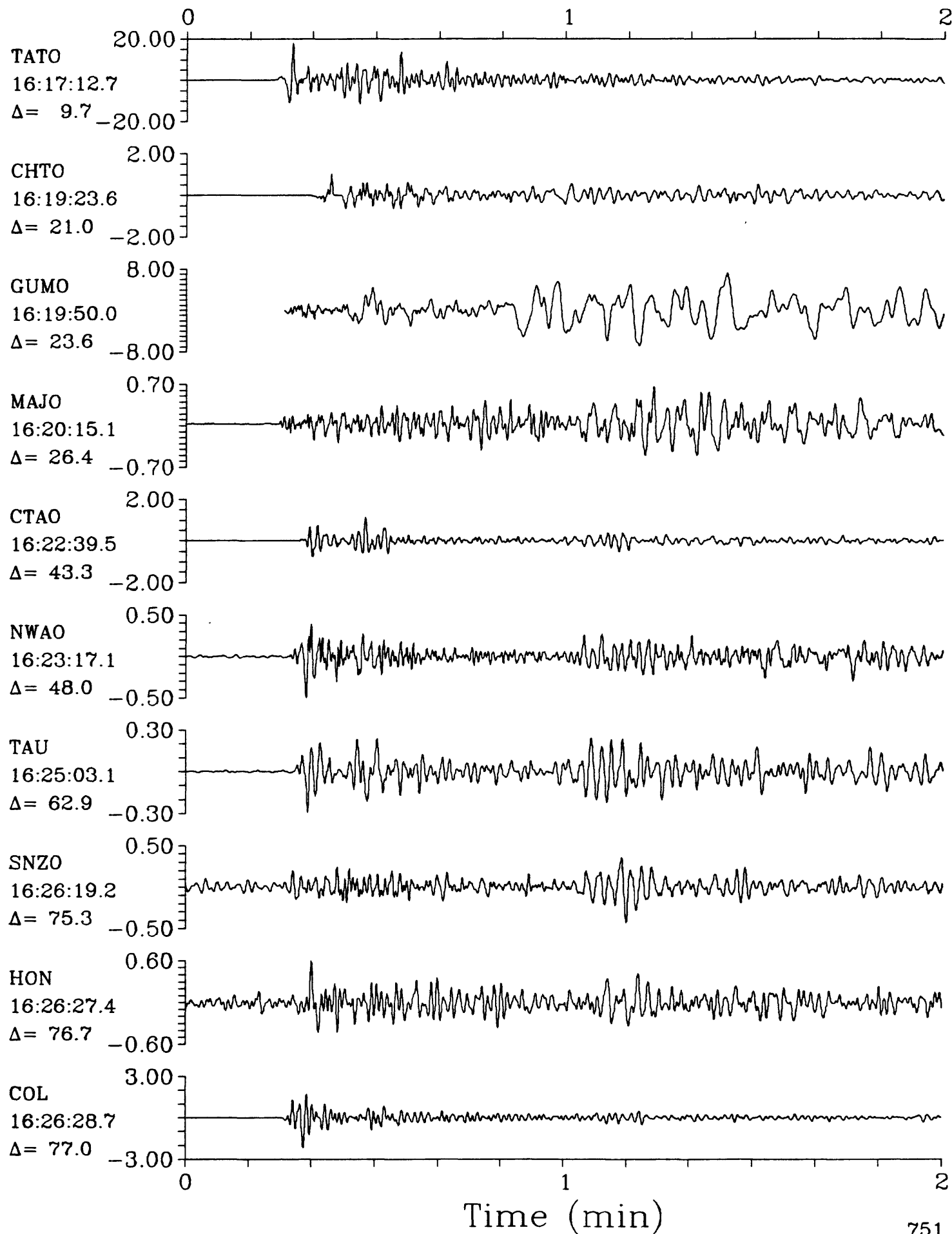
Luzon, Philippine Islands



SPZ

23 April 1985 16:15:11.03

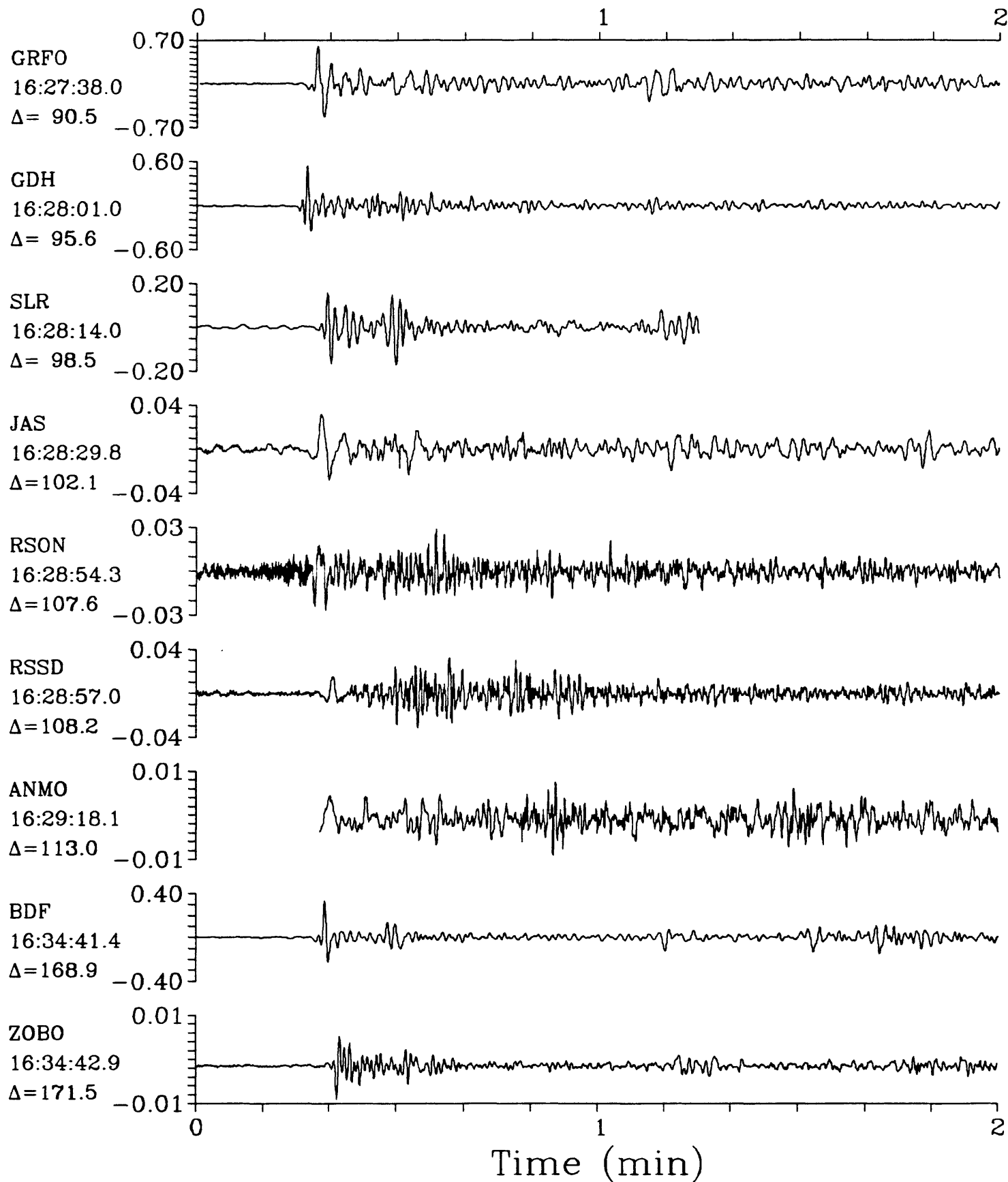
SPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

SPZ

23 April 1985 16:15:11.03

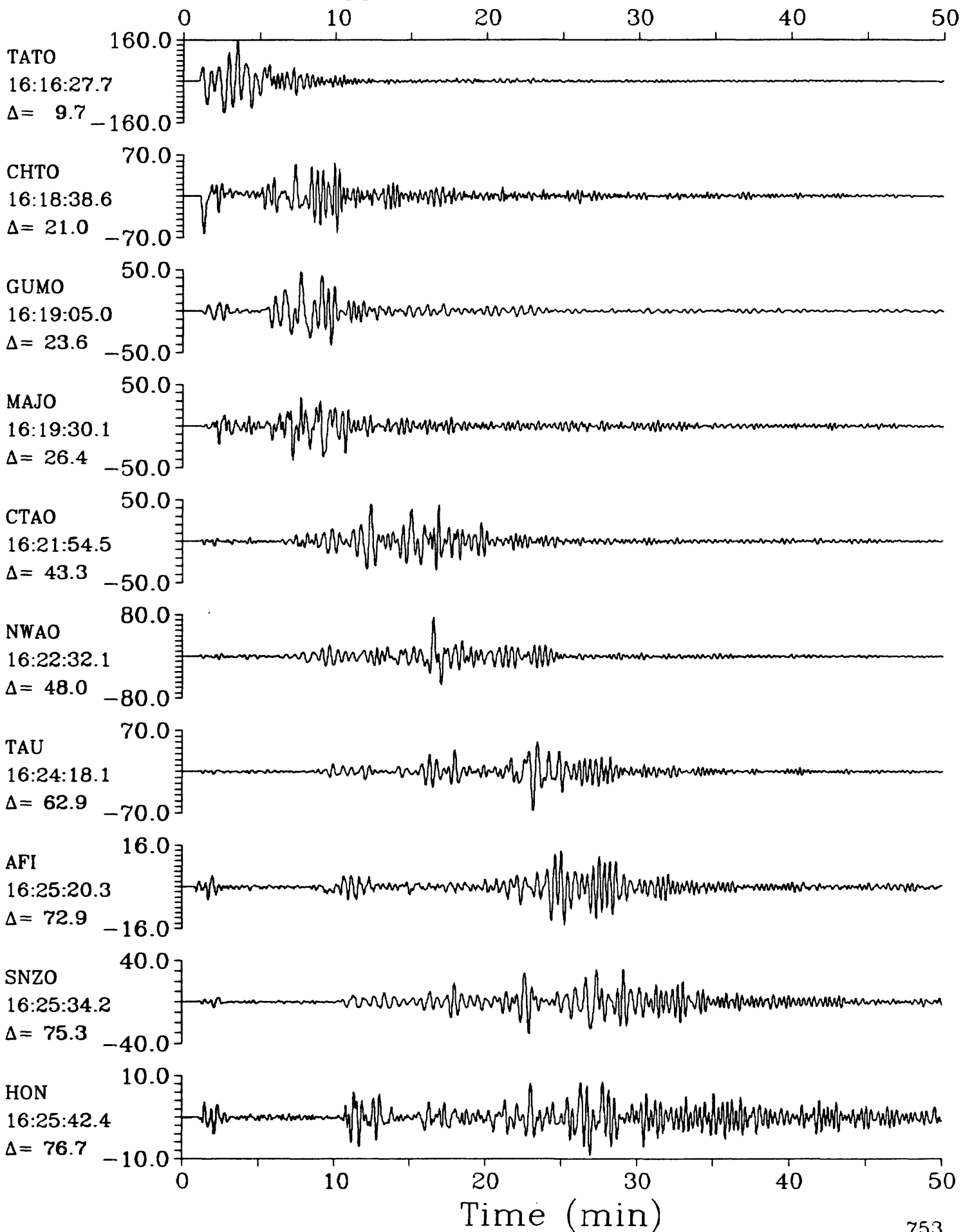
SPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

LPZ

23 April 1985 16:15:11.03

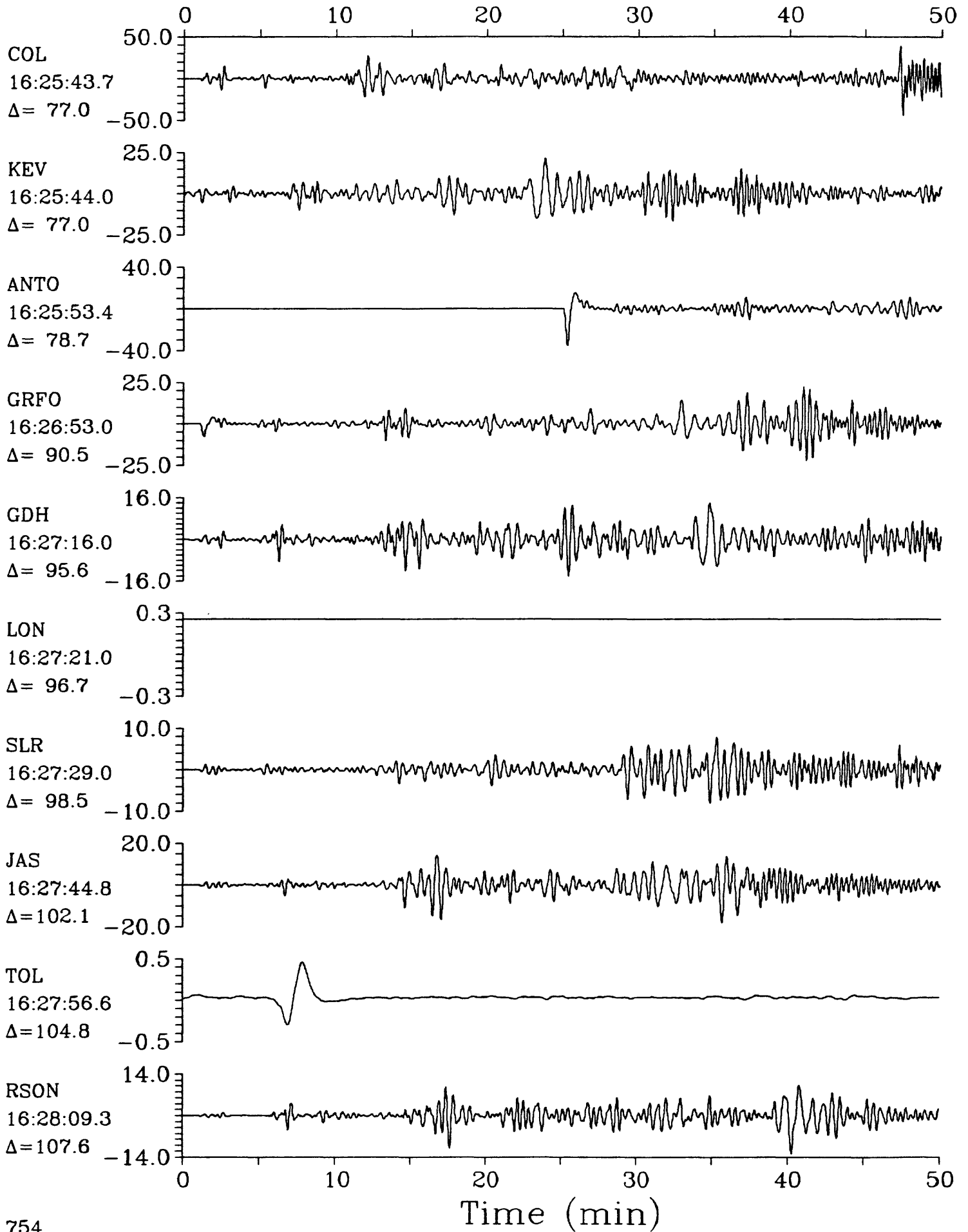
LPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

LPZ

23 April 1985 16:15:11.03

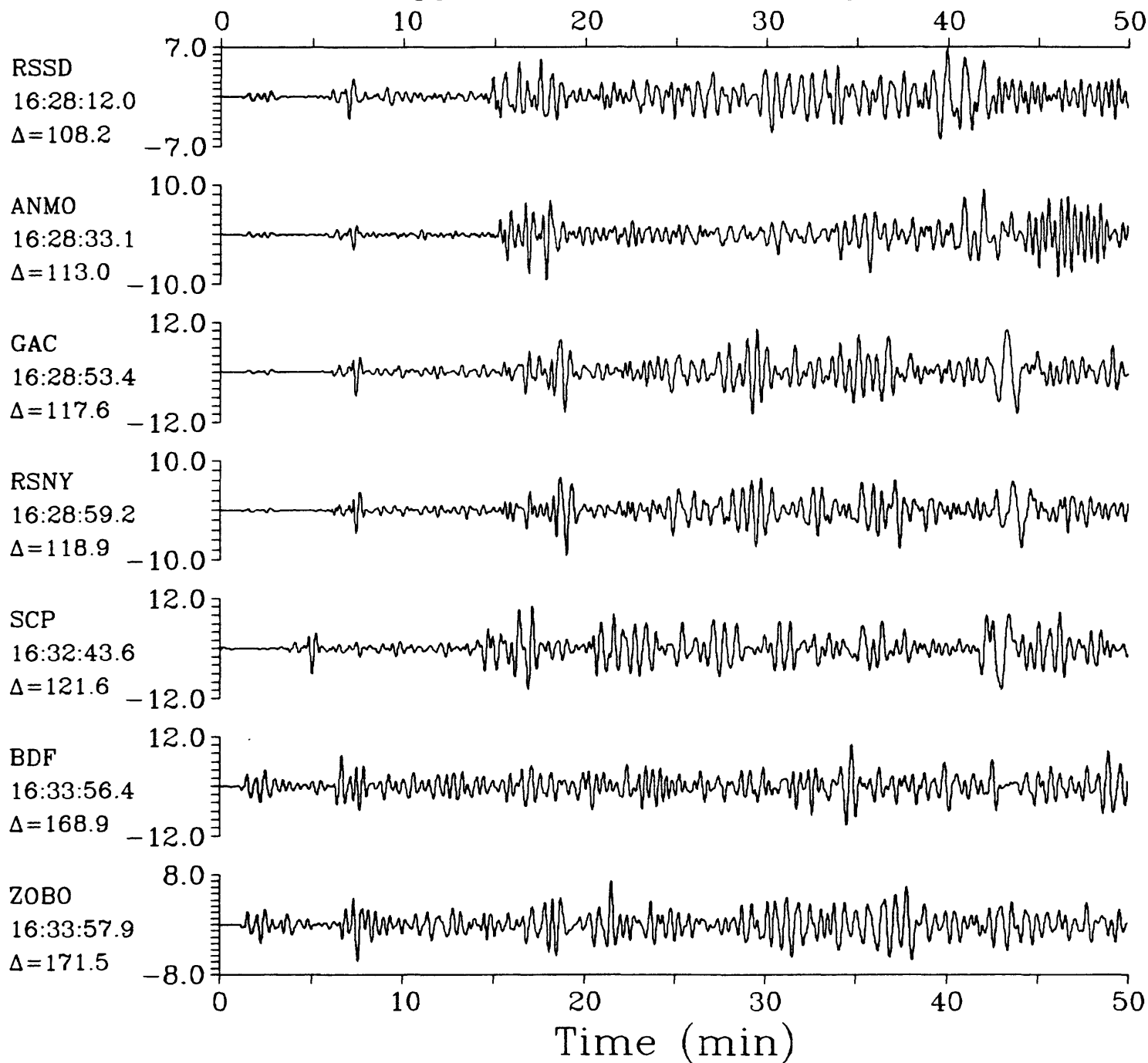
LPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

LPZ

23 April 1985 16:15:11.03

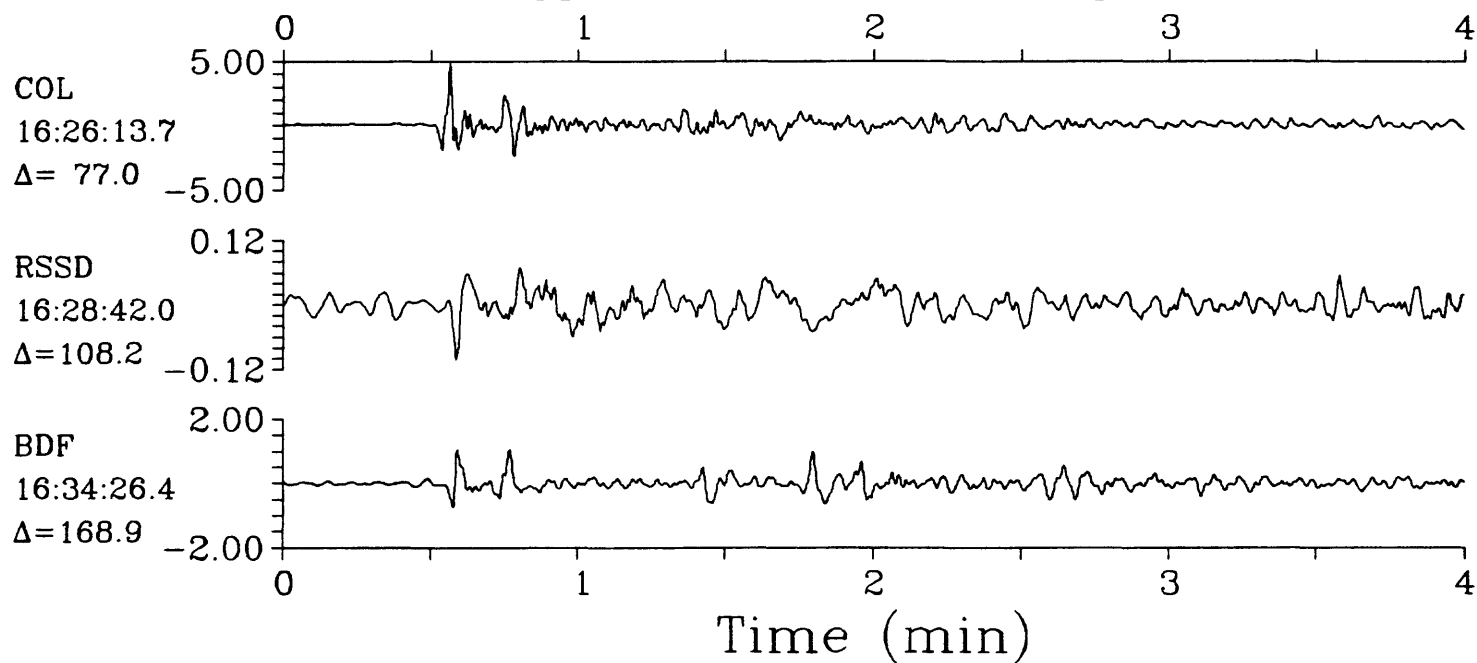
LPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

IPZ

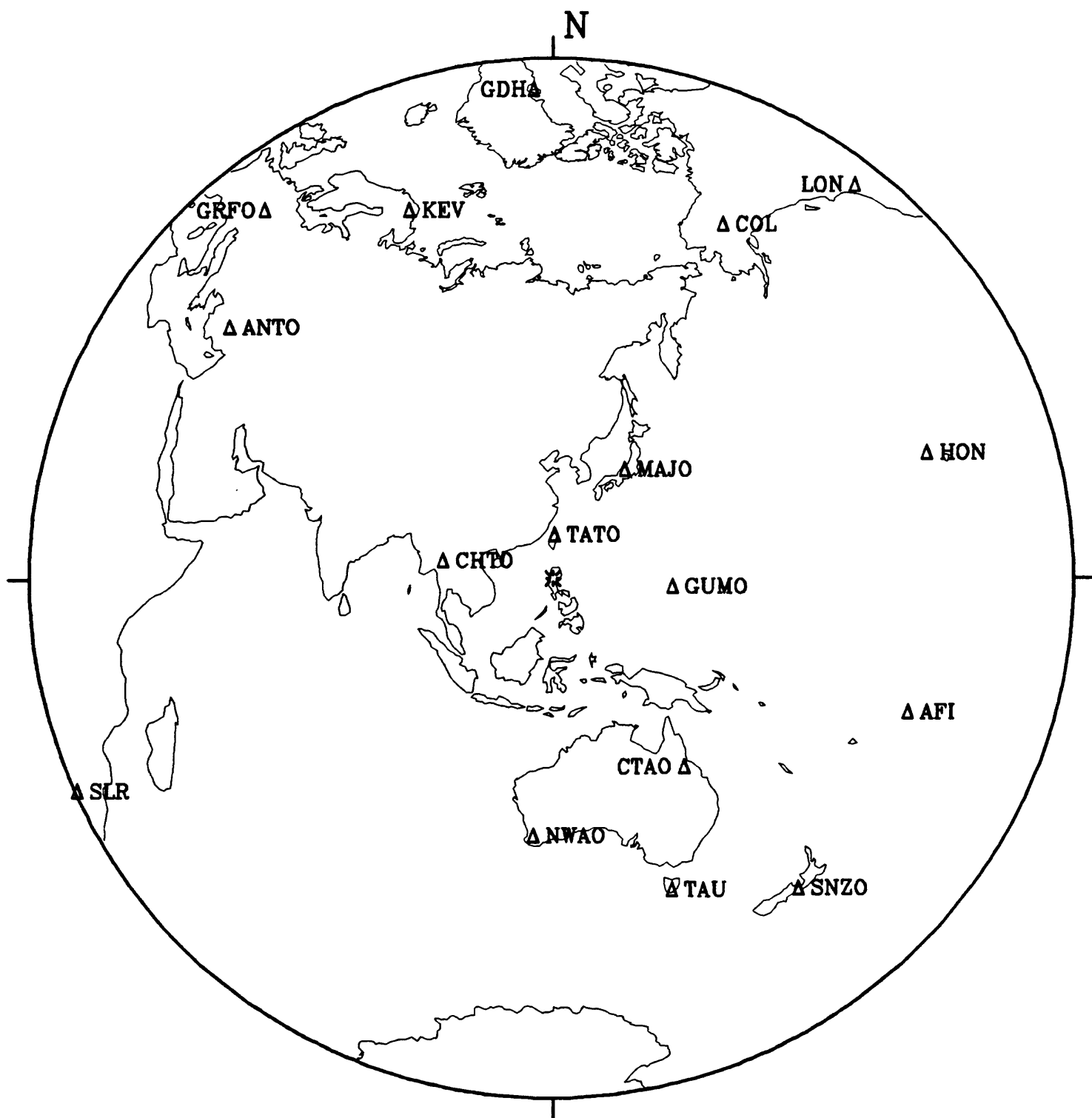
23 April 1985 16:15:11.03

IPZ

Luzon, Philippine Islands $h=181.2$ $m_b=6.4$ 

24 April 1985 01:07:14.60

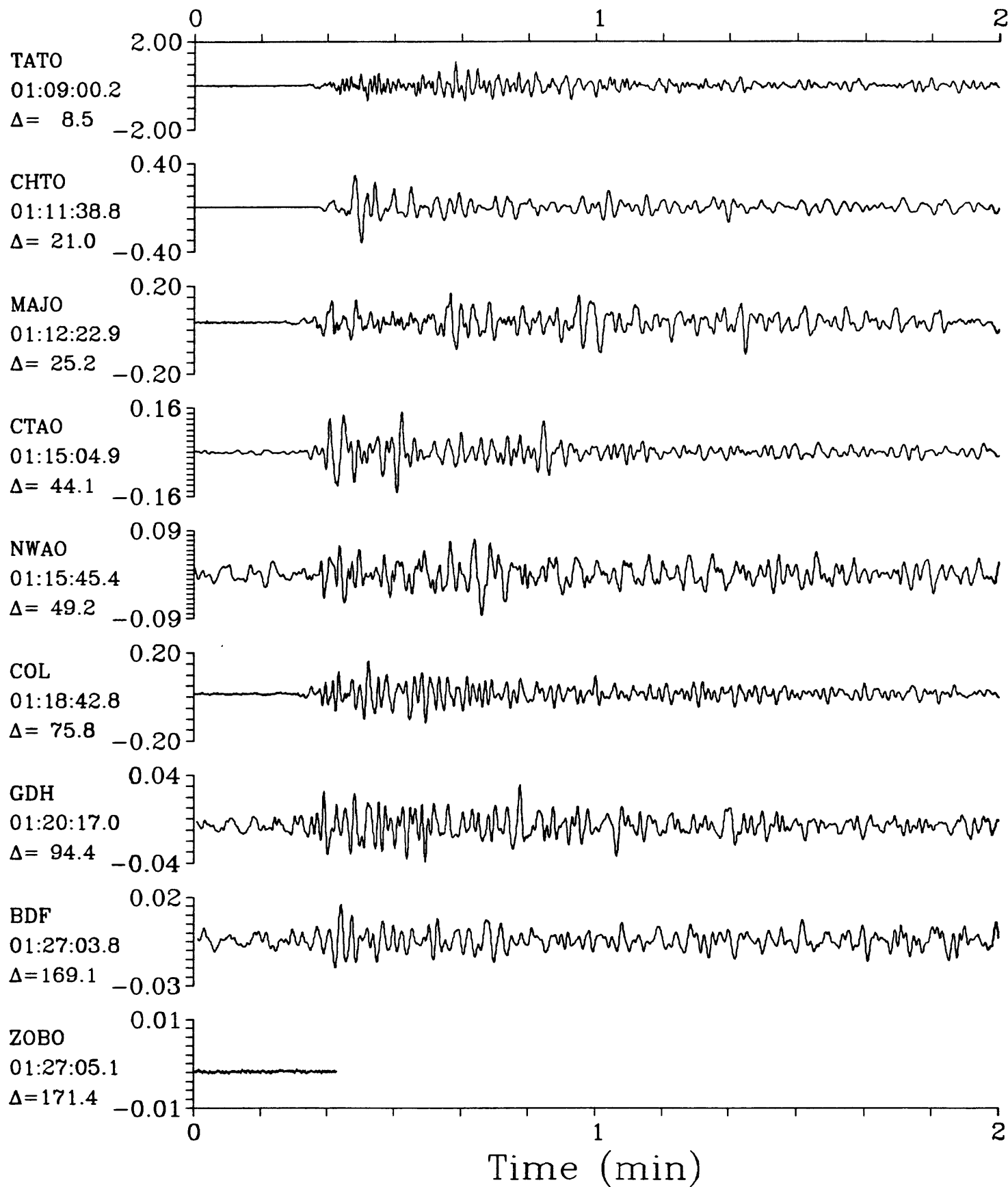
Luzon, Philippine Islands



SPZ

24 April 1985 01:07:14.60

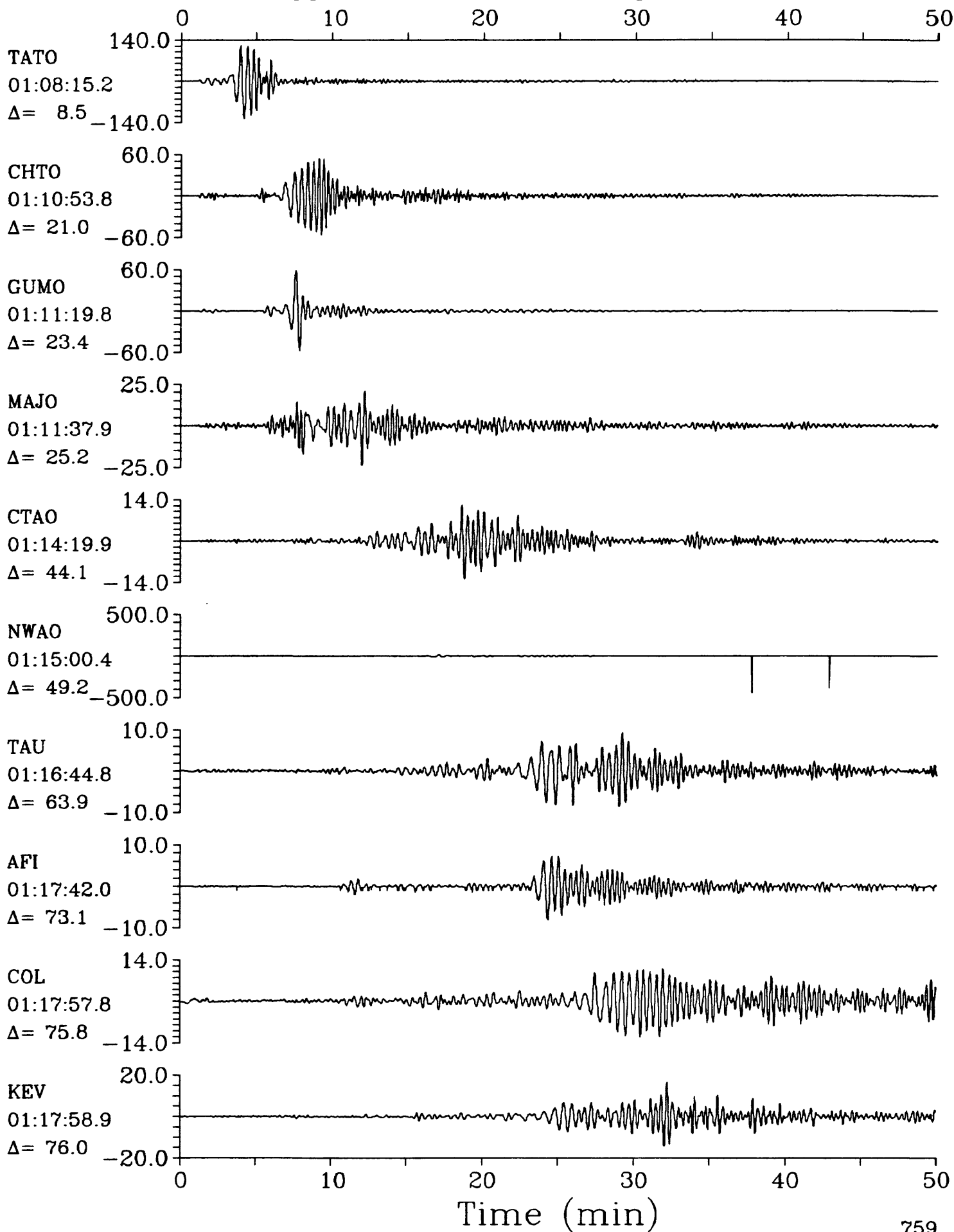
SPZ

Luzon, Philippine Islands $h=33.0$ $m_b=5.6$ $M_{sz}=6.0$ 

LPZ

24 April 1985 01:07:14.60

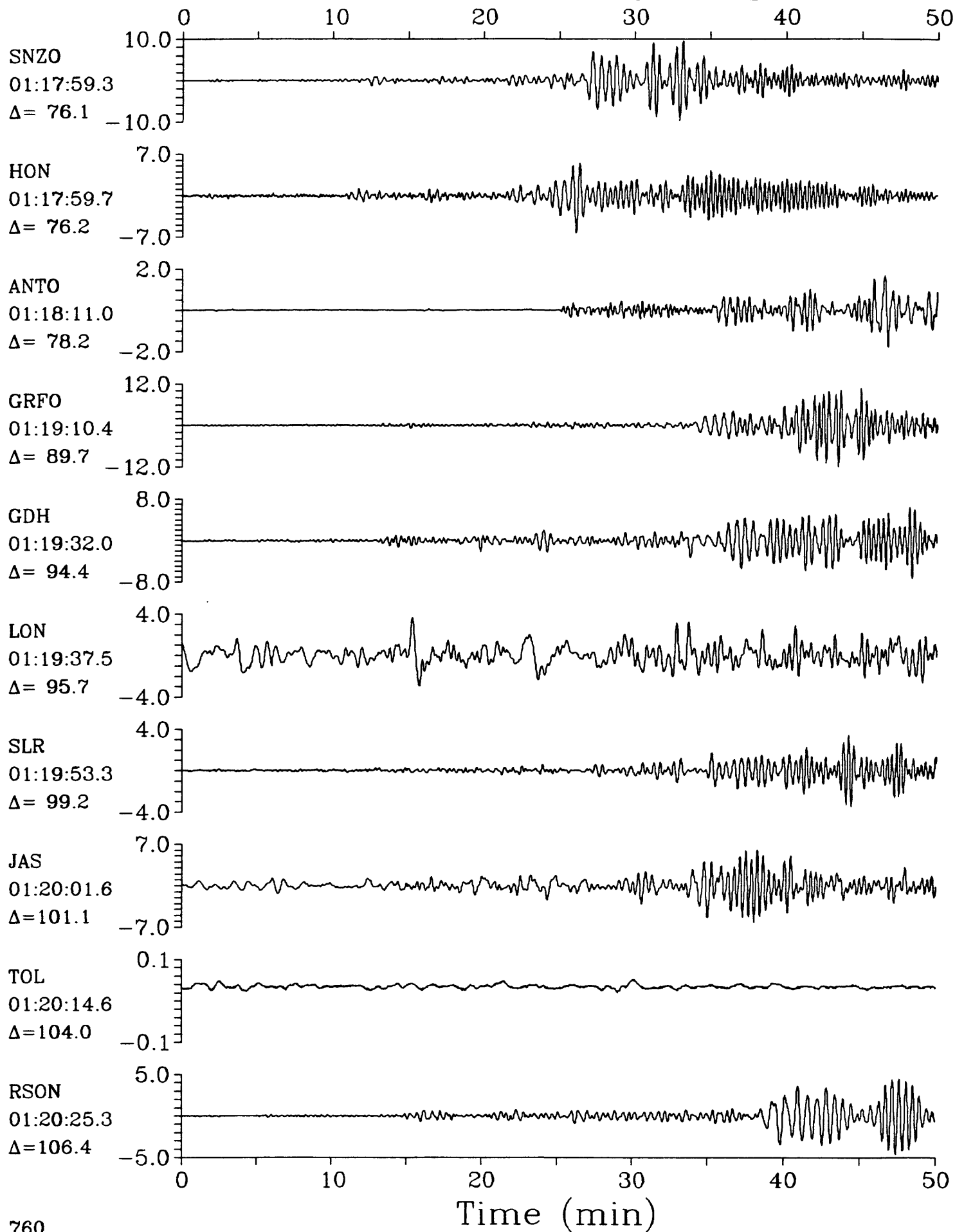
LPZ

Luzon, Philippine Islands $h=33.0$ $m_b=5.6$ $M_{sz}=6.0$ 

LPZ

24 April 1985 01:07:14.60

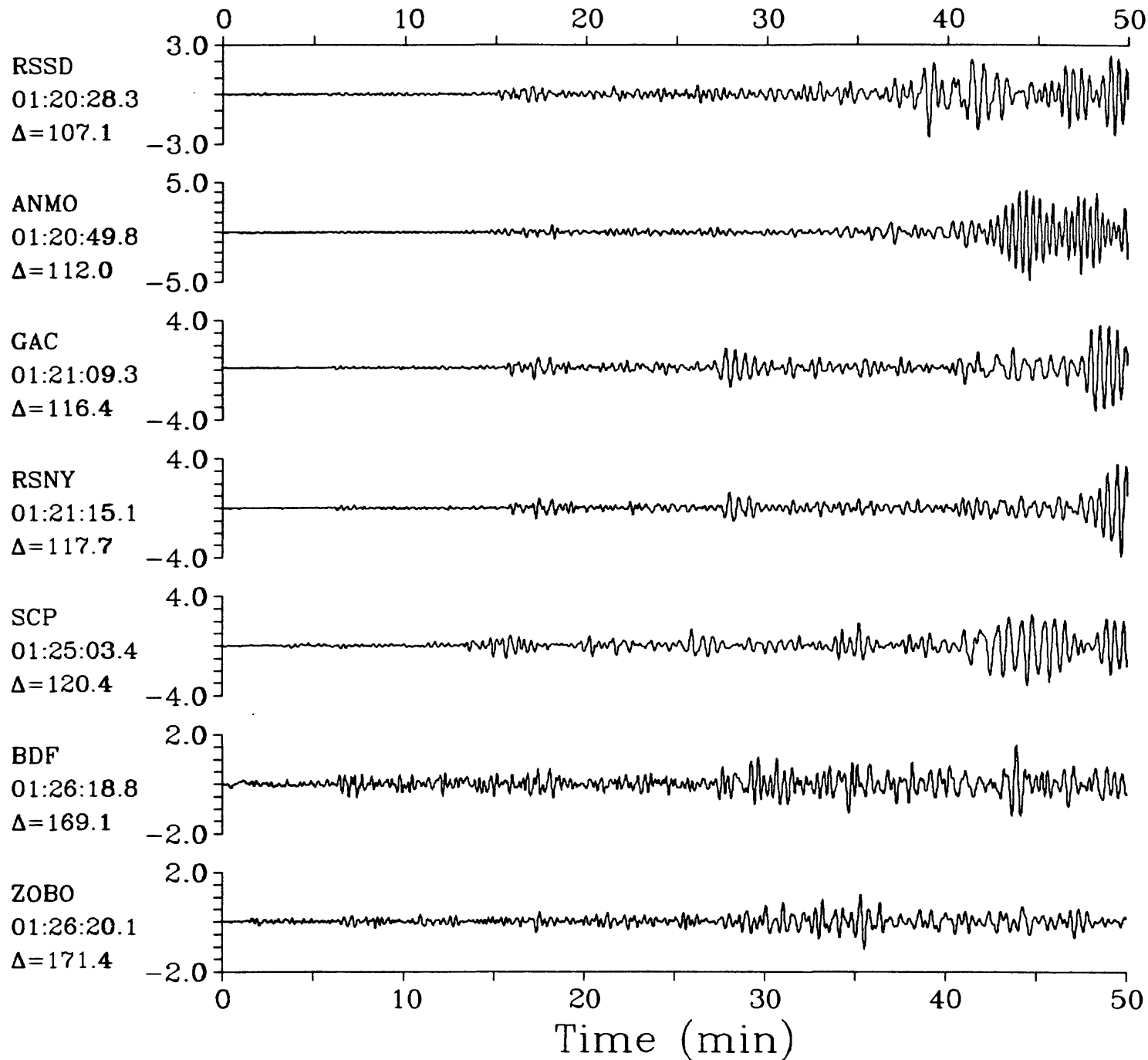
LPZ

Luzon, Philippine Islands $h=33.0$ $m_b=5.6$ $M_{sz}=6.0$ 

LPZ

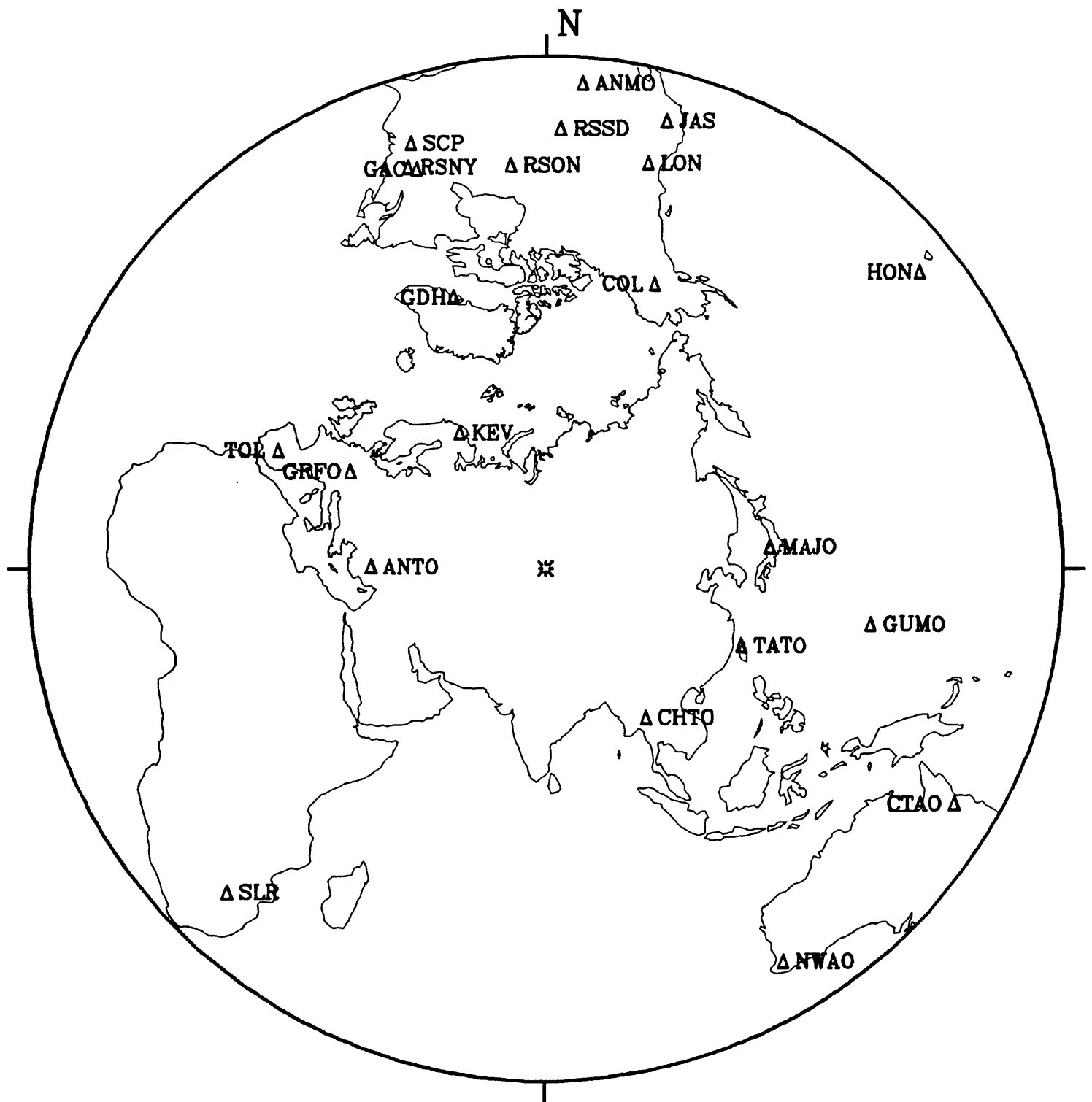
24 April 1985 01:07:14.60

LPZ

Luzon, Philippine Islands $h=33.0$ $m_b=5.6$ $M_{sz}=6.0$ 

25 April 1985 00:57:06.56

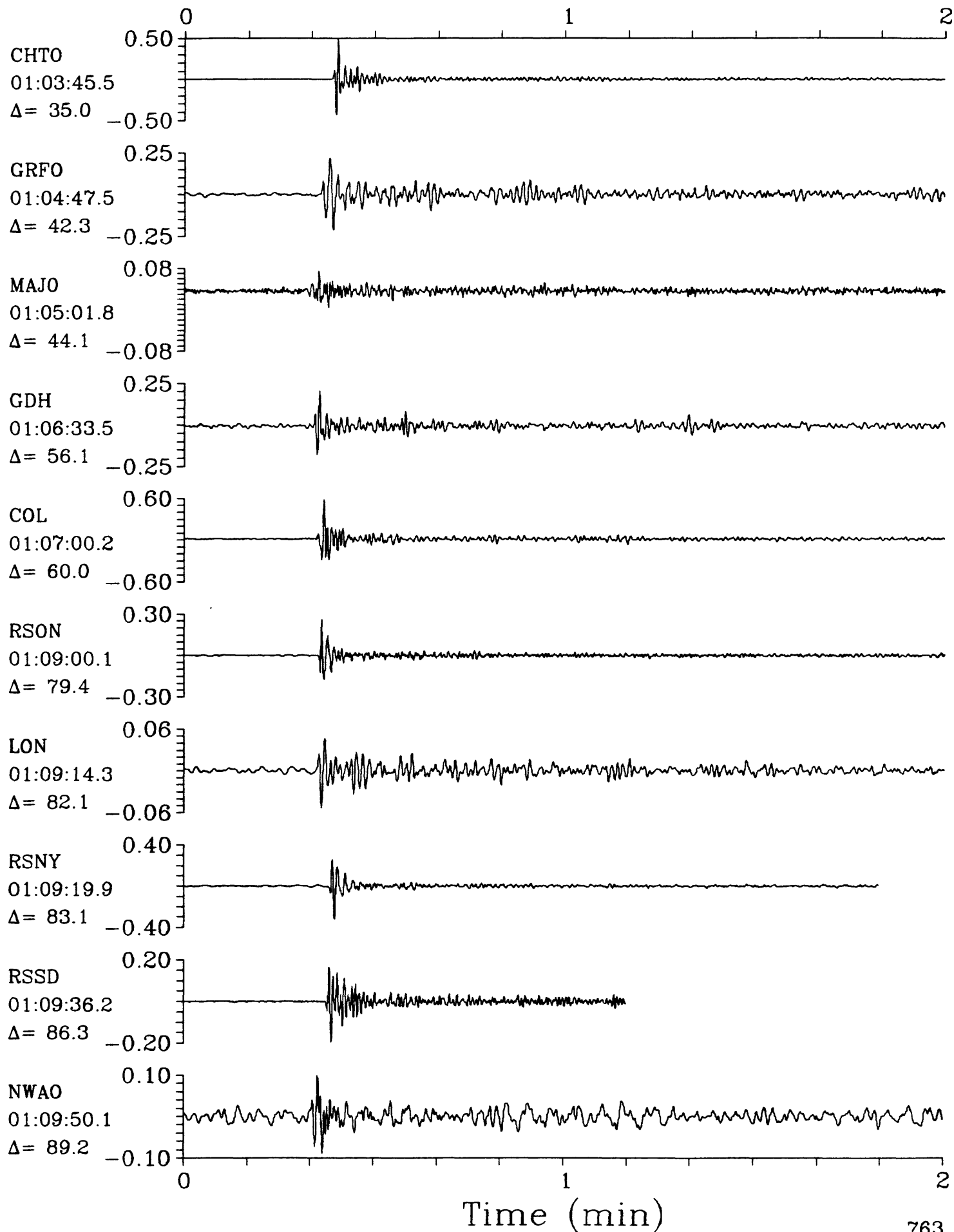
Eastern Kazakh SSR



SPZ

25 April 1985 00:57:06.56

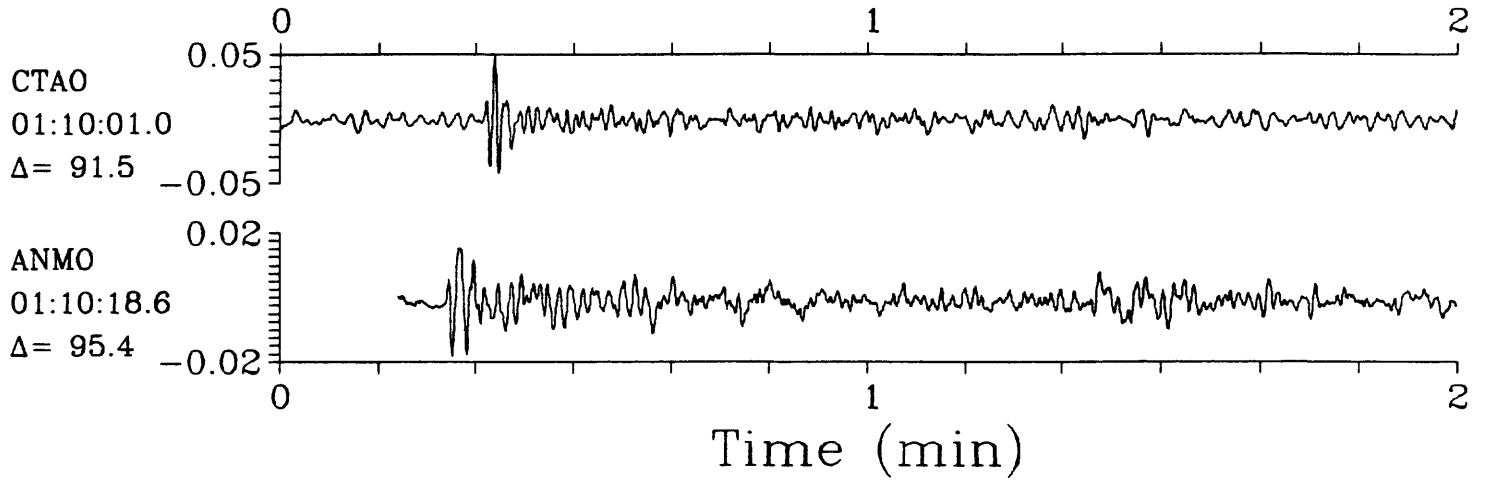
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

SPZ

25 April 1985 00:57:06.56

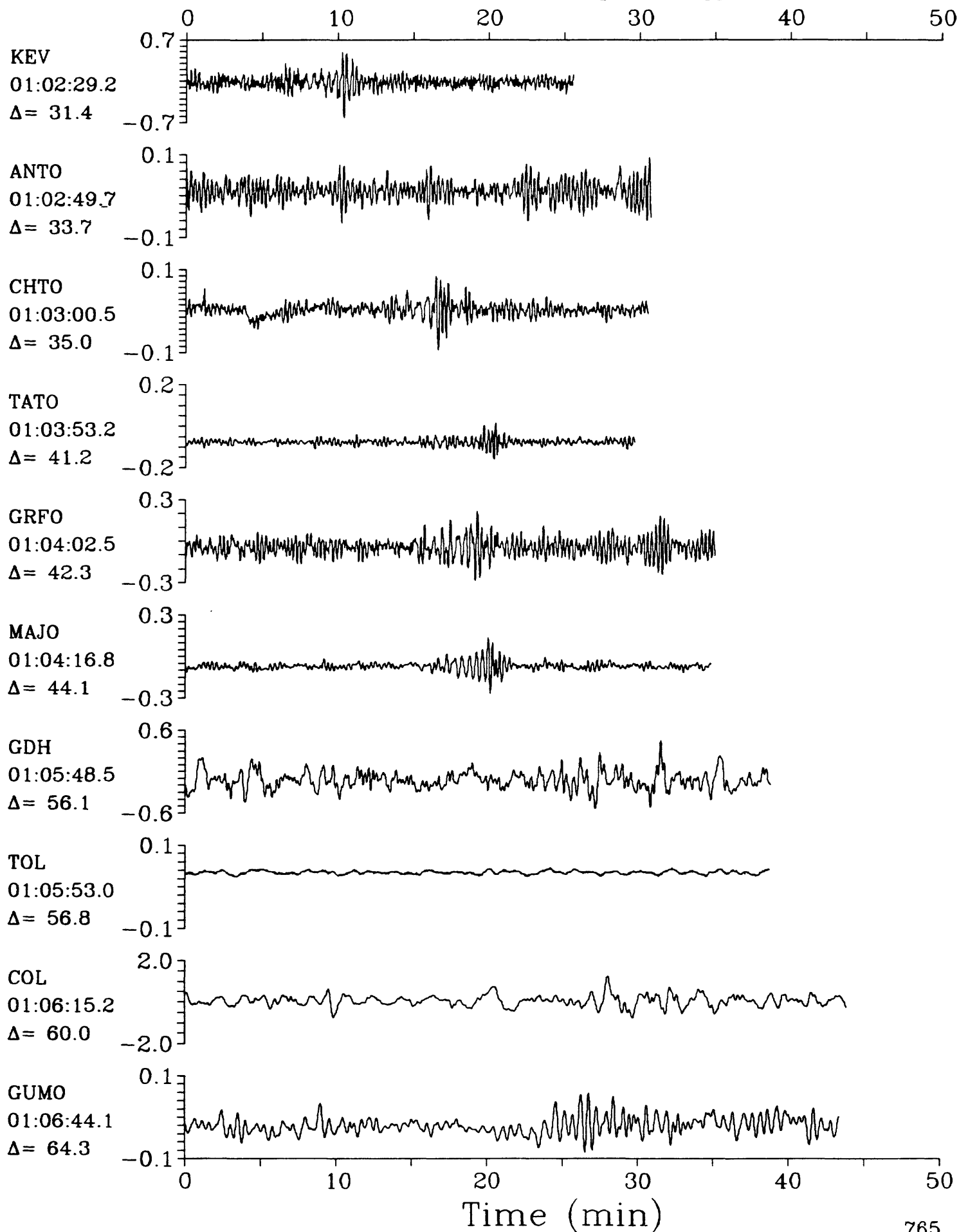
SPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

LPZ

25 April 1985 00:57:06.56

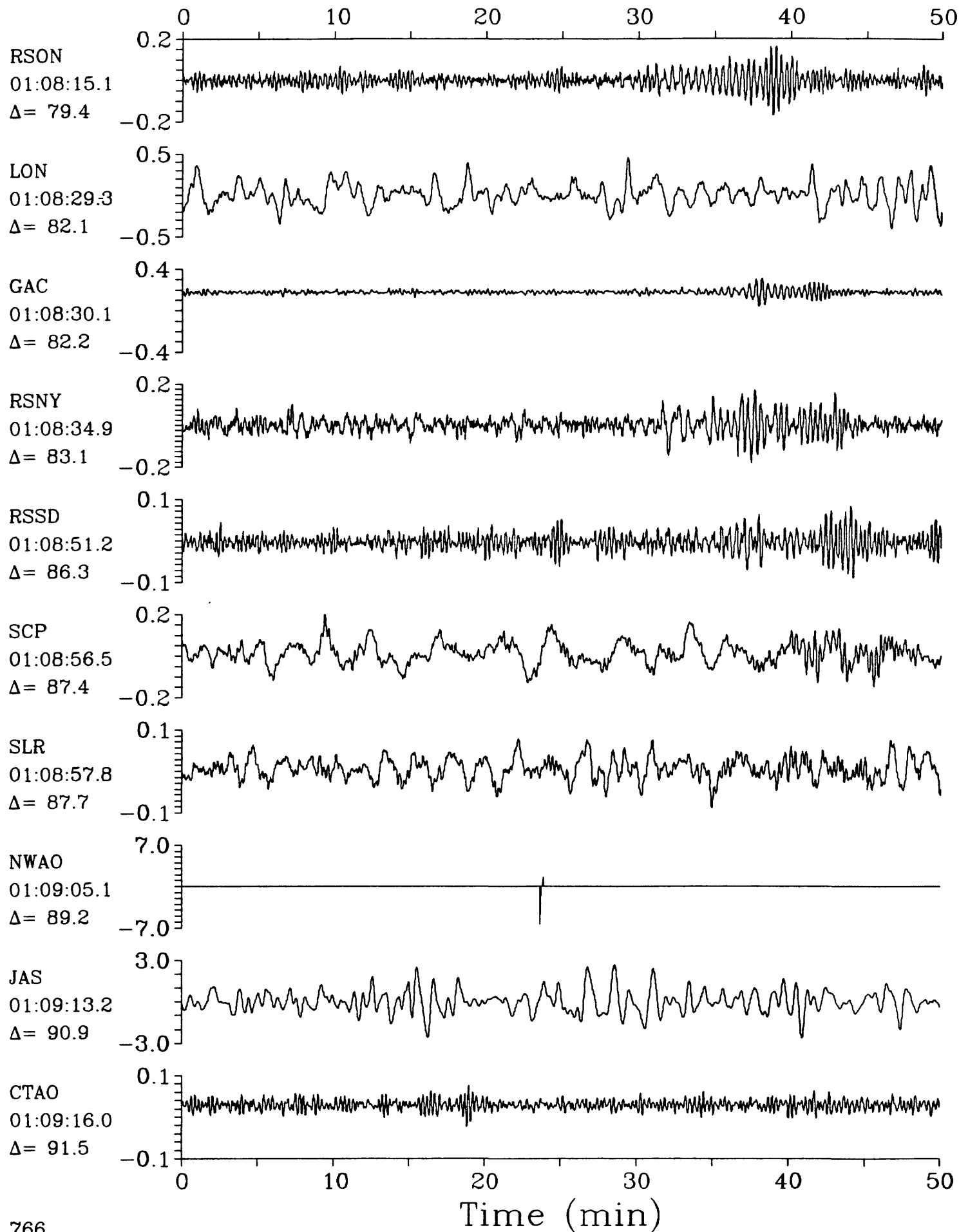
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

LPZ

25 April 1985 00:57:06.56

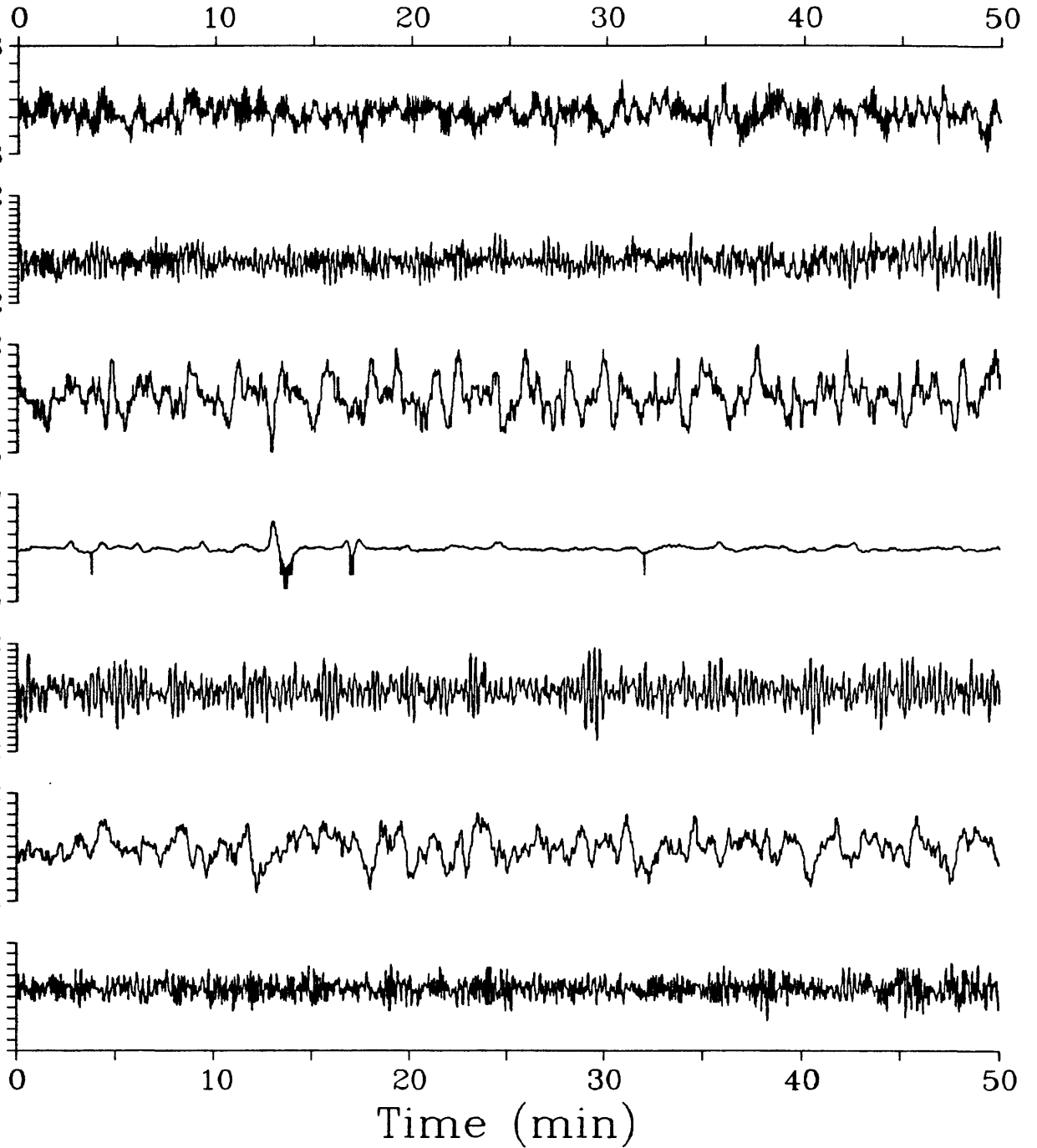
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

LPZ

25 April 1985 00:57:06.56

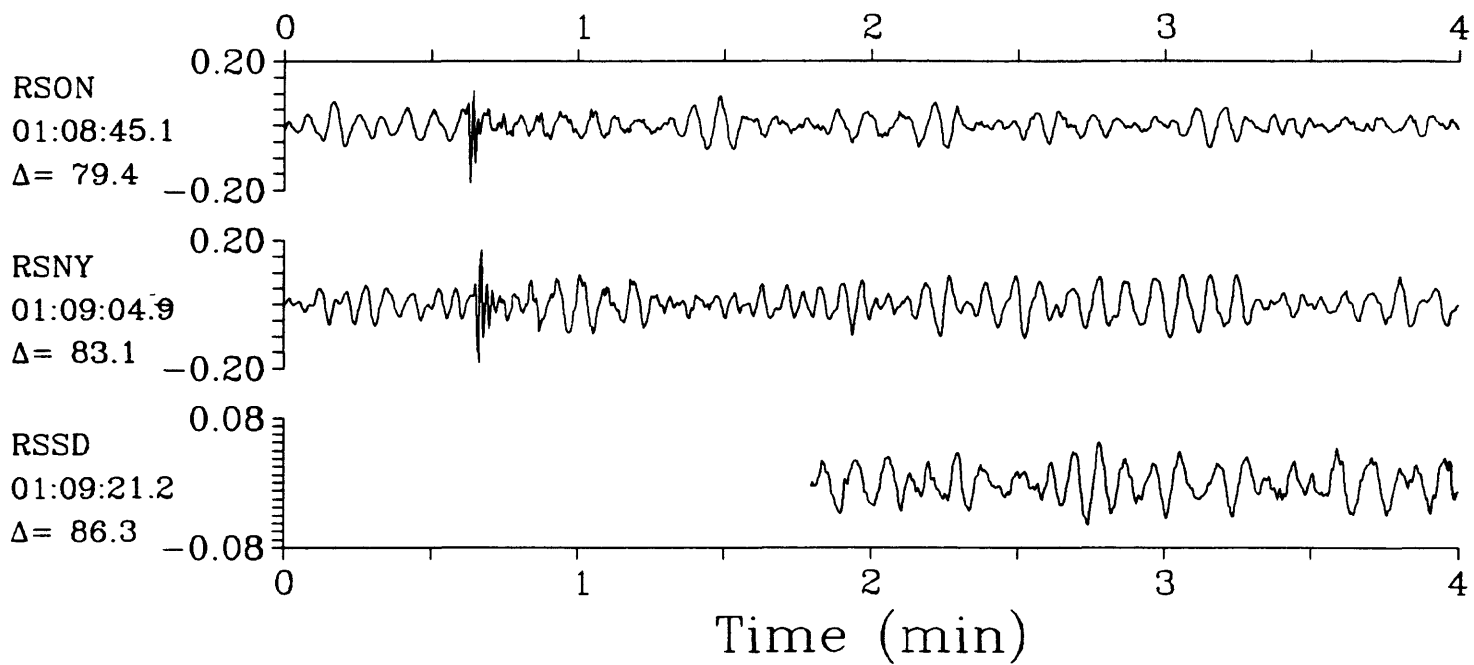
LPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

IPZ

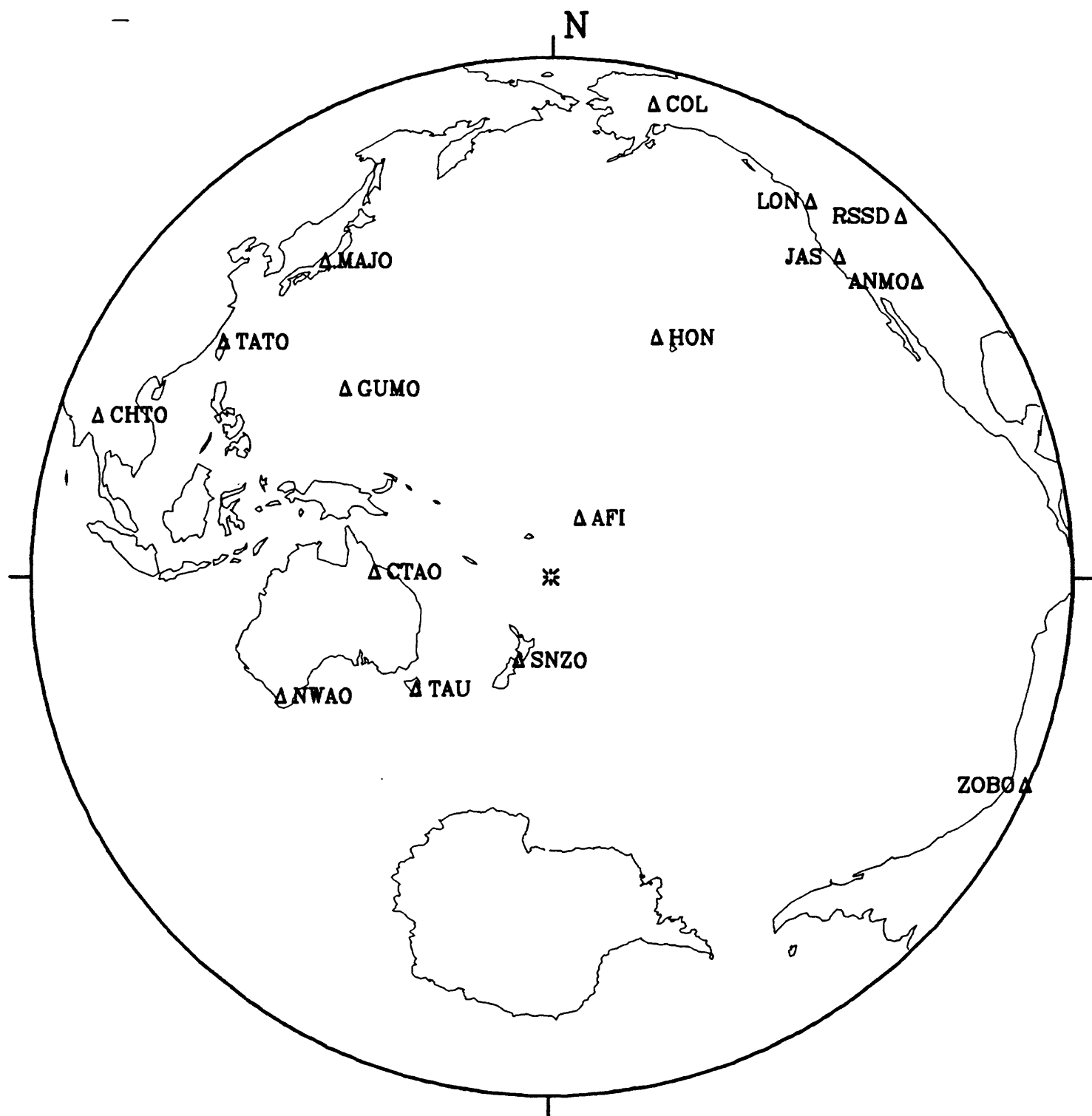
25 April 1985 00:57:06.56

IPZ

Eastern Kazakh SSR $h=0.0$ $m_b=5.9$ $M_{sz}=4.1$ 

25 April 1985 23:27:08.27

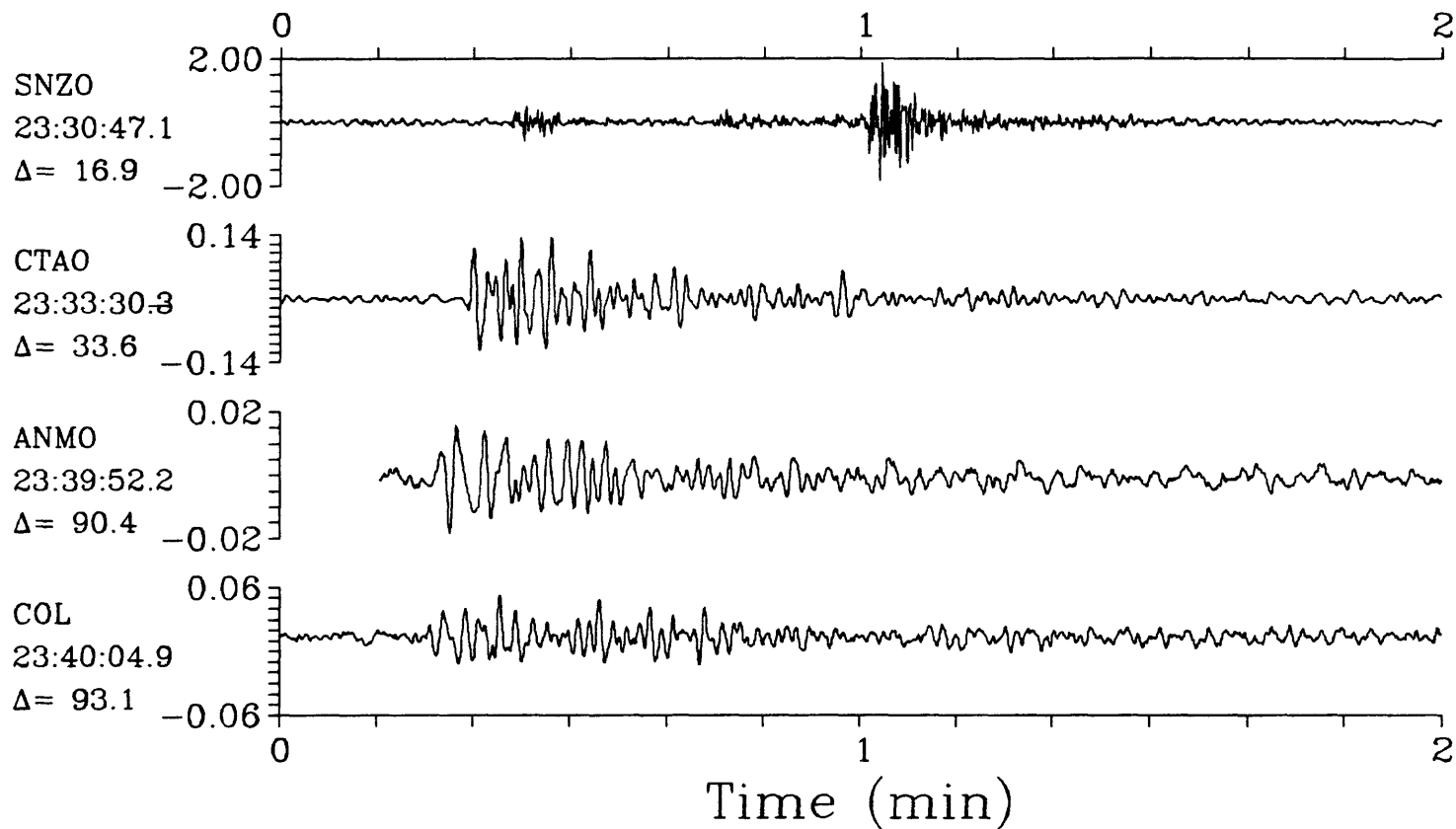
South of Fiji Islands



SPZ

25 April 1985 23:27:08.27

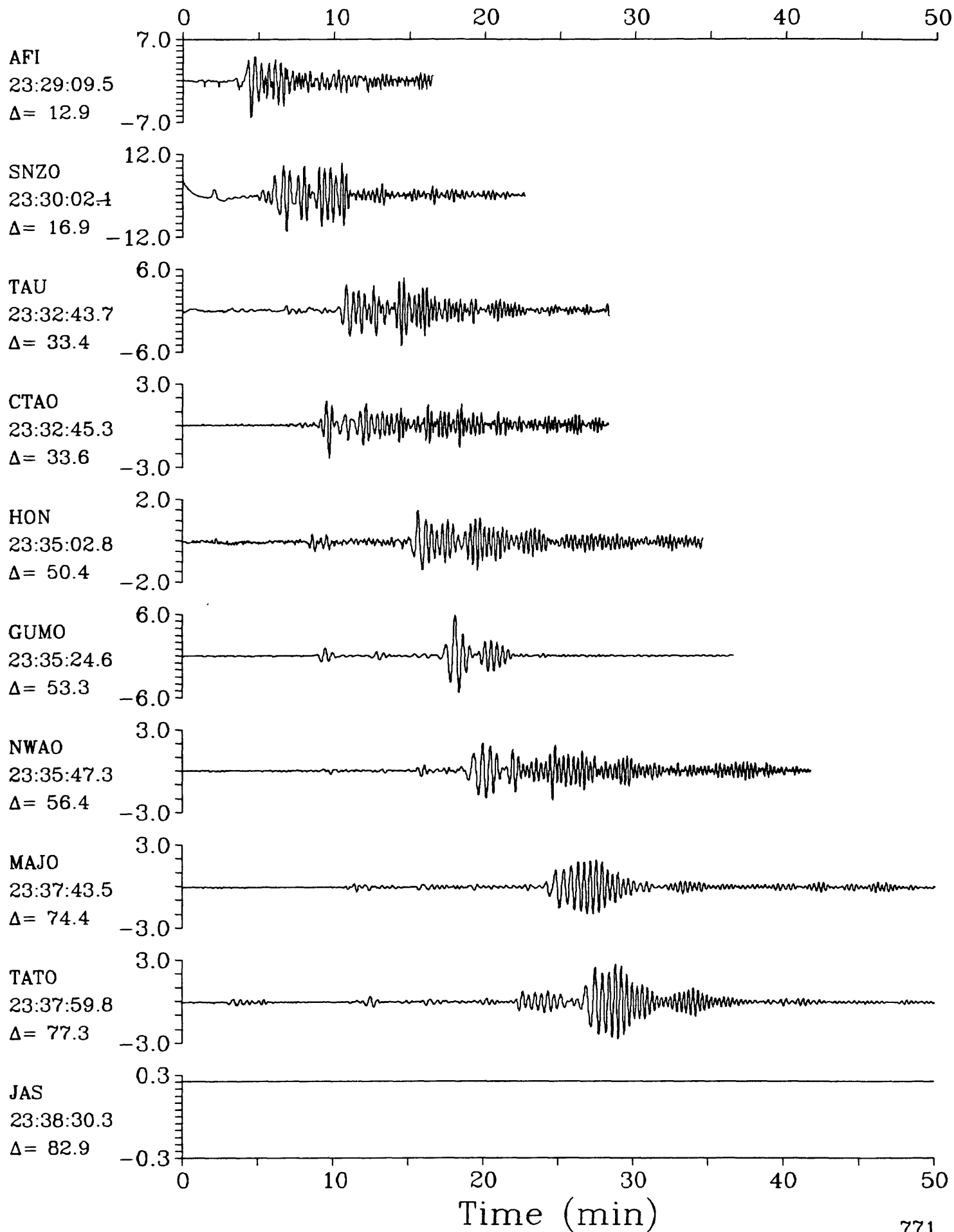
SPZ

South of Fiji Islands $h=33.0$ $m_b=5.4$ $M_{sz}=5.5$ 

LPZ

25 April 1985 23:27:08.27

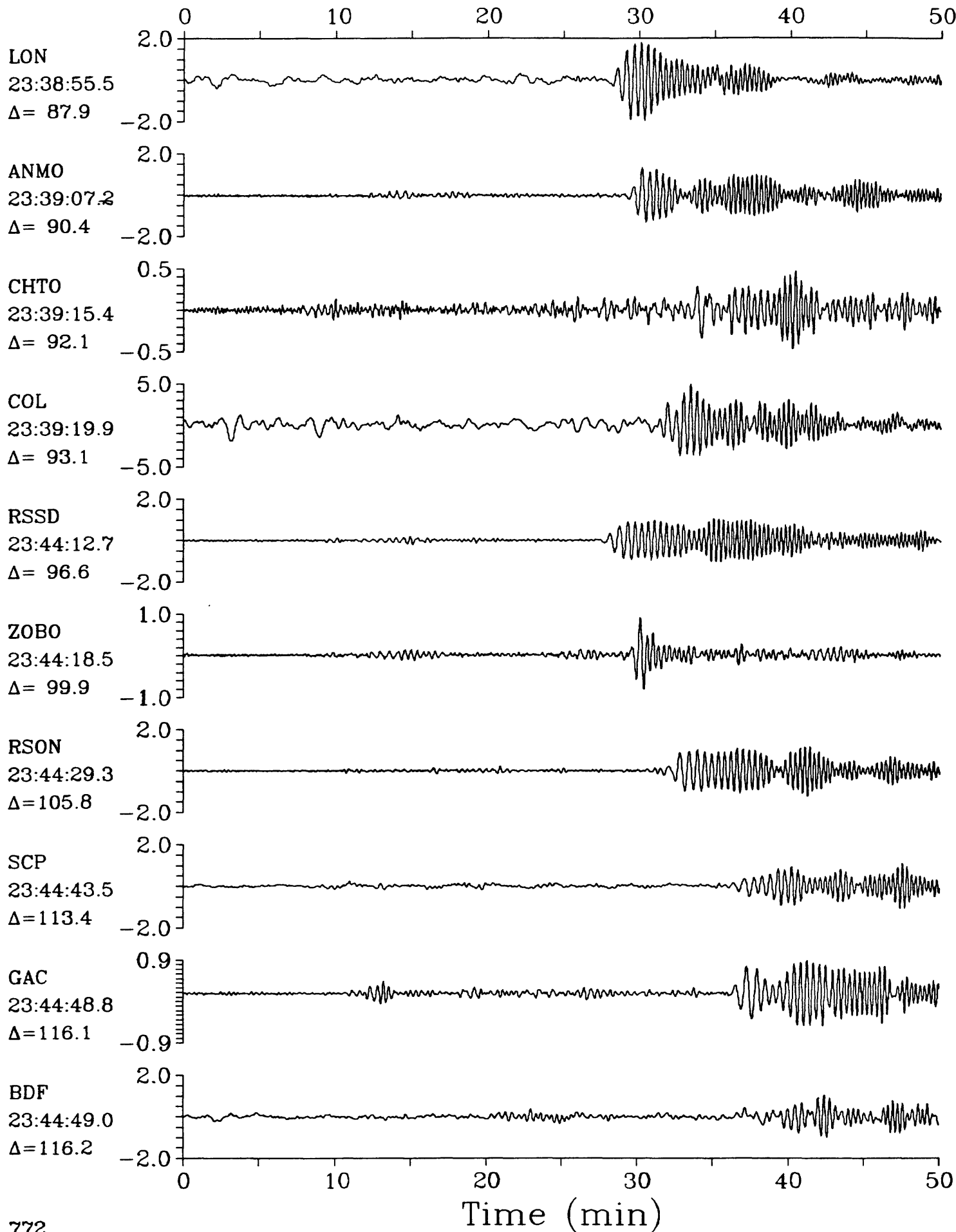
LPZ

South of Fiji Islands $h=33.0$ $m_b=5.4$ $M_{sz}=5.5$ 

LPZ

25 April 1985 23:27:08.27

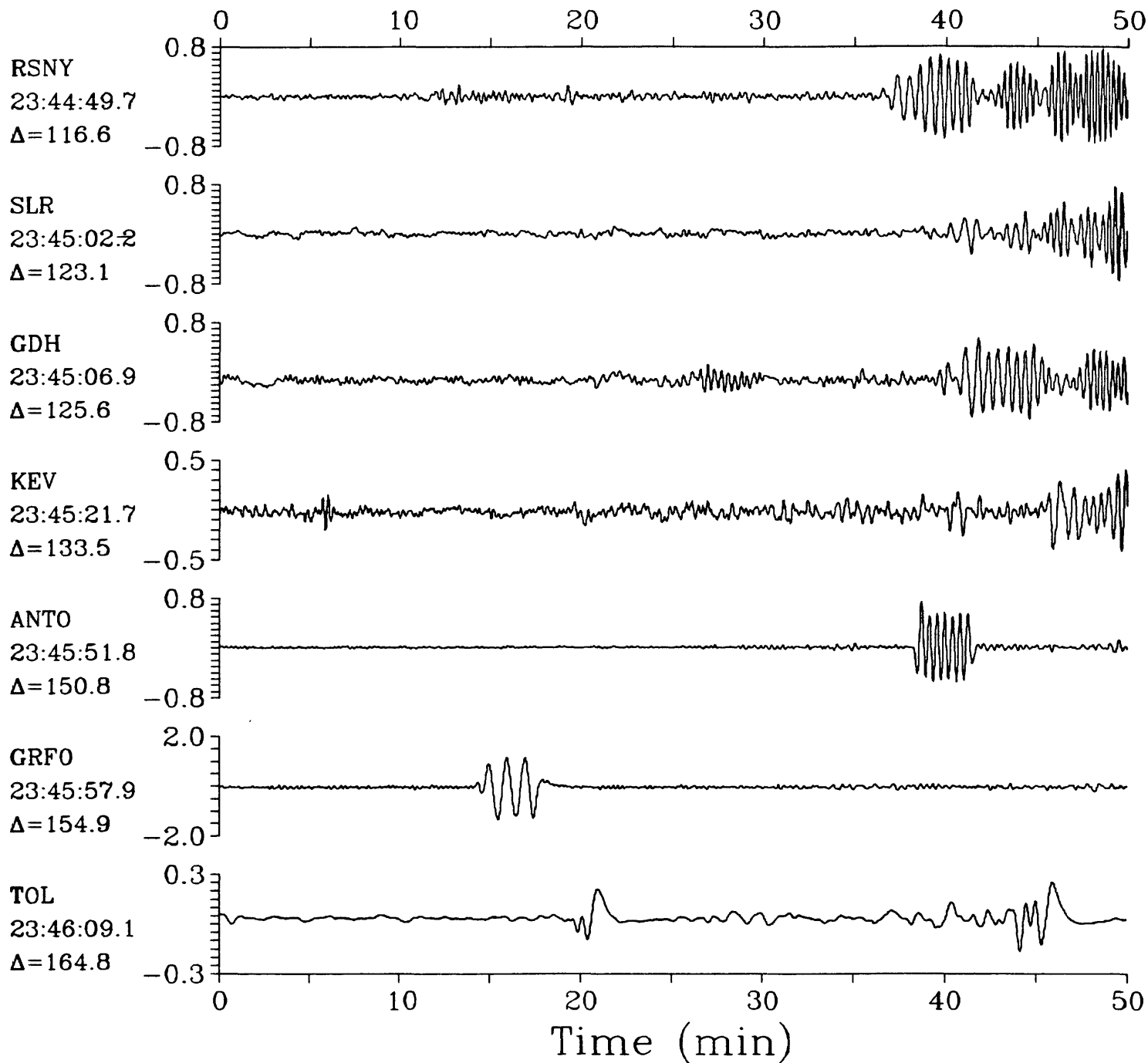
LPZ

South of Fiji Islands $h=33.0$ $m_b=5.4$ $M_{sz}=5.5$ 

LPZ

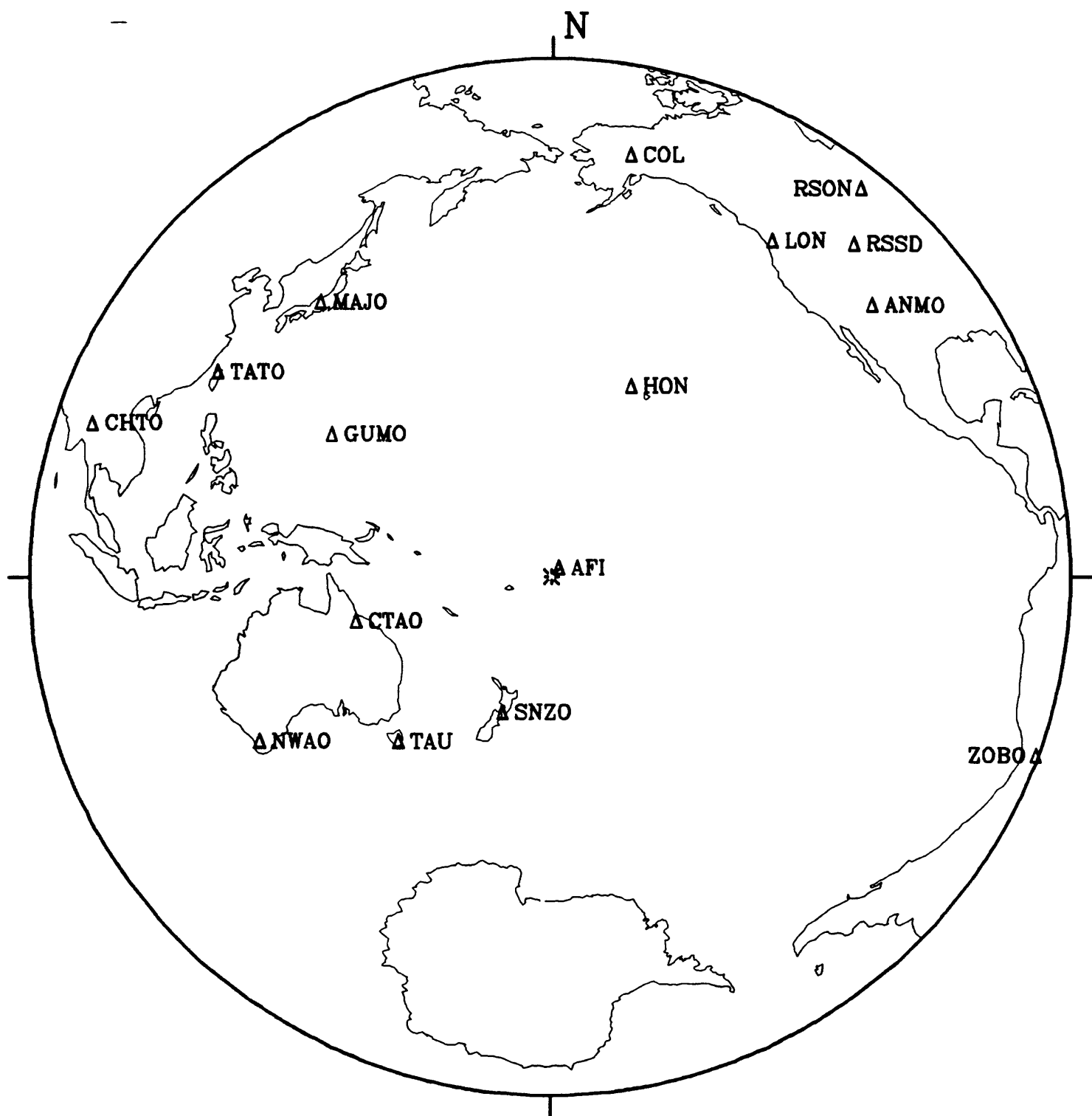
25 April 1985 23:27:08.27

LPZ

South of Fiji Islands $h=33.0$ $m_b=5.4$ $M_{sz}=5.5$ 

27 April 1985 00:33:12.99

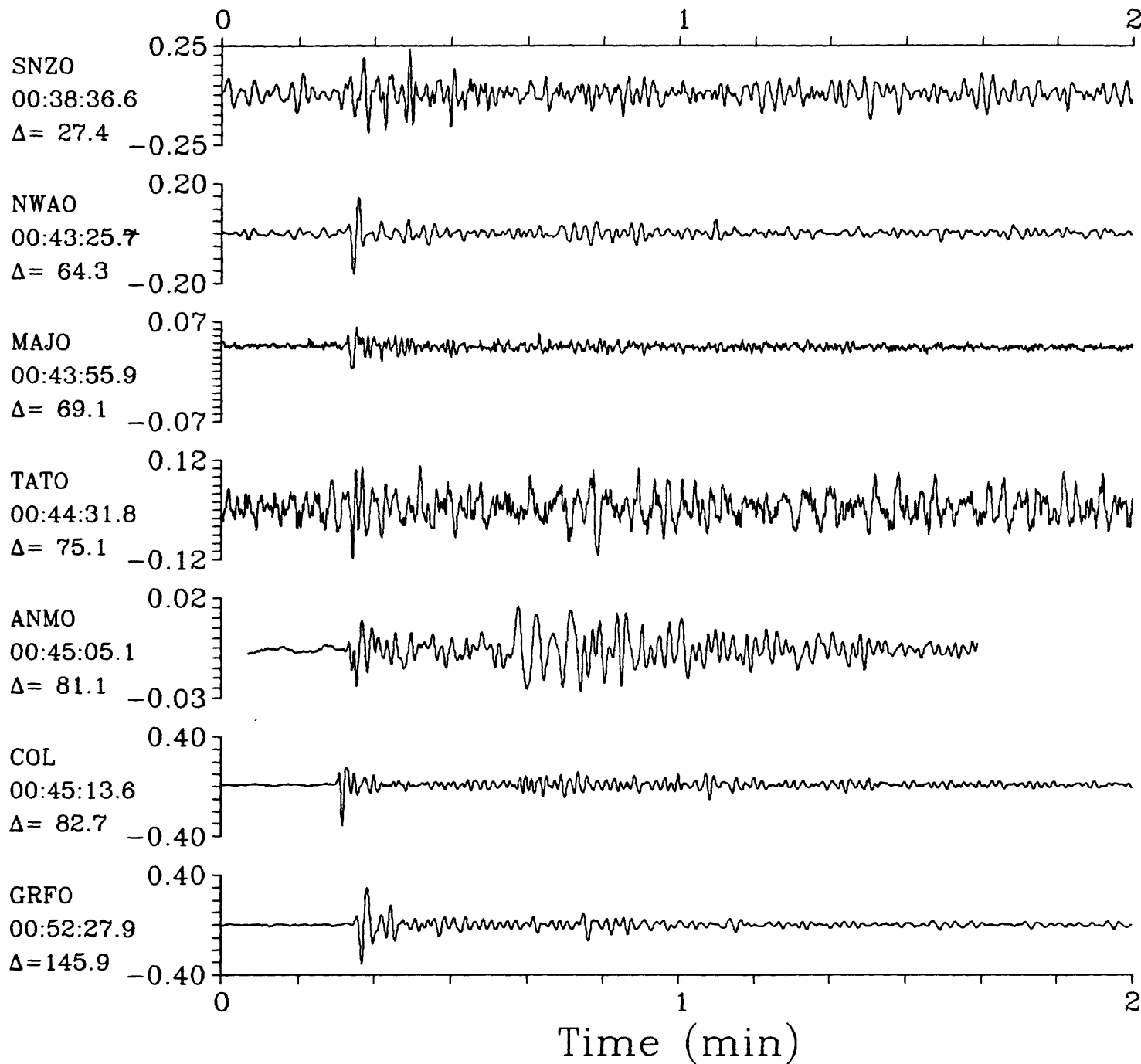
Tonga Islands



SPZ

27 April 1985 00:33:12.99
Tonga Islands $h=79.5$ $m_b=5.7$

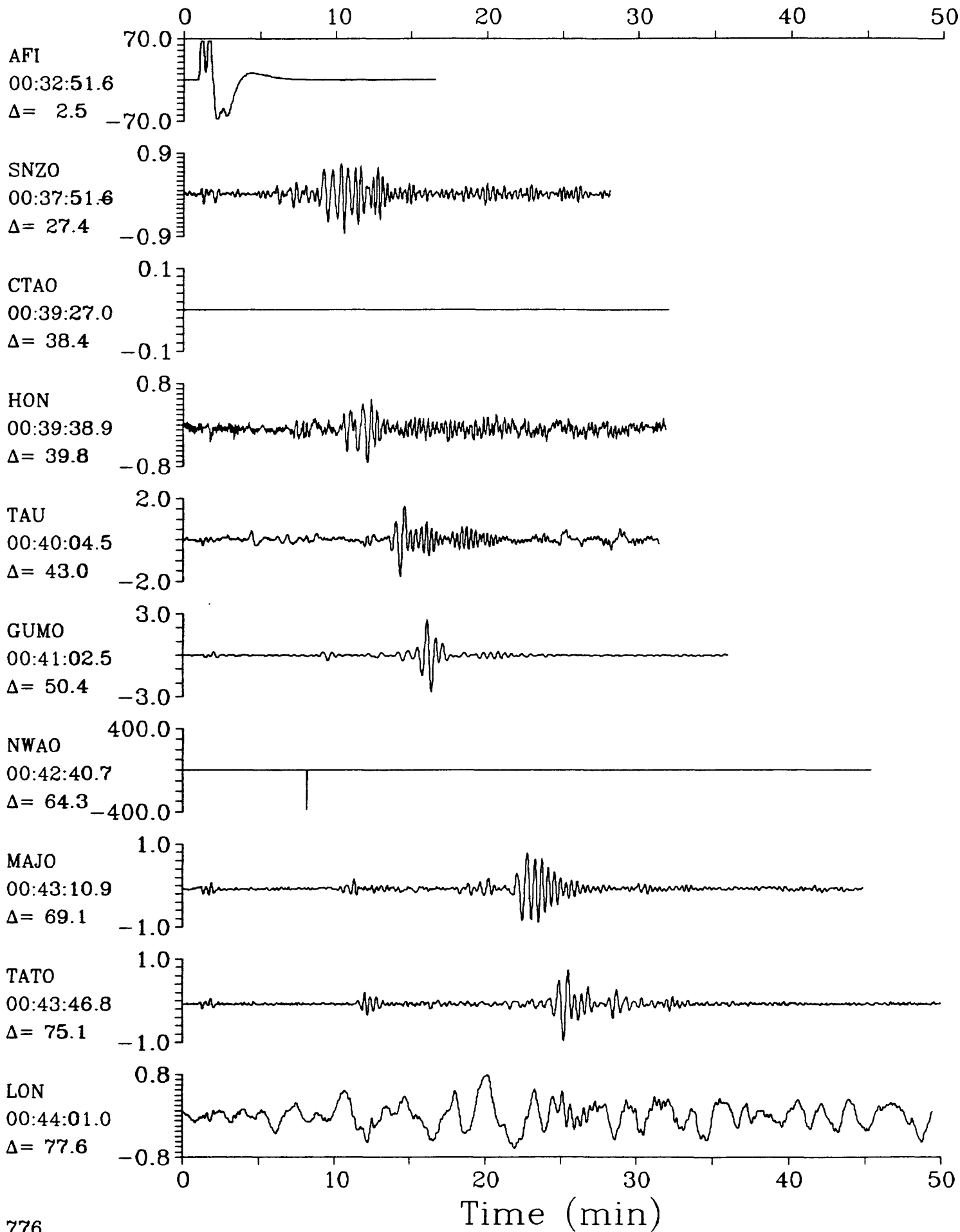
SPZ



LPZ

27 April 1985 00:33:12.99
Tonga Islands $h=79.5$ $m_b=5.7$

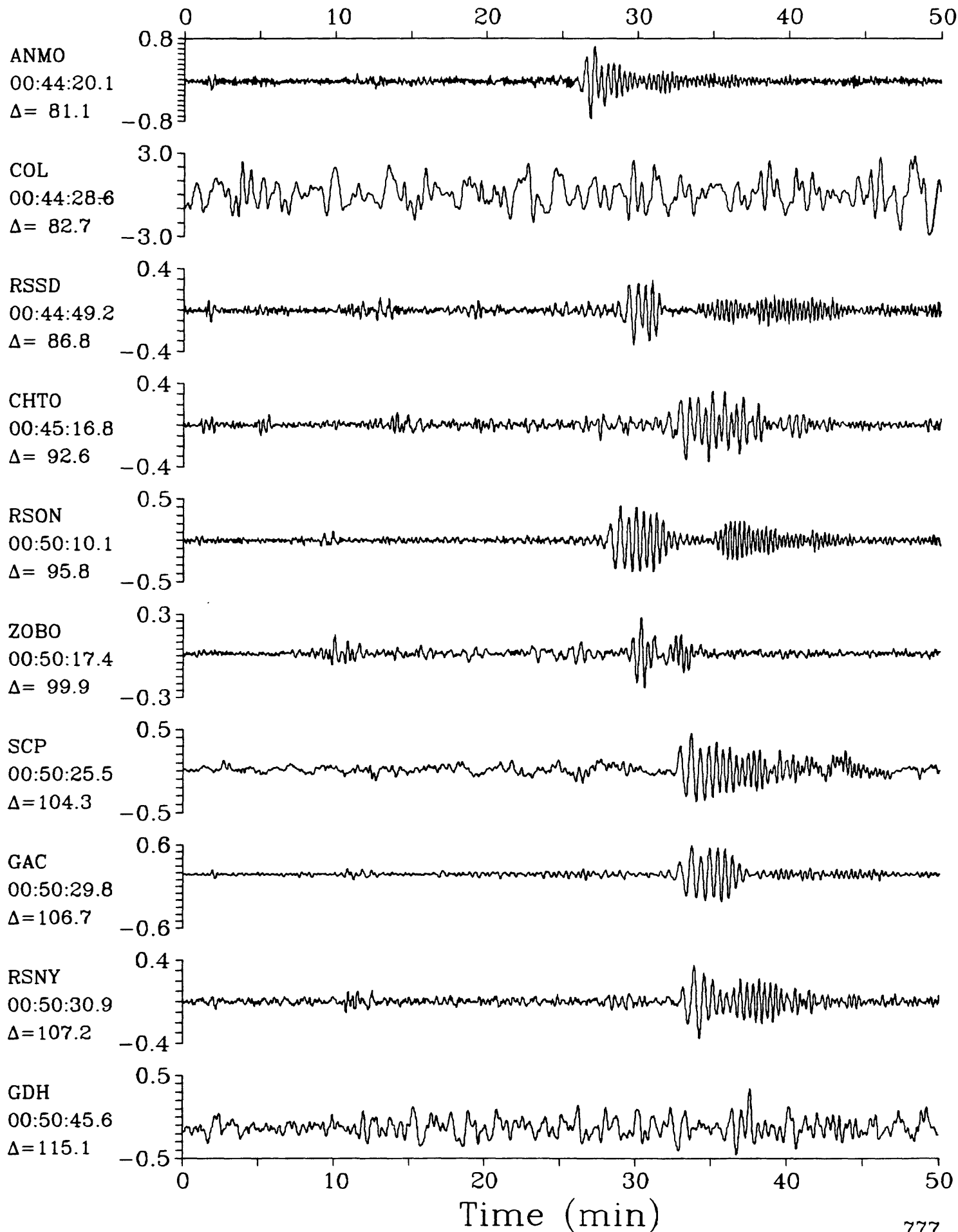
LPZ



LPZ

27 April 1985 00:33:12.99
Tonga Islands $h=79.5$ $m_b=5.7$

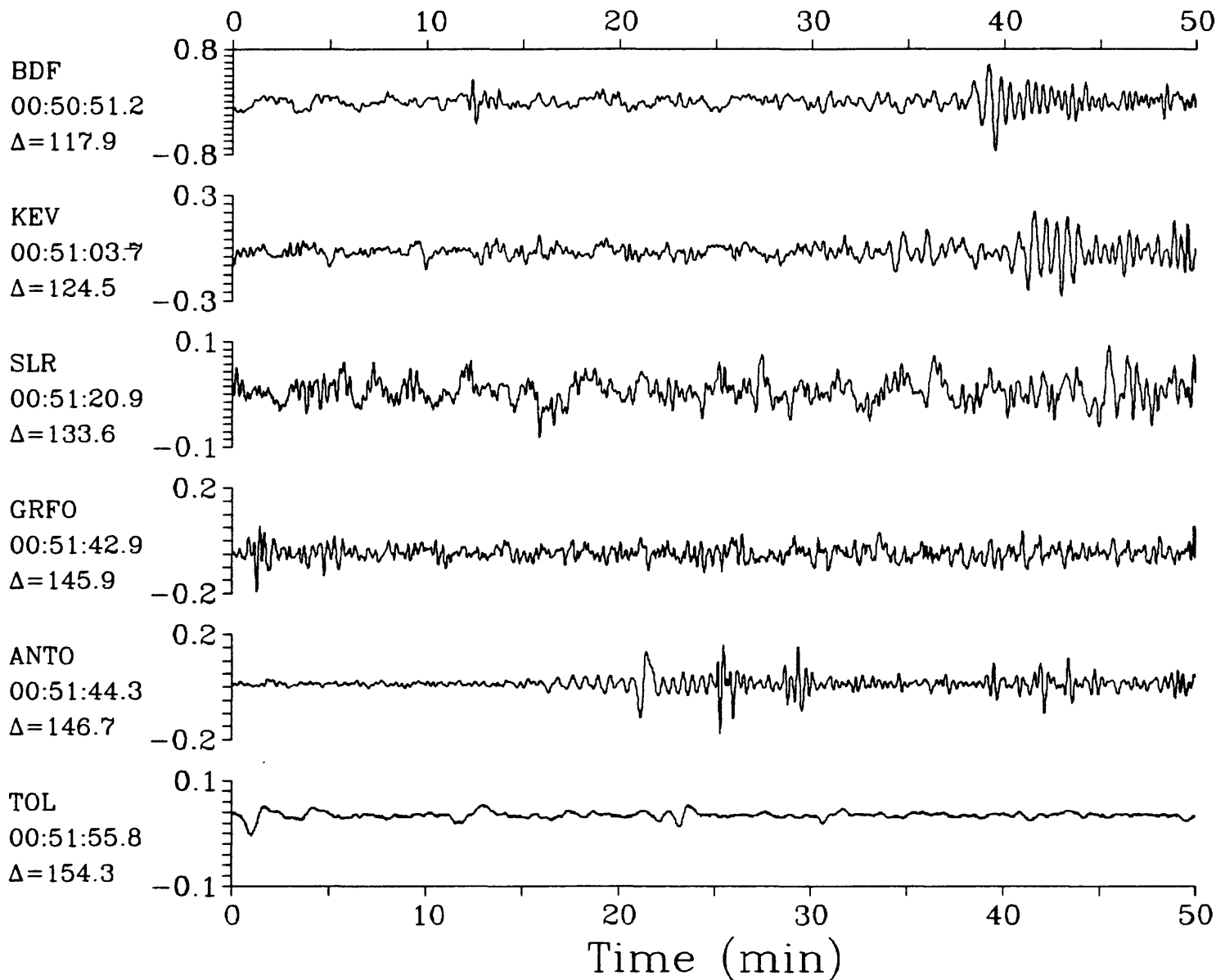
LPZ



LPZ

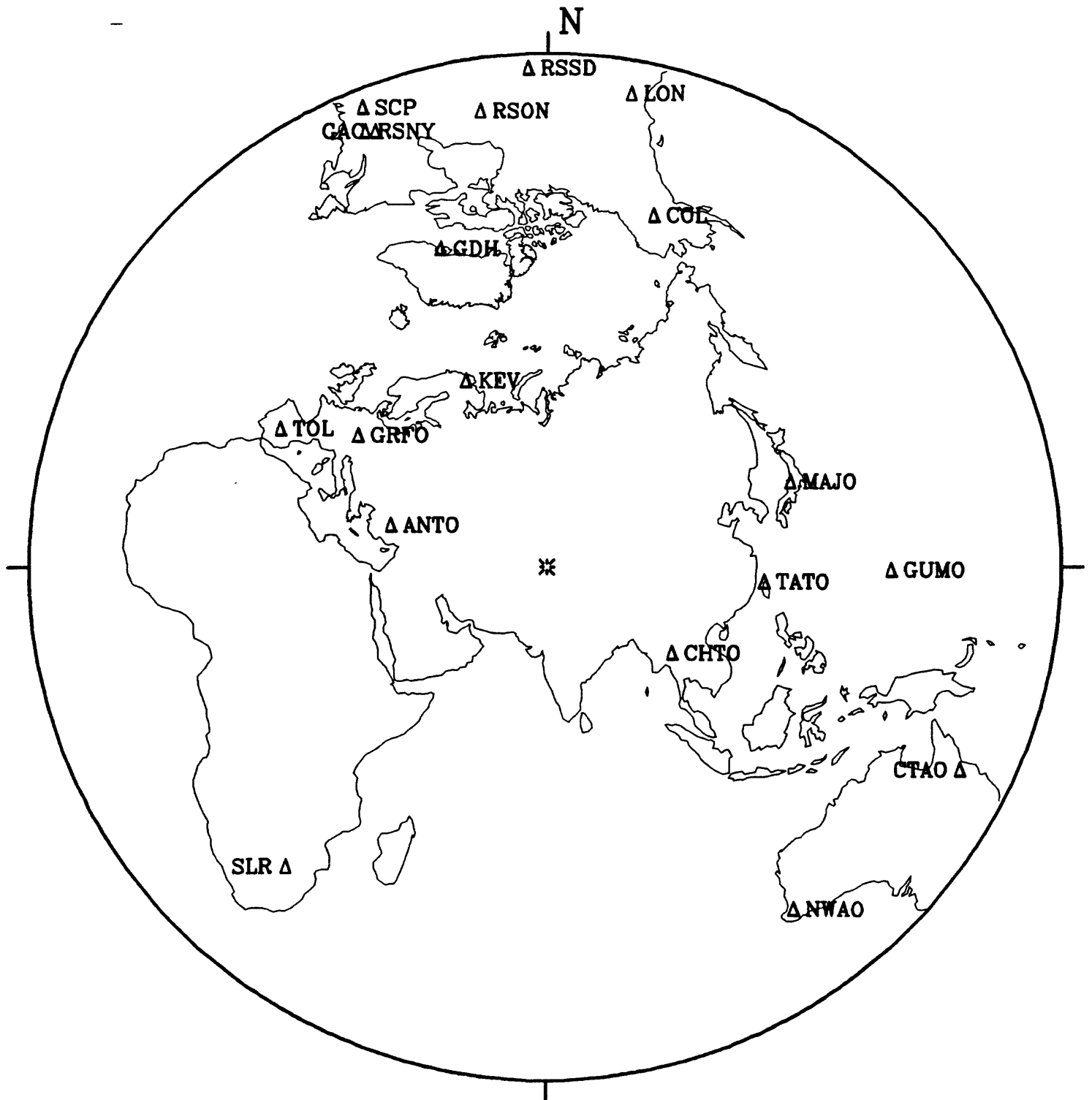
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Tonga Islands $h=79.5$ $m_b=5.7$

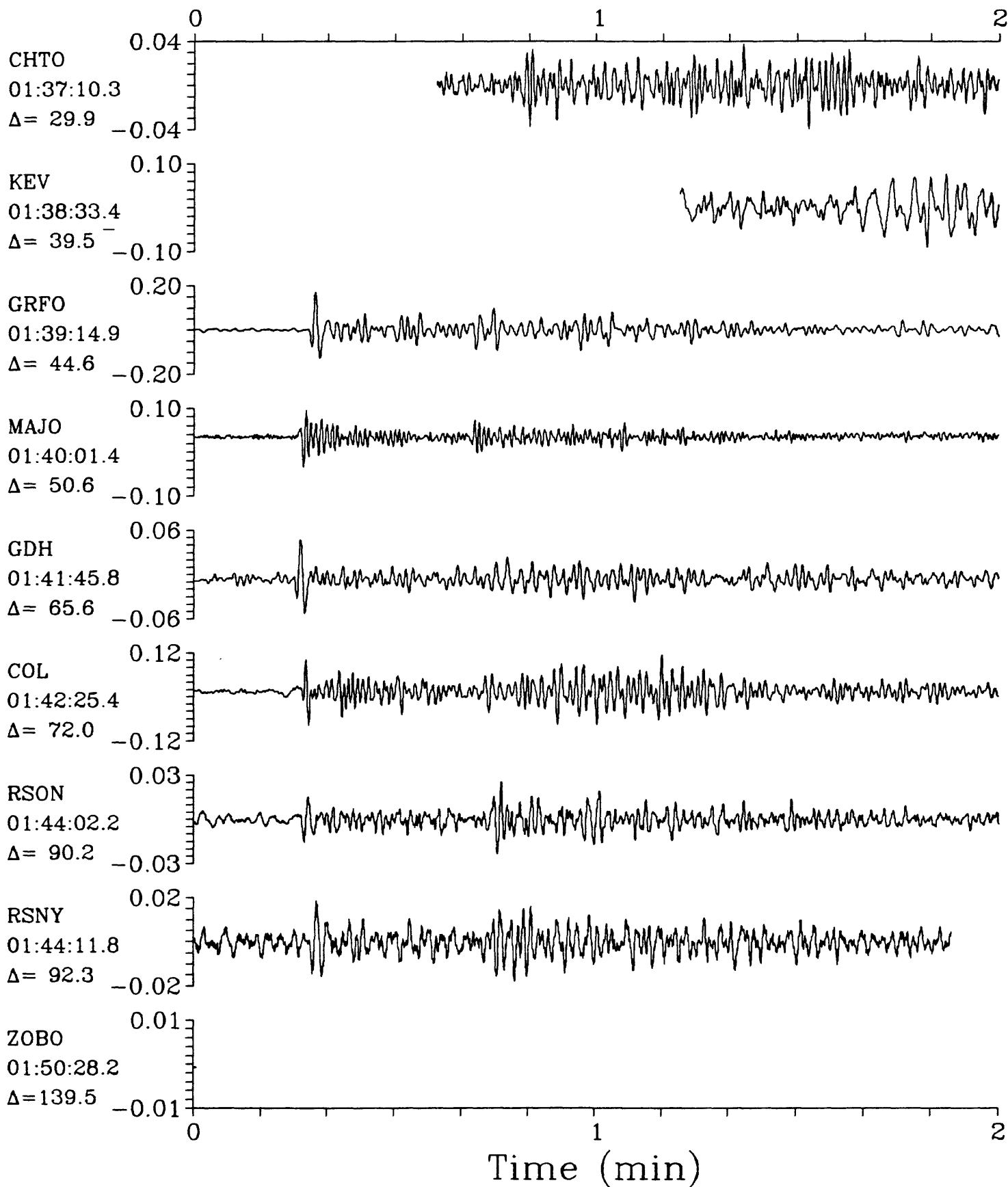
LPZ



27 April 1985 01:31:27.42

Tajik–Xinjiang Border Region

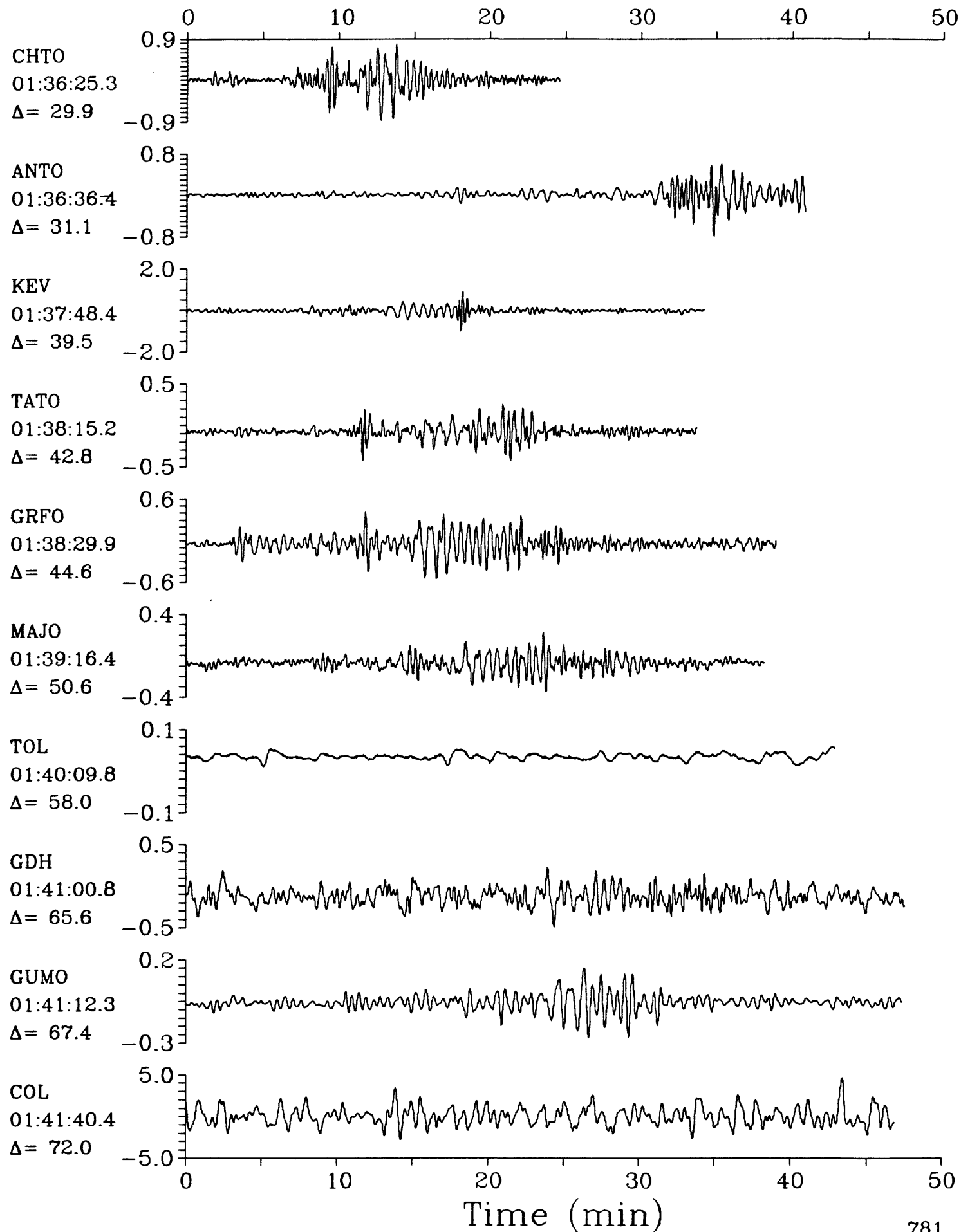


Tajik-Xinjiang Border Region $h=103.3$ $m_b=5.6$ 

LPZ

27 April 1985 01:31:27.42

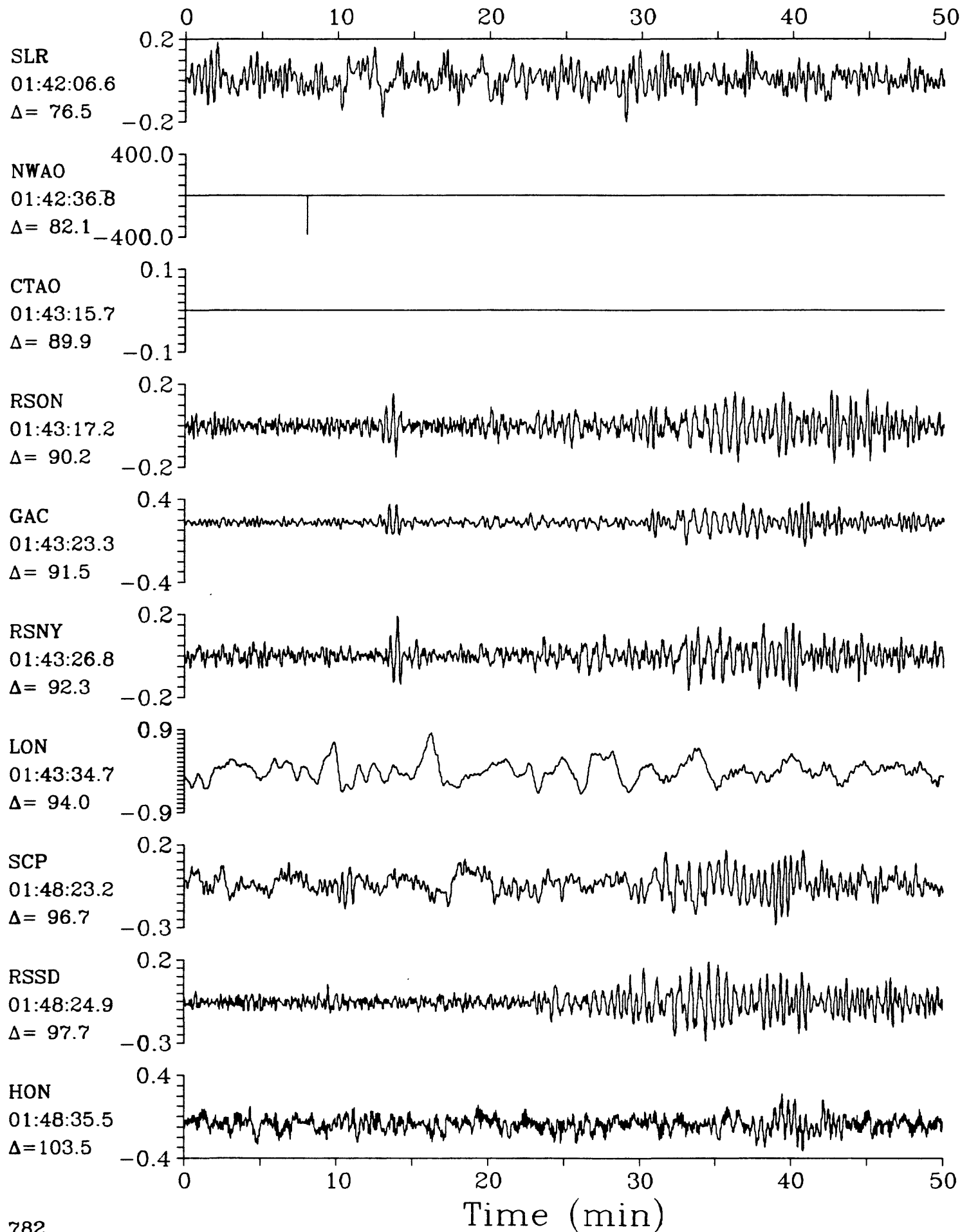
LPZ

Tajik-Xinjiang Border Region $h=103.3$ $m_b=5.6$ 

LPZ

27 April 1985 01:31:27.42

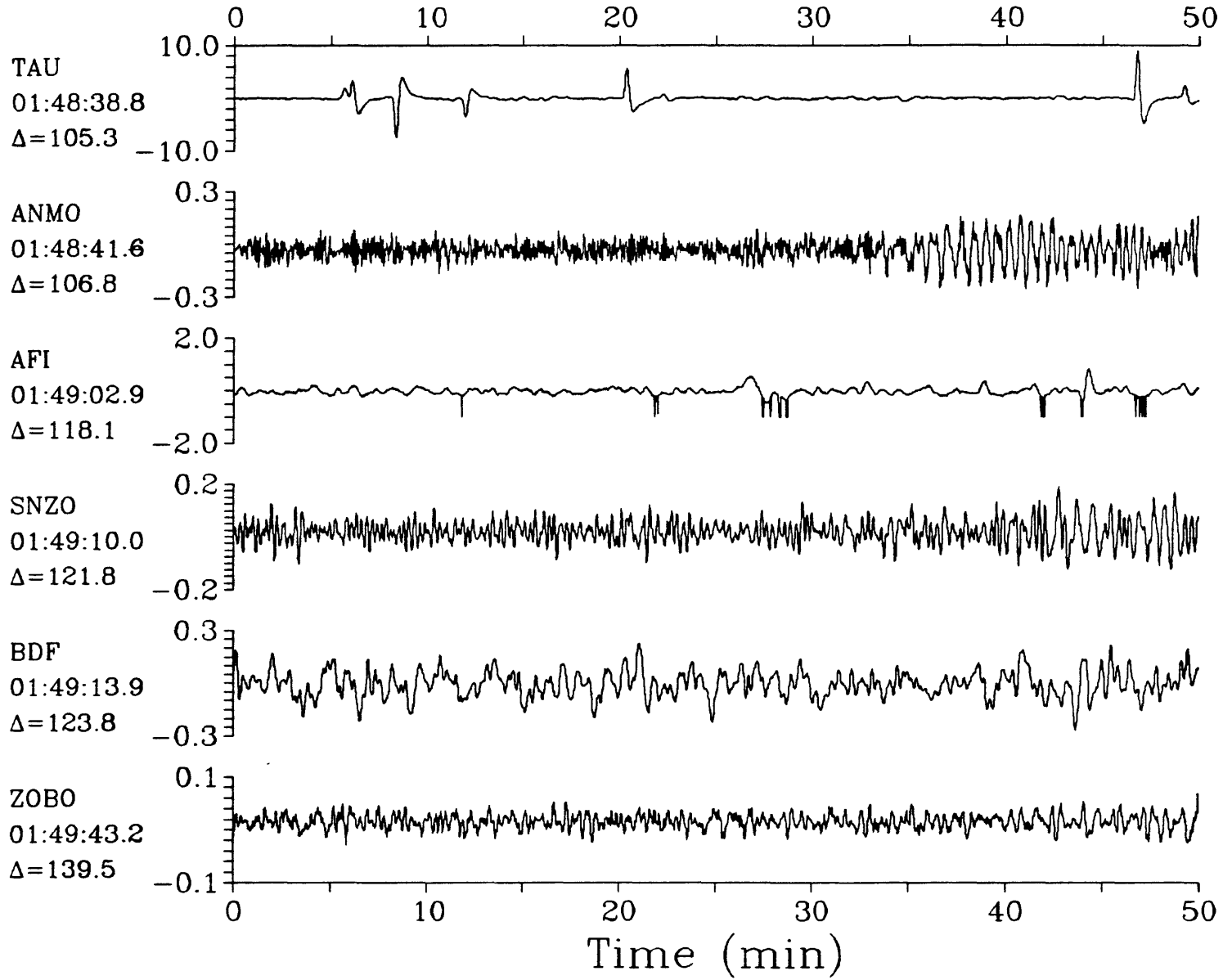
LPZ

Tajik-Xinjiang Border Region $h=103.3$ $m_b=5.6$ 

LPZ

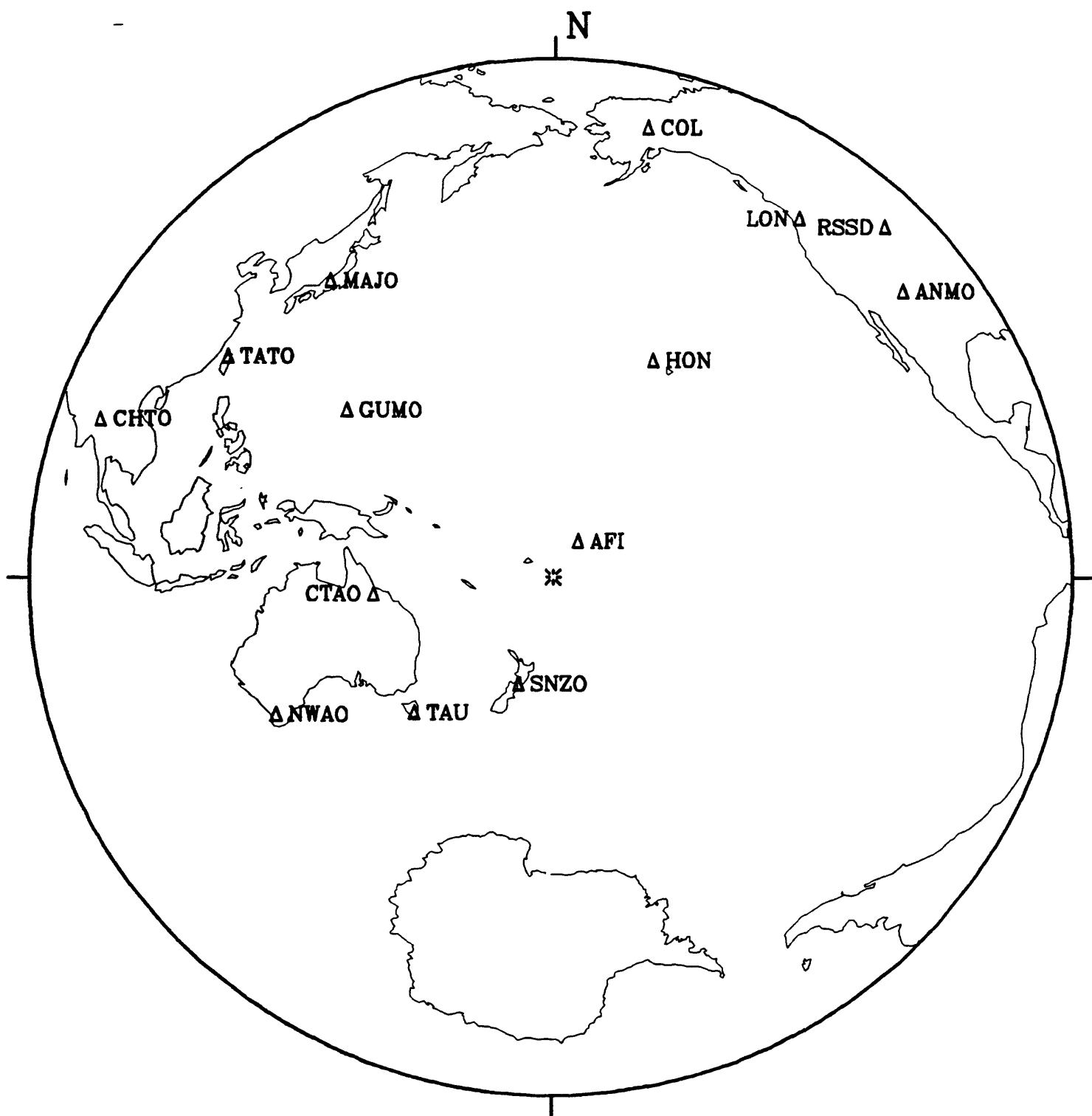
27 April 1985 01:31:27.42

LPZ

Tajik-Xinjiang Border Region $h=103.3$ $m_b=5.6$ 

27 April 1985 10:11:45.01

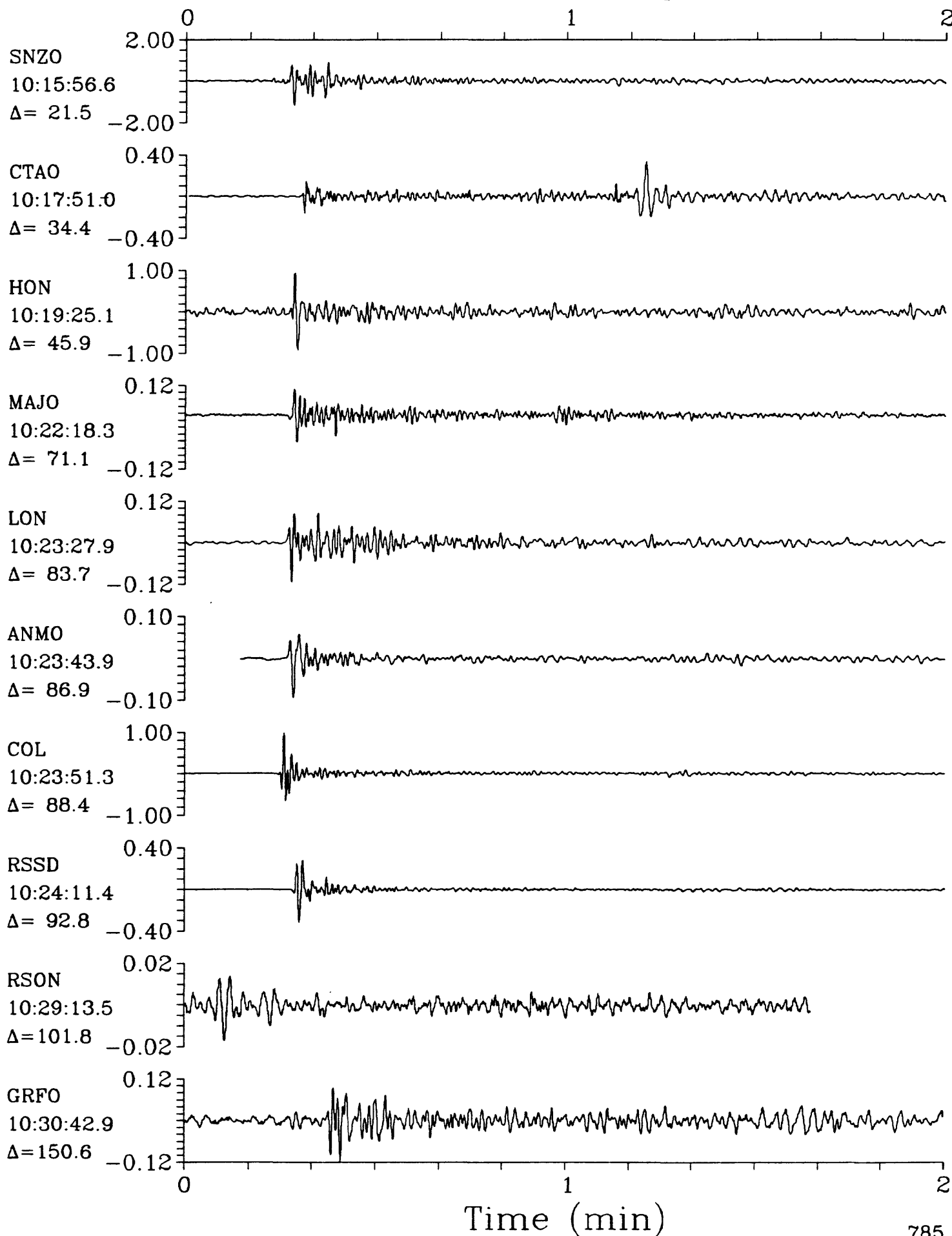
Fiji Islands Region

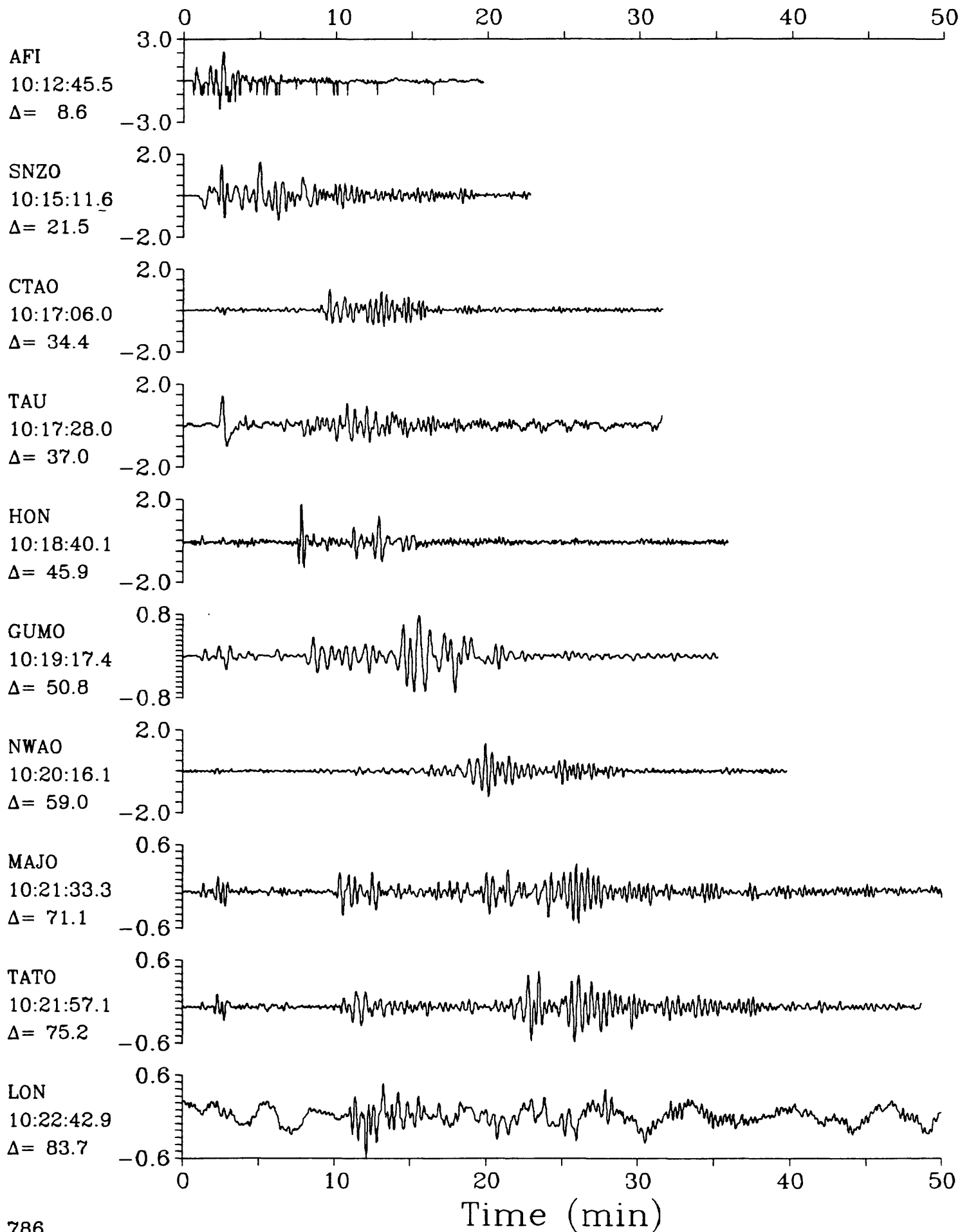


SPZ

27 April 1985 10:11:45.01
Fiji Islands Region $h=279.5$ $m_b=5.7$

SPZ

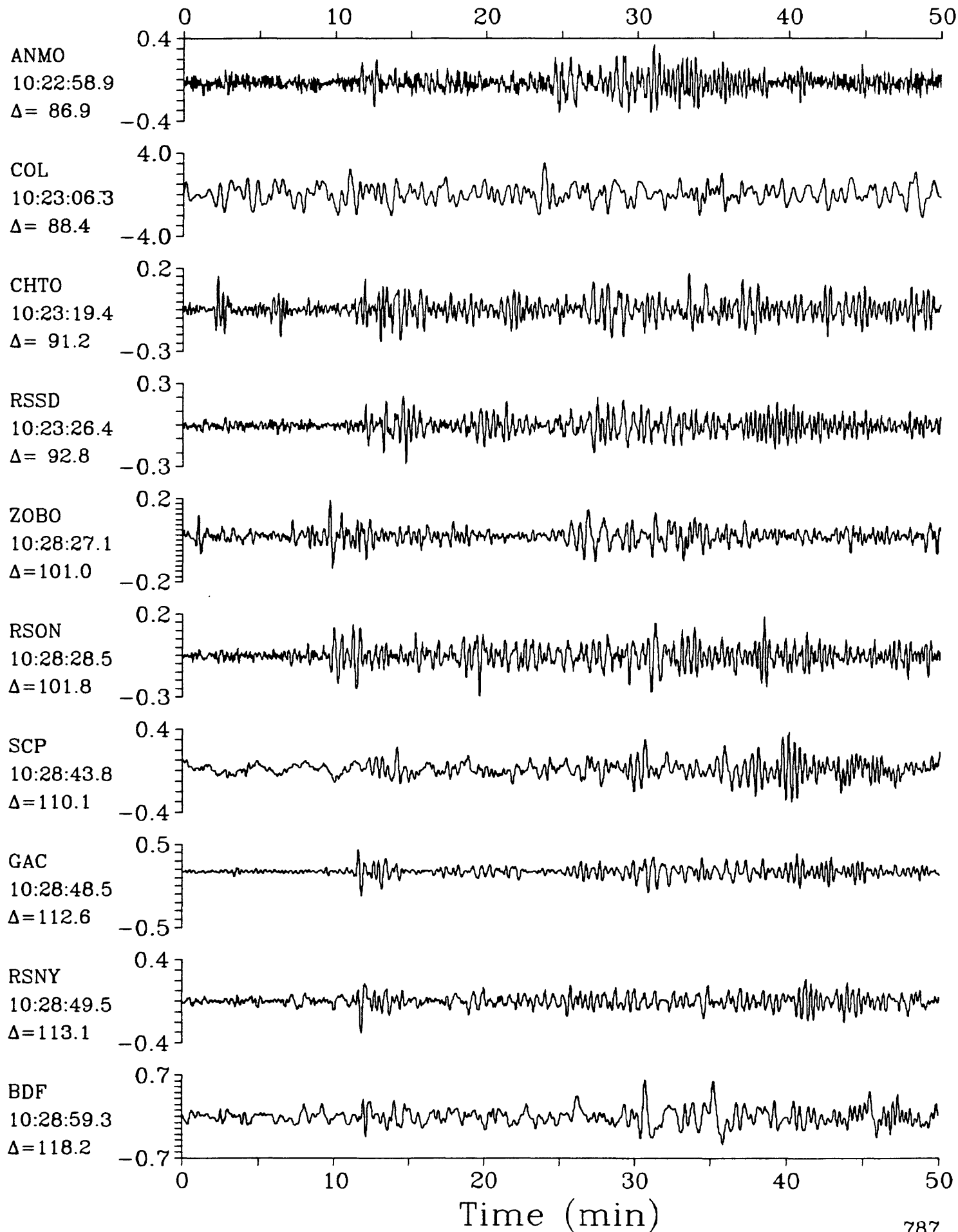


Fiji Islands Region $h=279.5$ $m_b=5.7$ 

LPZ

27 April 1985 10:11:45.01
Fiji Islands Region $h=279.5$ $m_b=5.7$

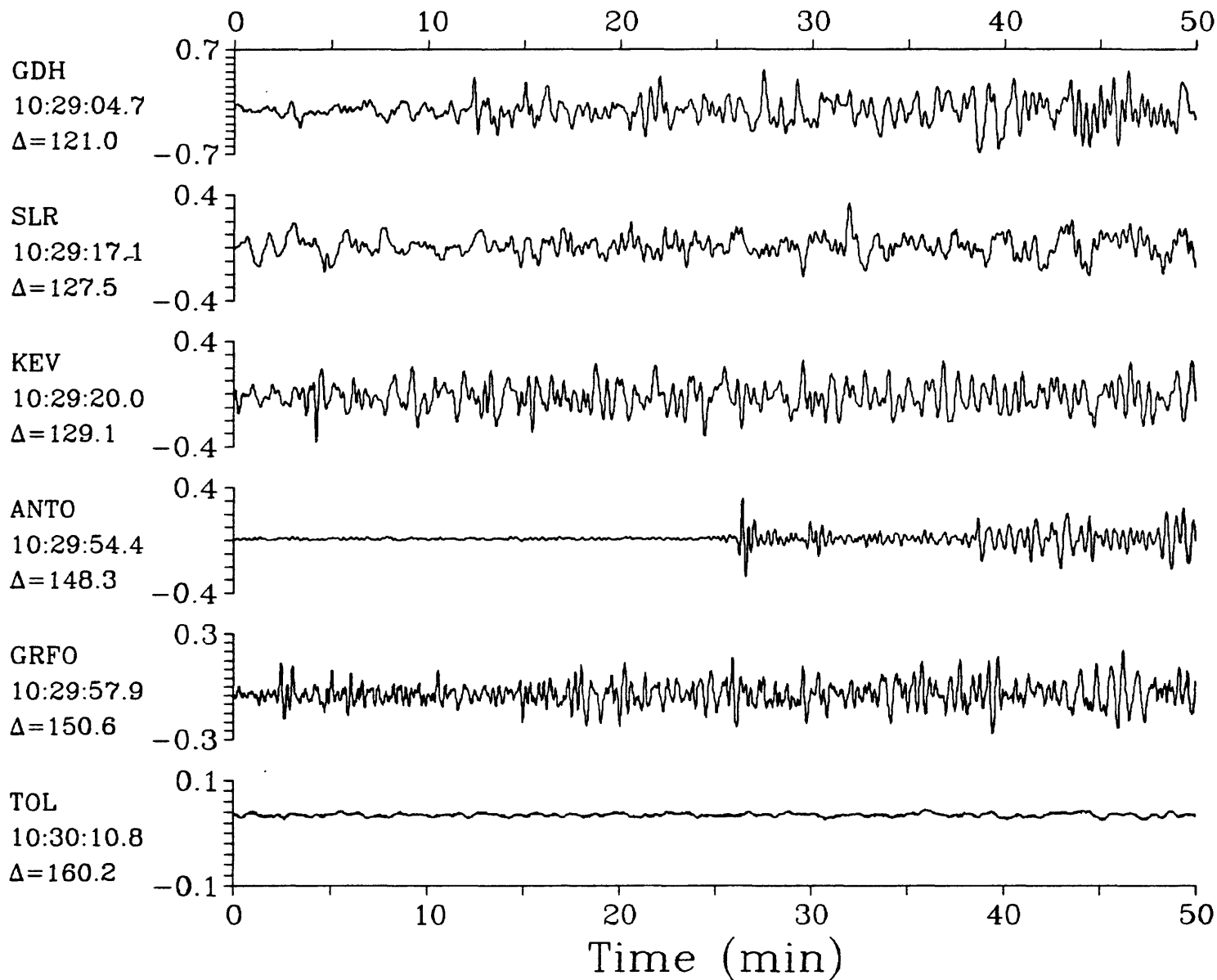
LPZ



LPZ

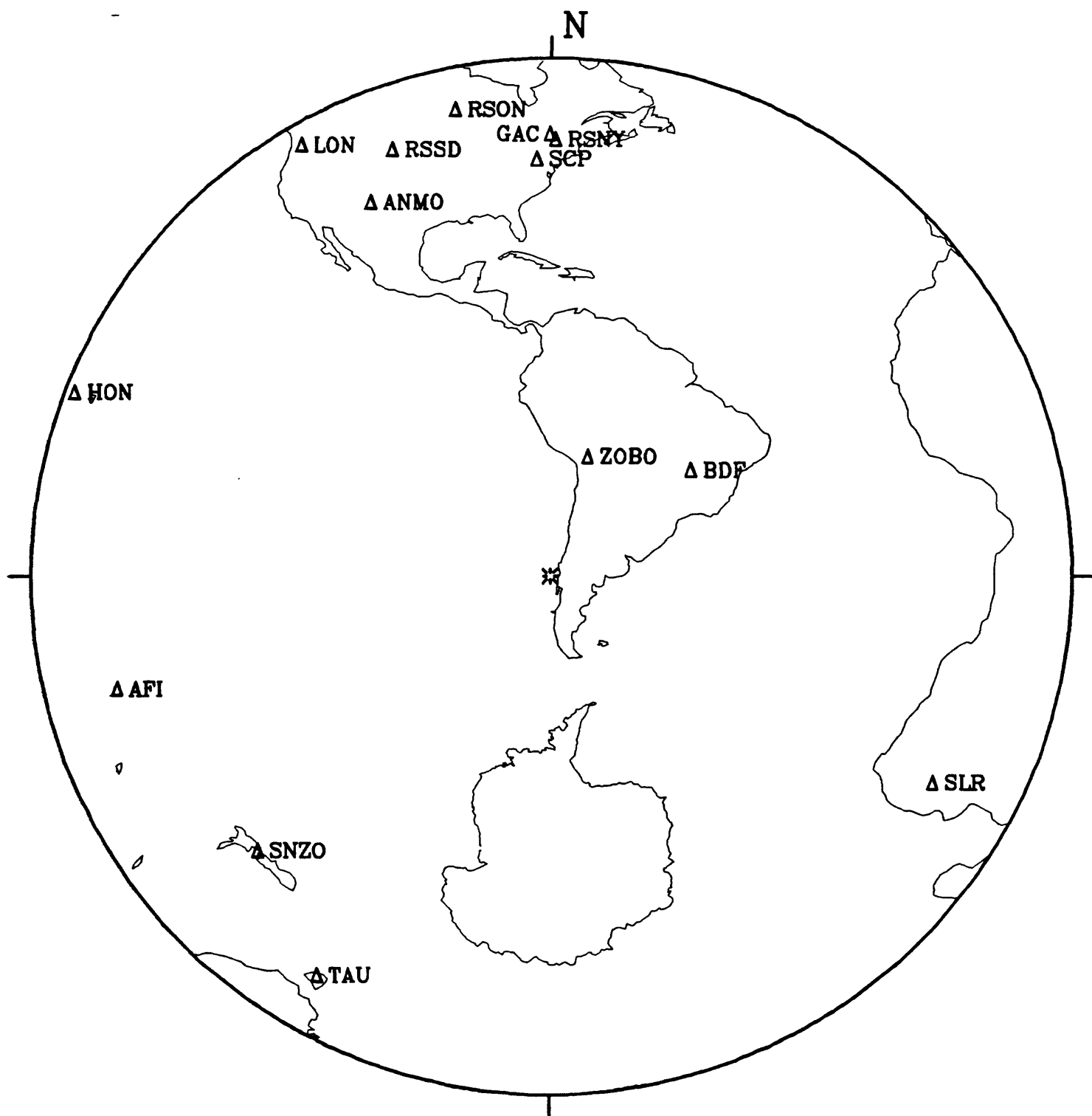
27 April 1985 10:11:45.01
Fiji Islands Region $h=279.5$ $m_b=5.7$

LPZ



28 April 1985 08:30:32.66

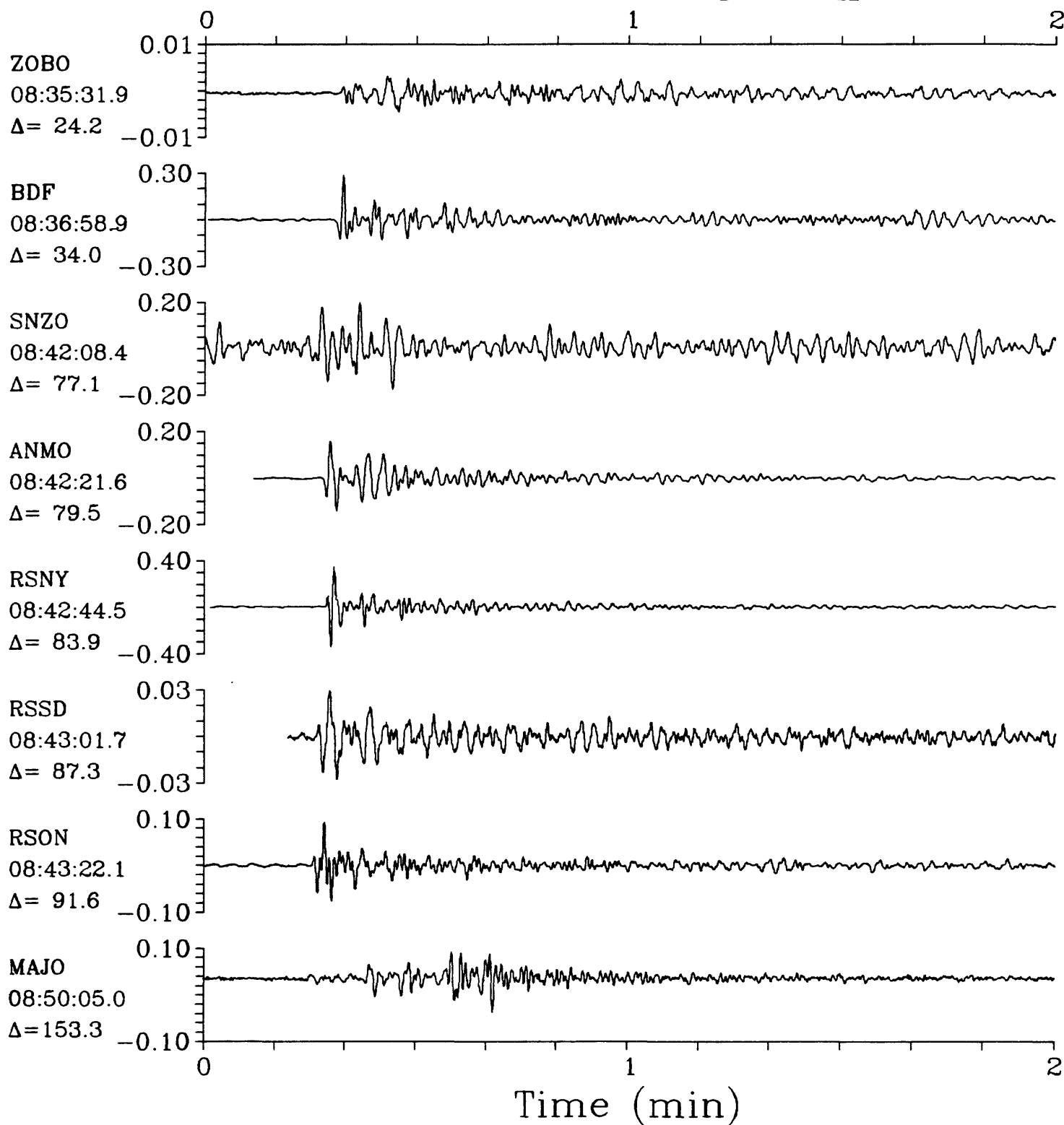
Off Coast of Central Chile



SPZ

28 April 1985 08:30:32.66

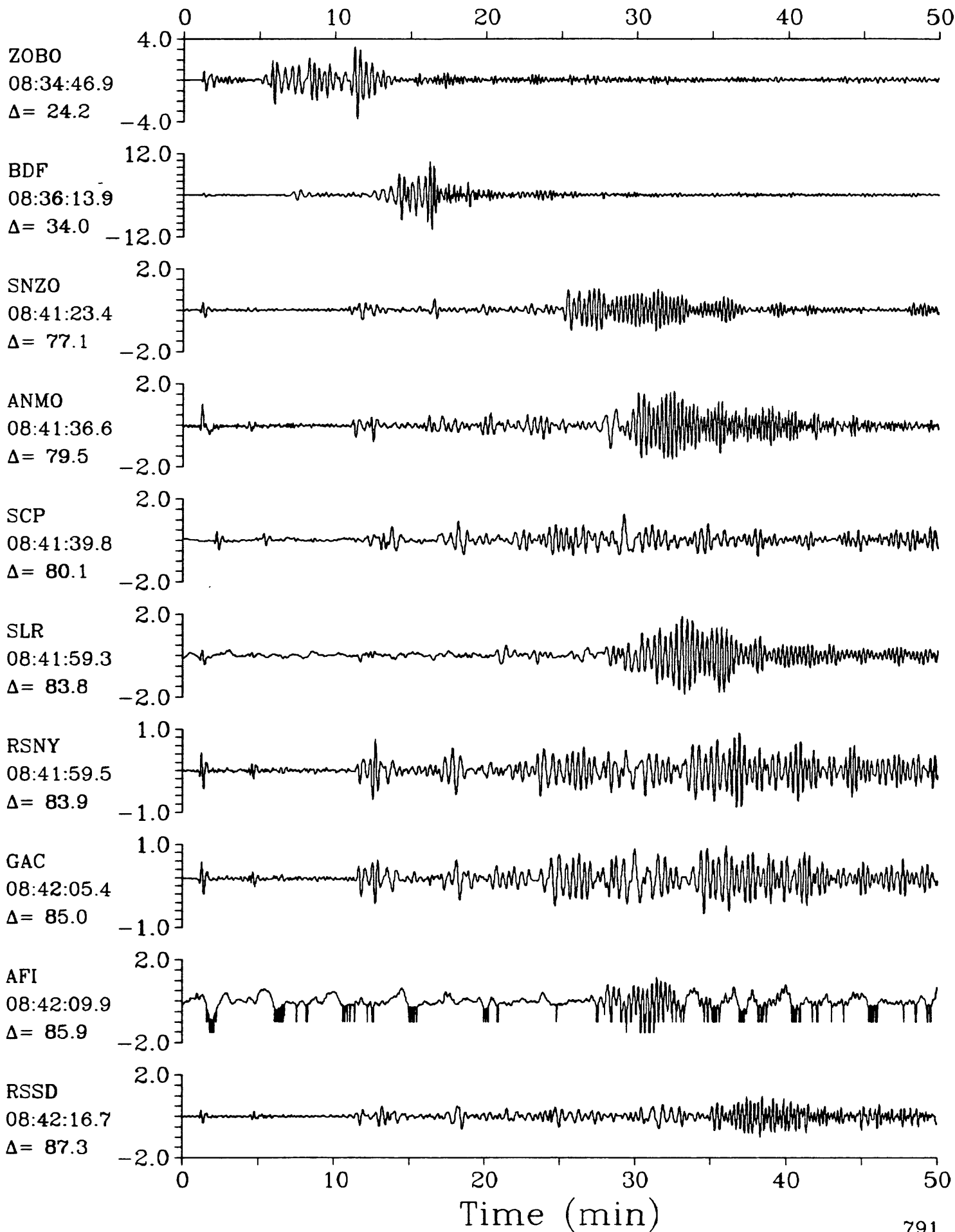
SPZ

Off Coast of Central Chile $h=33.0$ $m_b=6.0$ $M_{sz}=5.5$ 

LPZ

28 April 1985 08:30:32.66

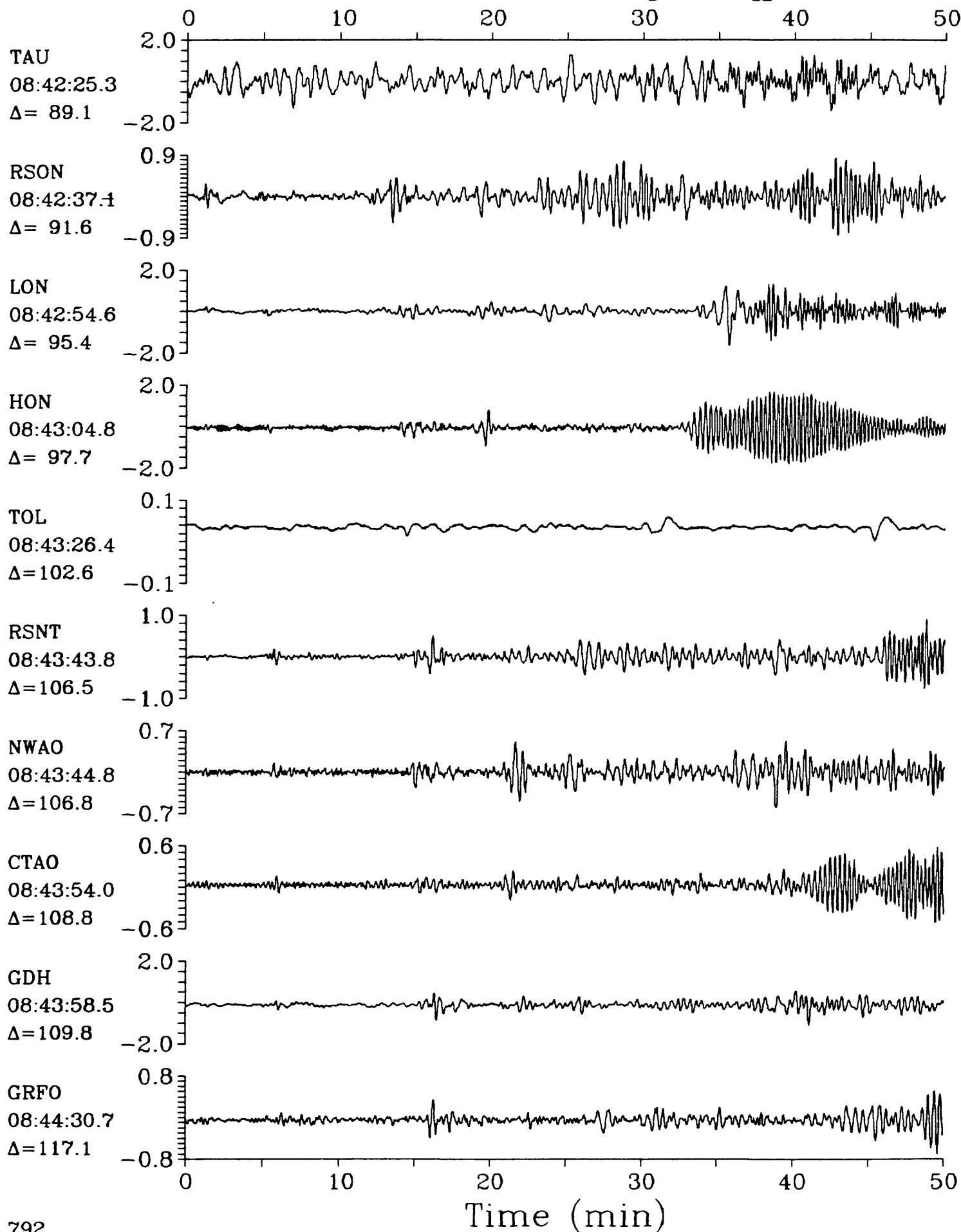
LPZ

Off Coast of Central Chile $h=33.0$ $m_b=6.0$ $M_{sz}=5.5$ 

LPZ

28 April 1985 08:30:32.66

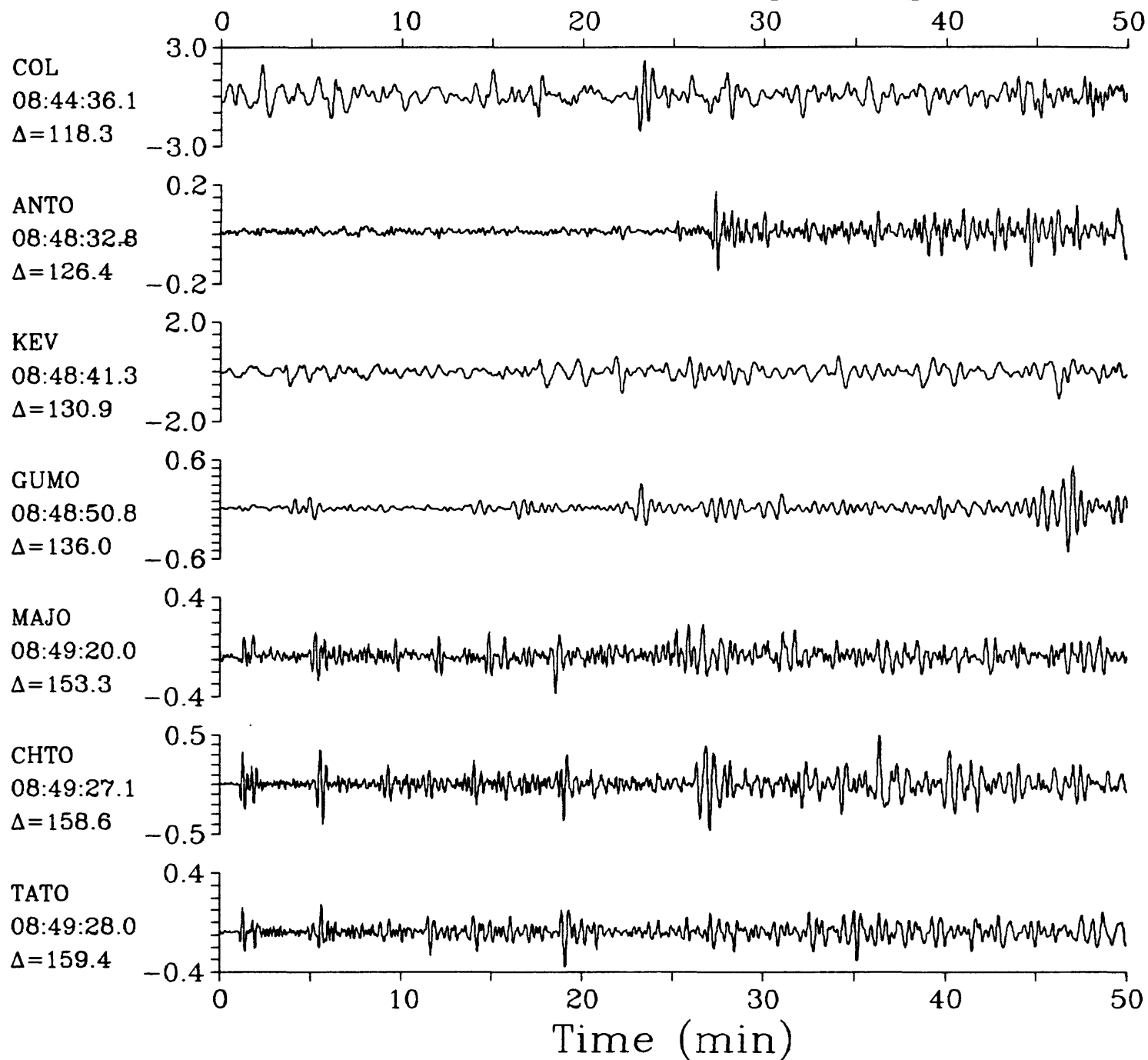
LPZ

Off Coast of Central Chile $h=33.0$ $m_b=6.0$ $M_{sz}=5.5$ 

LPZ

28 April 1985 08:30:32.66

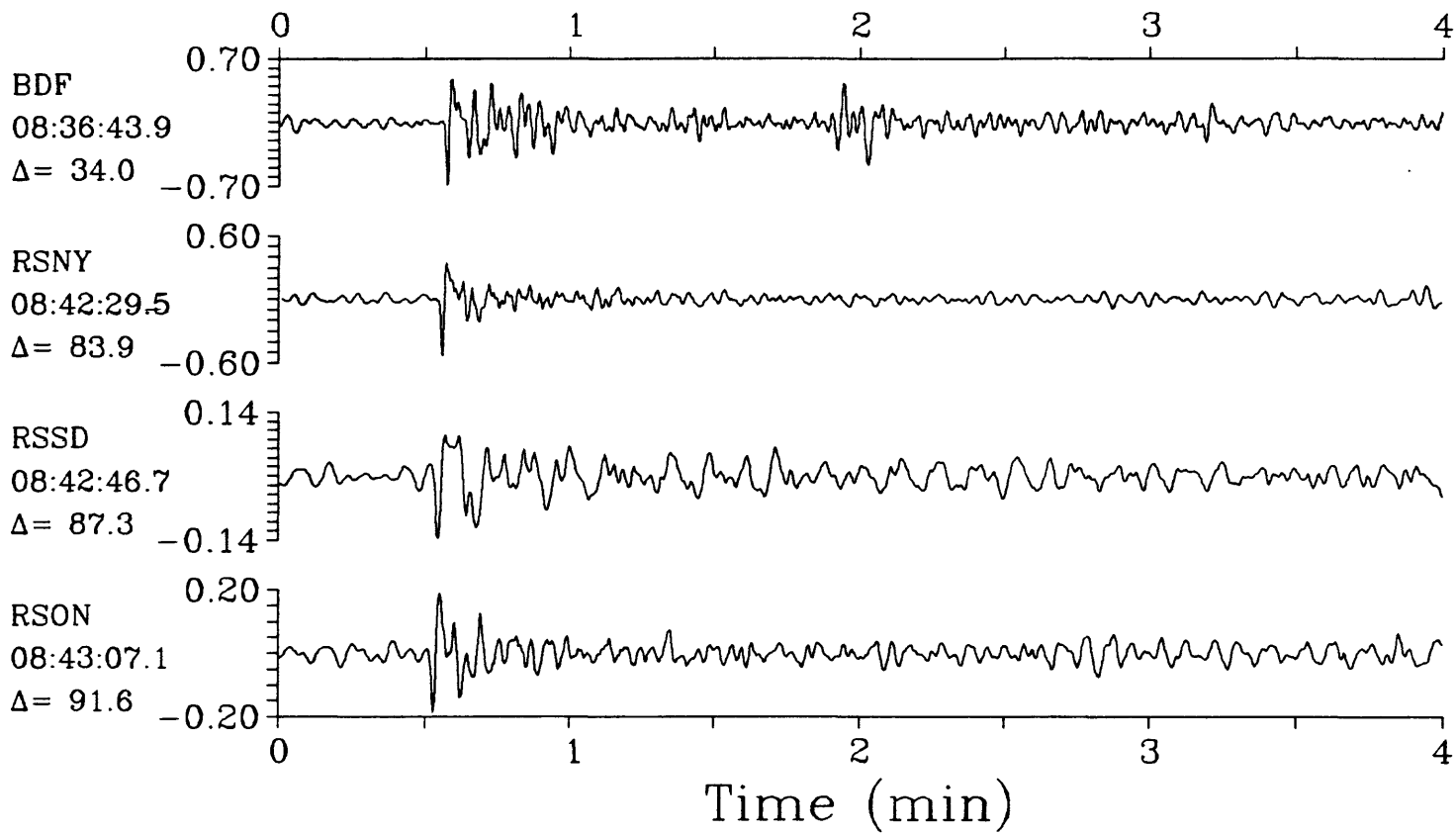
LPZ

Off Coast of Central Chile $h=33.0$ $m_b=6.0$ $M_{sz}=5.5$ 

IPZ

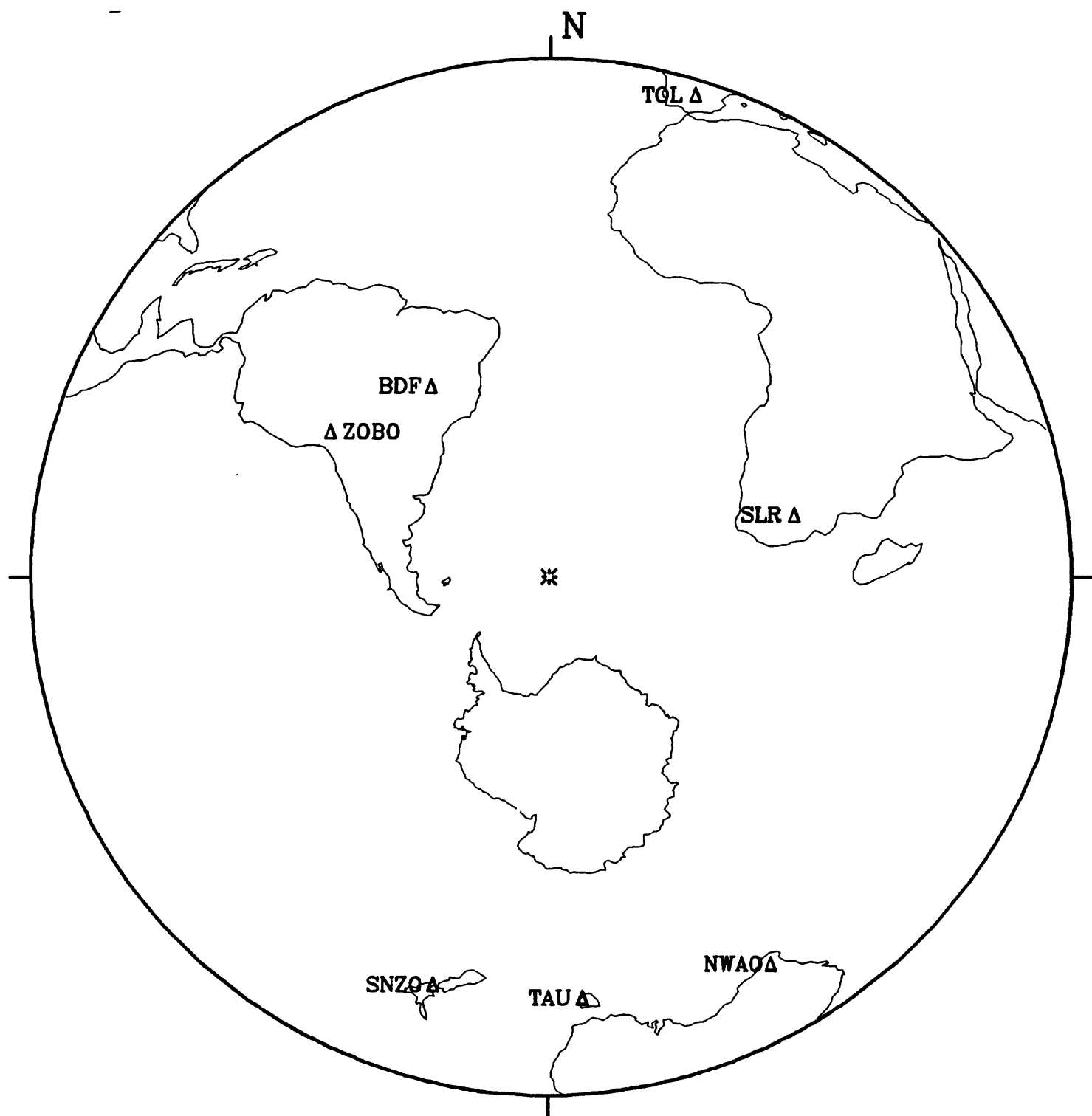
28 April 1985 08:30:32.66

IPZ

Off Coast of Central Chile $h=33.0$ $m_b=6.0$ $M_{sz}=5.5$ 

28 April 1985 22:56:51.14

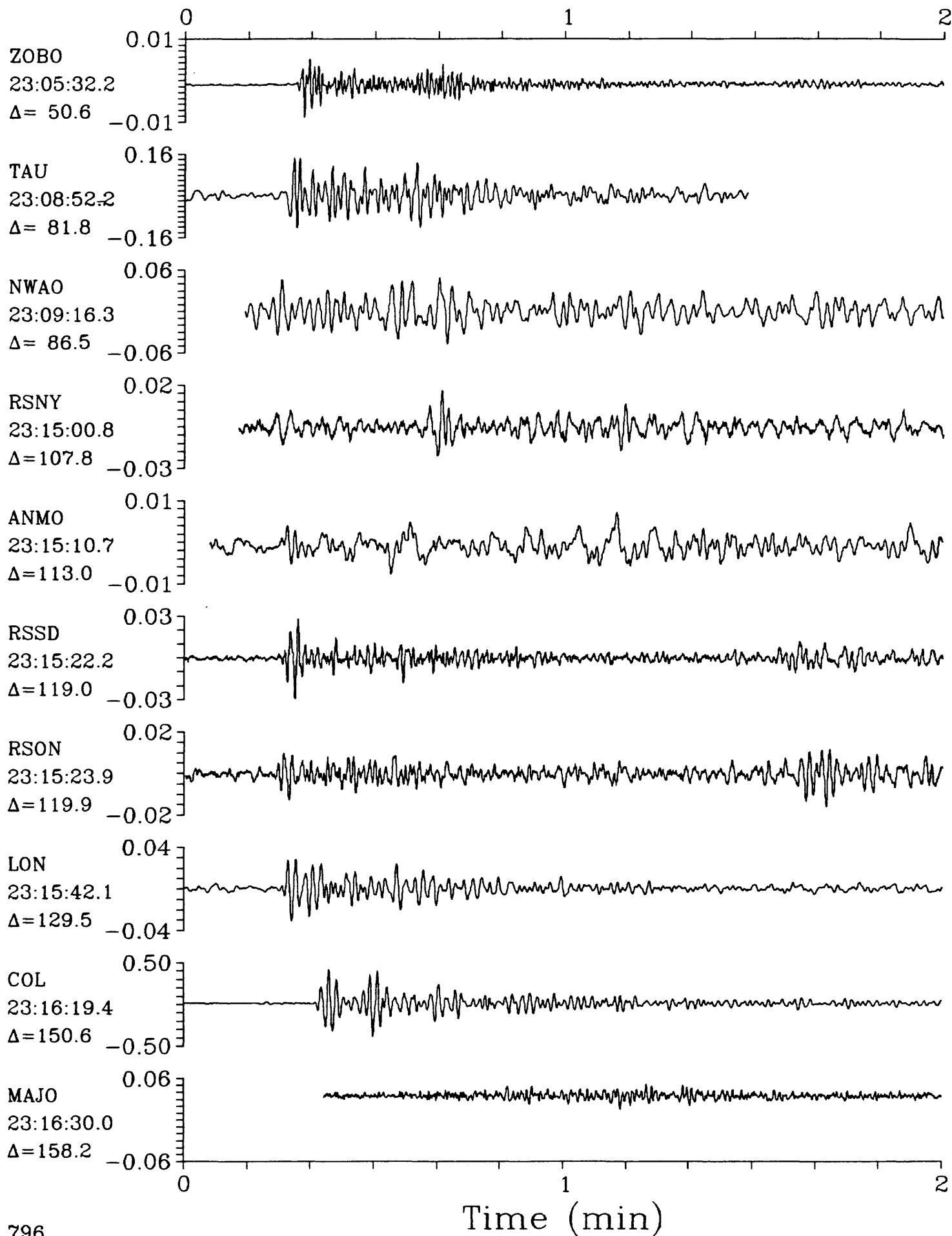
South Sandwich Islands Region



SPZ

28 April 1985 22:56:51.14

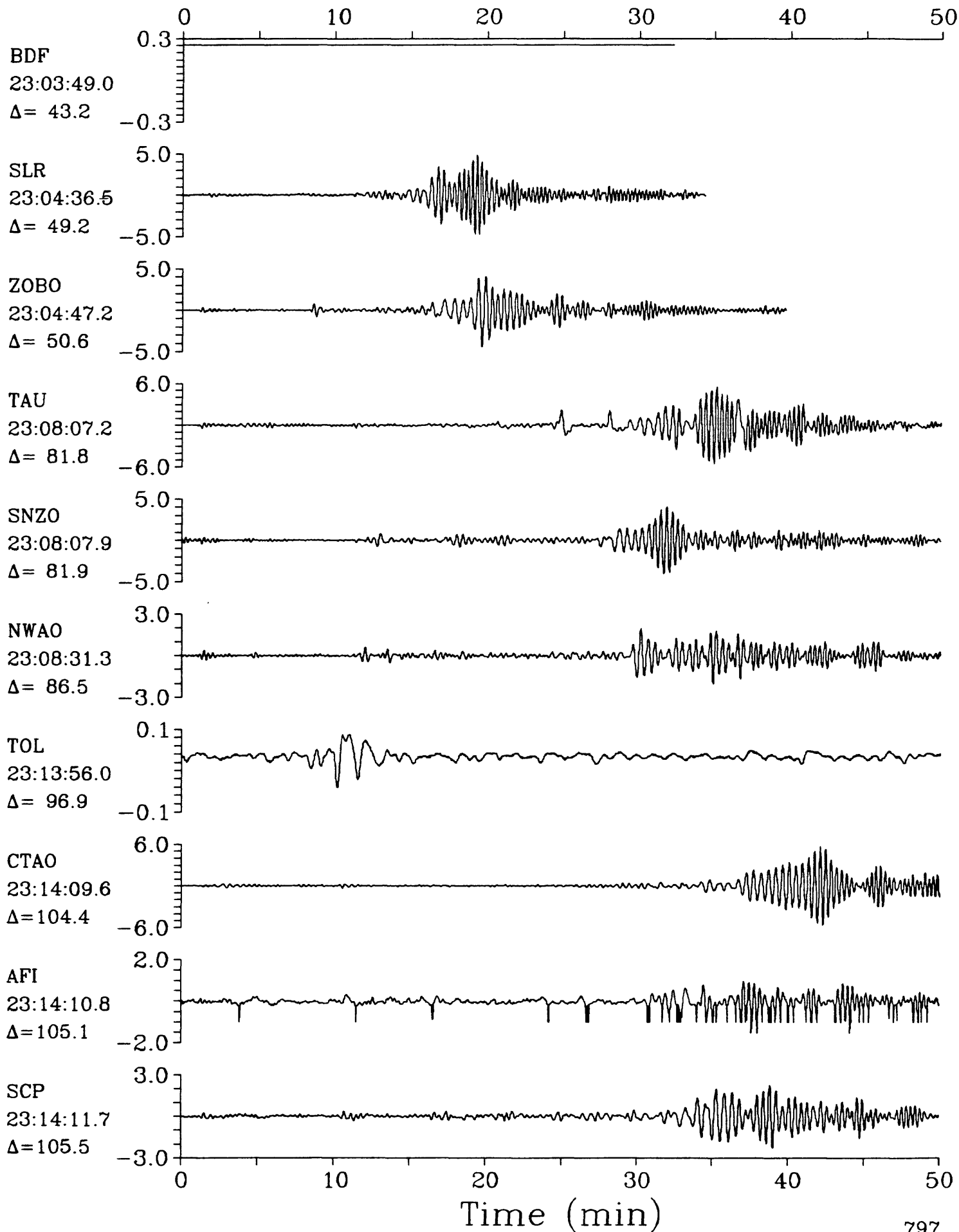
SPZ

South Sandwich Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.6$ 

LPZ

28 April 1985 22:56:51.14

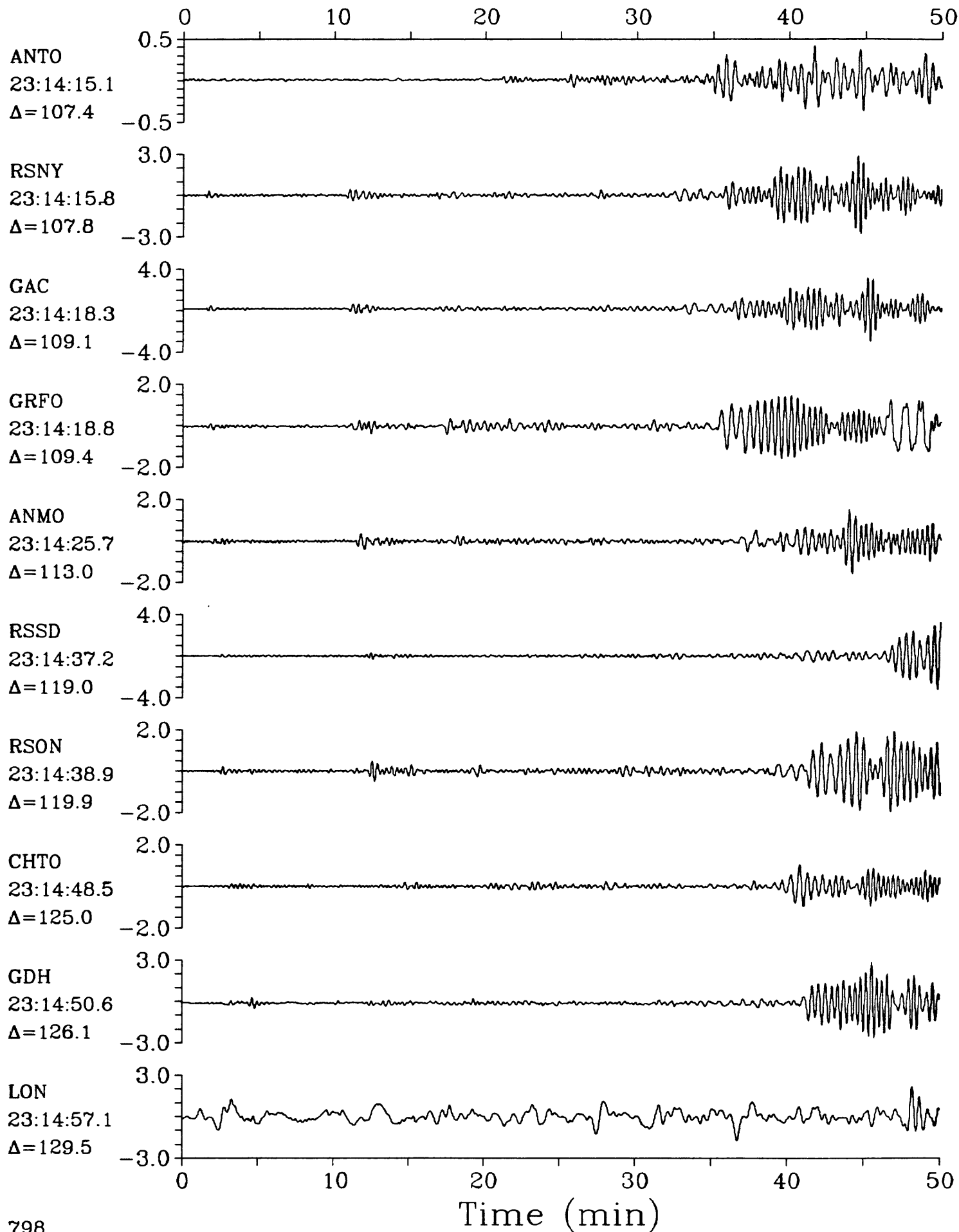
LPZ

South Sandwich Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.6$ 

LPZ

28 April 1985 22:56:51.14

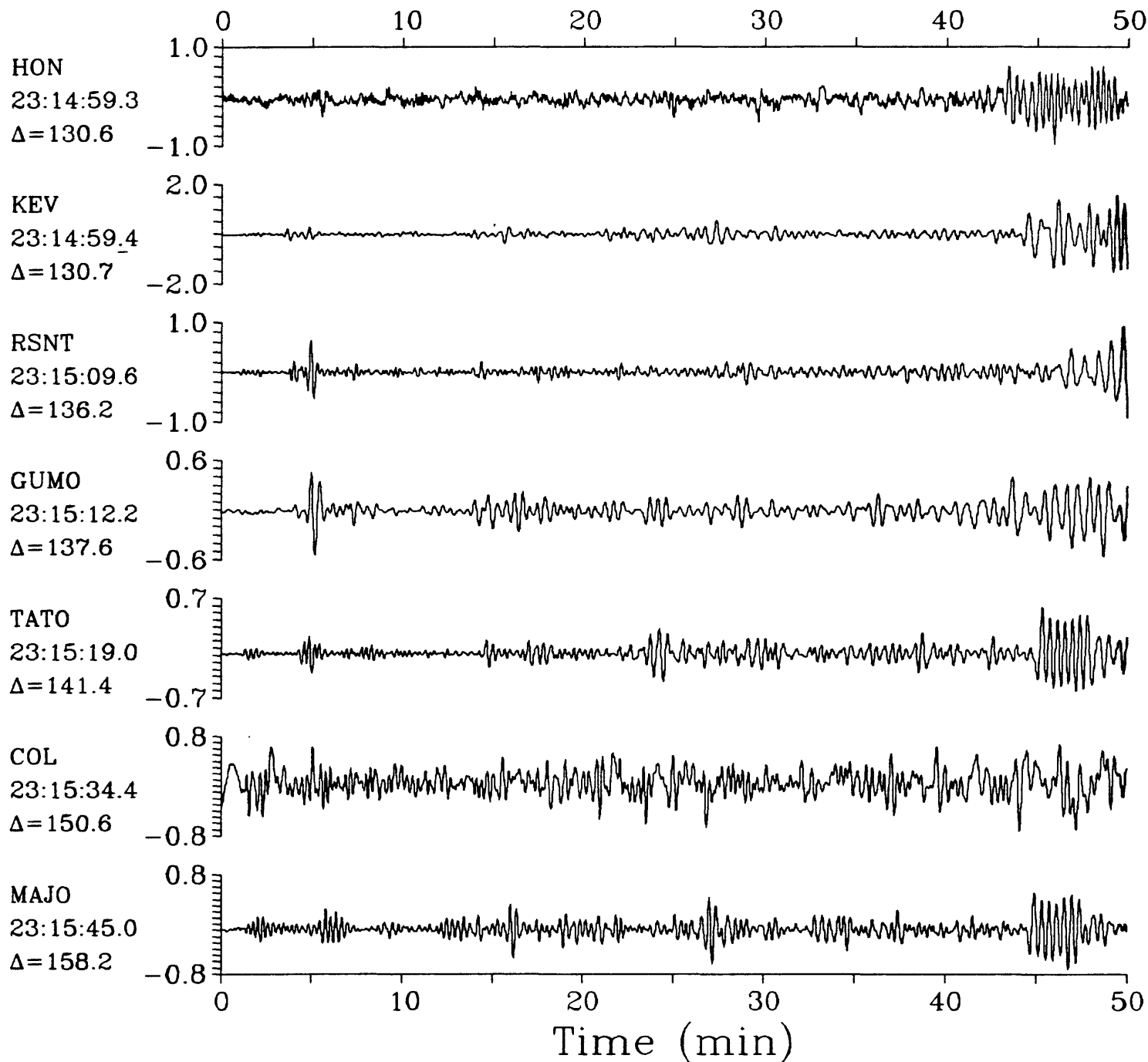
LPZ

South Sandwich Islands Region $h=33.0$ $m_b=5.7$ $M_{sz}=5.6$ 

LPZ

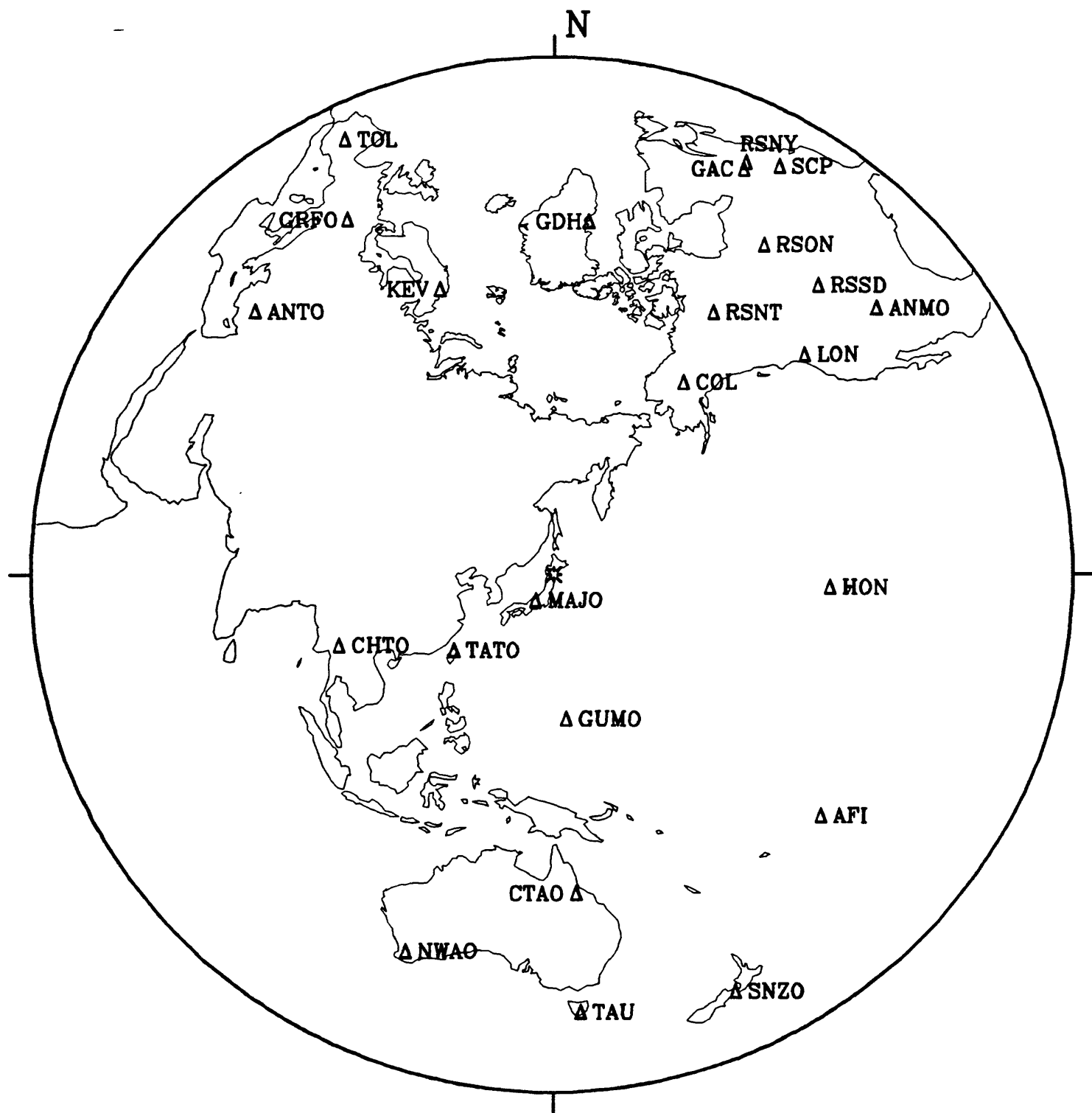
28 April 1985 22:56:51.14

LPZ

South Sandwich Islands Region $h=33.0$ $m_b=5.7$ $M_{SZ}=5.6$ 

29 April 1985 02:19:59.64

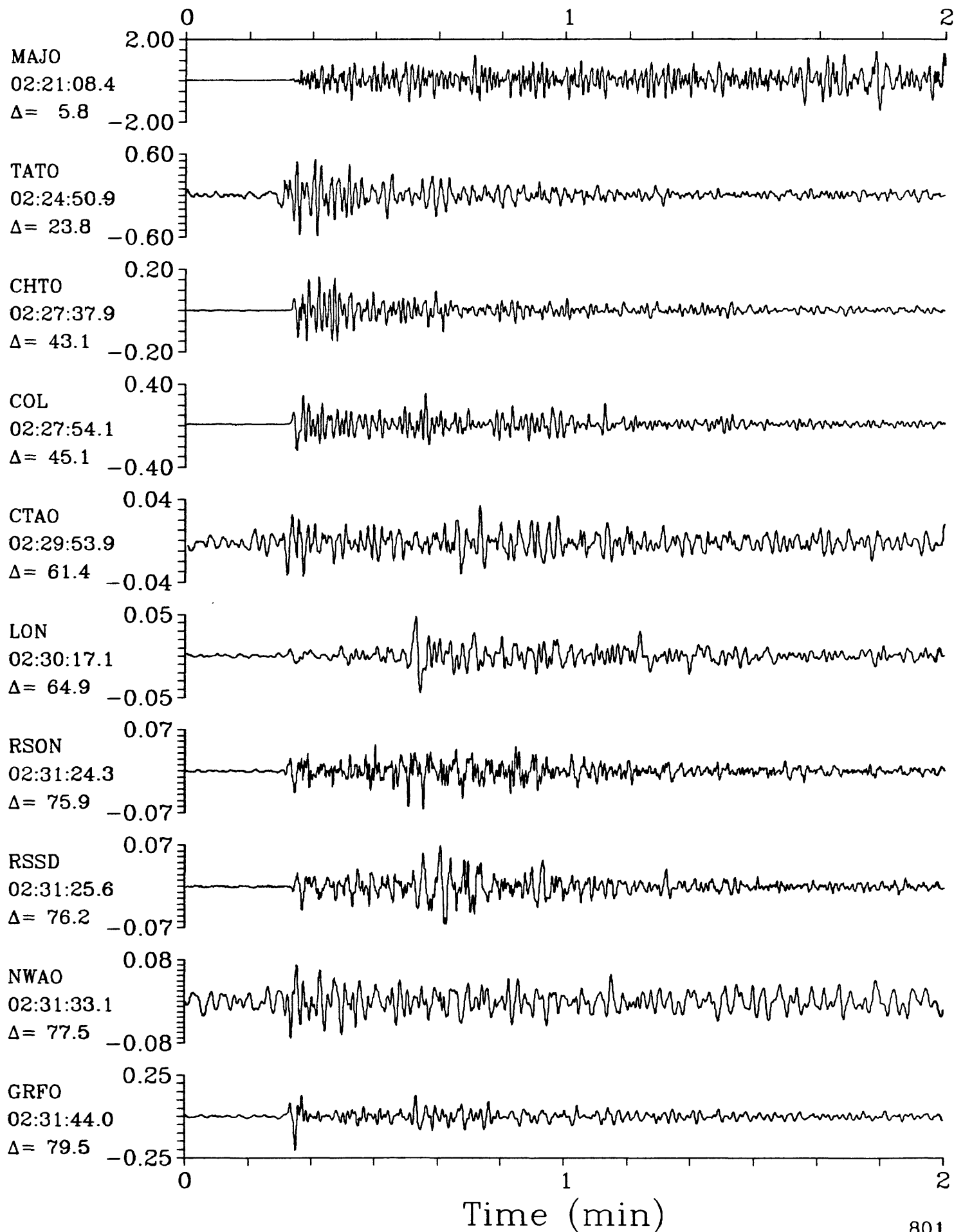
Hokkaido, Japan Region



SPZ

29 April 1985 02:19:59.64
Hokkaido, Japan Region $h=70.0$ $m_b=5.7$

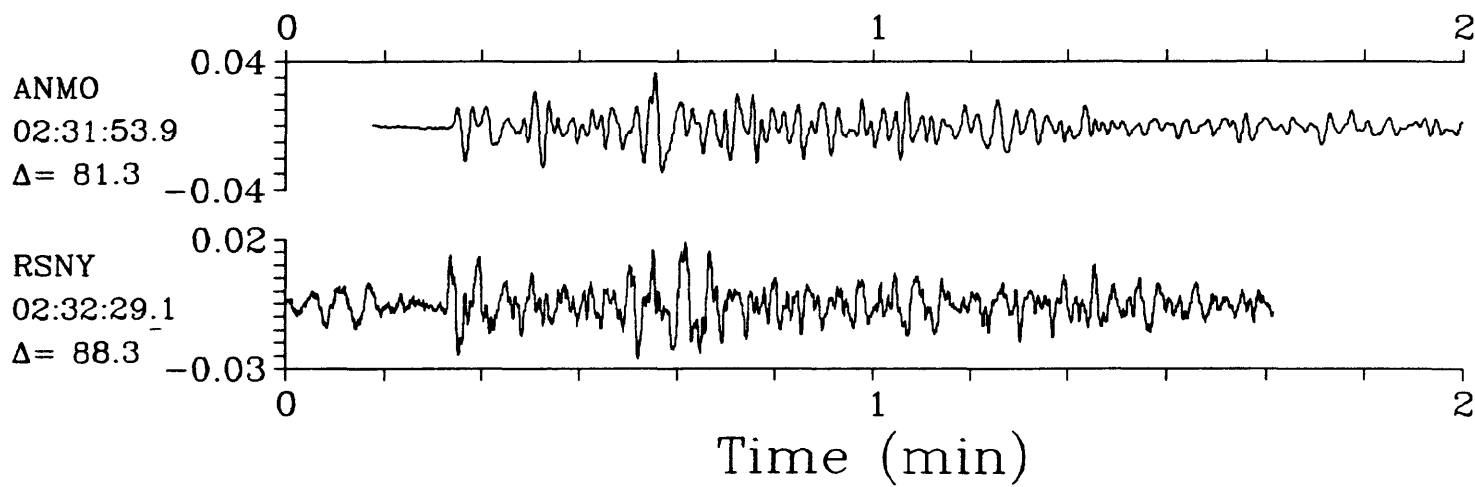
SPZ



SPZ

29 April 1985 02:19:59.64

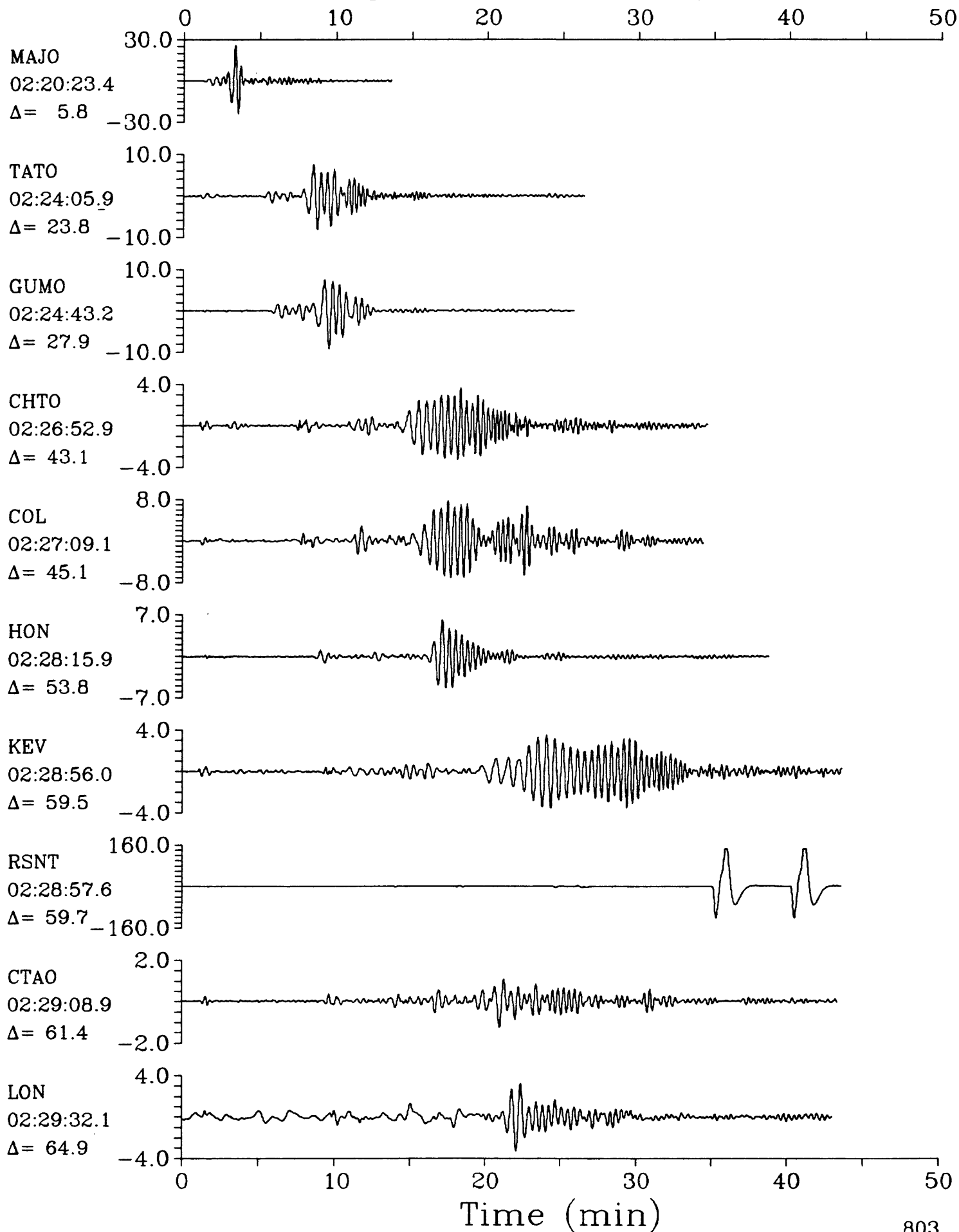
SPZ

Hokkaido, Japan Region $h=70.0$ $m_b=5.7$ 

LPZ

29 April 1985 02:19:59.64

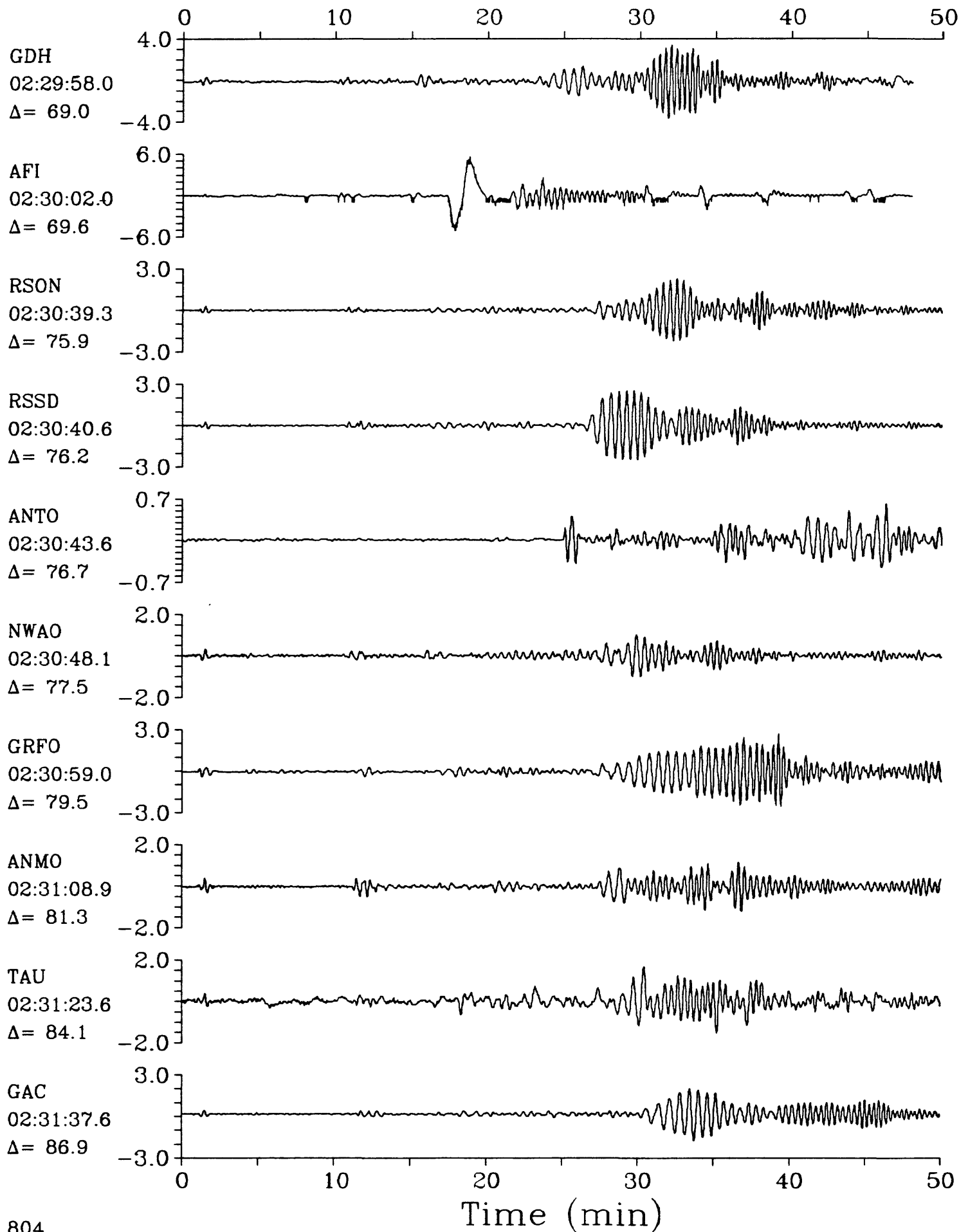
LPZ

Hokkaido, Japan Region $h=70.0$ $m_b=5.7$ 

LPZ

29 April 1985 02:19:59.64
Hokkaido, Japan Region $h=70.0$ $m_b=5.7$

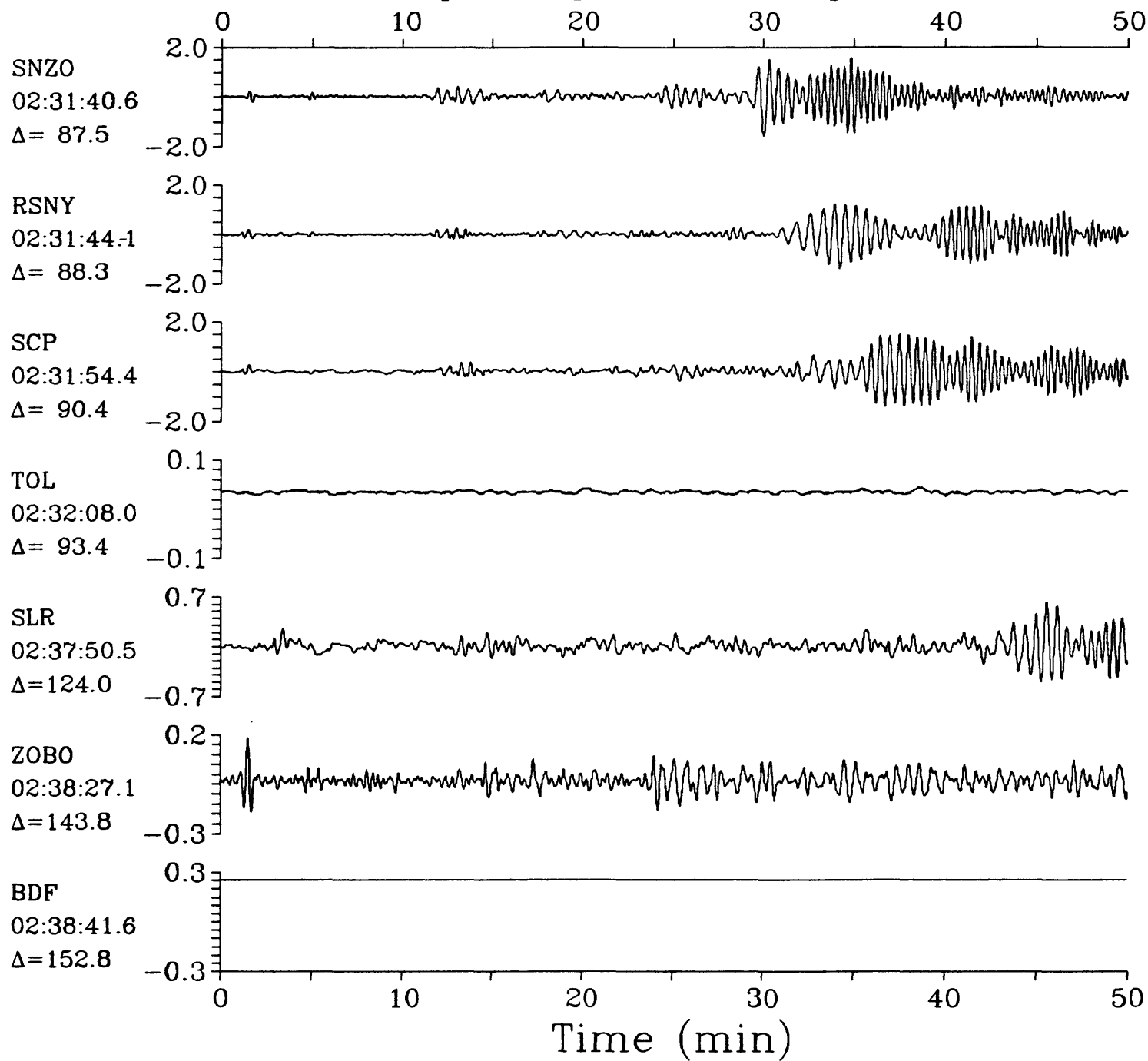
LPZ



LPZ

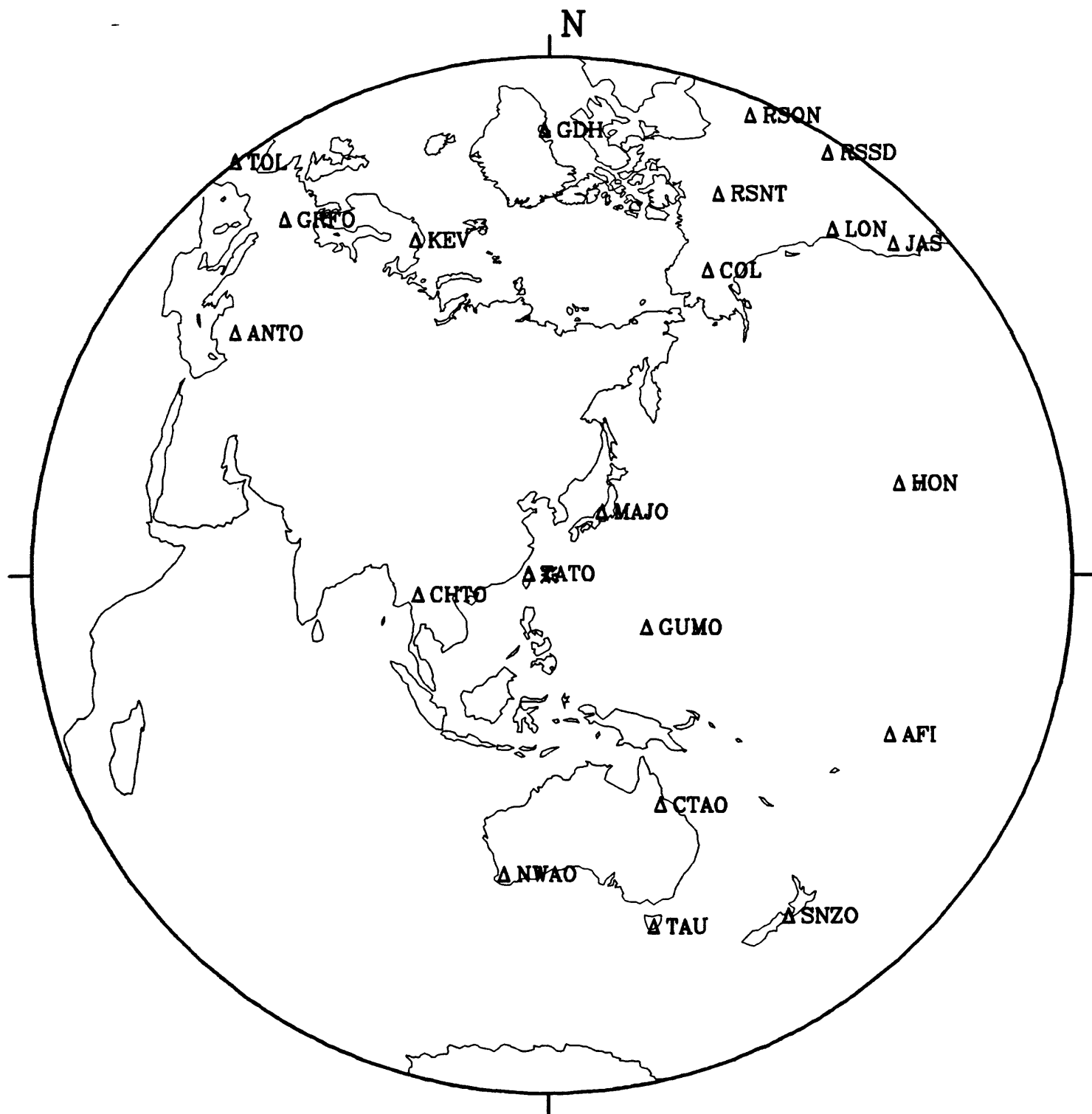
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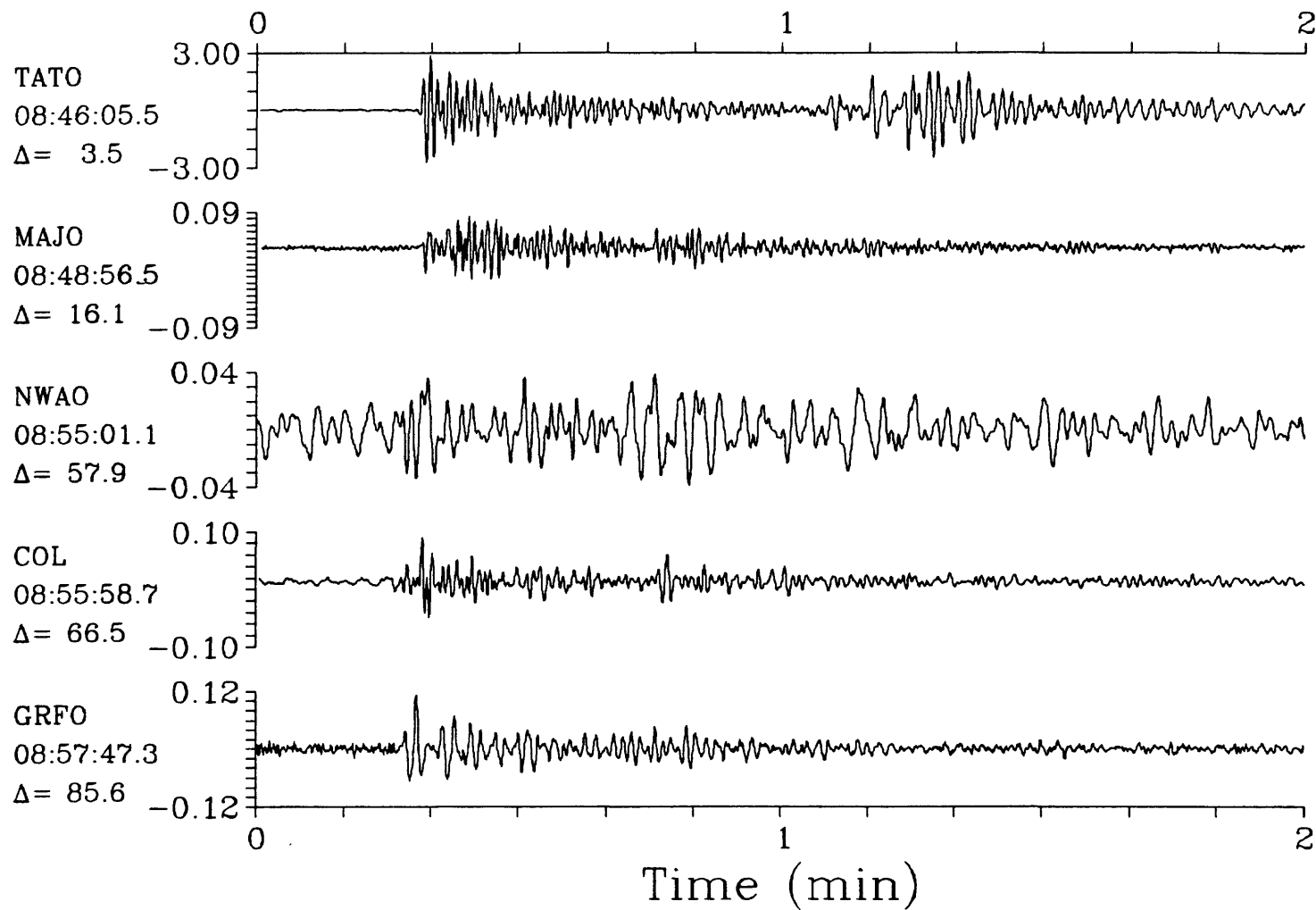
LPZ

Hokkaido, Japan Region $h=70.0$ $m_b=5.7$ 

30 April 1985 08:45:28.64

Southwestern Ryukyu Islands

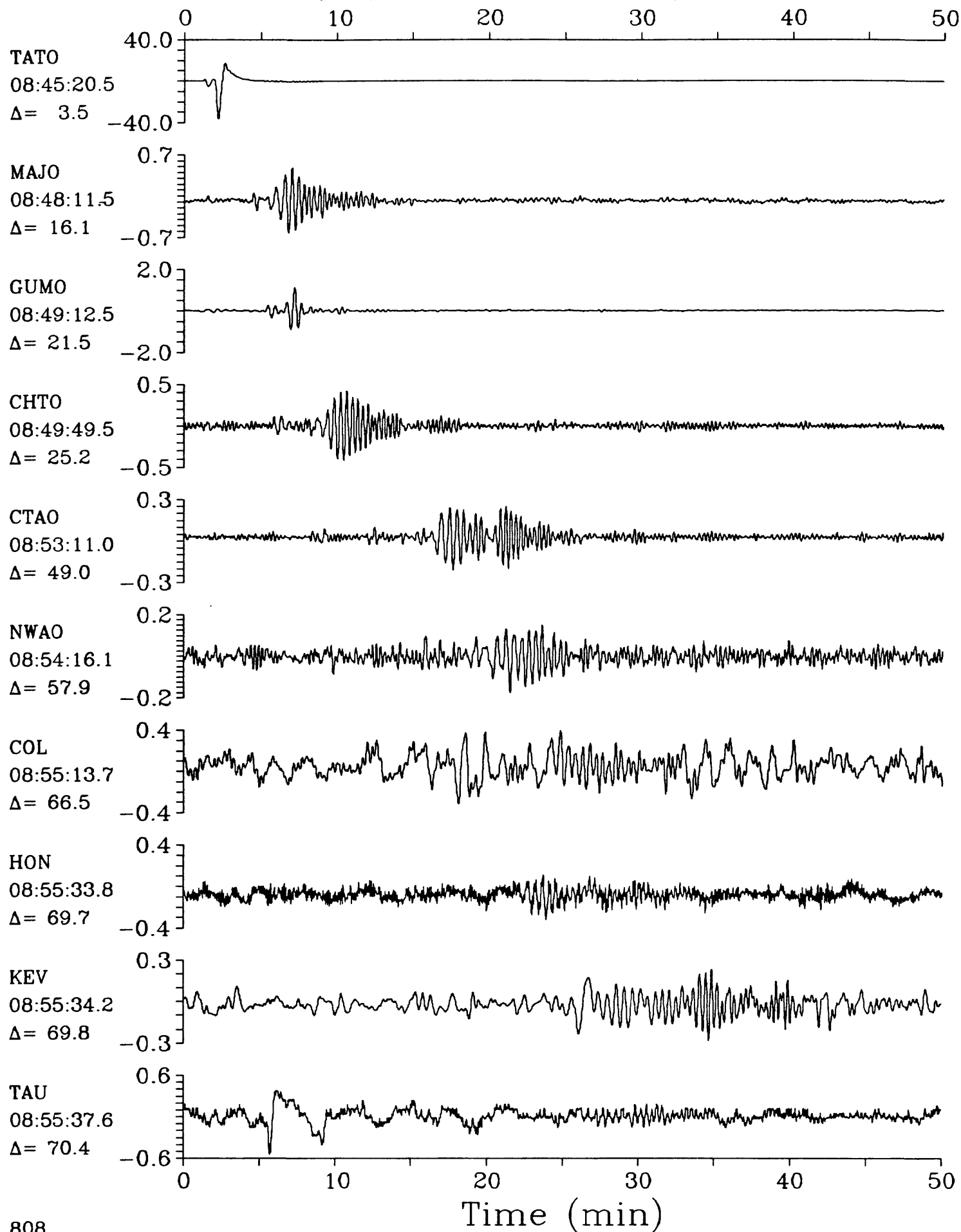




LPZ

30 April 1985 08:45:28.64

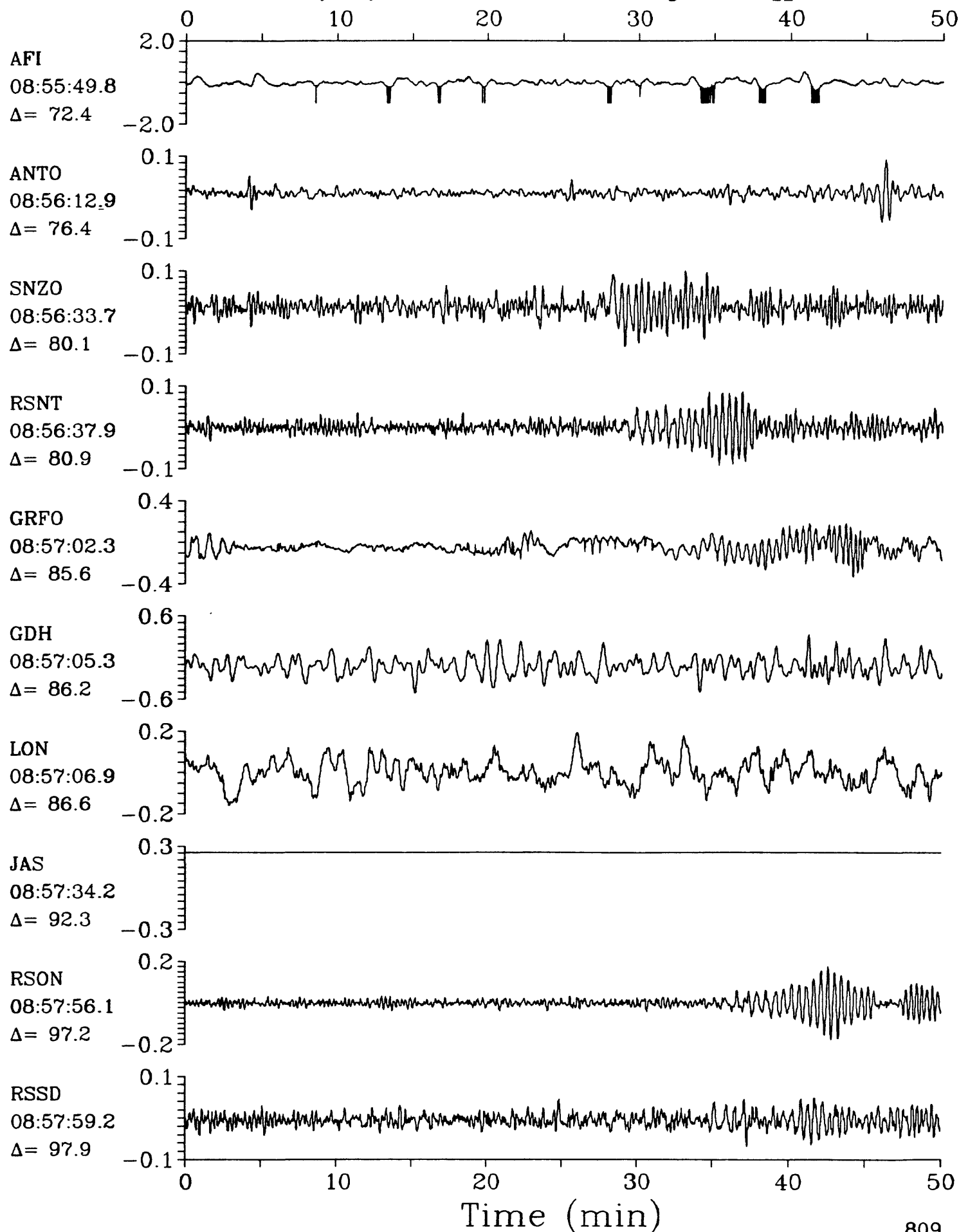
LPZ

Southwestern Ryukyu Islands $h=51.2$ $m_b=5.3$ $M_{sz}=6.0$ 

LPZ

30 April 1985 08:45:28.64

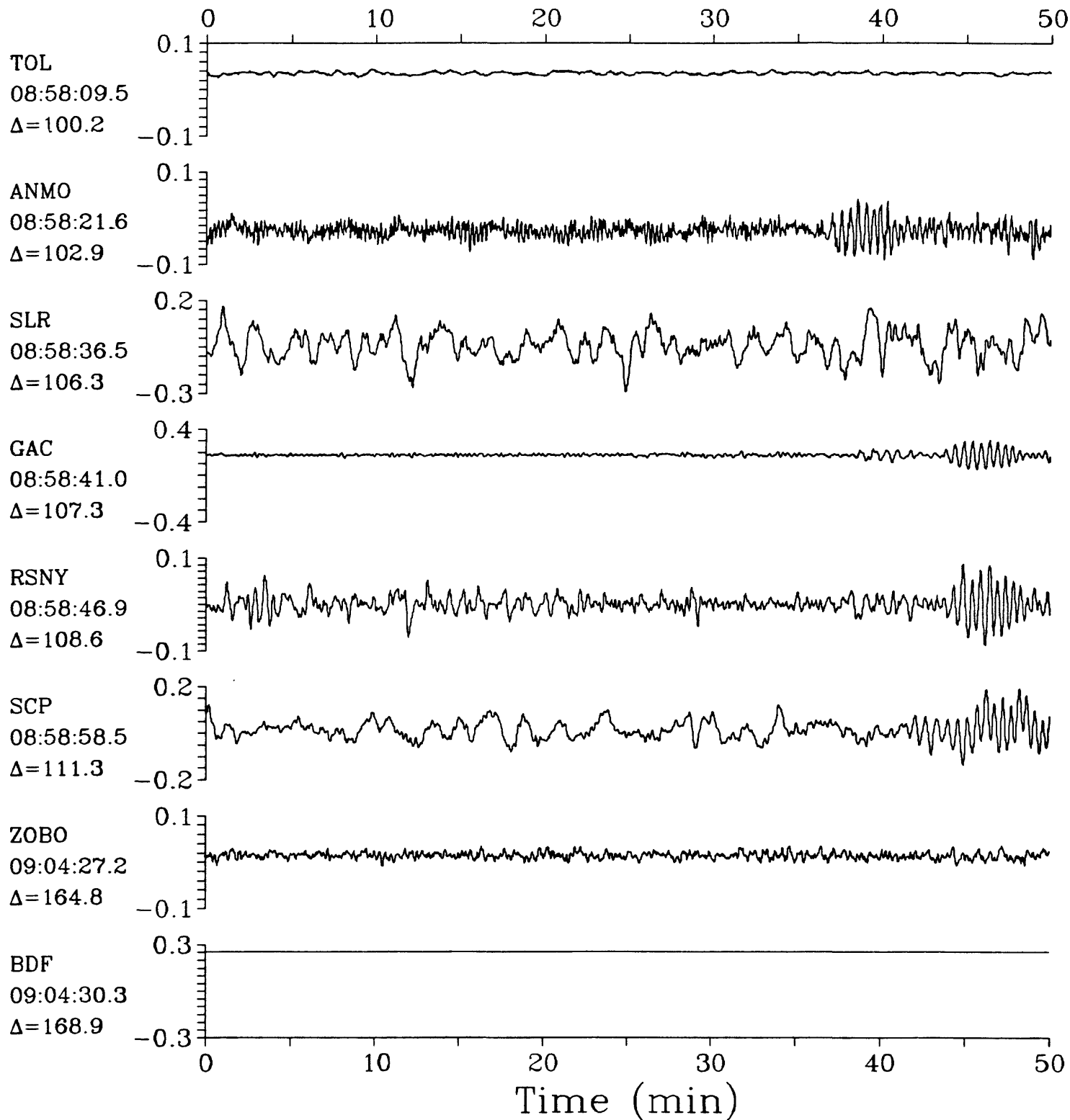
LPZ

Southwestern Ryukyu Islands $h=51.2$ $m_b=5.3$ $M_{SZ}=6.0$ 

LPZ

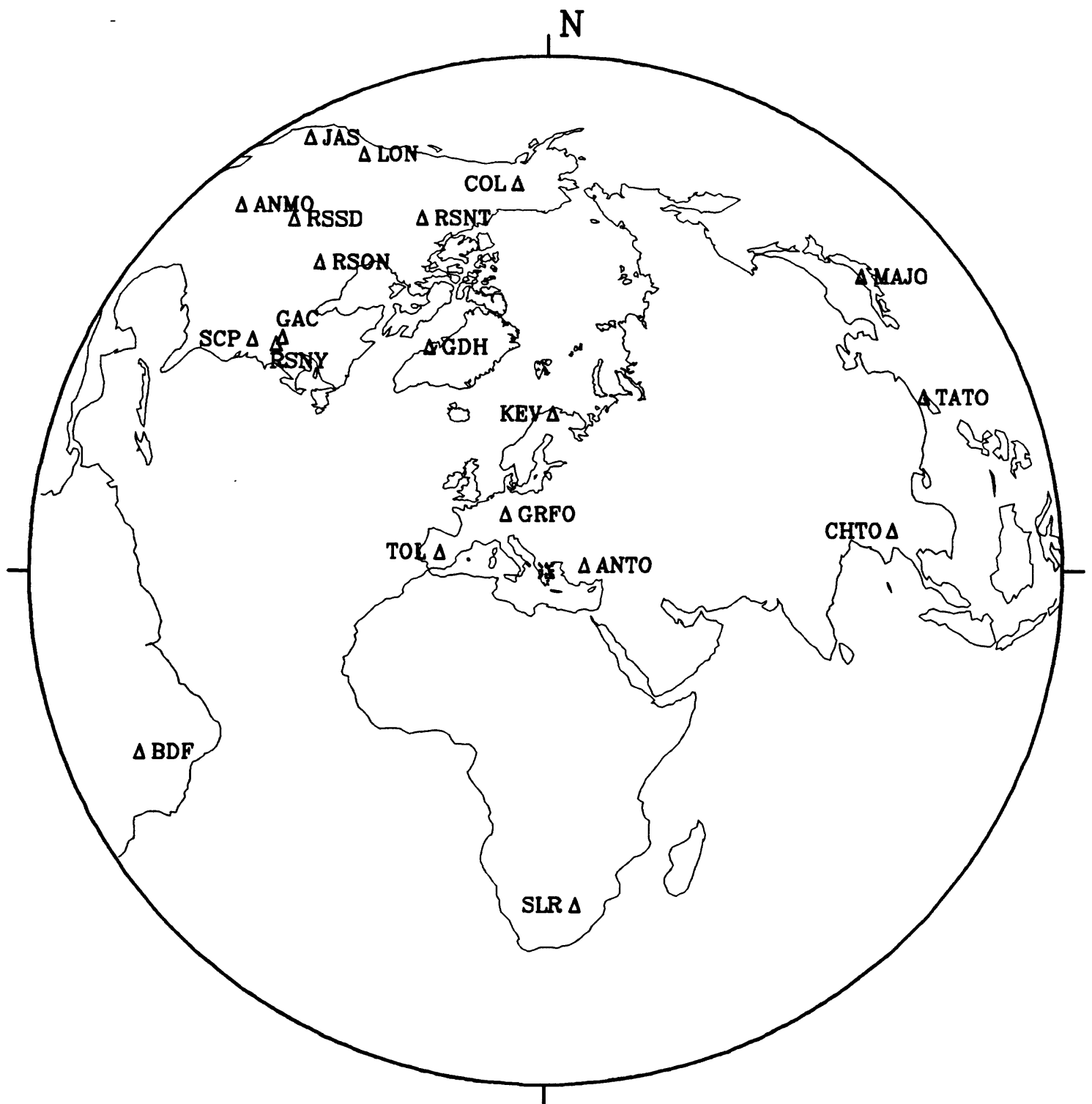
30 April 1985 08:45:28.64

LPZ

Southwestern Ryukyu Islands $h=51.2$ $m_b=5.3$ $M_{sz}=6.0$ 

30 April 1985 18:14:11.61

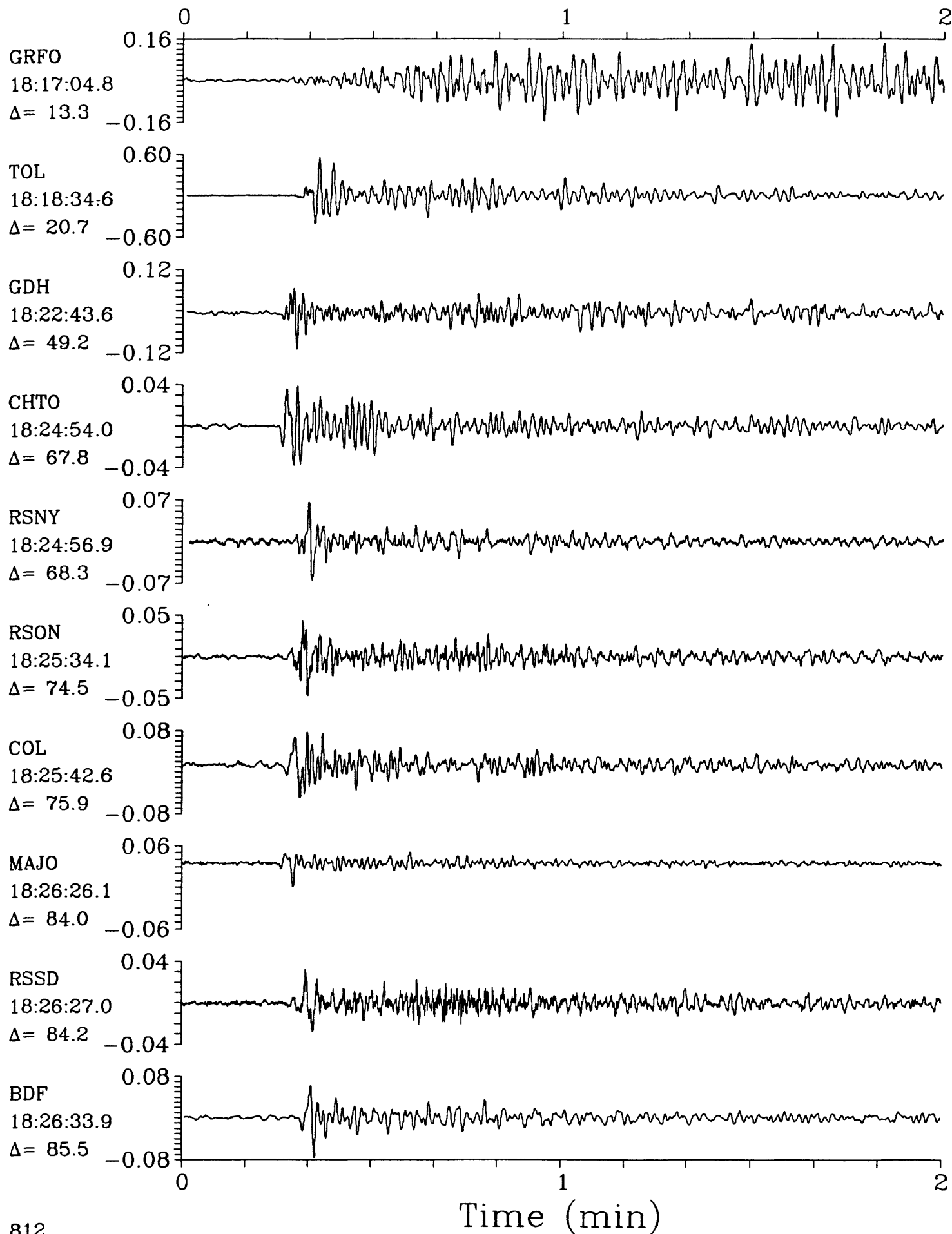
Greece

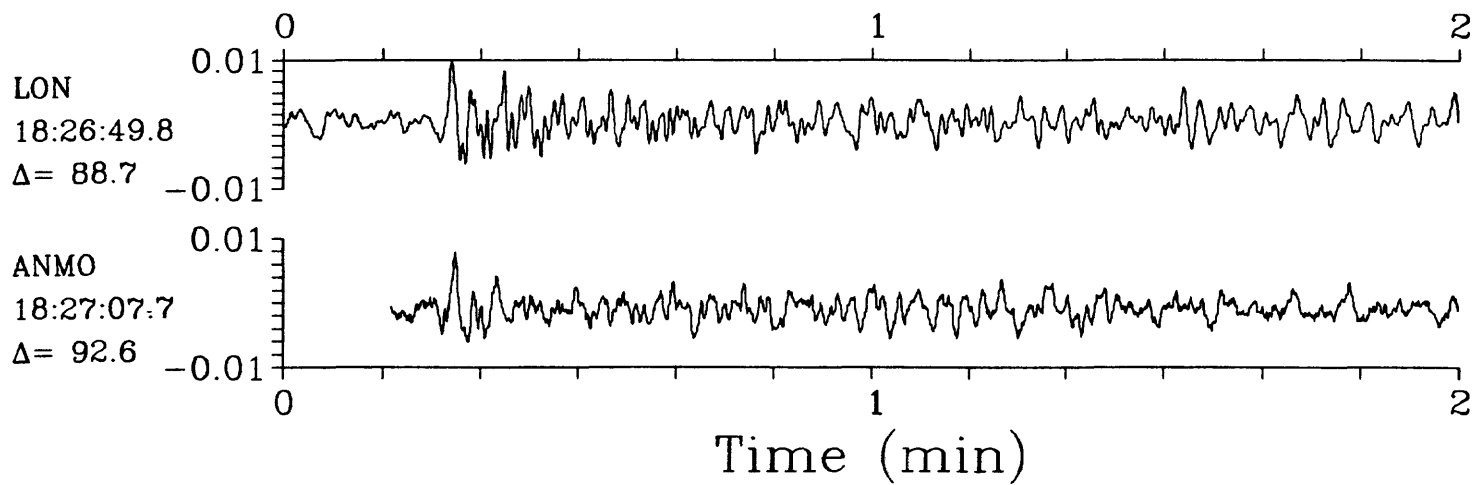


SPZ

30 April 1985 18:14:11.61
Greece $h=19.2$ $m_b=5.4$ $M_{SZ}=5.6$

SPZ





LPZ

30 April 1985 18:14:11.61
Greece $h=19.2$ $m_b=5.4$ $M_{SZ}=5.6$

LPZ

