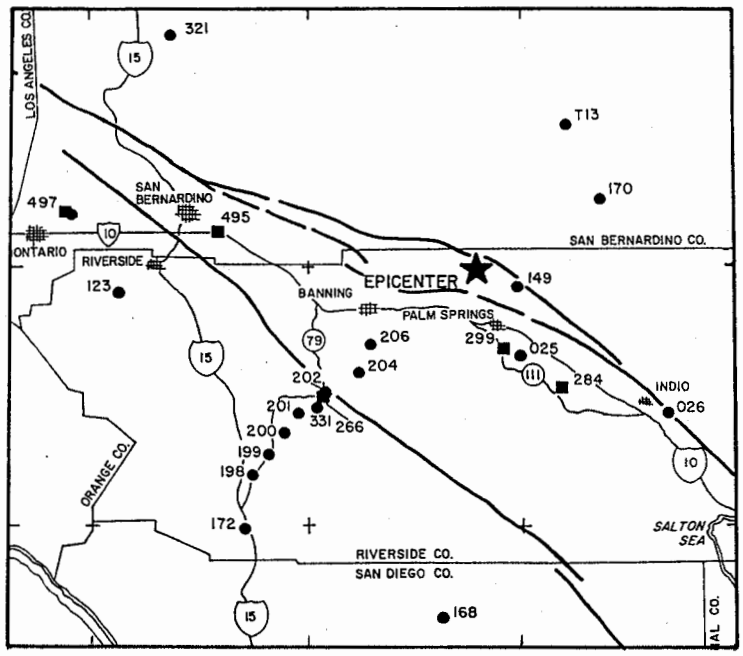
# PROCESSED STRONG MOTION DATA FROM THE PALM SPRINGS EARTHQUAKE OF 8 JULY 1986

# PART I

## GROUND-RESPONSE RECORDS




**CALIFORNIA DEPARTMENT OF CONSERVATION**
**DIVISION OF MINES AND GEOLOGY**
**OFFICE OF STRONG MOTION STUDIES**
**REPORT OSMS 87-01**

GORDON K. VAN VLECK, Secretary
THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor
STATE OF CALIFORNIA

RANDALL M. WARD, Director
DEPARTMENT OF CONSERVATION

**DIVISION OF MINES AND GEOLOGY**
BRIAN E. TUCKER
ACTING STATE GEOLOGIST

# PROCESSED STRONG MOTION DATA FROM THE PALM SPRINGS EARTHQUAKE OF 8 JULY 1986

## PART I. GROUND-RESPONSE RECORDS

M.J. Huang

D.L. Parke

R.W. Sherburne

A.F. Shakal

Report No. OSMS 87-01

California Strong Motion Instrumentation Program

California Department of Conservation

Division of Mines and Geology

Office of Strong Motion Studies

630 Bercut Drive, Sacramento, California 95814

June 1987

# CONTENTS


Page

Introduction . . . . . 1

Earthquake Characteristics . . . . . 1

CSMIP Stations and Instrumentation . . . . . 2

Accelerogram Digitization and Processing . . . . . 3

References . . . . . 14

Data Availability . . . . . 16

Appendix - Plots of Processed Data . . . . . 17

Organization and Order of Plots . . . . . 17

Stations:

Desert Hot Springs . . . . . 19
Palm Springs - Airport . . . . . 31
Silent Valley - Poppet Flat . . . . . 45
San Jacinto - Soboba . . . . . 57
San Jacinto - Valley Cemetery . . . . . 69
Hemet - Stetson Ave Fire Station . . . . . 81
Winchester - Page Bros. Ranch . . . . . 95
Winchester - Hidden Valley Farms . . . . . 107
Winchester - Bergman Ranch . . . . . 119
Murrieta Hot Springs - Collins Ranch . . . . . 131
Landers - Fire Station . . . . . 143
Joshua Tree - Fire Station . . . . . 155
Indio - Coachella Canal . . . . . 169
Temecula - CDF Fire Station . . . . . 183
Puerta La Cruz . . . . . 197
Riverside - Airport . . . . . 209
Hesperia . . . . . 221
Rancho Cucamonga - Law & Justice Center Free Field . 235

List of CSMIP Reports and Data Tapes . . . . . 247

## INTRODUCTION

Strong motion records were recovered from nearly thirty stations of the California Strong Motion Instrumentation Program (CSMIP) following the Palm Springs earthquake of July 8, 1986 (also known as North Palm Springs earthquake). Twenty-one of those stations were ground-response stations. This report presents results of the digitization and processing performed on the records obtained from eighteen of these stations. The unprocessed records for the remaining stations typically had maximum accelerations of 5% g or less, as shown in the data report by Huang et al. (1986), and were not digitized. The results for the digitization of strong-motion records obtained at CSMIP structural-response stations are presented in an accompanying Part II report (Huang et al., 1987). Strong-motion records obtained by other agencies such as the U.S. Geological Survey (USGS) are described in the report by Porcella et al. (1987).

## EARTHQUAKE CHARACTERISTICS

The Palm Springs earthquake occurred on July 8, 1986 within the San Andreas fault system in the northern part of the Coachella Valley. The epicenter of the mainshock has been located between the Mission Creek and Banning Faults of the San Andreas fault system (Hutton, 1986). Surface faulting was observed in the epicentral region (Hart, 1986). A total of about 7 cm of predominantly right-lateral strike-slip displacement was observed on the Banning Fault, a southern branch fault of the San Andreas Fault. The displacement observed was distributed over several parallel fault strands crossing Highway 62. Minor rupture was also observed on the

Mission Creek Fault and along a branch fault at the mouth of Whitewater Canyon.

Serious damage occurred at an electric power substation near Devers Hill, and at the Whitewater Interstate 10 overpass west of North Palm Springs. Specific reports on the earthquake damage and other aspects of the event are included in the EERI newsletter (August & September, 1986).

The earthquake location and magnitude are (K. Hutton, Caltech Seismological Lab., personal communication):

Origin Time: 09:20:45 GMT, 8 July 1986 (02:20:45 PDT)
Epicenter: 33.999 N, 116.606 W
Focal Depth: 12 Km
Magnitude: ML = 5.6

## CSMIP STATIONS AND INSTRUMENTATION

The locations of the earthquake epicenter and of the 18 SMIP ground-response stations for which data are included in this report are shown on the map in Figure 1. The locations of the five instrumented buildings for which data are included in the Part II report are also shown. The 18 ground-response stations are within the distance range of 10 to 90 km from the epicenter. For reference, the stations are listed in order of code number (three-digit code on the map) in Table 1A and are listed in alphabetical order in Table 1B. For each station, coordinates, site characteristics and maximum values of ground motion are given in Table 2. Table 2 also lists the distance of the station from the epicenter.

The Hemet array is a northeast-southwest alignment of stations which transects the San Jacinto Fault south of San Bernardino. This

earthquake is the first which triggered all stations of the array since it was installed in 1975. All the records from the 8 stations of the array are digitized and processed. For completeness, the free-field record from the San Bernardino County Law and Justice Center at Rancho Cucamonga (base-isolated building) is included in this report as well as the Part II report.

## ACCELEROGRAM DIGITIZATION AND PROCESSING

The digitization results presented in this report were obtained using a computer-driven optical scanning system. This facility is patterned after the system developed at the University of Southern California (Trifunac and Lee, 1979). In this system, a direct photographic negative copy of the film accelerogram is mounted on a rotating drum, which is scanned by a photodensitometer. The photodensitometer is mounted on a carriage moving perpendicular to the rotational direction of the drum. The resulting x-y array of optical density values is converted to raw time series through several trace-reconstruction steps. Baseline and other corrections are then applied to this raw data to obtain the acceleration data for further processing and spectral analysis. The subsequent post-digitization processing is similar to that first developed at the California Institute of Technology (Trifunac and Lee, 1973). As discussed in greater detail below, a change of operators was made to improve the instrument correction procedure at high frequencies. In addition, the results of system noise analyses are used to guide the selection of filter corner frequencies in CSMIP processing.

The accelerograms digitized for this report are from SMA-1 accelerographs having 3 channels of data recorded on a 70 mm

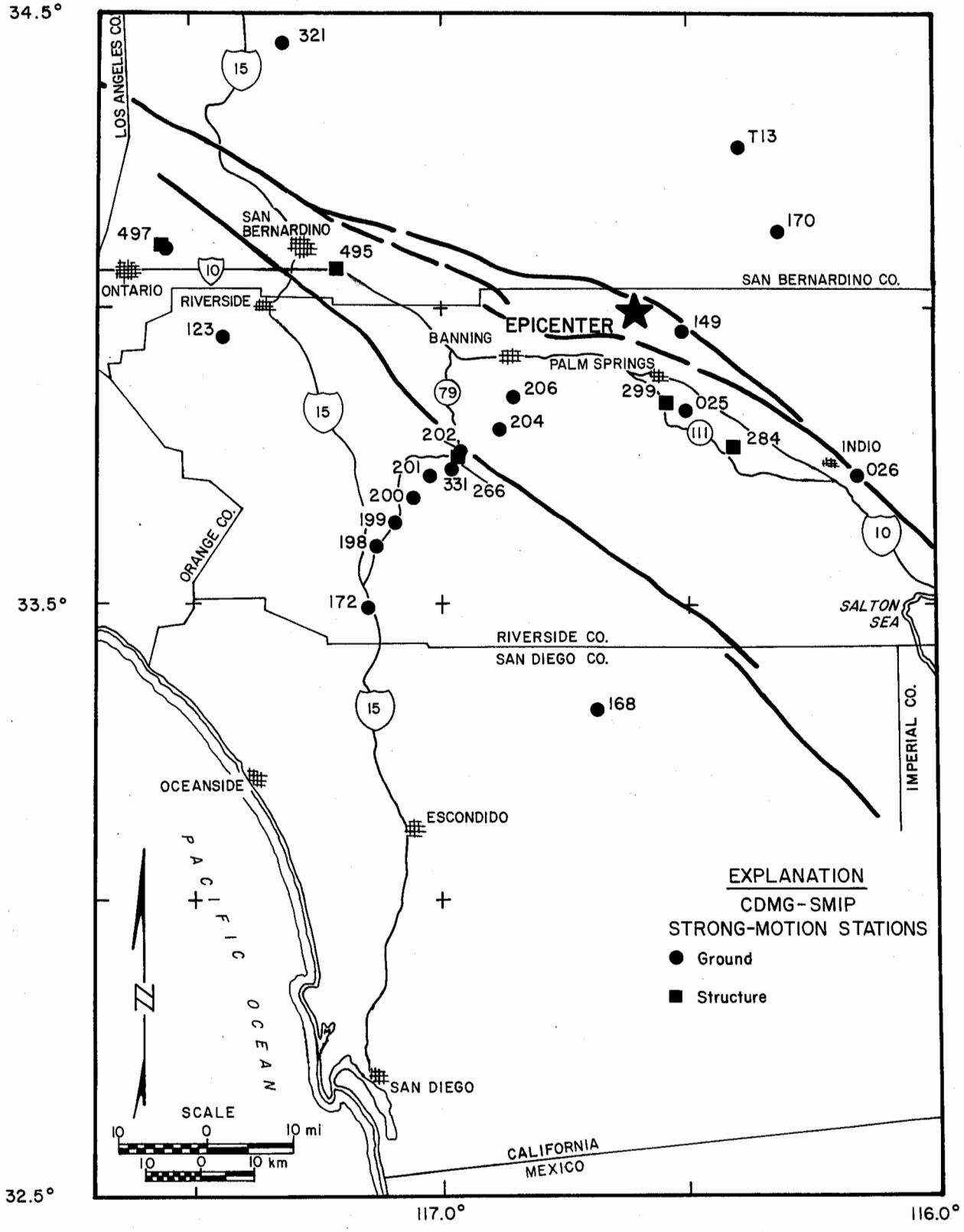



Fig. 1. Location of the epicenter and major faults in the vicinity of the 8 July 1986 earthquake near Palm Springs. Solid circles indicate the location of CSMIP ground-response stations for which digitized records are presented in this report. The stations are identified by 3-digit codes which are referenced to station names in Table 1A. The solid squares indicate the location of structural-response stations in the Part II report.

## Table 1A

## Station-Code Reference Table

| Code | Station No. | Station Name | Page |
|---|---|---|---|
| 025 | 12025 | Palm Springs Airport | 31 |
| 026 | 12026 | Indio Coachella Canal | 169 |
| 123 | 13123 | Riverside Airport | 209 |
| 149 | 12149 | Desert Hot Springs Pierson Blvd Fire Station | 19 |
| 168 | 12168 | Puerta La Cruz USFS Storage Bldg | 197 |
| 170 | 22170 | Joshua Tree Fire Station | 155 |
| 172 | 13172 | Temecula CDF Fire Station | 183 |
| 198 | 13198 | Murrieta Hot Springs Collins Ranch | 131 |
| 199 | 13199 | Winchester Bergman Ranch | 119 |
| 200 | 13200 | Winchester Hidden Valley Farms | 107 |
| 201 | 13201 | Winchester Page Bros. Ranch | 95 |
| 202 | 12202 | San Jacinto Valley Cemetery | 69 |
| 204 | 12204 | San Jacinto Soboba | 57 |
| 206 | 12206 | Silent Valley Poppet Flat | 45 |
| 321 | 23321 | Hesperia | 221 |
| 331 | 12331 | Hemet Stetson Ave Fire Station | 81 |
| 497 | 23497 | Rancho Cucamonga Law & Justice Center Free Field | 235 |
| T13 | 22T13 | Landers Fire Station | 143 |

## Table 1B

## Alphabetical List of Stations

| Station Name | Code |
|---|---|
| Desert Hot Springs Pierson Blvd Fire Station | 149 |
| Hemet Stetson Ave Fire Station | 331 |
| Hesperia | 321 |
| Indio Coachella Canal | 026 |
| Joshua Tree Fire Station | 170 |
| Landers Fire Station | T13 |
| Murrieta Hot Springs Collins Ranch | 198 |
| Palm Springs Airport | 025 |
| Puerta La Cruz USFS Storage Bldg | 168 |
| Rancho Cucamonga Law & Justice Center FF | 497 |
| Riverside Airport | 123 |
| San Jacinto Soboba | 204 |
| San Jacinto Valley Cemetery | 202 |
| Silent Valley Poppet Flat | 206 |
| Temecula CDF Fire Station | 172 |
| Winchester Bergman Ranch | 199 |
| Winchester Hidden Valley Farms | 200 |
| Winchester Page Bros. Ranch | 201 |

## Table 2 - Summary of Processed Ground-Response Records from

| Station No. | Station Name | Station Coordinates N Lat. | W Long. | Site Geology | Instrument Housing * | Epicentral Dist. ** (km) |
|---|---|---|---|---|---|---|
| 12149 | Desert Hot Springs Pierson Blvd Fire Station | 33.962 | 116.509 | Alluvium | 1-story bldg. | 10 |
| 12025 | Palm Springs Airport | 33.829 | 116.501 | Sand(3m) over alluvium | Instr. shltr A | 21 |
| | ---------- Hemet Array Stations (Northeast to Southwest) ---------- | | | | | |
| 12206 | Silent Valley Poppet Flat | 33.851 | 116.852 | Weathered granite | Instr. shltr A | 28 |
| 12204 | San Jacinto Soboba Castile Cyn Rd. | 33.797 | 116.880 | Alluvium | 1-story bldg. | 34 |
| 12202 | San Jacinto Valley Cemetery | 33.760 | 116.960 | Alluvium | 1-story bldg. | 42 |
| 12331 | Hemet Stetson Ave Fire Station | 33.729 | 116.979 | Deep alluvium | 1-story bldg. | 46 |
| 13201 | Winchester Page Bros. Ranch | 33.718 | 117.022 | Deep (200m?) alluvium | Instr. shltr A | 50 |
| 13200 | Winchester Hidden Valley Farms Newport Rd. | 33.681 | 117.056 | Thin soil(1m) over schist, granite | Instr. shltr A | 55 |
| 13199 | Winchester Bergman Ranch | 33.640 | 117.094 | Weathered granite | Instr. shltr A | 60 |
| 13198 | Murrieta Hot Springs Collins Ranch | 33.599 | 117.132 | Thin soil(1m) over weatherd granite | Instr. shltr A | 66 |
| | ---------- | | | | | |
| 22T13 | Landers Fire Station | 34.274 | 116.392 | Alluvium | 1-story bldg. | 36 |
| 22170 | Joshua Tree Fire Station | 34.131 | 116.314 | Alluvium (Shallow Vs~1130fps) | 1-story bldg. | 31 |
| 12026 | Indio Coachella Canal | 33.717 | 116.156 | Alluvium (Shallow Vs~1100fps) | Instr. shltr A | 52 |
| 13172 | Temecula CDF Fire Station | 33.496 | 117.149 | Alluvium | Instr. shltr H | 75 |
| 12168 | Puerta La Cruz USFS Storage Bldg. | 33.324 | 116.683 | Thin alluvium (8m?) over granite | 1-story bldg. | 75 |
| 13123 | Riverside Airport | 33.951 | 117.446 | Alluvium | 1-story bldg. | 78 |
| 23321 | Hesperia | 34.448 | 117.327 | Alluvium | 1-story bldg. | 83 |
| 23497 | Rancho Cucamonga Law & Justice Center Free Field | 34.104 | 117.574 | Sand,alluvium (250m?) over granite | Inst. shltr D | 90 |

* - The types of instrument shelters in this table are:
Instr. shltr A - small prefabricated metal building
Instr. shltr D - small metal box
Instr. shltr H - small fiberglass shelter
(adopted from Switzer et al., 1981)

** - Distance given relative to the epicenter at 33.999N, 116.606W.

**the 1986 Palm Springs Earthquake.**

| Station No. | Trigger Time # | Component Azimuth (deg.) | Peak Accel. (g) ## | Peak Velocity (cm/sec) | Peak Displ. (cm) | Processed Record Length(sec) | Long-Period Filter Limit | Page |
|---|---|---|---|---|---|---|---|---|
| 12149 | 20:47.5 | 90 | 0.274 | 18.5 | 4.3 | 60 | 6.25 secs (0.16 Hz) | 19 |
| | | UP | 0.563 | 19.6 | 1.9 | | | |
| | | 360 | 0.330 | 33.9 | 7.2 | | | |
| 12025 | 20:48.8 | 90 | 0.199 | 11.5 | 2.4 | 60 | 6.25 secs (0.16 Hz) | 31 |
| | | UP | 0.192 | 6.6 | 1.4 | | | |
| | | 360 | 0.167 | 12.3 | 2.4 | | | |
| | ---------- Hemet Array Stations (Northeast to Southwest) ---------- | | | | | | | |
| 12206 | 20:50.9 | 90 | 0.119 | 3.6 | 0.5 | 60 | 2.50 secs (0.40 Hz) | 45 |
| | | UP | 0.099 | 2.7 | 0.3 | | | |
| | | 360 | 0.145 | 3.8 | 0.2 | | | |
| 12204 | 20:50.9 | 90 | 0.243 | 9.3 | 1.1 | 60 | 3.33 secs (0.30 Hz) | 57 |
| | | UP | 0.208 | 6.4 | 0.8 | | | |
| | | 360 | 0.256 | 9.5 | 1.1 | | | |
| 12202 | 20:53.8 | 360 | 0.064 | 4.0 | 0.7 | 60 | 3.33 secs (0.30 Hz) | 69 |
| | | UP | 0.055 | 1.8 | 0.2 | | | |
| | | 270 | 0.071 | 3.0 | 0.6 | | | |
| 12331 | 20:53.1 | 360 | 0.136 | 4.7 | 0.5 | 60 | 2.50 secs (0.40 Hz) | 81 |
| | | UP | 0.096 | 3.0 | 0.2 | | | |
| | | 270 | 0.149 | 4.8 | 0.6 | | | |
| 13201 | 20:54.5 | 90 | 0.112 | 4.4 | 0.5 | 60 | 2.50 secs (0.40 Hz) | 95 |
| | | UP | 0.073 | 2.0 | 0.2 | | | |
| | | 360 | 0.109 | 4.0 | 0.6 | | | |
| 13200 | 21:00.6 | 360 | 0.079 | 1.3 | 0.1 | 40 | 1.67 secs (0.60 Hz) | 107 |
| | | UP | 0.043 | 0.8 | 0.1 | | | |
| | | 270 | 0.089 | 1.3 | 0.1 | | | |
| 13199 | 20:59.5 | 90 | 0.096 | 1.8 | 0.2 | 40 | 1.67 secs (0.60 Hz) | 119 |
| | | UP | 0.079 | 1.3 | 0.1 | | | |
| | | 360 | 0.072 | 1.7 | 0.2 | | | |
| 13198 | 20:56.9 | 90 | 0.051 | 1.3 | 0.1 | 40 | 1.25 secs (0.8 Hz) | 131 |
| | | UP | 0.034 | 0.8 | 0.1 | | | |
| | | 360 | 0.054 | 1.4 | 0.1 | | | |
| | ---------- | | | | | | | |
| 22T13 | 20:51.9 | 90 | 0.103 | 4.6 | 0.5 | 60 | 1.67 secs (0.60 Hz) | 143 |
| | | UP | 0.056 | 2.5 | 0.1 | | | |
| | | 360 | 0.084 | 4.2 | 0.5 | | | |
| 22170 | 20:50.9 | 90 | 0.067 | 4.0 | 0.6 | 60 | 2.50 secs (0.40 Hz) | 155 |
| | | UP | 0.042 | 3.8 | 0.6 | | | |
| | | 360 | 0.052 | 4.0 | 0.9 | | | |
| 12026 | 20:54.4 | 90 | 0.052 | 3.7 | 1.0 | 60 | 3.33 secs (0.30 Hz) | 169 |
| | | UP | 0.061 | 2.1 | 0.5 | | | |
| | | 360 | 0.057 | 6.0 | 1.7 | | | |
| 13172 | 20:58.2 | 90 | 0.102 | 5.4 | 0.7 | 60 | 2.50 secs (0.40 Hz) | 183 |
| | | UP | 0.031 | 1.2 | 0.2 | | | |
| | | 360 | 0.107 | 7.2 | 0.5 | | | |
| 12168 | 20:57.8 | 348 | 0.061 | 1.7 | 0.1 | 40 | 1.25 secs (0.80 Hz) | 197 |
| | | UP | 0.044 | 1.8 | 0.2 | | | |
| | | 258 | 0.077 | 2.4 | 0.2 | | | |
| 13123 | 20:58.1 | 270 | 0.041 | 0.9 | 0.08 | 40 | 1.25 secs (0.80 Hz) | 209 |
| | | UP | 0.025 | 0.5 | 0.03 | | | |
| | | 180 | 0.053 | 1.0 | 0.06 | | | |
| 23321 | 20:59.1 | 92 | 0.038 | 1.3 | 0.2 | 40 | 2.50 secs (0.40 Hz) | 221 |
| | | UP | 0.034 | 1.2 | 0.3 | | | |
| | | 2 | 0.043 | 2.1 | 0.3 | | | |
| 23497 | 21:01.7 | 90 | 0.021 | 0.8 | 0.1 | 40 | 1.25 secs (0.80 Hz) | 235 |
| | | UP | --- | | | | | |
| | | 360 | 0.022 | 0.9 | 0.1 | | | |

\# Accelerograph trigger time, when known, in seconds after 09:00 GMT on 8 July 1986.

\## Volume I peak acceleration values; absolute values are given for peak acceleration, velocity and displacement.

(2.75 in) wide film. For each accelerogram, the 70 mm film contains three acceleration traces, two straight-line reference traces, and two time-mark traces. For all the accelerograms presented in this report, one of the time-mark traces contains a WWVB time code. The accelerograph trigger times are listed in Table 2.

The sequence of steps in processing these records is summarized in the following:

1. The film record, 70 mm wide and about 60 cm (60 seconds) long, is contact-copied onto a 25 cm by 25 cm high-contrast photographic negative; three sections of the record, each approximately 22 cm (22 seconds) in length, are copied onto a single negative. To facilitate subsequent reconstruction of the original record, adjacent sections are copied so that they have an overlap of approximately 2 seconds. For further details, refer to the report by Trifunac and Lee (1979).

2. The negative containing the three sections of the accelerogram is digitized into x and y coordinates by the optical scanner. The scanner sampling rate used for these records is 200 samples per centimeter in x and y. This is nominally equal to a time step of 0.005 second (200 samples/sec) and an acceleration increment of 0.003 g.

3. The raw x,y data from the individual sections are concatenated to form continuous acceleration traces, straight-line reference traces and timing traces.

4. Vol. I Processing. The reference traces are subtracted from the acceleration traces to remove any spurious film-movement effects. The axis of zero acceleration is determined. The time-mark traces are used to obtain an accurate time scale. The

starting times of the acceleration channels are adjusted so any time phasing error from one channel to another is less than 0.02 sec (i.e., less than one time increment in the Vol. II data). The instrument sensitivities are used to scale ordinate values to accelerations. The length of the record processed in this report is 40 or 60 seconds depending on the duration of motion.

5. Vol. II Processing. The Vol. I acceleration data are interpolated to obtain exactly 200 pts/sec sampling (100 Hz Nyquist frequency). The instrumental data are corrected to true acceleration using a simple finite-difference based instrument correction operator. A high-frequency Ormsby filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz is applied. The data are then decimated to 50 pts/sec (25 Hz Nyquist). As discussed in Shakal and Ragsdale (1984), this order (instrument correction prior decimation) improves the accuracy of the instrument correction procedure at high frequencies while still using the same simple operator used in the original Caltech code (Trifunac and Lee, 1973). The acceleration data are initially corrected for long-period errors by using a low-frequency Ormsby filter with a ramp from 0.05 to 0.07 Hz. Velocity and displacement are integrated from acceleration and filtered using the same low-frequency Ormsby filter as for the acceleration. To prevent the introduction of spurious long-period energy through aliasing, an Ormsby filter rather than a running mean filter is used prior to the decimation associated with the long period filtering (Shakal, 1982; Shakal and Ragsdale, 1984).

6. Vol. III Processing. The response spectra for periods from 0.04 to 15 seconds and damping values of 0, 2, 5, 10 and 20 per cent

of critical are calculated from the accelerations obtained in Step 5. The Fourier amplitude spectral values are also computed for these periods. A preliminary plot of the pseudo-velocity(PSV) response spectrum is generated for use in filter selection.

7. The Vol. II Processing of Step 5 is repeated, but with a new low-frequency Ormsby filter to remove long-period noise in the record. The corner frequency of the filter used depends on the signal-to-noise ratio in the record and the noise level of the digitizing system. The long-period intersection of the PSV spectrum obtained in Step 6 and the CSMIP system average noise spectrum shown in Fig. 2 (from Shakal and Ragsdale, 1984) indicates the long-period limit of useful information. An iterative procedure is used, with the filter corner being set at progressively shorter periods in order to remove the long period noise while preserving as much of the signal as possible. The final value of the filter corner used is shown on the titles of the plots. The acceleration, velocity and displacement time histories obtained using this filter are the final Vol. II data written on a magnetic tape and presented in this report.

8. The final relative velocity response spectrum (SV), relative displacement response spectrum (SD), absolute acceleration response spectrum (SA), and Fourier amplitude spectrum (FS) are computed using the final filter settings. The pseudo-velocity response spectra (PSV) computed from SD are plotted on tripartite logarithmic paper and presented in this report. In addition, the SA spectra are plotted versus period with a linear scale.

Note that the optimal filter corner is obtained for each accelerogram; all accelerograms from a single earthquake are not

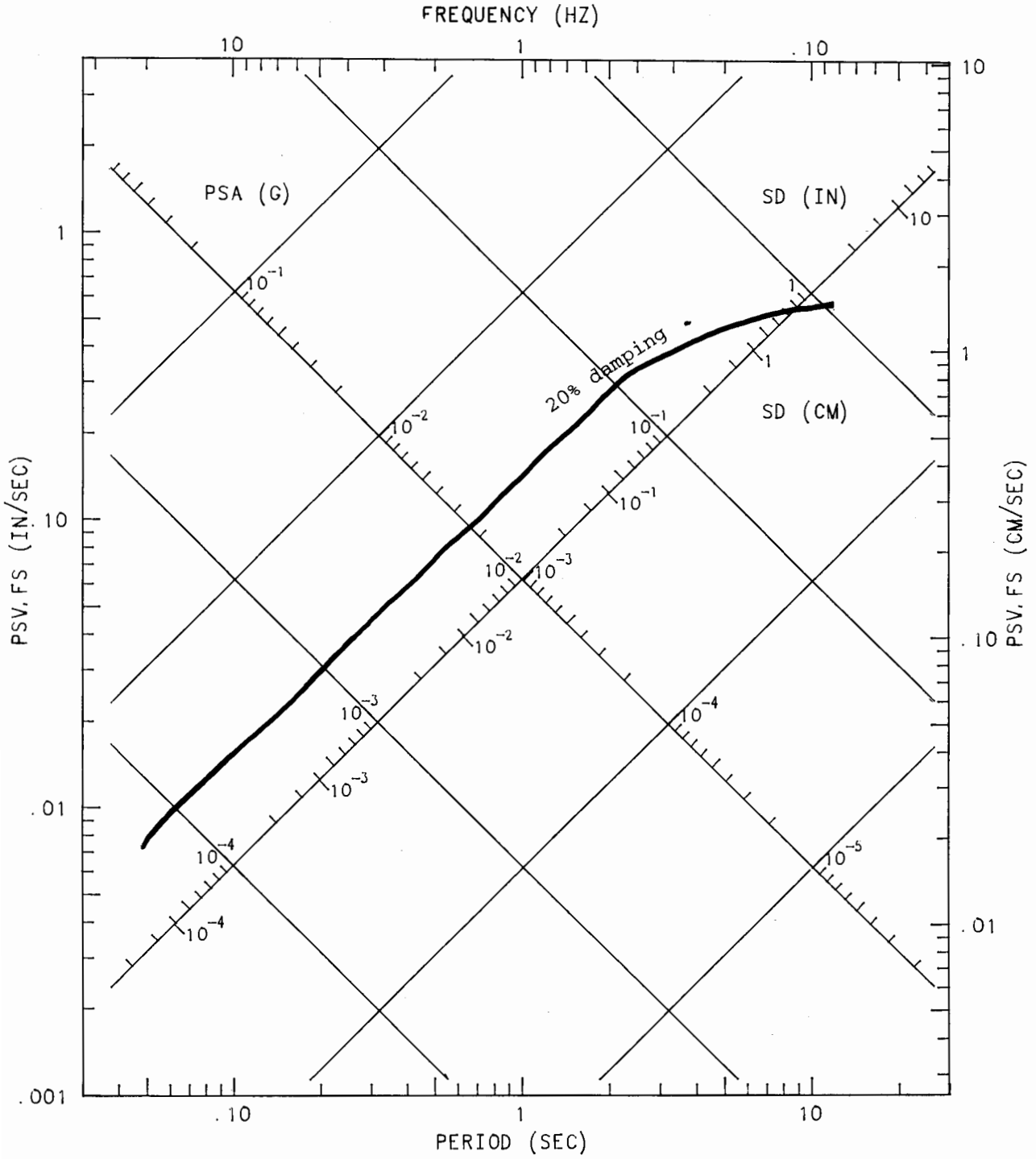



Fig. 2. Noise-level spectra (PSV, 20% damping) for the CSMIP digitization system (from Shakal and Ragsdale, 1984).

restricted to have a single filter corner frequency. However, the same filter corner is used for all channels from a single accelerogram to make channel-to-channel comparisons convenient.

As discussed above, Fig. 2 shows the average noise spectrum for the CSMIP digitization system. It is also useful to consider the noise characteristics in terms of actual time-domain amplitudes. Fig. 3 shows typical noise amplitudes present in acceleration, in velocity, and in displacement time histories obtained for different long-period filter cutoff settings. For example, Fig. 3 indicates that for a filter cutoff near 10 seconds, the expected noise level is near 0.002 g in acceleration, 1 cm/sec in velocity, and 1 cm in displacement.

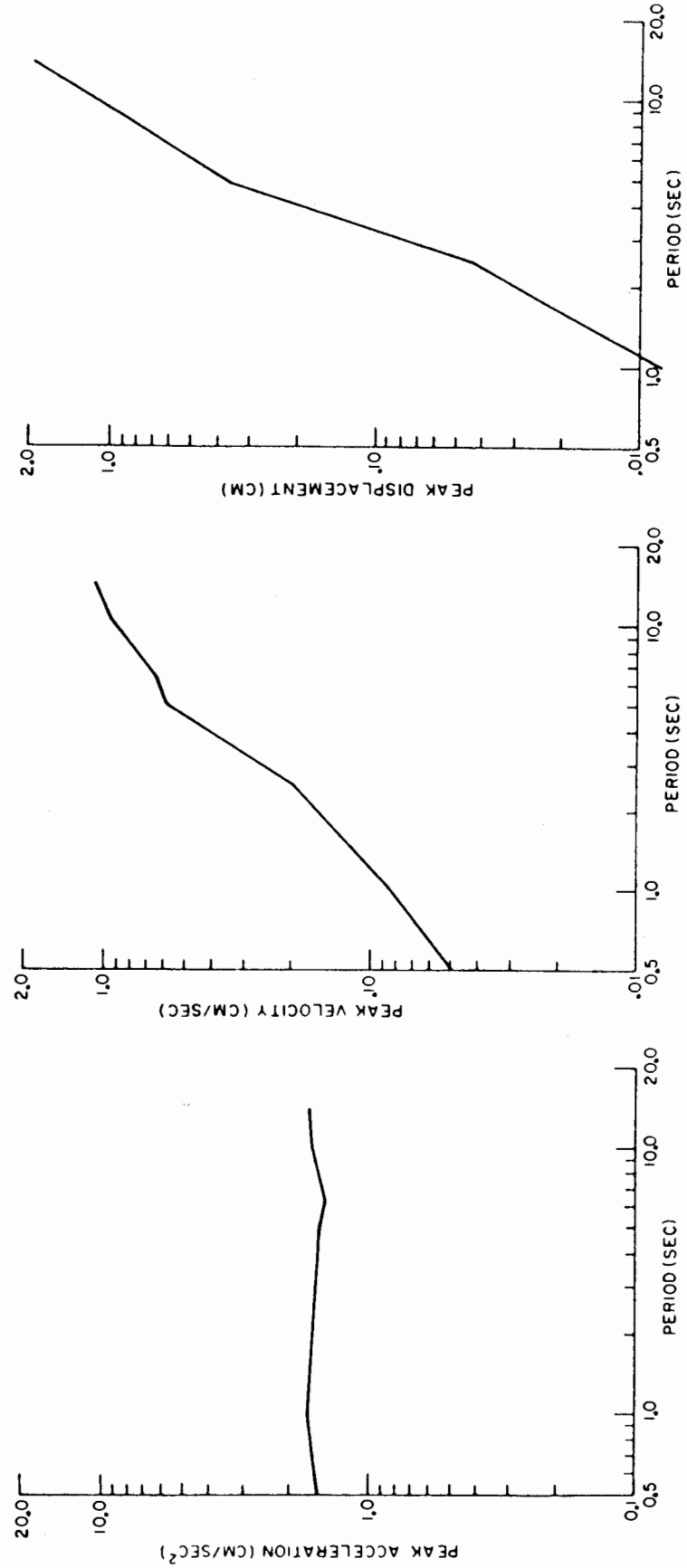



Fig. 3. Processing noise present in a typical acceleration (left), velocity (middle) and displacement (right) record processed with a long-period filter cut-off period ranging from 0.5 sec to 15 secs (from Shakal and Ragsdale, 1984).

## REFERENCES

Earthquake Engineering Research Institute Newsletter, Vol. 20, No. 8 & 9, August and September, 1986.

Hart, E., 1986, personal communication, California Division of Mines and Geology.

Huang, M.J., R.W. Sherburne, D.L. Parke, and A.F. Shakal, 1987, CSMIP strong-motion records from the Palm Springs, California earthquake of 8 July 1986, Calif. Div. Mines and Geology, Report No. OSMS 86-05.

Huang, M.J., A.F. Shakal, D.L. Parke, and R.W. Sherburne, 1987, Processed strong-motion data from the Palm Springs earthquake of 8 July 1986, Part II. Structural-response records, Calif. Div. Mines and Geology, Report No. OSMS 87-02.

Hutton, K., 1986, personal communication, Seismo. Lab., California Institute of Technology.

Lee, V.W. and M.D. Trifunac, 1979, Automatic digitization and processing of strong-motion accelerograms, Part II: Computer processing of accelerograms, Report No. 79-15 II, Dept. of Civil Engineering, Univ. of Southern Calif., Los Angeles.

Porcella, R.L., E. Etheredge, R. Maley and J. Switzer, 1987, Strong-motion data from the July 8, 1986 North Palm Springs earthquake and aftershocks, U.S. Geological Survey, Open File Report 87-155.

Shakal, A.F., 1982, Spectral folding in the processing of strong-motion accelerograms, (abstr.), Trans. Amer. Geophys. Union, Vol. 63, p. 1037.

Shakal, A.F. and M.J. Huang, 1985, Standard tape format for CSMIP strong-motion data tapes, Calif. Div. Mines and Geology, Report No. OSMS 85-03.

Shakal, A.F. and J.T. Ragsdale, 1984, Acceleration, velocity and displacement noise analysis for the CSMIP accelerogram digitization system, Proc. 8th World Conference on Earthquake Engineering, Vol. 2, pp. 111-118.

Switzer, J., D. Johnson, R. Maley, and R.B. Matthiesen, 1981, Western hemisphere strong-motion accelerograph station list - 1980, U.S. Geological Survey Open File Report No. 81-664.

Trifunac, M.D. and V.W. Lee, 1973, Routine computer processing of strong-motion accelerograms, Earthquake Engineering Research Lab., Report EERL 73-03, Calif. Inst. of Technology, Pasadena.

Trifunac, M.D. and V.W. Lee, 1979, Automatic digitization and processing of strong-motion accelerograms, Part I: Automatic digitization, Report No. 79-15 I, Dept. of Civil Engineering, Univ. of Southern Calif., Los Angeles.

## DATA AVAILABILITY

The processed data for the CSMIP ground-response records presented in this report are available on two magnetic tapes, one containing Vol. I data (named PALMSPRINGS86-IG) and the other Vol. II and III data (PALMSPRINGS86-G). They are written in a standard CSMIP format similar to that of the Caltech tapes, documented in Shakal and Huang (1985). These tapes are available in standard ASCII or EBCDIC blocked (unlabeled) coding, and can be obtained at nominal cost from this office:

Office of Strong Motion Studies
Division of Mines and Geology
California Department of Conservation
630 Bercut Drive, Sacramento, California 95814

Phone: (916) 322-3105

# APPENDIX

# PLOTS OF PROCESSED DATA

## Organization and Order of Plots

In this appendix, the processed data plots and related information for each station are presented in the following order:

1. Colored title/separator page.

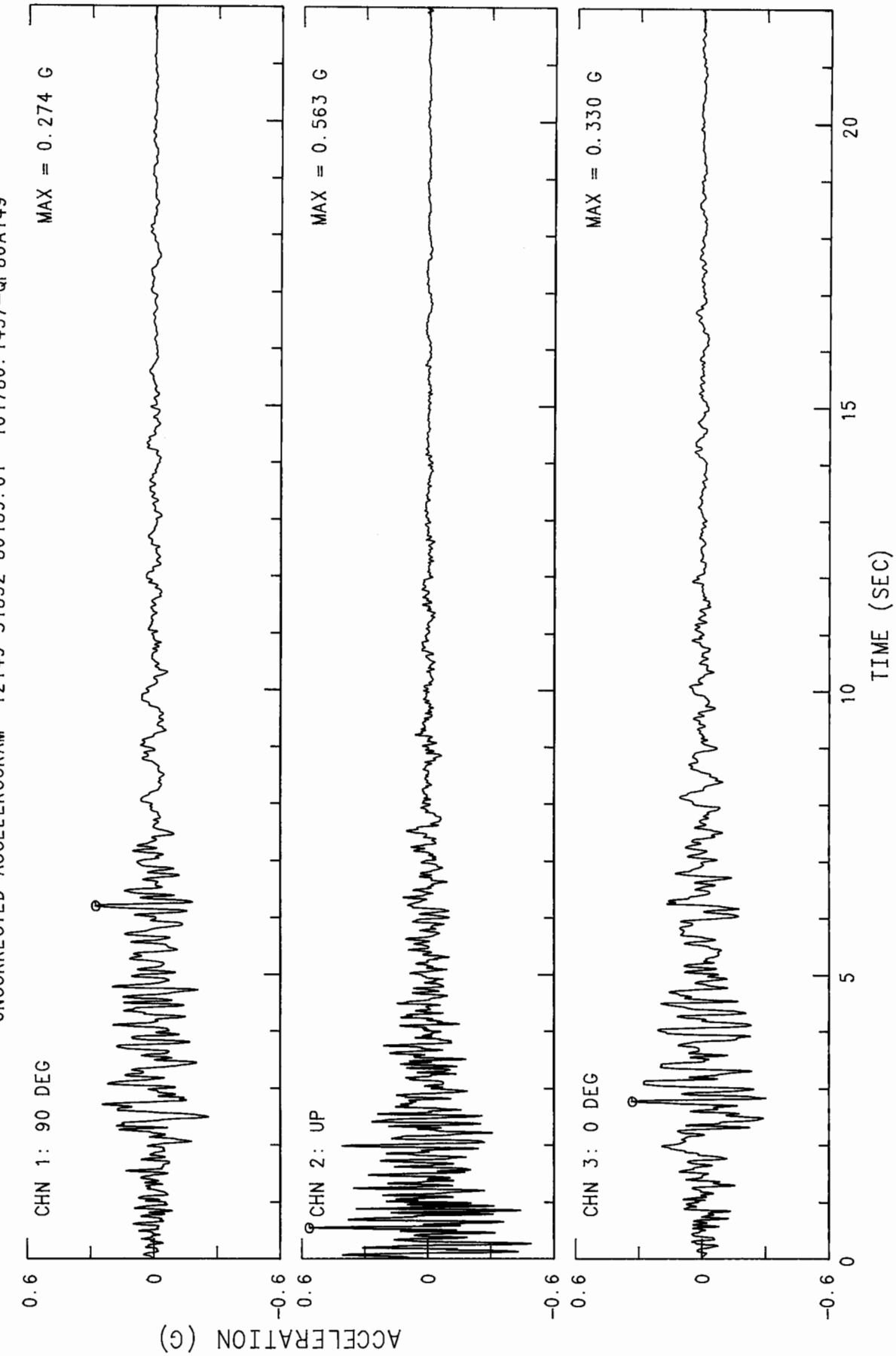
2. Uncorrected accelerograms (Vol. I data). The three components of the acceleration for the first 22 seconds are plotted with a common scaling factor and a common 22-second time axis length (which corresponds to a time scale of approximately 1 second per centimeter, like an SMA film record). This plot is followed by another plot of the full processed length (40 or 60 seconds) with each component individually scaled.

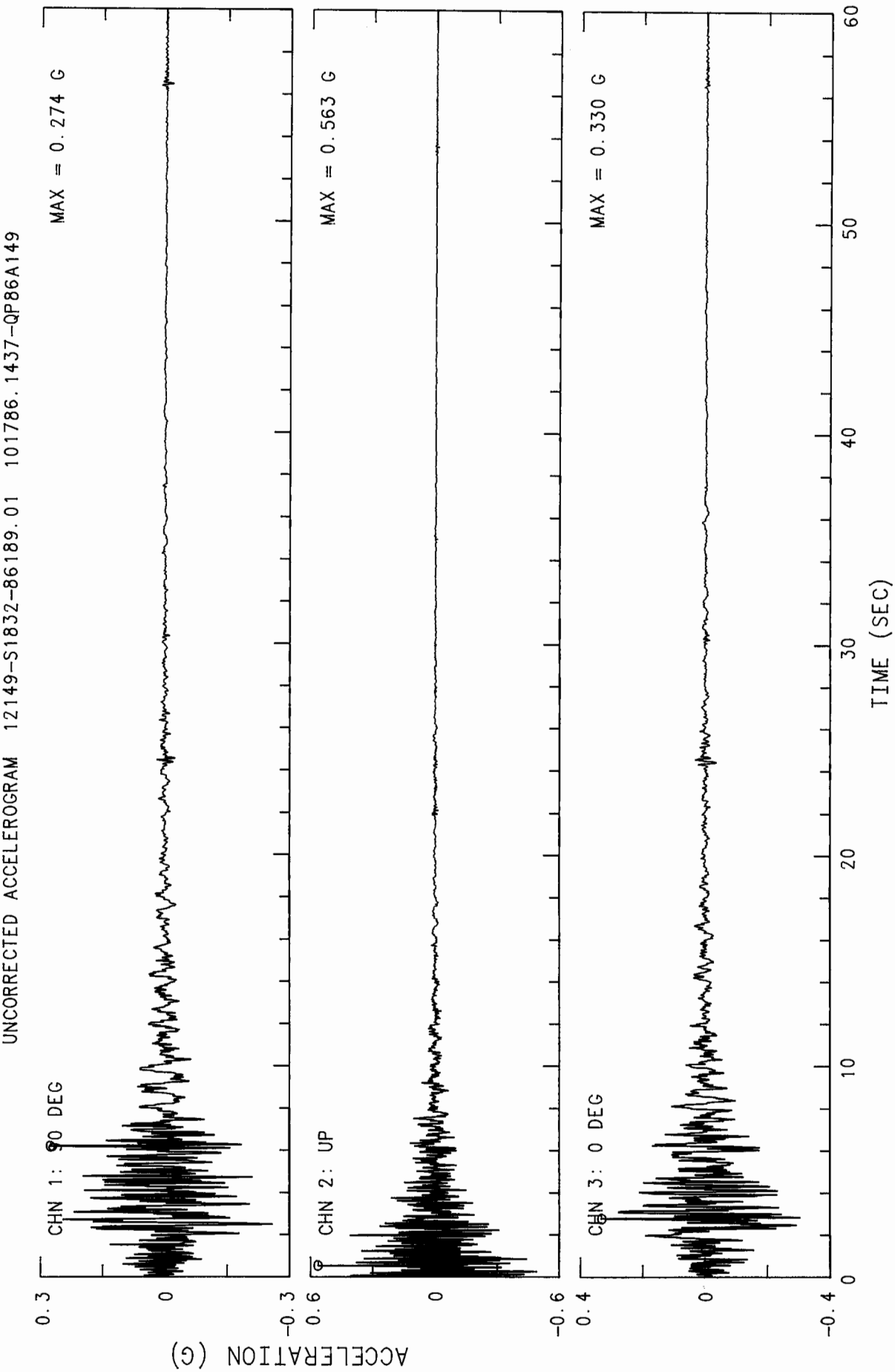
3. Instrument and baseline-corrected acceleration, velocity and displacement (Vol. II data). The filter frequencies used are indicated on the plots. One 22-second plot per component, plotted with equal scaling for all three components. For some stations with longer-duration signal, this is augmented by a 40- or 60-second plot.

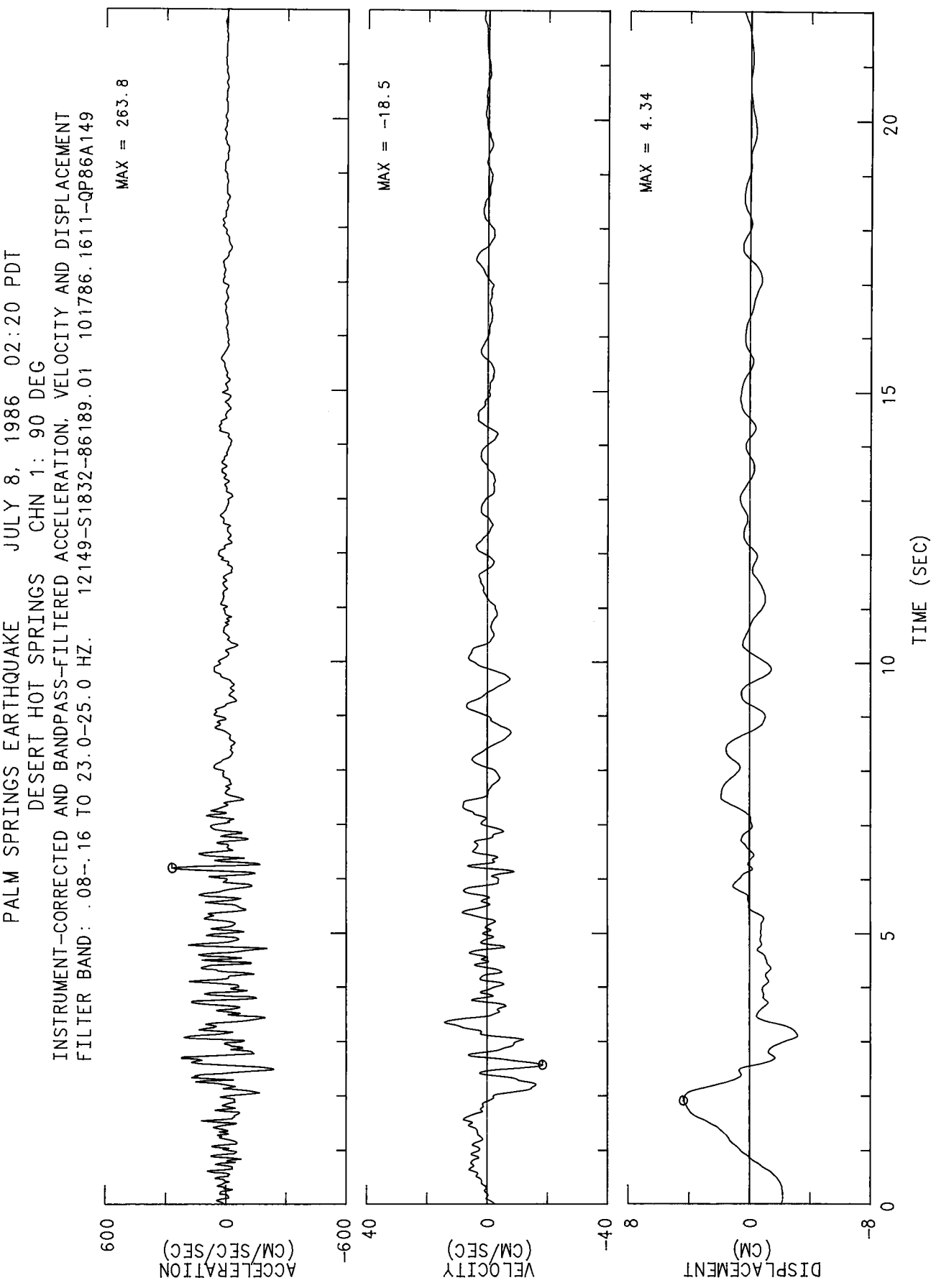
4. Absolute acceleration response spectra (Vol. III data). The absolute acceleration (Sa) spectra for 0%, 2%, 5%, 10%, and 20% dampings are plotted against period for periods from 0 to 2 seconds, all three components on a single page, with linear-linear scaling.

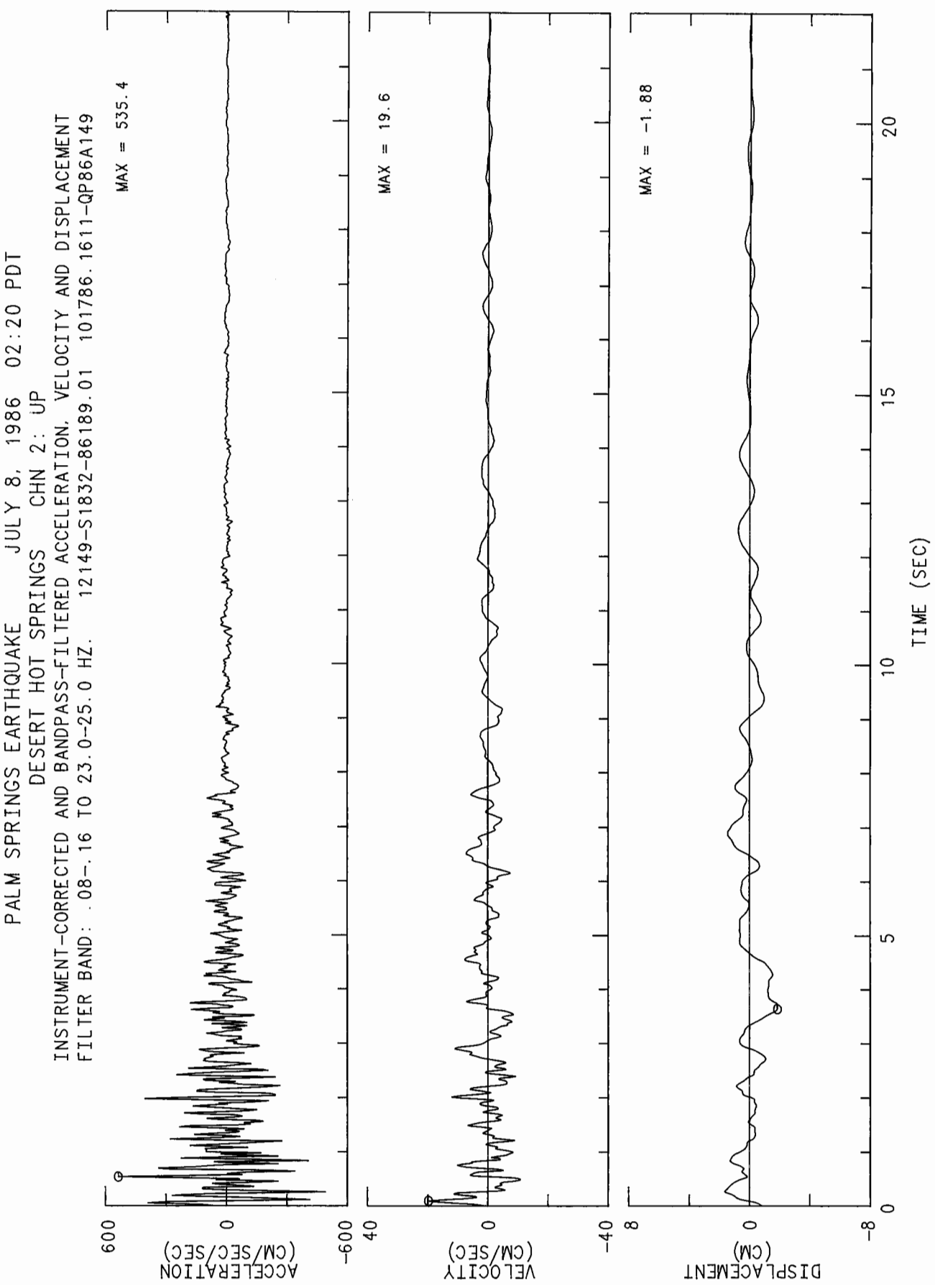
5. Response and Fourier amplitude spectra (Vol. III data). One spectral plot per component. The spectra are plotted for periods from 0.04 second (25 Hz) to the period used in the final long-period filters used in the Vol. II processing.

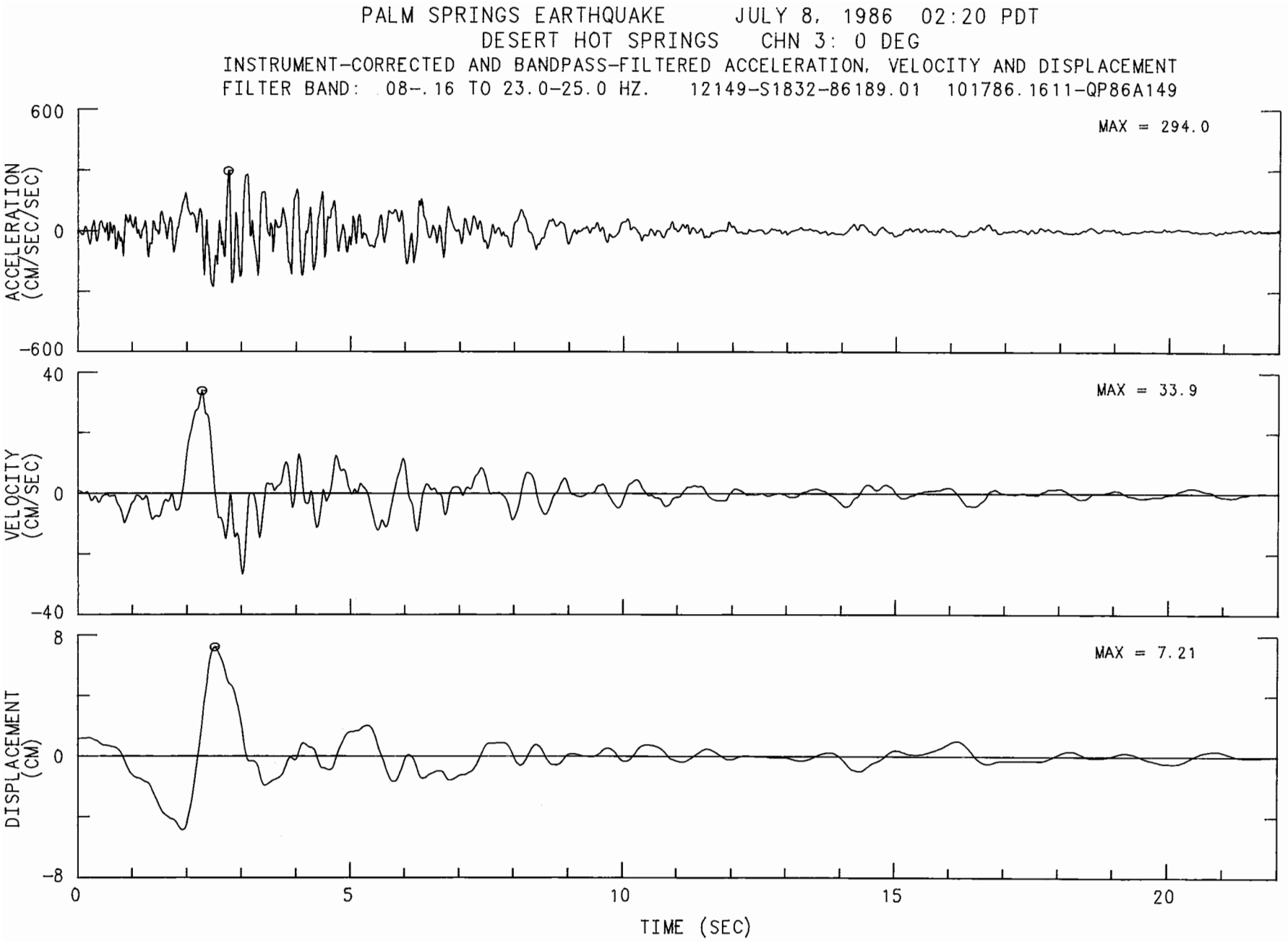
DESERT HOT SPRINGS


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROGRAM 12149-S1832-86189.01 101786.1437-QP86A149
CHN 1: 90 DEG
MAX = 0.274 G
CHN 2: UP
MAX = 0.563 G
CHN 3: 0 DEG
MAX = 0.330 G
ACCELERATION (G)
0.6
0
-0.6
0
5
10
15
20
TIME (SEC)

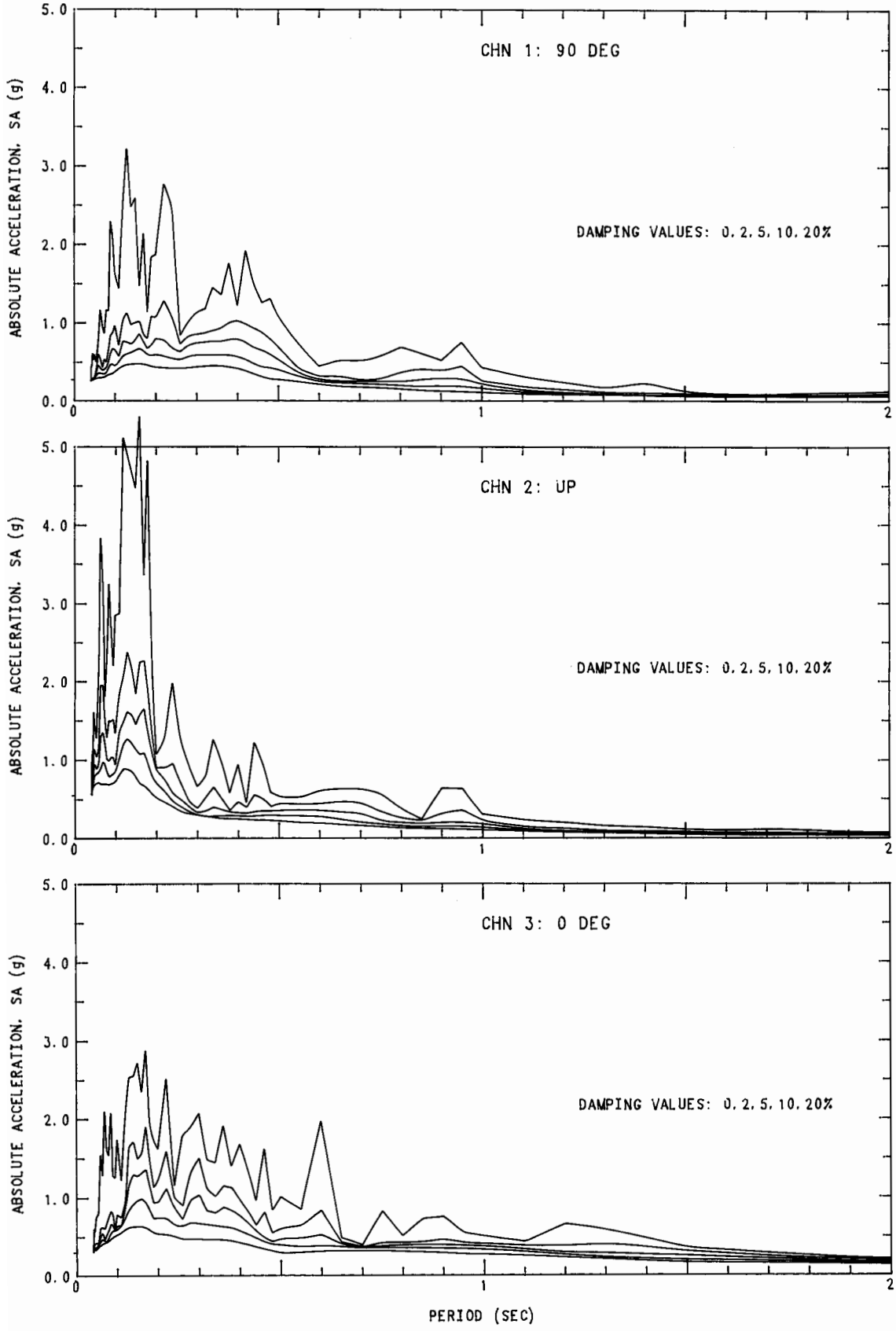

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROGRAM 12149-S1832-86189.01 101786.1437-QP86A149
CHN 1: 90 DEG
MAX = 0.274 G
CHN 2: UP
MAX = 0.563 G
CHN 3: 0 DEG
MAX = 0.330 G
ACCELERATION (G)
TIME (SEC)
0.3
0
-0.3
0.6
0
-0.6
0.4
0
-0.4
0
10
20
30
40
50
60


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12149-S1832-86189.01 101786.1611-QP86A149
MAX = 263.8
MAX = -18.5
MAX = 4.34
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
600
0
-600
40
0
-40
8
0
-8
0
5
10
15
20

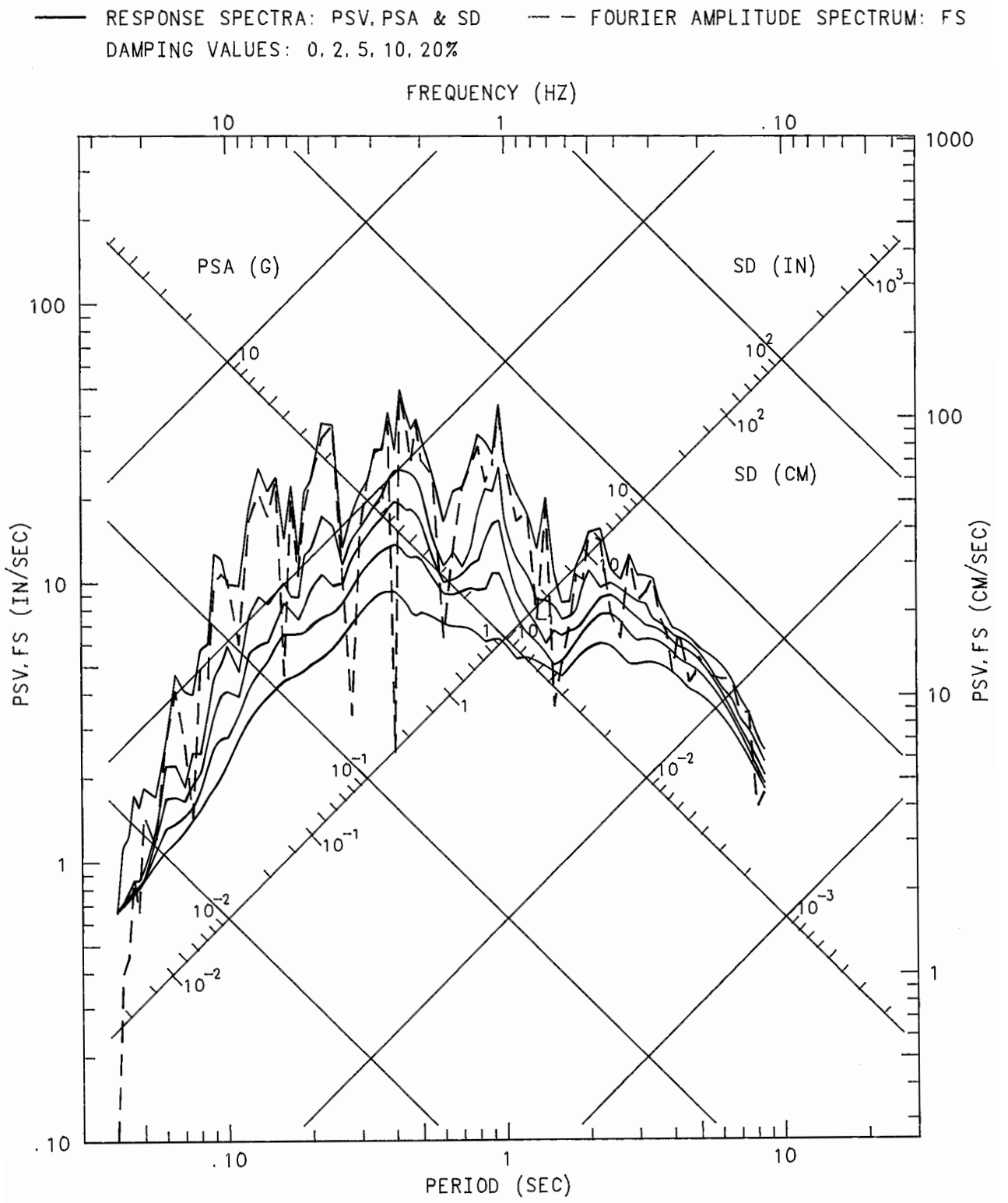

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12149-S1832-86189.01 101786.1611-QP86A149
MAX = 535.4
MAX = 19.6
MAX = -1.88
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
600
0
-600
40
0
-40
8
0
-8
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12149-S1832-86189.01 101786.1611-QP86A149
ACCELERATION (CM/SEC/SEC)
600
0
-600
MAX = 294.0
VELOCITY (CM/SEC)
40
0
-40
MAX = 33.9
DISPLACEMENT (CM)
8
0
-8
MAX = 7.21
0
5
10
15
20
TIME (SEC)

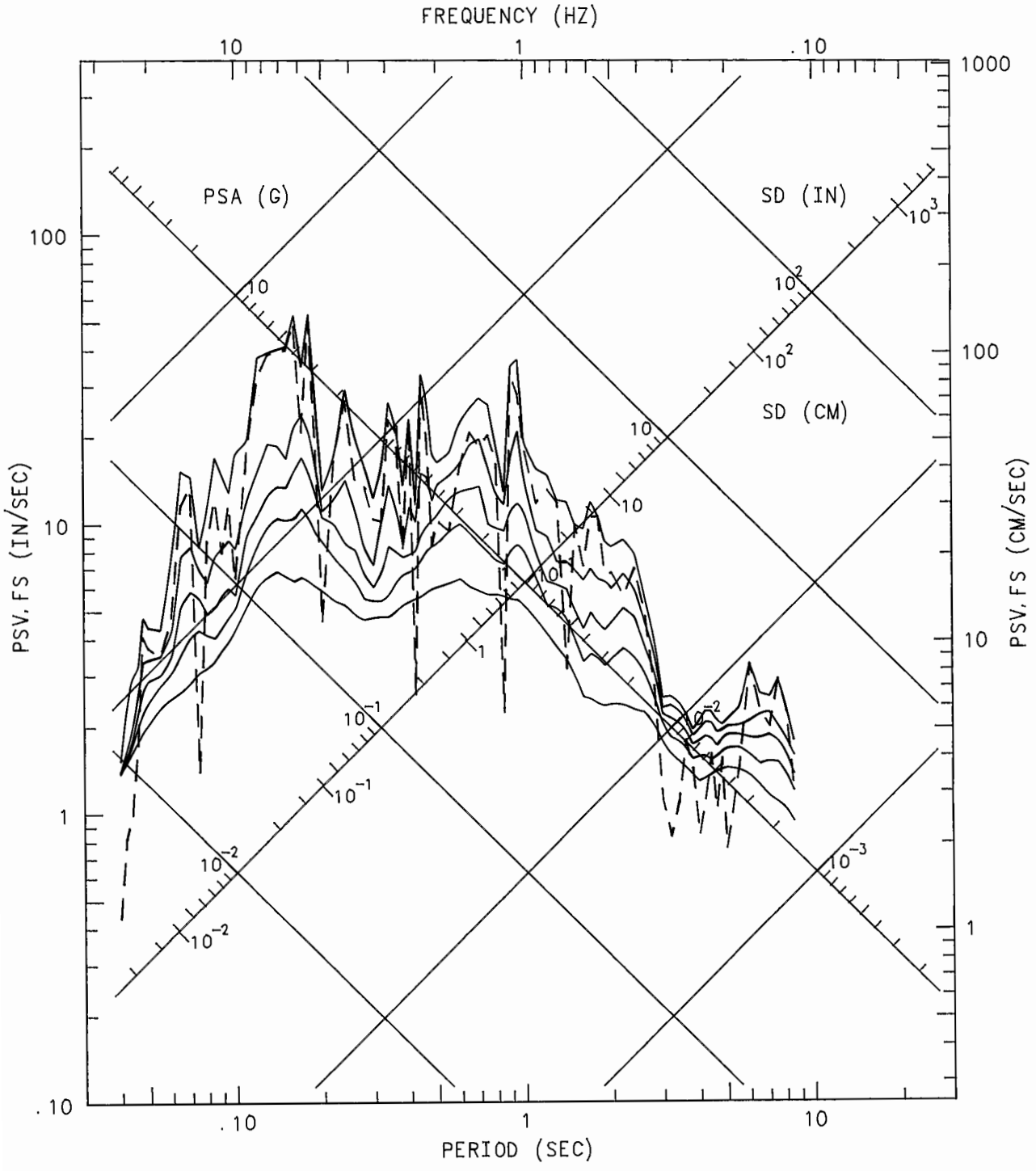
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12149-S1832-86189.01 101786.1634-QPALMSP86G



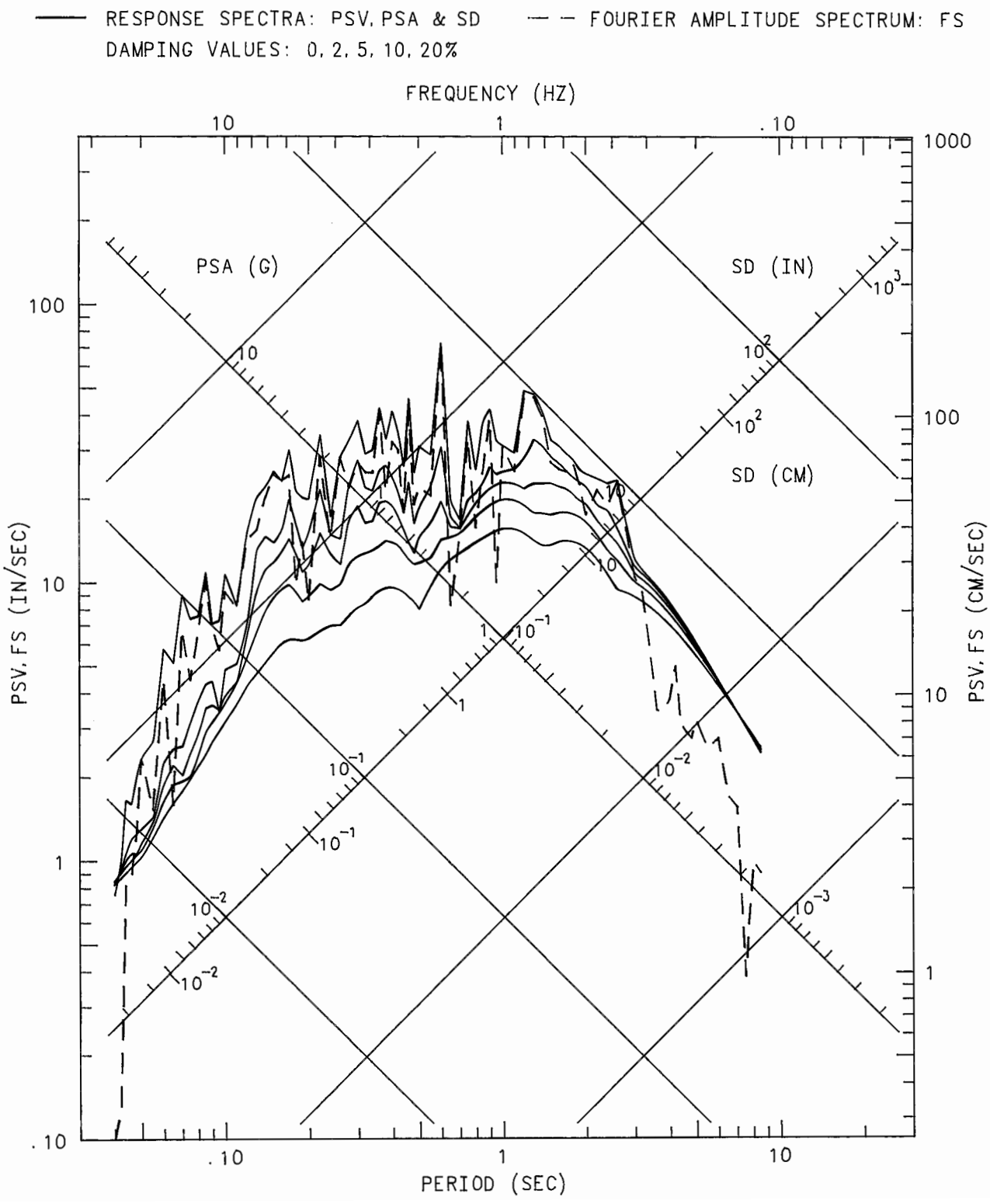
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12149-S1832-86189.01 101786.1634-QP86A149



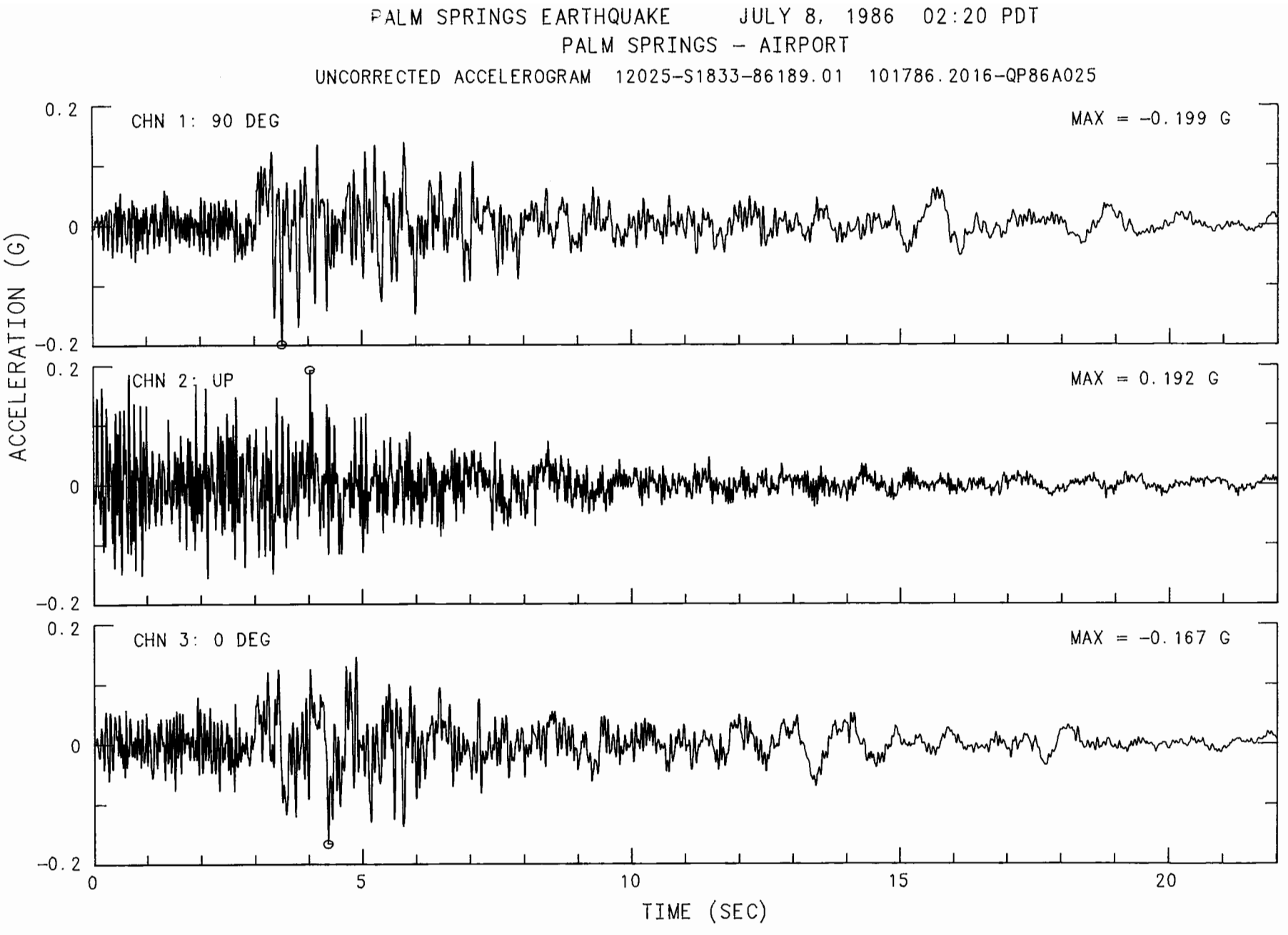
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12149-S1832-86189.01 101786.1634-QP86A149

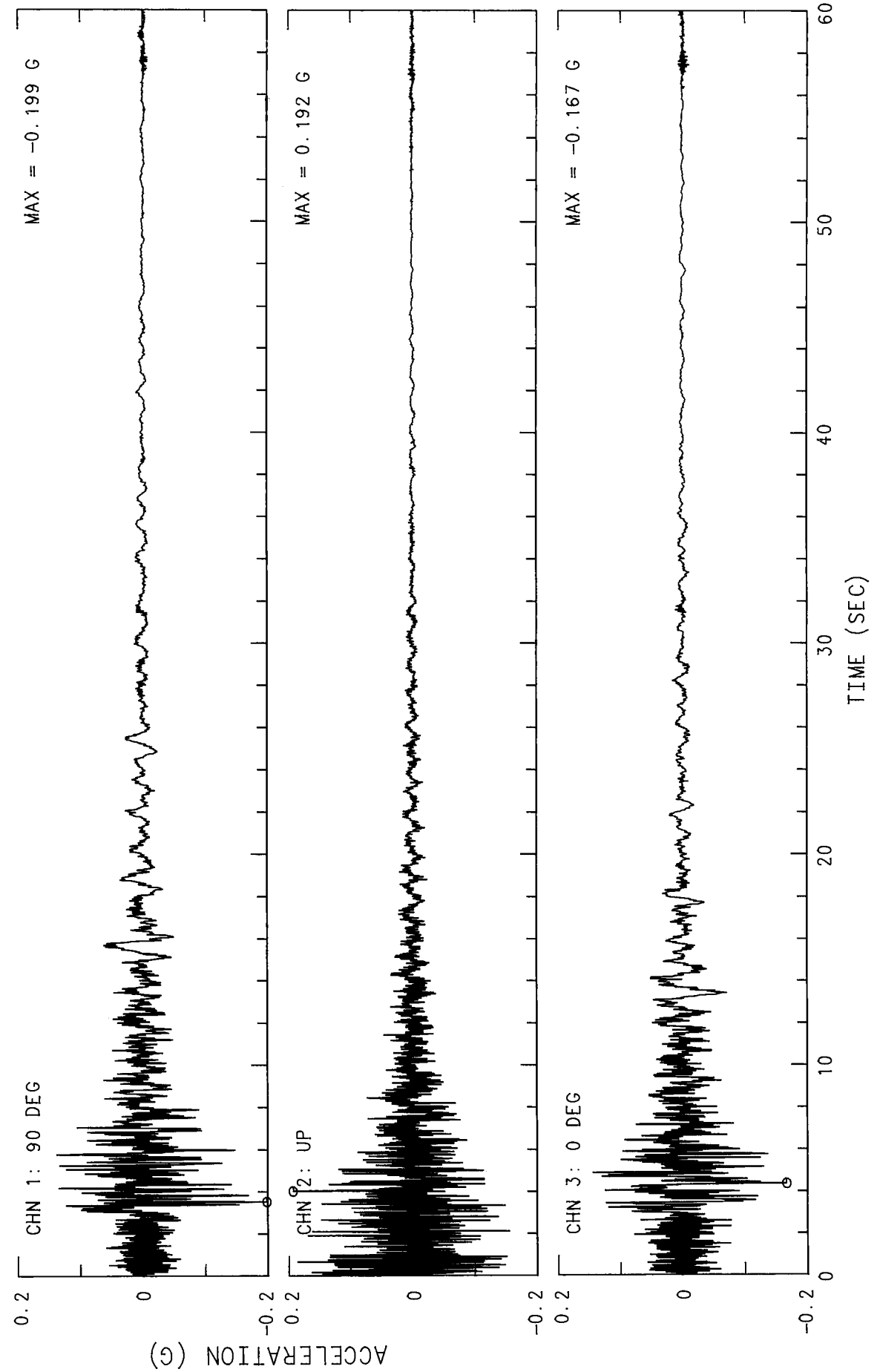


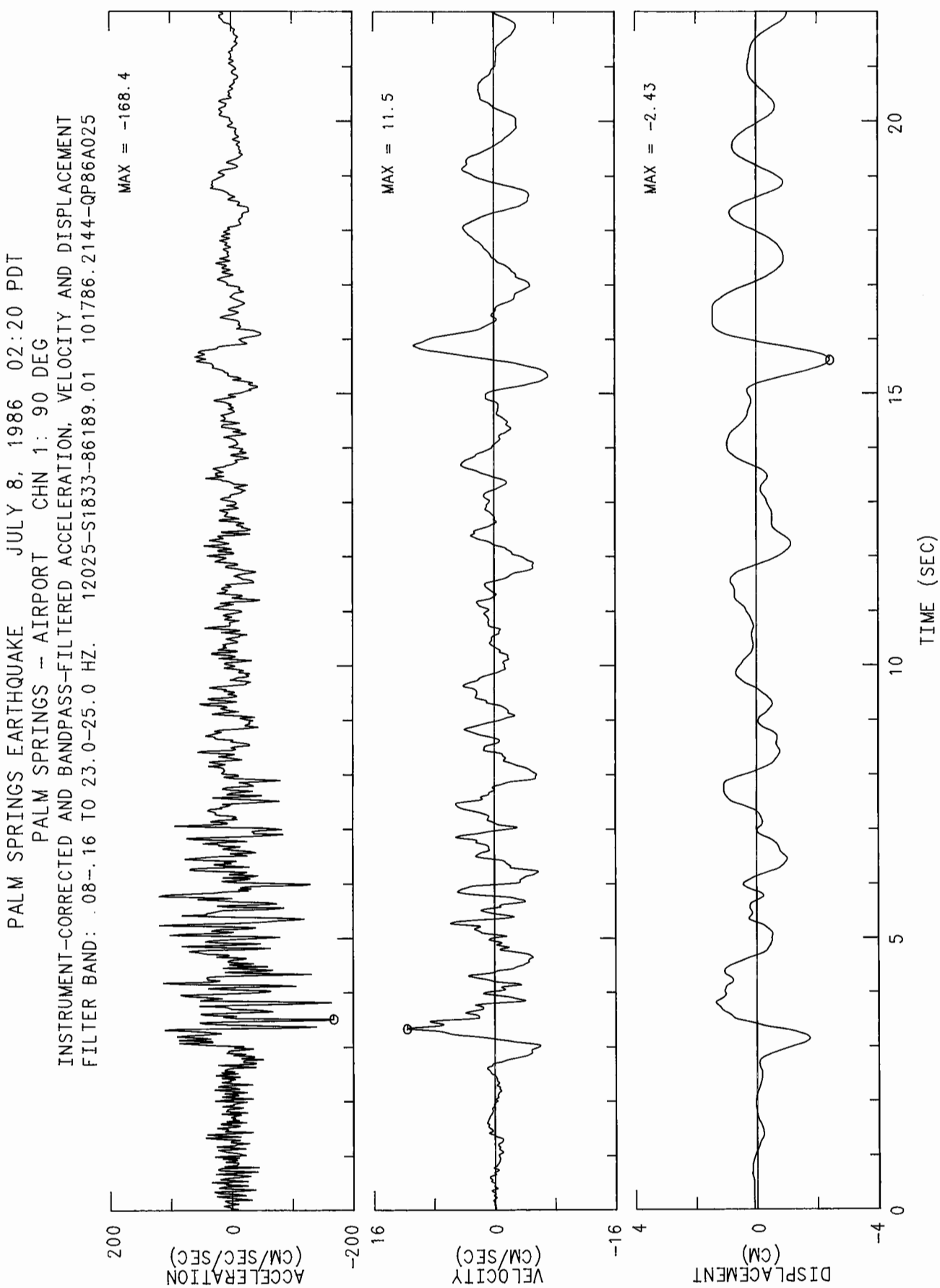
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
DESERT HOT SPRINGS
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12149-S1832-86189.01 101786.1634-QP86A149

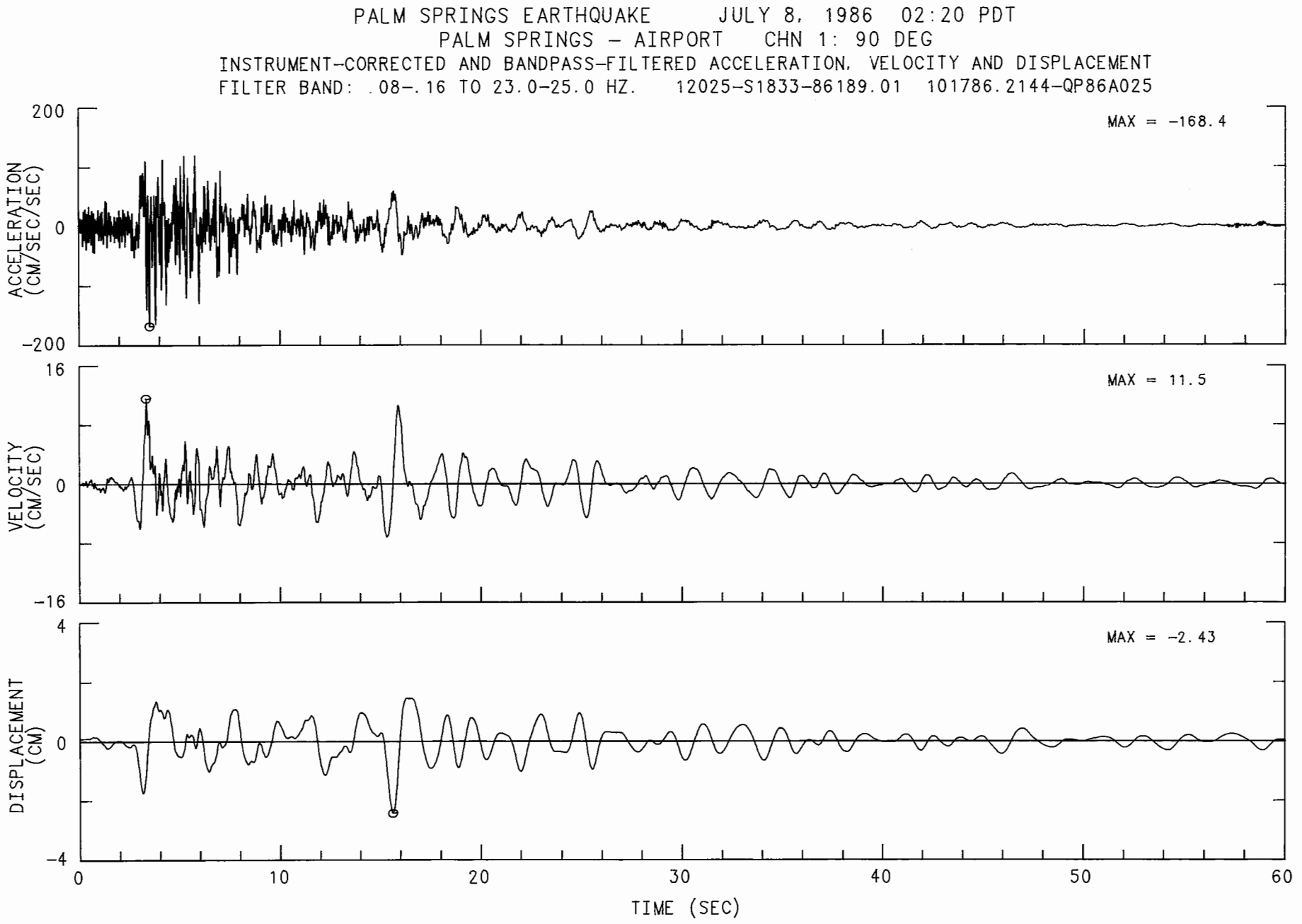


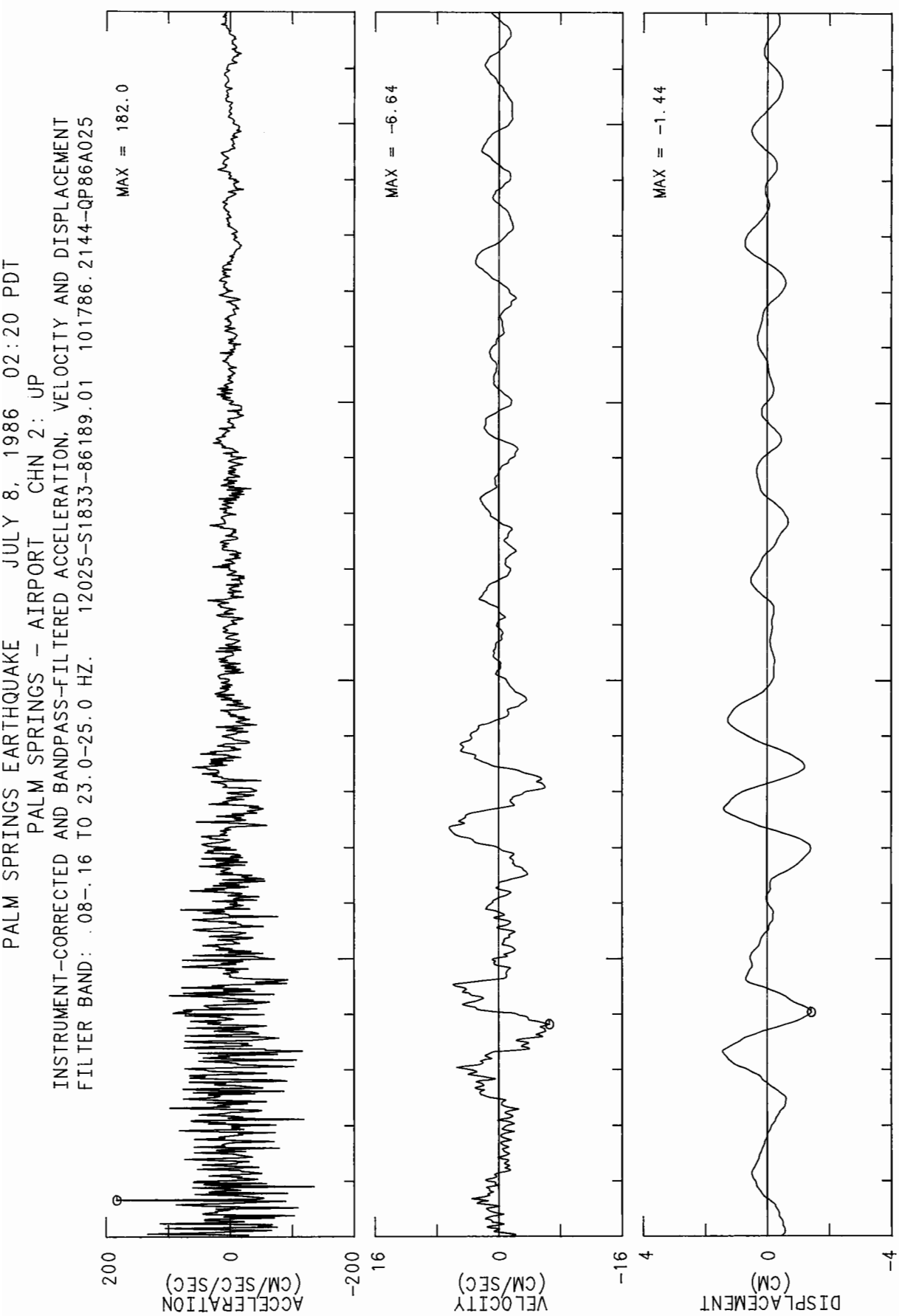
PALM SPRINGS - AIRPORT

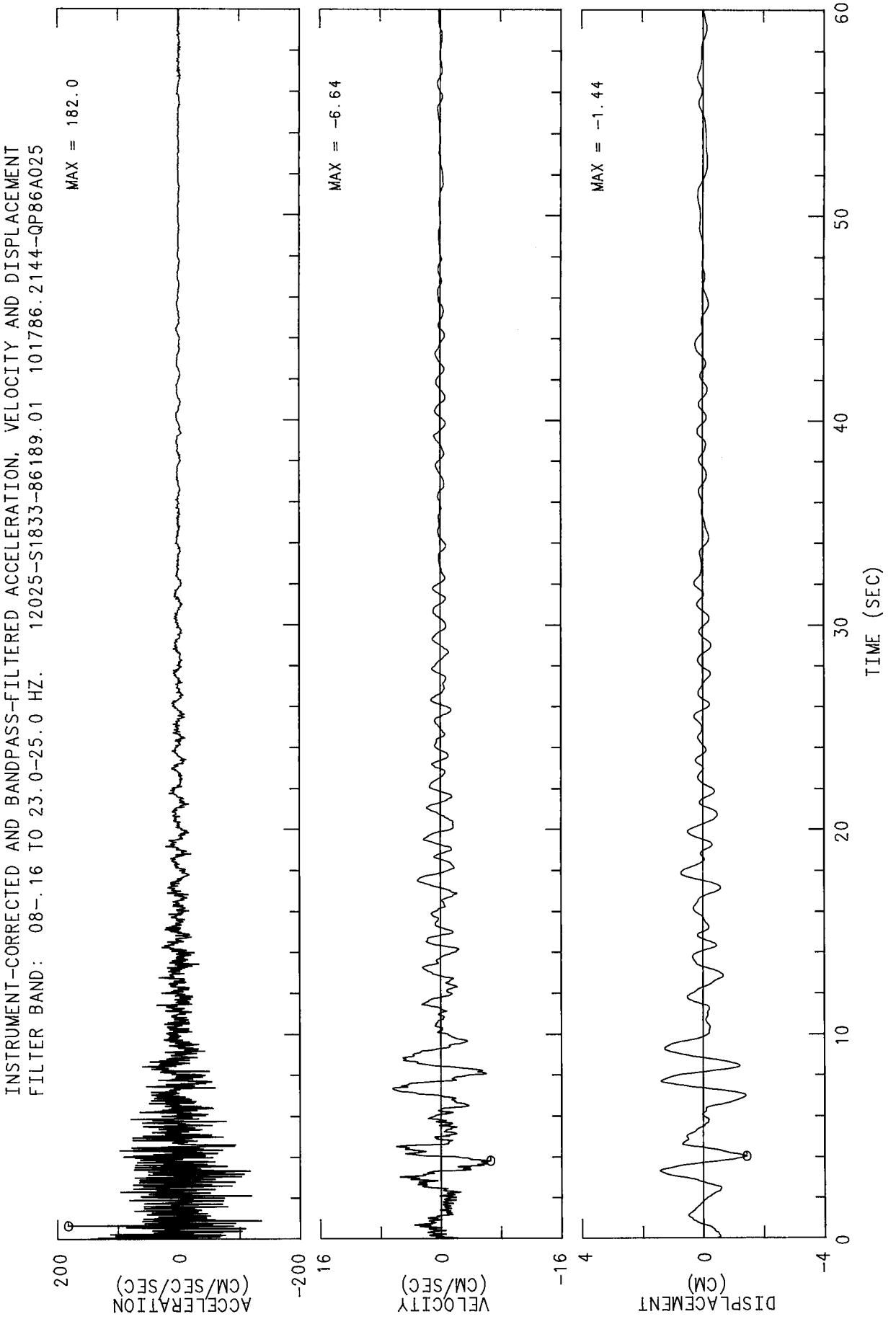

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT
UNCORRECTED ACCELEROGRAM 12025-S1833-86189.01 101786.2016-QP86A025
CHN 1: 90 DEG
MAX = -0.199 G
CHN 2: UP
MAX = 0.192 G
CHN 3: 0 DEG
MAX = -0.167 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

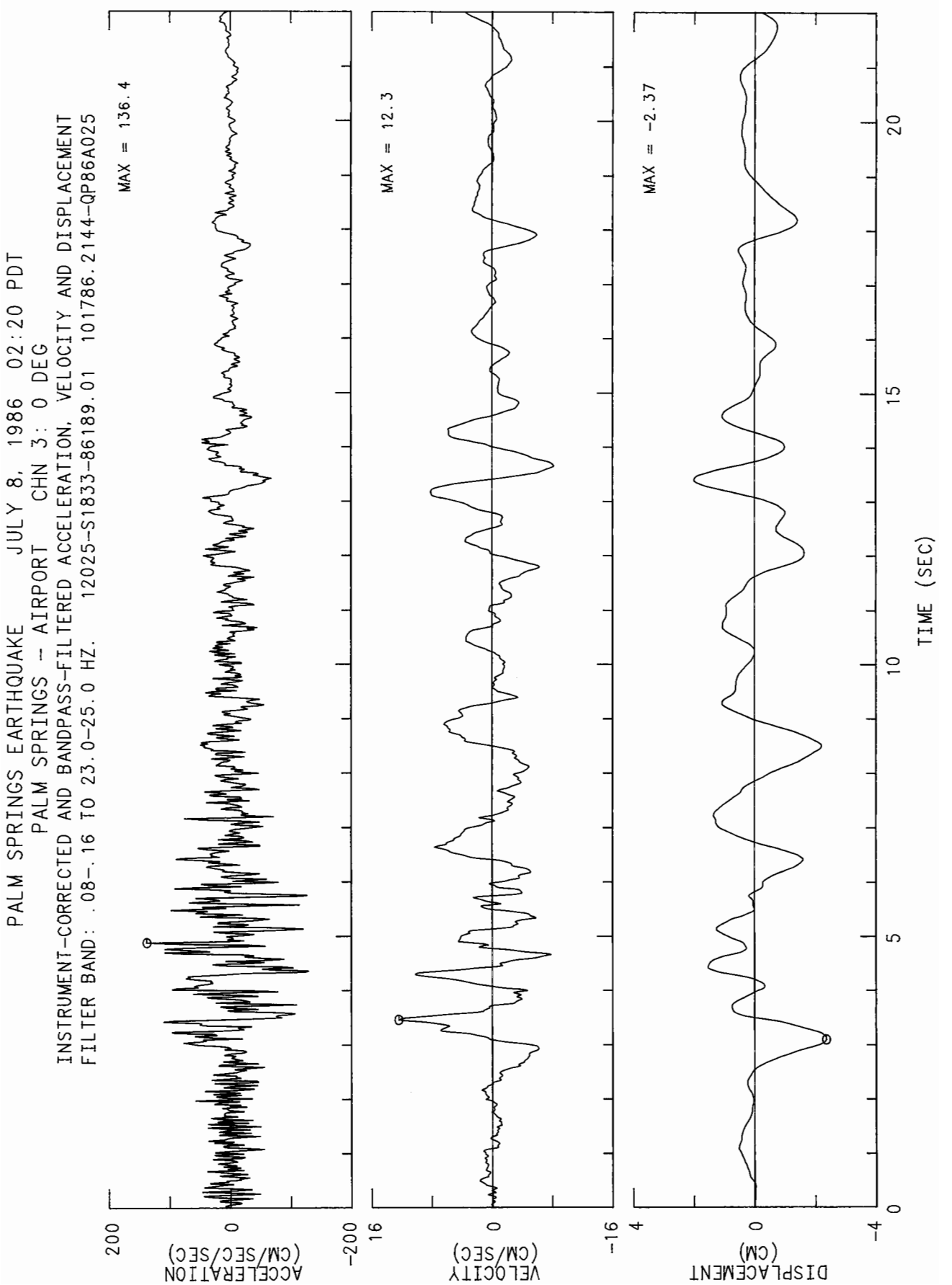

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT
UNCORRECTED ACCELEROGRAM 12025-S1833-86189.01 101786.2016-QP86A025
CHN 1: 90 DEG
MAX = -0.199 G
CHN 2: UP
MAX = 0.192 G
CHN 3: 0 DEG
MAX = -0.167 G
ACCELERATION (G)
0.2
0
-0.2
0
10
20
30
40
50
60
TIME (SEC)

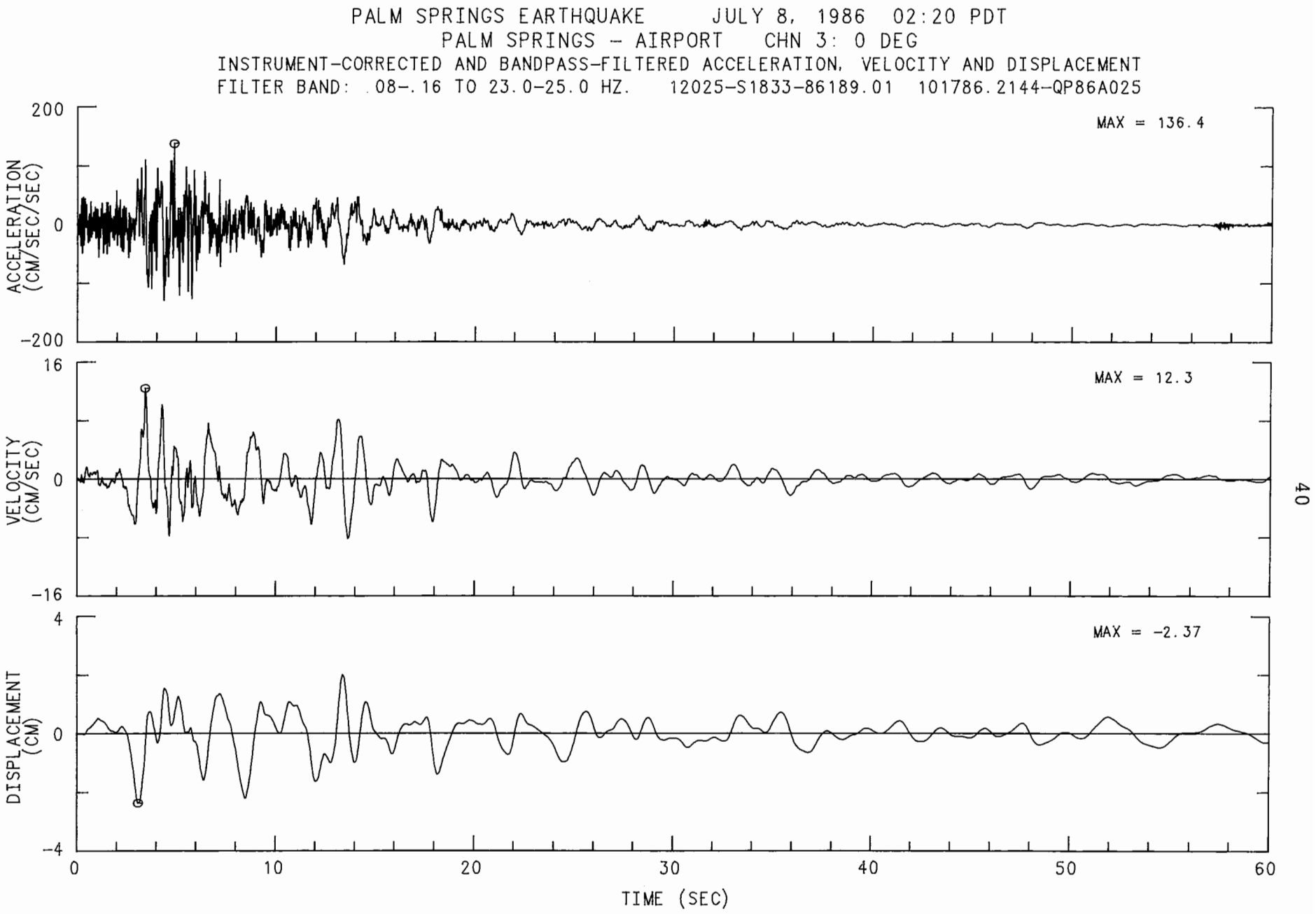

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS -- AIRPORT CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
MAX = -168.4
MAX = 11.5
MAX = -2.43
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
16
0
-16
4
0
-4
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS – AIRPORT CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
ACCELERATION (CM/SEC/SEC)
MAX = -168.4
VELOCITY (CM/SEC)
MAX = 11.5
DISPLACEMENT (CM)
MAX = -2.43
TIME (SEC)

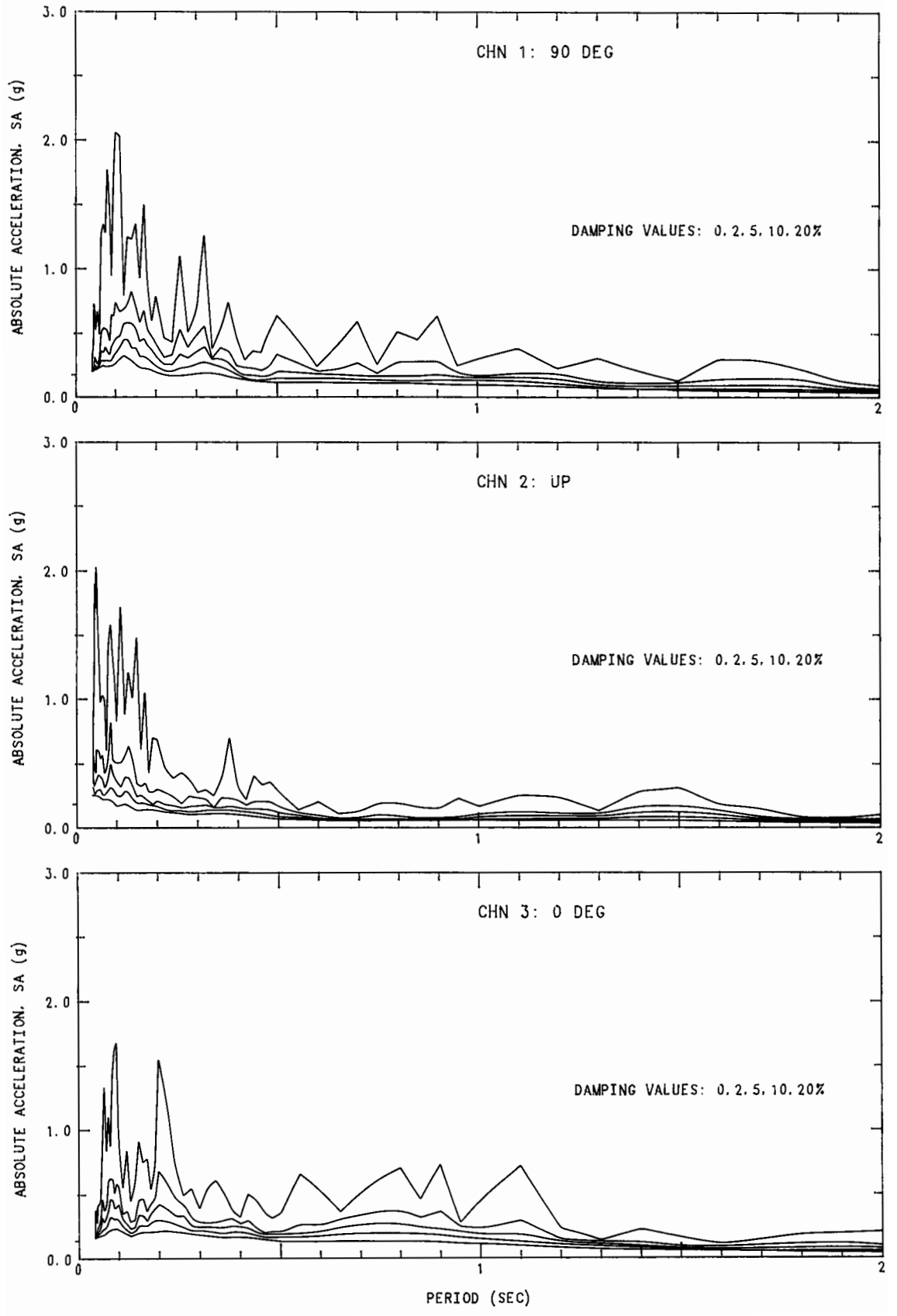

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
MAX = 182.0
MAX = -6.64
MAX = -1.44
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
MAX = 182.0
MAX = -6.64
MAX = -1.44
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

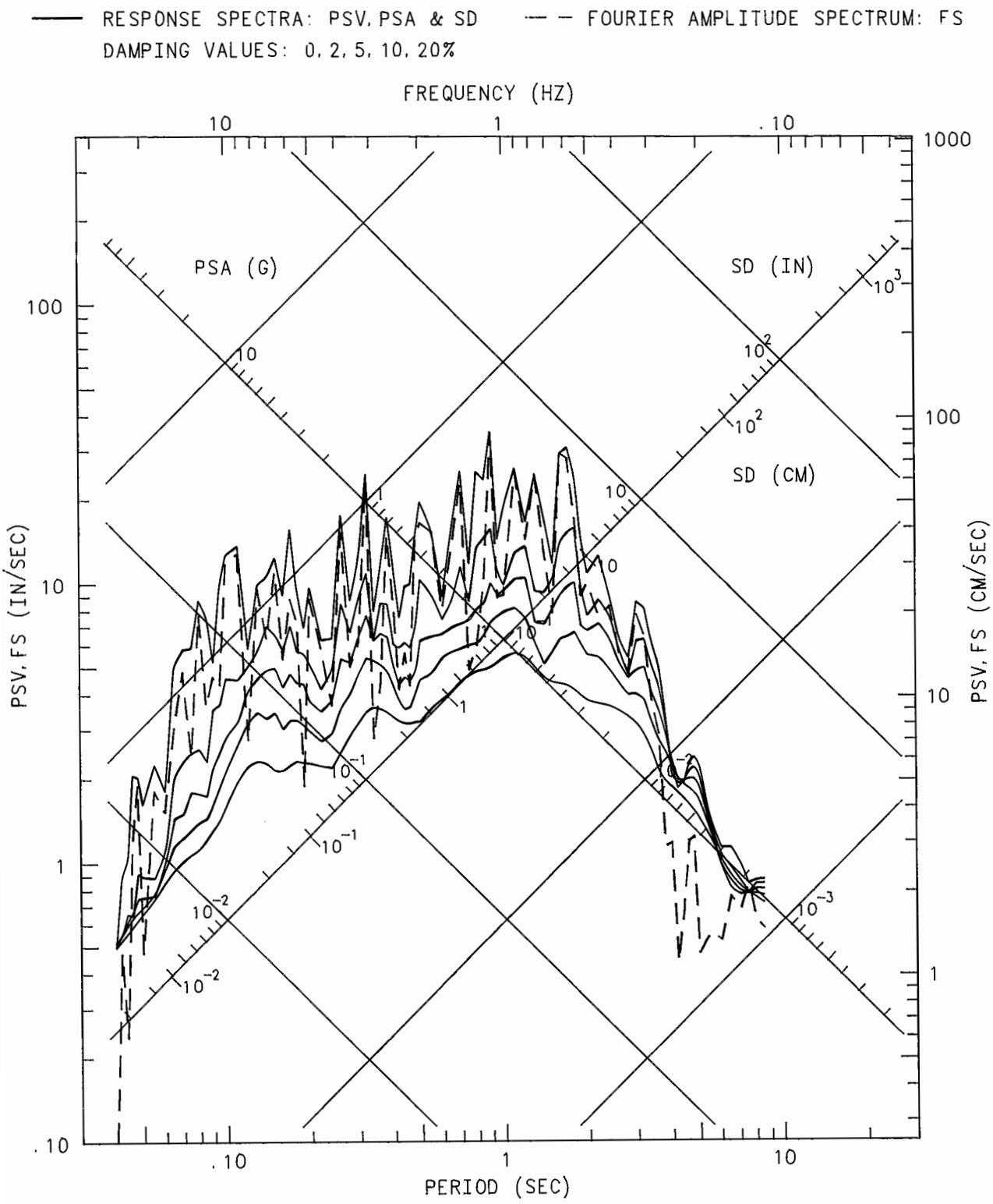

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS -- AIRPORT CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
MAX = 136.4
MAX = 12.3
MAX = -2.37
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
16
0
-16
4
0
-4
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 12025-S1833-86189.01 101786.2144-QP86A025
ACCELERATION (CM/SEC/SEC)
200
0
-200
MAX = 136.4
VELOCITY (CM/SEC)
16
0
-16
MAX = 12.3
DISPLACEMENT (CM)
4
0
-4
MAX = -2.37
0
10
20
30
40
50
60
TIME (SEC)

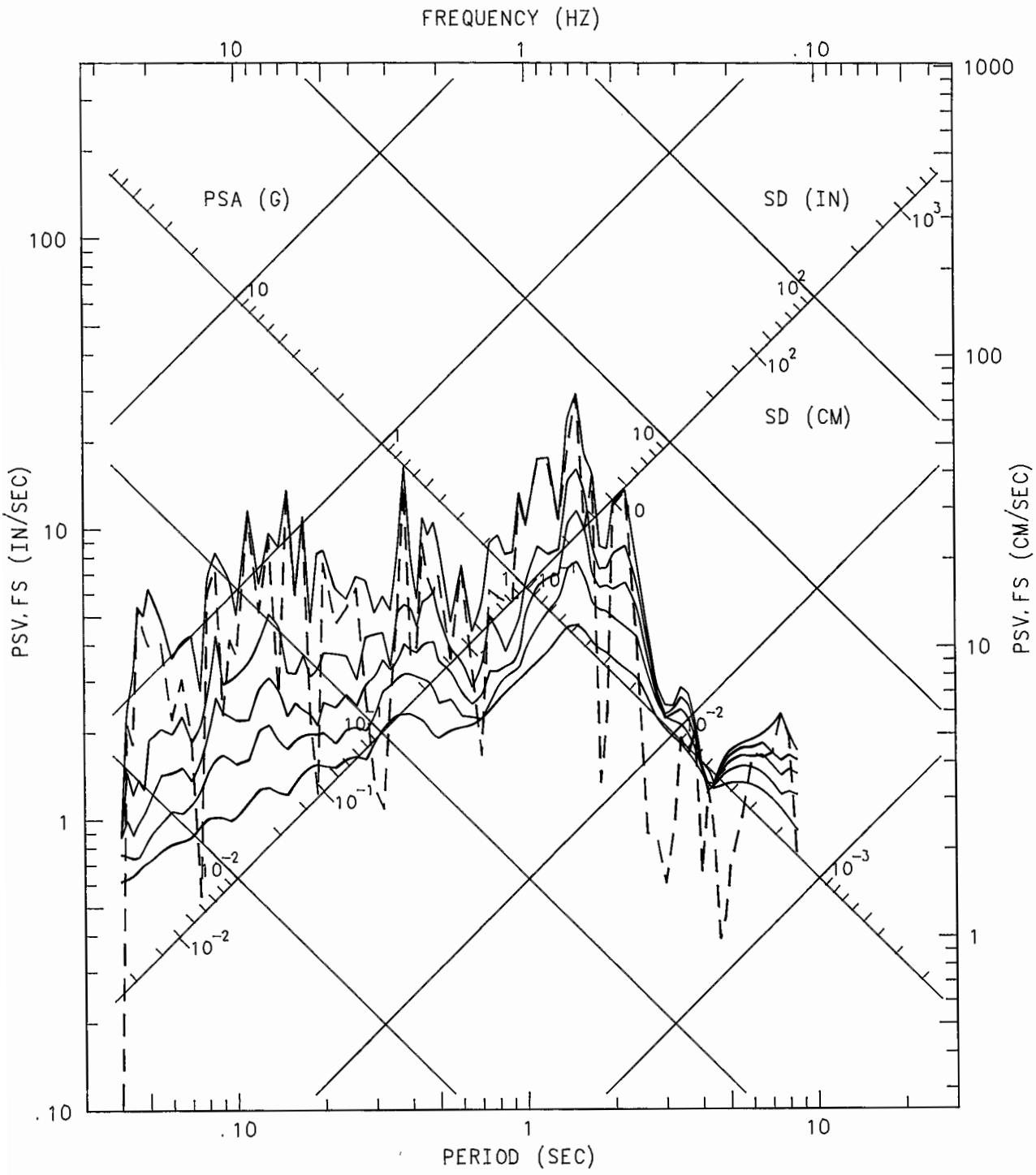
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS -- AIRPORT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12025--S1833-86189.01 101786.2208-QPALMSP86G



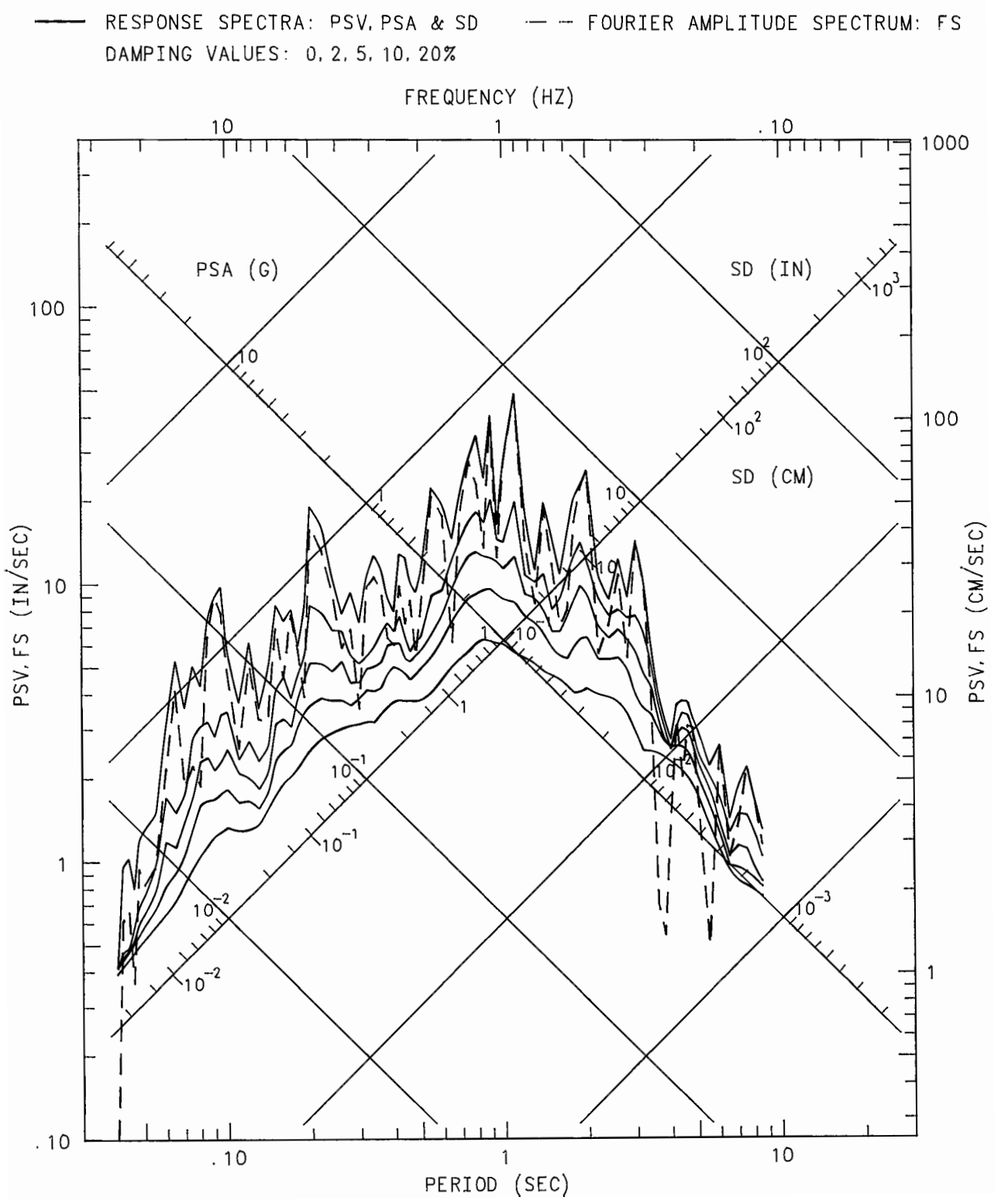
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12025-S1833-86189.01 101786.2208-QP86A025



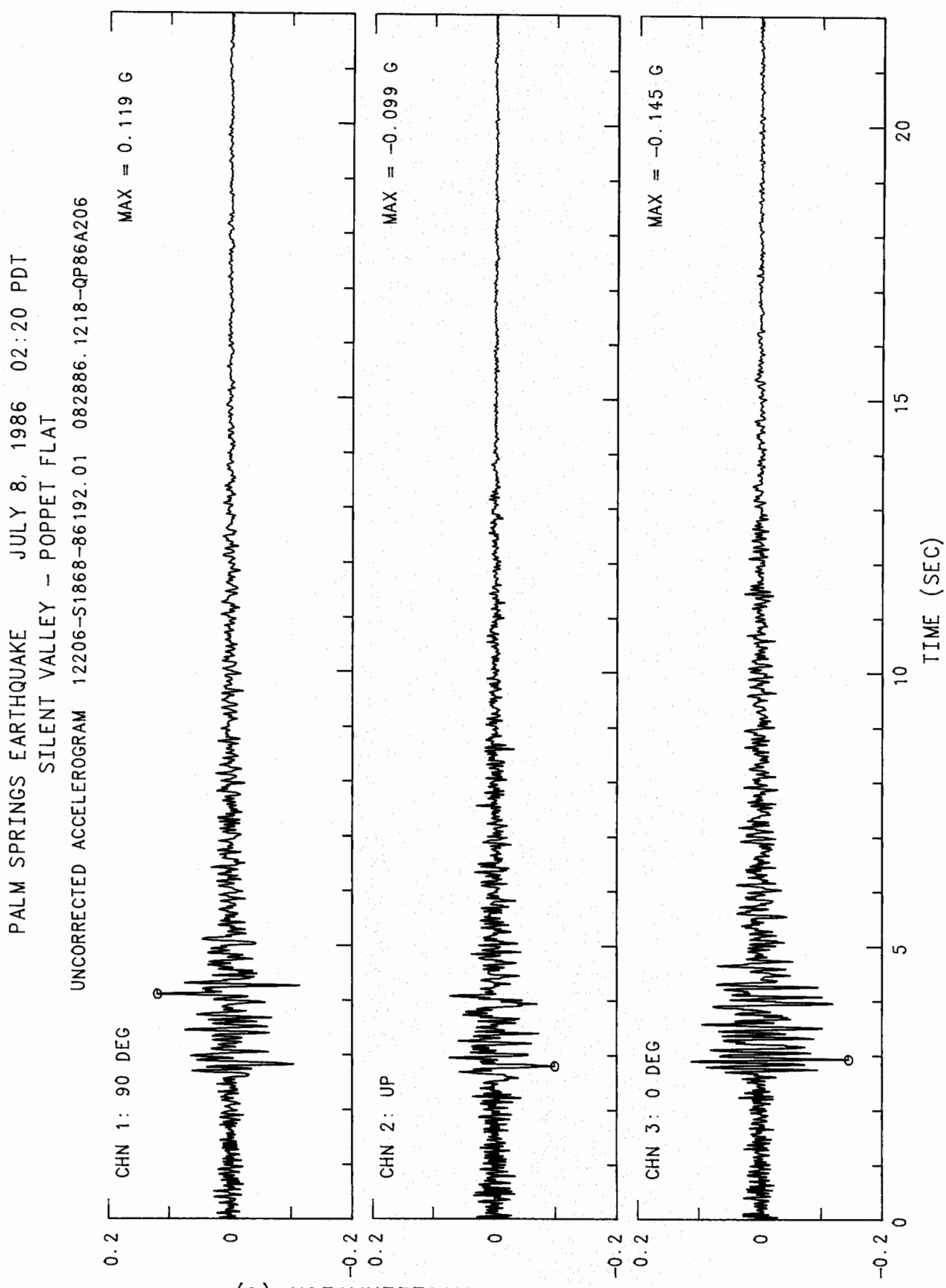
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12025-S1833-86189.01 101786.2208-QP86A025

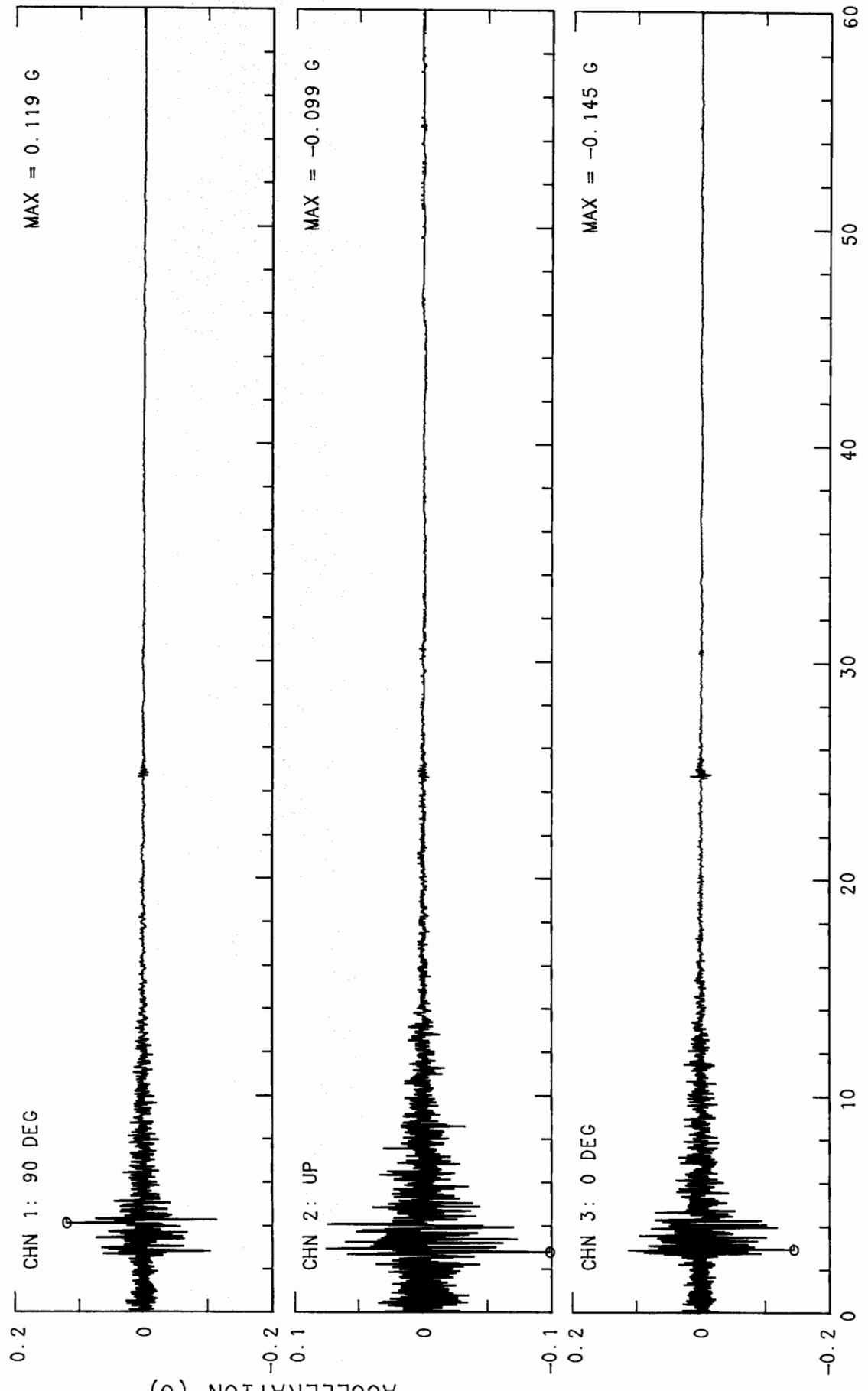


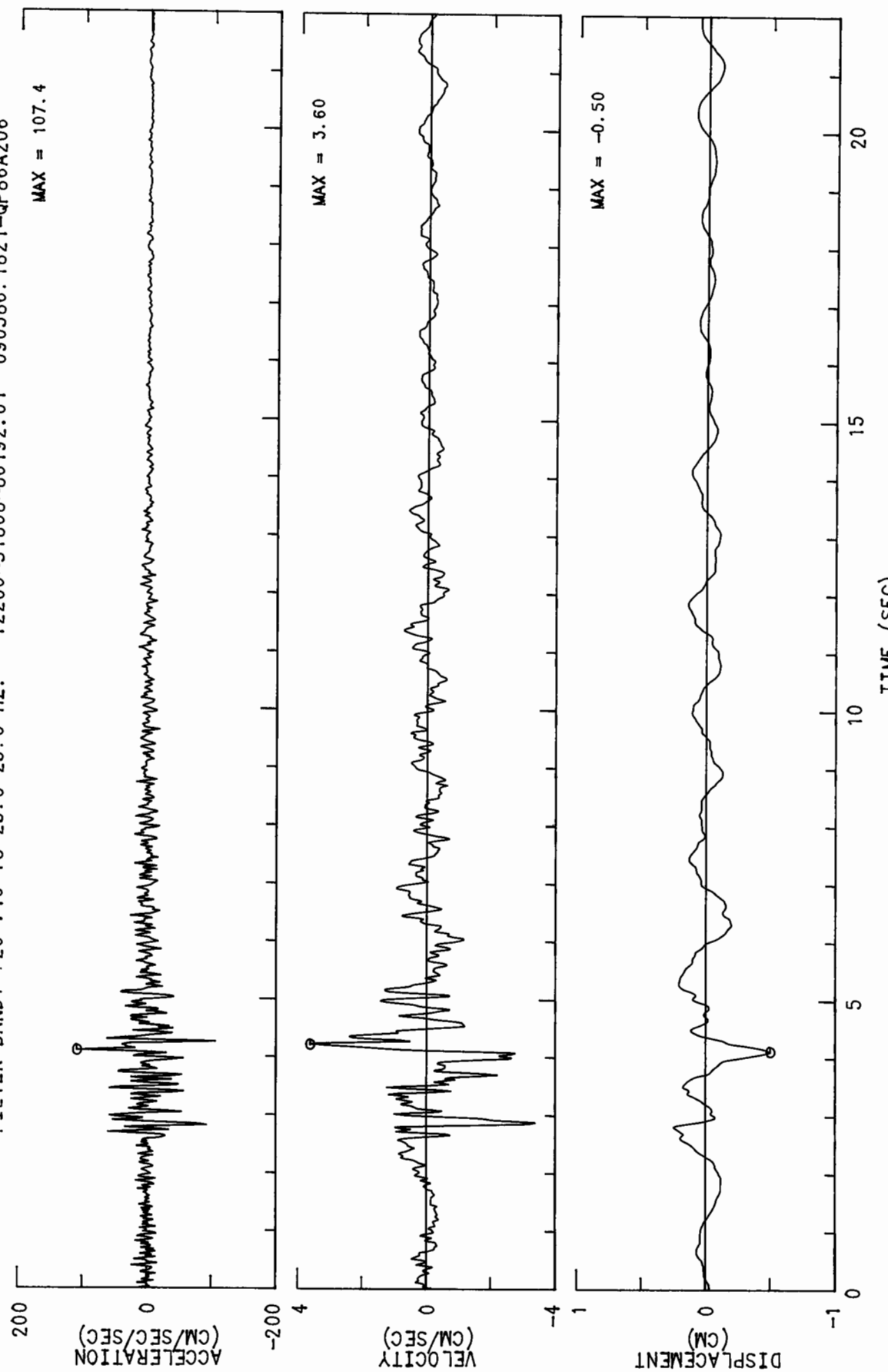
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PALM SPRINGS - AIRPORT
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
12025-S1833-86189.01 101786.2208-QP86A025

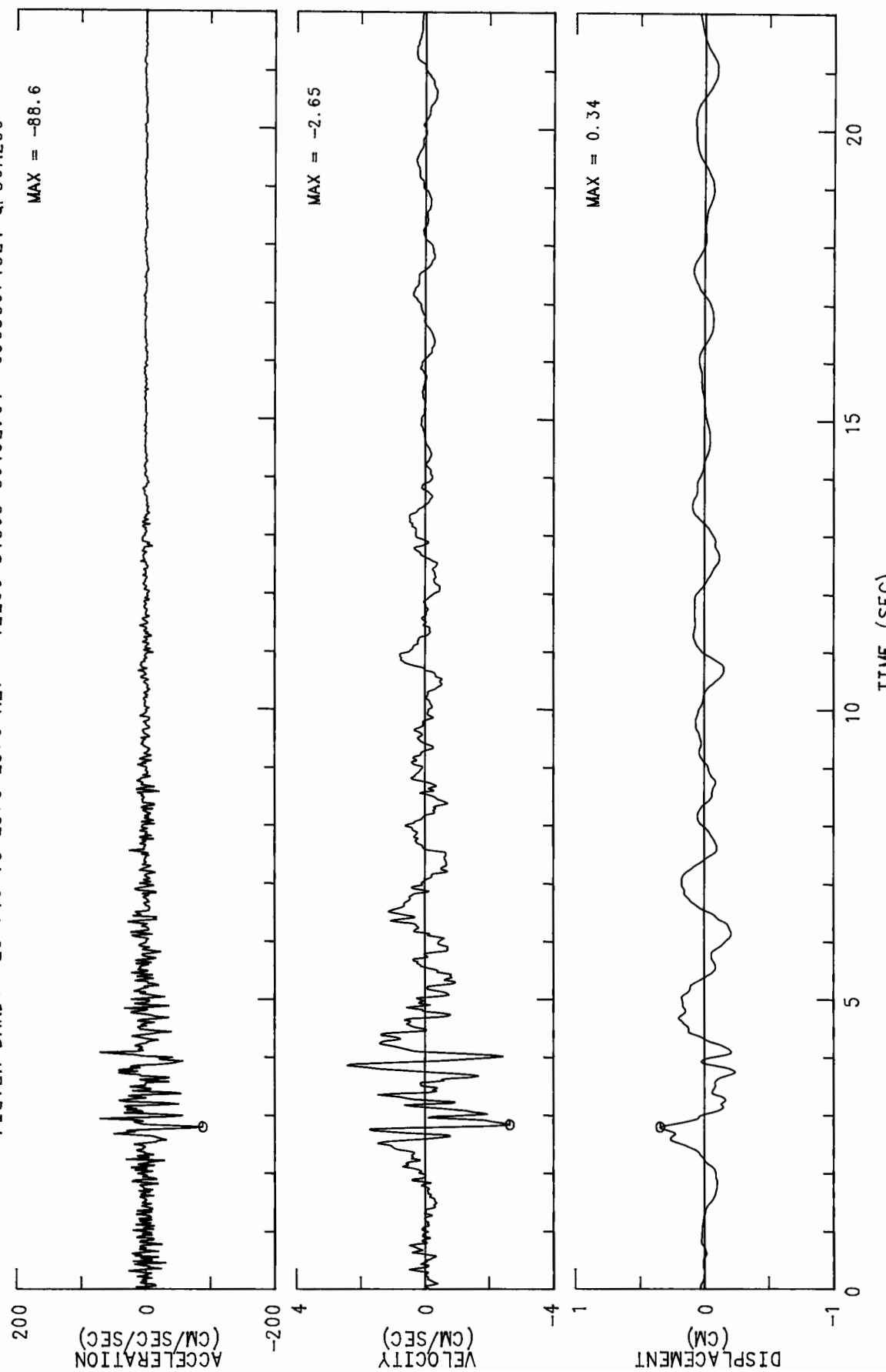


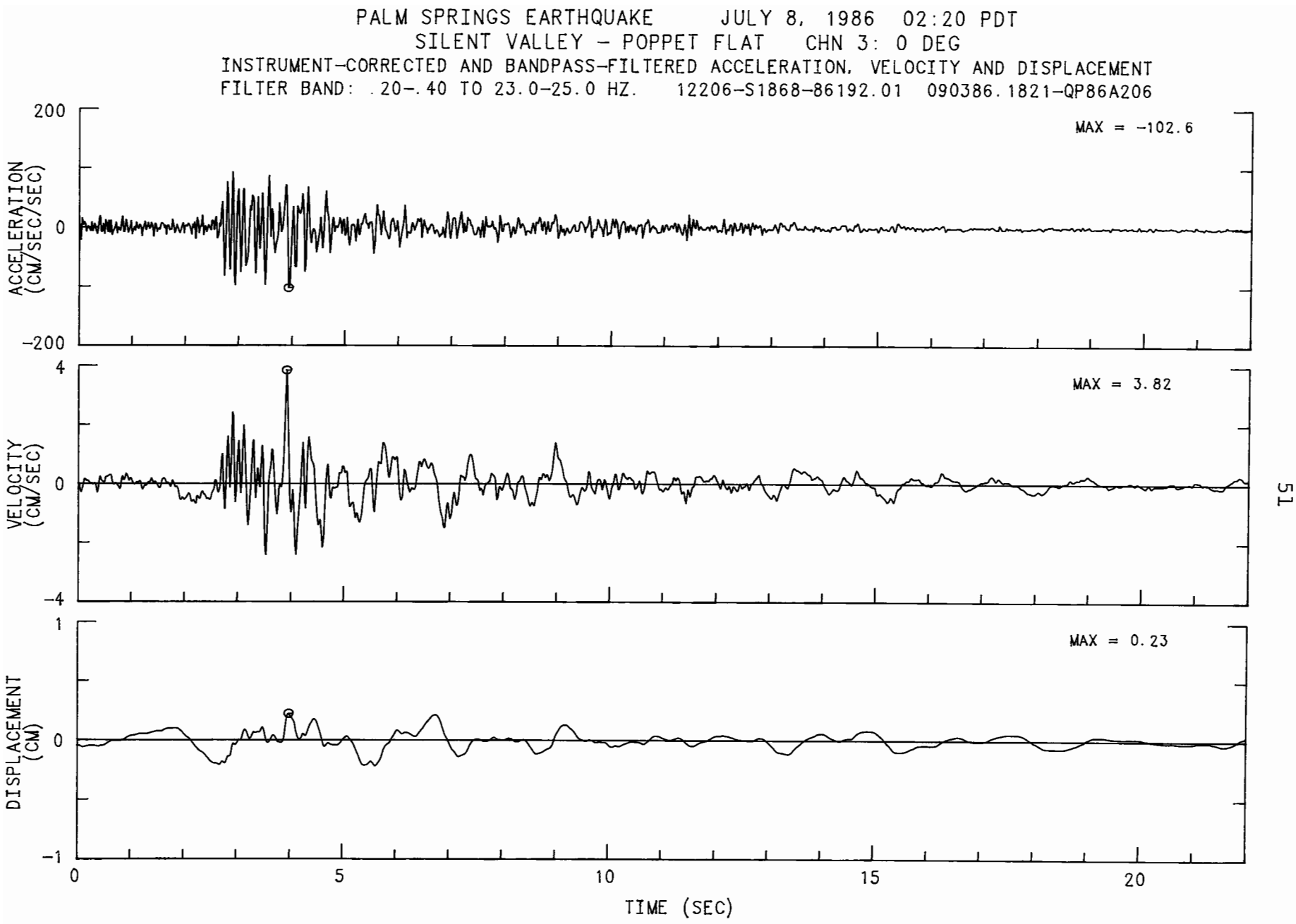
SILENT VALLEY - POPPET FLAT


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT
UNCORRECTED ACCELEROGRAM 12206-S1868-86192.01 082886.1218-QP86A206
CHN 1: 90 DEG
MAX = 0.119 G
CHN 2: UP
MAX = -0.099 G
CHN 3: 0 DEG
MAX = -0.145 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

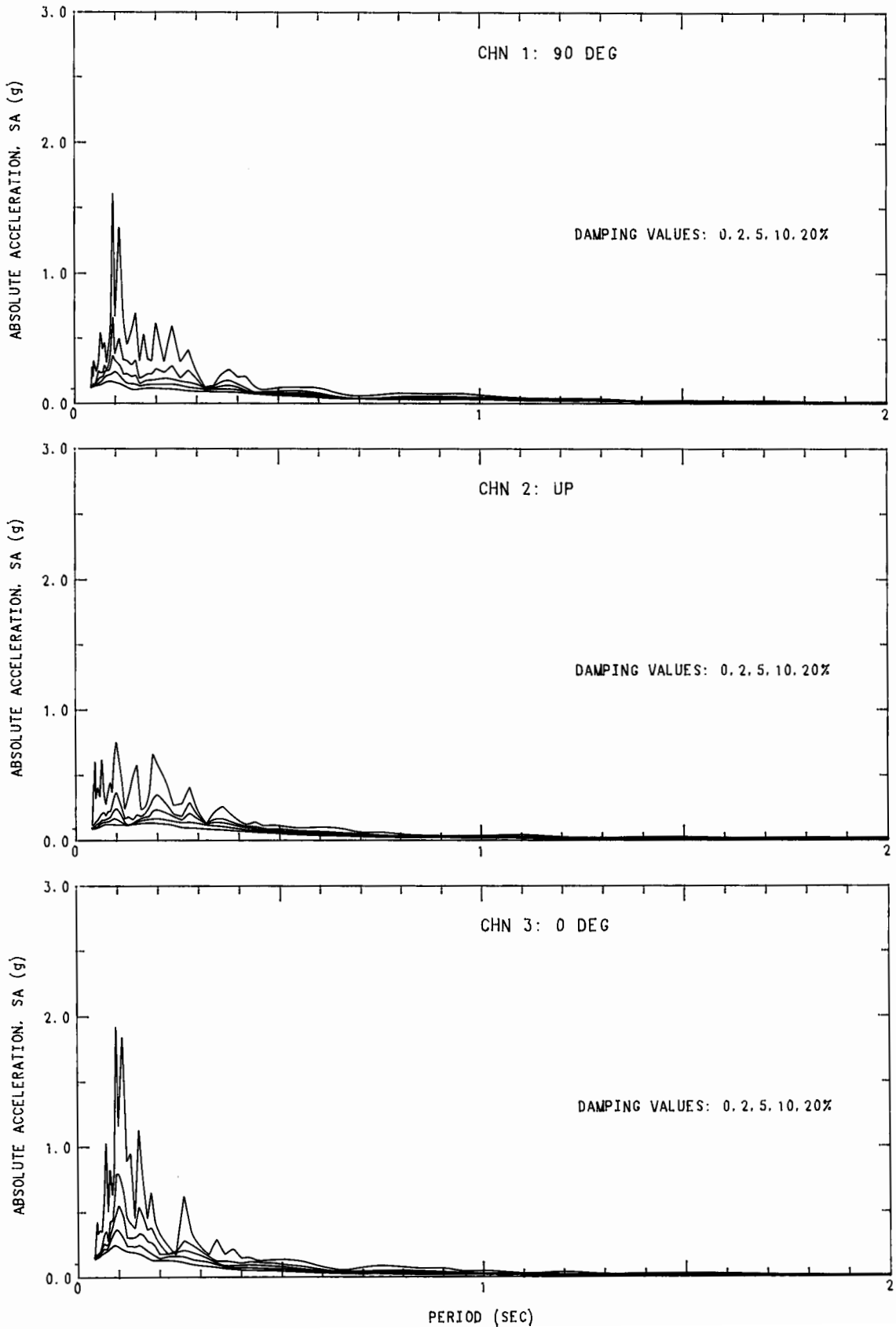

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT
UNCORRECTED ACCELEROGRAM 12206-S1868-86192.01 082886.1218-QP86A206
CHN 1: 90 DEG
MAX = 0.119 G
CHN 2: UP
MAX = -0.099 G
CHN 3: 0 DEG
MAX = -0.145 G
ACCELERATION (G)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12206-S1868-86192.01 090386.1821-QP86A206
MAX = 107.4
MAX = 3.60
MAX = -0.50
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
4
0
-4
1
0
-1
0
5
10
15
20

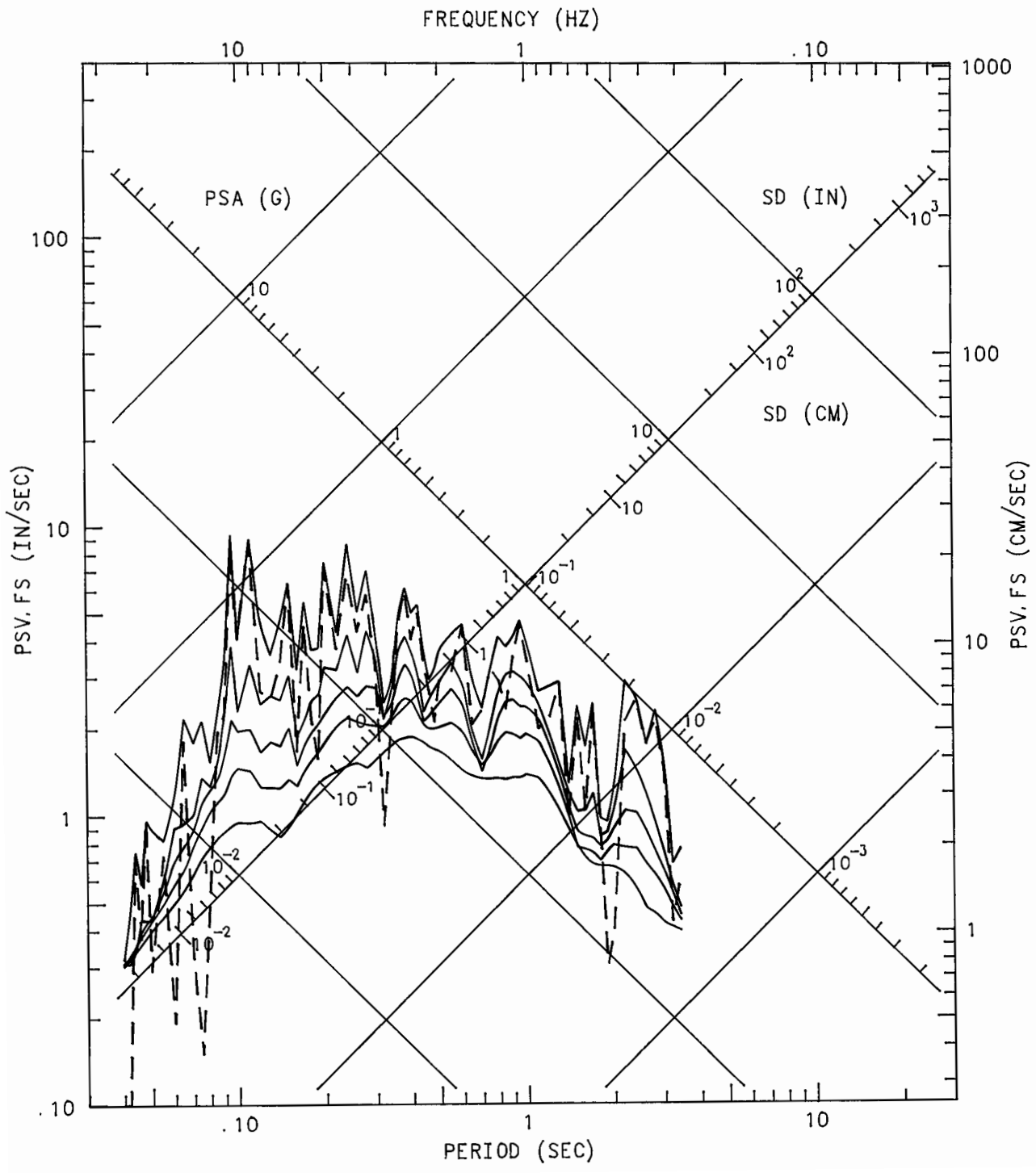

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12206-S1868-86192.01 090386.1821-QP86A206
MAX = -88.6
MAX = -2.65
MAX = 0.34
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12206-S1868-86192.01 090386.1821-QP86A206
ACCELERATION (CM/SEC/SEC)
200
0
-200
MAX = -102.6
VELOCITY (CM/SEC)
4
0
-4
MAX = 3.82
DISPLACEMENT (CM)
1
0
-1
MAX = 0.23
0
5
10
15
20
TIME (SEC)

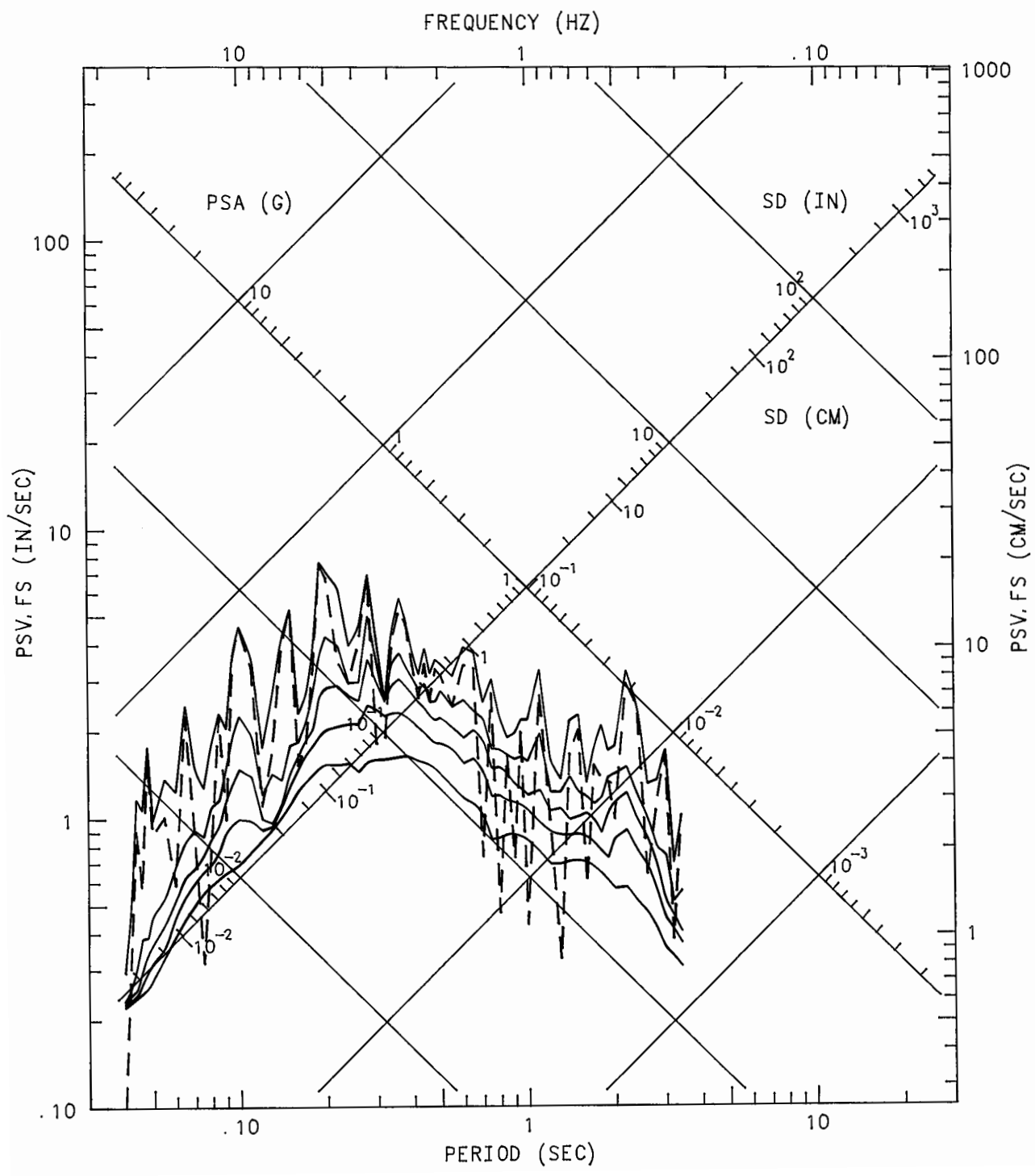
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY -- POPPET FLAT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12206-S1868-86192.01 091986.1604-QPALMSP86G



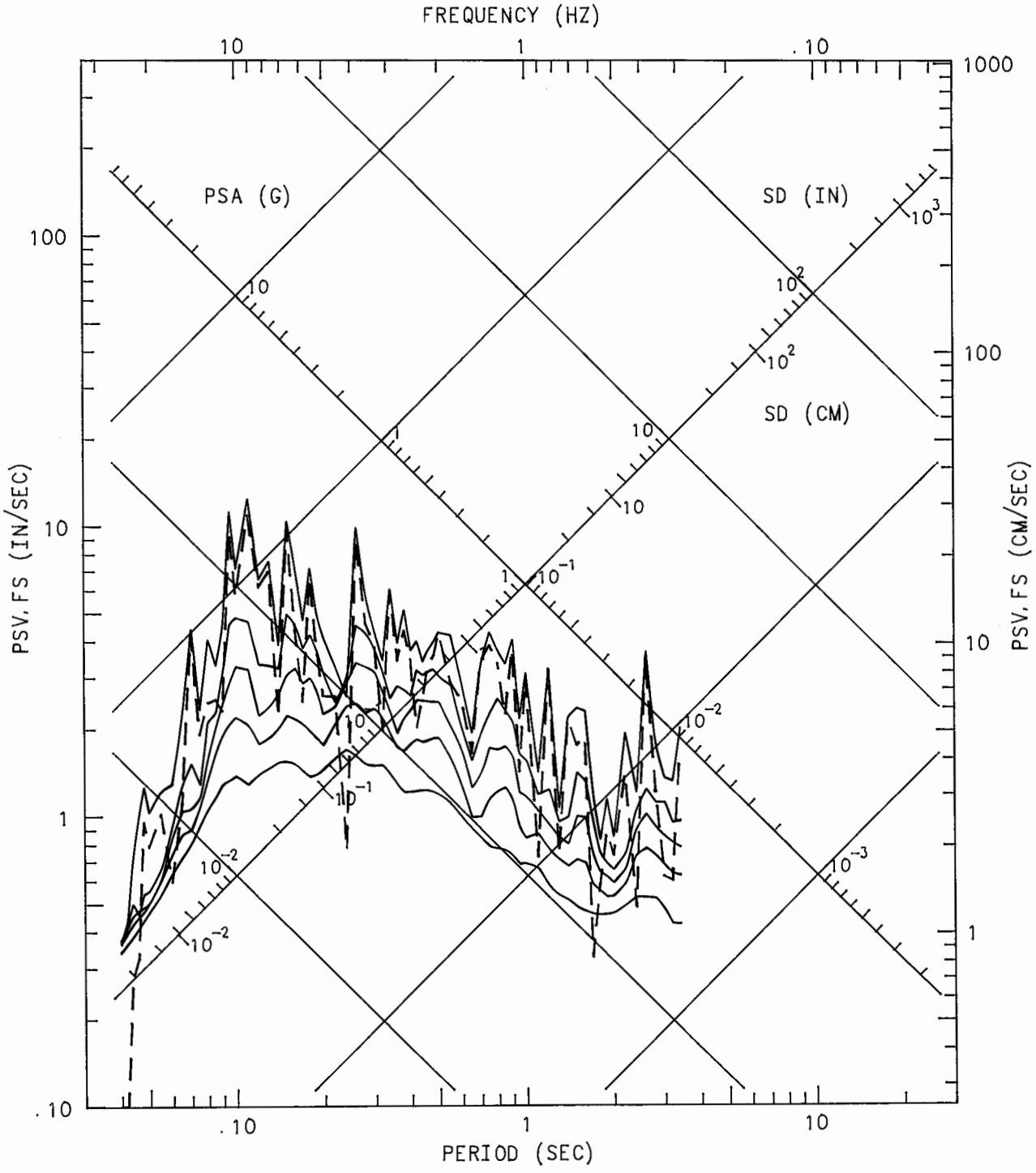
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12206-S1868-86192.01 091986.1604-QP86A206



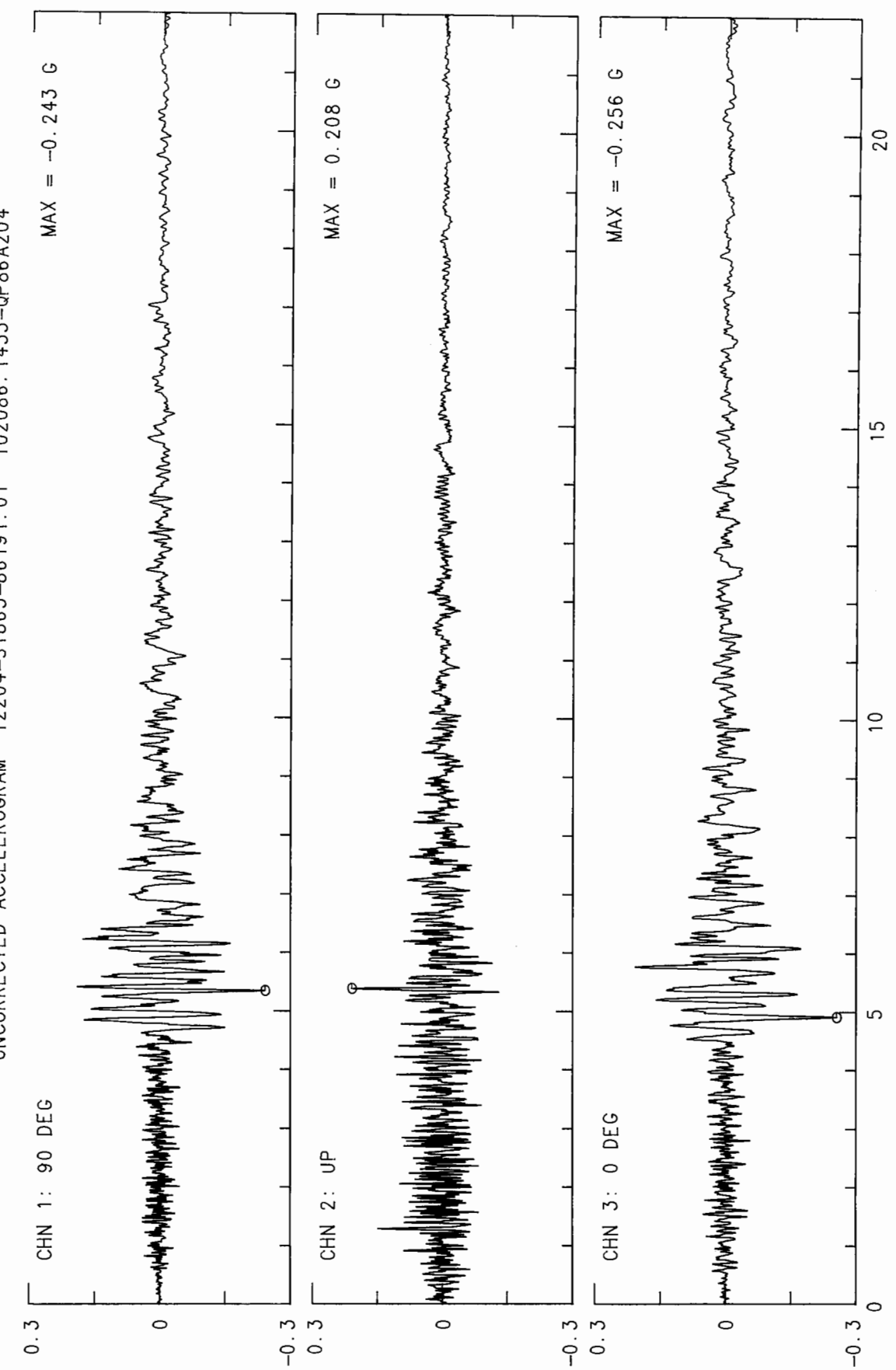
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12206-S1868-86192.01 091986.1604-QP86A206

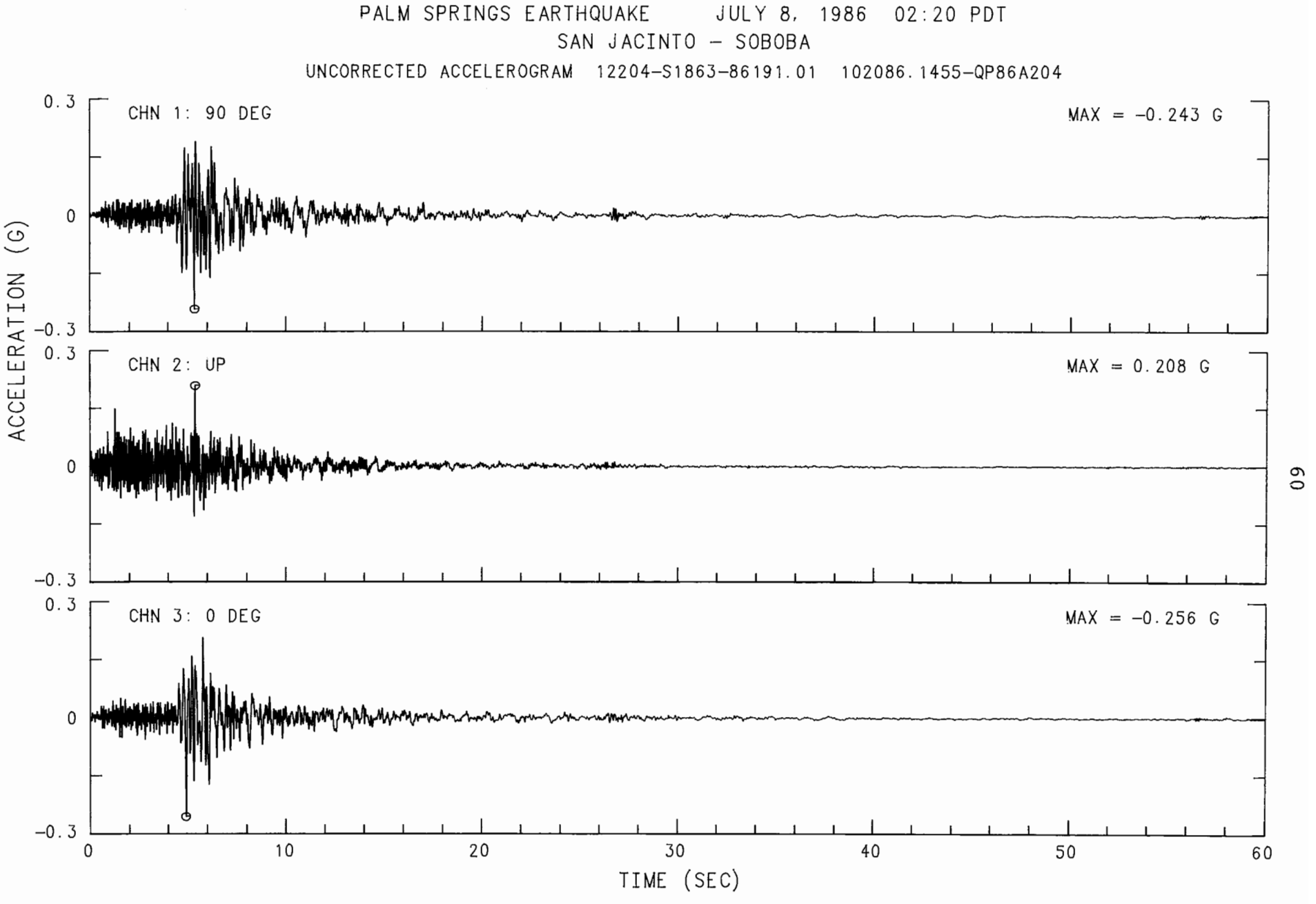


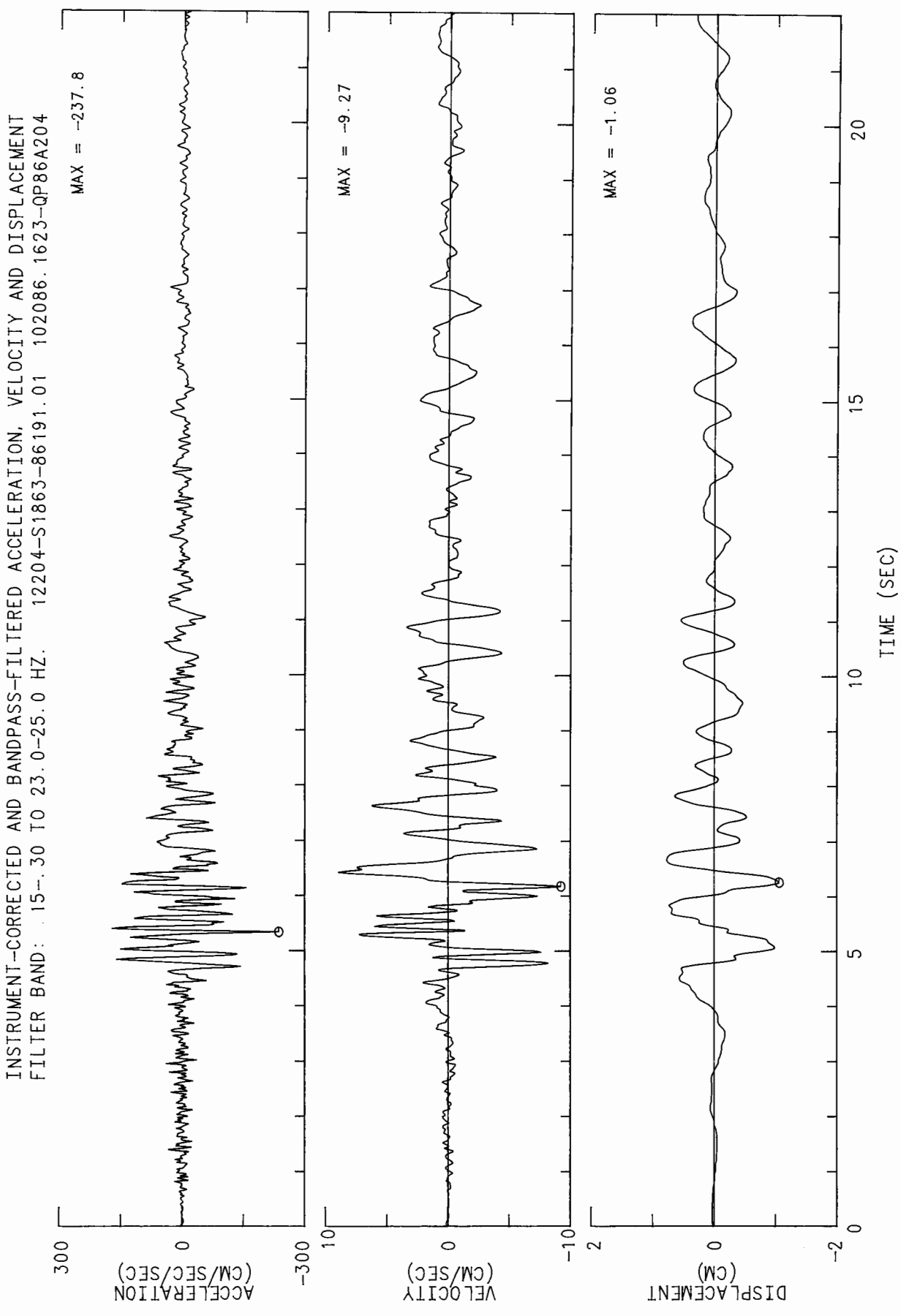
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SILENT VALLEY - POPPET FLAT
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12206-S1868-86192.01 091986.1604-QP86A206

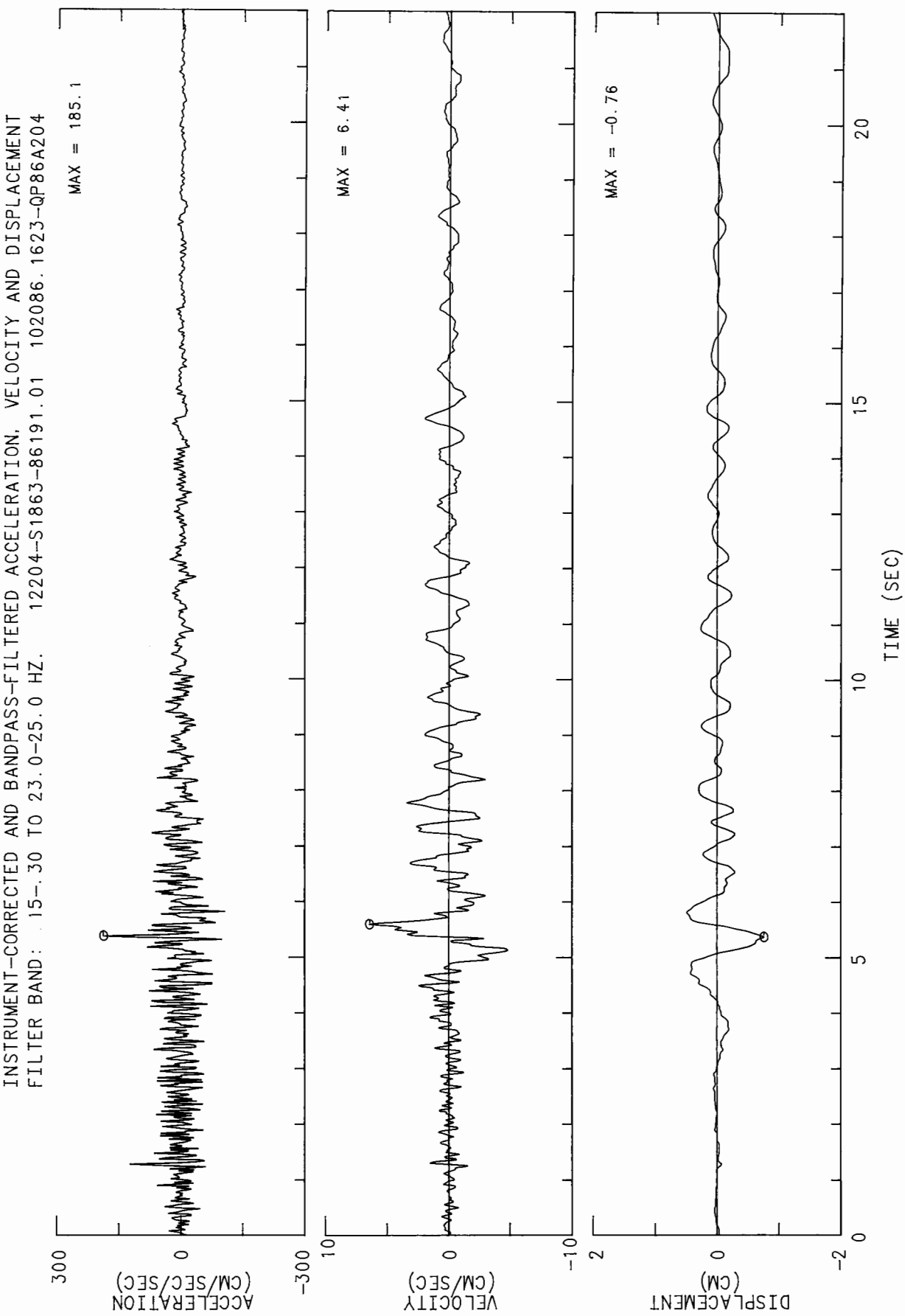


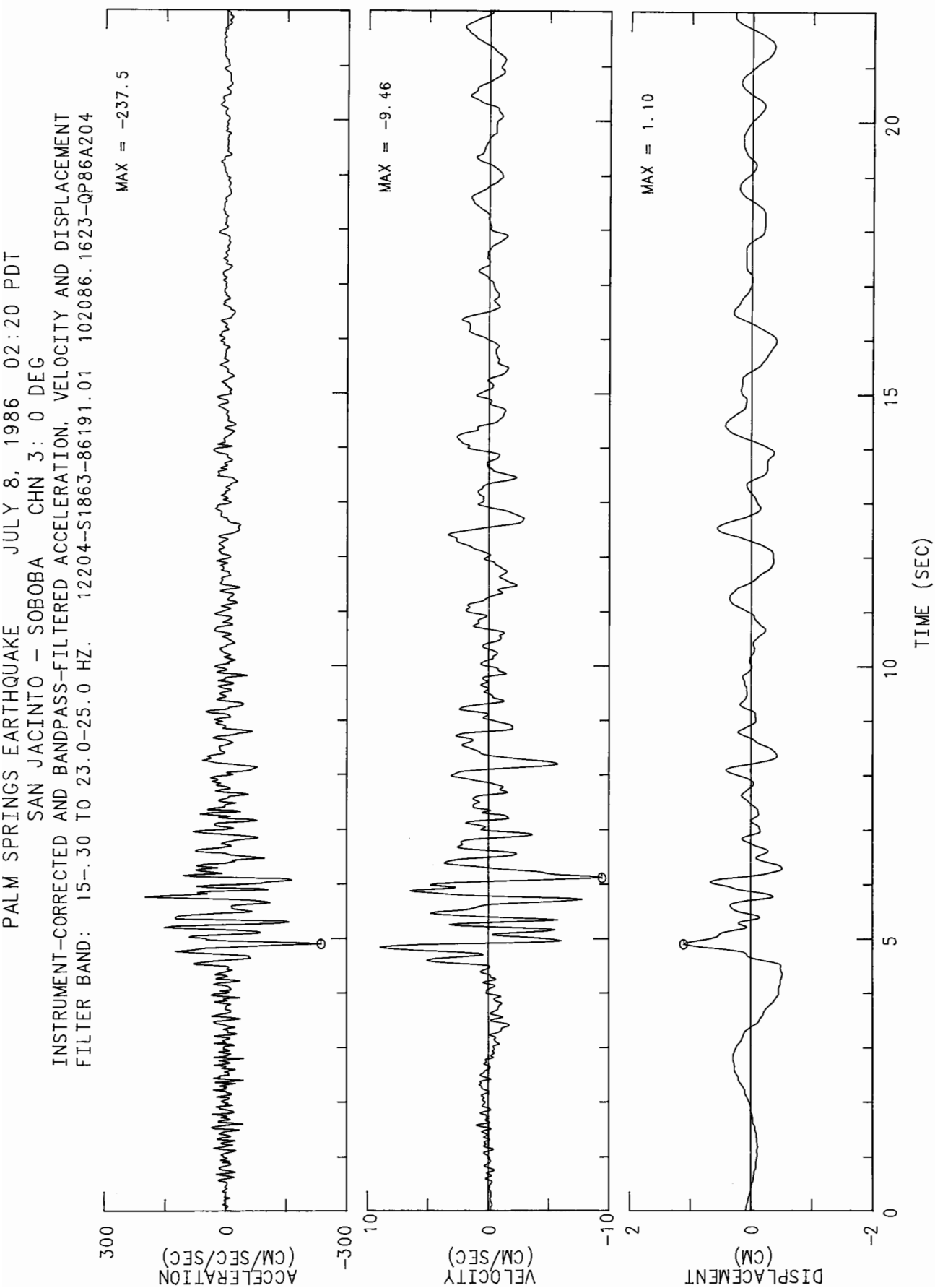
SAN JACINTO - SOBOBA


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO -- SOBOBA
UNCORRECTED ACCELEROGRAM 12204-S1863-86191.01 102086.1455-QP86A204
CHN 1: 90 DEG
MAX = -0.243 G
CHN 2: UP
MAX = 0.208 G
CHN 3: 0 DEG
MAX = -0.256 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

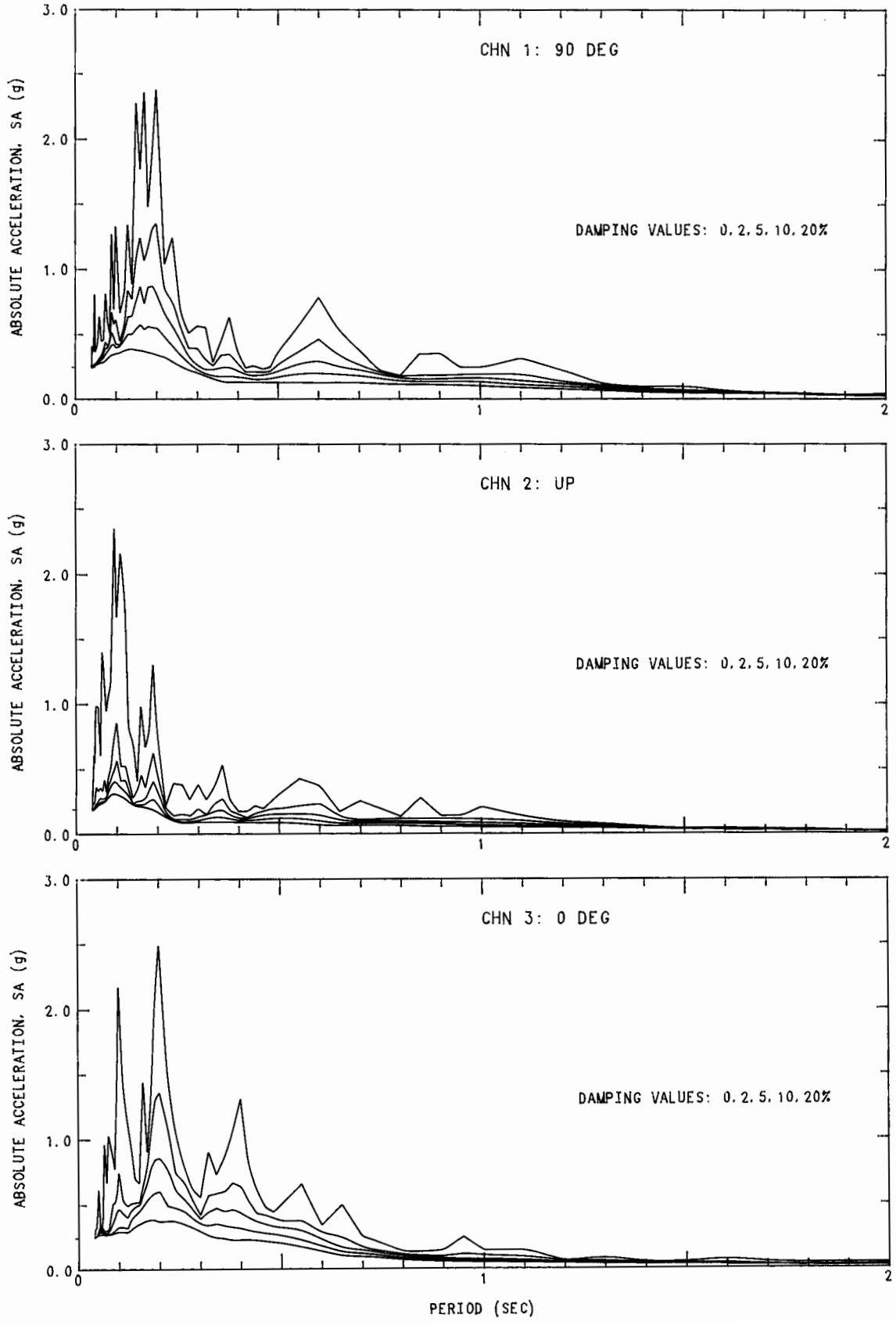

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO – SOBOBA
UNCORRECTED ACCELEROGRAM 12204-S1863-86191.01 102086.1455-QP86A204
CHN 1: 90 DEG
MAX = -0.243 G
CHN 2: UP
MAX = 0.208 G
CHN 3: 0 DEG
MAX = -0.256 G
ACCELERATION (G)
0.3
0
-0.3
0
10
20
30
40
50
60
TIME (SEC)
09


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12204-S1863-86191.01 102086.1623-QP86A204
MAX = -237.8
MAX = -9.27
MAX = -1.06
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
10
0
-10
2
0
-2
0
5
10
15
20

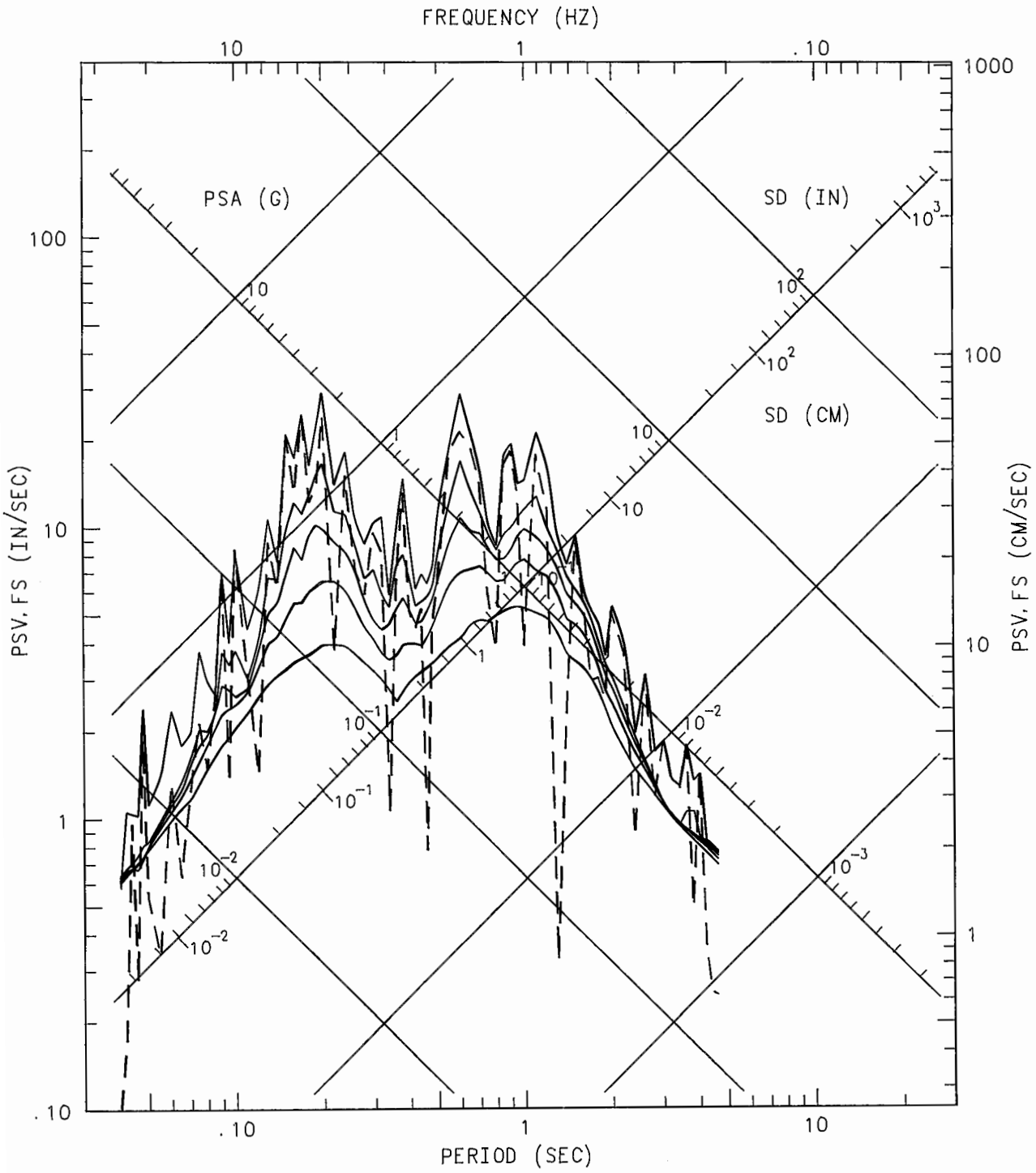

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12204-S1863-86191.01 102086.1623-QP86A204
MAX = 185.1
MAX = 6.41
MAX = -0.76
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
10
0
-10
2
0
-2
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 15-.30 TO 23.0-25.0 HZ. 12204-S1863-86191.01 102086.1623-QP86A204
MAX = -237.5
MAX = -9.46
MAX = 1.10
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
10
0
-10
2
0
-2
0
5
10
15
20

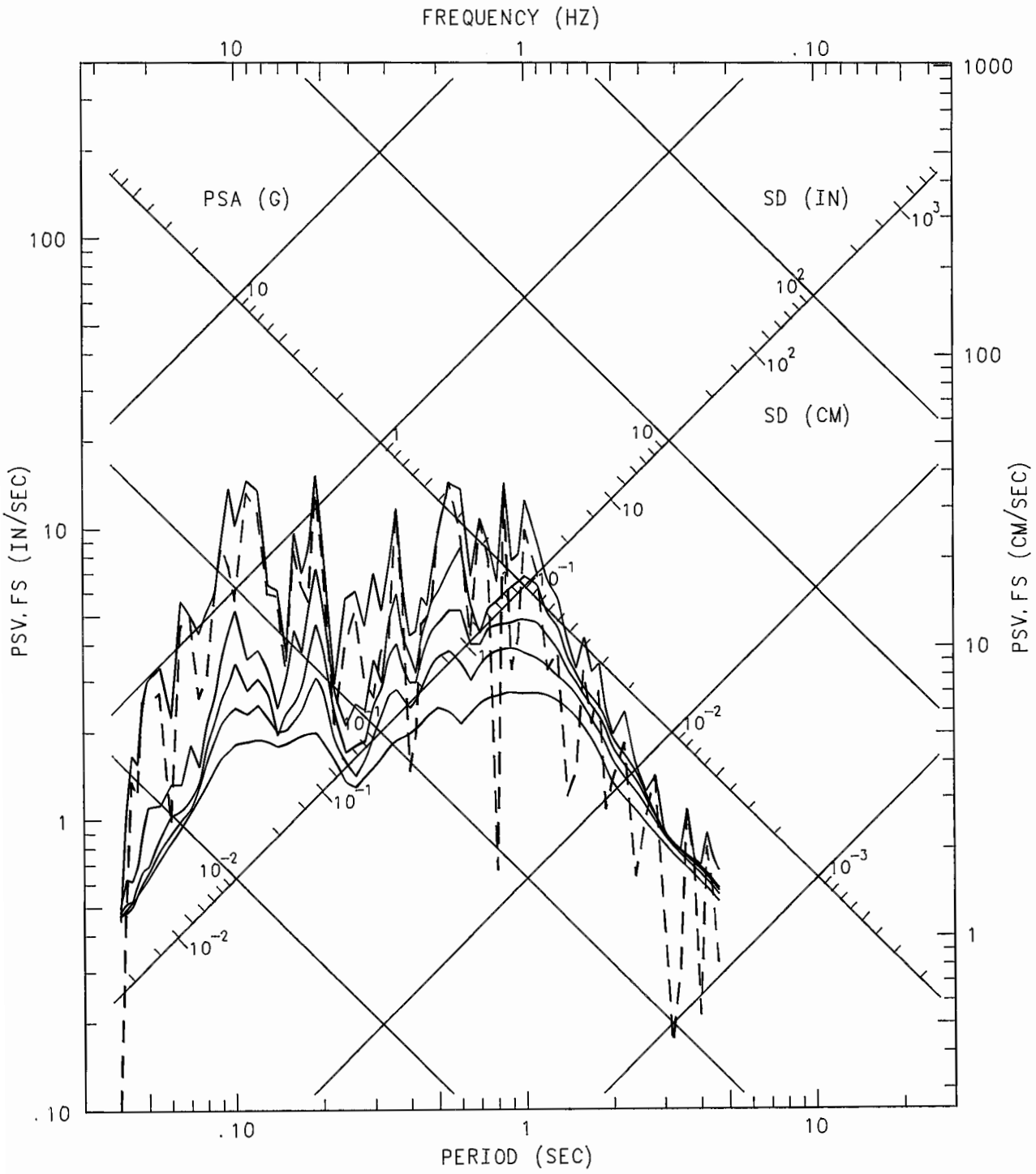
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO -- SOBOBA
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12204-S1863-86191.01 110386.1604-QPALMSP86G



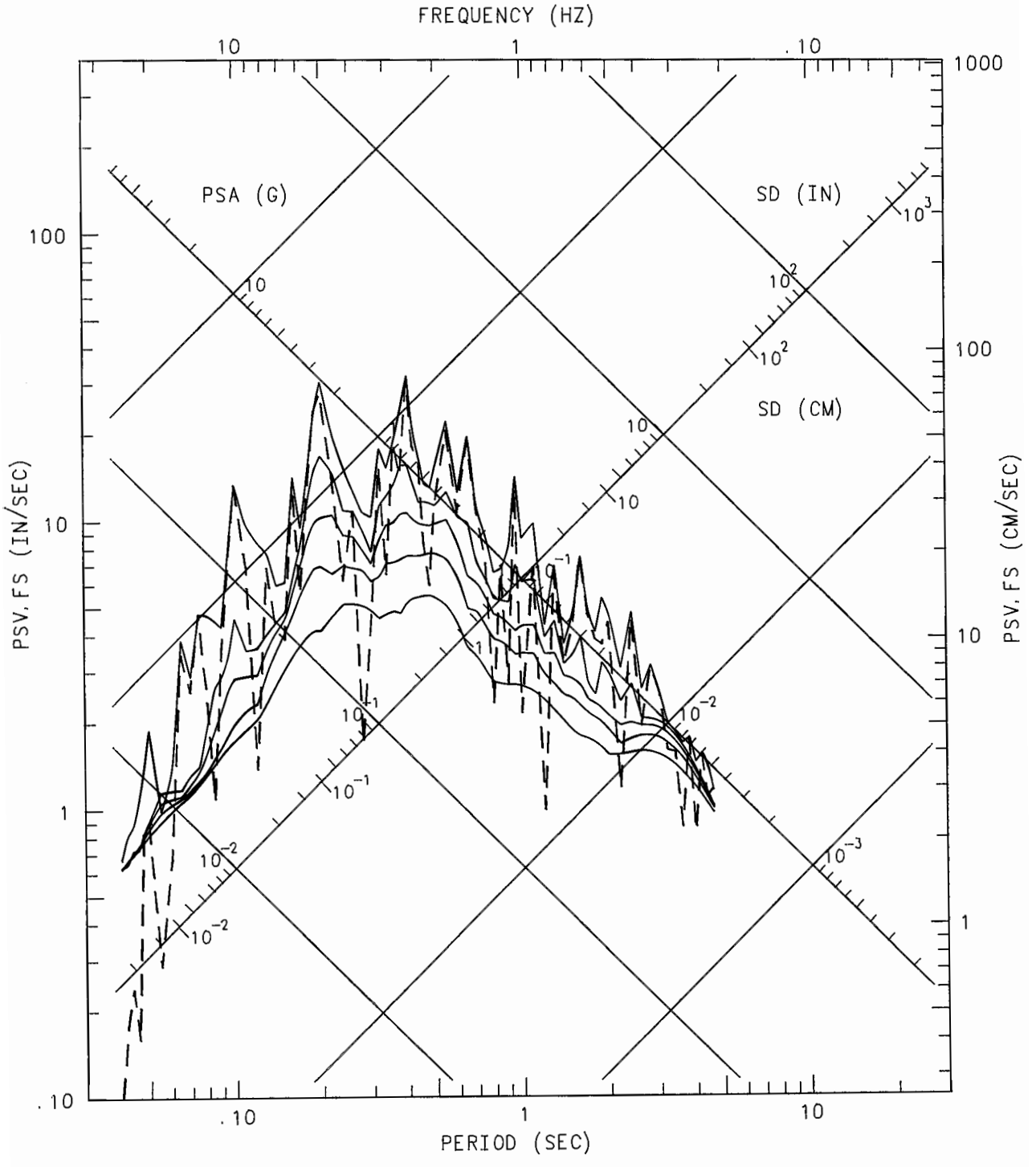
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12204-S1863-86191.01 110386.1604-QP86A204



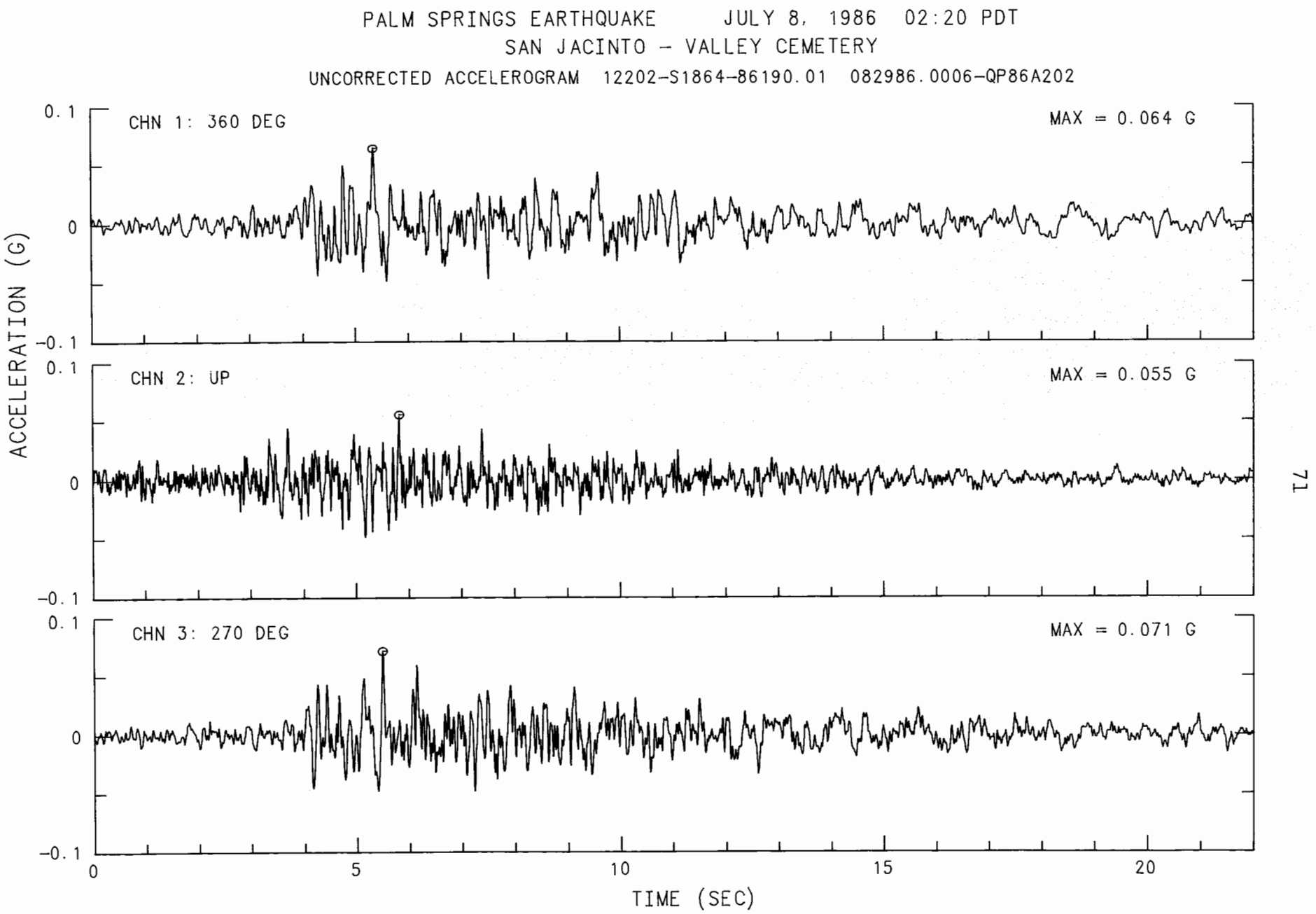
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12204-S1863-86191.01 110386.1604-QP86A204

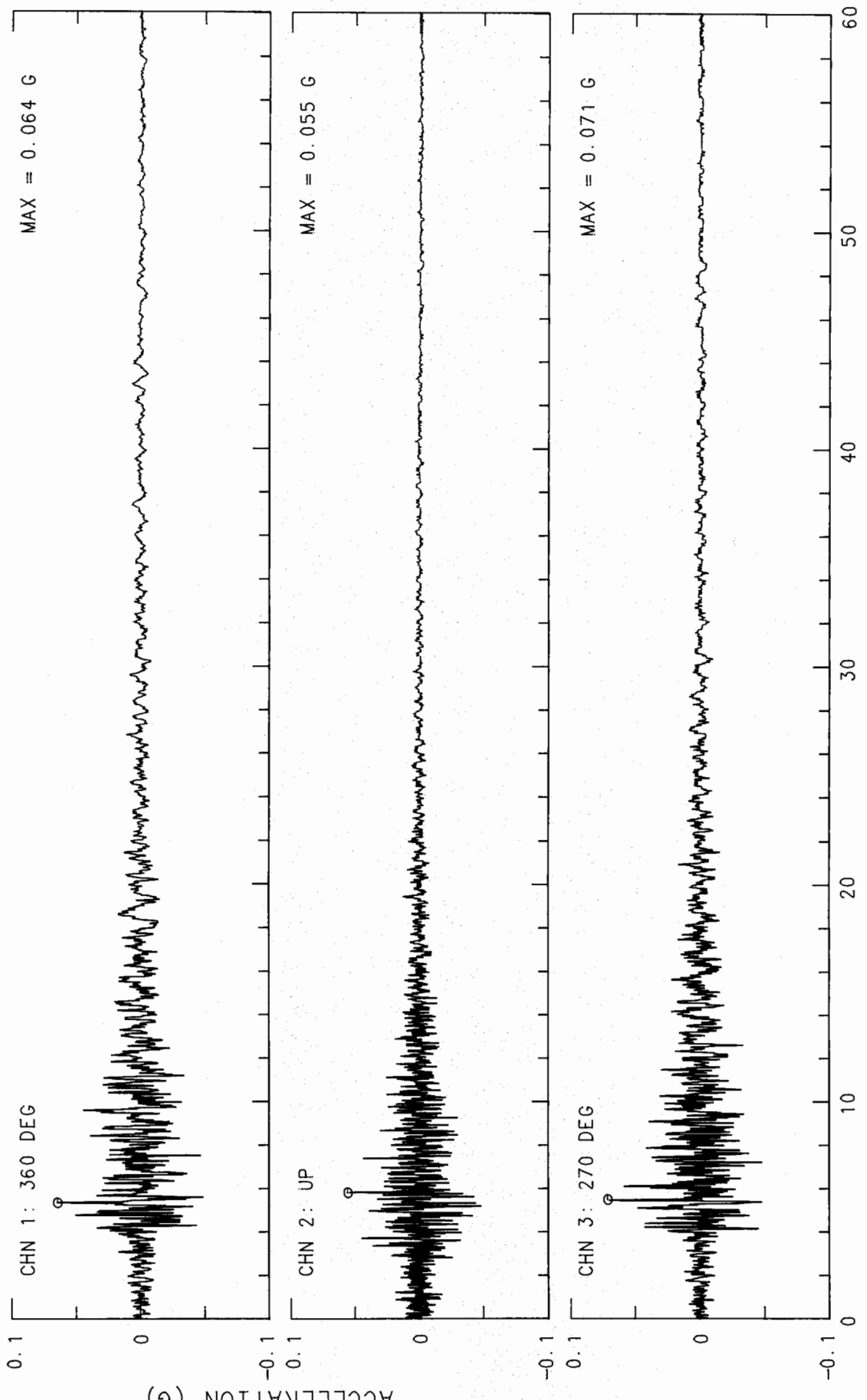


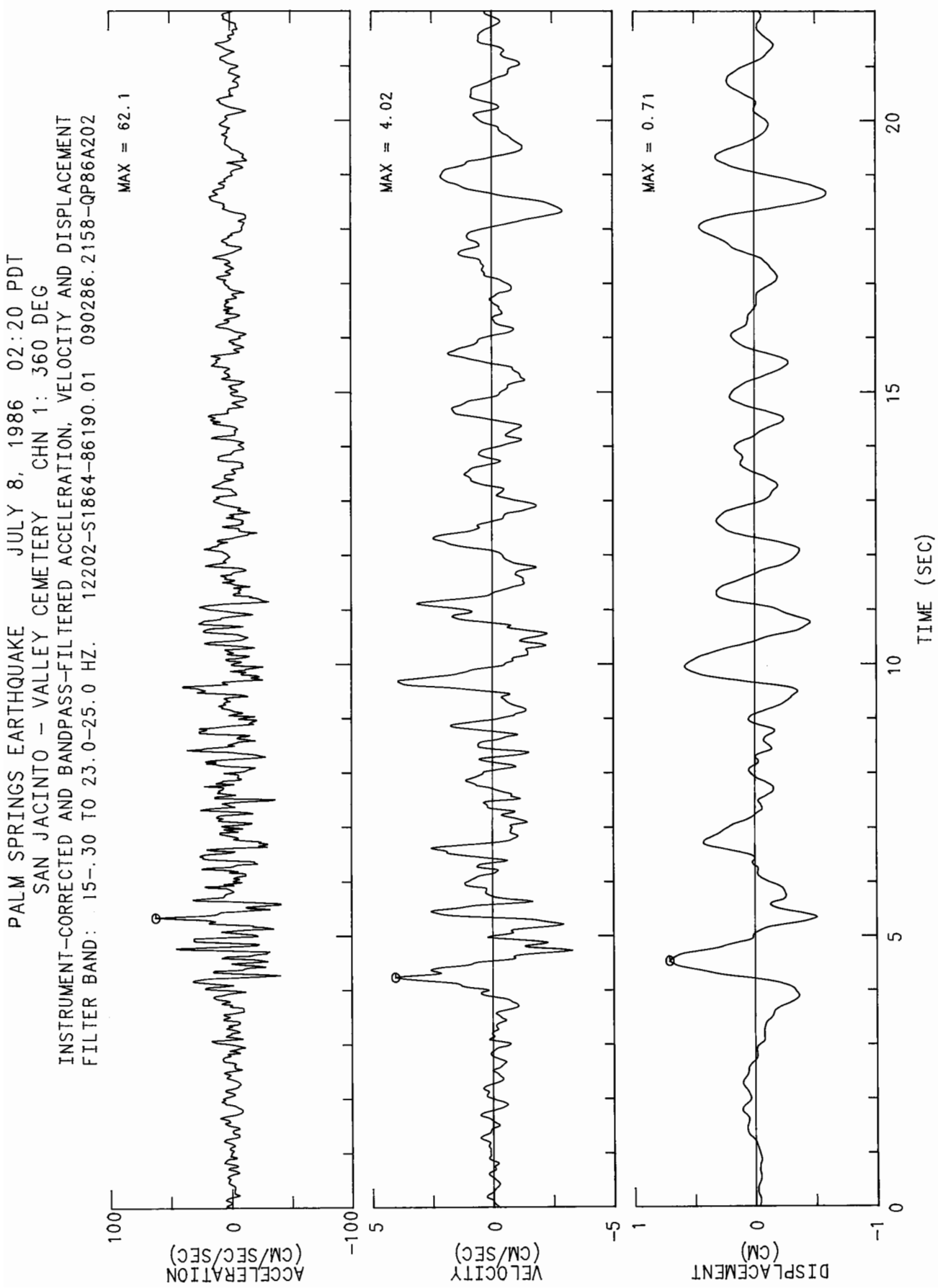
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - SOBOBA
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12204-S1863-86191.01 110386.1604-QP86A204

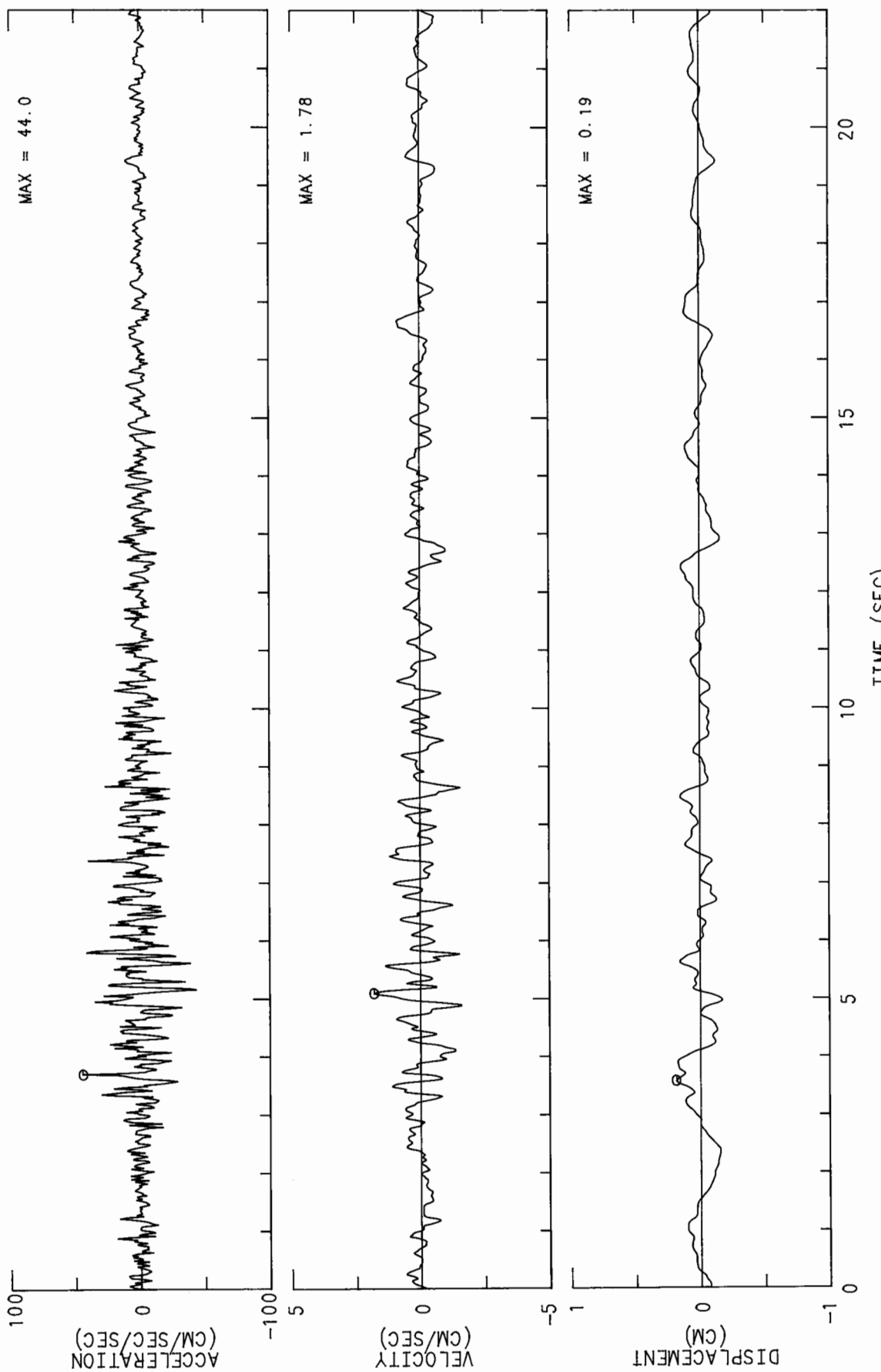


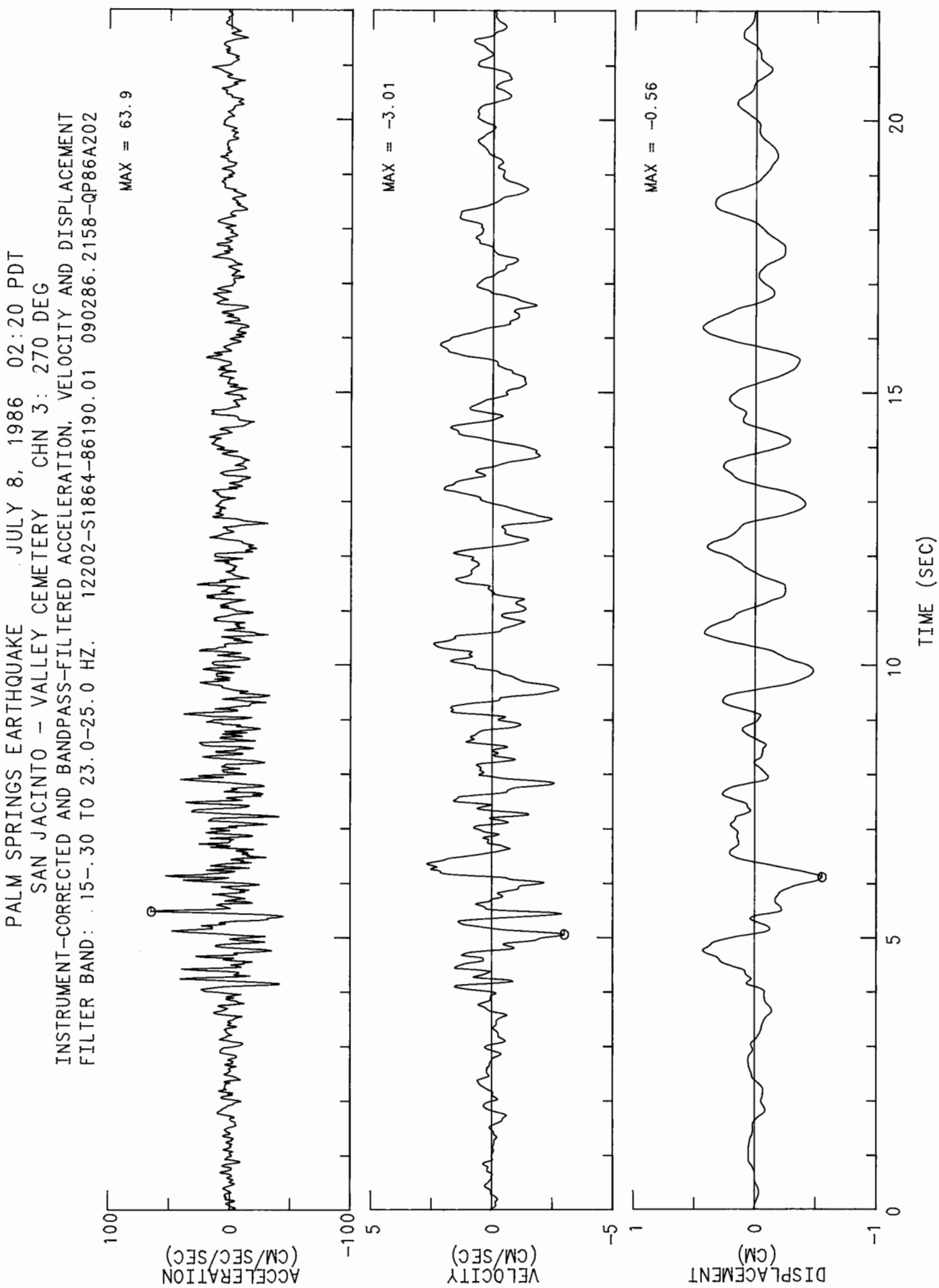
# SAN JACINTO - VALLEY CEMETERY


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO – VALLEY CEMETERY
UNCORRECTED ACCELEROGRAM 12202-S1864-86190.01 082986.0006-QP86A202
CHN 1: 360 DEG
MAX = 0.064 G
CHN 2: UP
MAX = 0.055 G
CHN 3: 270 DEG
MAX = 0.071 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

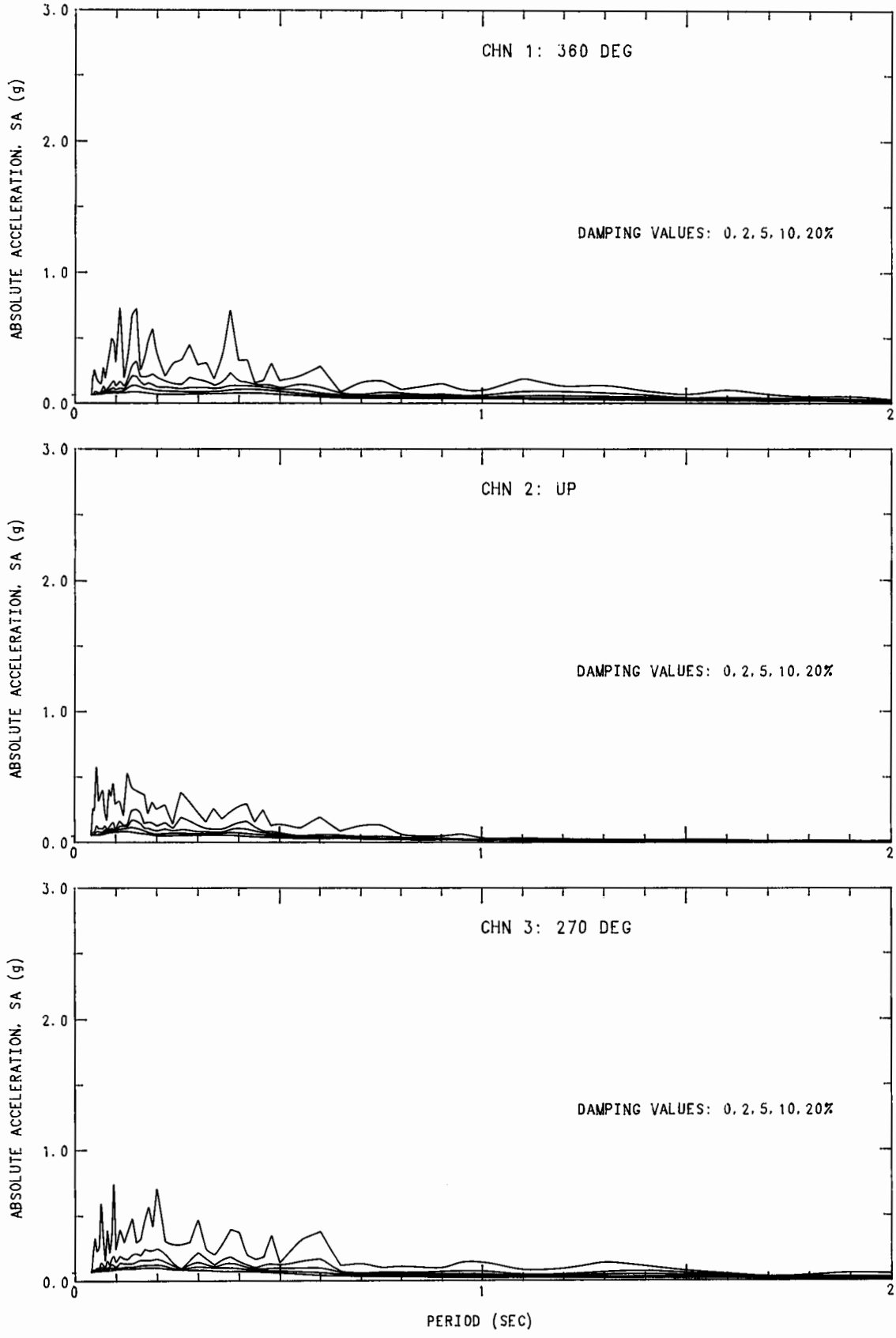

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY
UNCORRECTED ACCELEROGRAM 12202-S1864-86190.01 082986.0006-QP86A202
CHN 1: 360 DEG
MAX = 0.064 G
CHN 2: UP
MAX = 0.055 G
CHN 3: 270 DEG
MAX = 0.071 G
ACCELERATION (G)
0.1
0
-0.1
TIME (SEC)
0
10
20
30
40
50
60


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12202-S1864-86190.01 090286.2158-QP86A202
MAX = 62.1
MAX = 4.02
MAX = 0.71
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
5
0
-5
1
0
-1
0
5
10
15
20

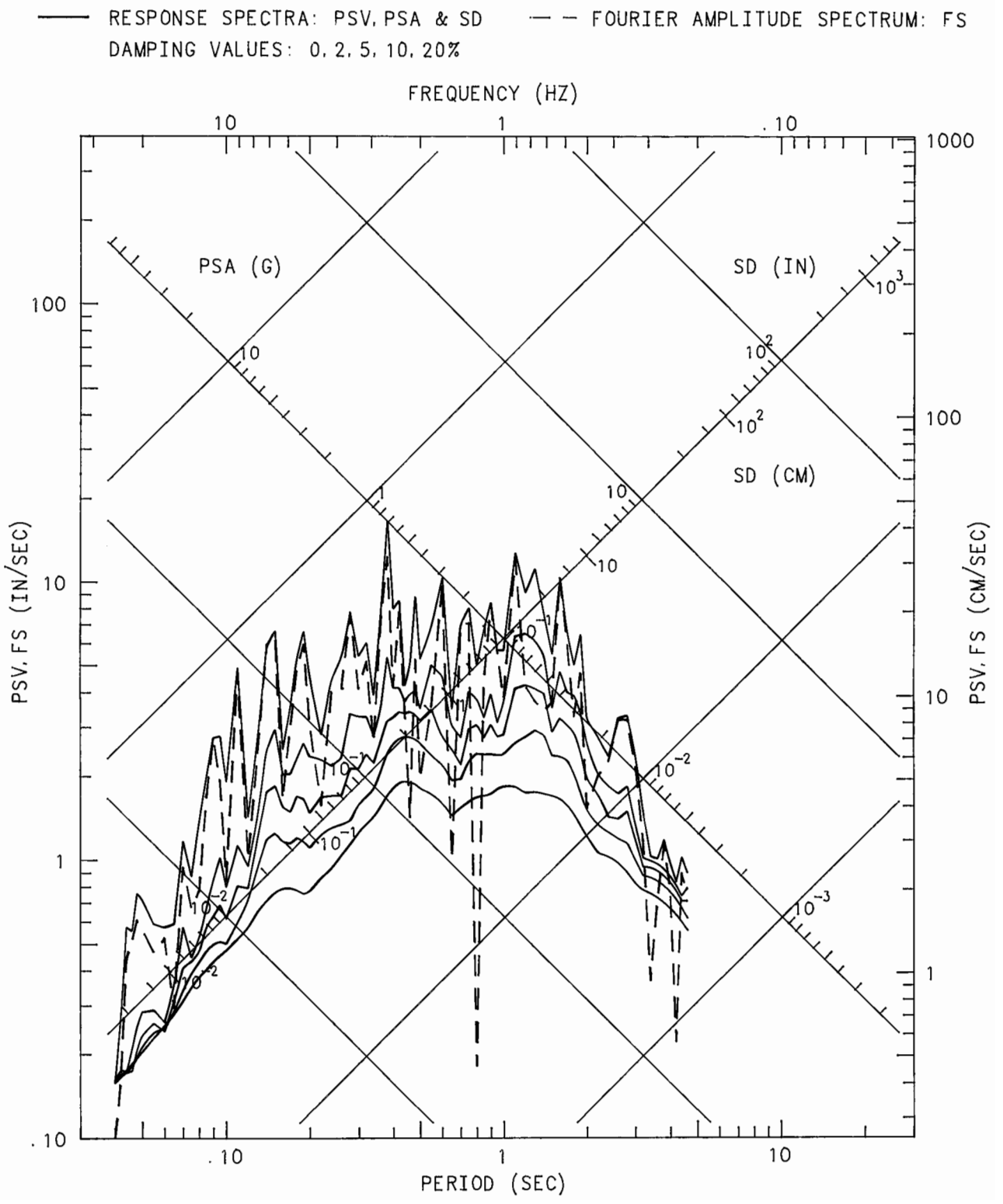

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12202-S1864-86190.01 090286.2158-QP86A202
MAX = 44.0
MAX = 1.78
MAX = 0.19
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12202-S1864-86190.01 090286.2158-QP86A202
MAX = 63.9
MAX = -3.01
MAX = -0.56
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

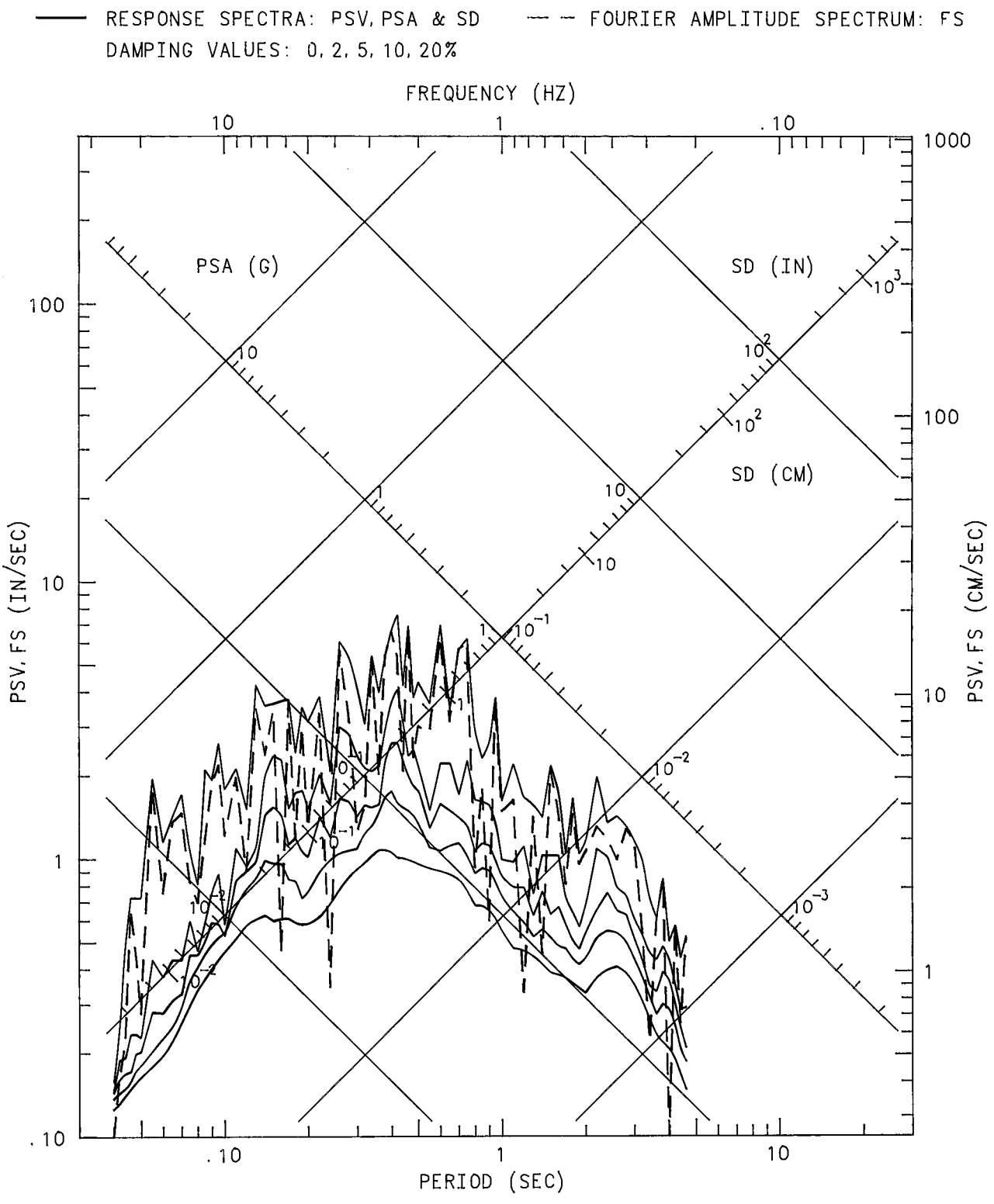
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12202-S1864-86190.01 092286.1756-QPALMSP86G



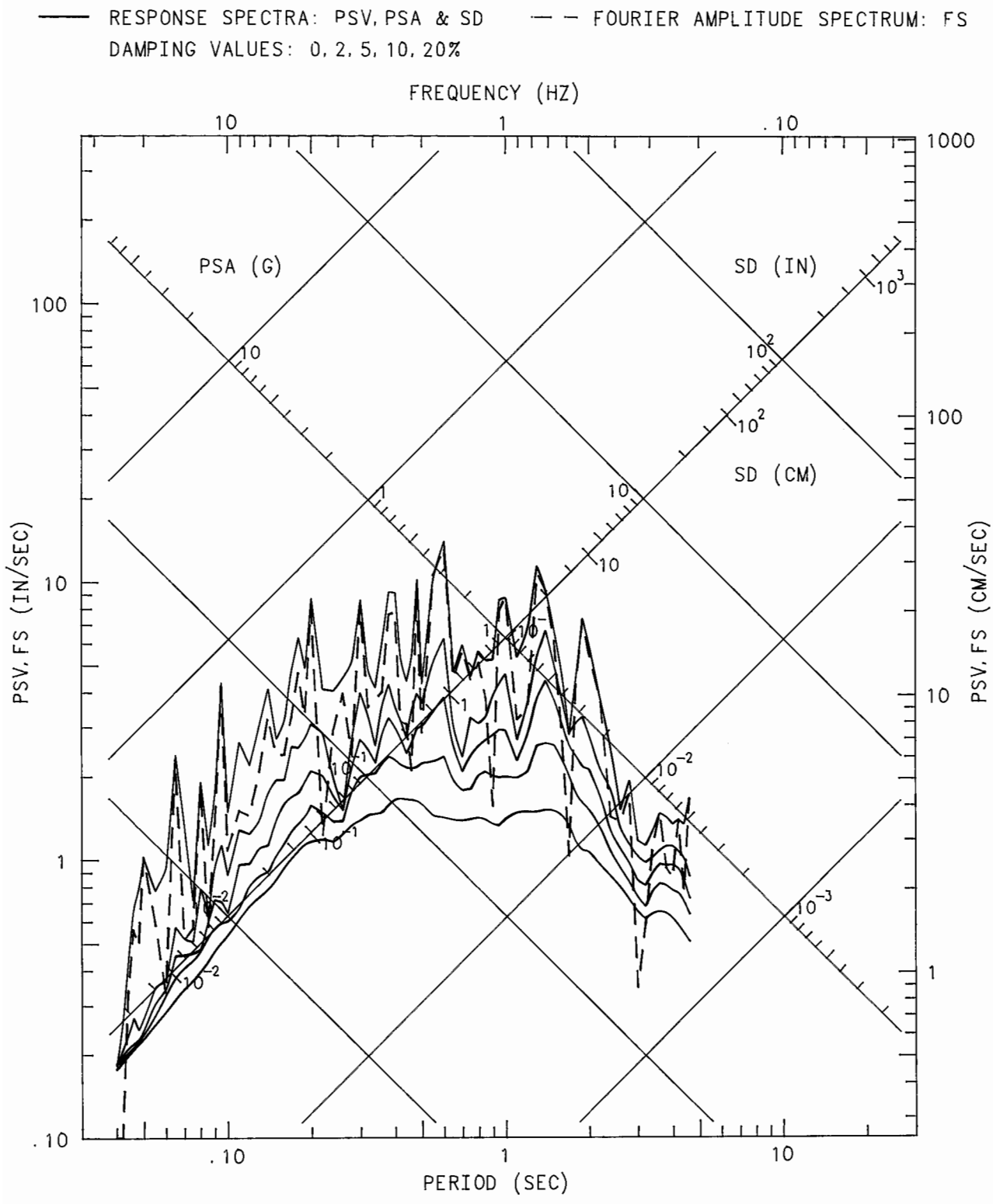
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY
CHN 1: 360 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12202-S1864-86190.01 092286.1756-QP86A202



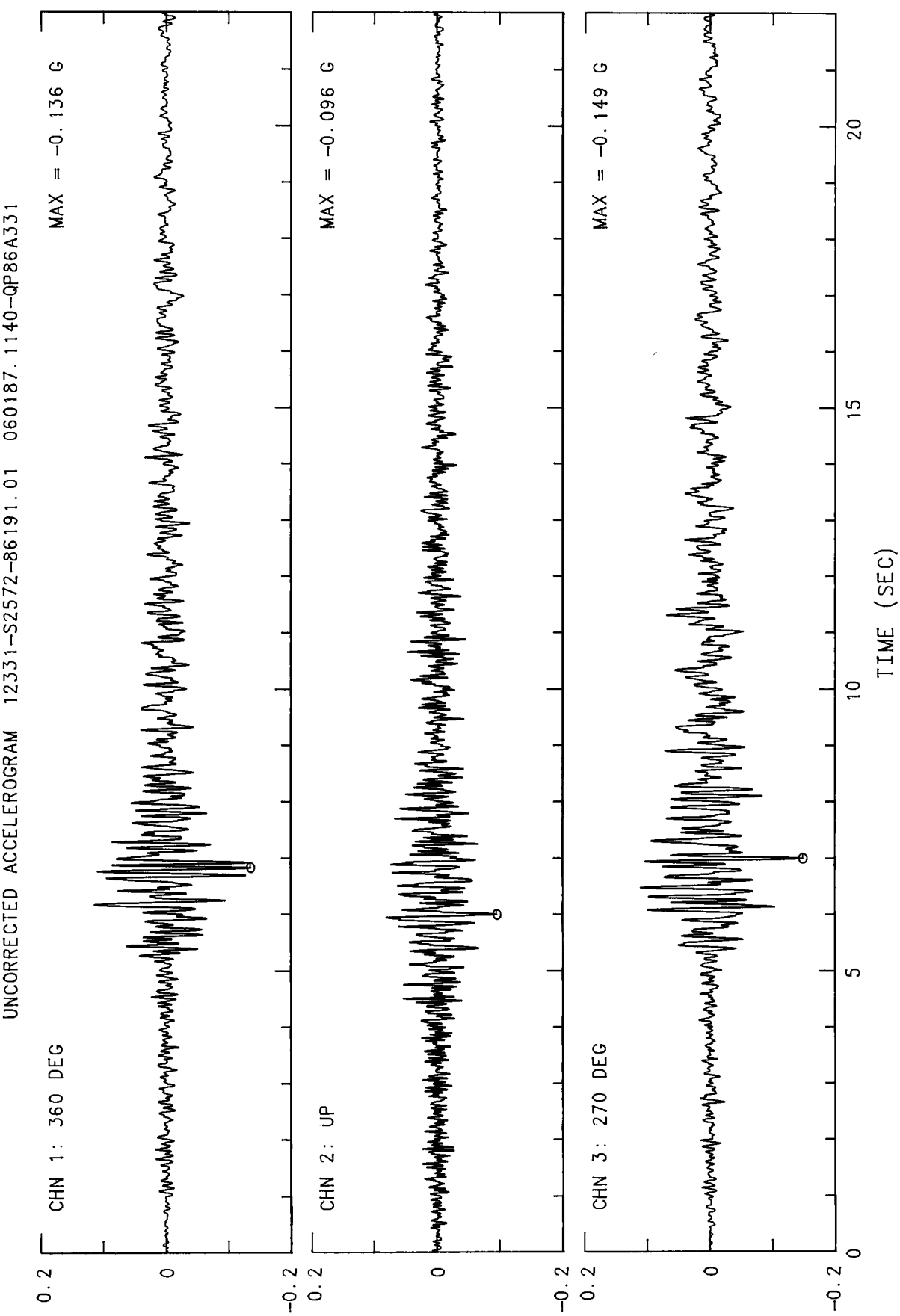
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO - VALLEY CEMETERY
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12202-S1864-86190.01 092286.1756-QP86A202

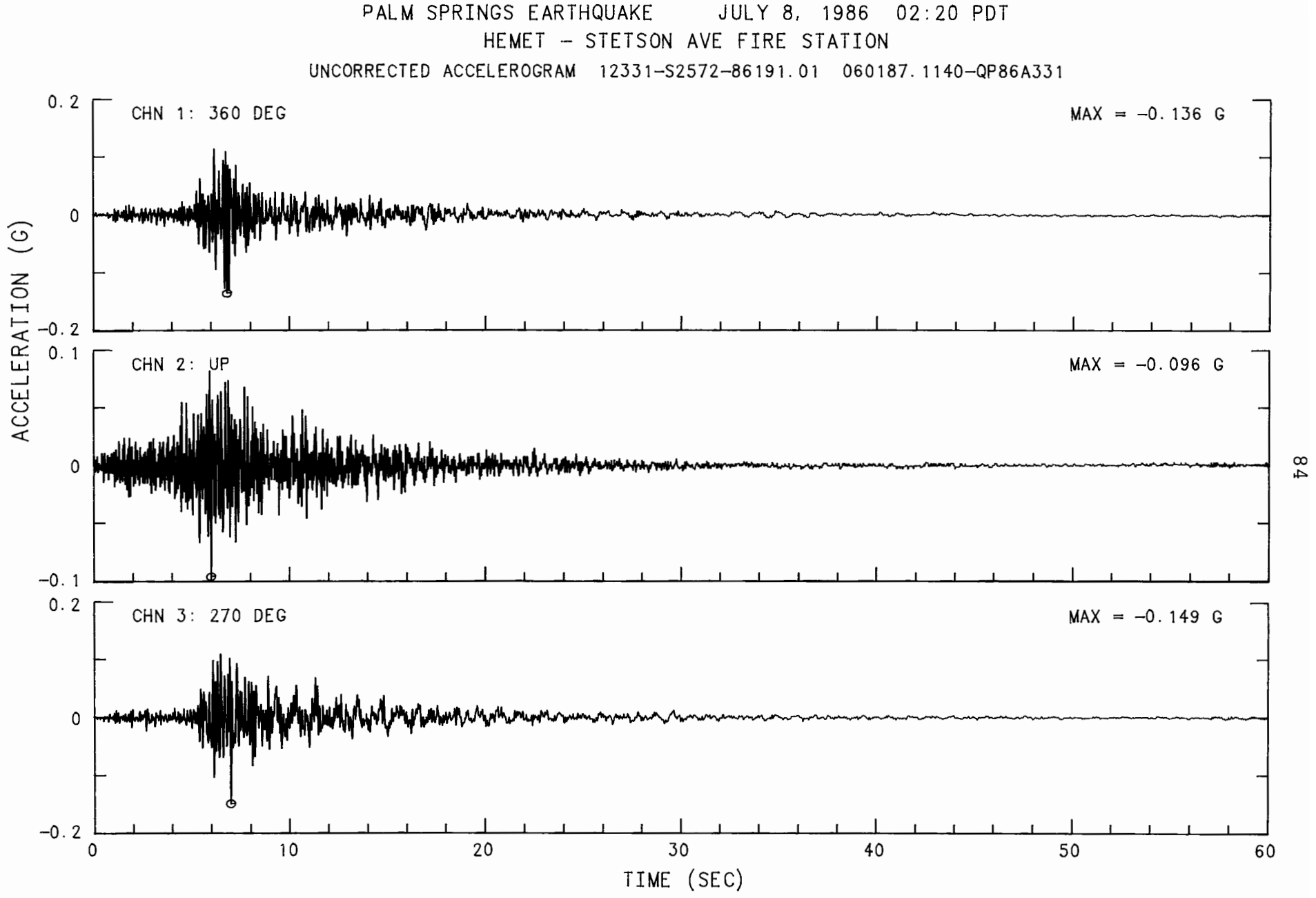


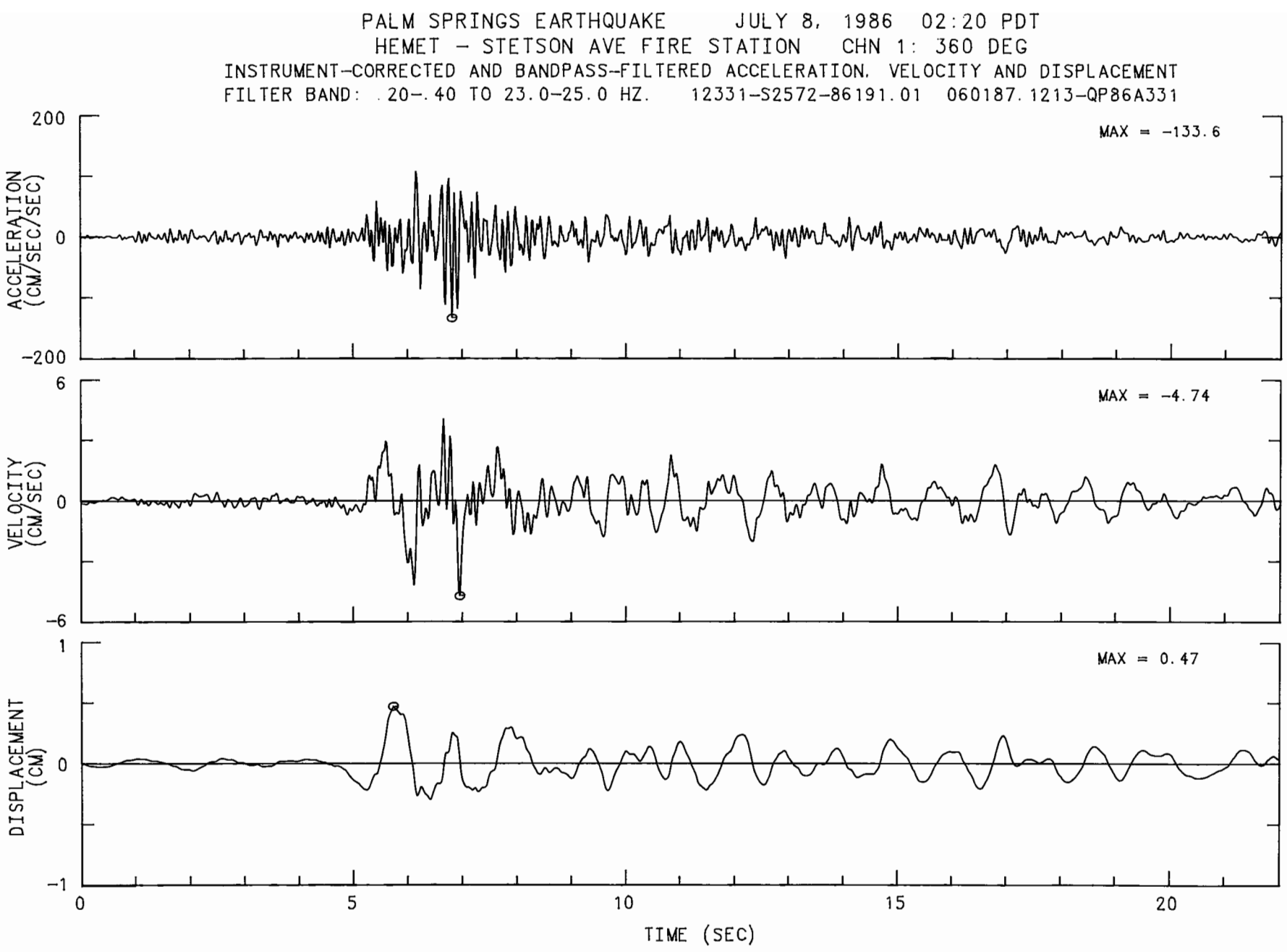
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
SAN JACINTO – VALLEY CEMETERY
CHN 3: 270 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12202-S1864-86190.01 092286.1756-QP86A202

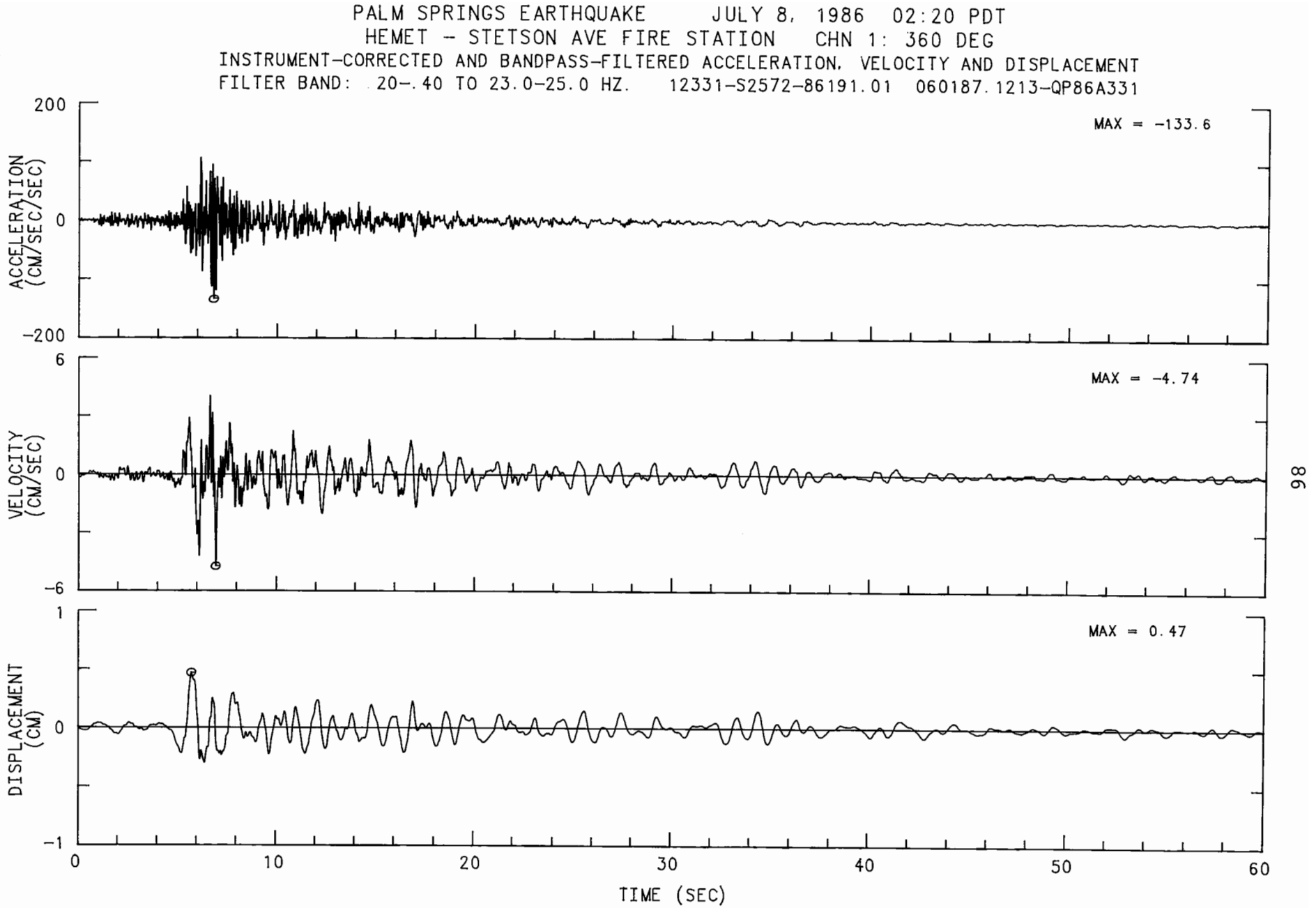


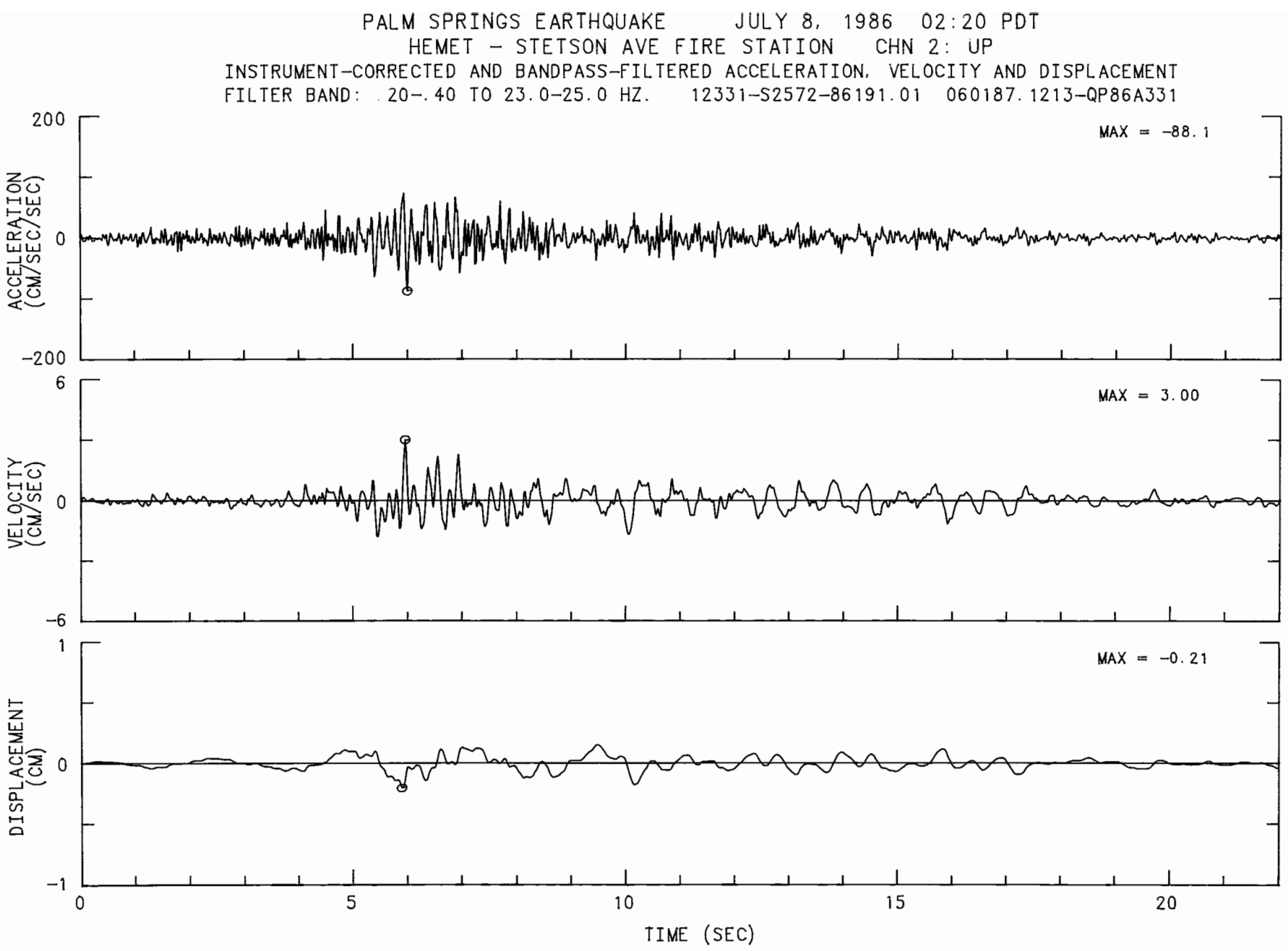
HEMET - STETSON AVE FIRE STATION

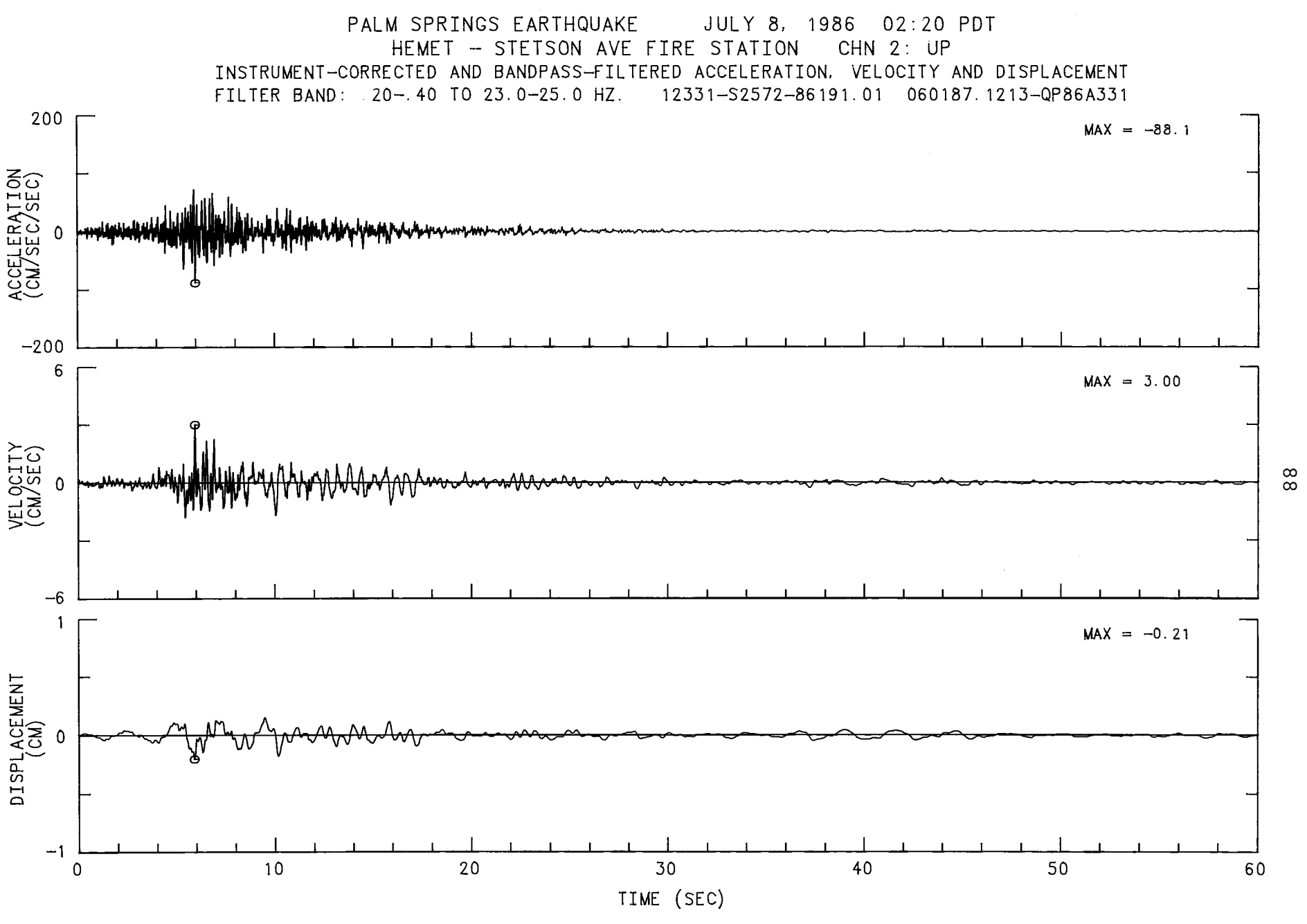

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
UNCORRECTED ACCELEROGRAM 12331-S2572-86191.01 060187.1140-QP86A331
CHN 1: 360 DEG
MAX = -0.136 G
CHN 2: UP
MAX = -0.096 G
CHN 3: 270 DEG
MAX = -0.149 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

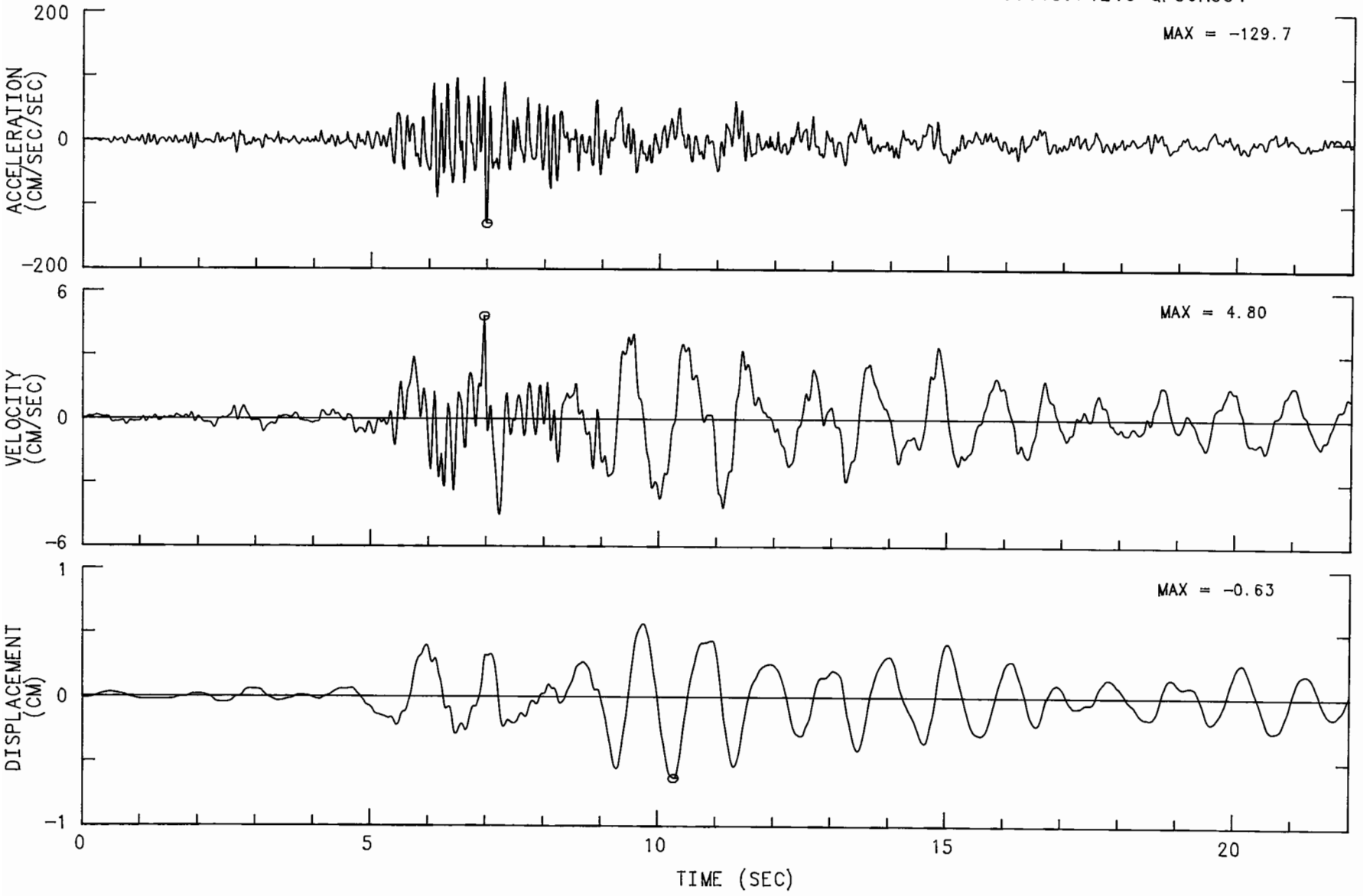

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
UNCORRECTED ACCELEROGRAM 12331-S2572-86191.01 060187.1140-QP86A331
CHN 1: 360 DEG
MAX = -0.136 G
CHN 2: UP
MAX = -0.096 G
CHN 3: 270 DEG
MAX = -0.149 G
ACCELERATION (G)
0.2
0
-0.2
0.1
-0.1
0
10
20
30
40
50
60
TIME (SEC)

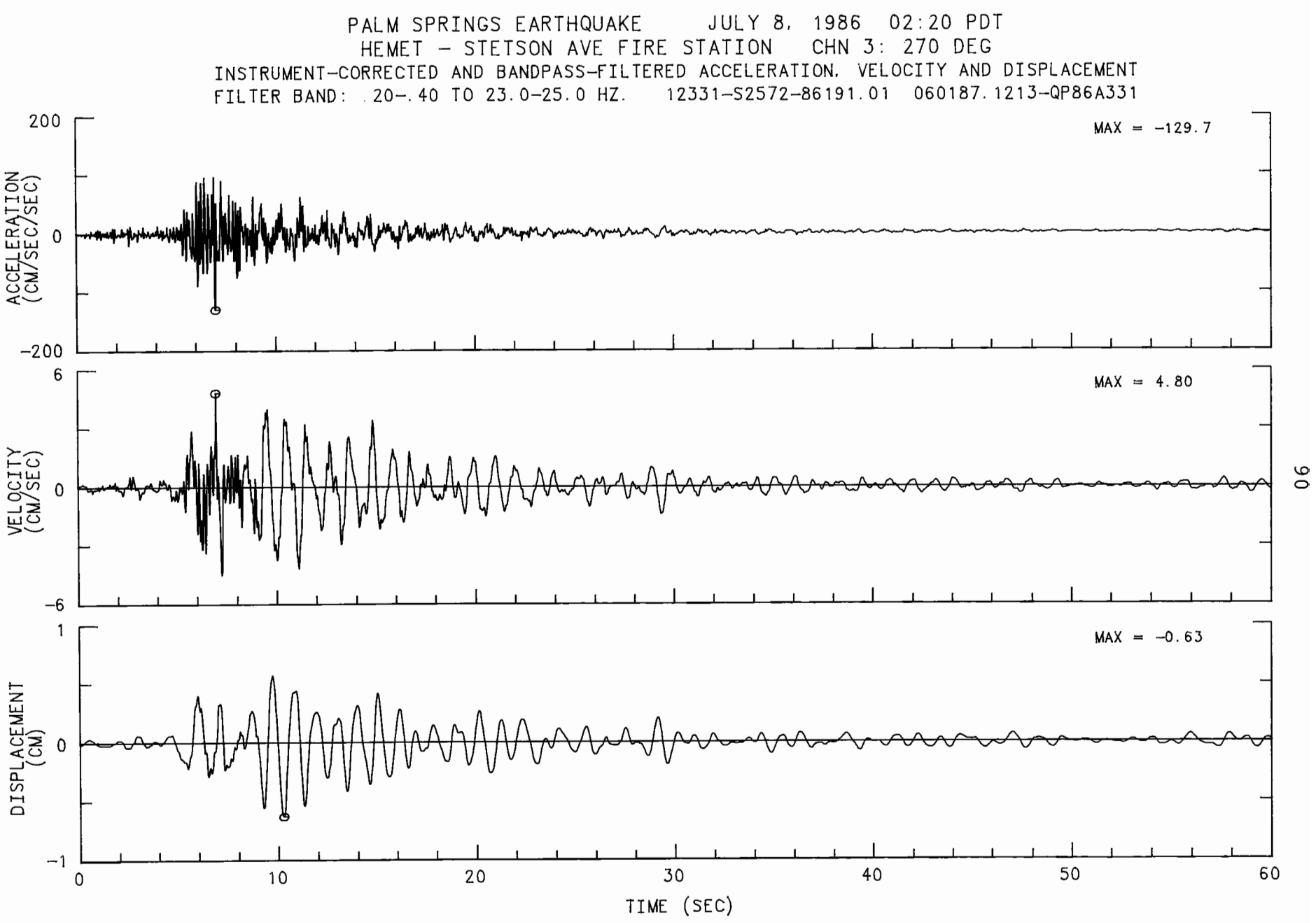

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
ACCELERATION (CM/SEC/SEC)
MAX = -133.6
VELOCITY (CM/SEC)
MAX = -4.74
DISPLACEMENT (CM)
MAX = 0.47
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
ACCELERATION (CM/SEC/SEC)
MAX = -133.6
VELOCITY (CM/SEC)
MAX = -4.74
DISPLACEMENT (CM)
MAX = 0.47
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
ACCELERATION (CM/SEC/SEC)
MAX = -88.1
VELOCITY (CM/SEC)
MAX = 3.00
DISPLACEMENT (CM)
MAX = -0.21
TIME (SEC)

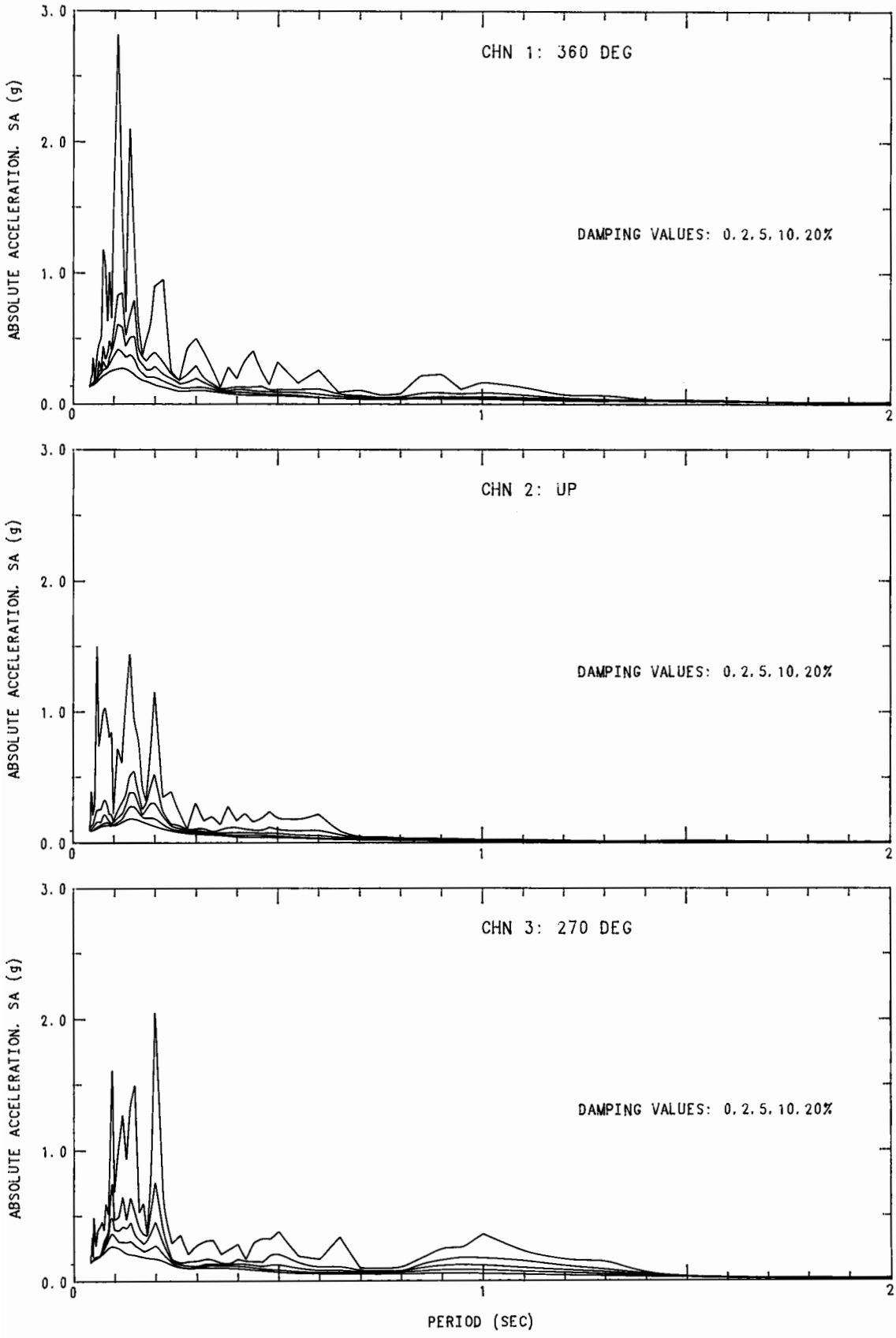

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
ACCELERATION (CM/SEC/SEC)
MAX = -88.1
VELOCITY (CM/SEC)
MAX = 3.00
DISPLACEMENT (CM)
MAX = -0.21
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
ACCELERATION (CM/SEC/SEC)
MAX = -129.7
VELOCITY (CM/SEC)
MAX = 4.80
DISPLACEMENT (CM)
MAX = -0.63
TIME (SEC)

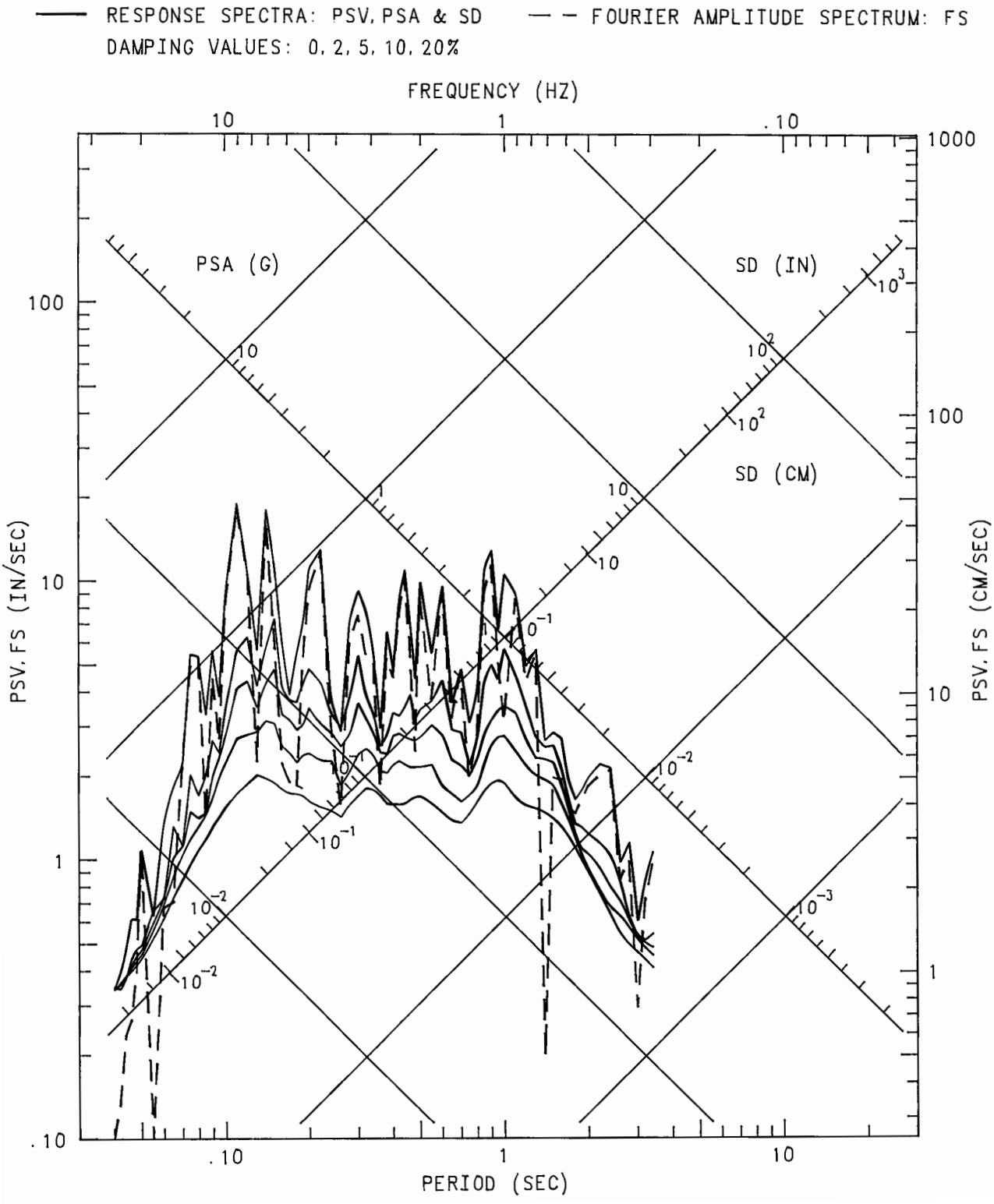

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 12331-S2572-86191.01 060187.1213-QP86A331
MAX = -129.7
MAX = 4.80
MAX = -0.63
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
200
0
-200
6
0
-6
1
0
-1
0
10
20
30
40
50
60
TIME (SEC)

90

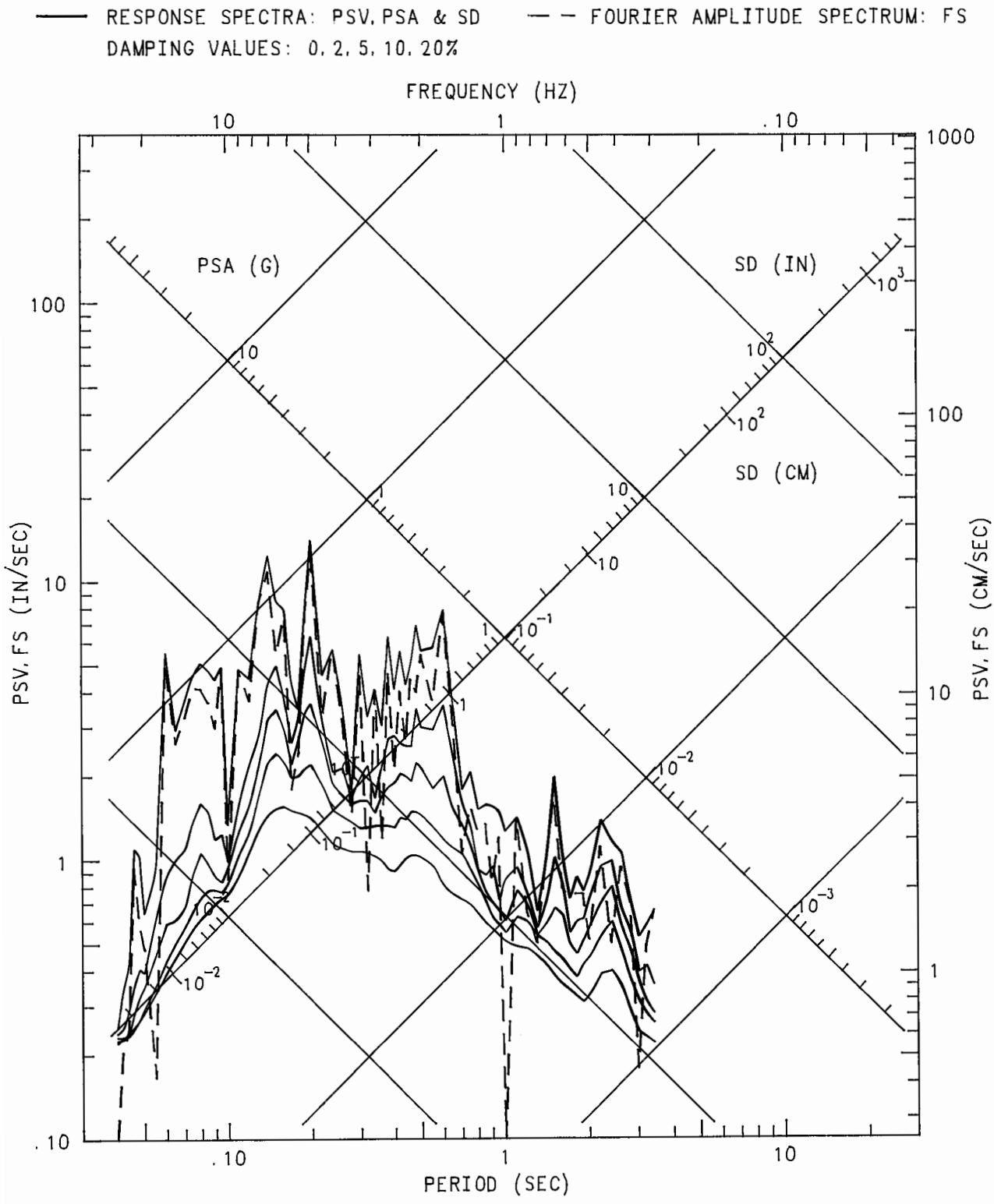
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12331-S2572-86191.01 060187.1233-QPALMSP86G



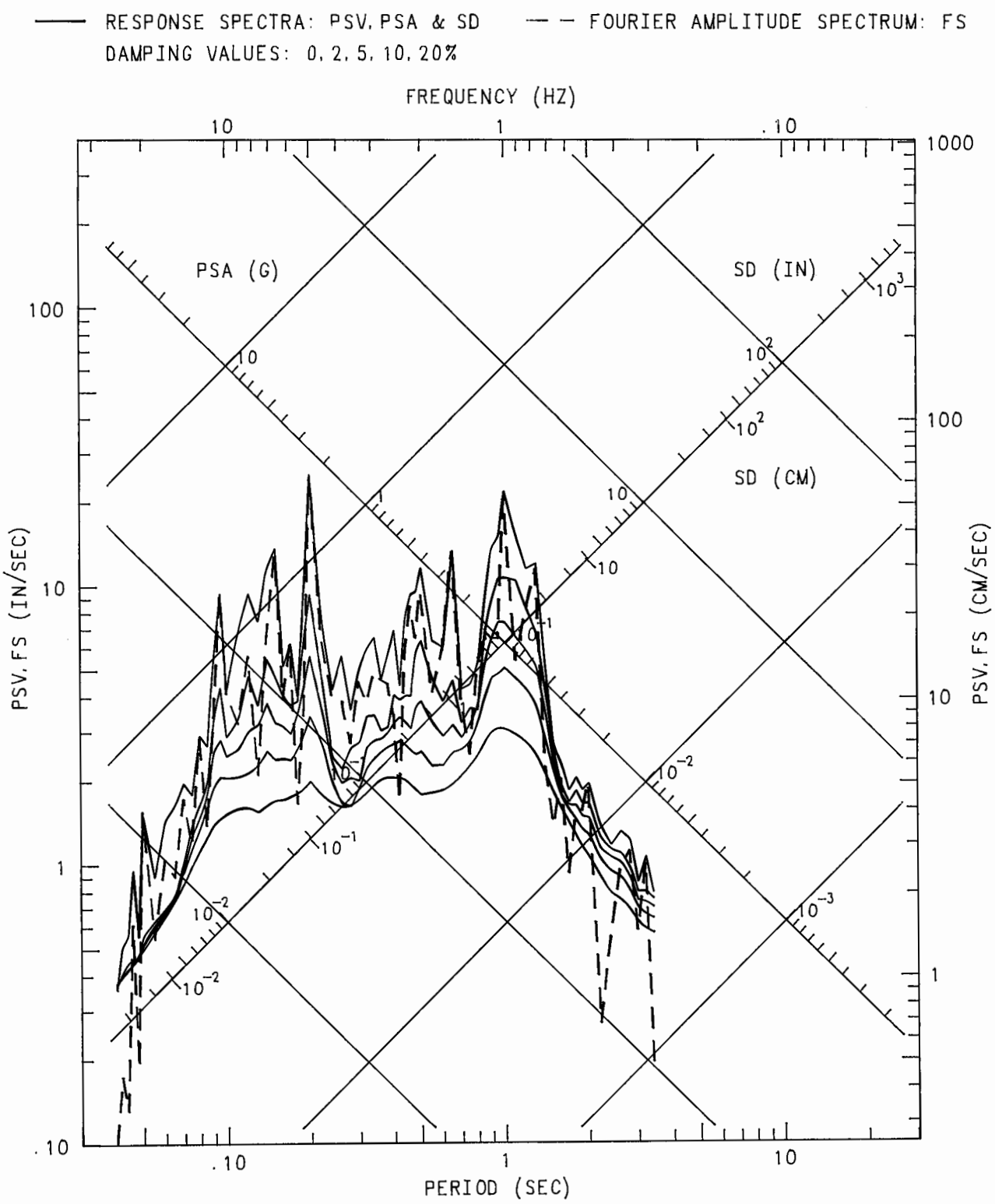
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
CHN 1: 360 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12331-S2572-86191.01 060187.1233-QP86A331



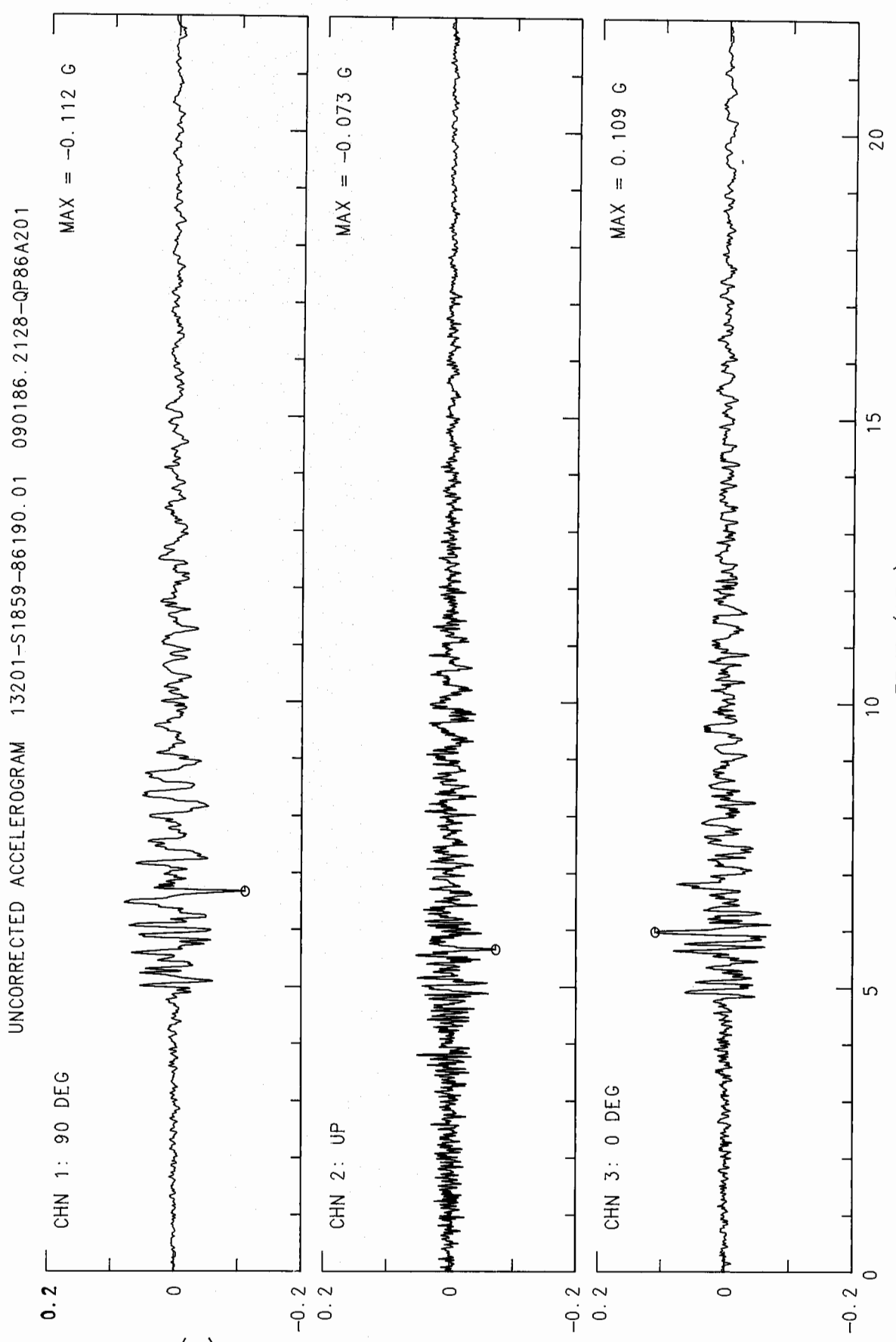
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12331-S2572-86191.01 060187.1233-QP86A331

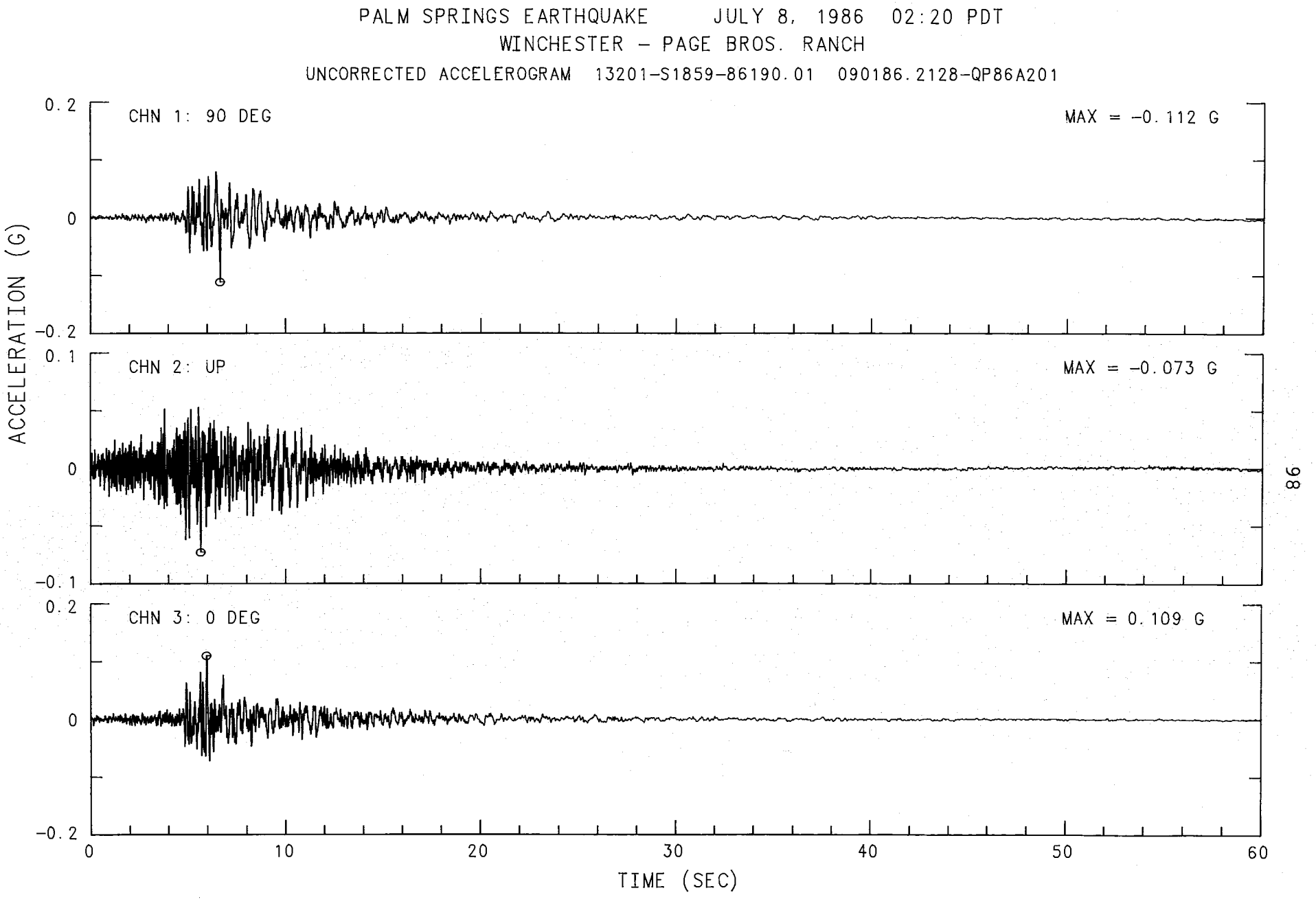


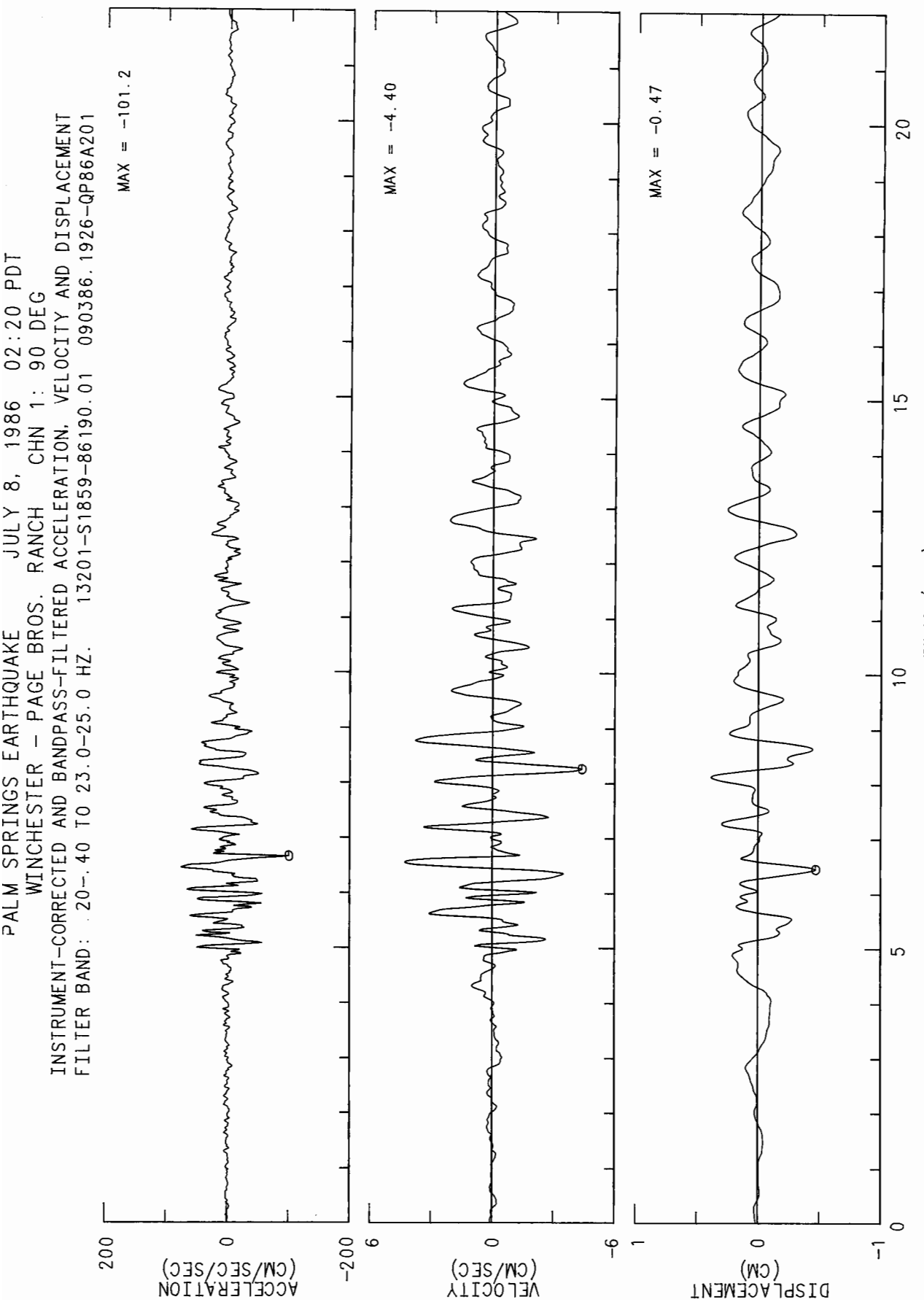
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HEMET - STETSON AVE FIRE STATION
CHN 3: 270 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
12331-S2572-86191.01 060187.1233-QP86A331

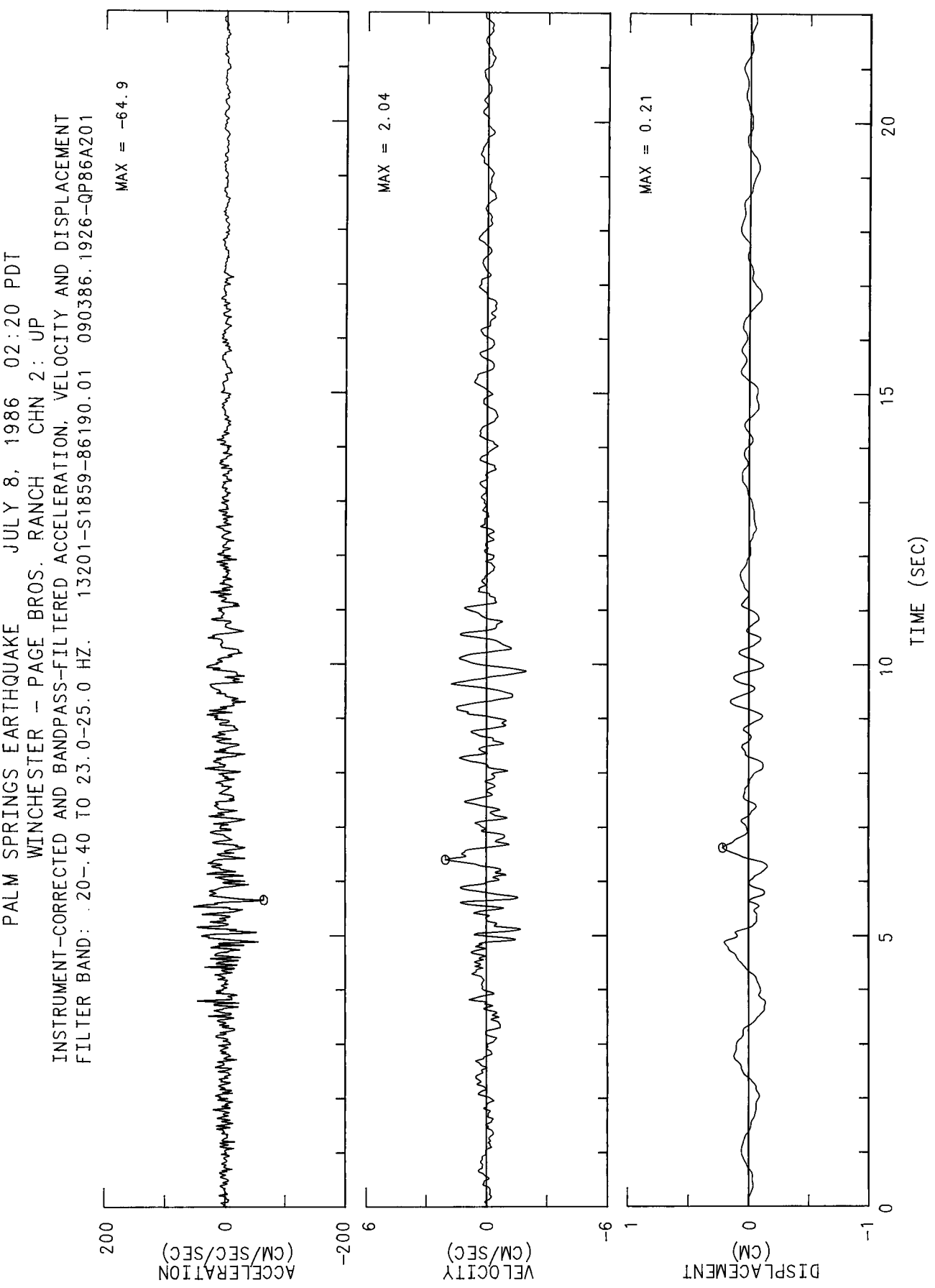


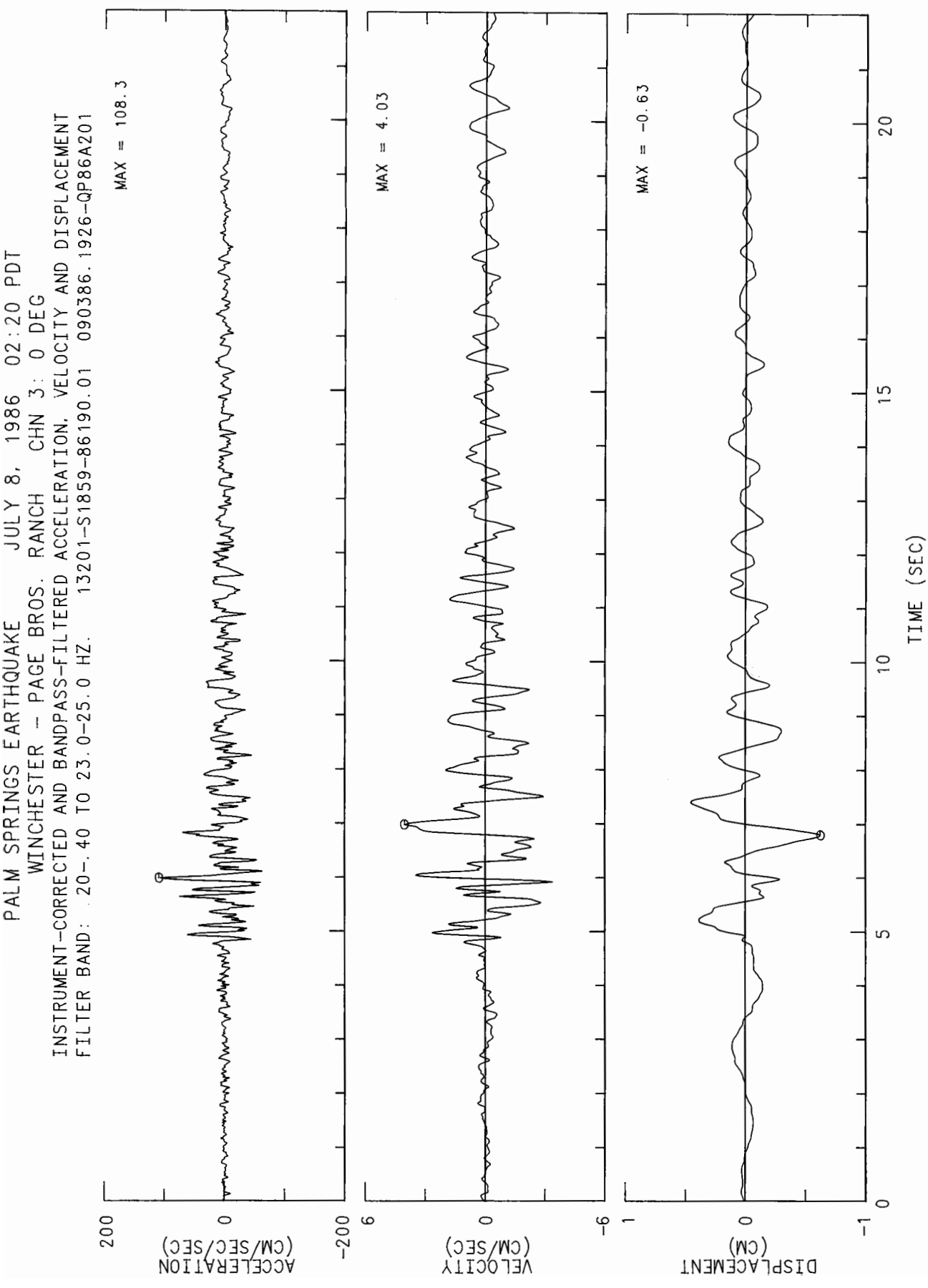
WINCHESTER - PAGE BROS. RANCH


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH
UNCORRECTED ACCELEROGRAM 13201-S1859-86190.01 090186.2128-QP86A201
CHN 1: 90 DEG
MAX = -0.112 G
CHN 2: UP
MAX = -0.073 G
CHN 3: 0 DEG
MAX = 0.109 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

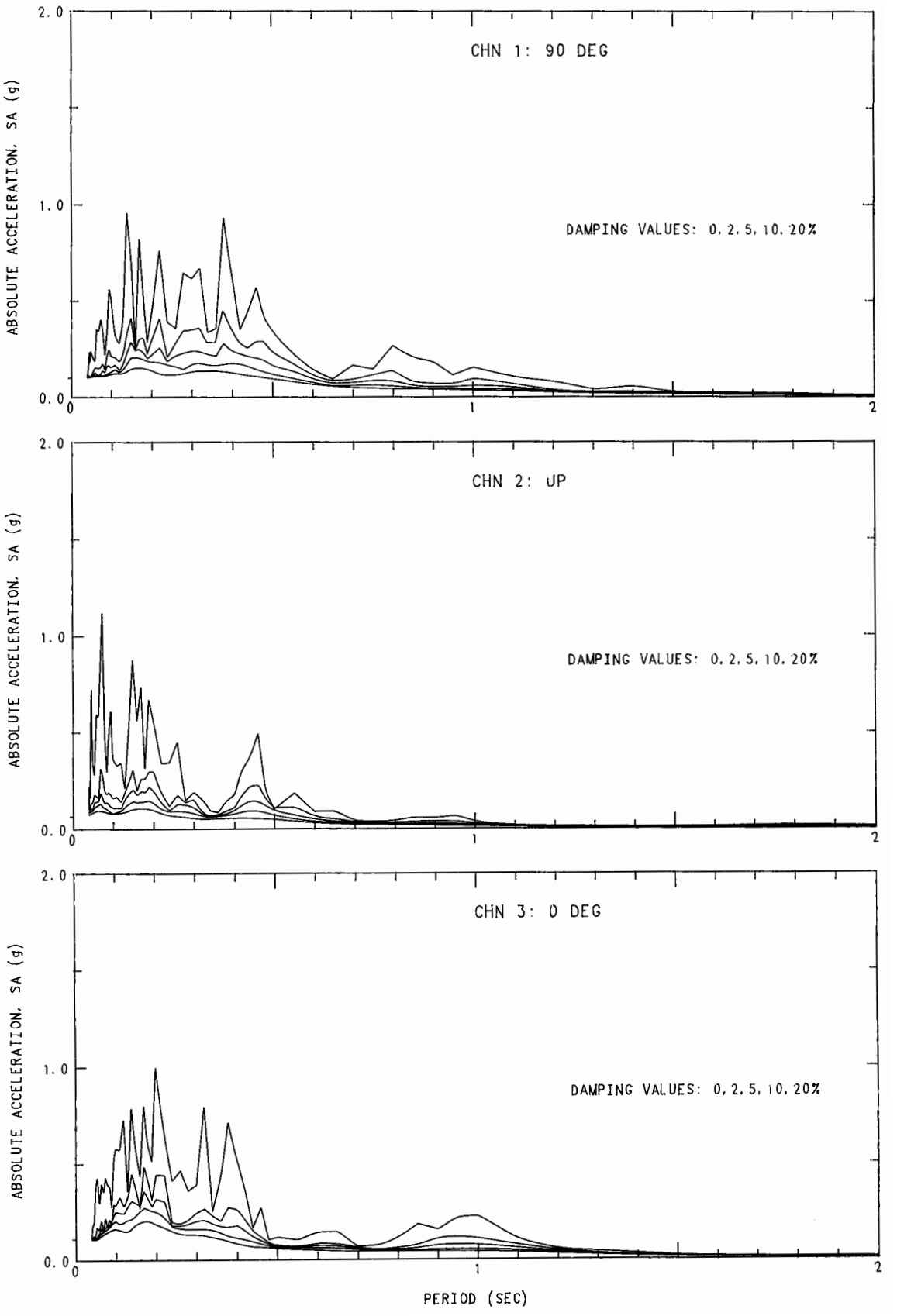

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER – PAGE BROS. RANCH
UNCORRECTED ACCELEROGRAM 13201-S1859-86190.01 090186.2128-QP86A201
CHN 1: 90 DEG
MAX = -0.112 G
CHN 2: UP
MAX = -0.073 G
CHN 3: 0 DEG
MAX = 0.109 G
ACCELERATION (G)
0.2
0
-0.2
0.1
0
-0.1
0.2
0
-0.2
0
10
20
30
40
50
60
TIME (SEC)
86


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 13201-S1859-86190.01 090386.1926-QP86A201
MAX = -101.2
MAX = -4.40
MAX = -0.47
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
6
0
-6
1
0
-1
0
5
10
15
20

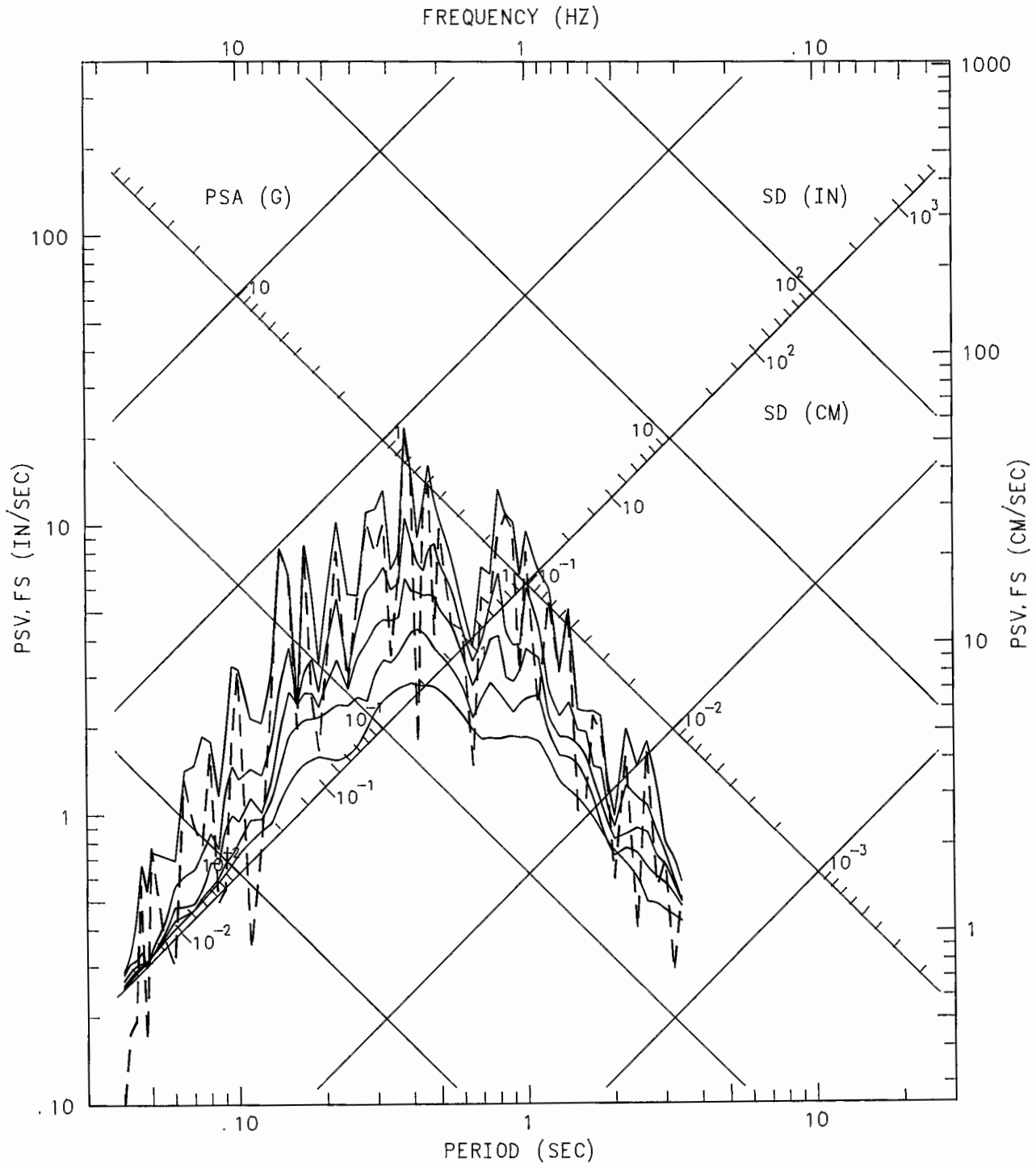

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 13201-S1859-86190.01 090386.1926-QP86A201
MAX = -64.9
MAX = 2.04
MAX = 0.21
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
6
0
-6
1
0
-1
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER -- PAGE BROS. RANCH CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 13201-S1859-86190.01 090386.1926-QP86A201
MAX = 108.3
MAX = 4.03
MAX = -0.63
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

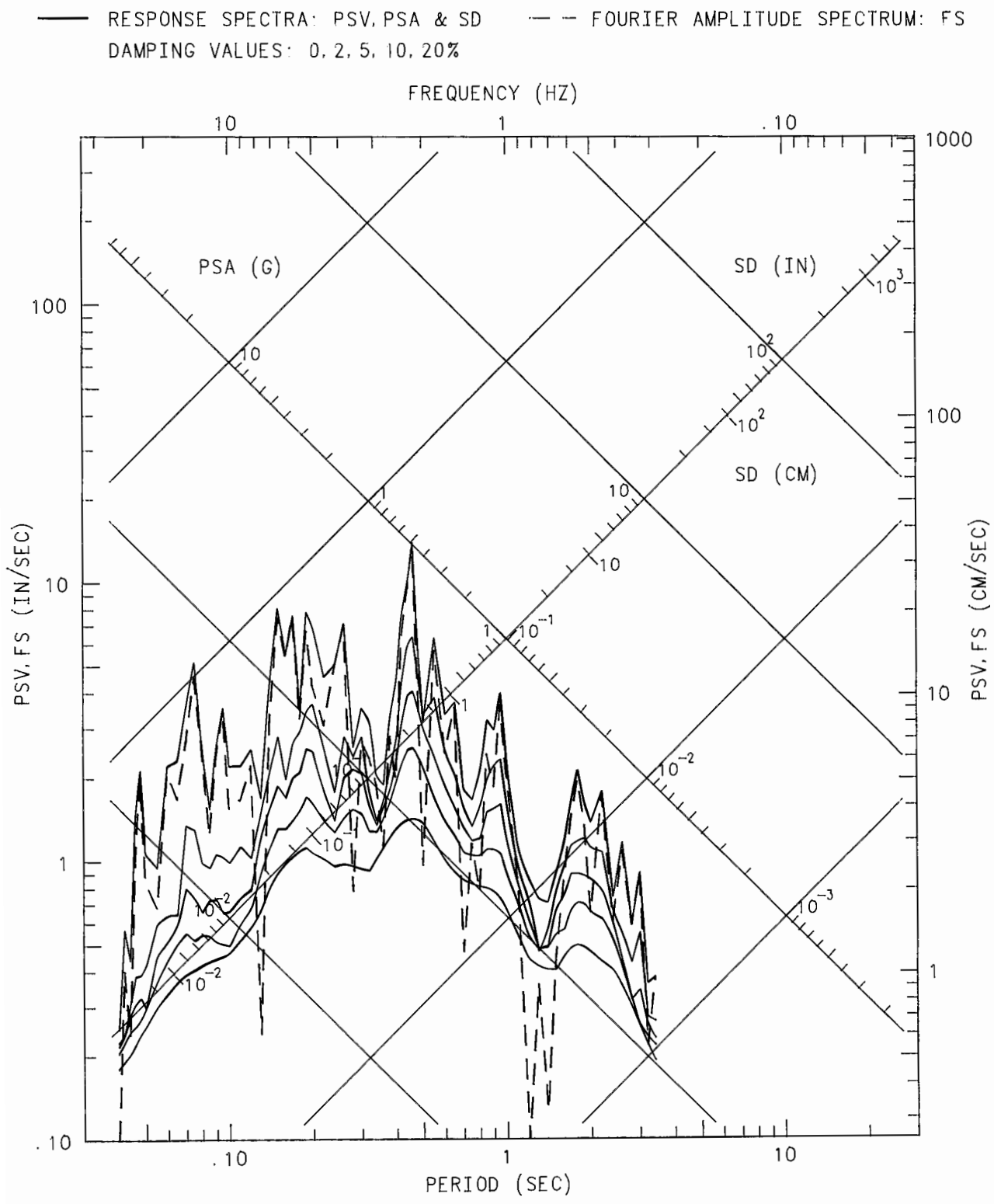
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13201-S1859-86190.01 040887.0820-QPALMSP86G



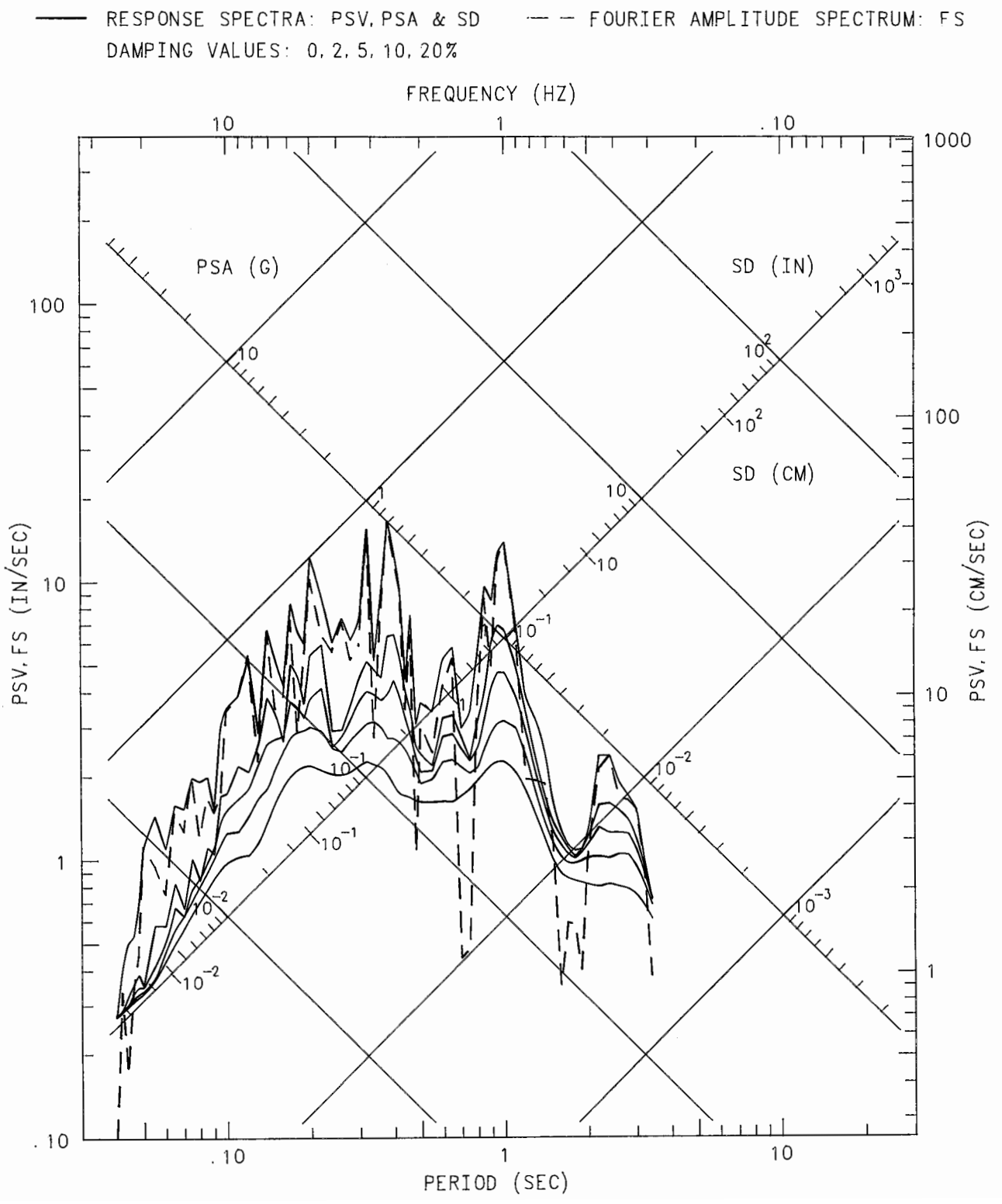
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13201-S1859-86190.01 040887.0820-QP86A201



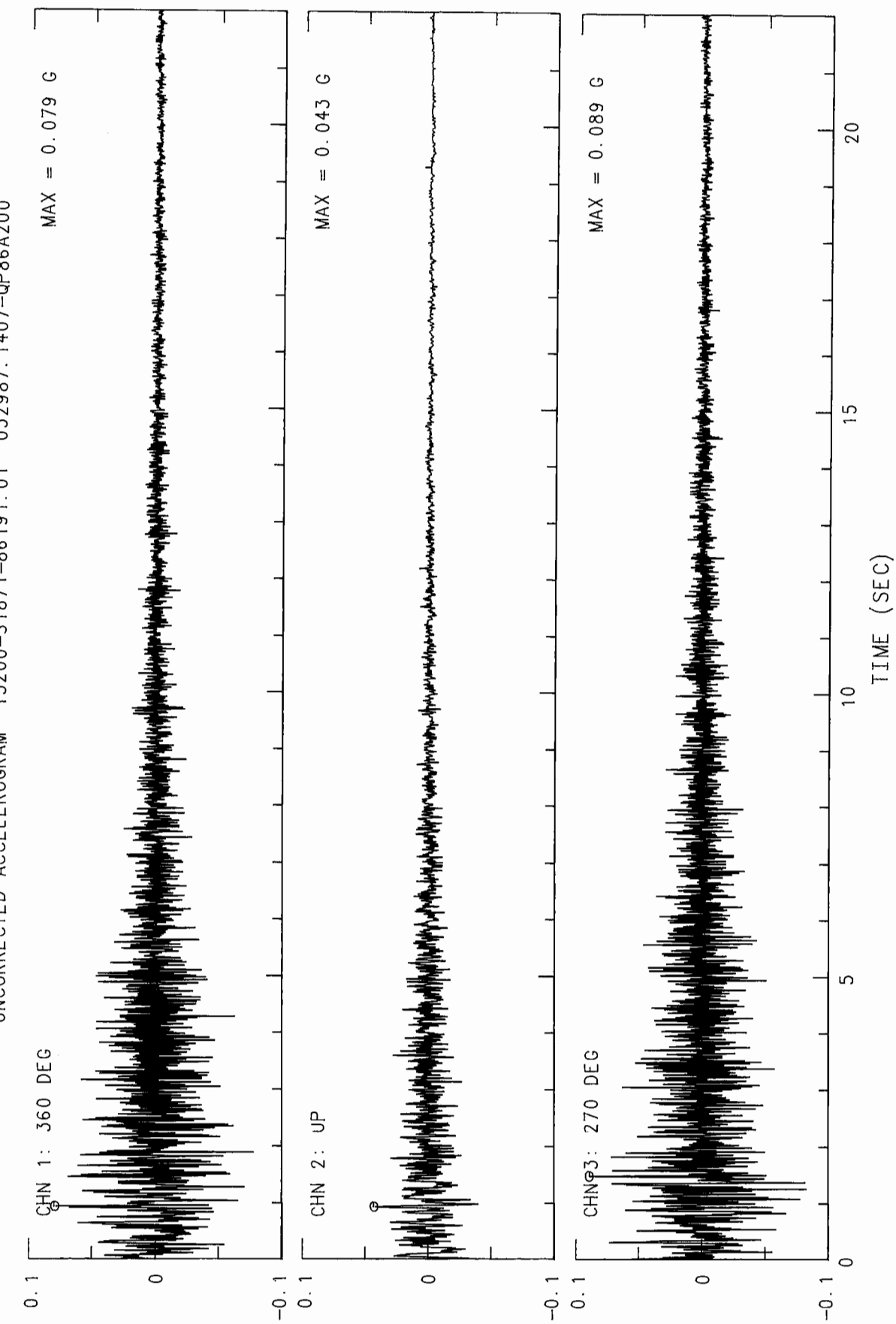
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER – PAGE BROS. RANCH
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13201-S1859-86190.01 040887.0820-QP86A201

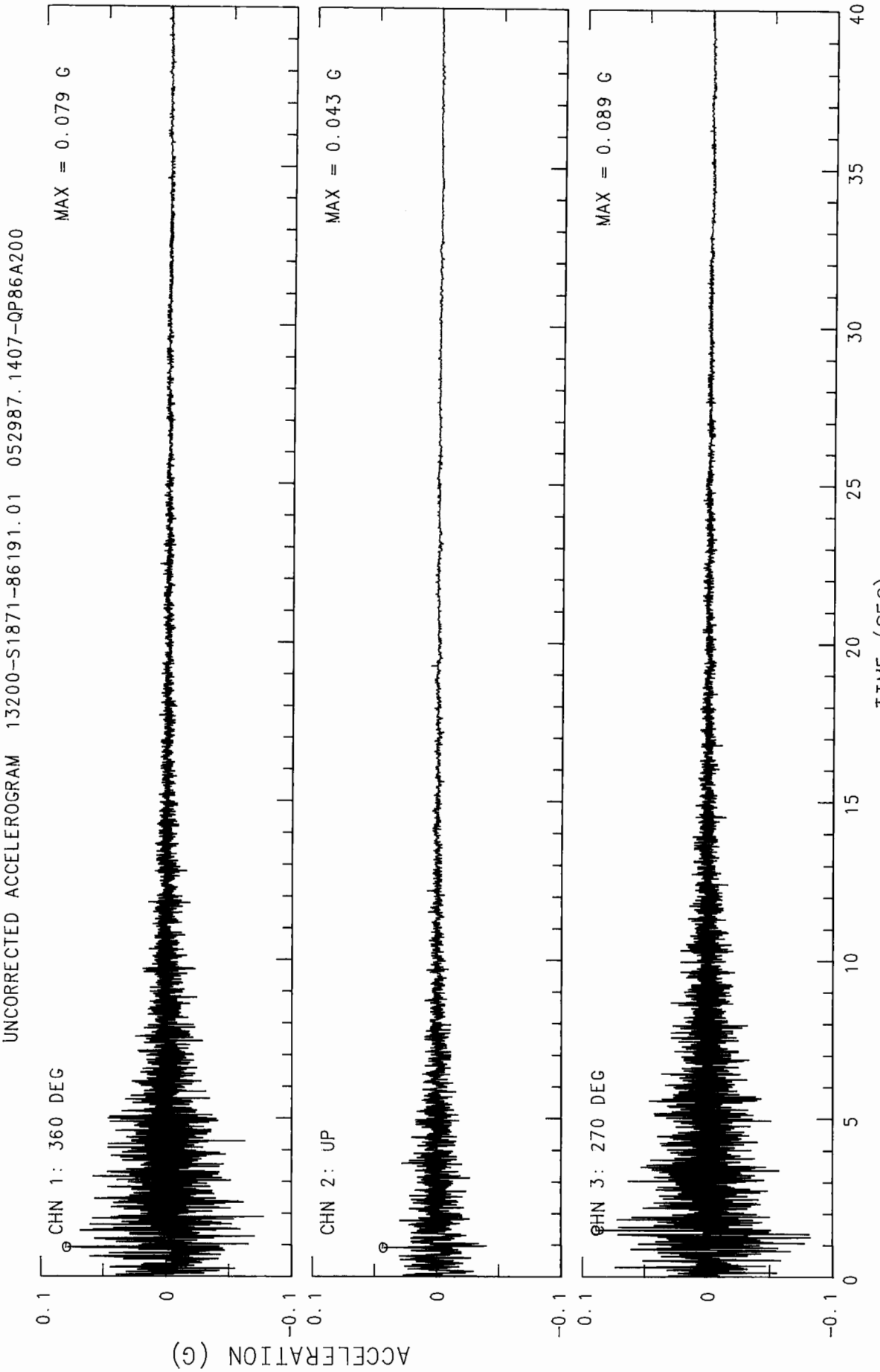


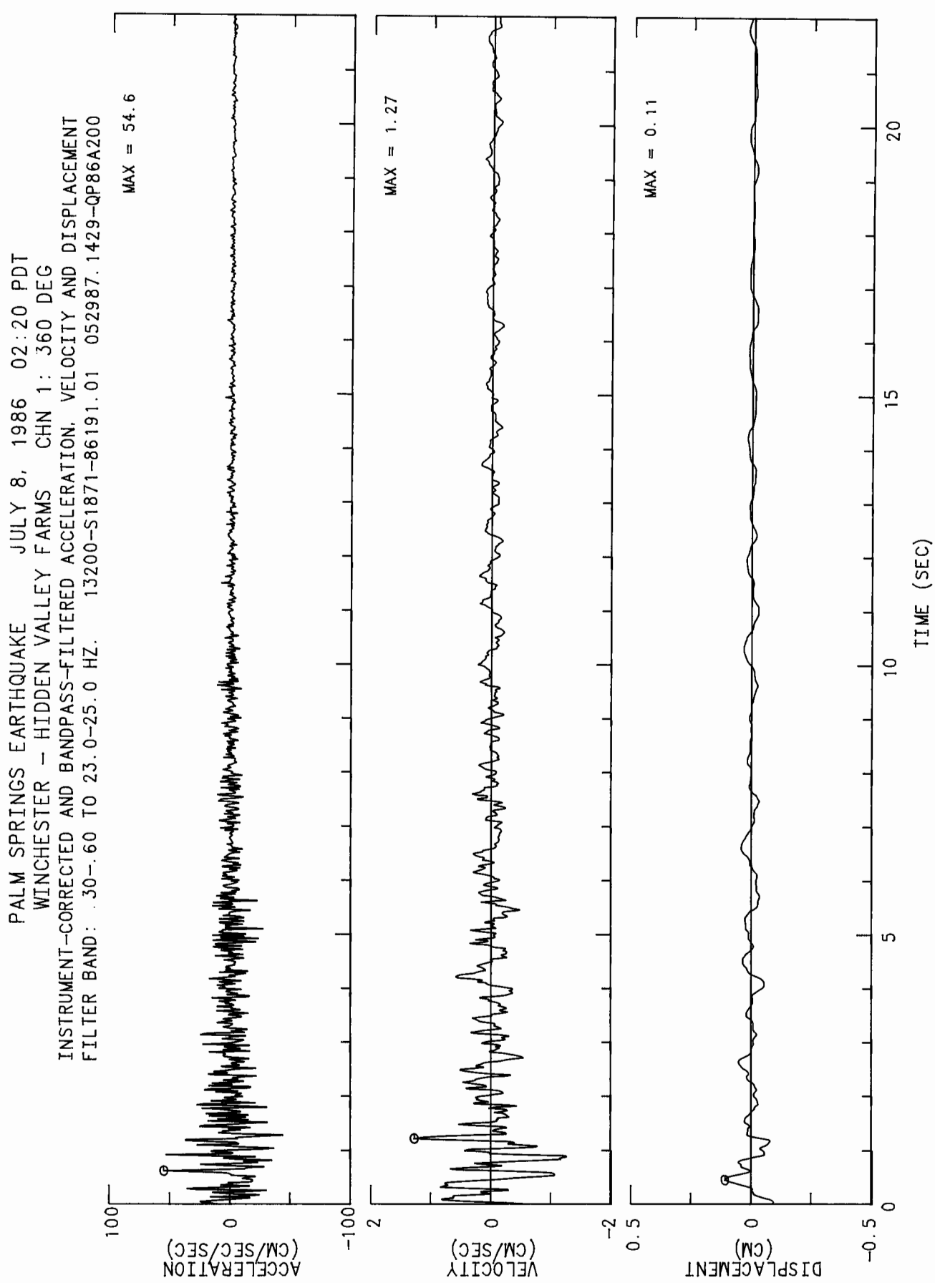
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - PAGE BROS. RANCH
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13201-S1859-86190.01 040887.0820-QP86A201

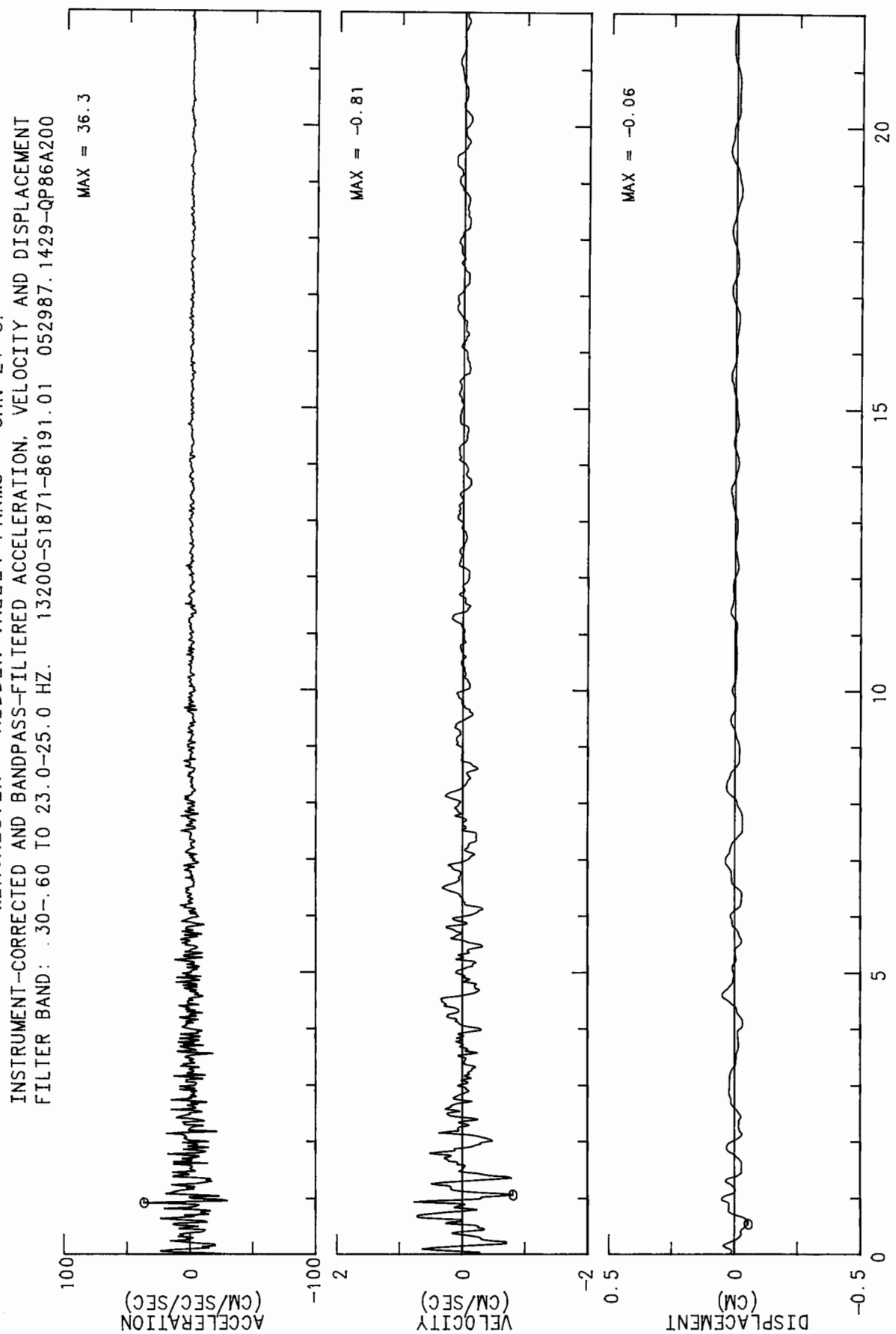


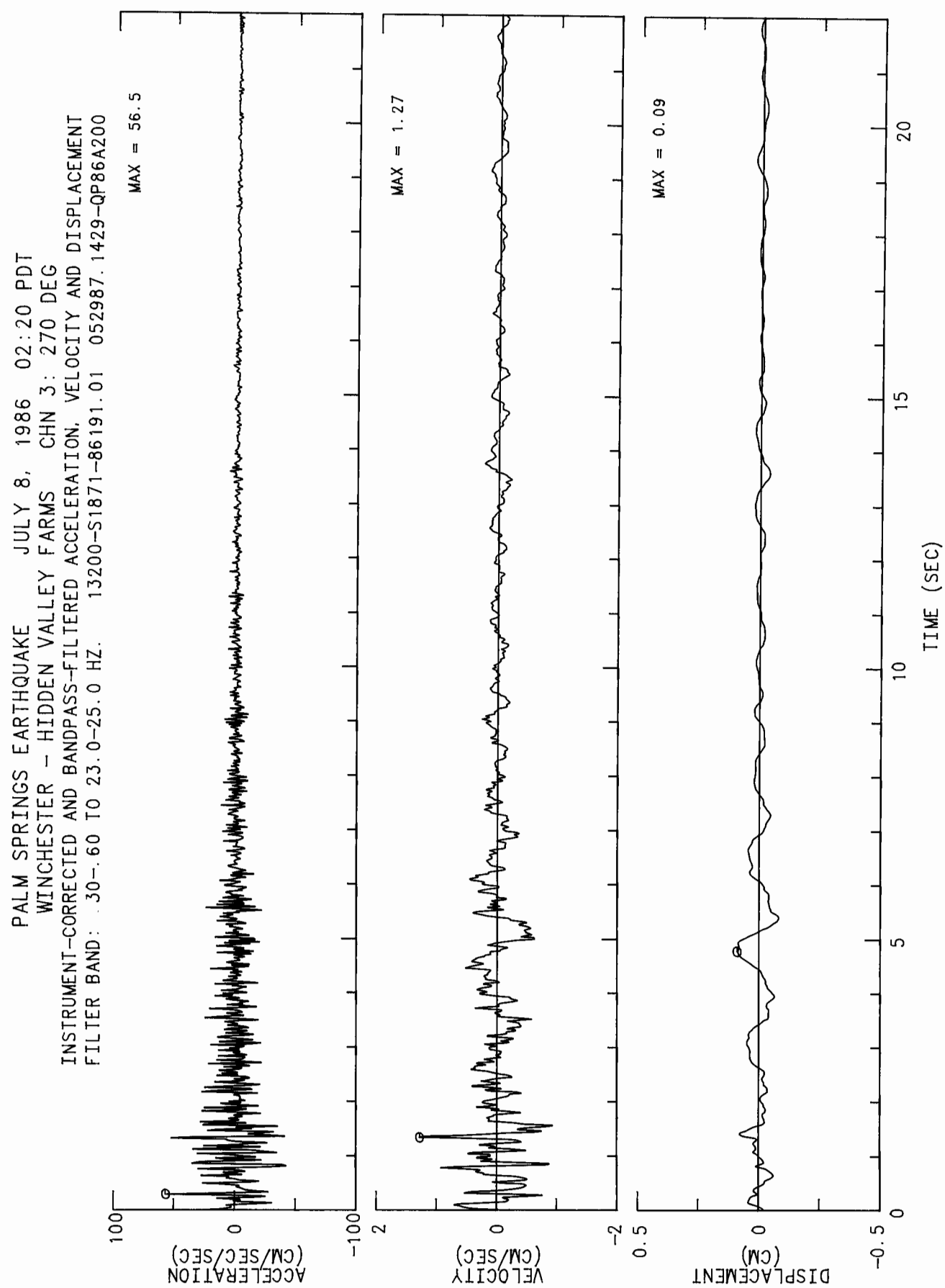
# WINCHESTER - HIDDEN VALLEY FARMS


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS
UNCORRECTED ACCELEROGRAM 13200-S1871-86191.01 052987.1407-QP86A200
CHN 1: 360 DEG
MAX = 0.079 G
CHN 2: UP
MAX = 0.043 G
CHN 3: 270 DEG
MAX = 0.089 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

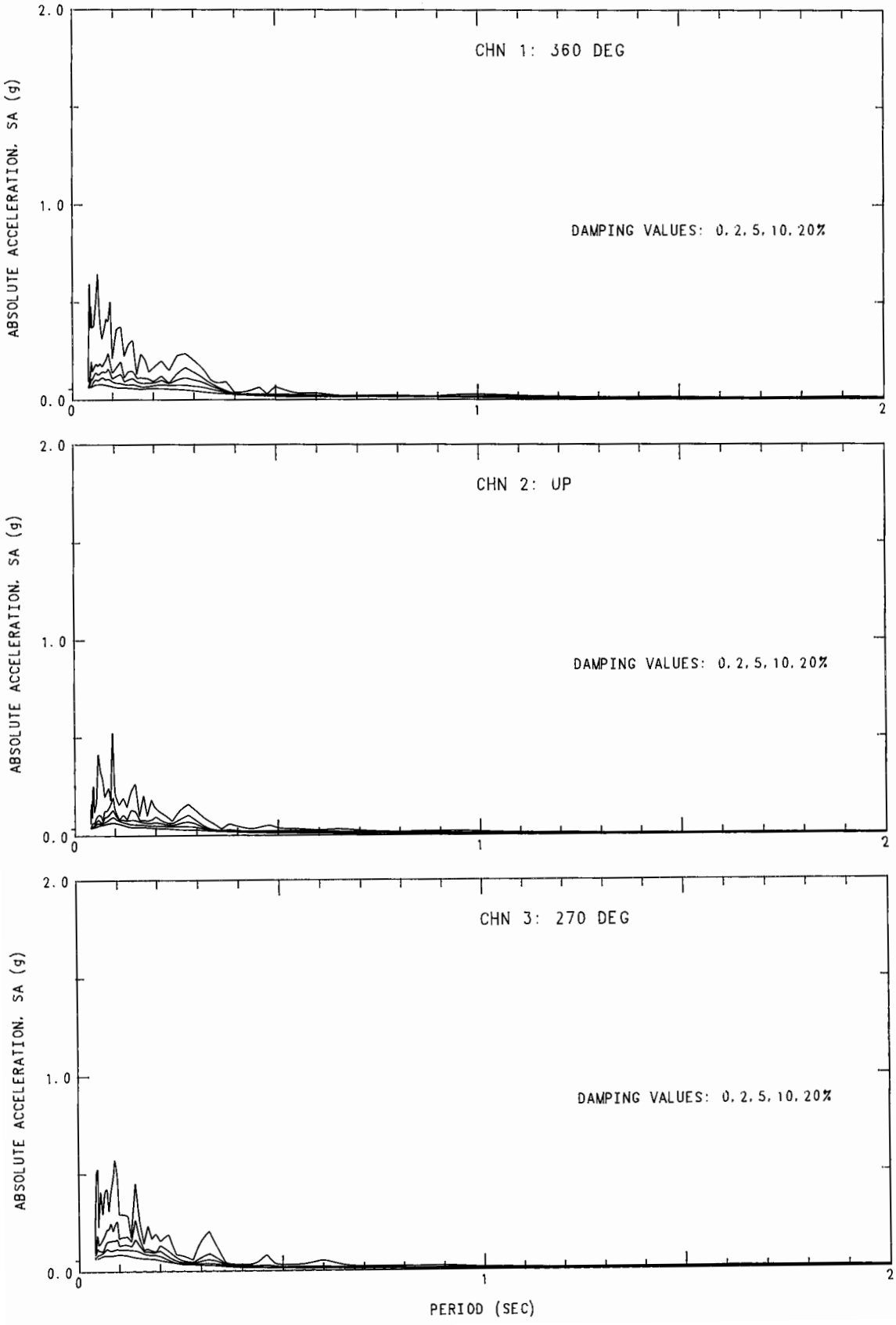

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS
UNCORRECTED ACCELEROGRAM 13200-S1871-86191.01 052987.1407-QP86A200
CHN 1: 360 DEG
MAX = 0.079 G
CHN 2: UP
MAX = 0.043 G
CHN 3: 270 DEG
MAX = 0.089 G
ACCELERATION (G)
0.1
0
-0.1
TIME (SEC)
0
5
10
15
20
25
30
35
40


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 13200-S1871-86191.01 052987.1429-QP86A200
MAX = 54.6
MAX = 1.27
MAX = 0.11
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.5
0
-0.5
0
5
10
15
20

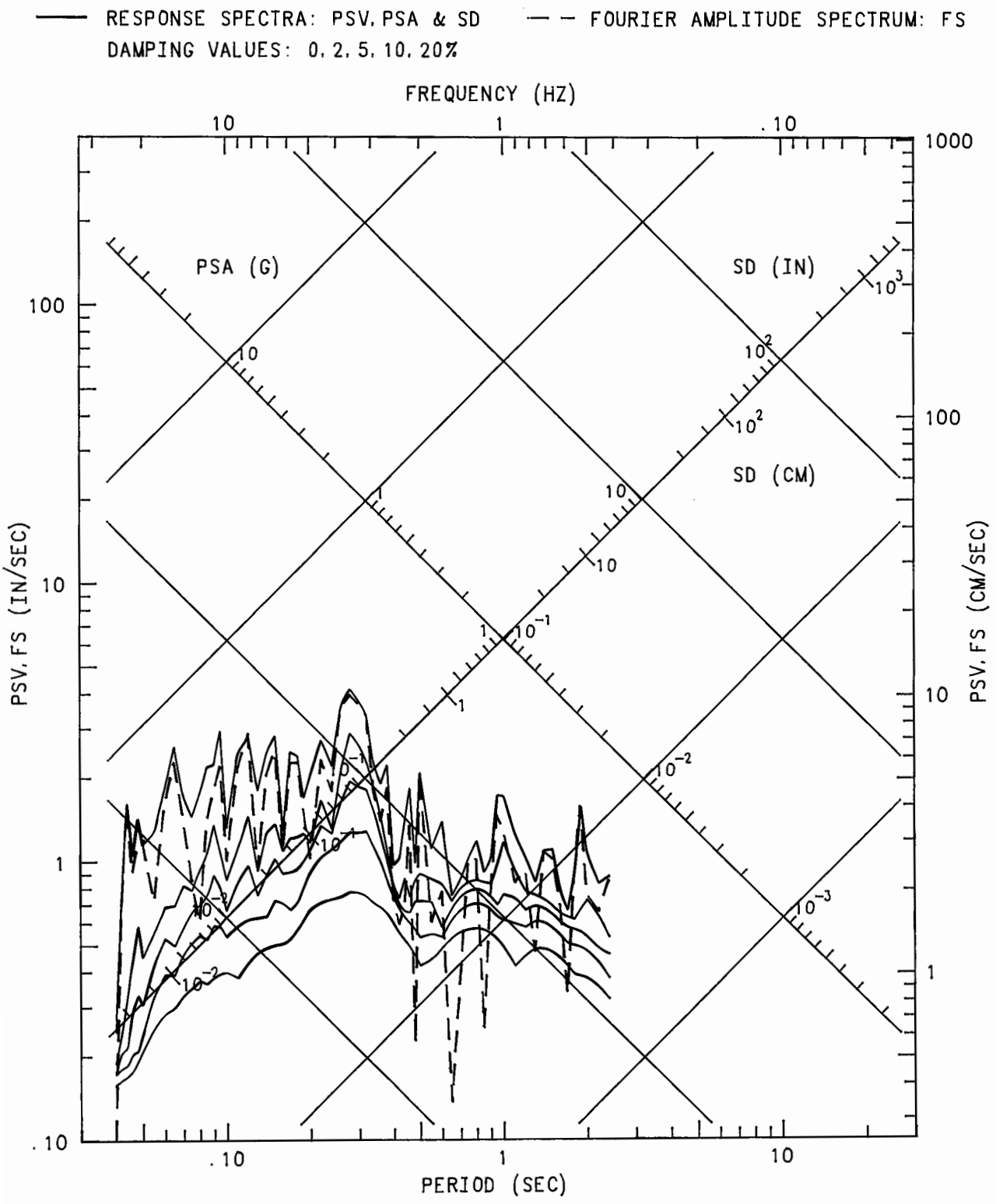

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 13200-S1871-86191.01 052987.1429-QP86A200
MAX = 36.3
MAX = -0.81
MAX = -0.06
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 13200-S1871-86191.01 052987.1429-QP86A200
MAX = 56.5
MAX = 1.27
MAX = 0.09
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

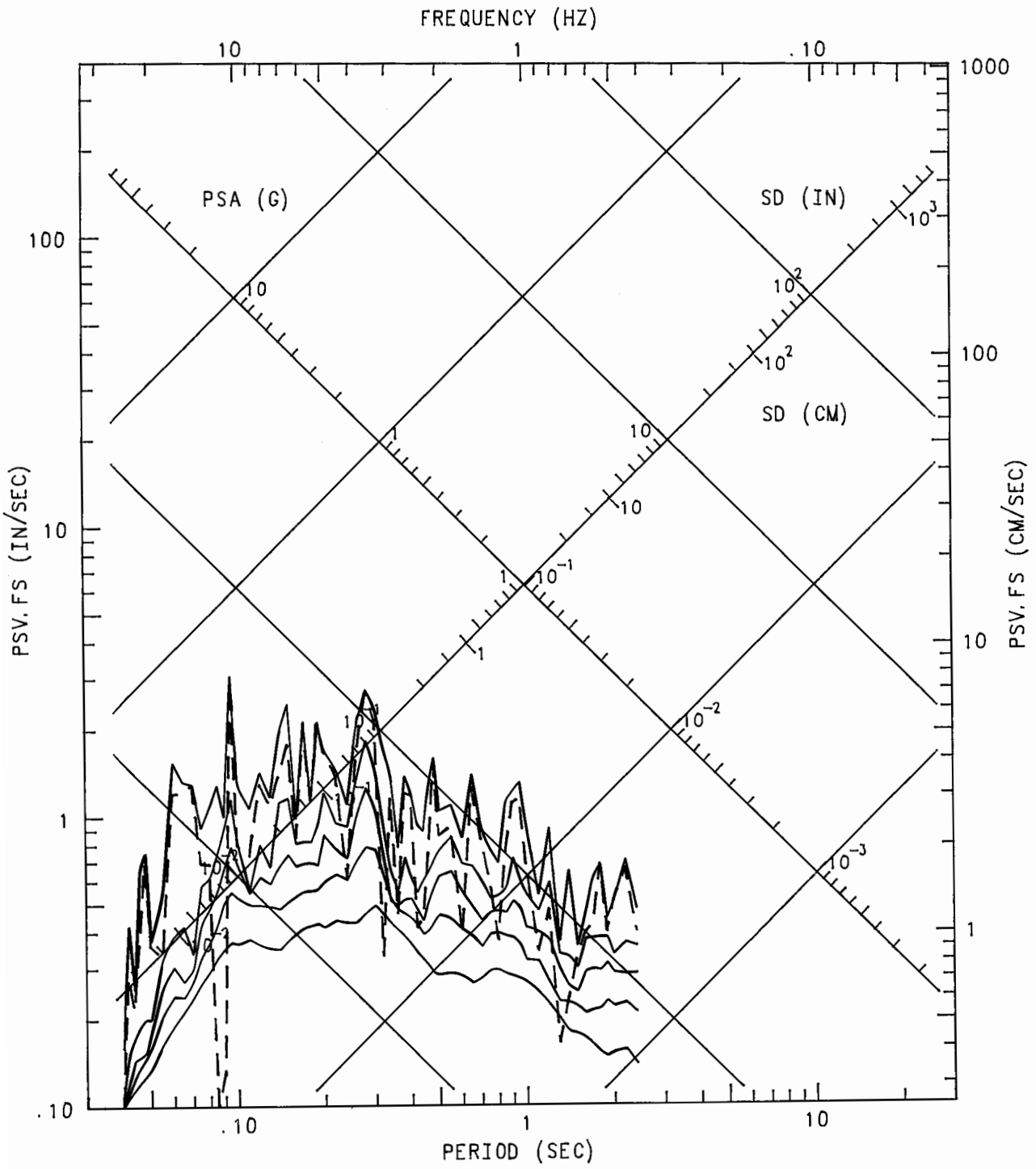
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13200-S1871-86191.01 052987.1443-QPALMSP86G



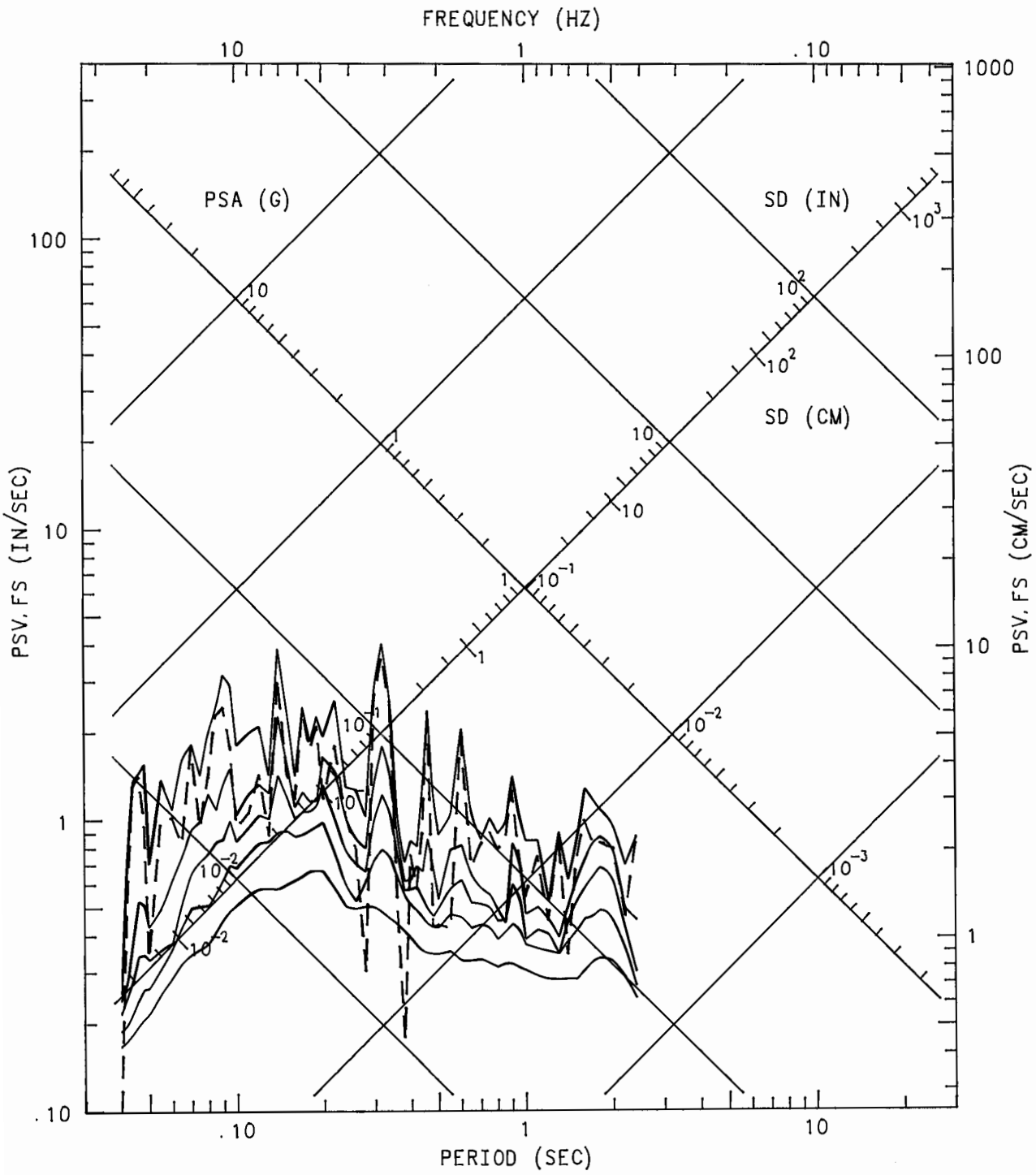
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS
CHN 1: 360 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13200-S1871-86191.01 052987.1443-QP86A200



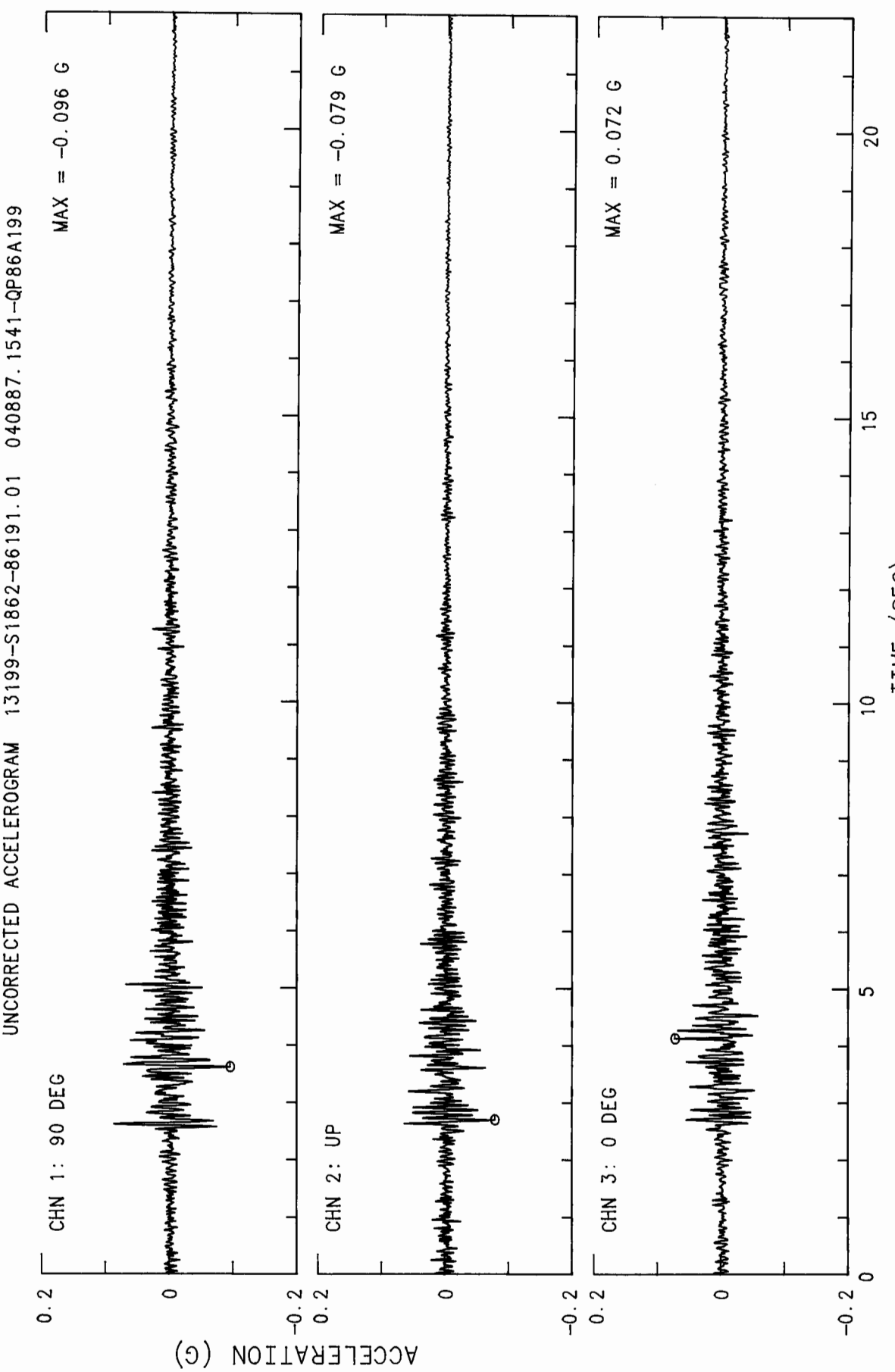
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER – HIDDEN VALLEY FARMS
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13200-S1871-86191.01 052987.1443-QP86A200

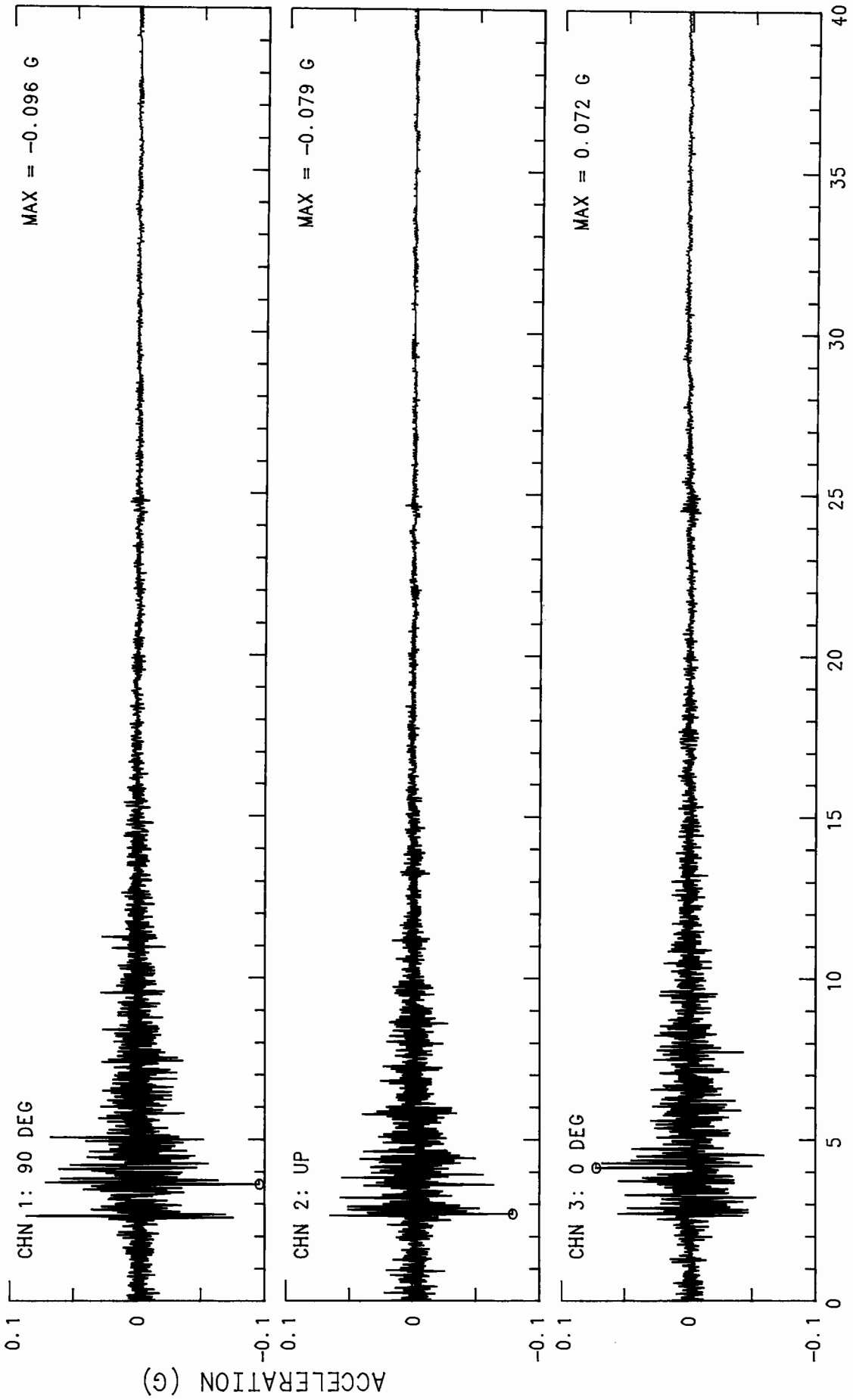


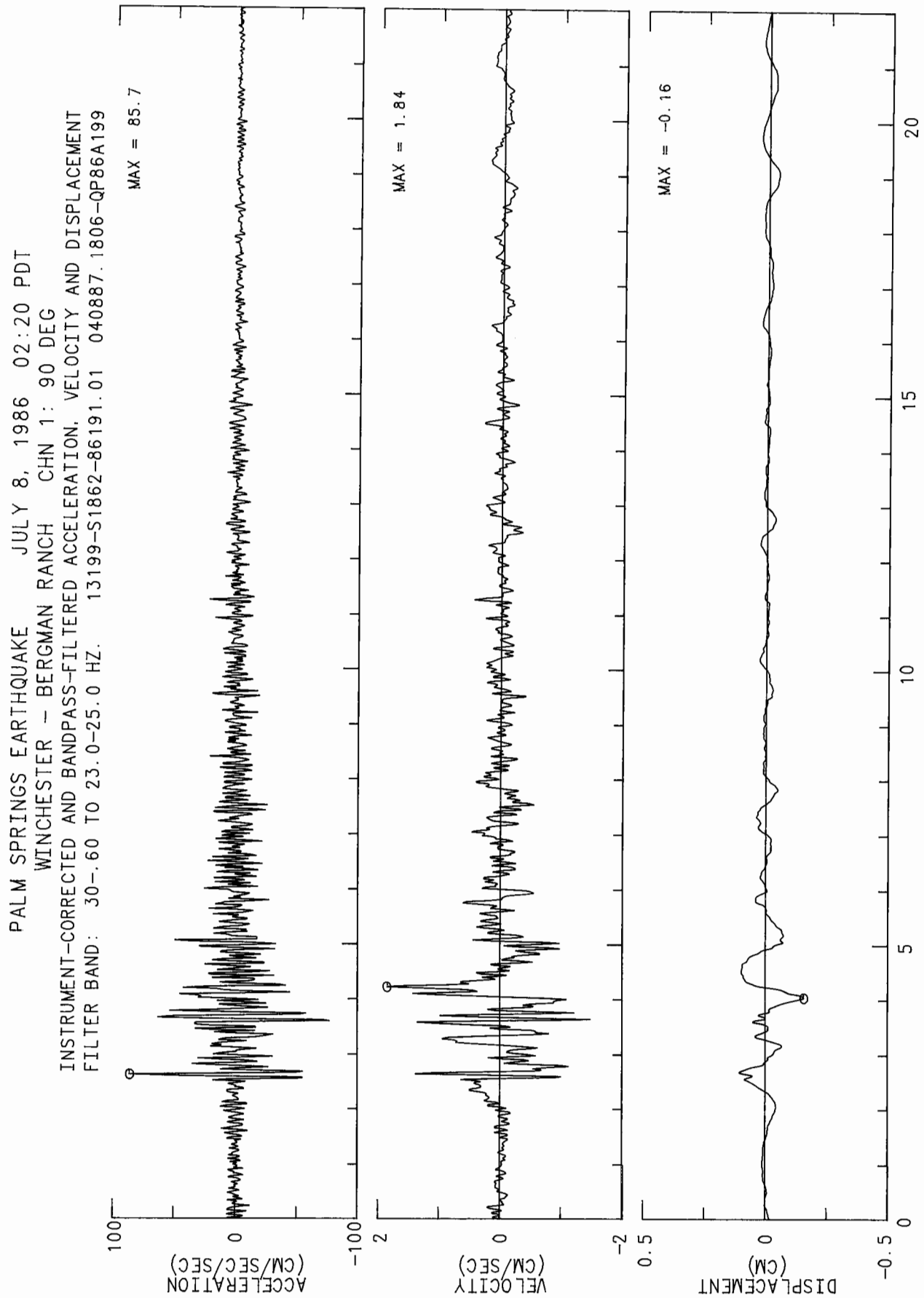
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - HIDDEN VALLEY FARMS
CHN 3: 270 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13200-S1871-86191.01 052987.1443-QP86A200

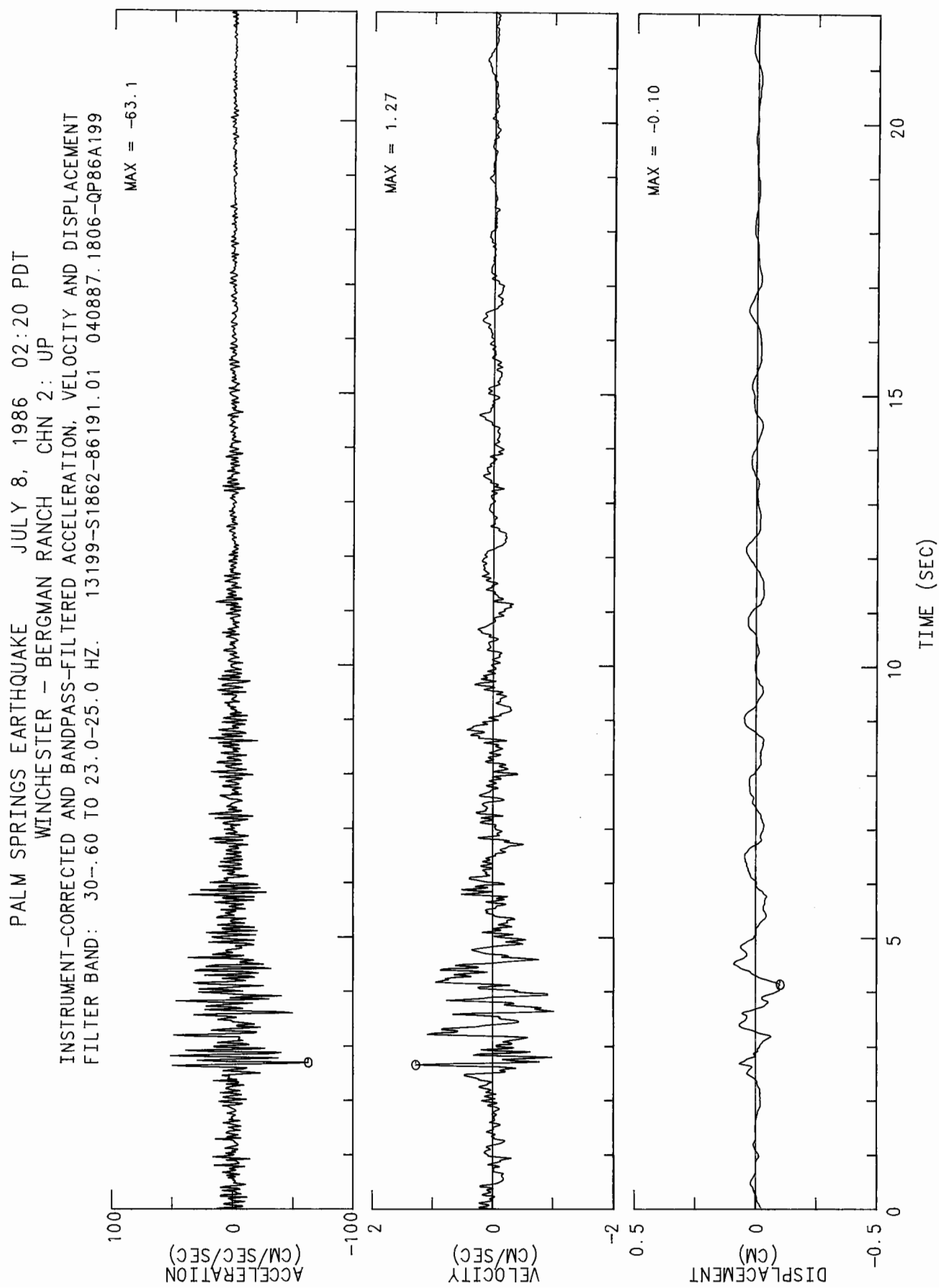


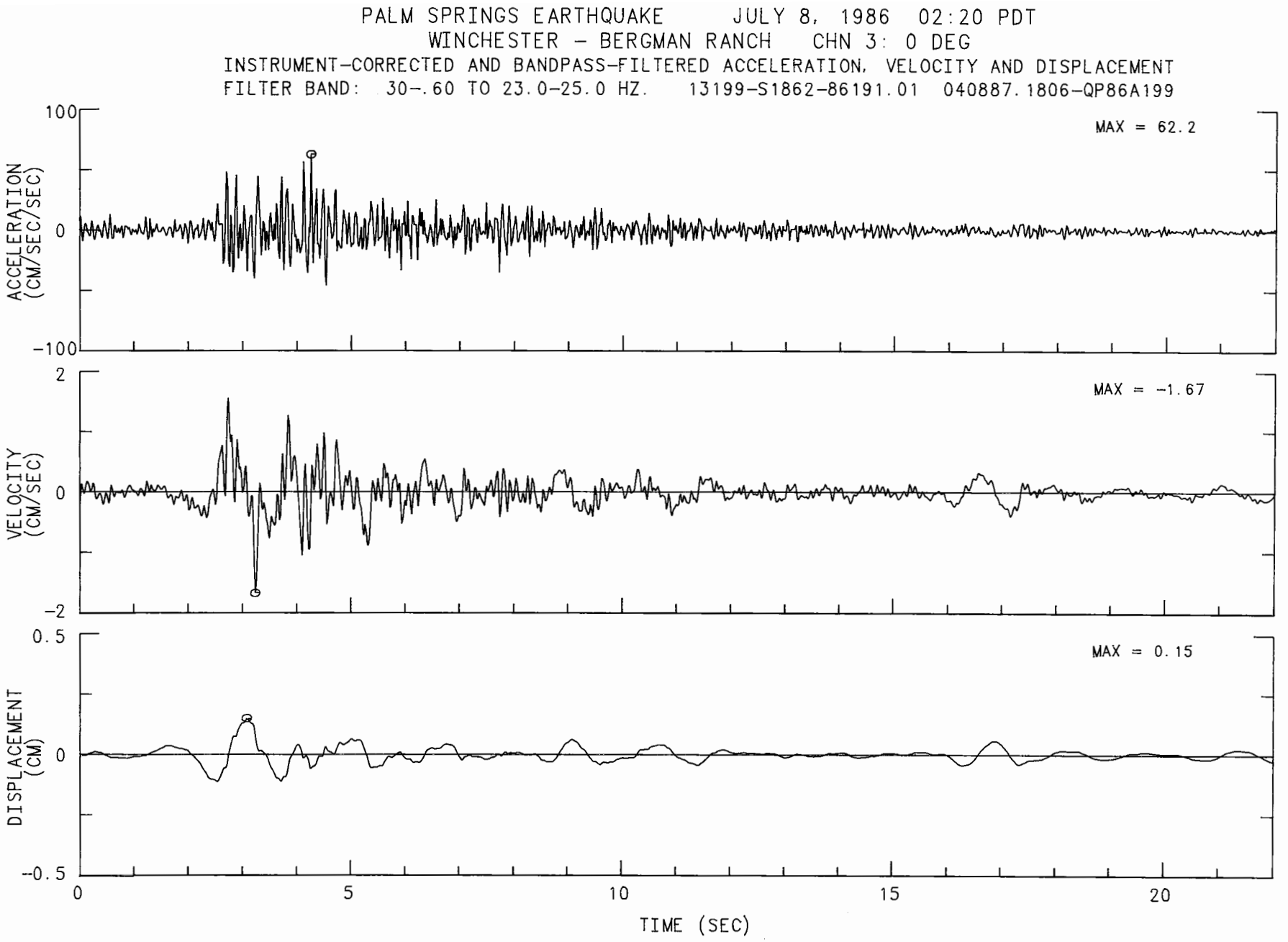
WINCHESTER - BERGMAN RANCH


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
UNCORRECTED ACCELEROGRAM 13199-S1862-86191.01 040887.1541-QP86A199
CHN 1: 90 DEG
MAX = -0.096 G
CHN 2: UP
MAX = -0.079 G
CHN 3: 0 DEG
MAX = 0.072 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

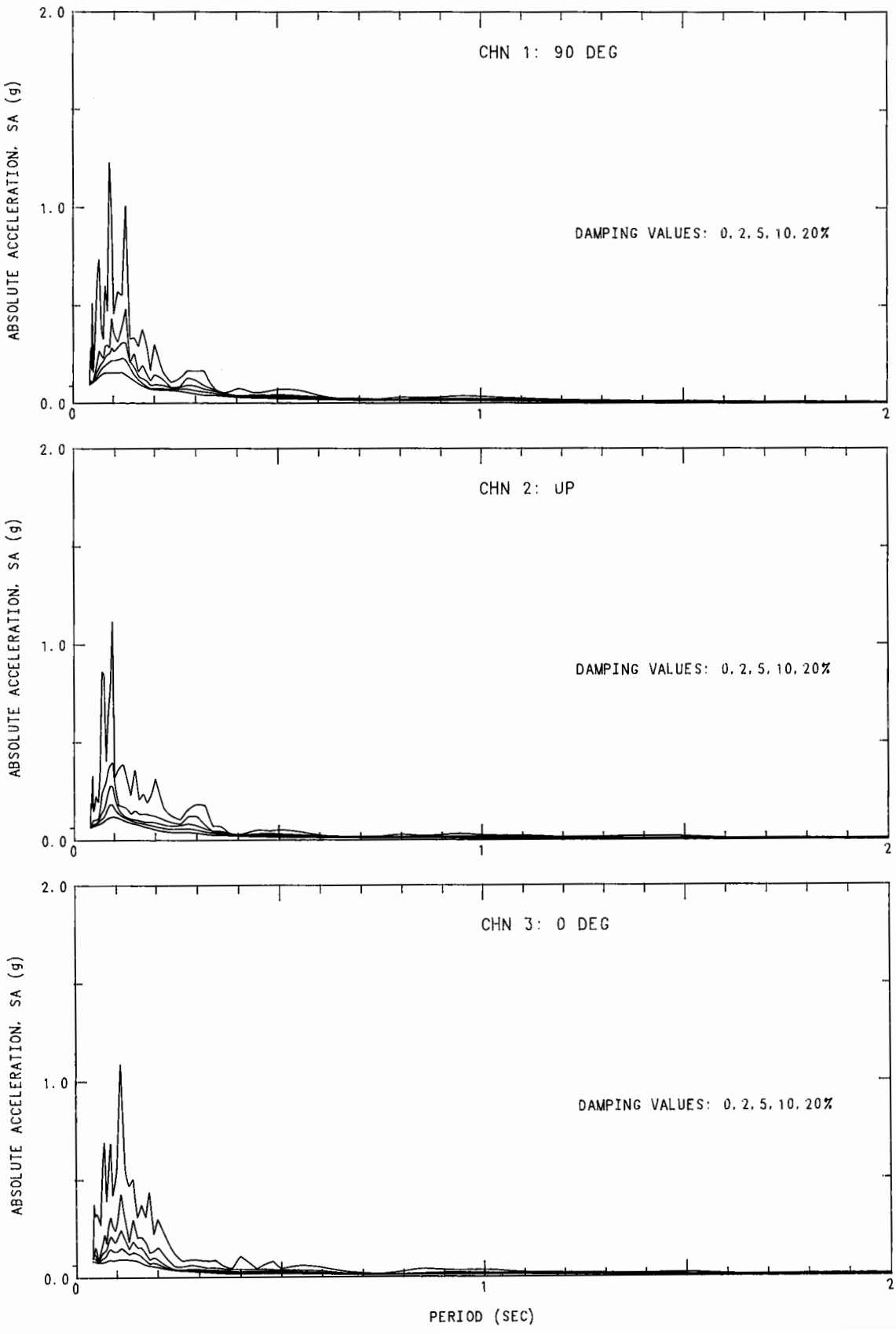

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
UNCORRECTED ACCELEROGRAM 13199-S1862-86191.01 040887.1541-QP86A199
CHN 1: 90 DEG
MAX = -0.096 G
CHN 2: UP
MAX = -0.079 G
CHN 3: 0 DEG
MAX = 0.072 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
25
30
35
40
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 30-.60 TO 23.0-25.0 HZ. 13199-S1862-86191.01 040887.1806-QP86A199
MAX = 85.7
MAX = 1.84
MAX = -0.16
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.5
0
-0.5
0
5
10
15
20

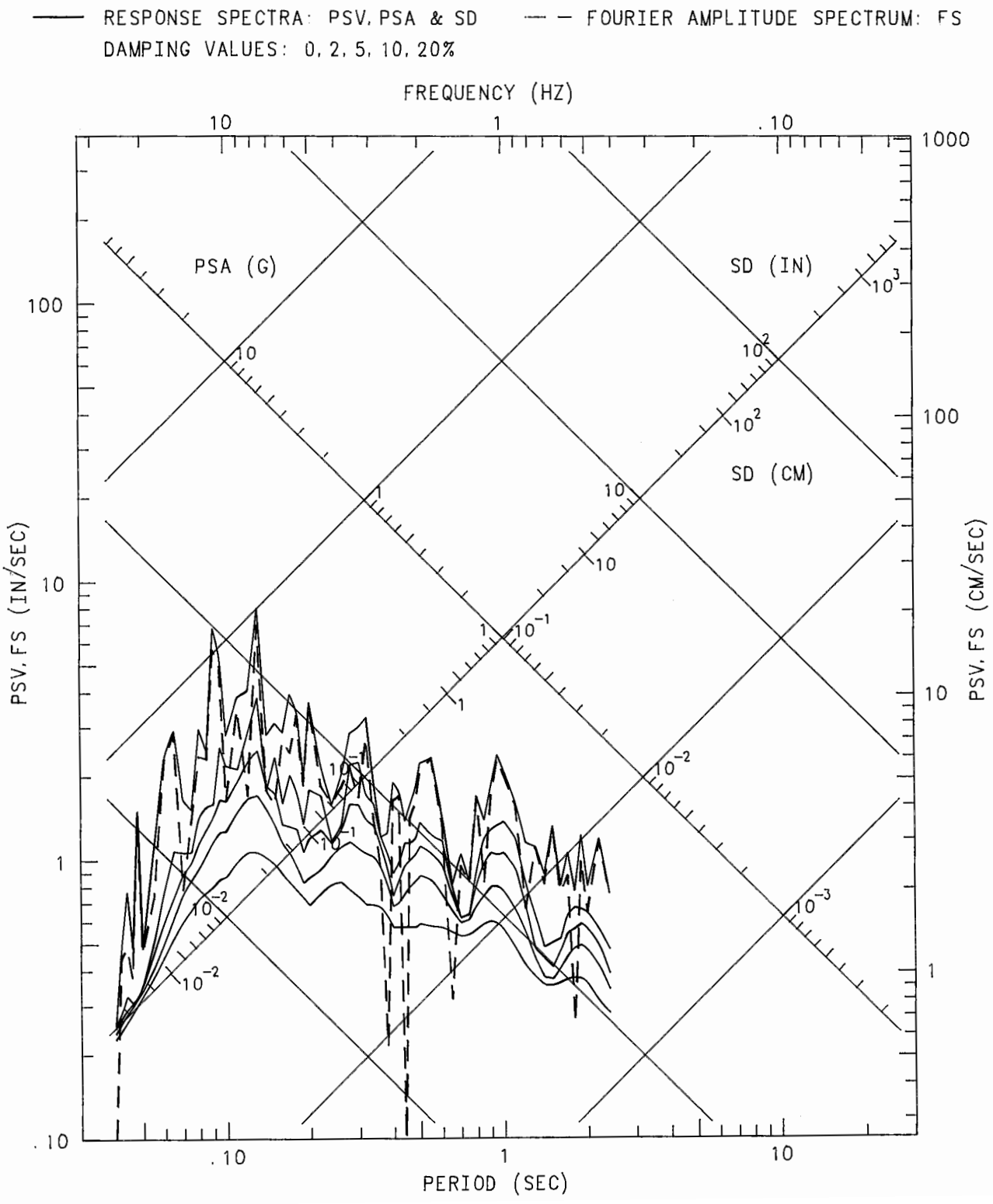

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 13199-S1862-86191.01 040887.1806-QP86A199
MAX = -63.1
MAX = 1.27
MAX = -0.10
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.5
0
-0.5
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 30-.60 TO 23.0-25.0 HZ. 13199-S1862-86191.01 040887.1806-QP86A199
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 62.2
VELOCITY (CM/SEC)
2
0
-2
MAX = -1.67
DISPLACEMENT (CM)
0.5
0
-0.5
MAX = 0.15
0
5
10
15
20
TIME (SEC)

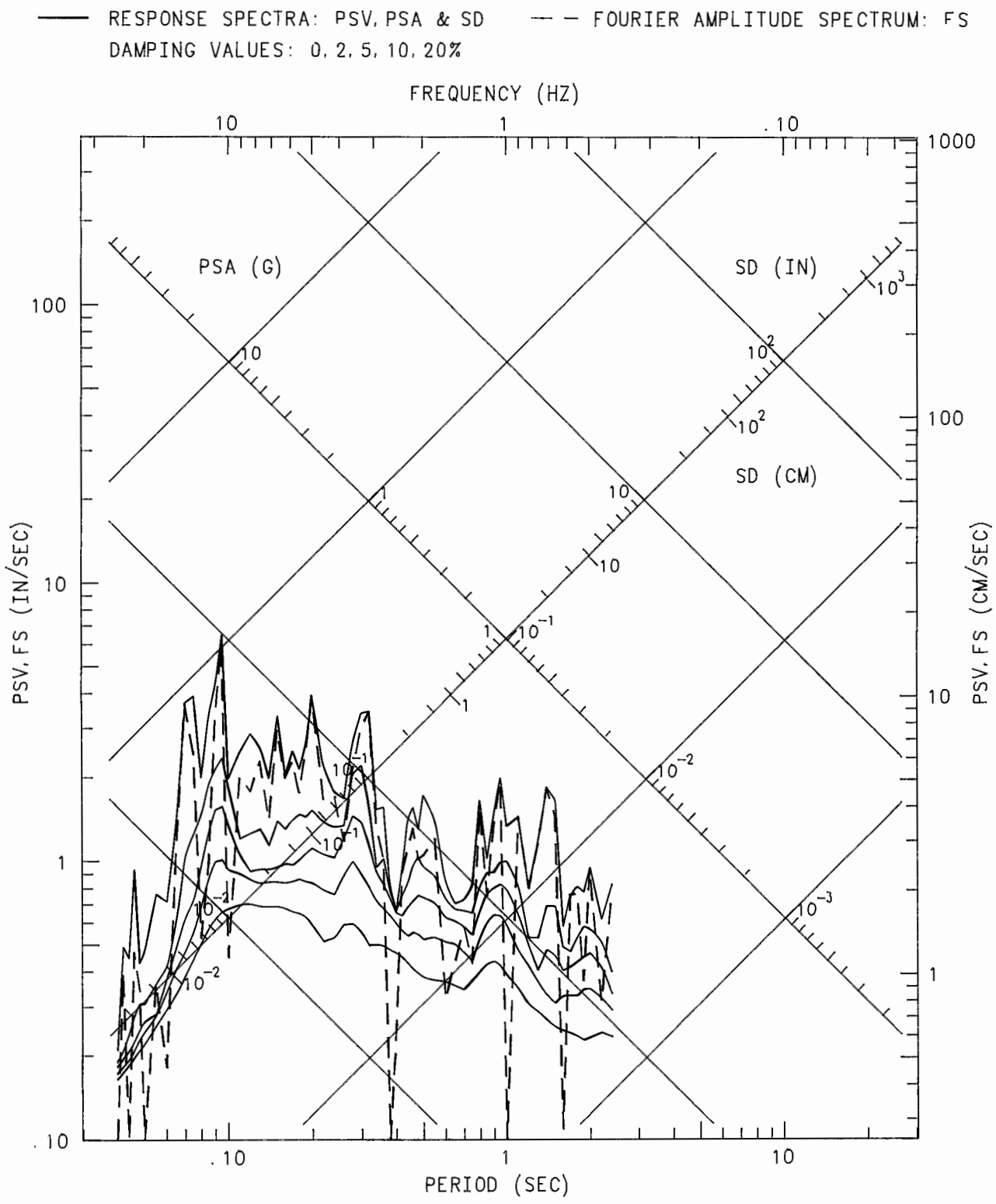
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13199-S1862-86191.01 041087.1347-QPALMSP86G



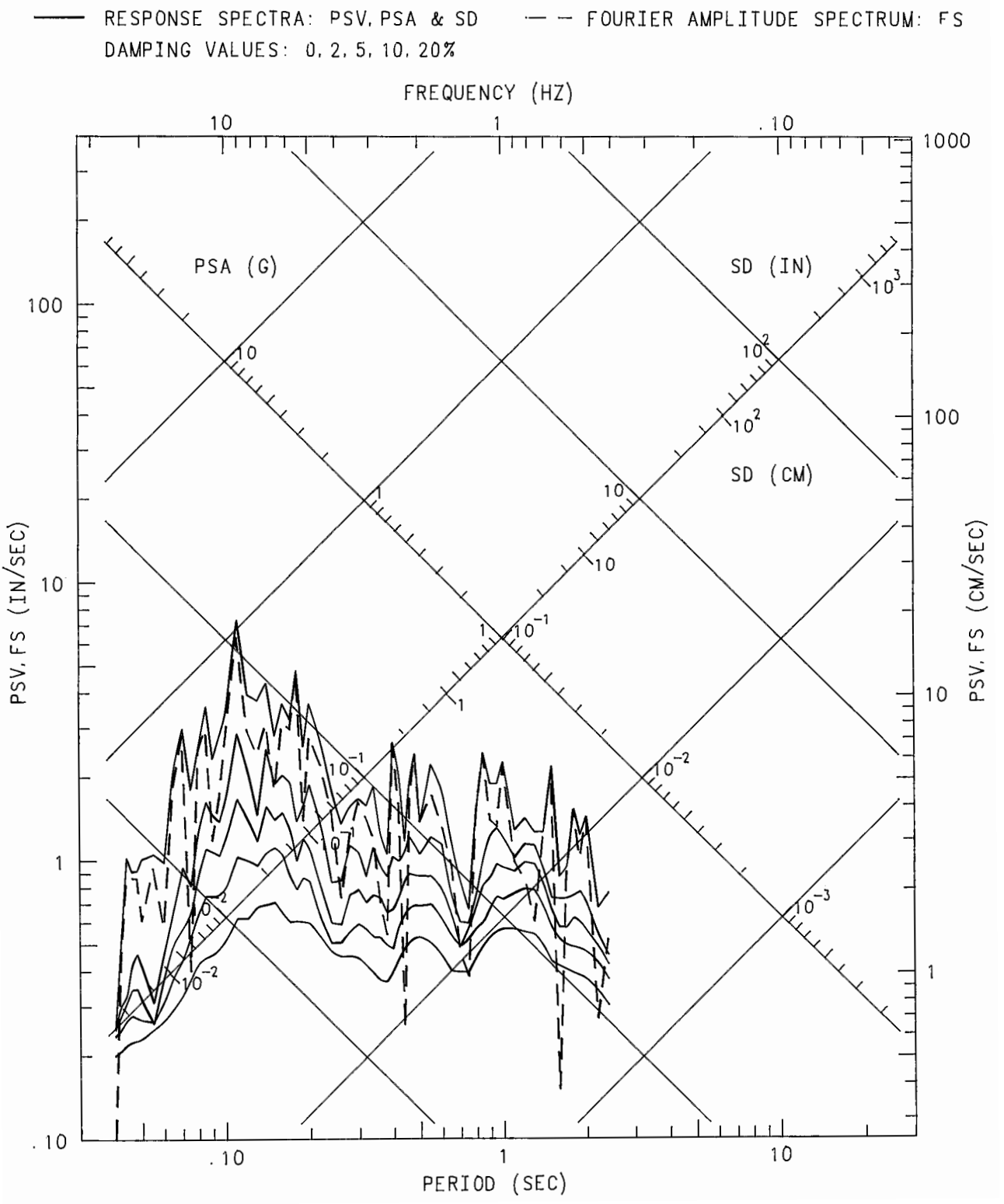
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13199-S1862-86191.01 041087.1347-QP86A199



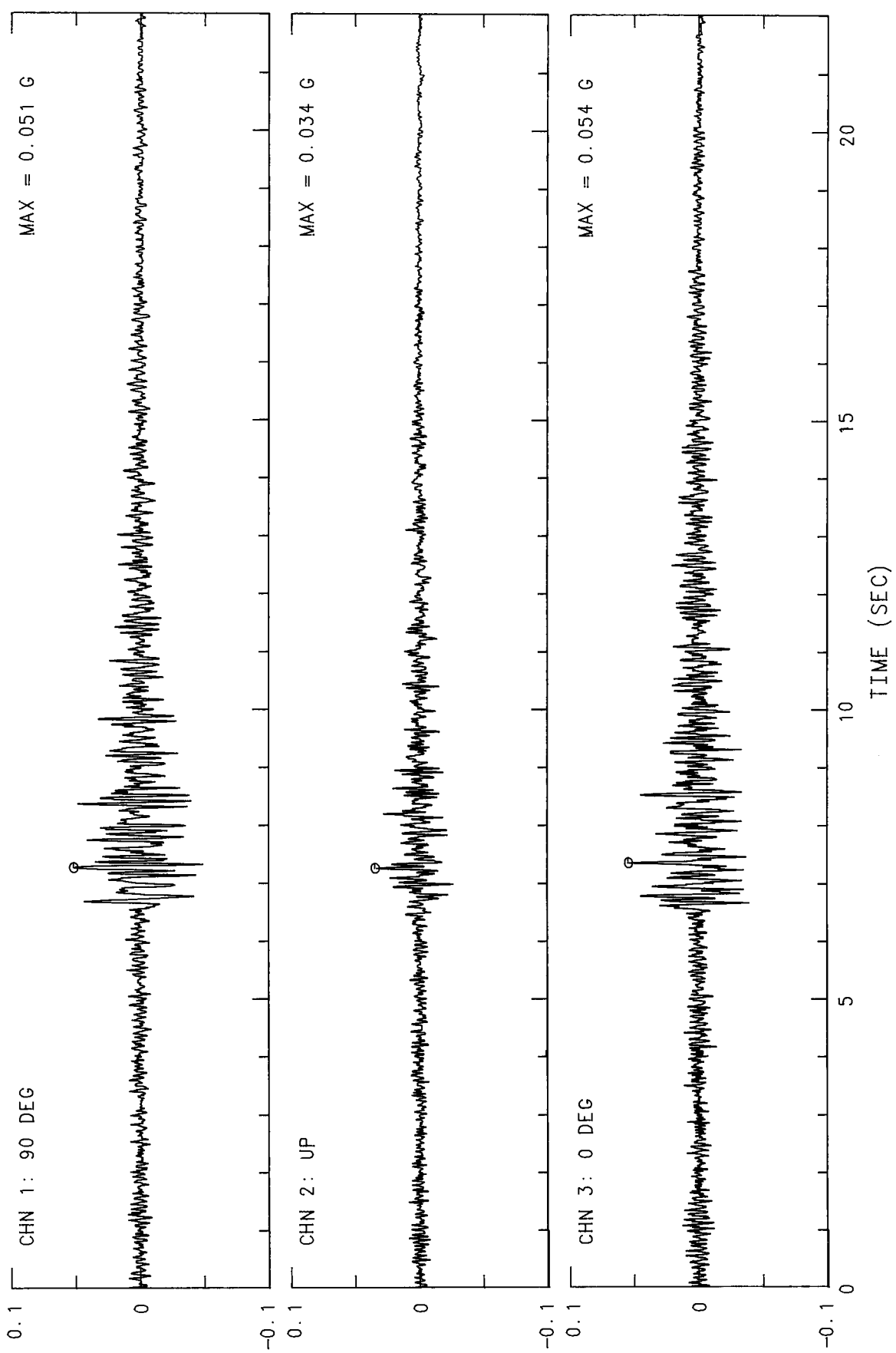
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13199-S1862-86191.01 041087.1347-QP86A199

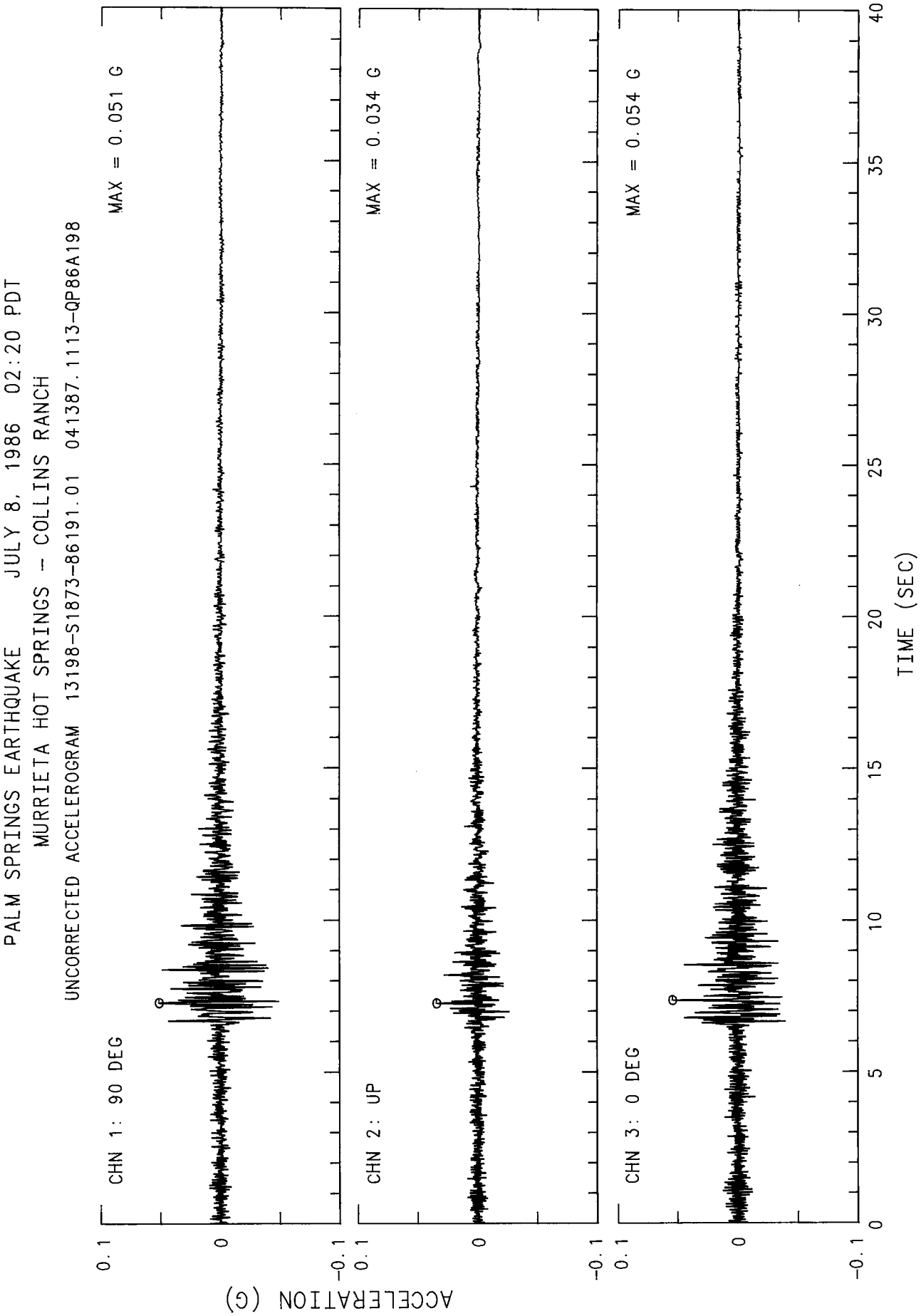


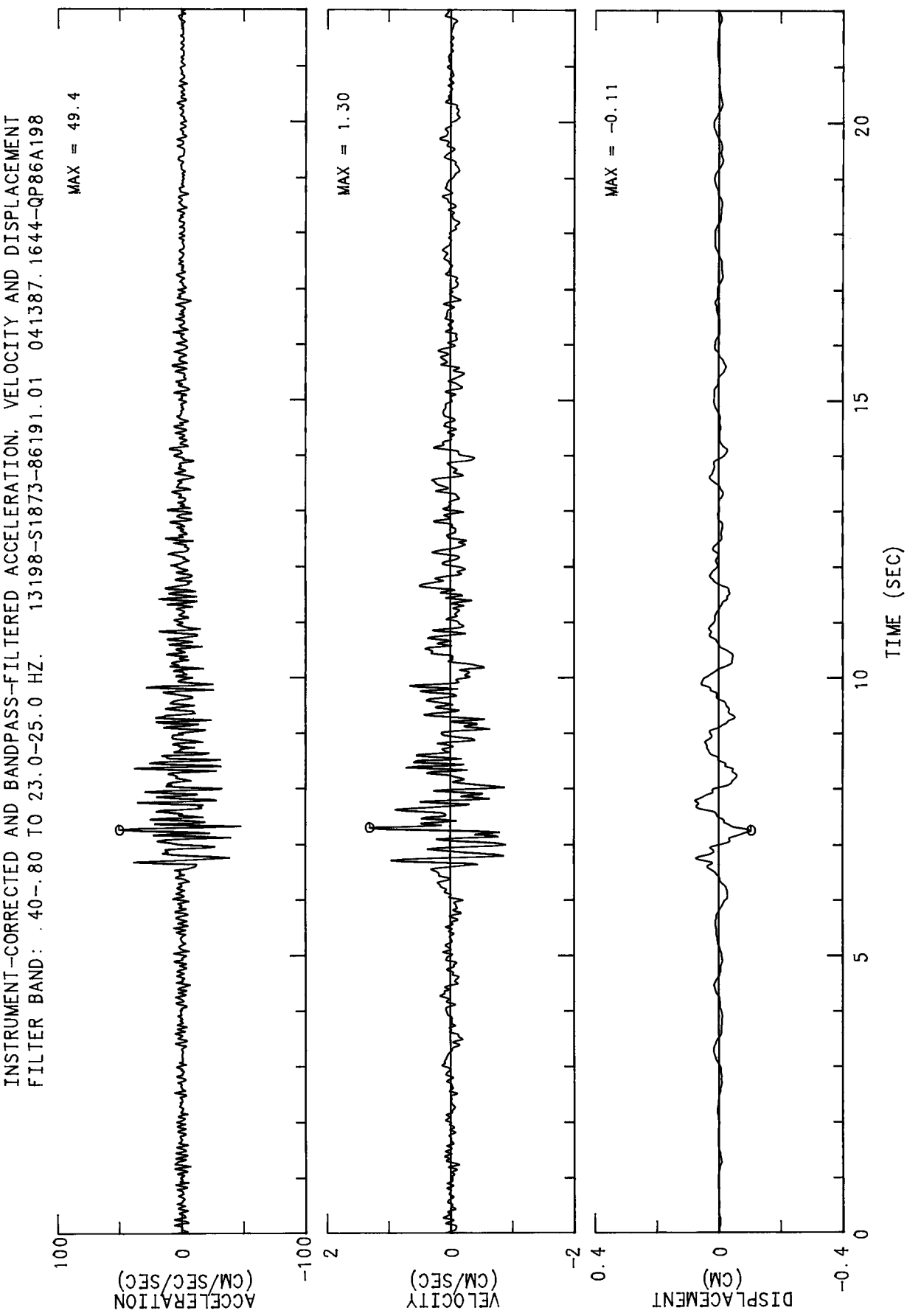
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
WINCHESTER - BERGMAN RANCH
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
13199-S1862-86191.01 041087.1347-QP86A199

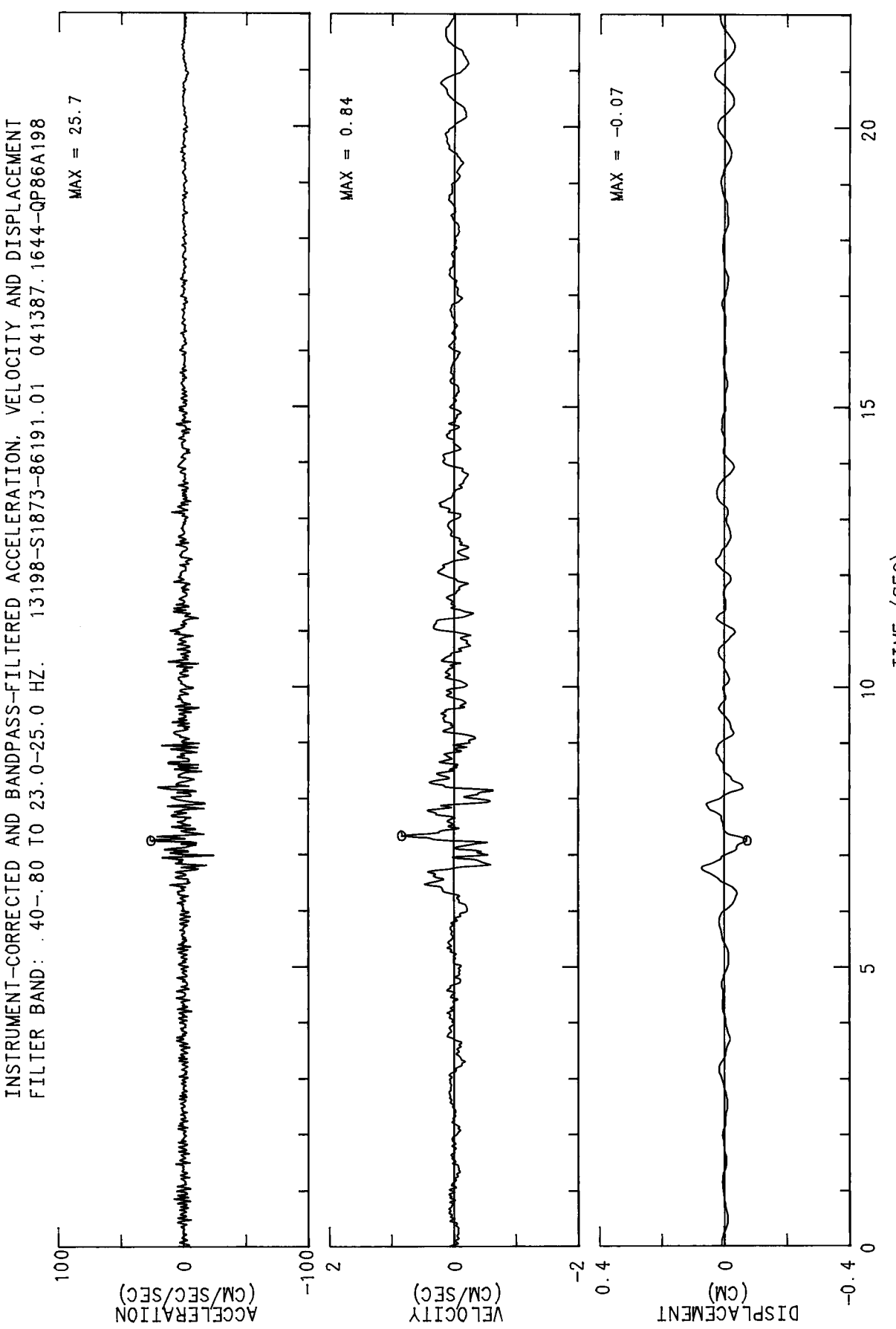


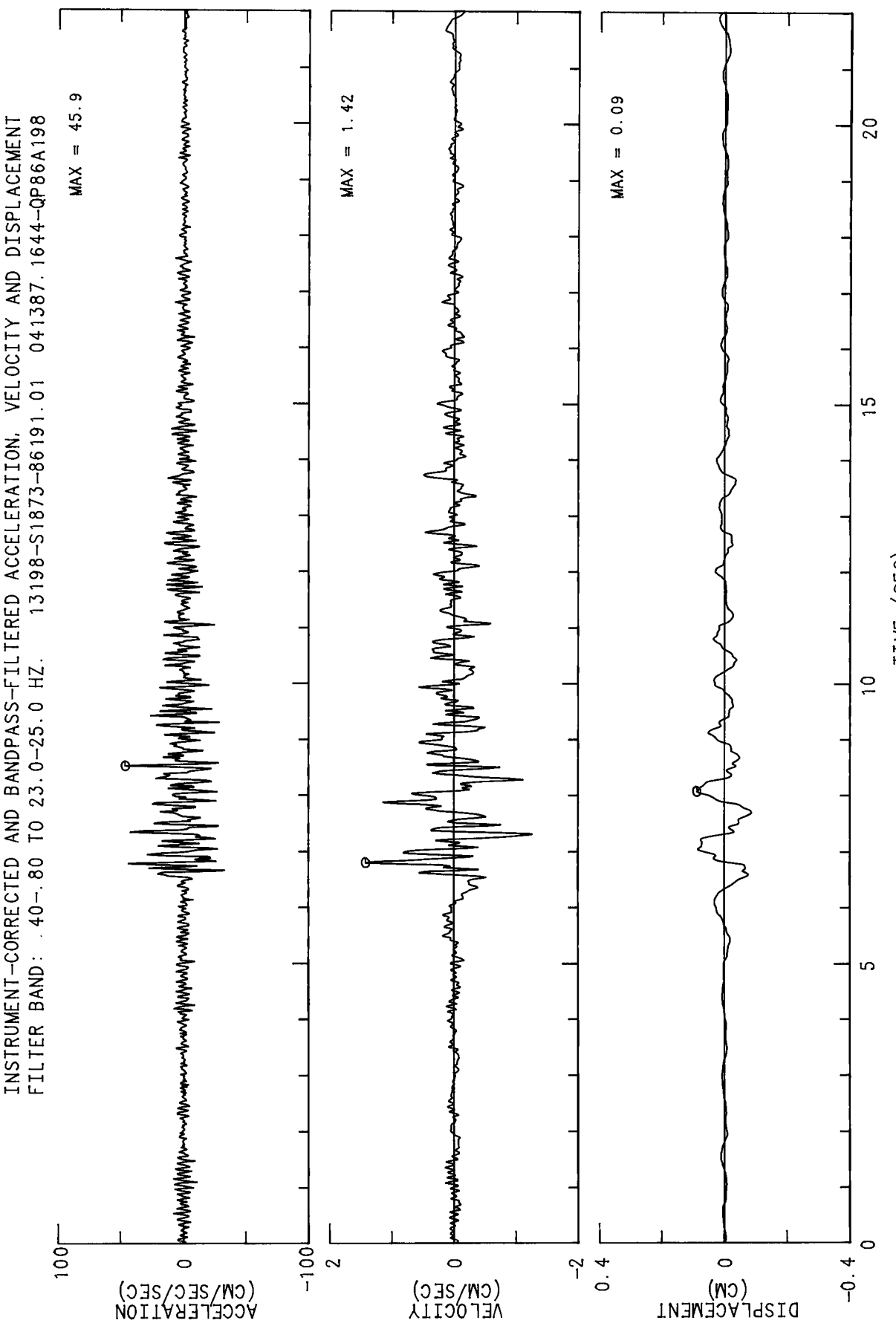
MURRIETA HOT SPRINGS - COLLINS RANCH


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
UNCORRECTED ACCELEROGRAM 13198-S1873-86191.01 041387.1113-QP86A198
CHN 1: 90 DEG
MAX = 0.051 G
CHN 2: UP
MAX = 0.034 G
CHN 3: 0 DEG
MAX = 0.054 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

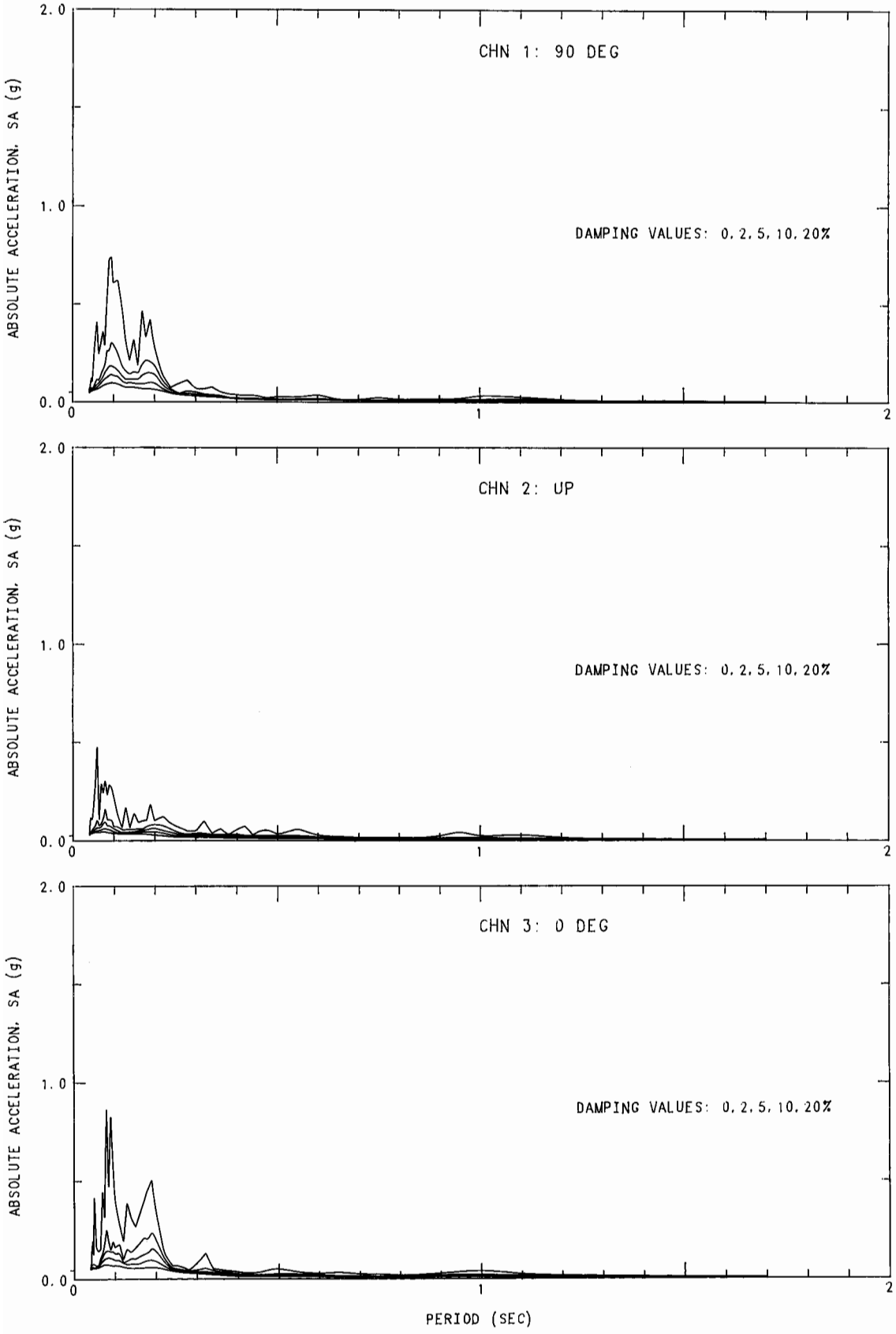

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
UNCORRECTED ACCELEROGRAM 13198-S1873-86191.01 041387.1113-QP86A198
CHN 1: 90 DEG
MAX = 0.051 G
CHN 2: UP
MAX = 0.034 G
CHN 3: 0 DEG
MAX = 0.054 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
25
30
35
40
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 13198-S1873-86191.01 041387.1644-QP86A198
MAX = 49.4
MAX = 1.30
MAX = -0.11
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.4
0
-0.4
0
5
10
15
20

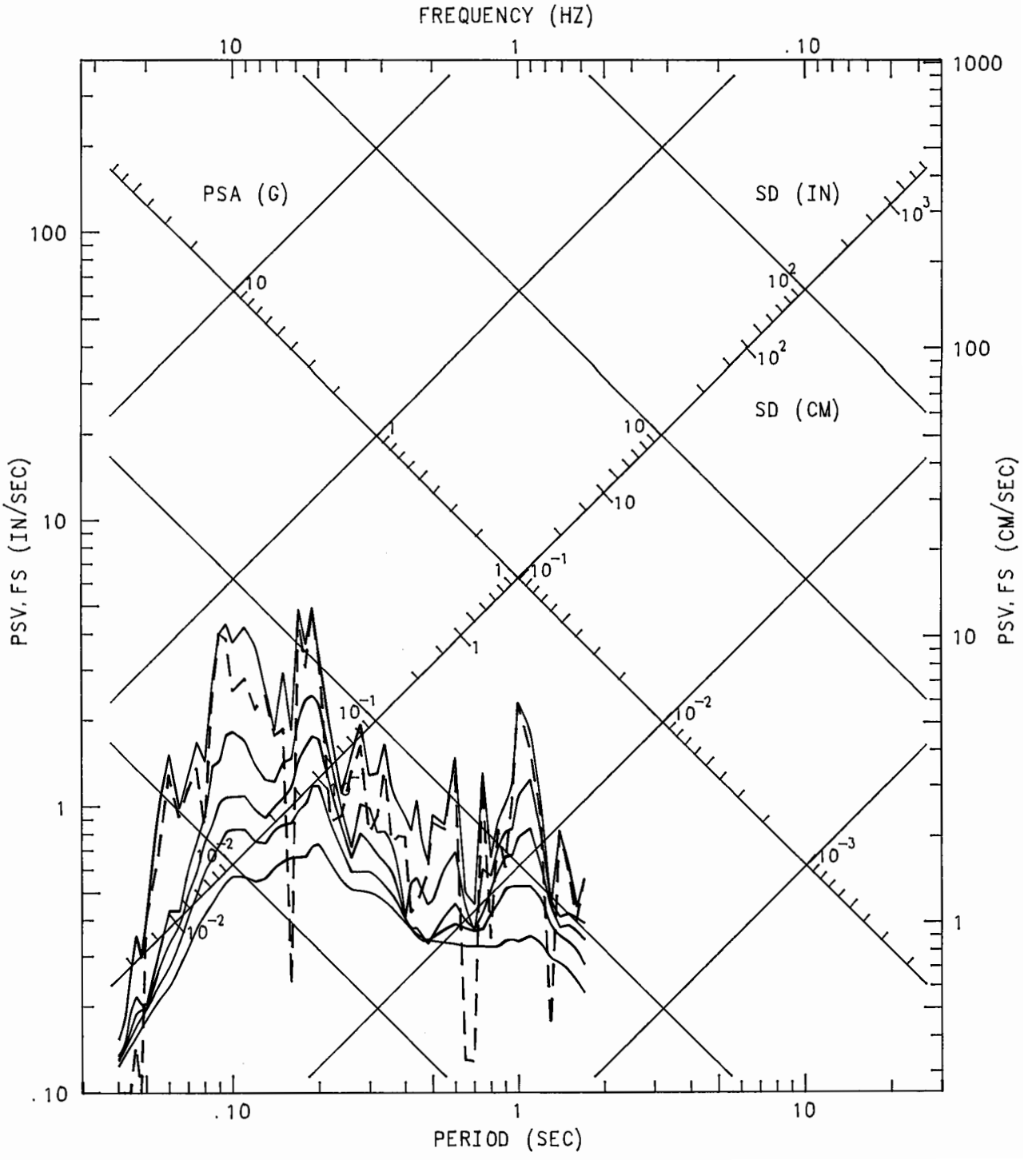

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 13198-S1873-86191.01 041387.1644-QP86A198
MAX = 25.7
MAX = 0.84
MAX = -0.07
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 13198-S1873-86191.01 041387.1644-QP86A198
MAX = 45.9
MAX = 1.42
MAX = 0.09
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.4
0
-0.4
0
5
10
15
20

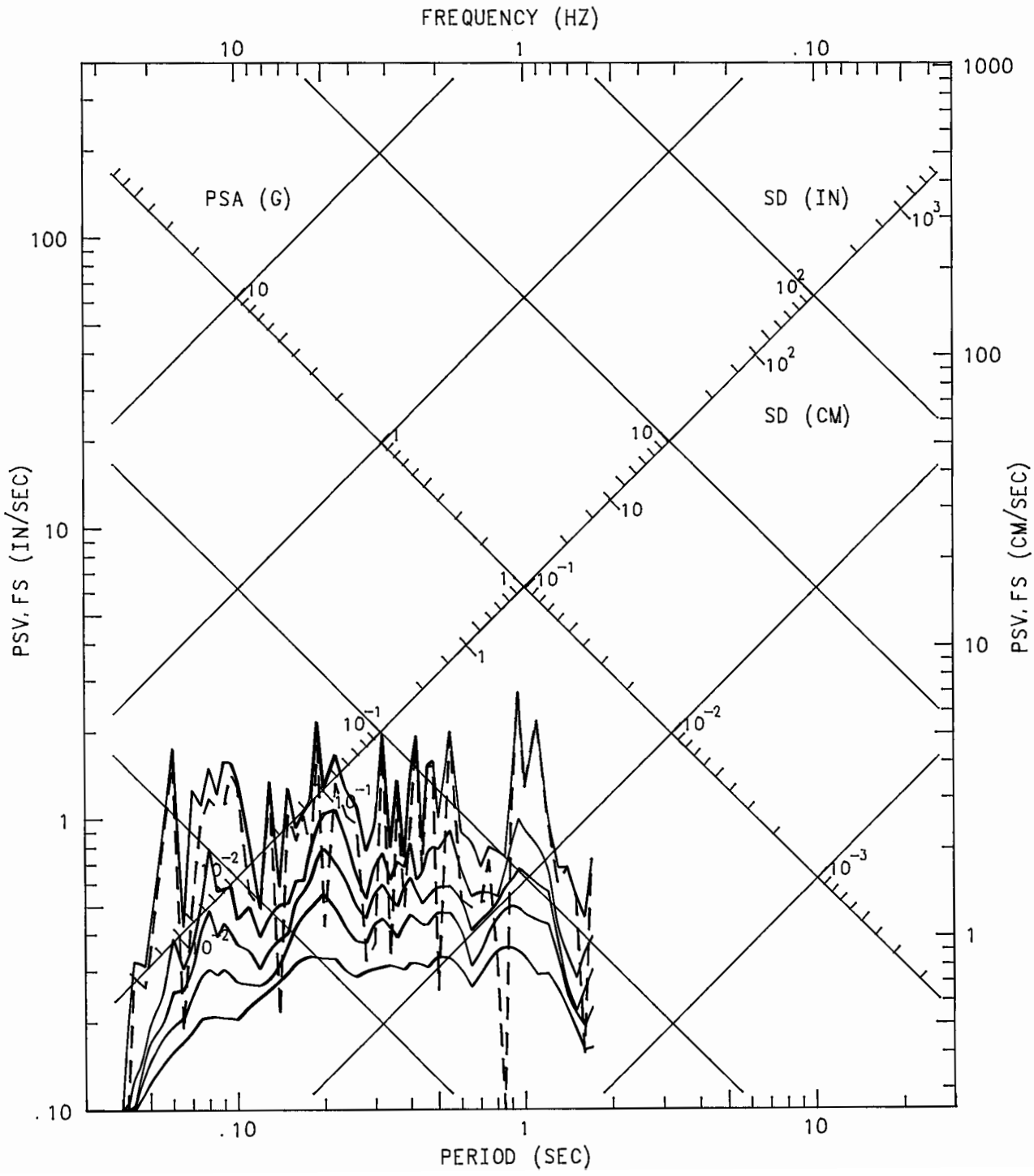
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13198-S1873-86191.01 043087.1504-QPALMSP86G



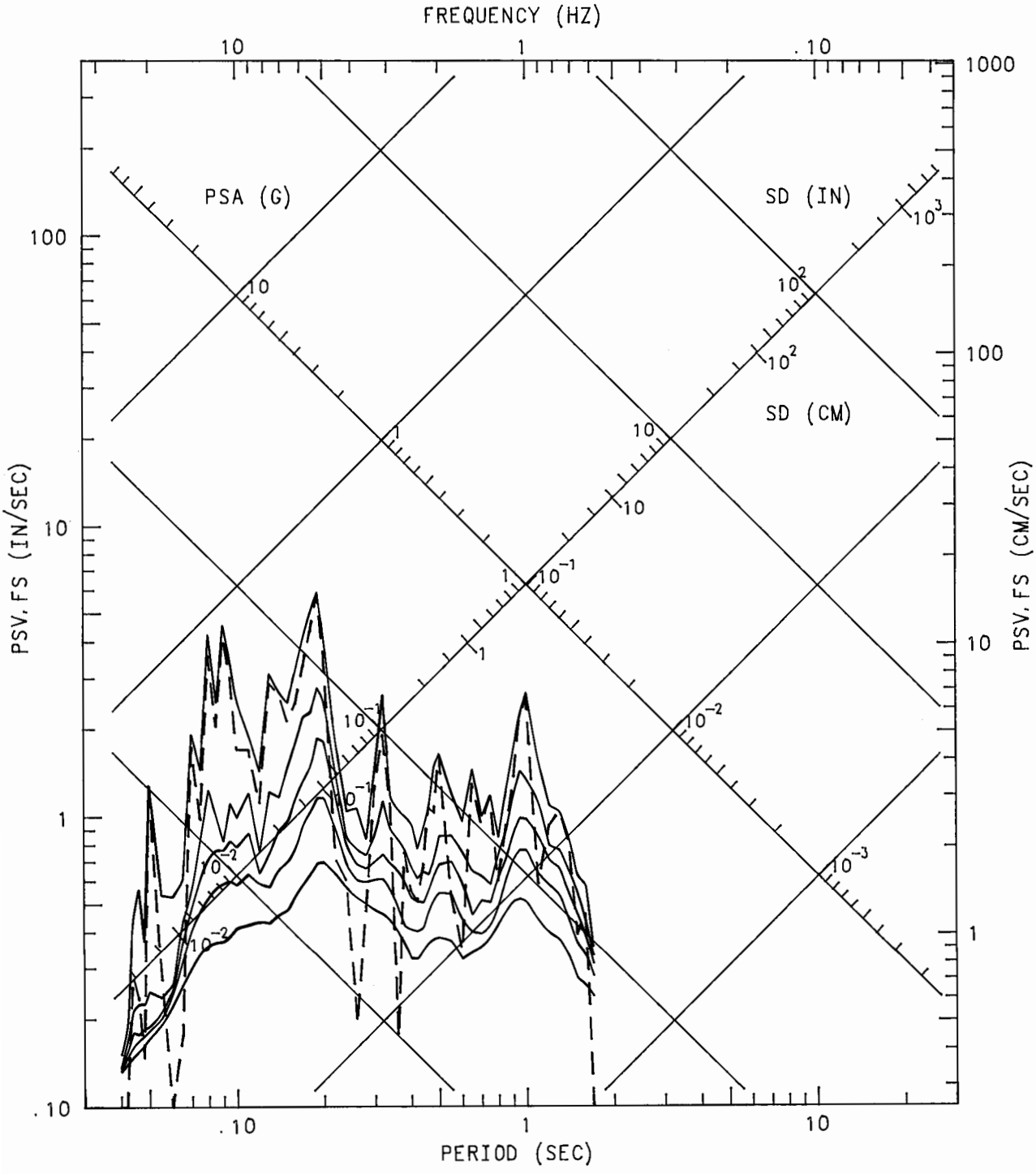
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13198-S1873-86191.01 043087.1504-QP86A198



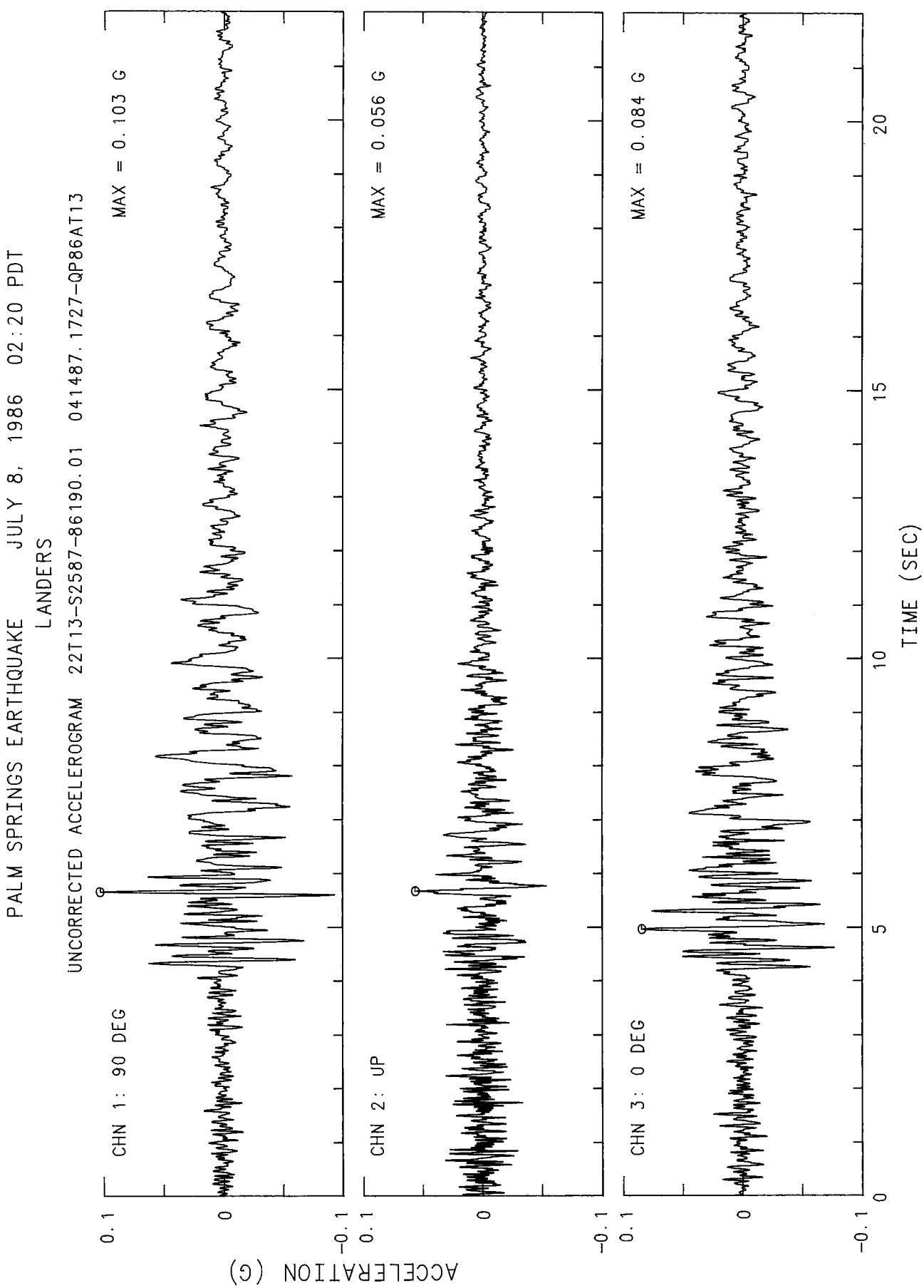
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13198-S1873-86191.01 043087.1504-QP86A198

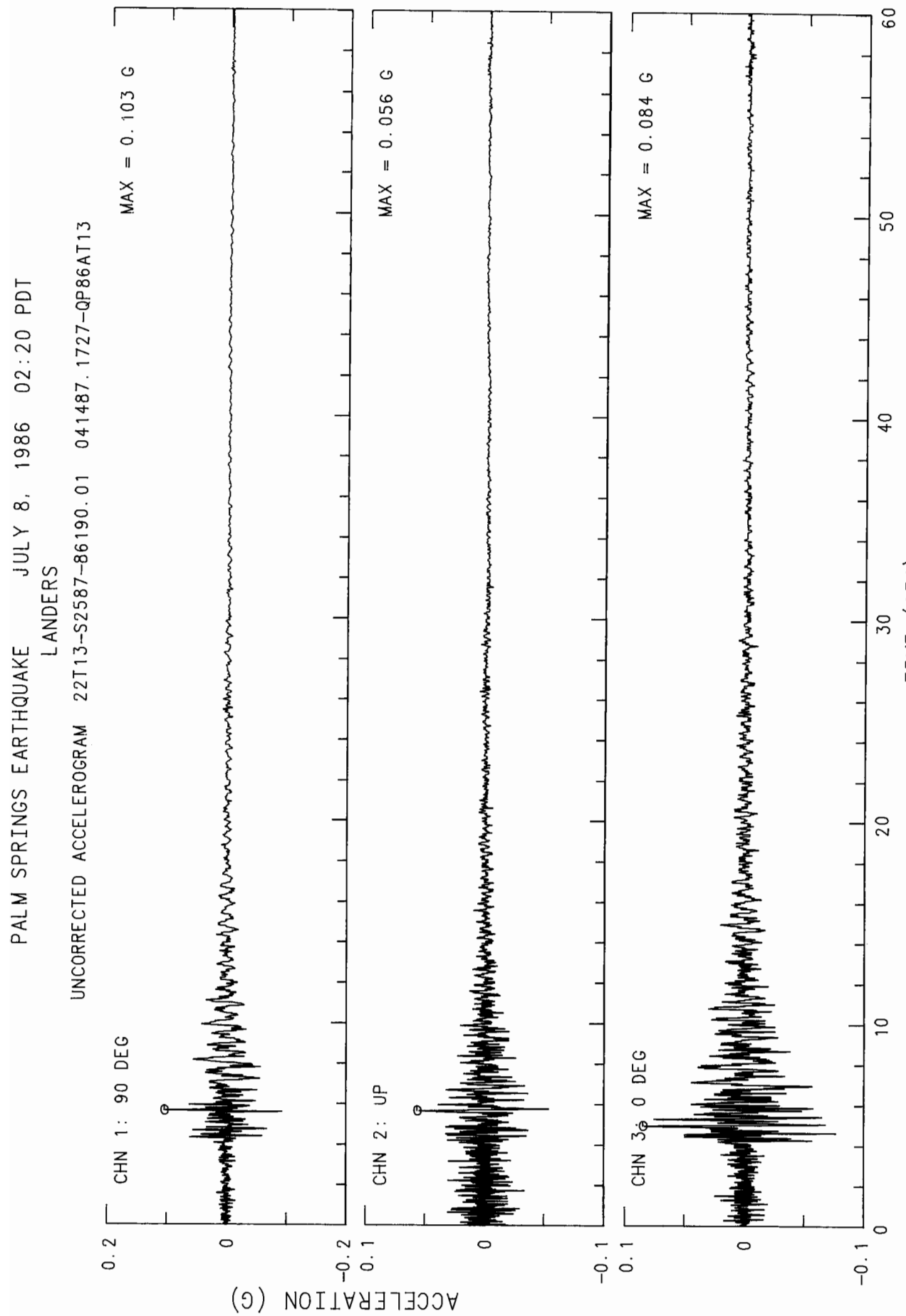


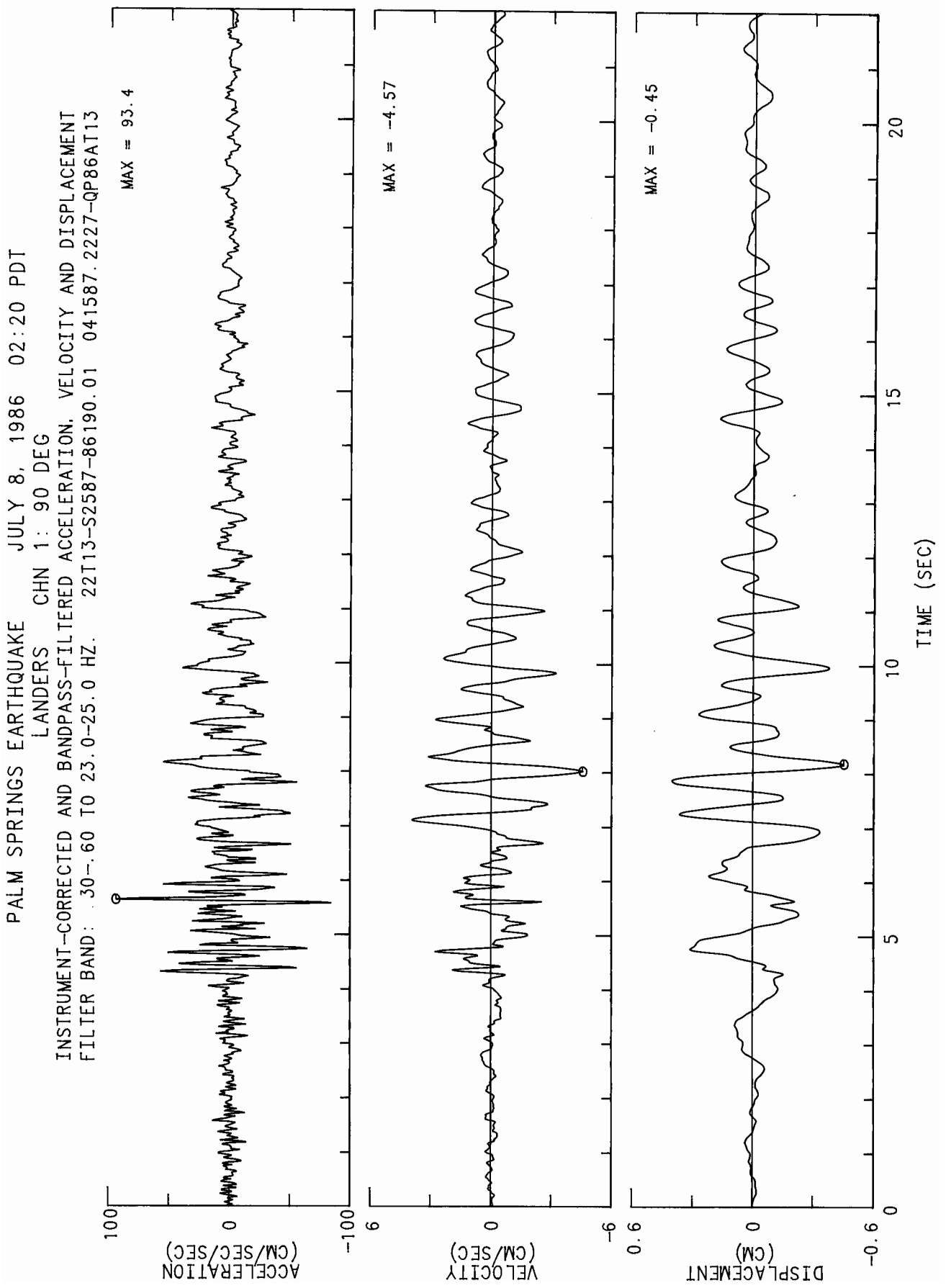
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
MURRIETA HOT SPRINGS - COLLINS RANCH
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13198-S1873-86191.01 043087.1504-QP86A198

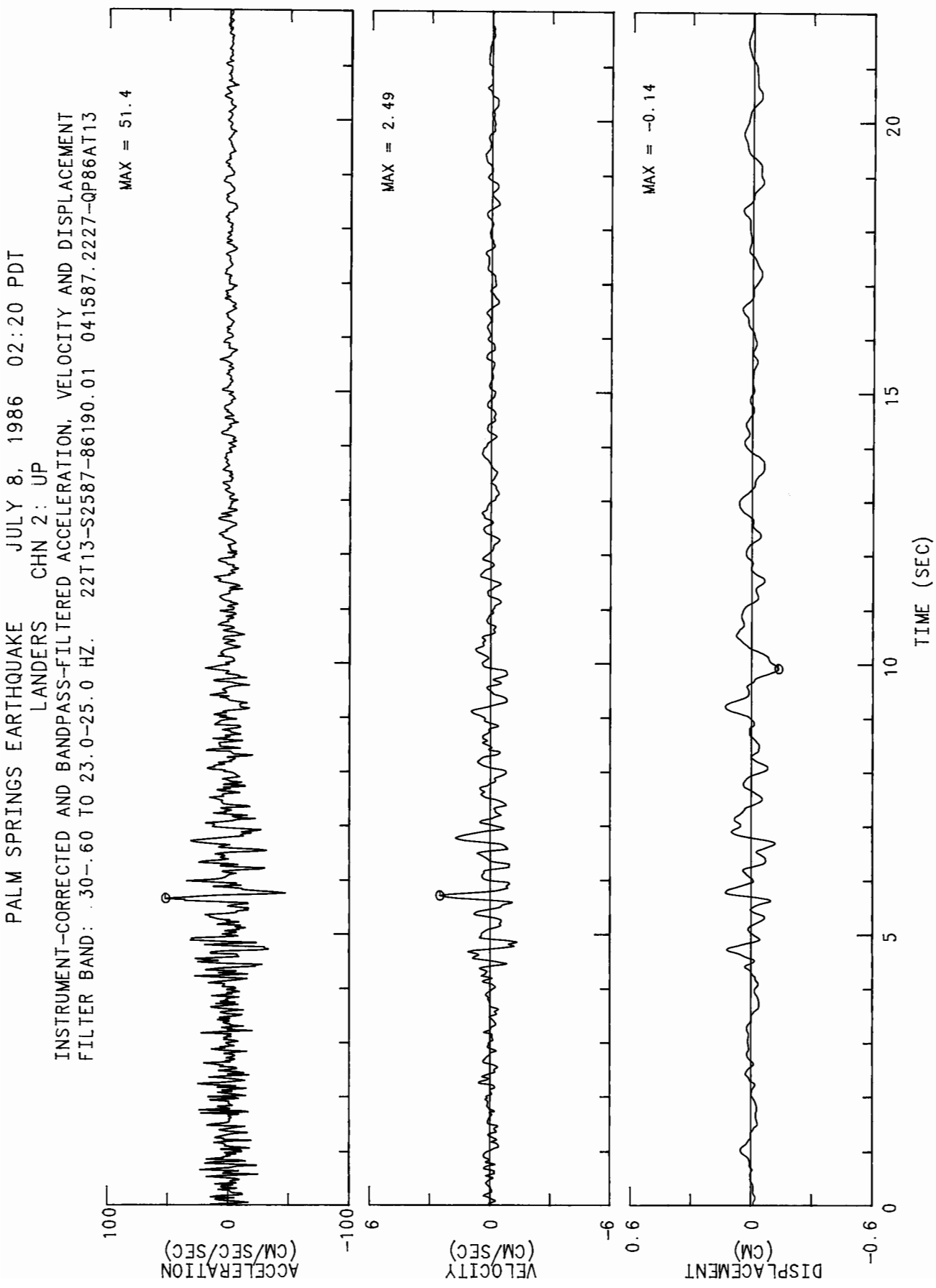


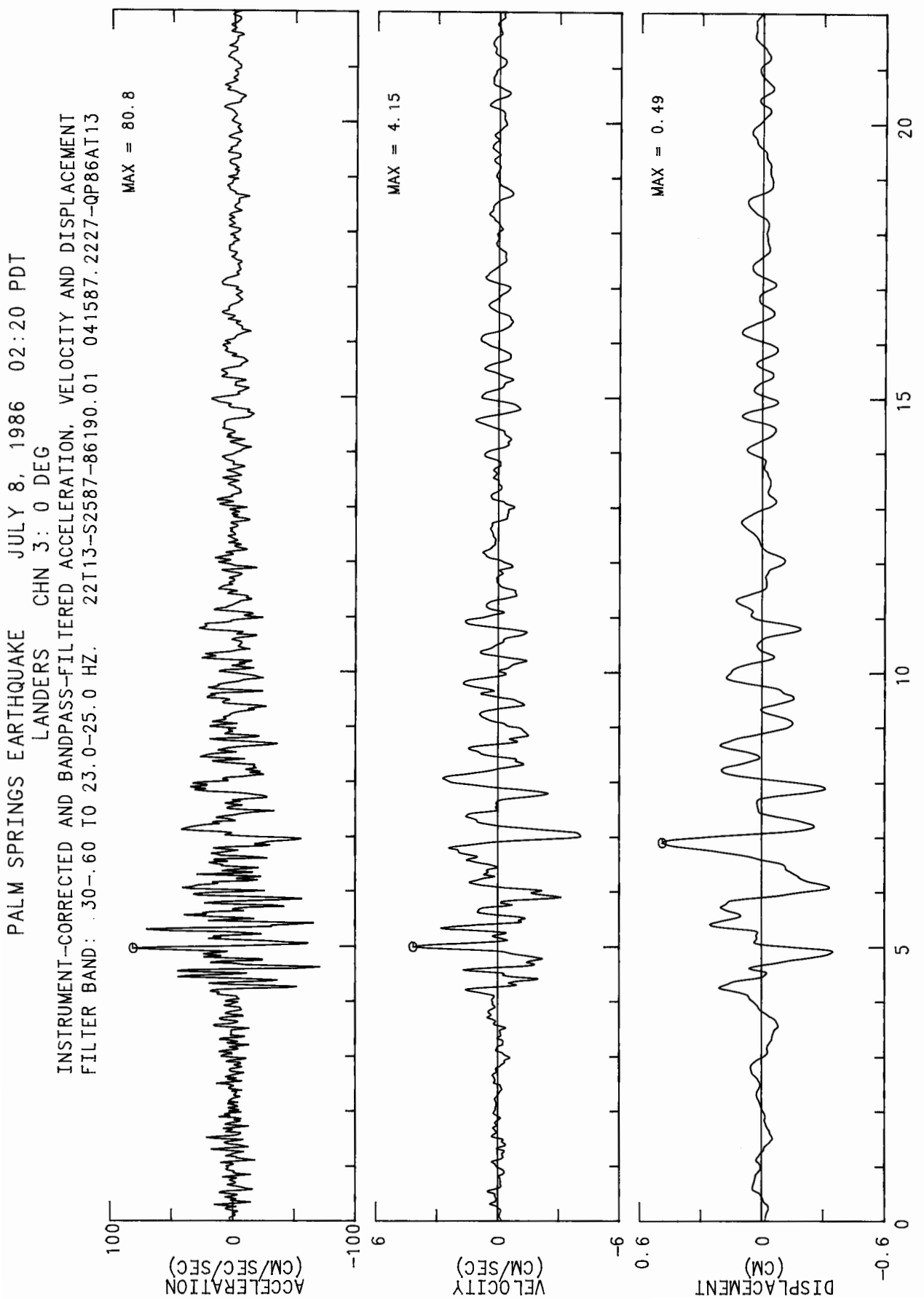
# LANDERS - FIRE STATION


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
UNCORRECTED ACCELEROGRAM 22T13-S2587-86190.01 041487.1727-QP86AT13
CHN 1: 90 DEG
MAX = 0.103 G
CHN 2: UP
MAX = 0.056 G
CHN 3: 0 DEG
MAX = 0.084 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

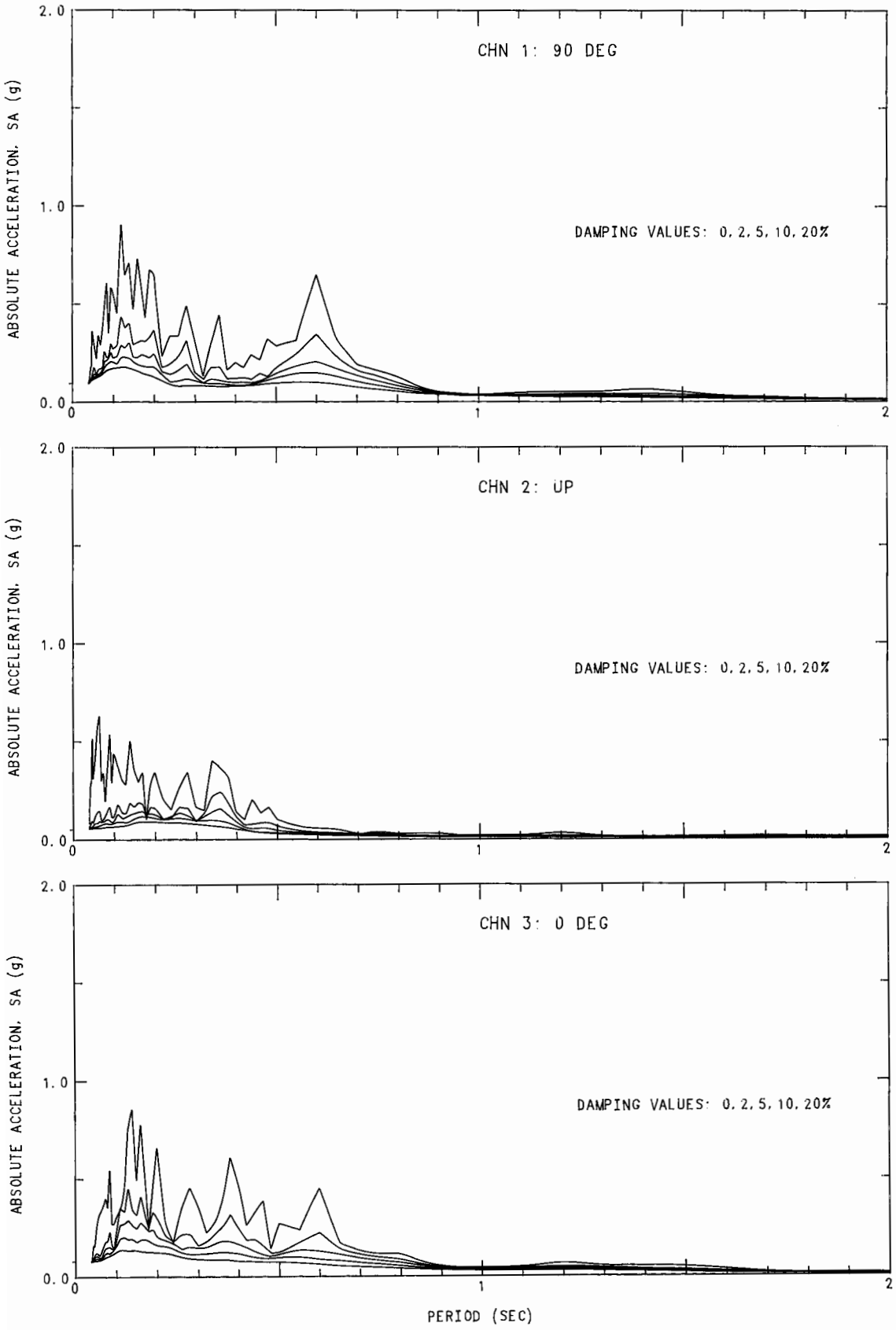

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
UNCORRECTED ACCELEROGRAM 22T13-S2587-86190.01 041487.1727-QP86AT13
CHN 1: 90 DEG
MAX = 0.103 G
CHN 2: UP
MAX = 0.056 G
CHN 3: 0 DEG
MAX = 0.084 G
ACCELERATION (G)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 22T13-S2587-86190.01 041587.2227-QP86AT13
MAX = 93.4
MAX = -4.57
MAX = -0.45
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

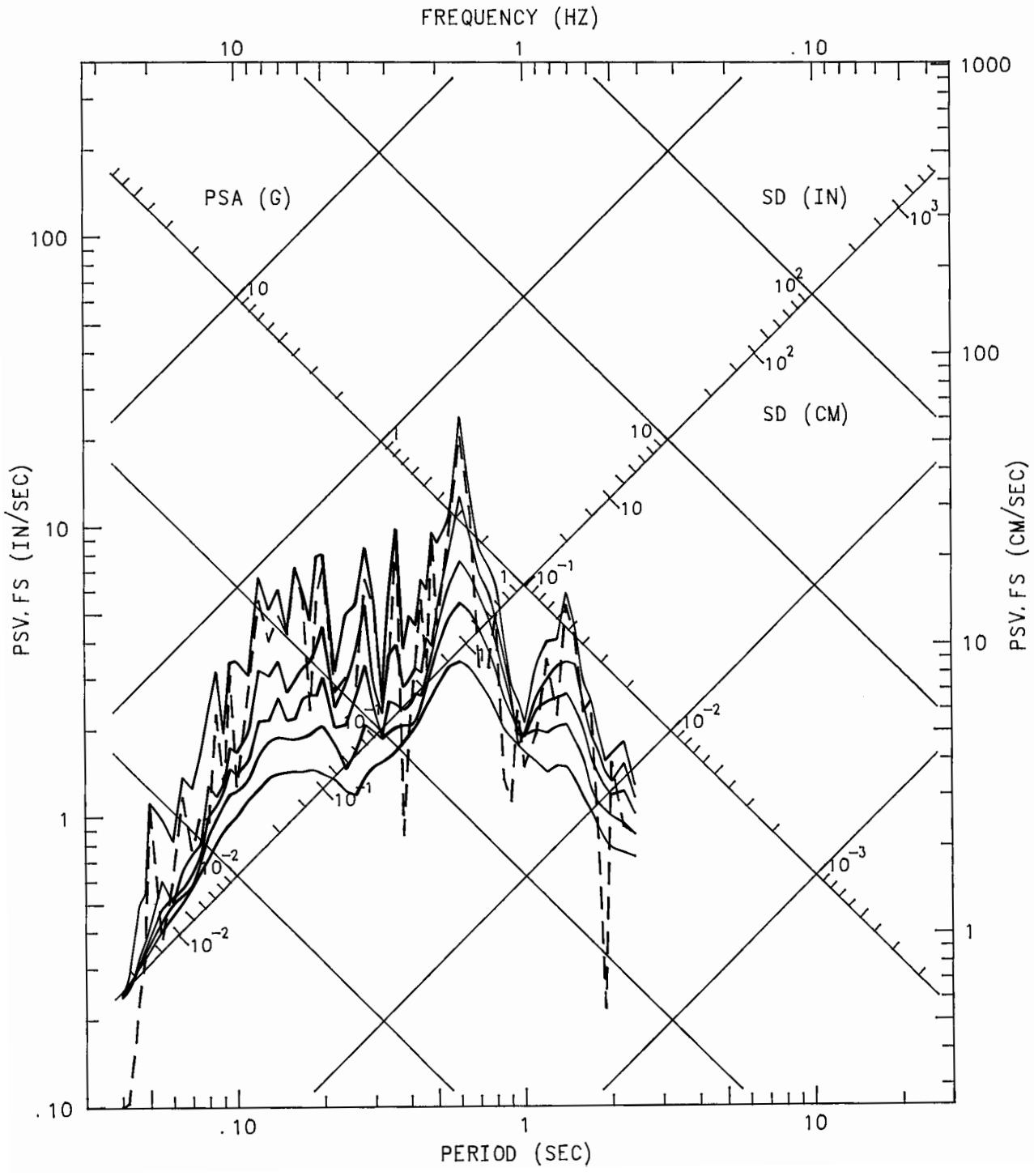

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 22T13-S2587-86190.01 041587.2227-QP86AT13
MAX = 51.4
MAX = 2.49
MAX = -0.14
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .30-.60 TO 23.0-25.0 HZ. 22T13-S2587-86190.01 041587.2227-QP86AT13
MAX = 80.8
MAX = 4.15
MAX = 0.49
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)

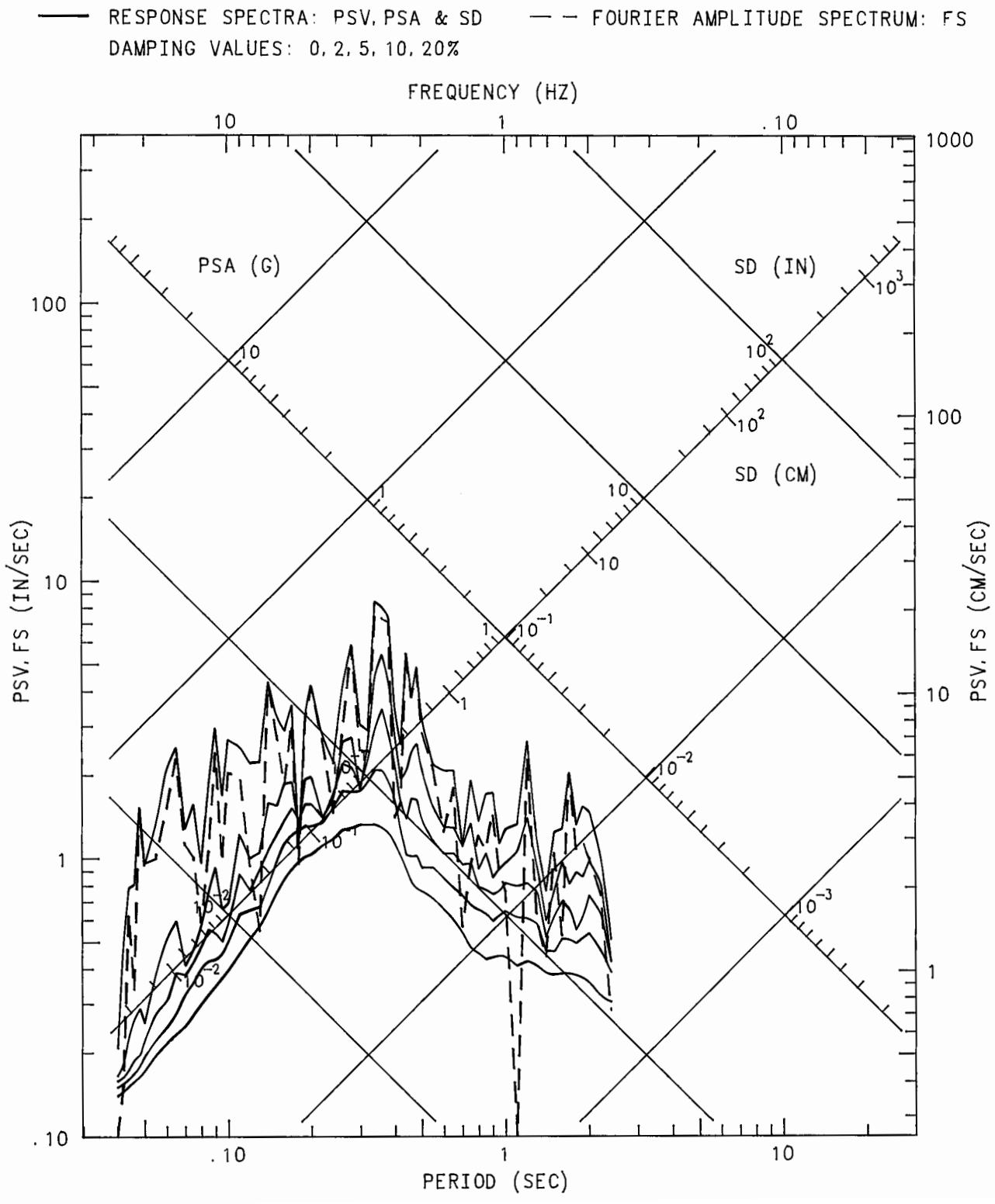
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
22T13-S2587-86190.01 043087.1551-QPALMSP86G



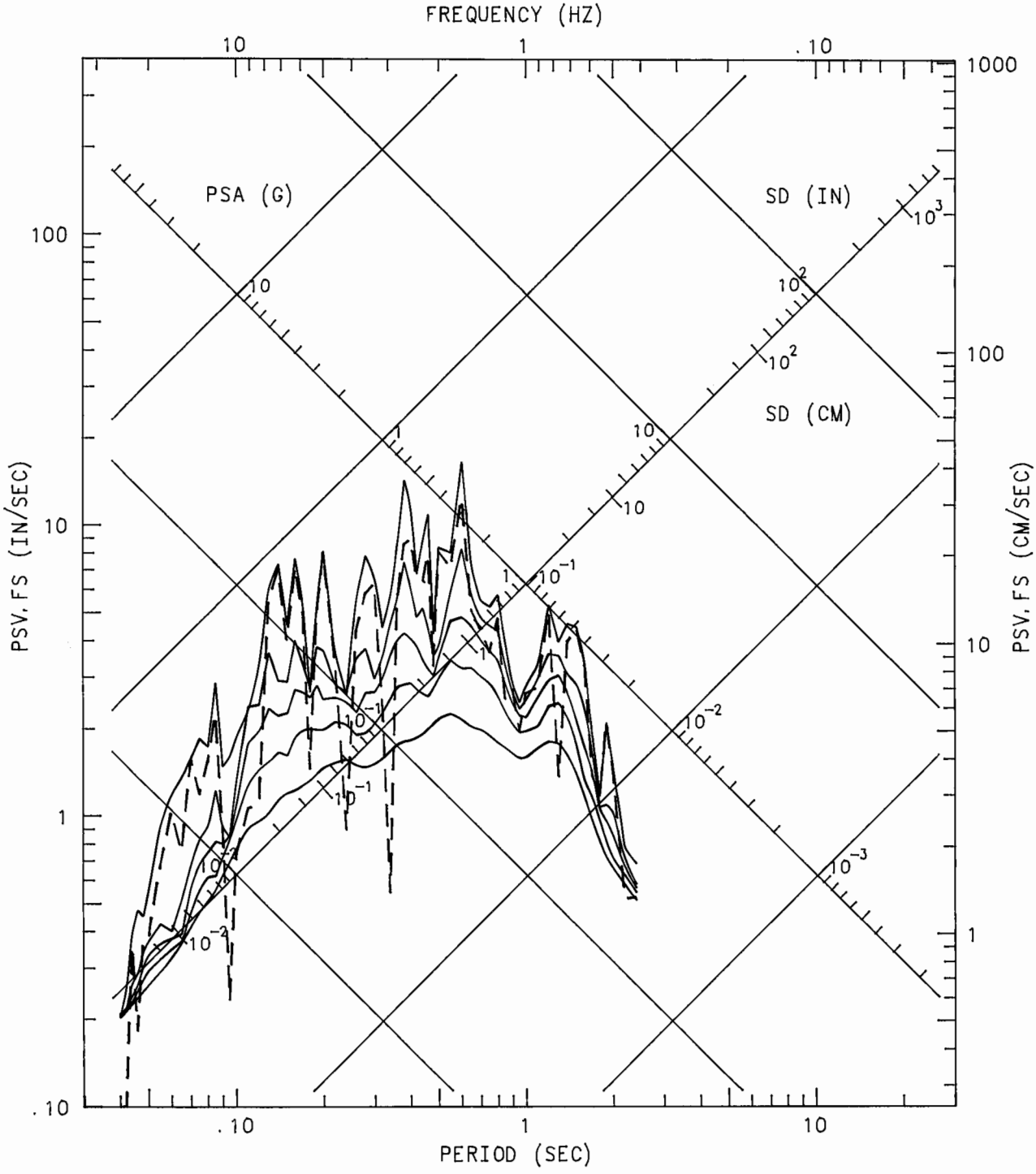
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
22T13-S2587-86190.01 043087.1551-QP86AT13



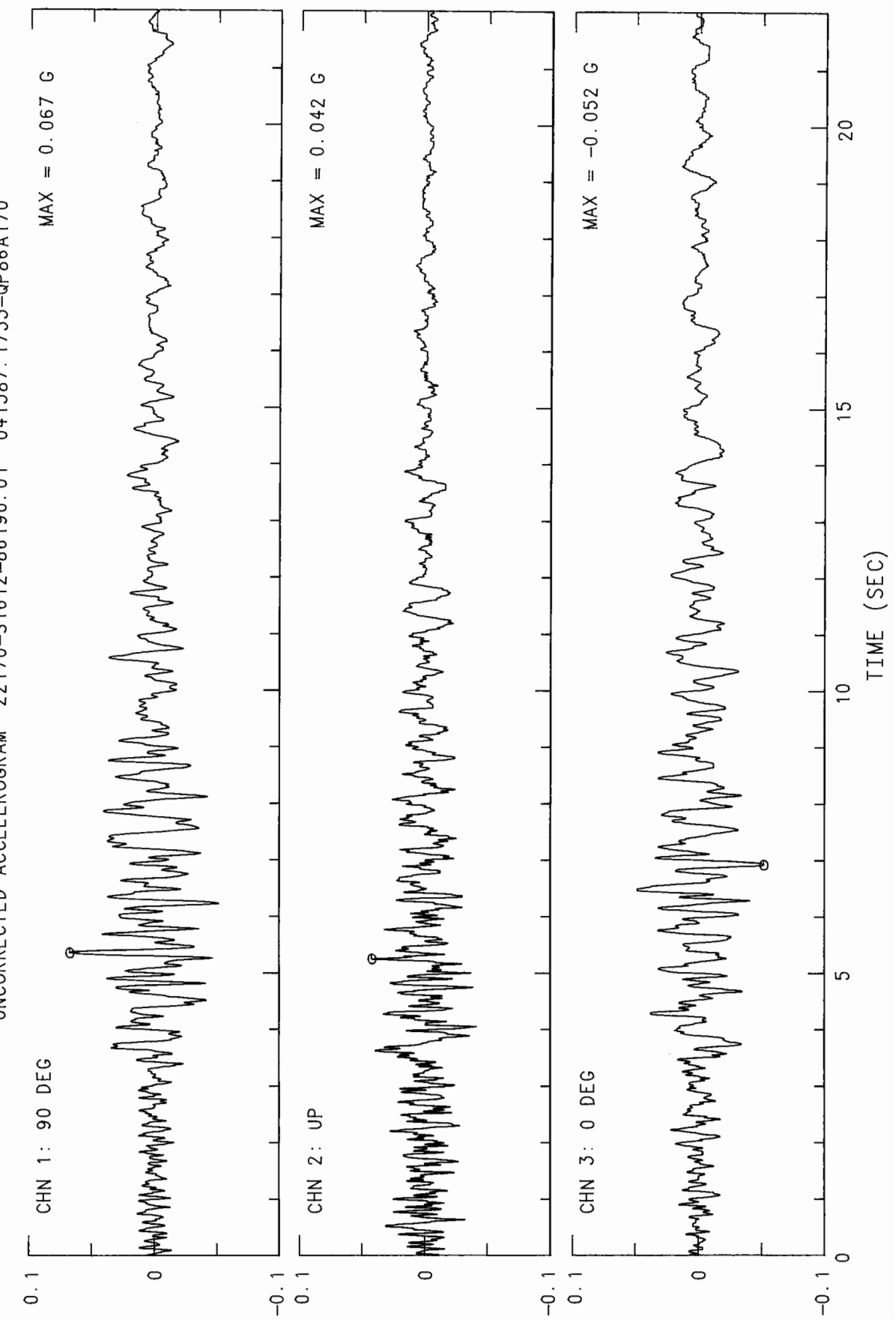
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
22T13-S2587-86190.01 043087.1551-QP86AT13

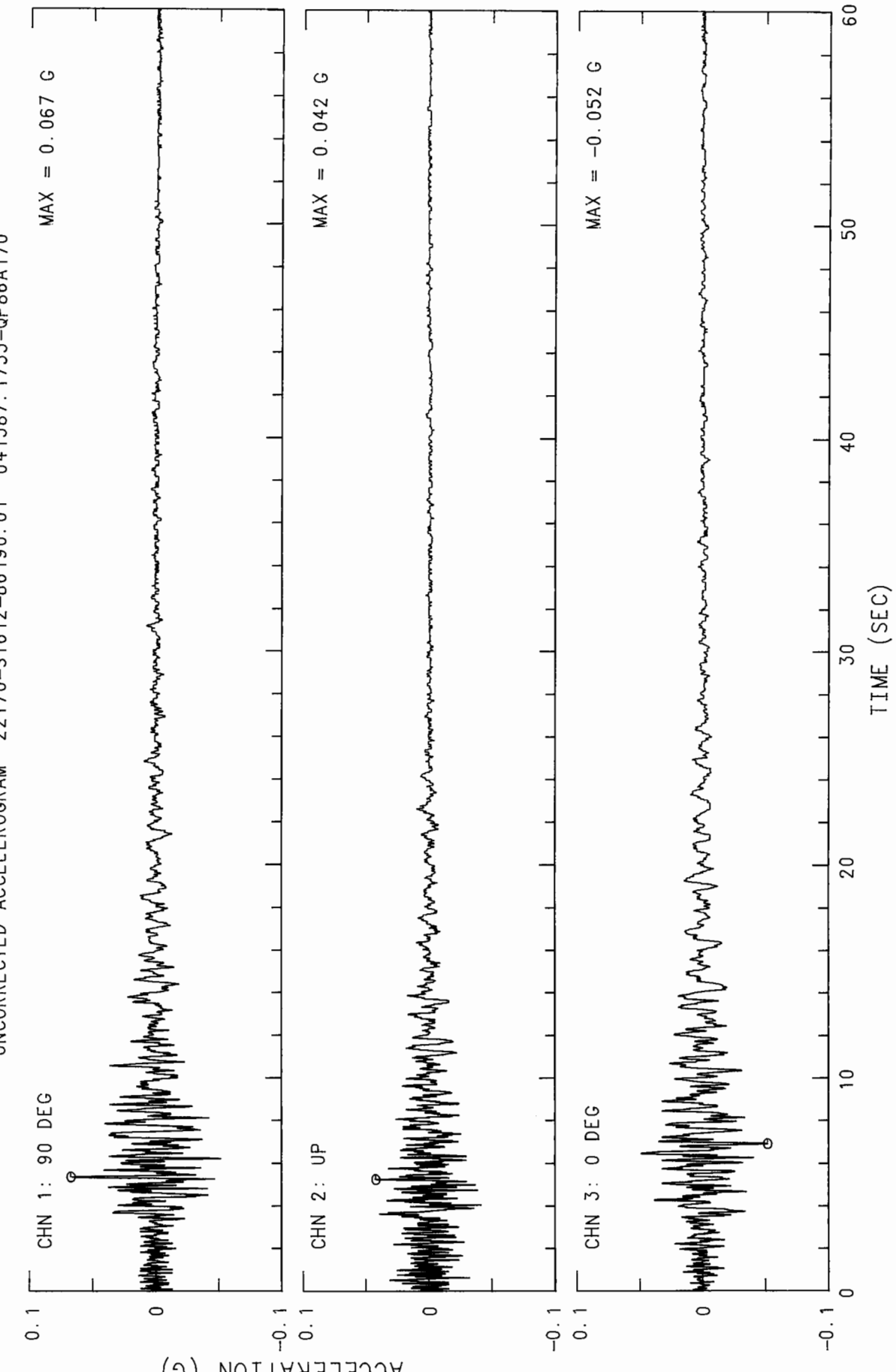


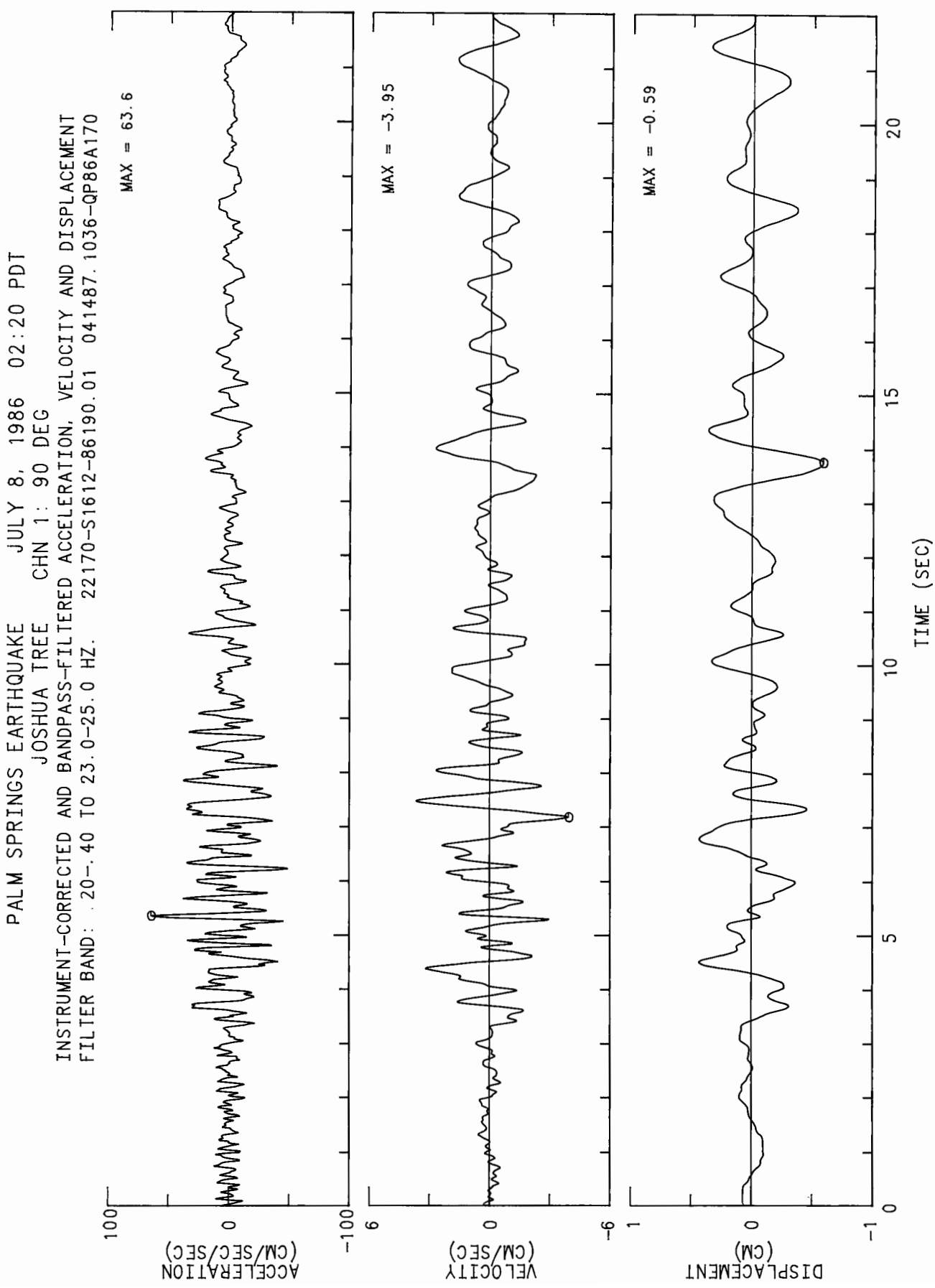
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
LANDERS
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .30-.60 TO 23.0-25.0 HZ.
22T13-S2587-86190.01 043087.1551-QP86AT13

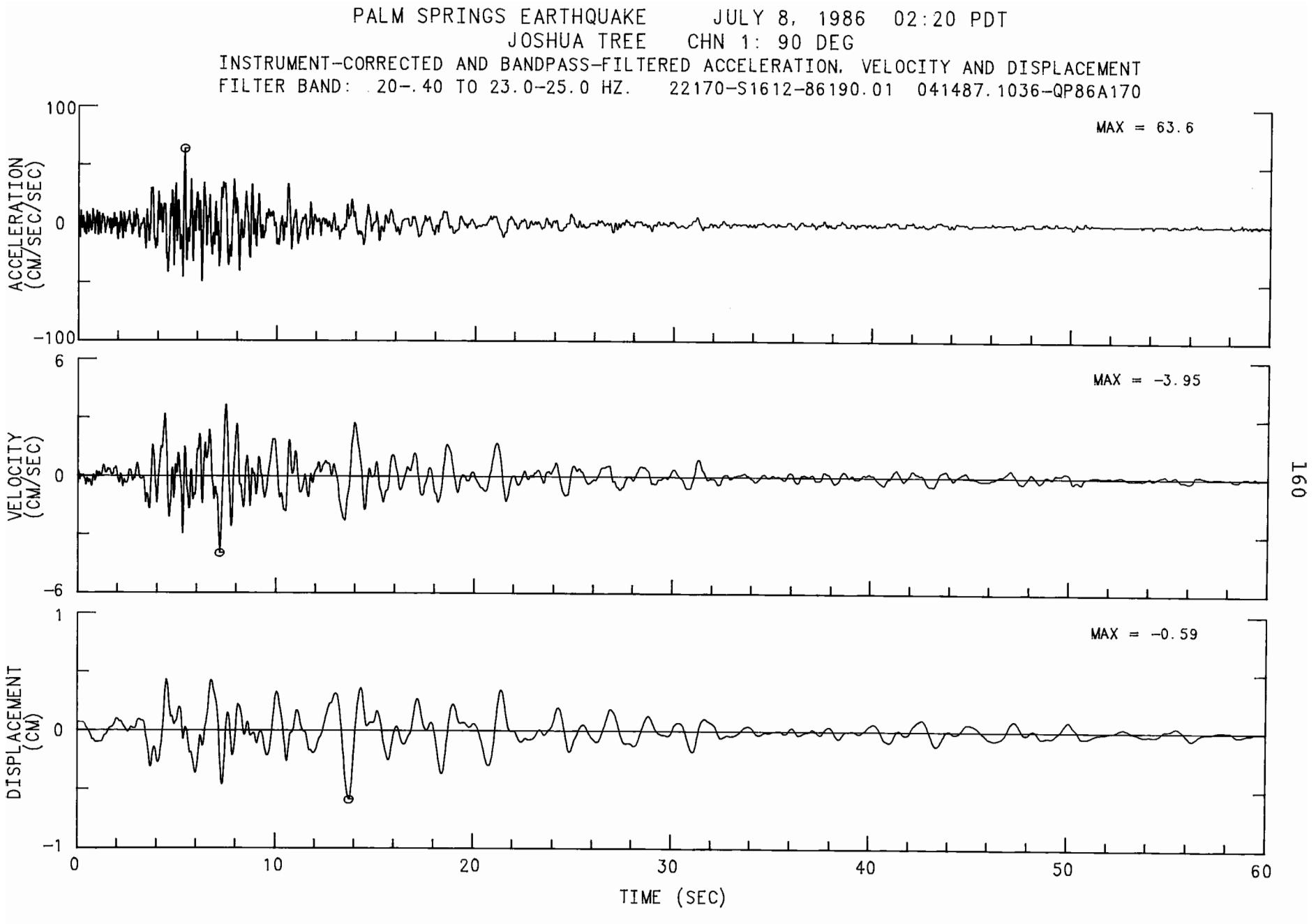


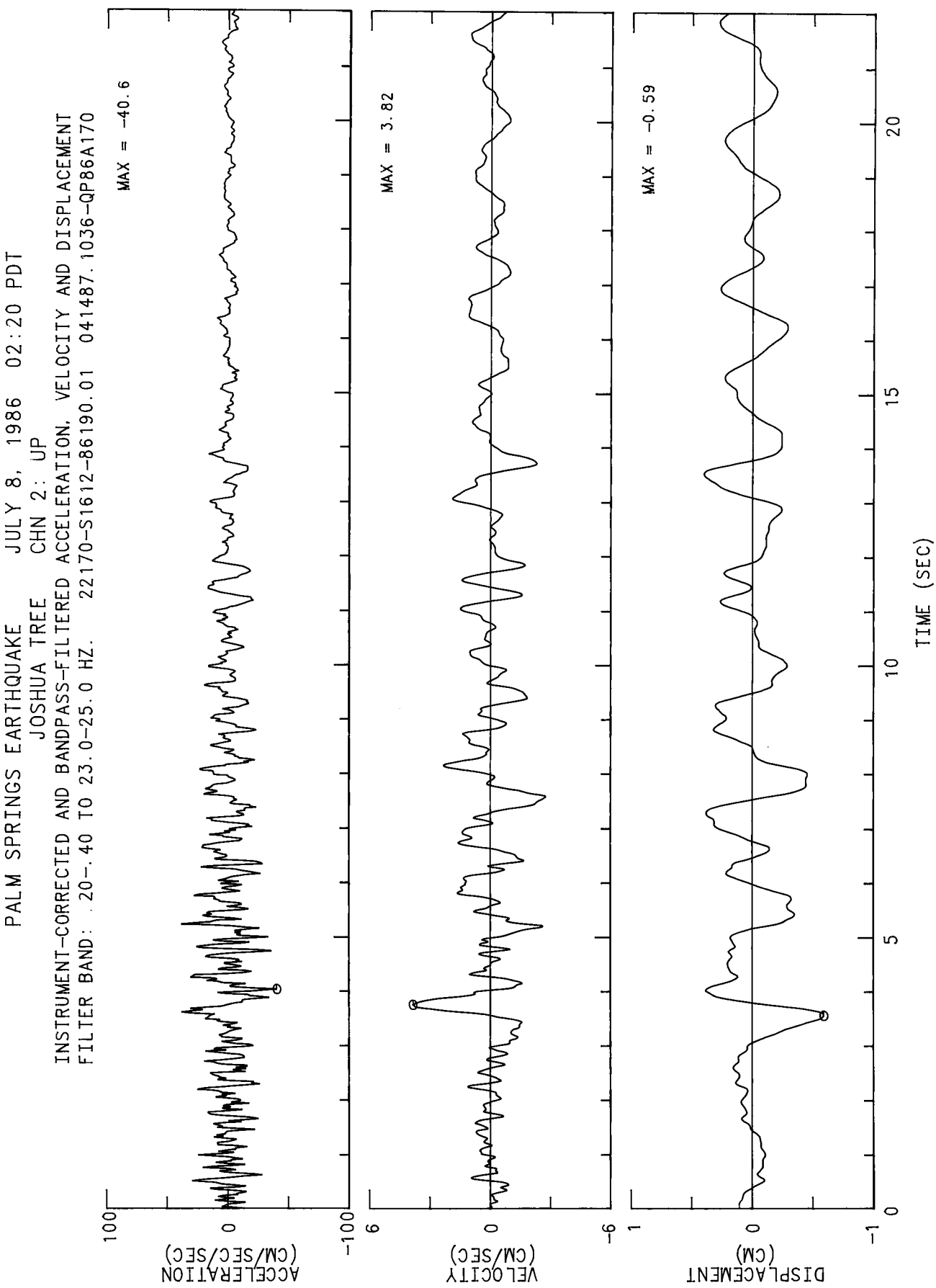
JOSHUA TREE - FIRE STATION

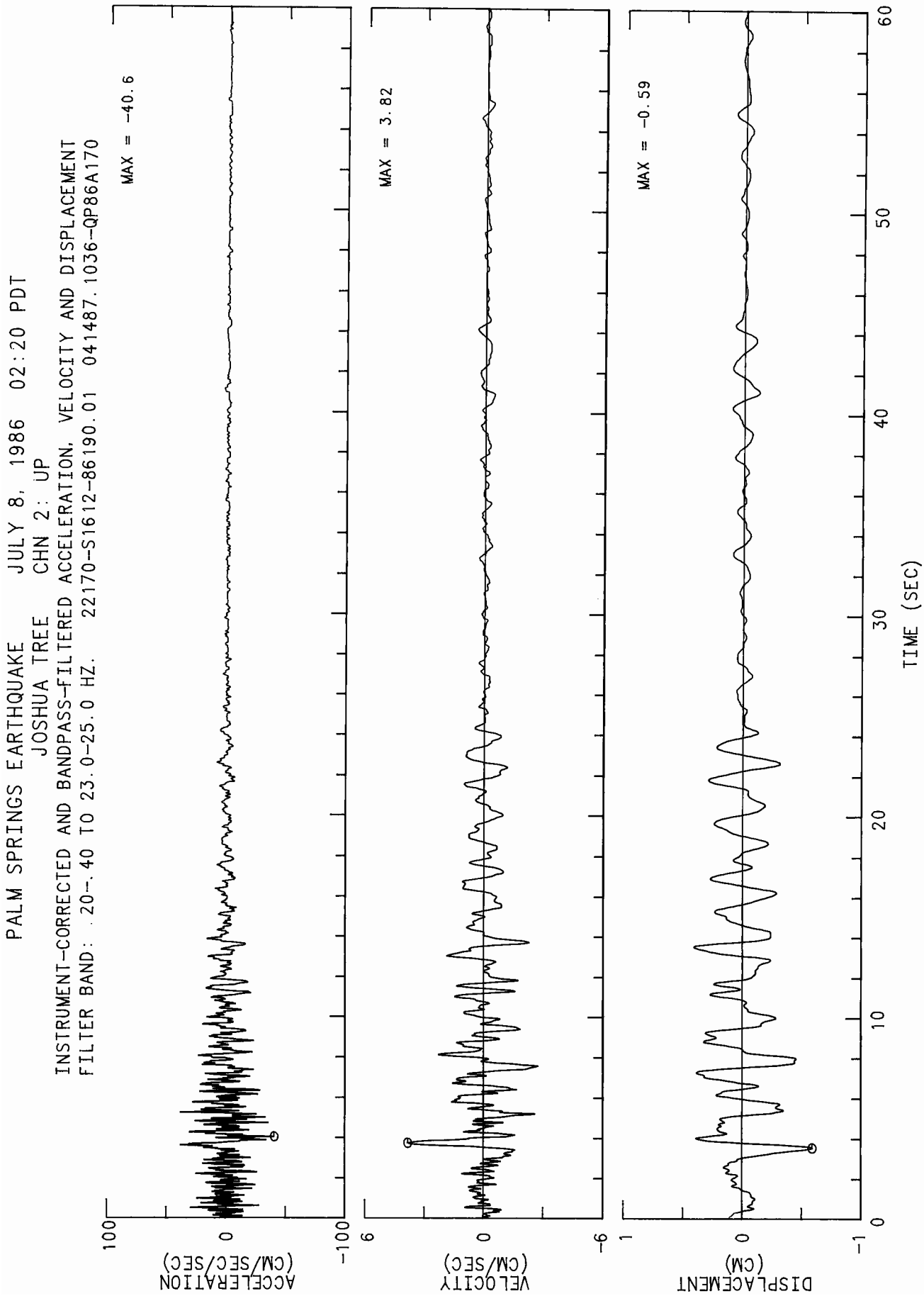

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
UNCORRECTED ACCELEROGRAM 22170-S1612-86190.01 041387.1753-QP86A170
CHN 1: 90 DEG
MAX = 0.067 G
CHN 2: UP
MAX = 0.042 G
CHN 3: 0 DEG
MAX = -0.052 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

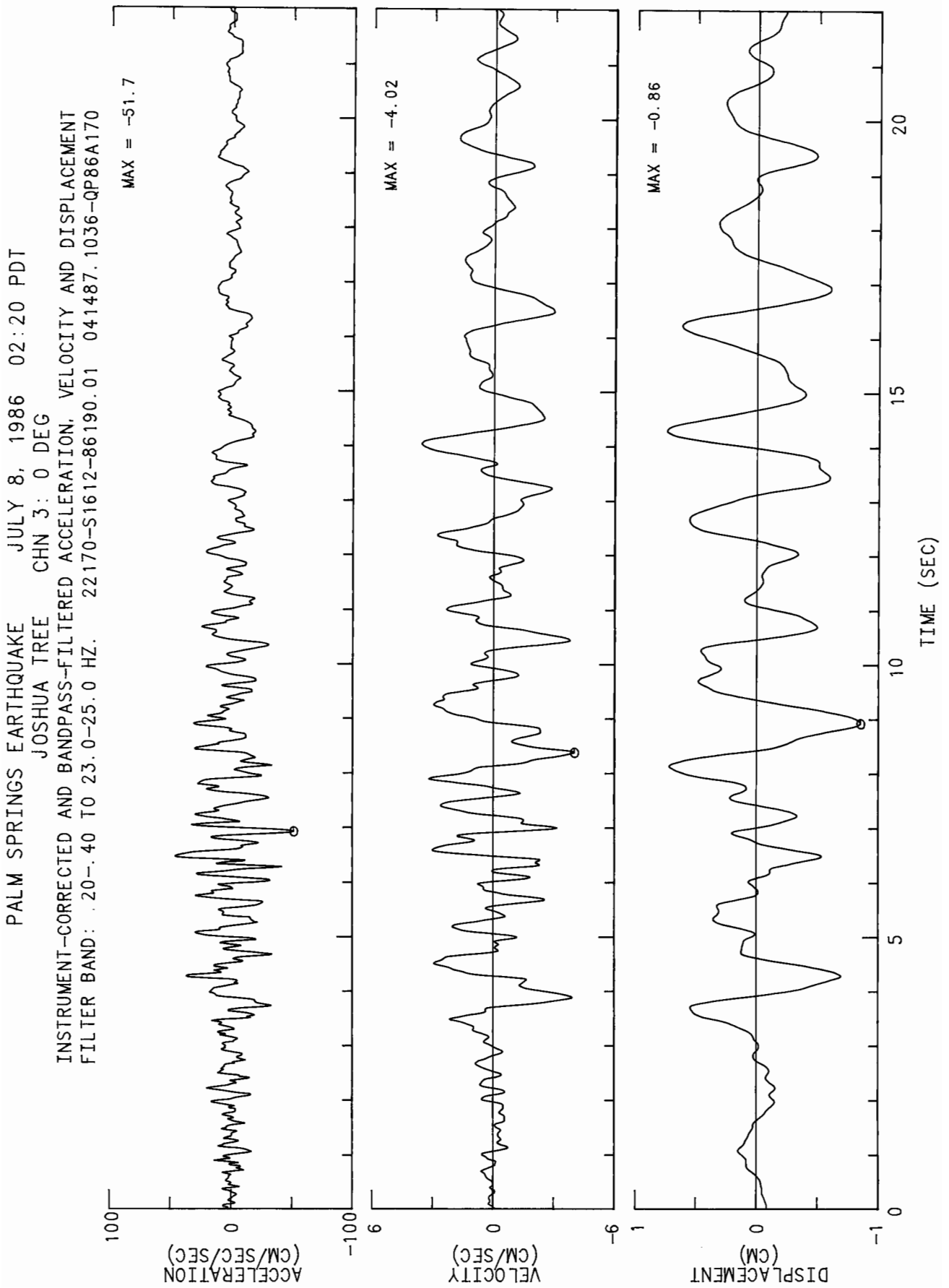

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
UNCORRECTED ACCELEROGRAM 22170-S1612-86190.01 041387.1753-QP86A170
CHN 1: 90 DEG
MAX = 0.067 G
CHN 2: UP
MAX = 0.042 G
CHN 3: 0 DEG
MAX = -0.052 G
ACCELERATION (G)
0.1
0
-0.1
0
10
20
30
40
50
60
TIME (SEC)

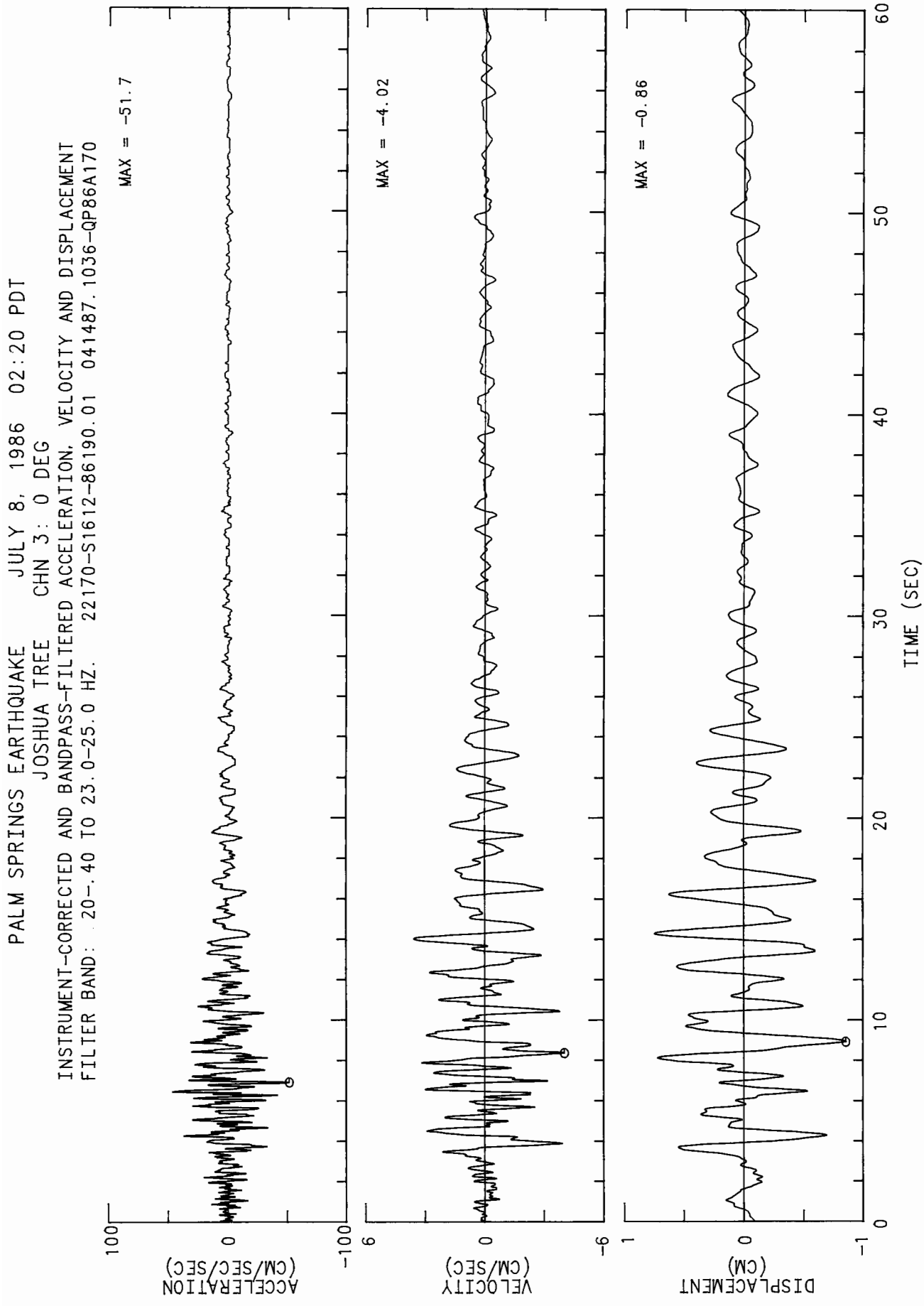

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
MAX = 63.6
MAX = -3.95
MAX = -0.59
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
6
0
-6
1
0
-1
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 63.6
VELOCITY (CM/SEC)
6
0
-6
MAX = -3.95
DISPLACEMENT (CM)
1
0
-1
MAX = -0.59
0
10
20
30
40
50
60
TIME (SEC)
160

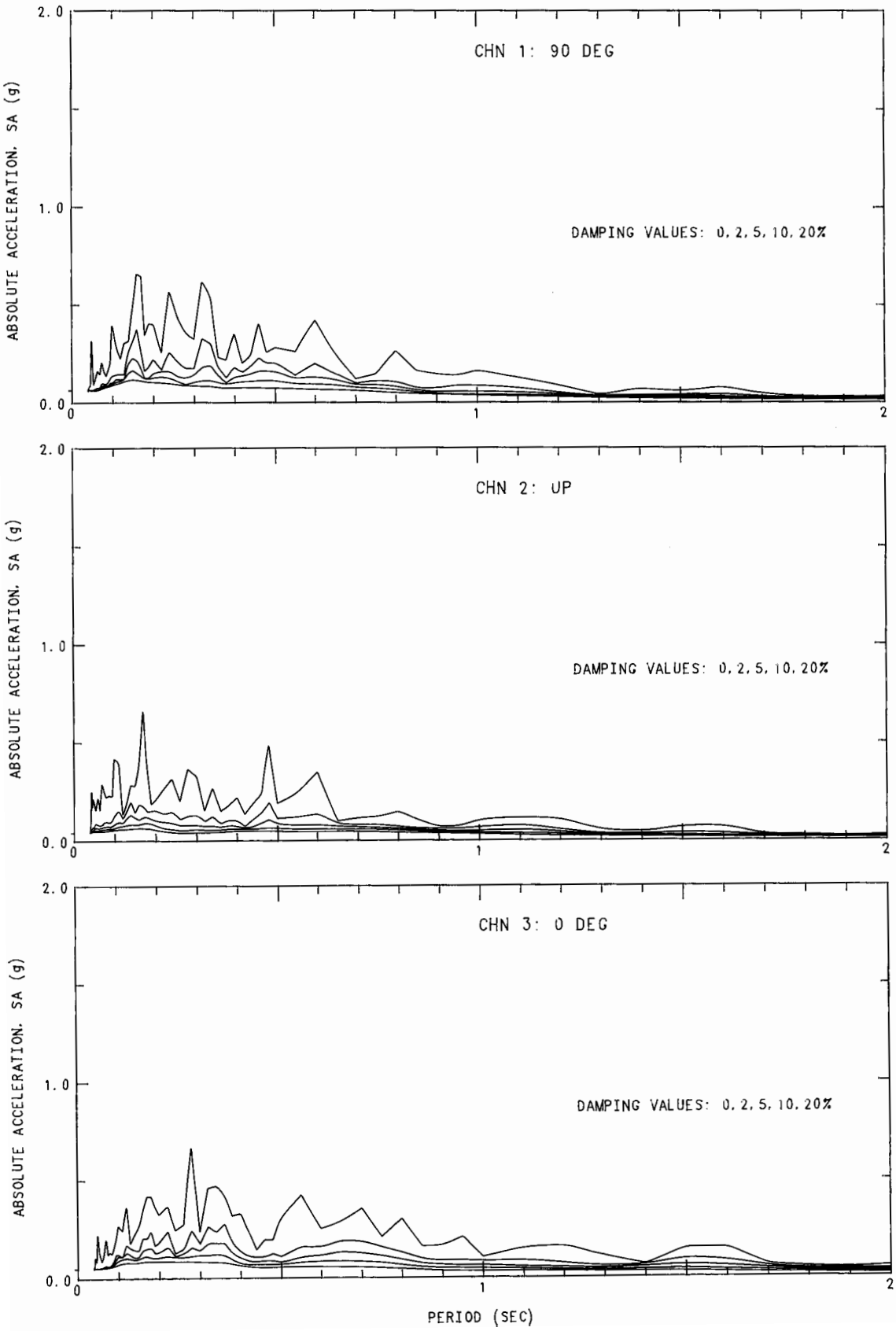

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
MAX = -40.6
MAX = 3.82
MAX = -0.59
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
6
0
-6
1
0
-1
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
MAX = -40.6
MAX = 3.82
MAX = -0.59
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
6
0
-6
1
0
-1
0
10
20
30
40
50
60

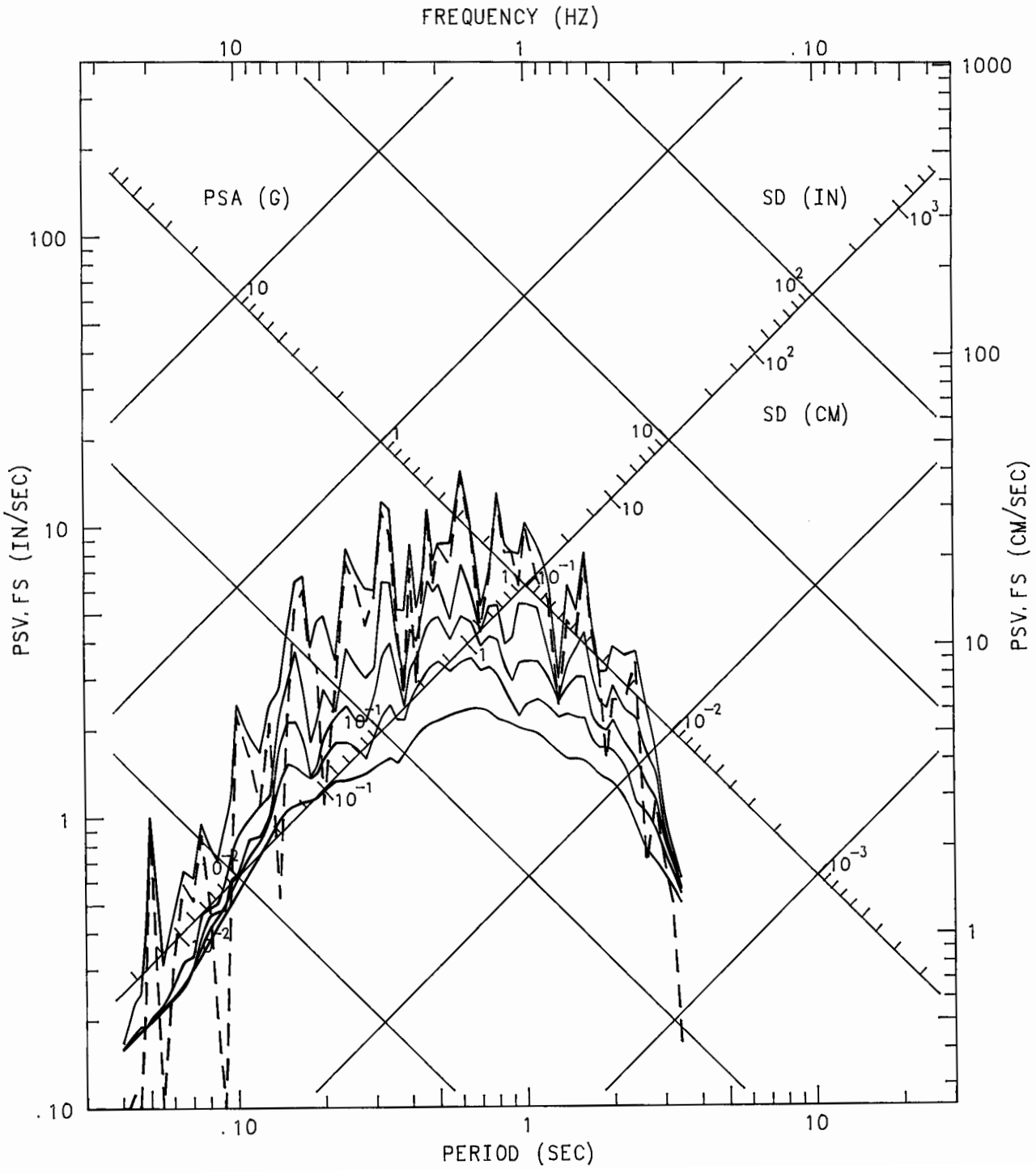

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
MAX = -51.7
MAX = -4.02
MAX = -0.86
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 22170-S1612-86190.01 041487.1036-QP86A170
MAX = -51.7
MAX = -4.02
MAX = -0.86
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
6
0
-6
1
0
-1
0
10
20
30
40
50
60

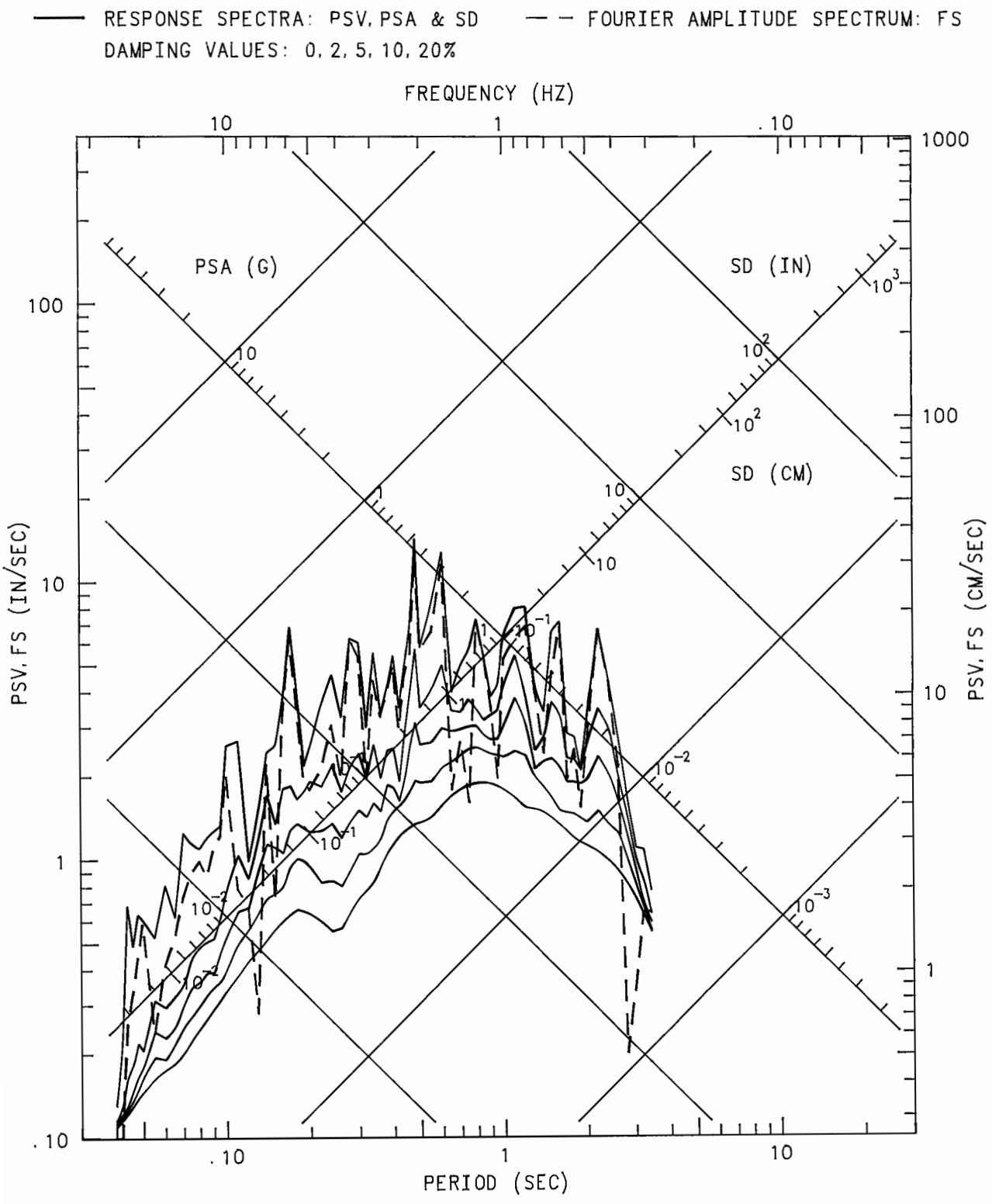
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
22170-S1612-86190.01 043087.1620-QPALMSP86G



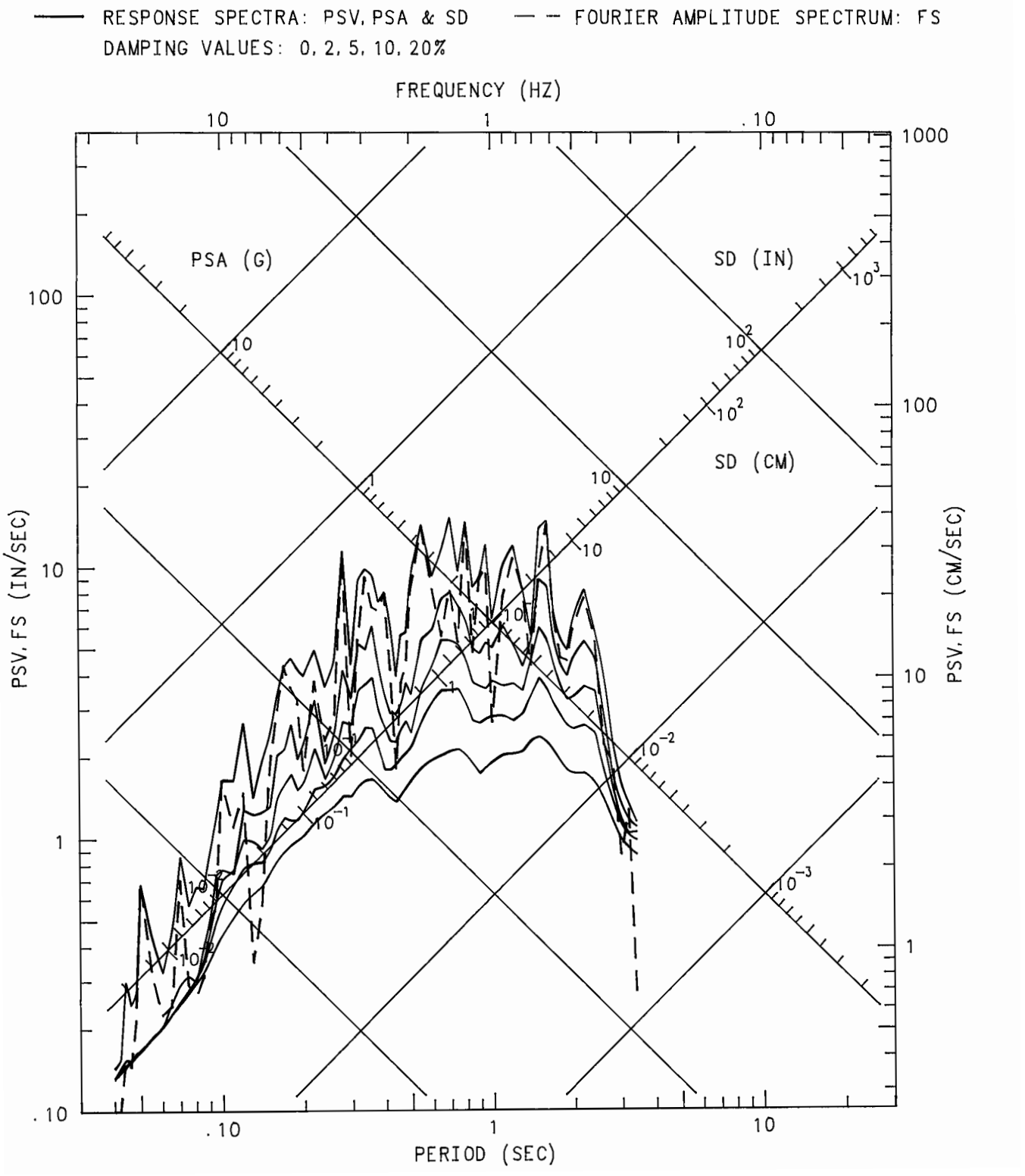
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
22170-S1612-86190.01 043087.1620-QP86A170



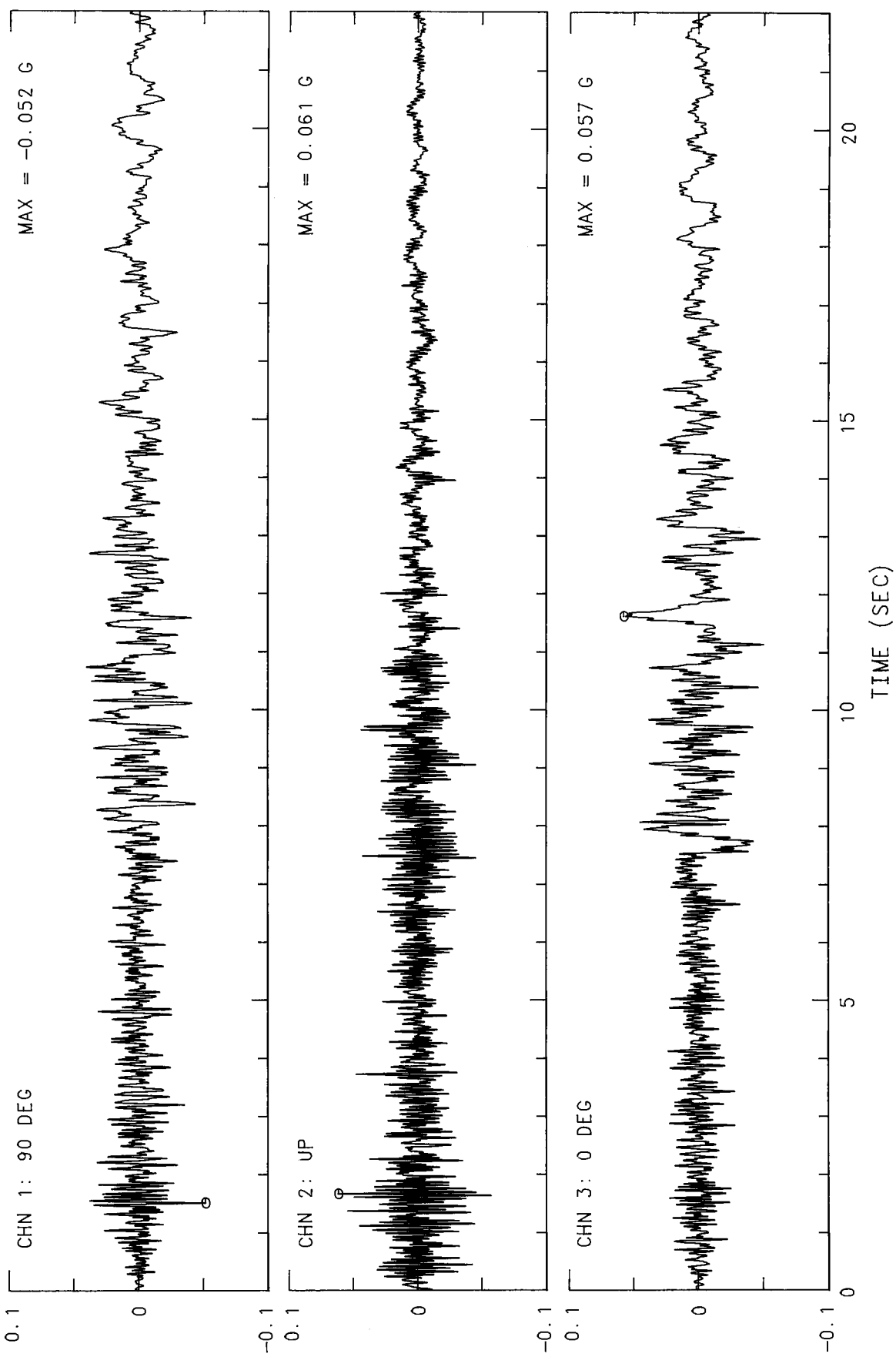
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
22170-S1612-86190.01 043087.1620-QP86A170

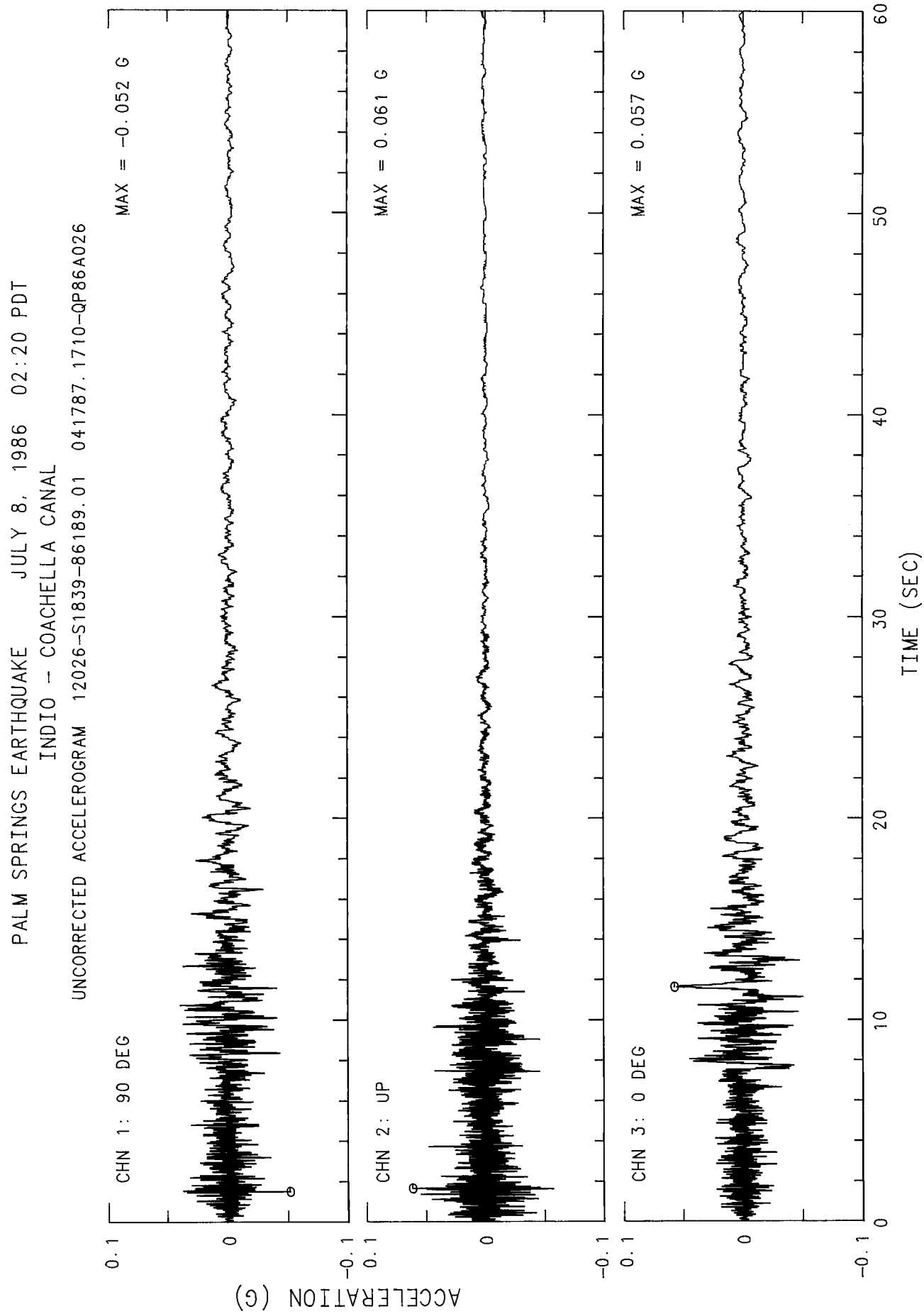


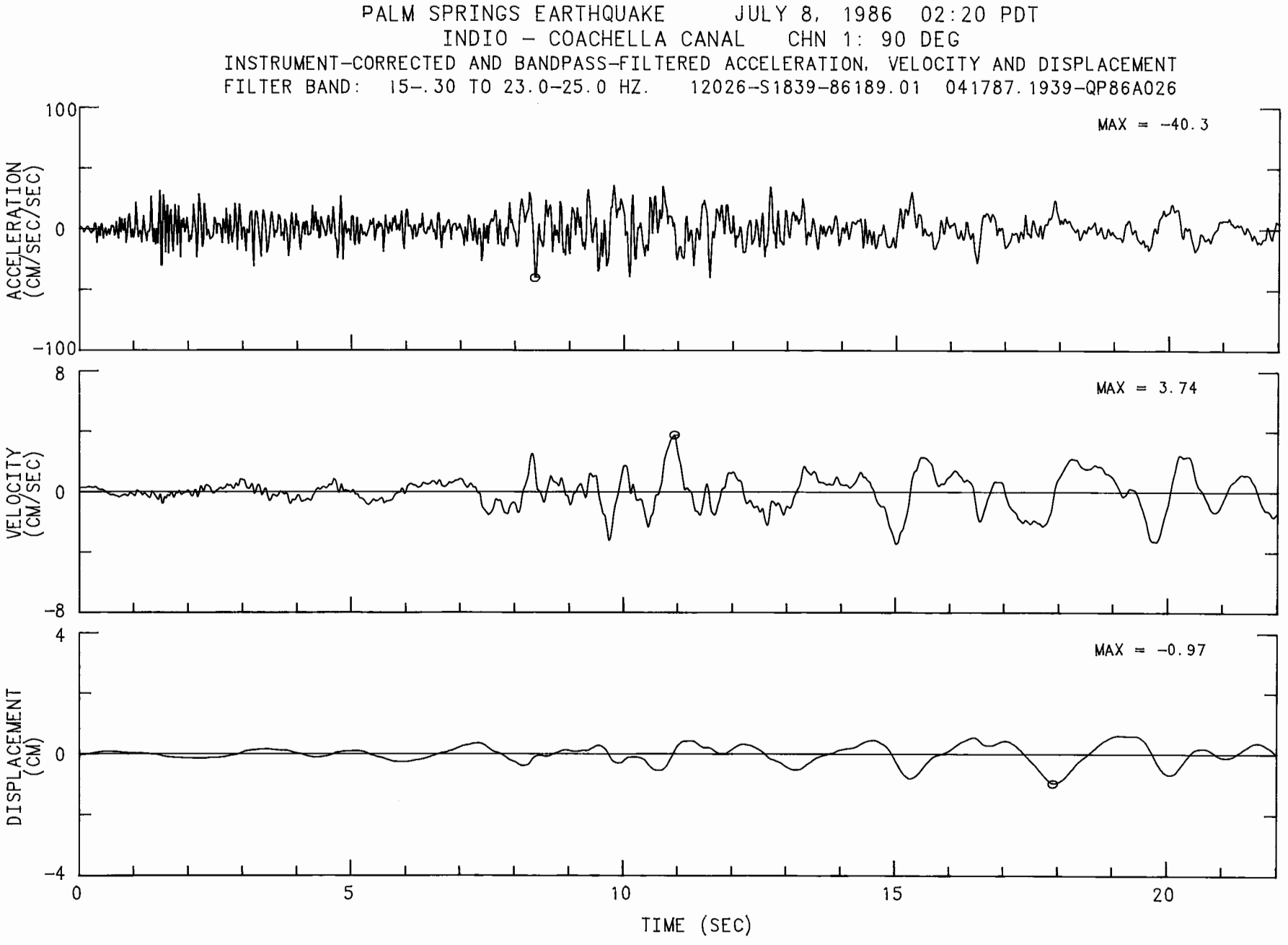
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
JOSHUA TREE
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
22170-S1612-86190.01 043087.1620-QP86A170

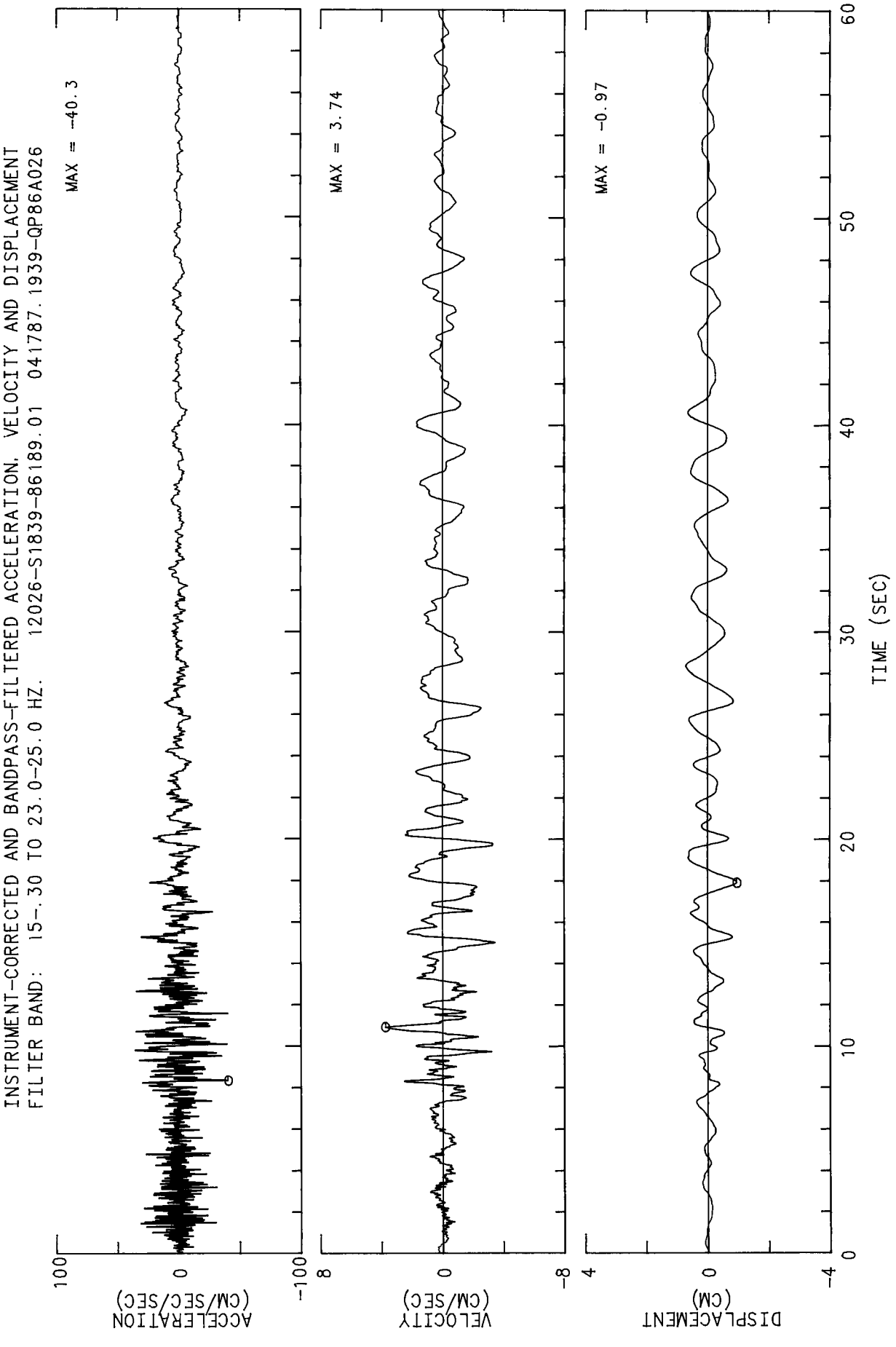


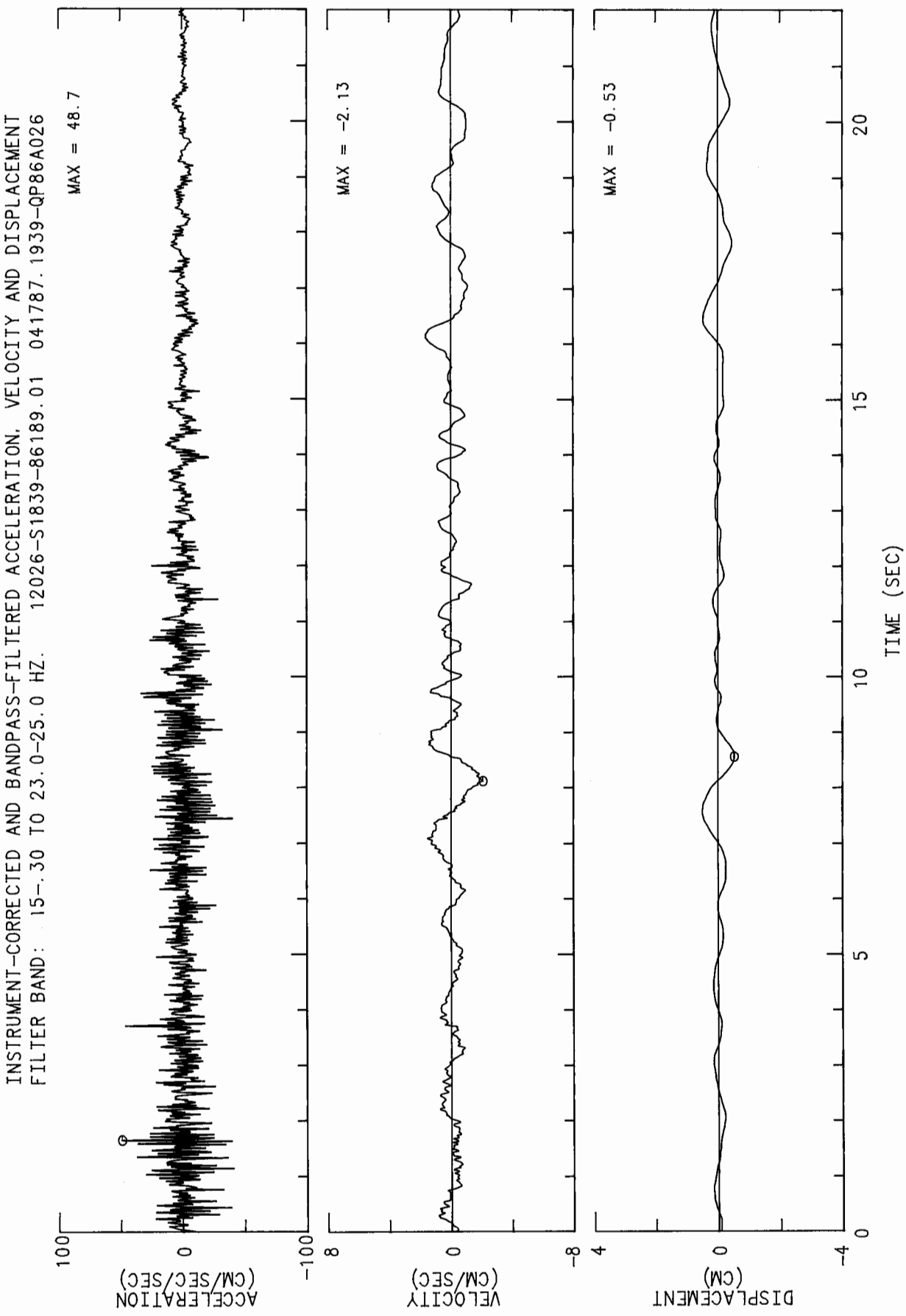
INDIO - COACHELLA CANAL

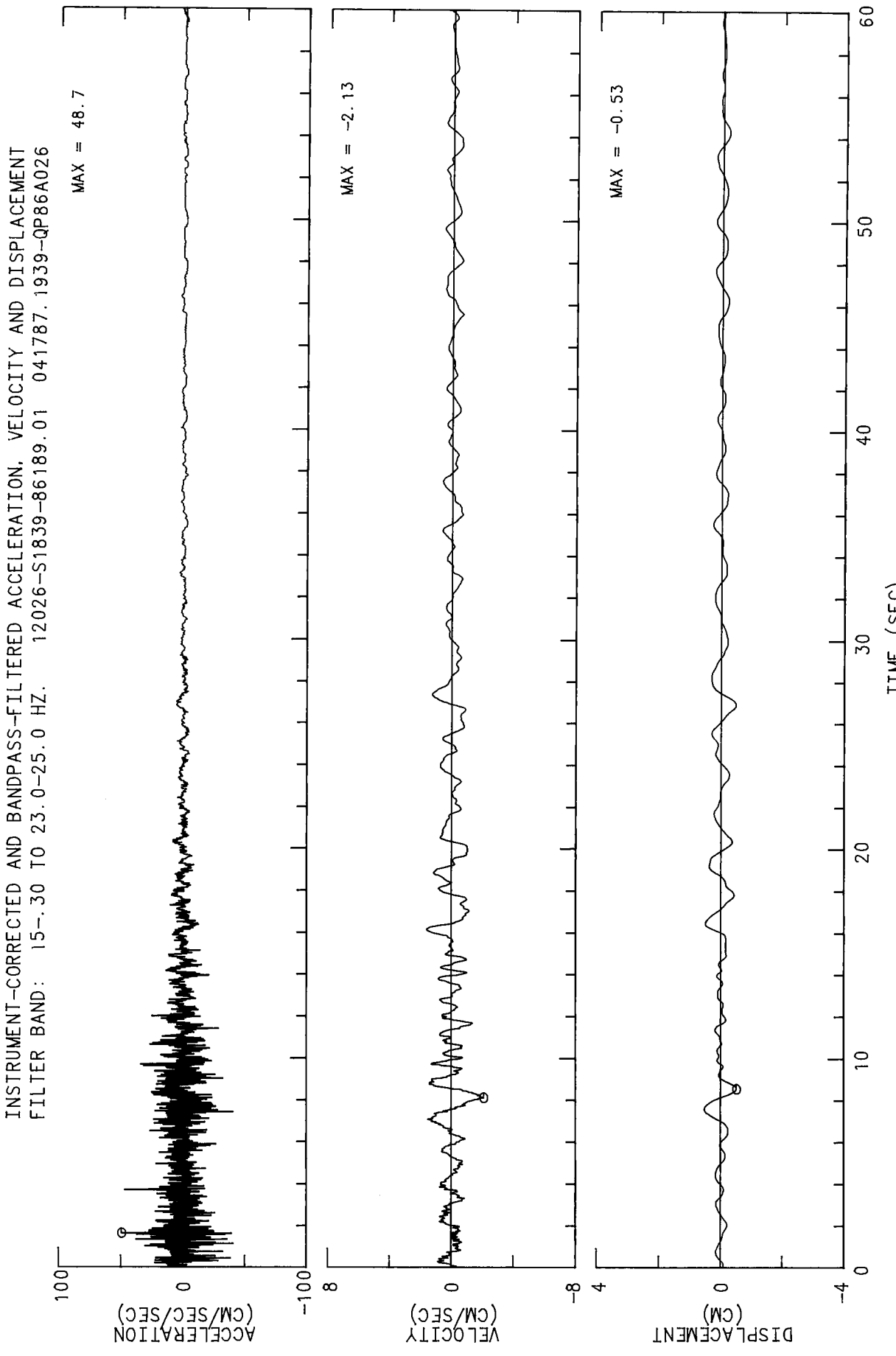

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL
UNCORRECTED ACCELEROGRAM 12026-S1839-86189.01 041787.1710-QP86A026
CHN 1: 90 DEG
MAX = -0.052 G
CHN 2: UP
MAX = 0.061 G
CHN 3: 0 DEG
MAX = 0.057 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

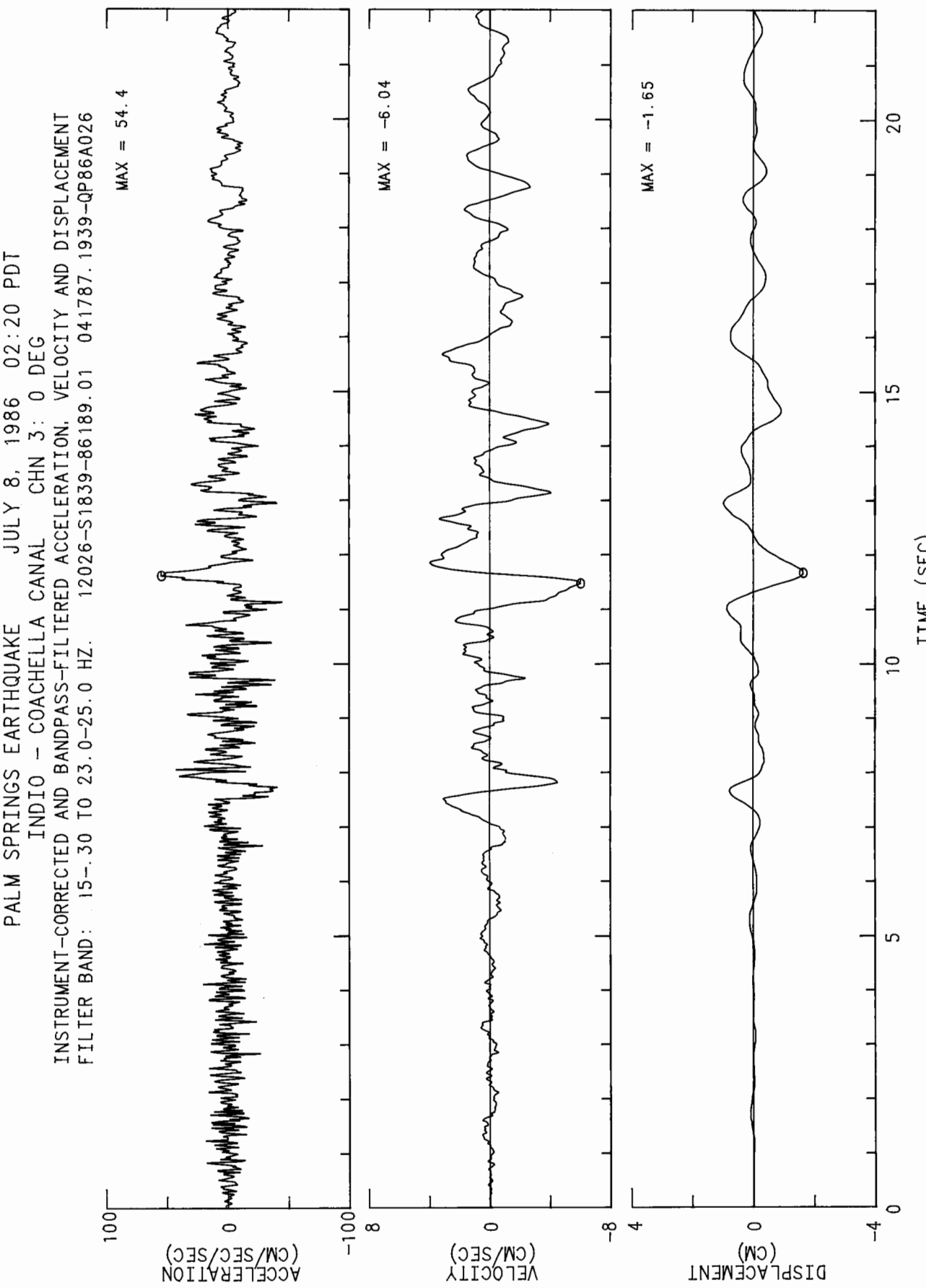

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL
UNCORRECTED ACCELEROGRAM 12026-S1839-86189.01 041787.1710-QP86A026
CHN 1: 90 DEG
MAX = -0.052 G
CHN 2: UP
MAX = 0.061 G
CHN 3: 0 DEG
MAX = 0.057 G
0.1
0
-0.1
ACCELERATION (G)
0
10
20
30
40
50
60
TIME (SEC)

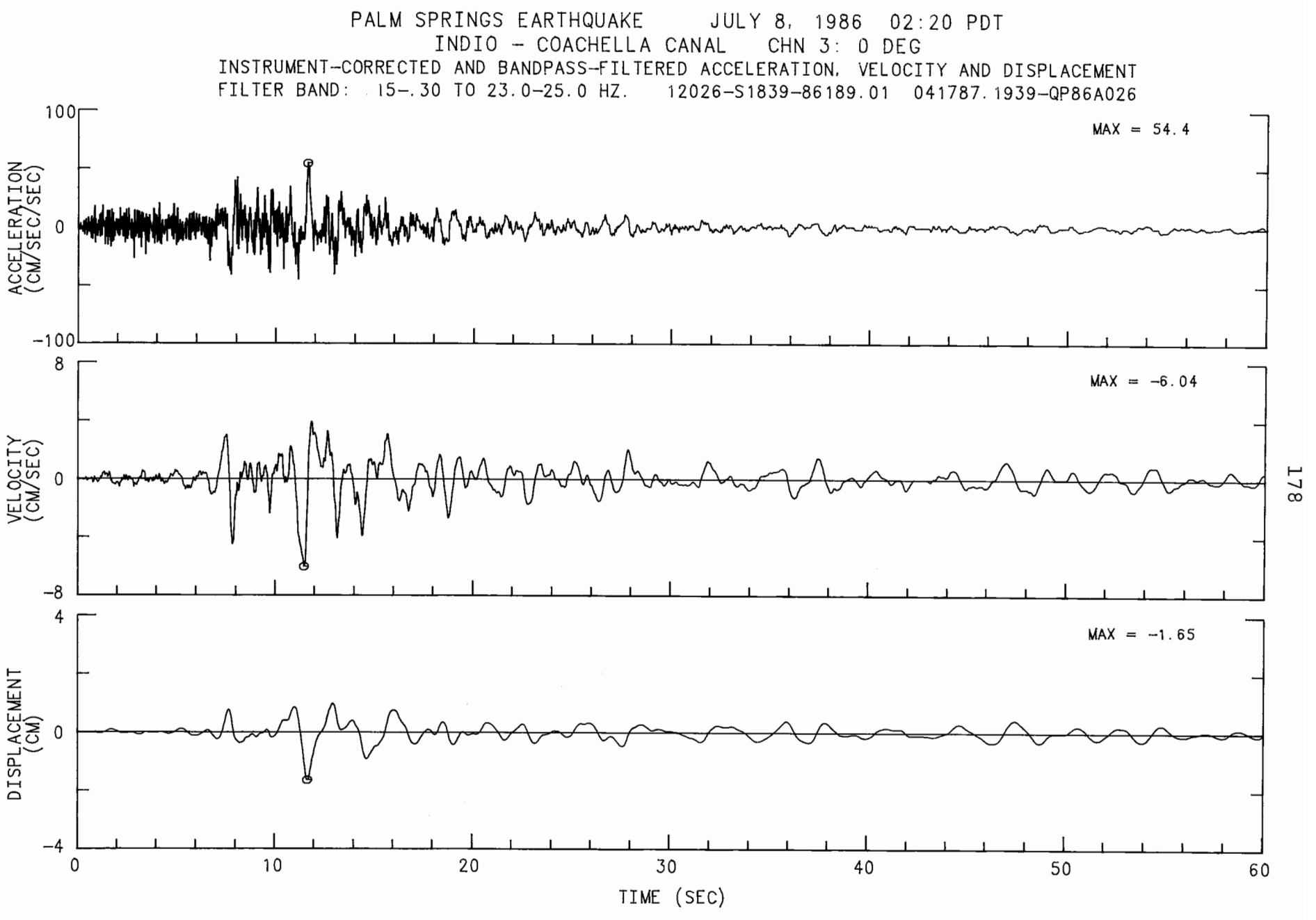

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = -40.3
VELOCITY (CM/SEC)
8
0
-8
MAX = 3.74
DISPLACEMENT (CM)
4
0
-4
MAX = -0.97
0
5
10
15
20
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
MAX = -40.3
MAX = 3.74
MAX = -0.97
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
8
0
-8
4
0
-4
0
10
20
30
40
50
60

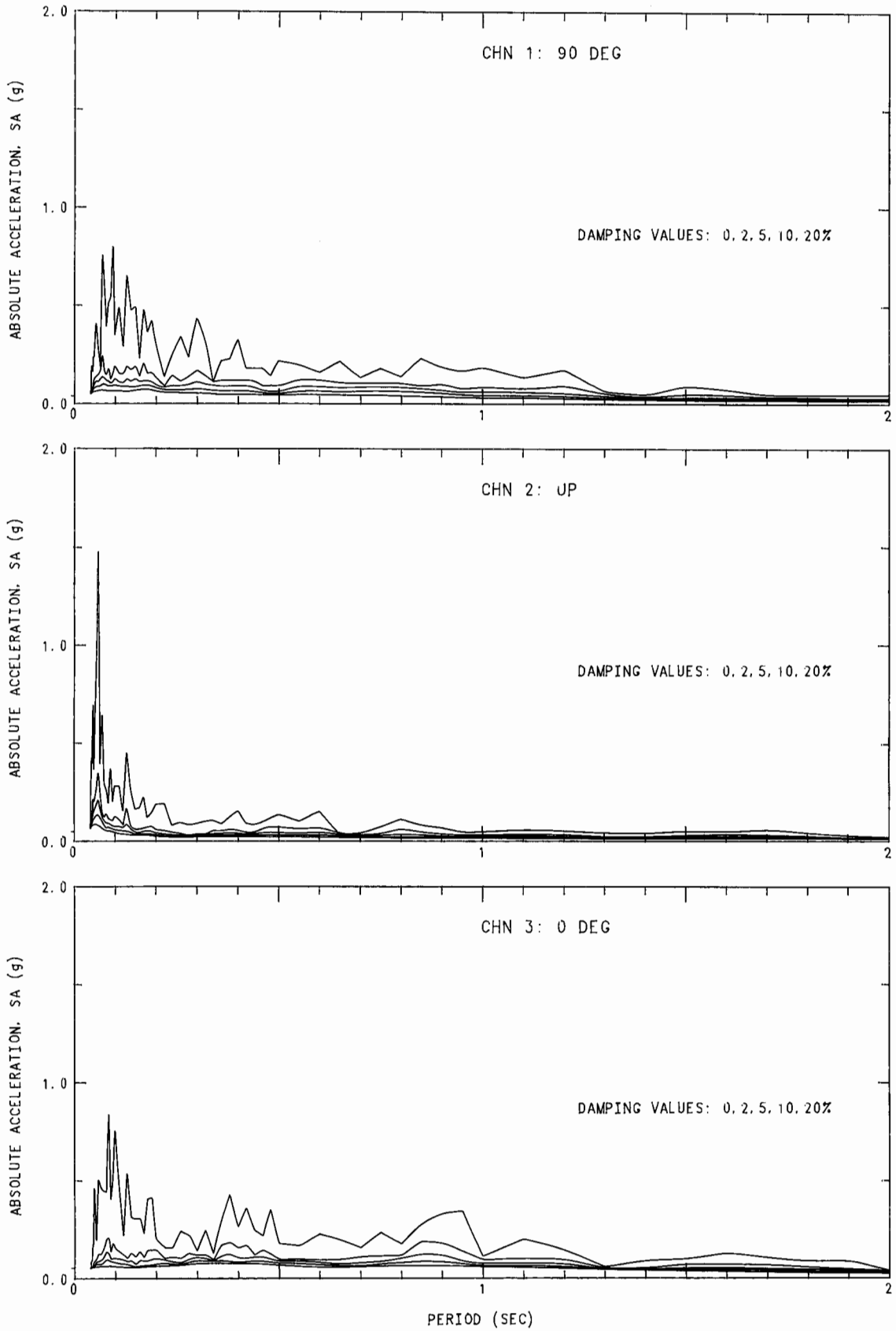

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
MAX = 48.7
MAX = -2.13
MAX = -0.53
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
MAX = 48.7
MAX = -2.13
MAX = -0.53
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
8
0
-8
4
0
-4
0
10
20
30
40
50
60

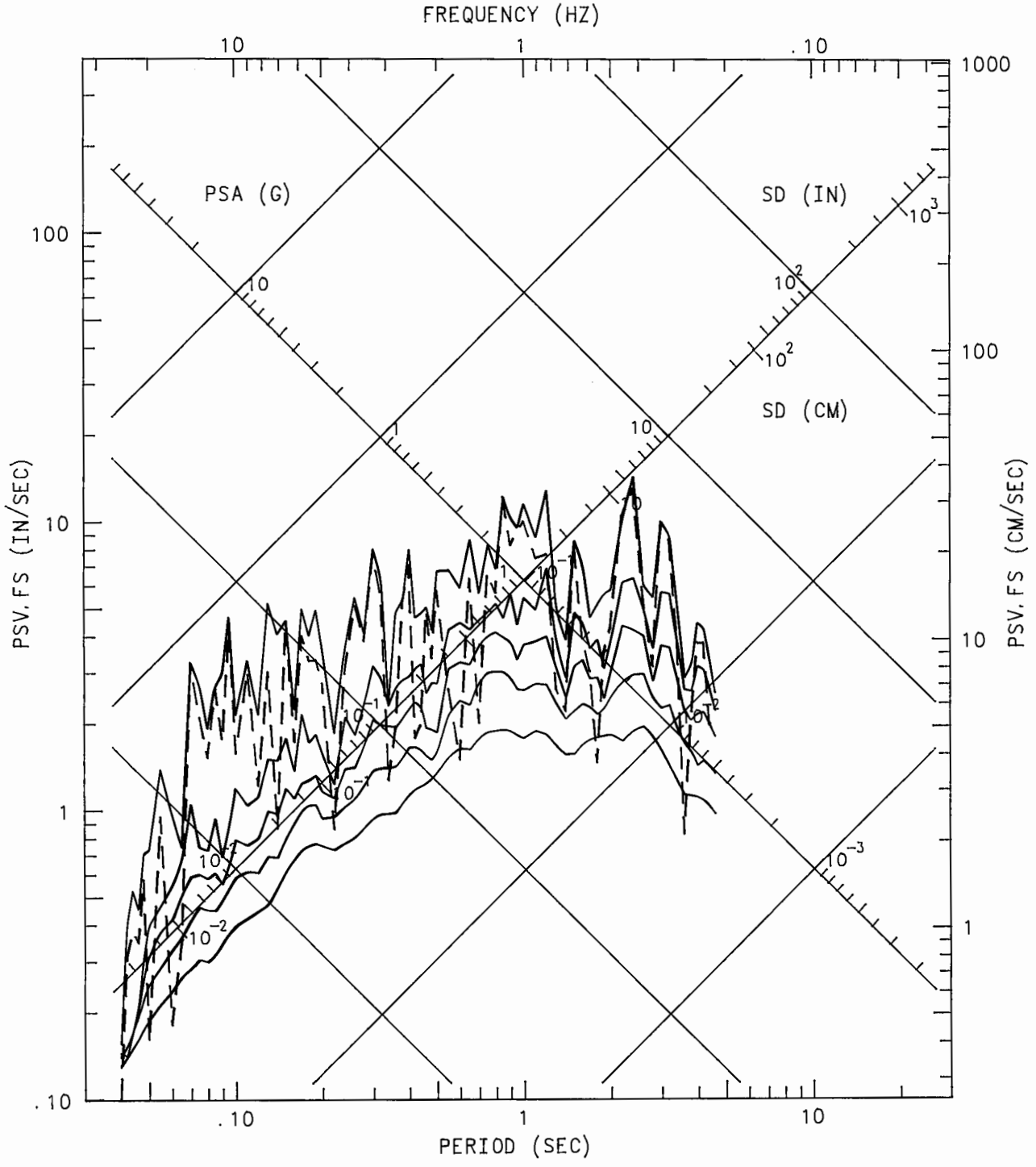

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
MAX = 54.4
MAX = -6.04
MAX = -1.65
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
8
0
-8
4
0
-4
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 12026-S1839-86189.01 041787.1939-QP86A026
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 54.4
VELOCITY (CM/SEC)
8
0
-8
MAX = -6.04
DISPLACEMENT (CM)
4
0
-4
MAX = -1.65
0
10
20
30
40
50
60
TIME (SEC)

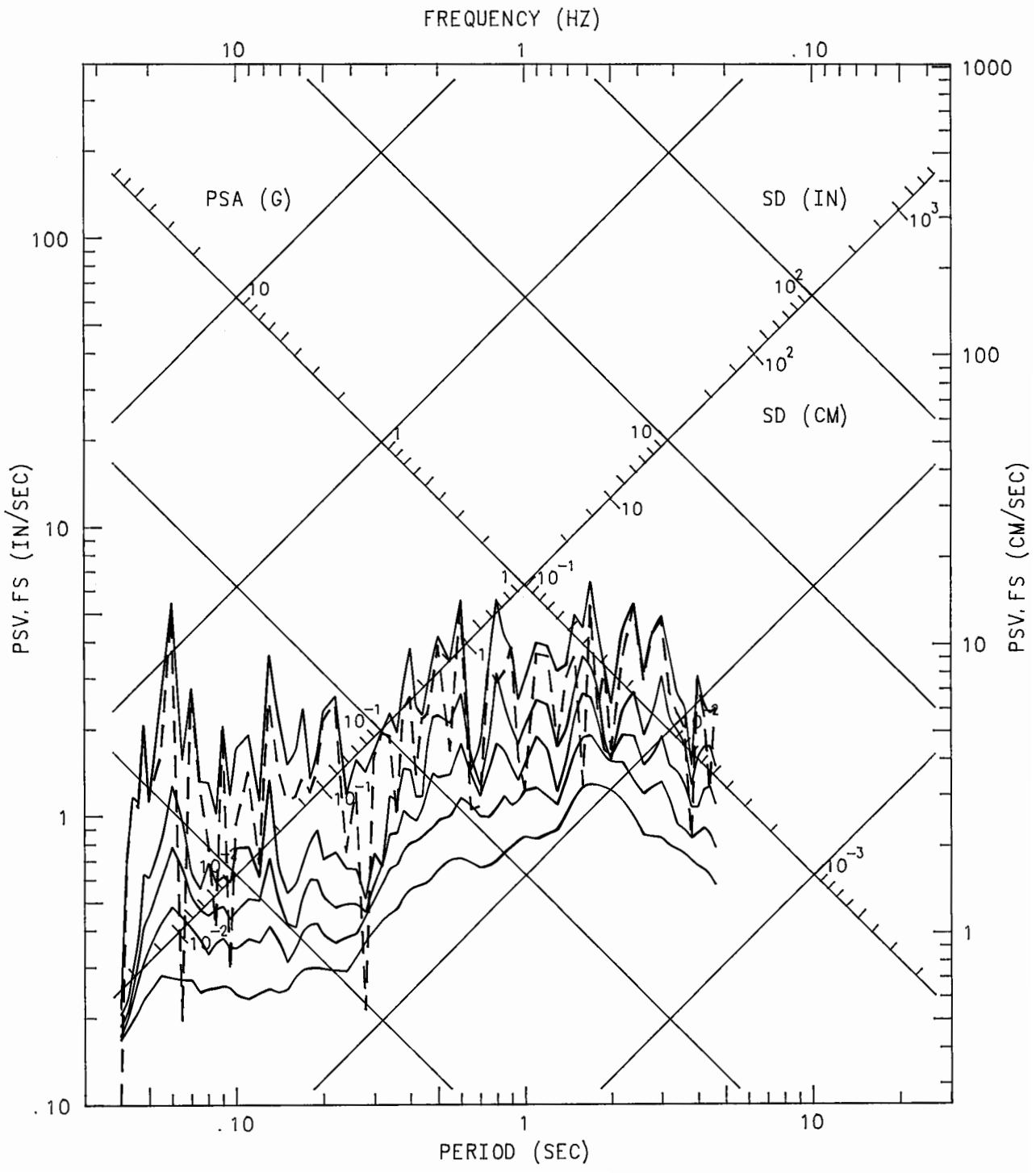
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12026-S1839-86189.01 043087.1847-QPALMSP86G



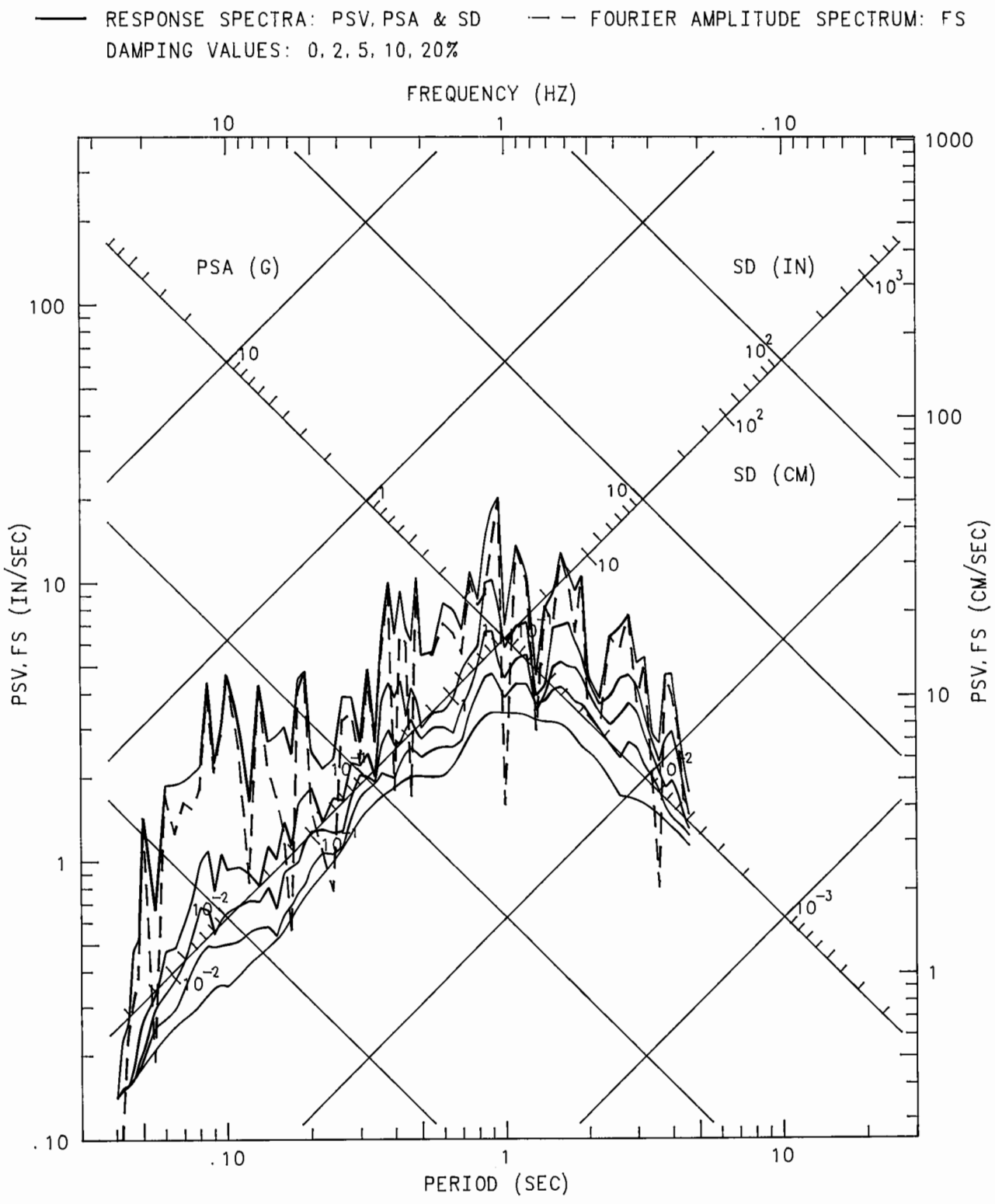
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO – COACHELLA CANAL
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12026-S1839-86189.01 043087.1847-QP86A026



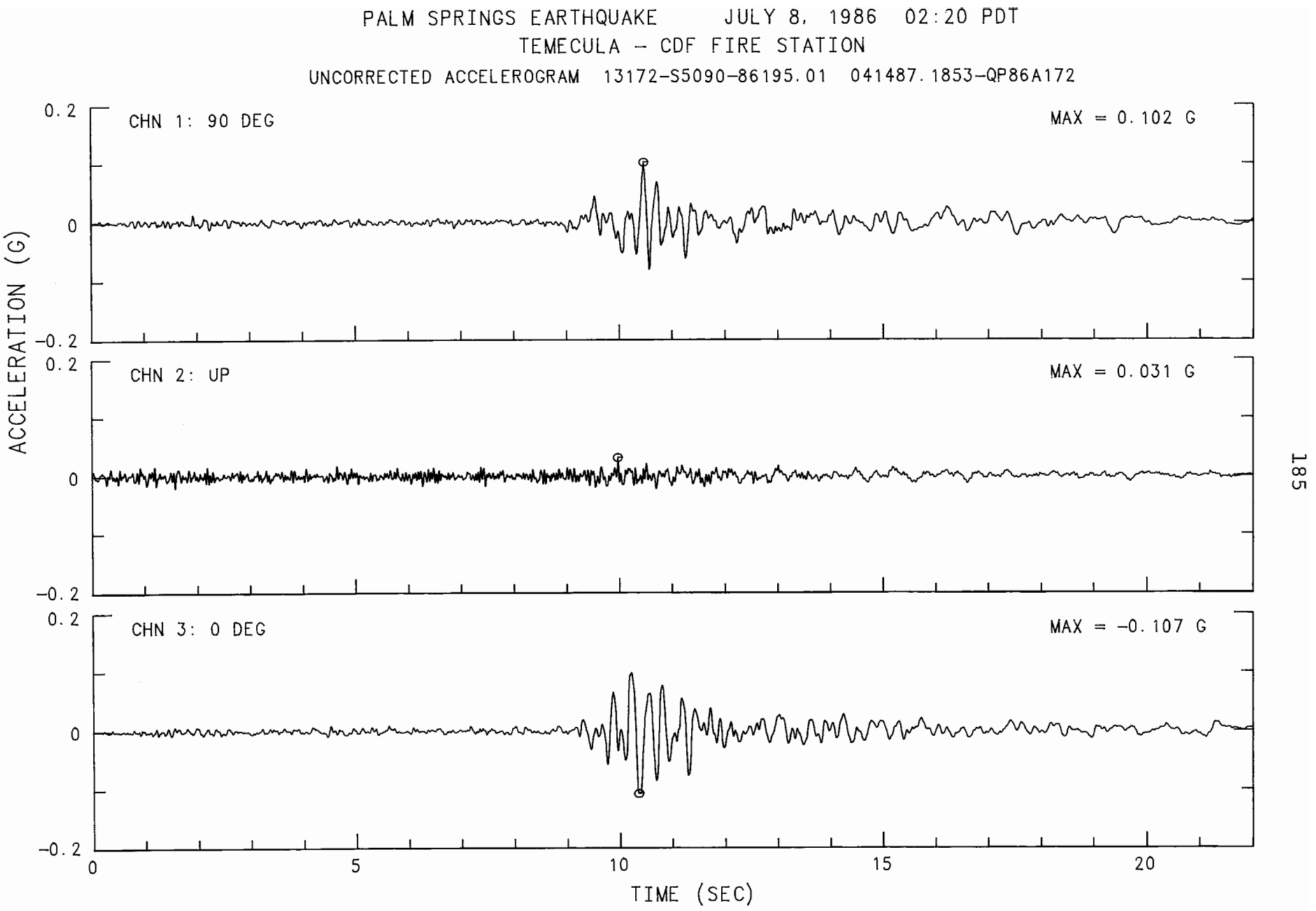
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO – COACHELLA CANAL
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12026-S1839-86189.01 043087.1847-QP86A026

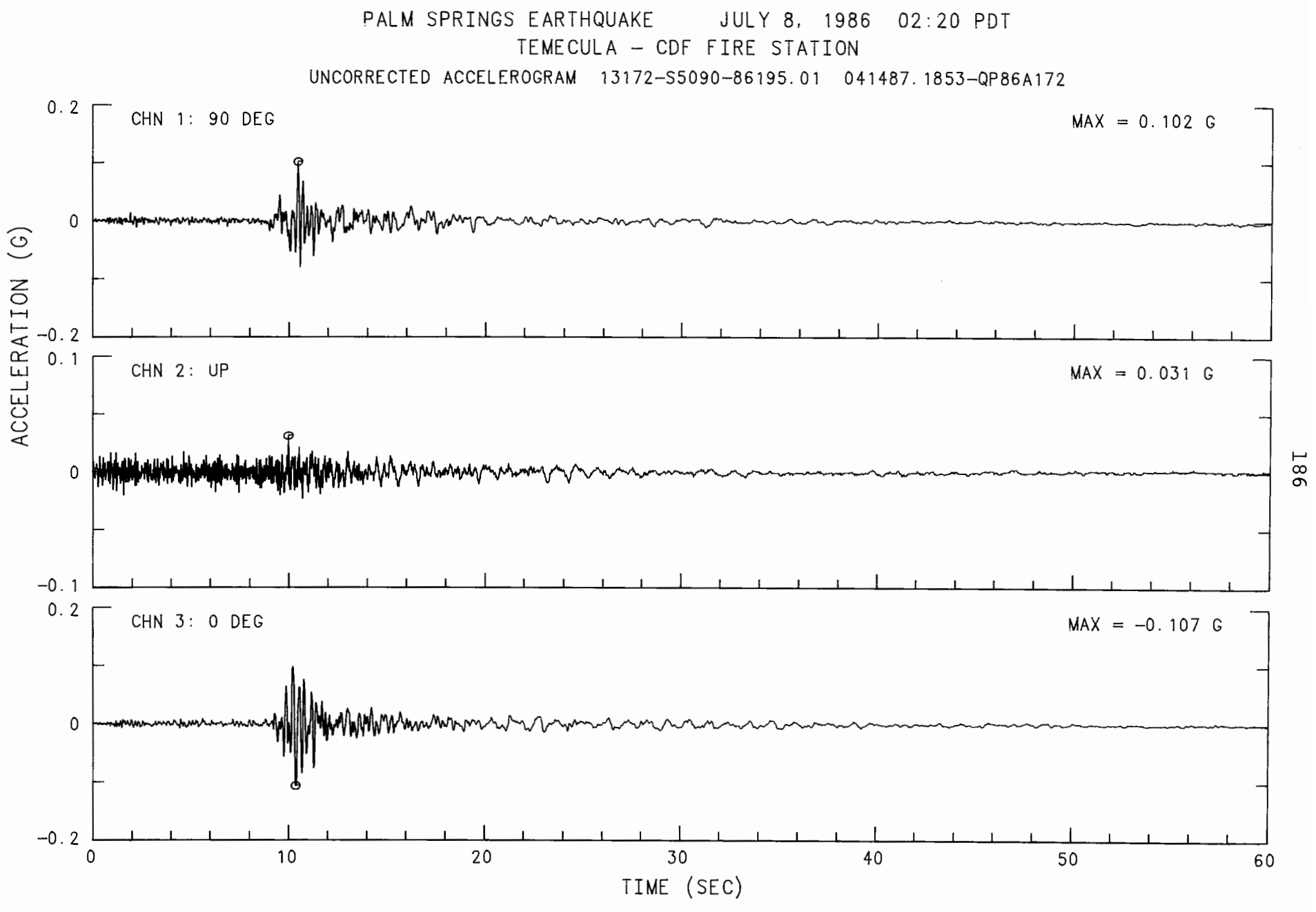


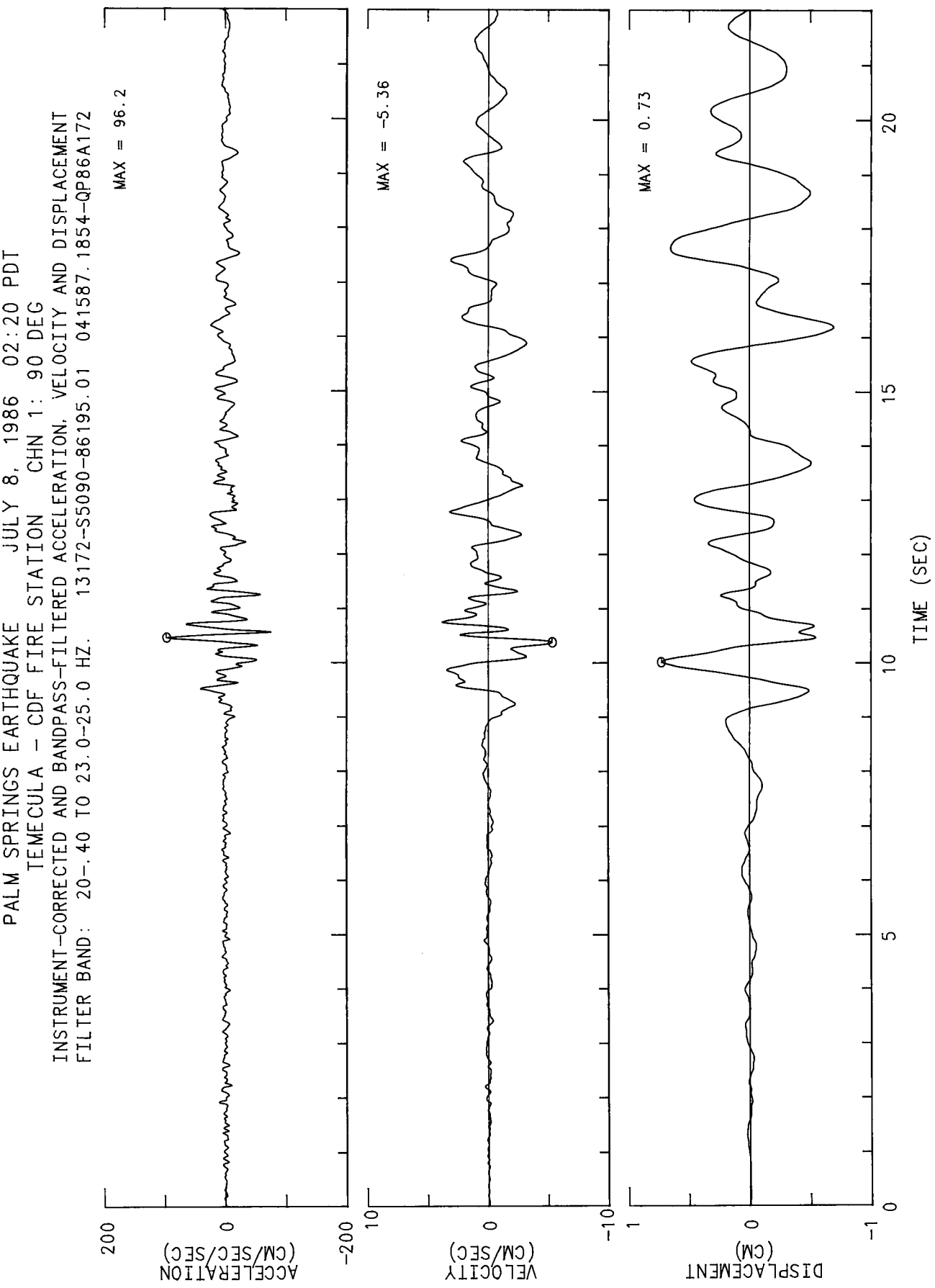
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
INDIO - COACHELLA CANAL
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
12026-S1839-86189.01 043087.1847-QP86A026

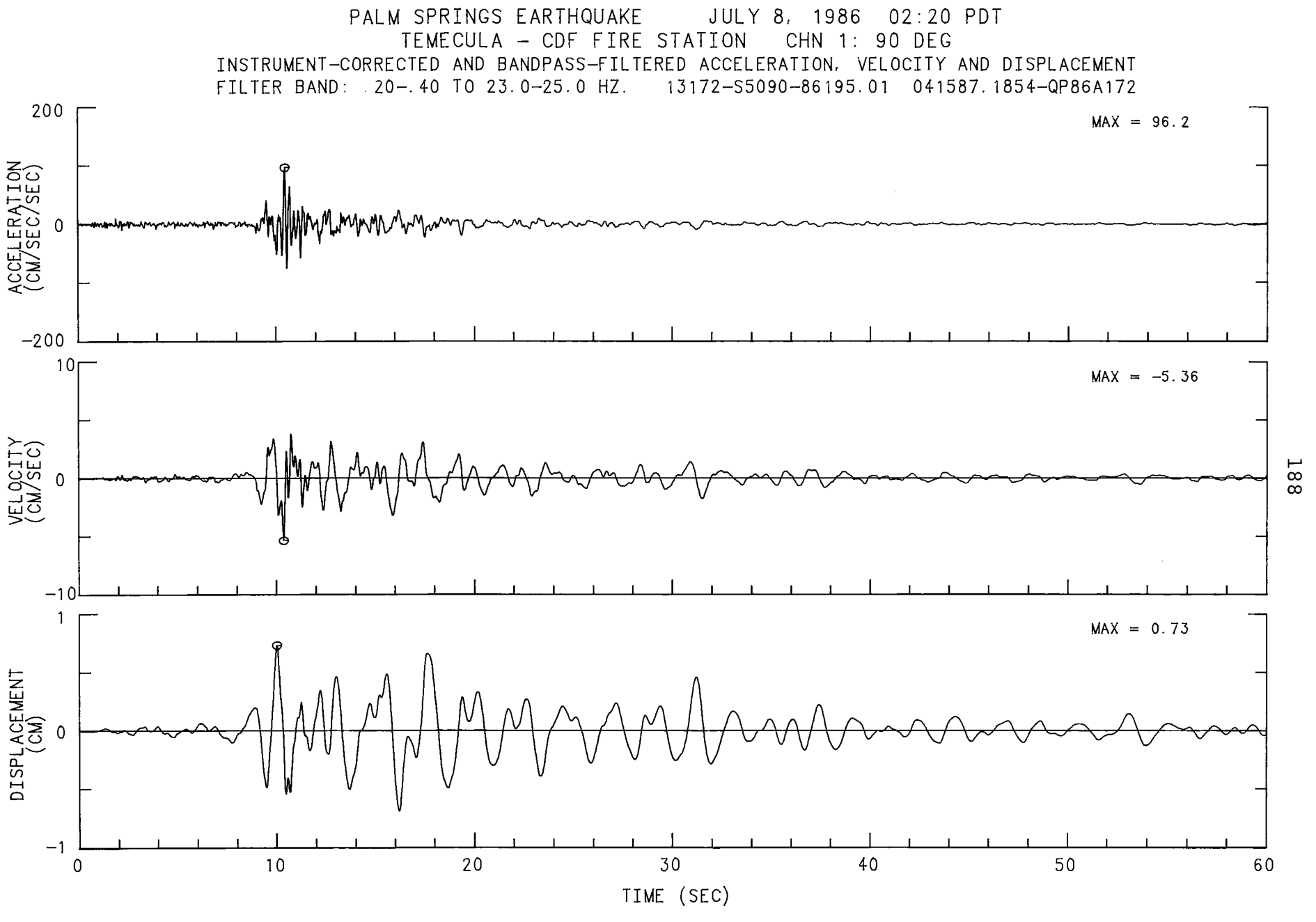


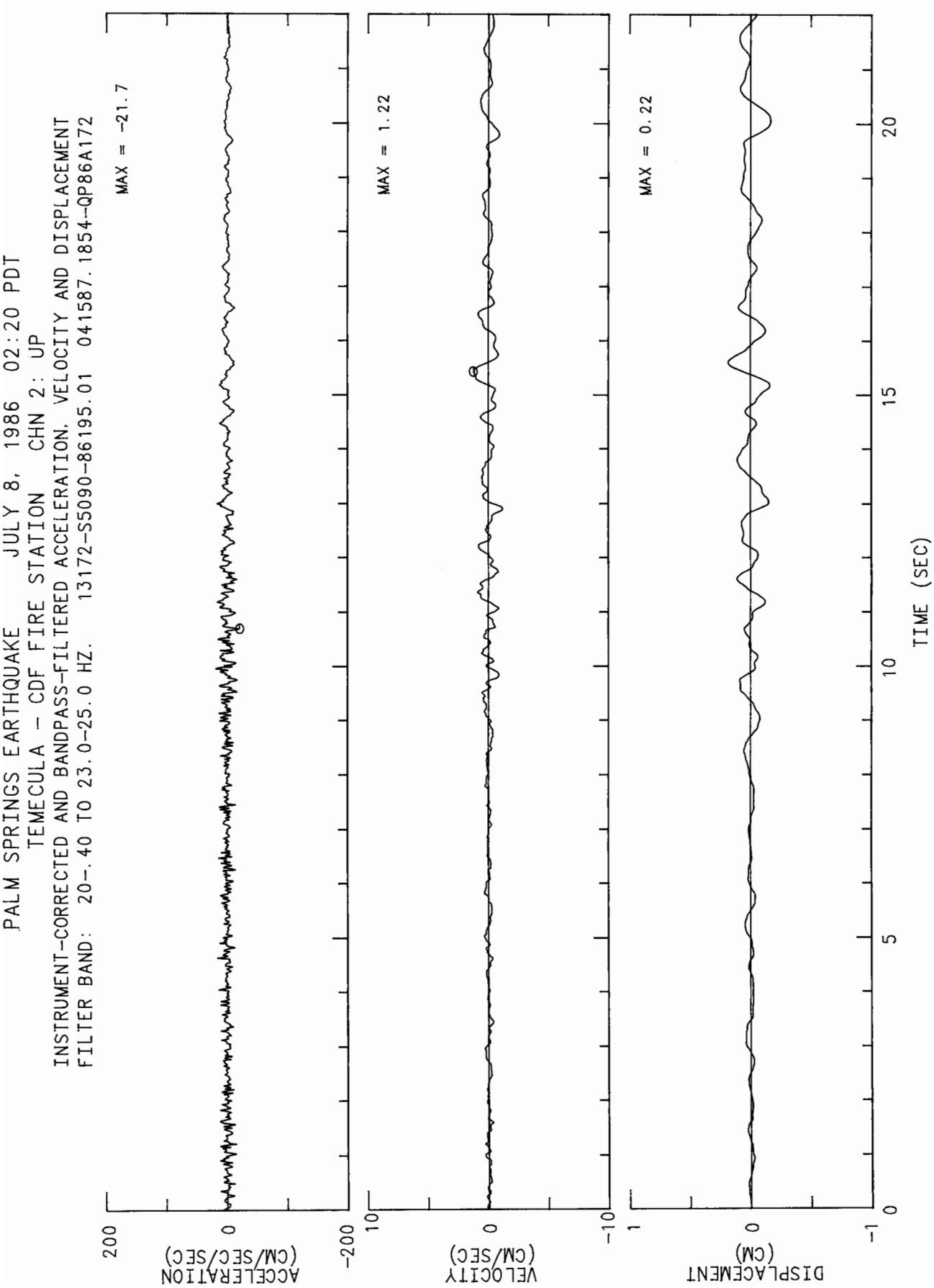
TEMECULA - CDF FIRE STATION

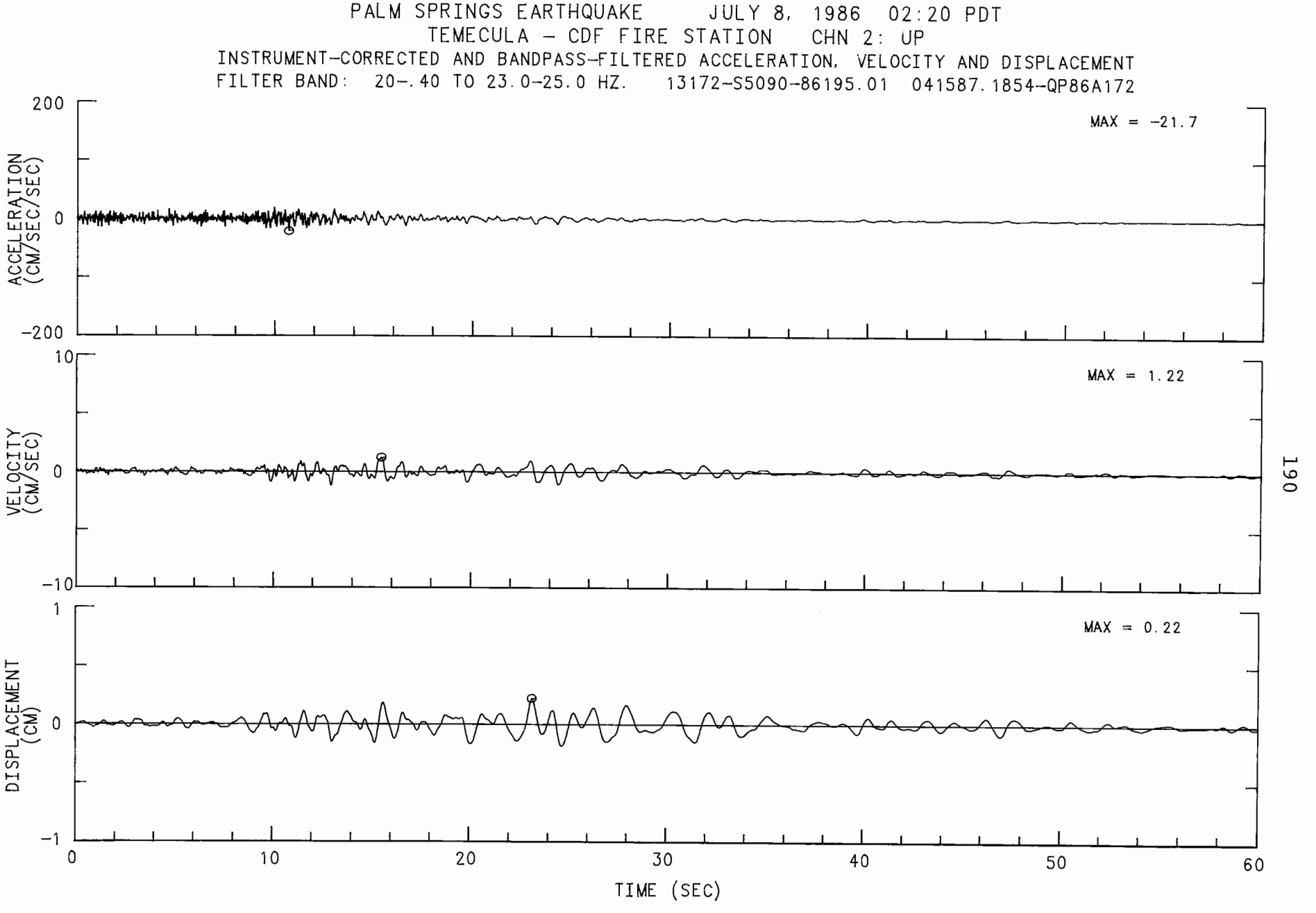

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION
UNCORRECTED ACCELEROGRAM 13172-S5090-86195.01 041487.1853-QP86A172
CHN 1: 90 DEG
MAX = 0.102 G
CHN 2: UP
MAX = 0.031 G
CHN 3: 0 DEG
MAX = -0.107 G
ACCELERATION (G)
0.2
0
-0.2
0
5
10
15
20
TIME (SEC)

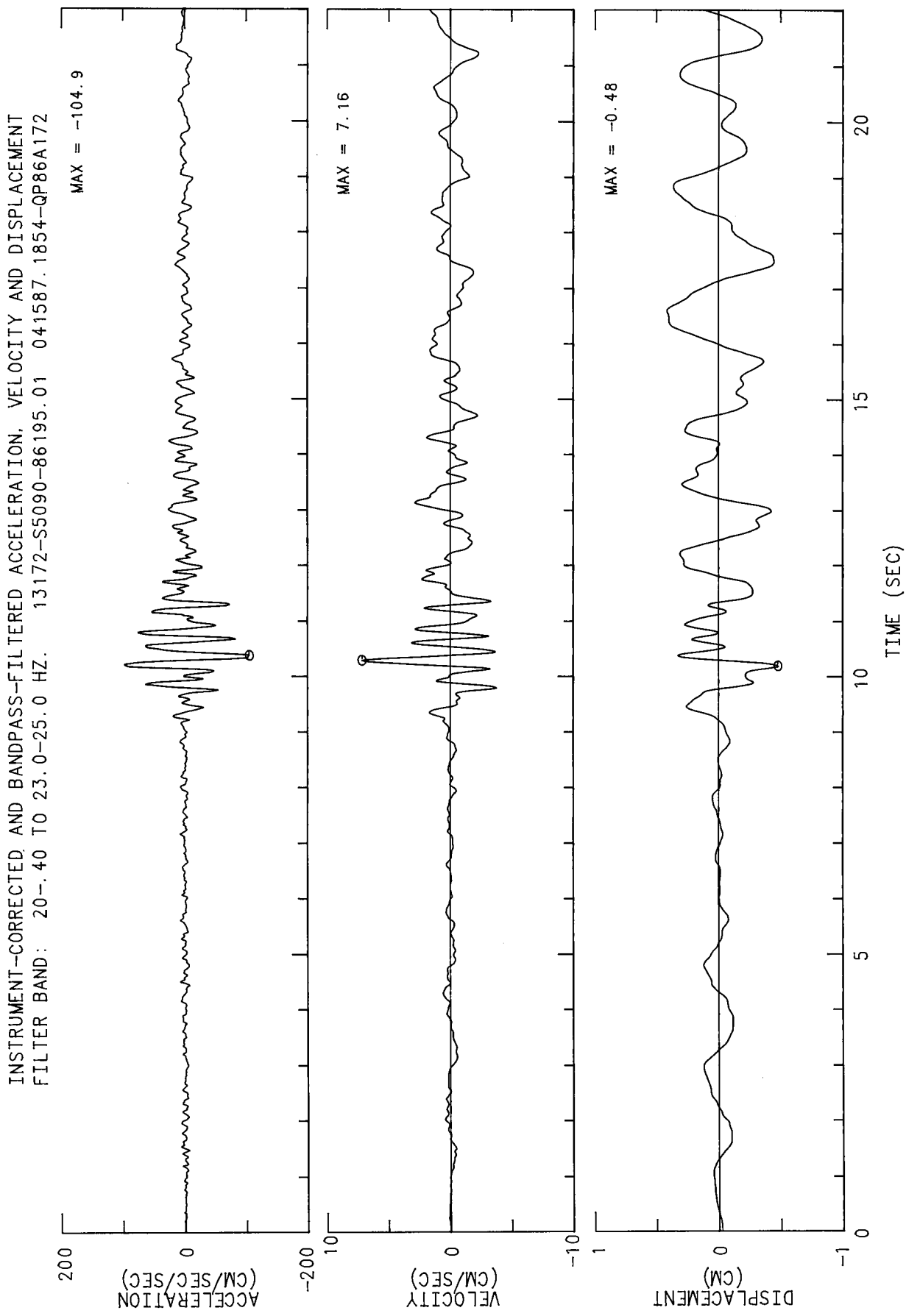

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION
UNCORRECTED ACCELEROGRAM 13172-S5090-86195.01 041487.1853-QP86A172
CHN 1: 90 DEG
MAX = 0.102 G
CHN 2: UP
MAX = 0.031 G
CHN 3: 0 DEG
MAX = -0.107 G
ACCELERATION (G)
0.2
0
-0.2
0.1
-0.1
0
10
20
30
40
50
60
TIME (SEC)
186

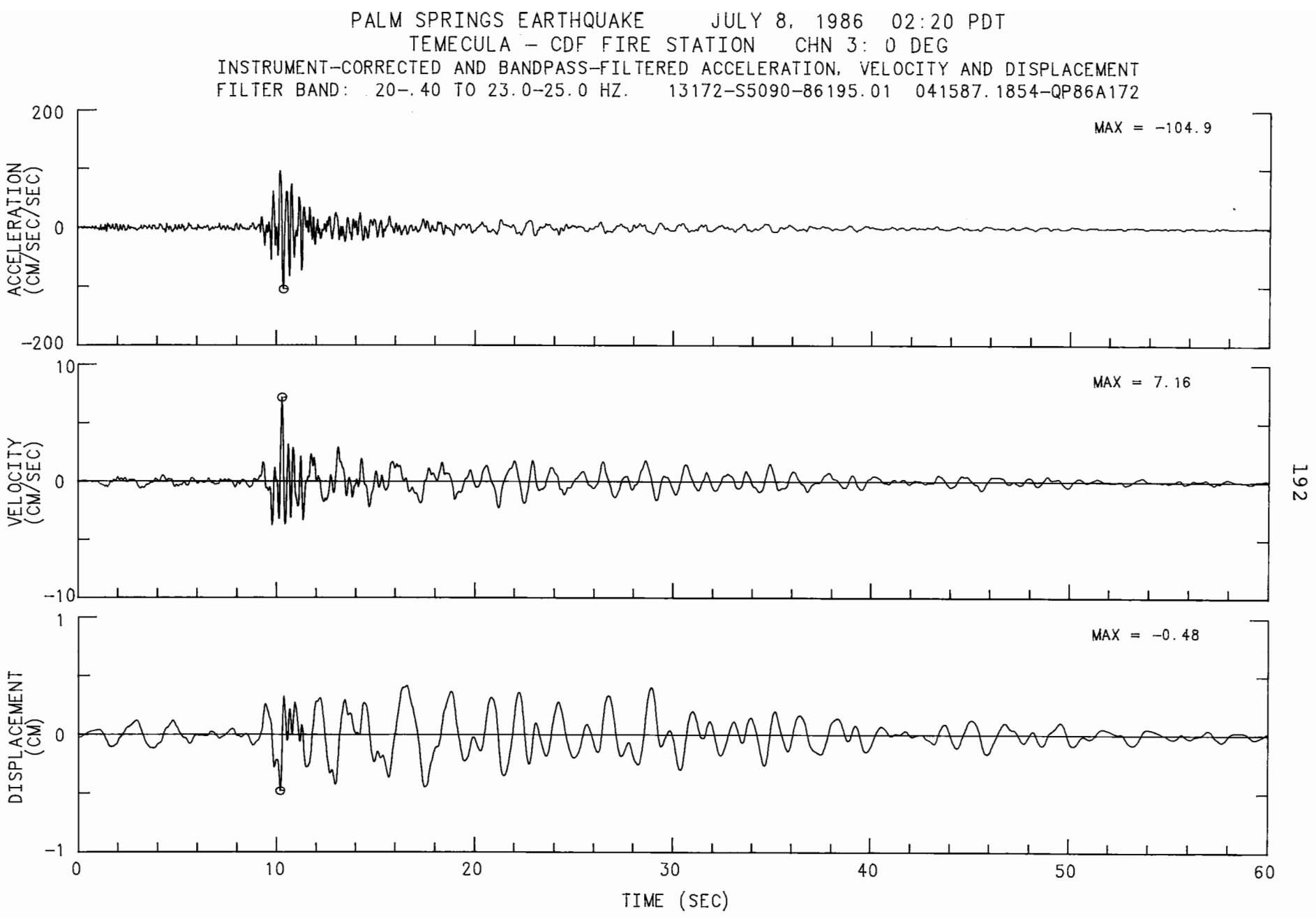

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA - CDF FIRE STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
MAX = 96.2
MAX = -5.36
MAX = 0.73
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA - CDF FIRE STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
ACCELERATION (CM/SEC/SEC)
MAX = 96.2
VELOCITY (CM/SEC)
MAX = -5.36
DISPLACEMENT (CM)
MAX = 0.73
TIME (SEC)
188

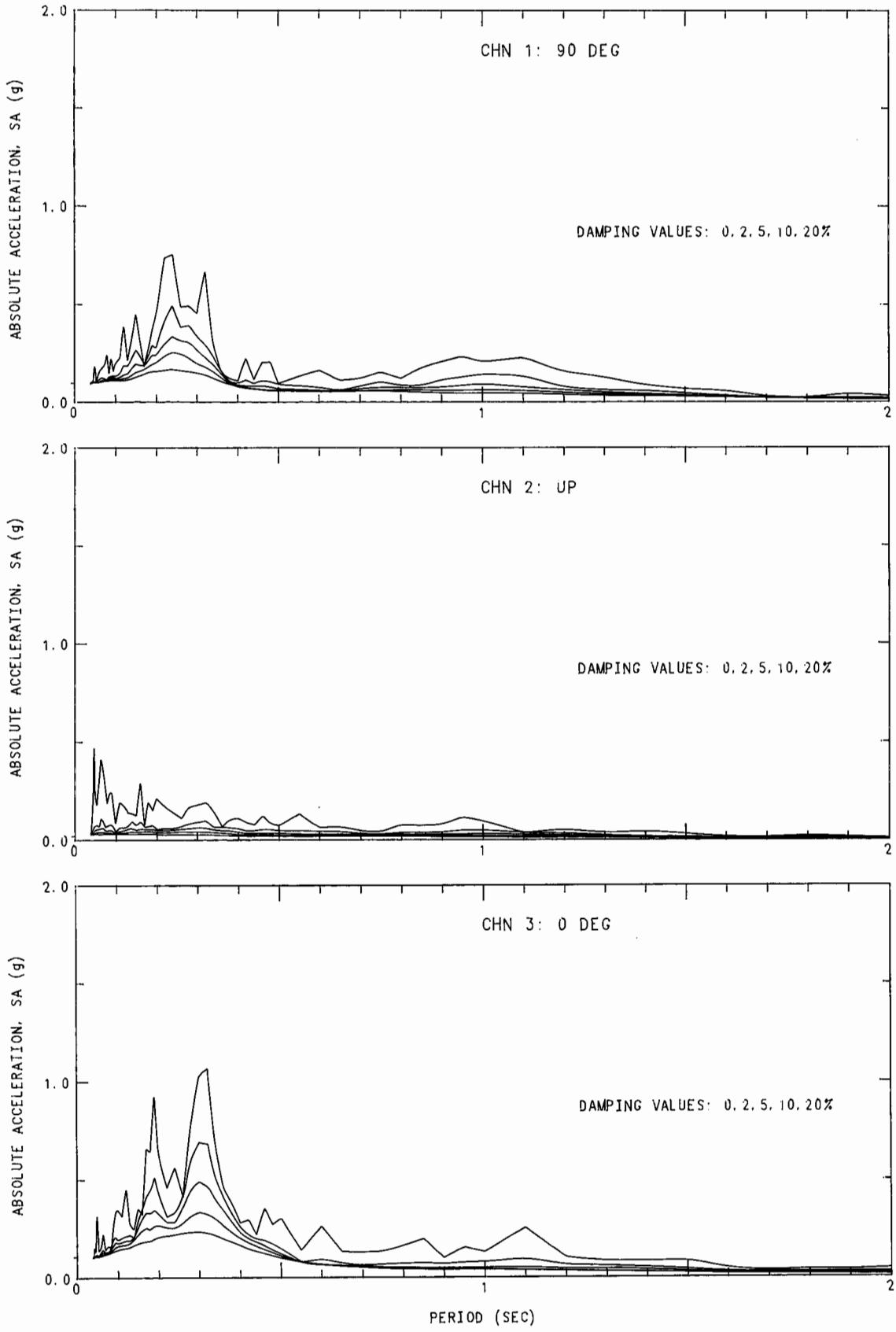

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA - CDF FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
MAX = -21.7
MAX = 1.22
MAX = 0.22
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
ACCELERATION (CM/SEC/SEC)
MAX = -21.7
VELOCITY (CM/SEC)
MAX = 1.22
DISPLACEMENT (CM)
MAX = 0.22
TIME (SEC)
190

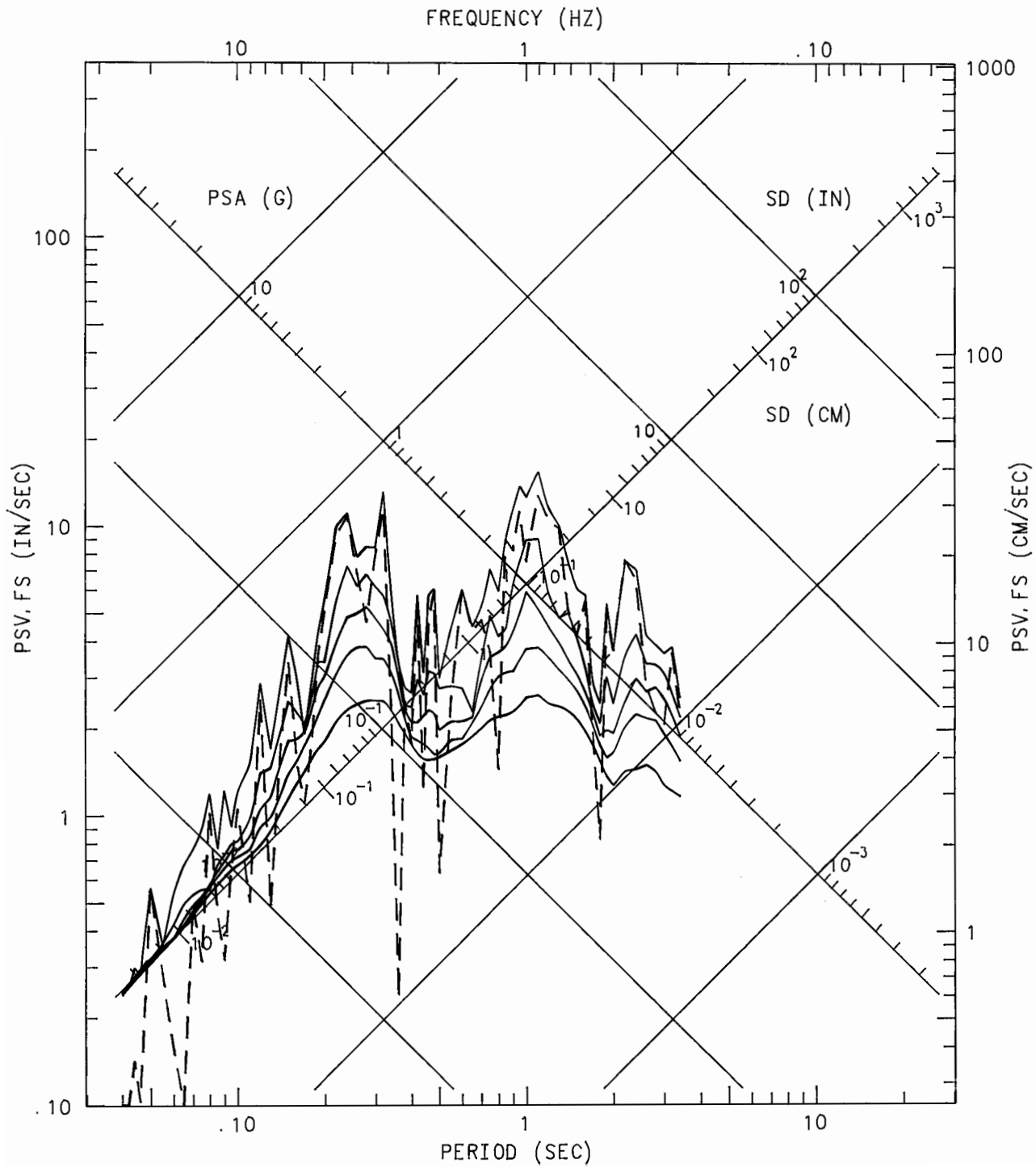

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA - CDF FIRE STATION CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
MAX = -104.9
MAX = 7.16
MAX = -0.48
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
200
0
-200
10
0
-10
1
0
-1
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 13172-S5090-86195.01 041587.1854-QP86A172
ACCELERATION (CM/SEC/SEC)
MAX = -104.9
VELOCITY (CM/SEC)
MAX = 7.16
DISPLACEMENT (CM)
MAX = -0.48
TIME (SEC)

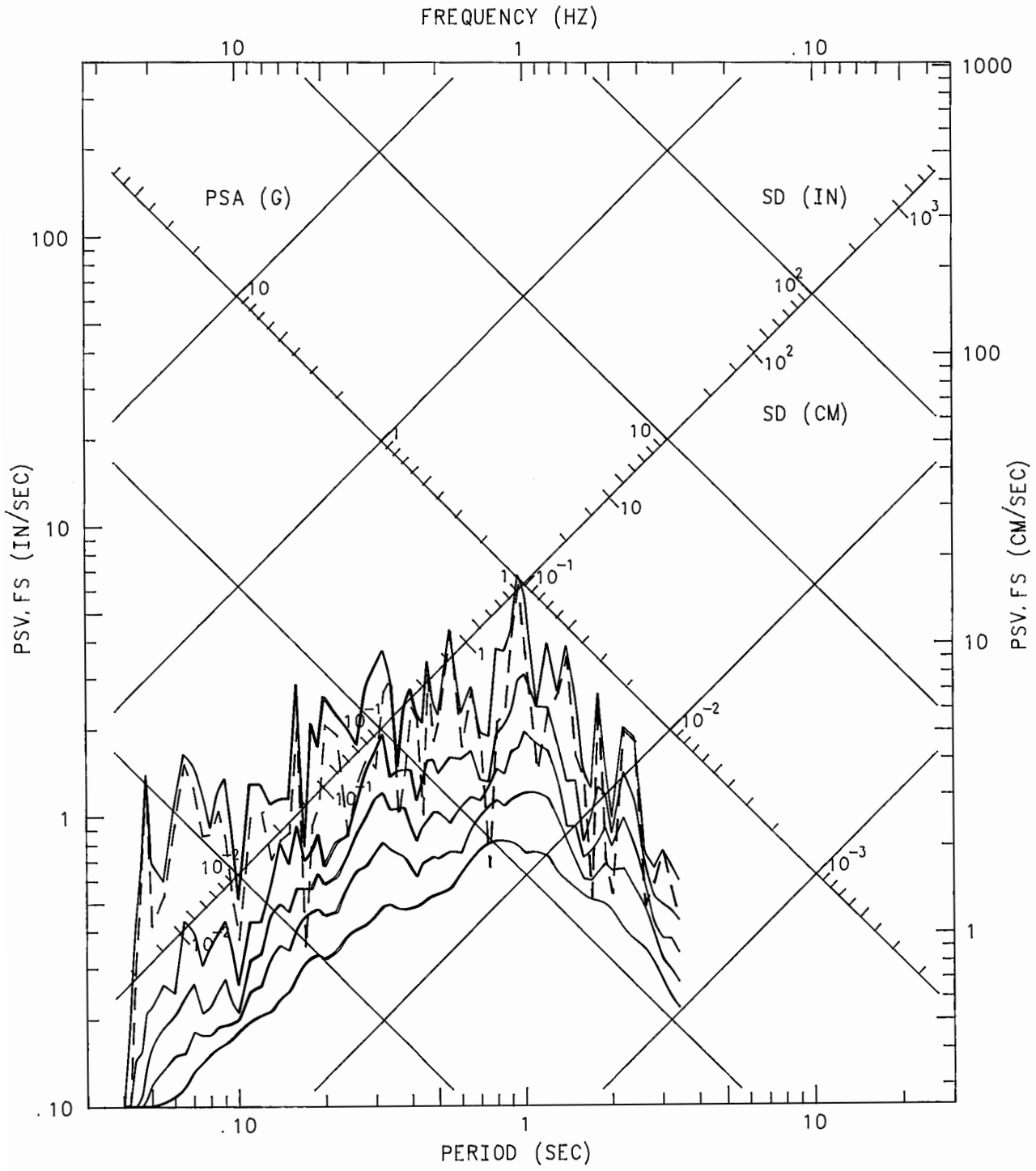
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA - CDF FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13172-S5090-86195.01 050187.0910-QPALMSP86G



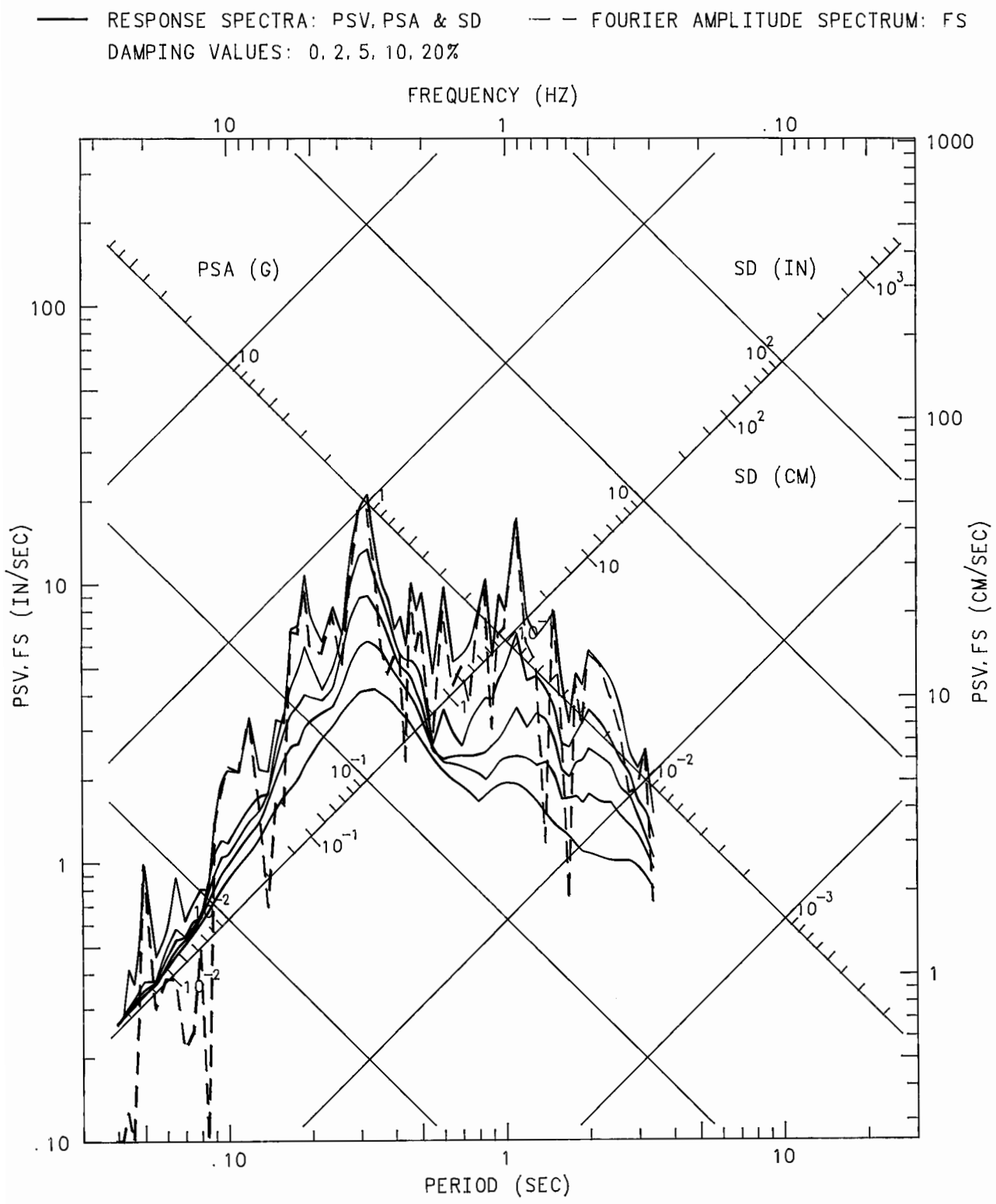
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13172-S5090-86195.01 050187.0910-QP86A172



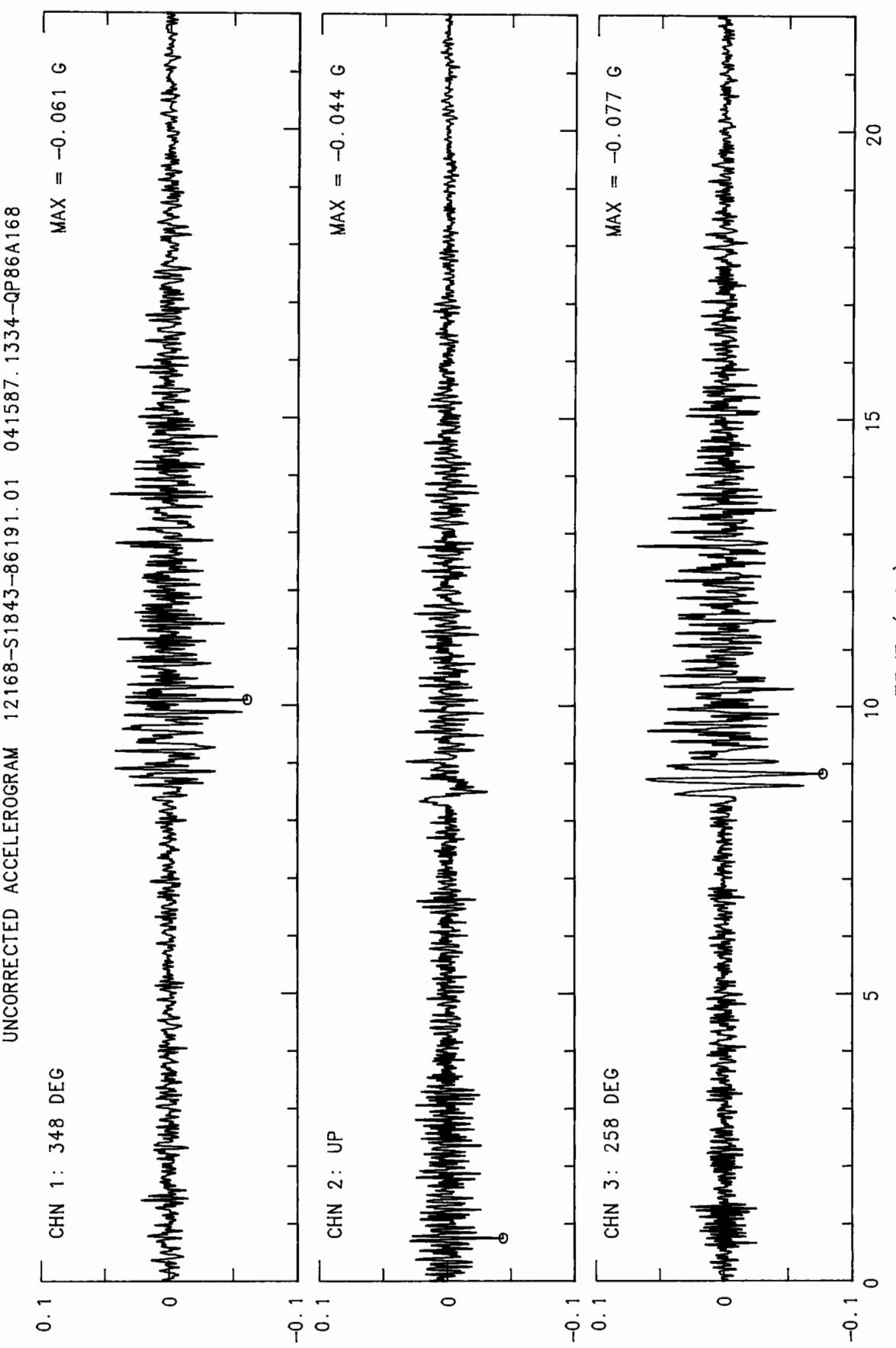
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13172-S5090-86195.01 050187.0910-QP86A172

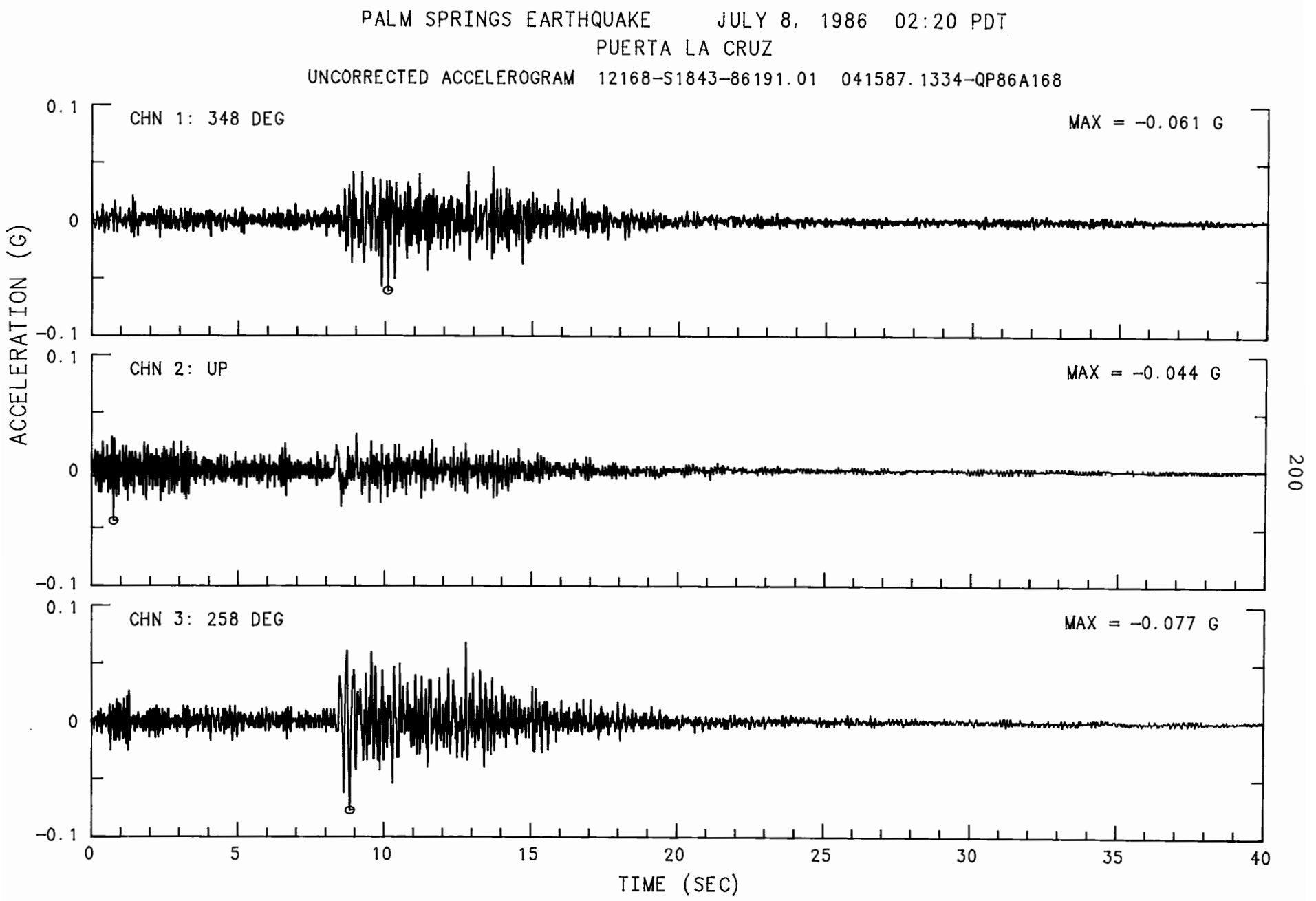


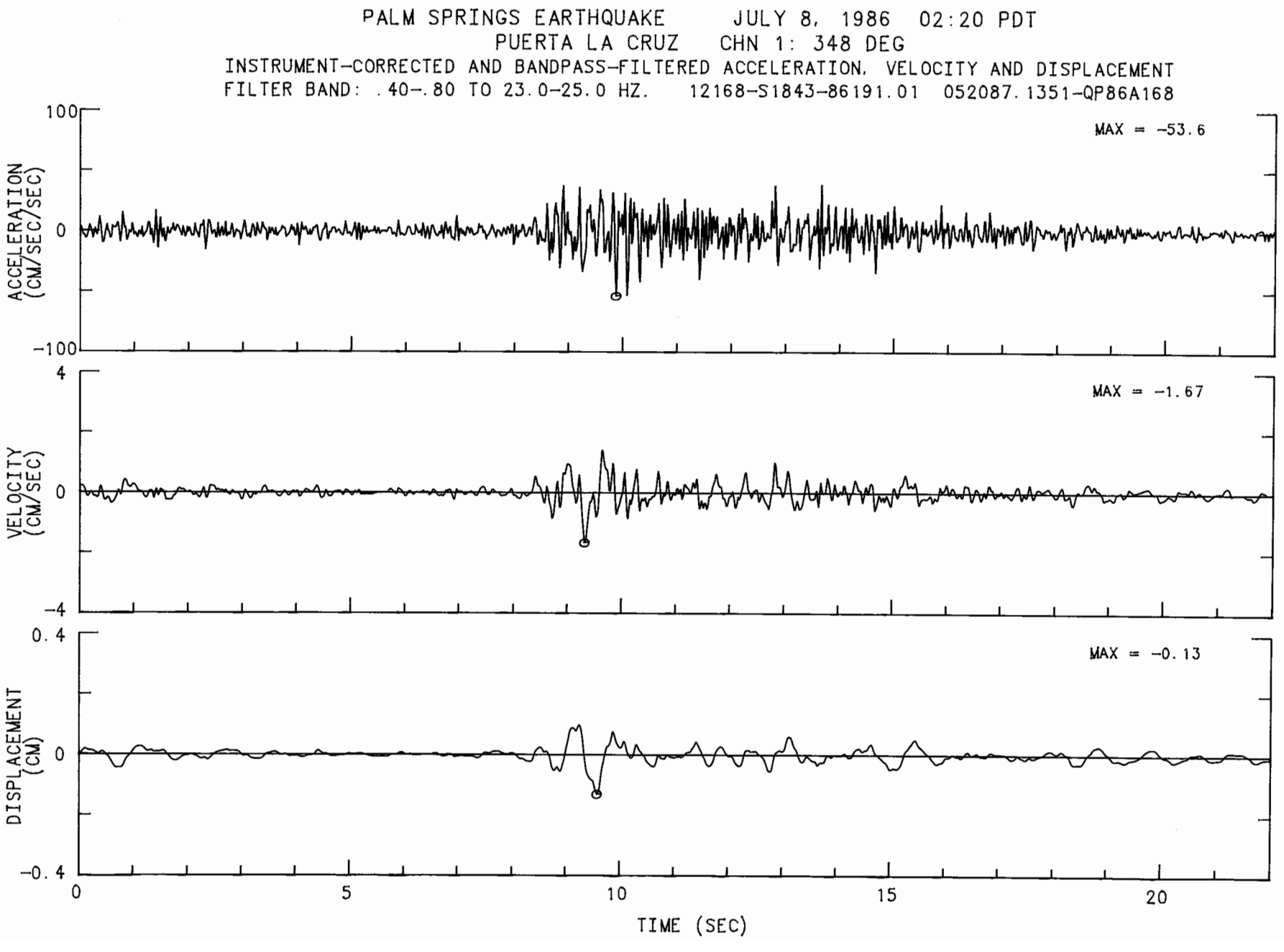
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
TEMECULA – CDF FIRE STATION
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
13172-S5090-86195.01 050187.0910-QP86A172

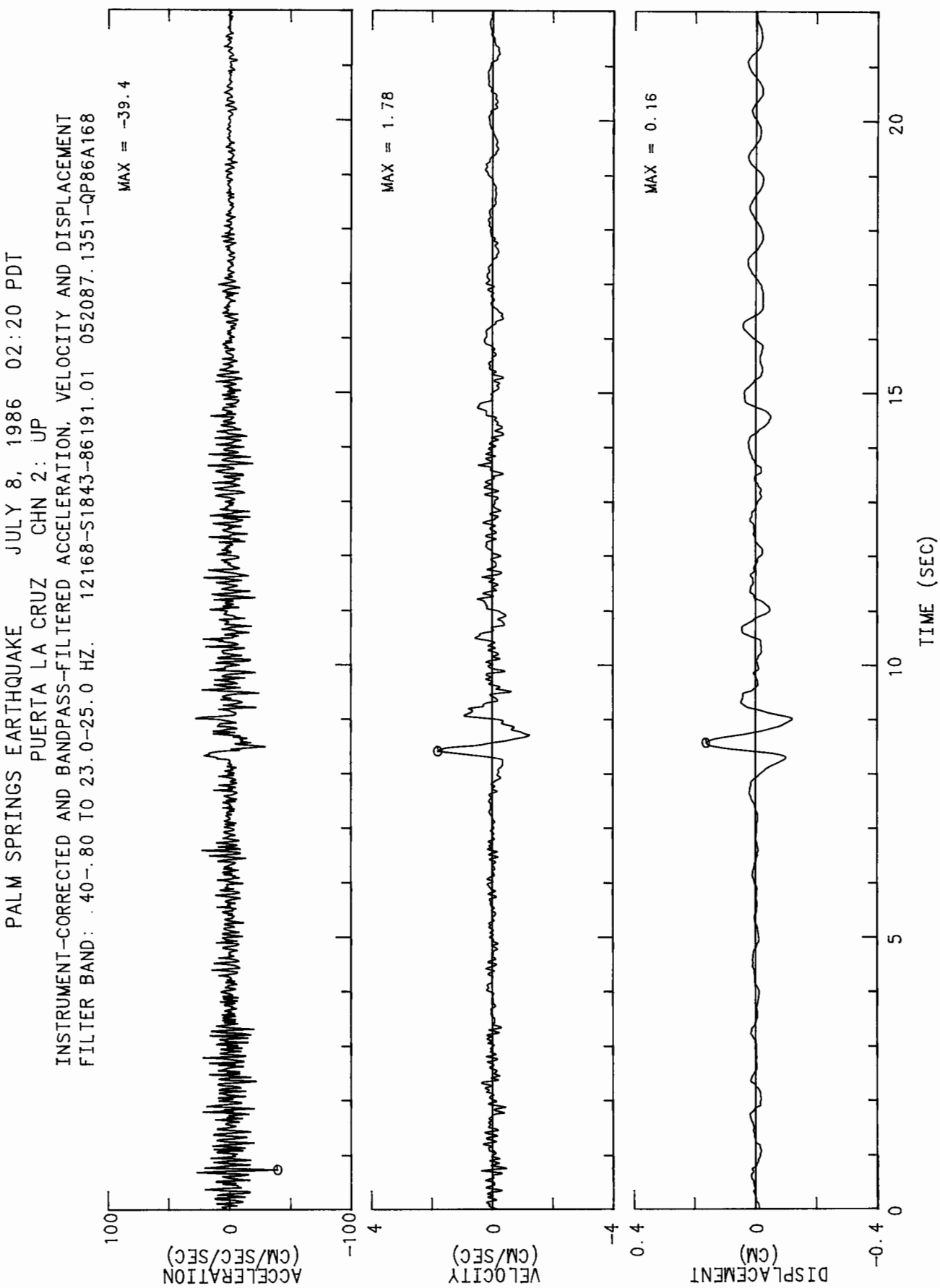


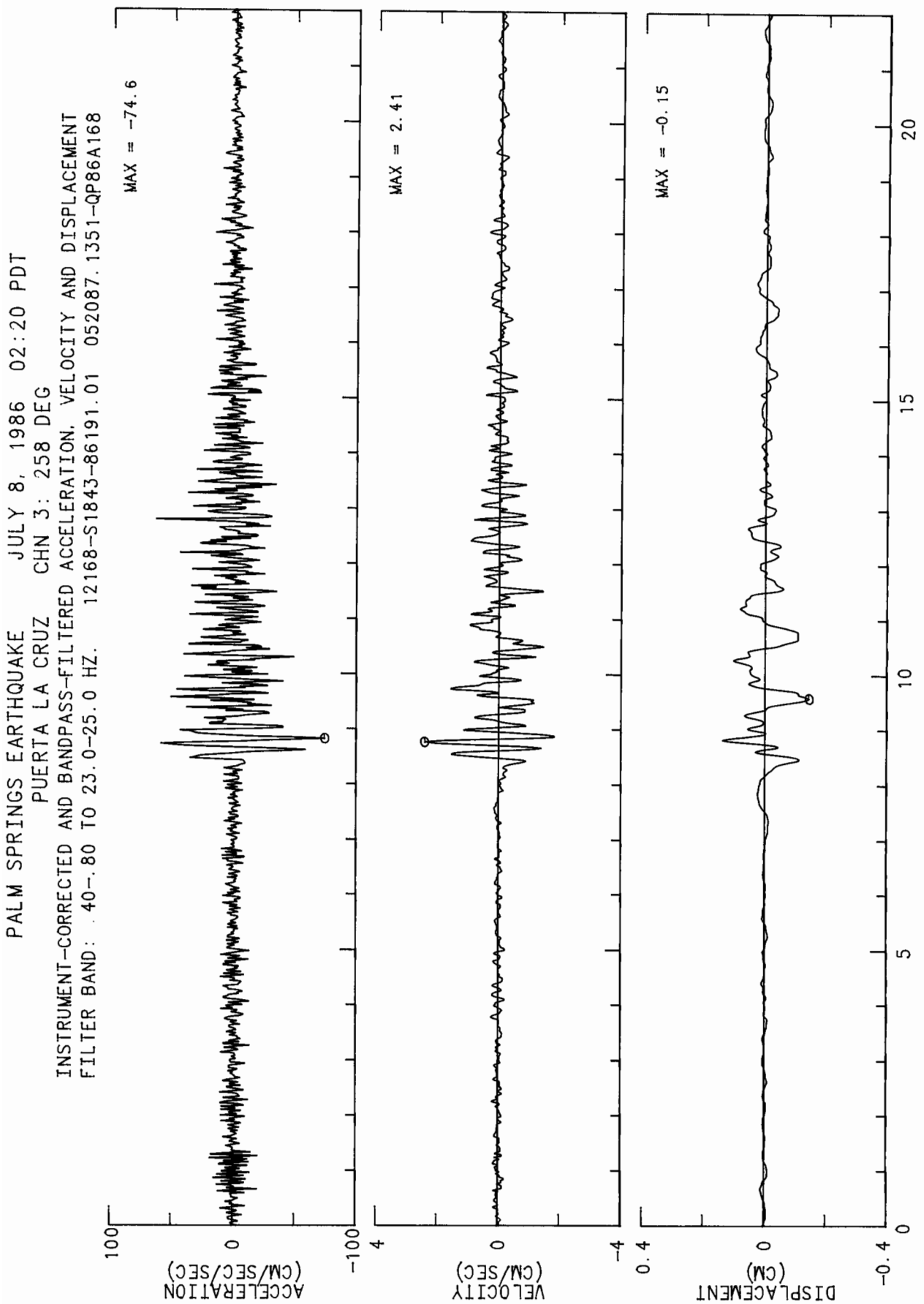
# PUERTA LA CRUZ


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
UNCORRECTED ACCELEROGRAM 12168-S1843-86191.01 041587.1334-QP86A168
CHN 1: 348 DEG
MAX = -0.061 G
CHN 2: UP
MAX = -0.044 G
CHN 3: 258 DEG
MAX = -0.077 G
ACCELERATION (G)
0.1
0
-0.1
TIME (SEC)
0
5
10
15
20

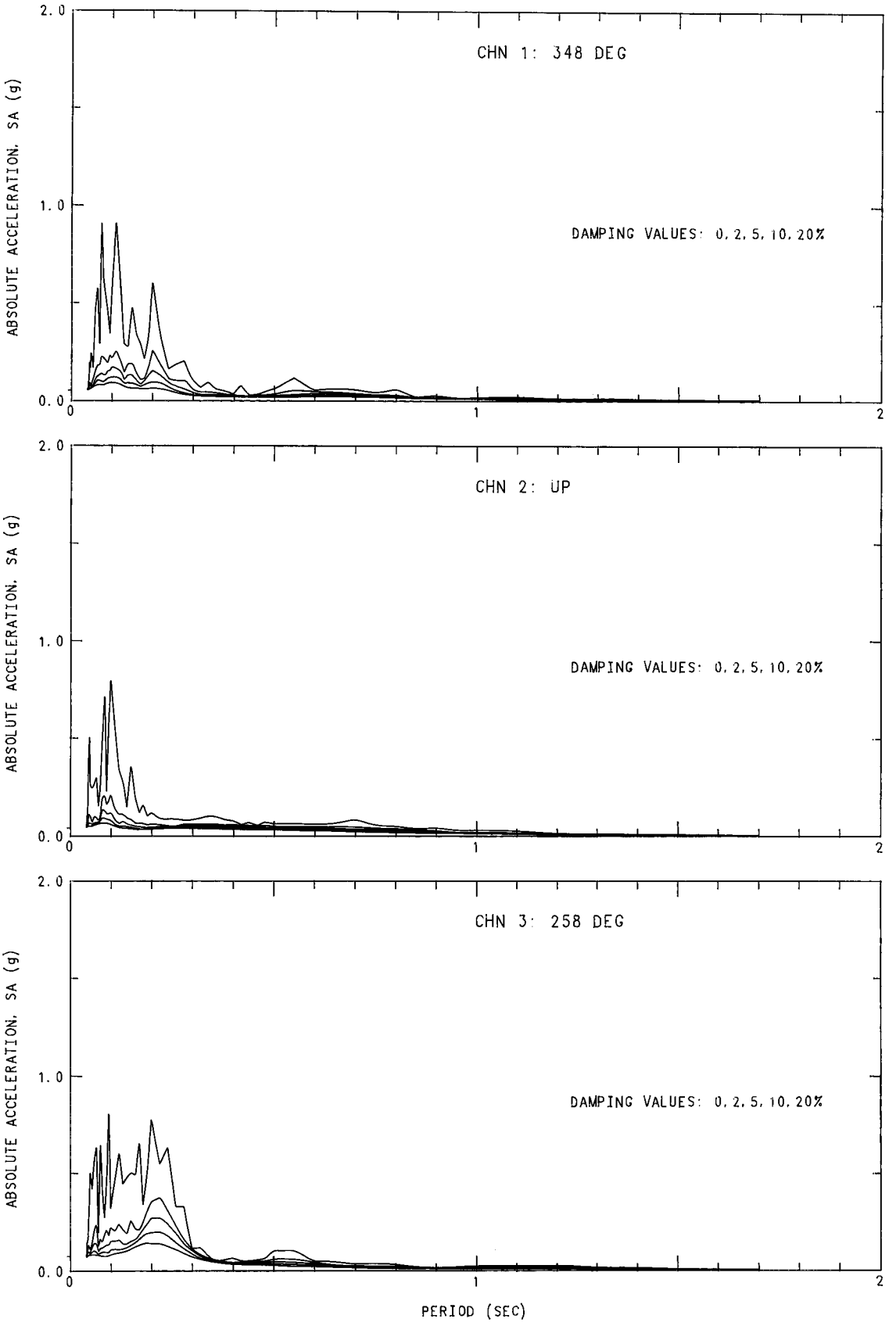

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
UNCORRECTED ACCELEROGRAM 12168-S1843-86191.01 041587.1334-QP86A168
CHN 1: 348 DEG
MAX = -0.061 G
CHN 2: UP
MAX = -0.044 G
CHN 3: 258 DEG
MAX = -0.077 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
25
30
35
40
TIME (SEC)
200


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ CHN 1: 348 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 12168-S1843-86191.01 052087.1351-QP86A168
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = -53.6
VELOCITY (CM/SEC)
4
0
-4
MAX = -1.67
DISPLACEMENT (CM)
0.4
0
-0.4
MAX = -0.13
0
5
10
15
20
TIME (SEC)

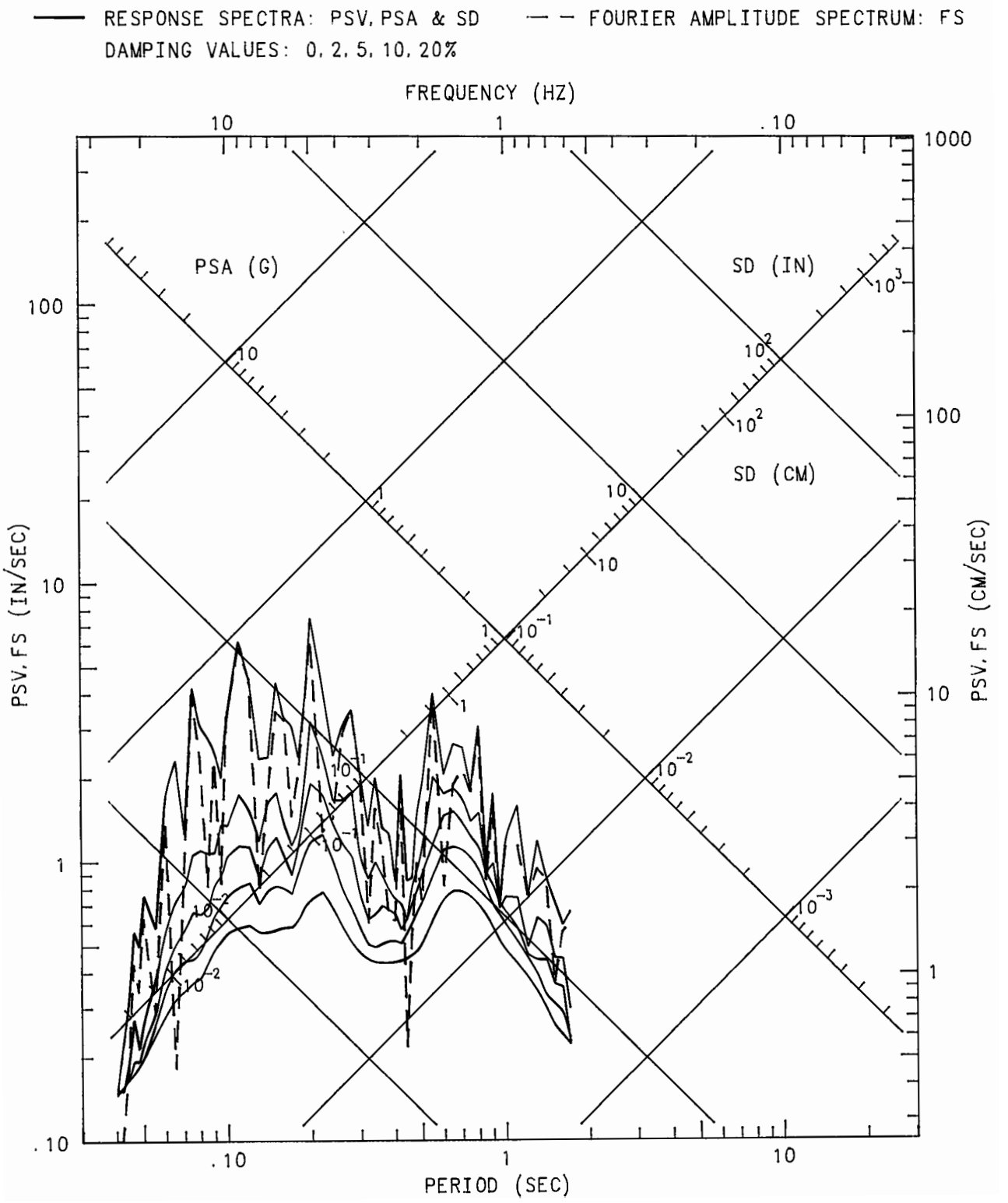

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 12168-S1843-86191.01 052087.1351-QP86A168
MAX = -39.4
MAX = 1.78
MAX = 0.16
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
4
0
-4
0.4
0
-0.4
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ CHN 3: 258 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 12168-S1843-86191.01 052087.1351-QP86A168
MAX = -74.6
MAX = 2.41
MAX = -0.15
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
4
0
-4
0.4
0
-0.4
0
5
10
15
20

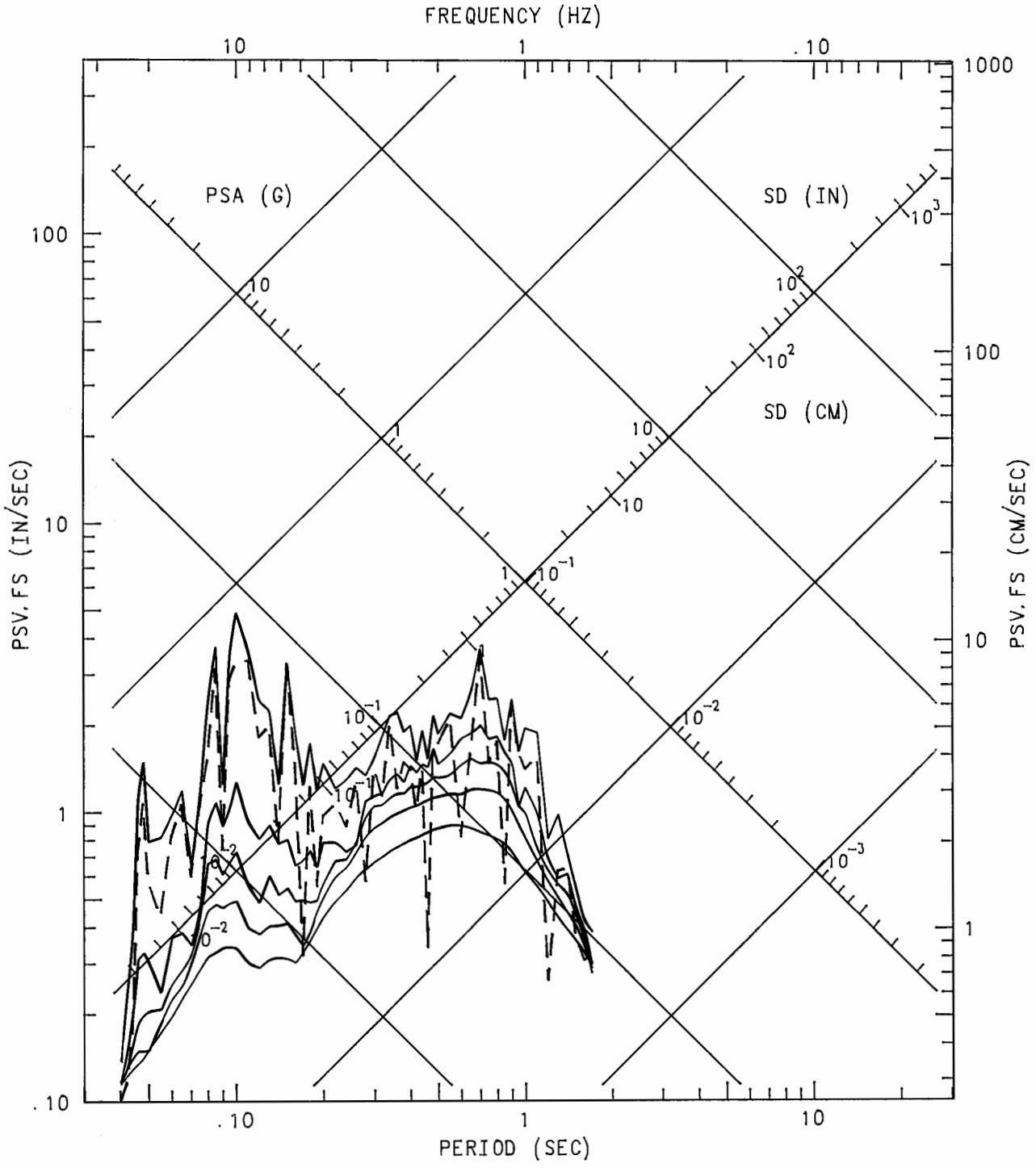
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
12168-S1843-86191.01 060387.0914-QPALMSP86G



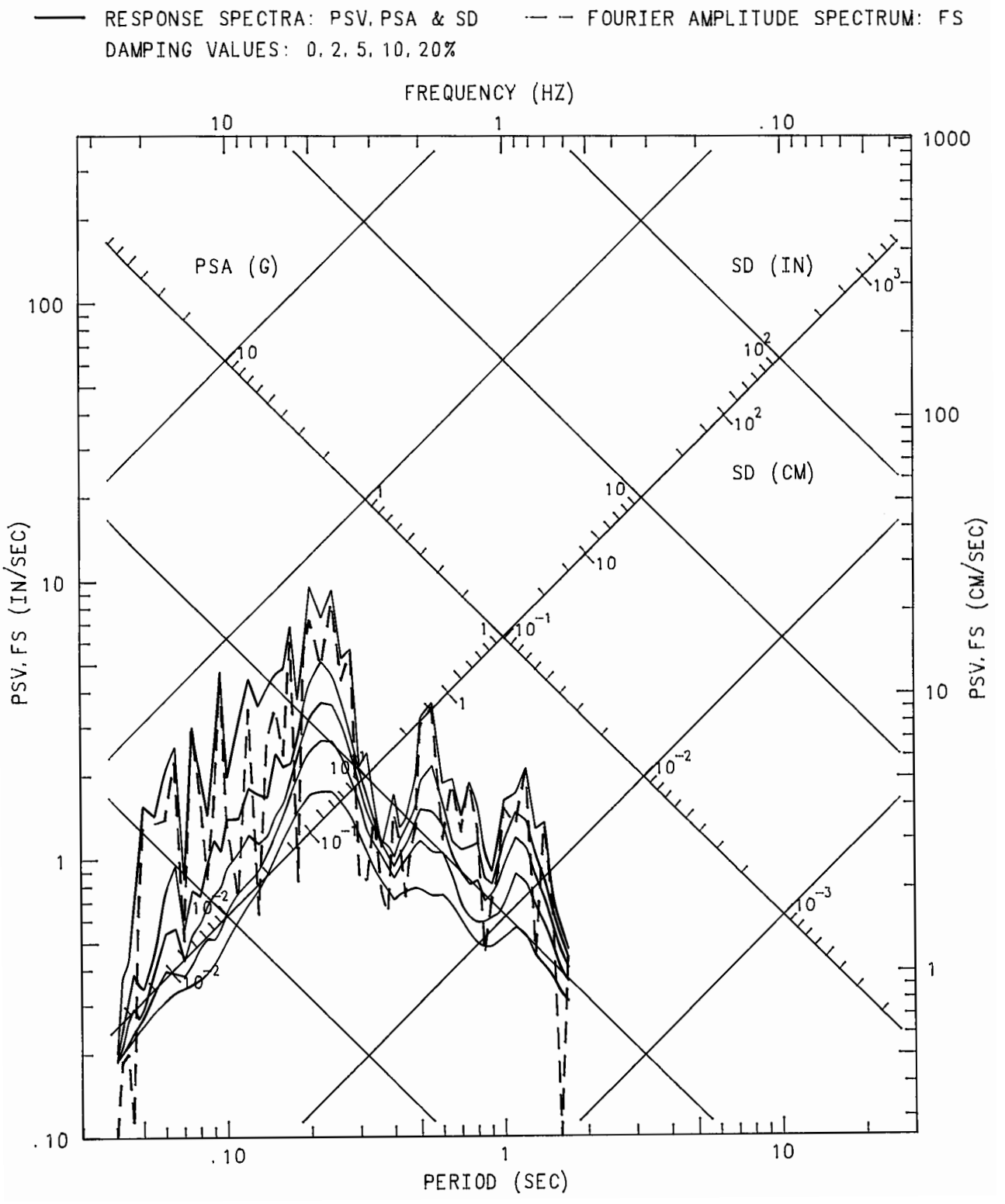
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
CHN 1: 348 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
12168-S1843-86191.01 060387.0914-QP86A168



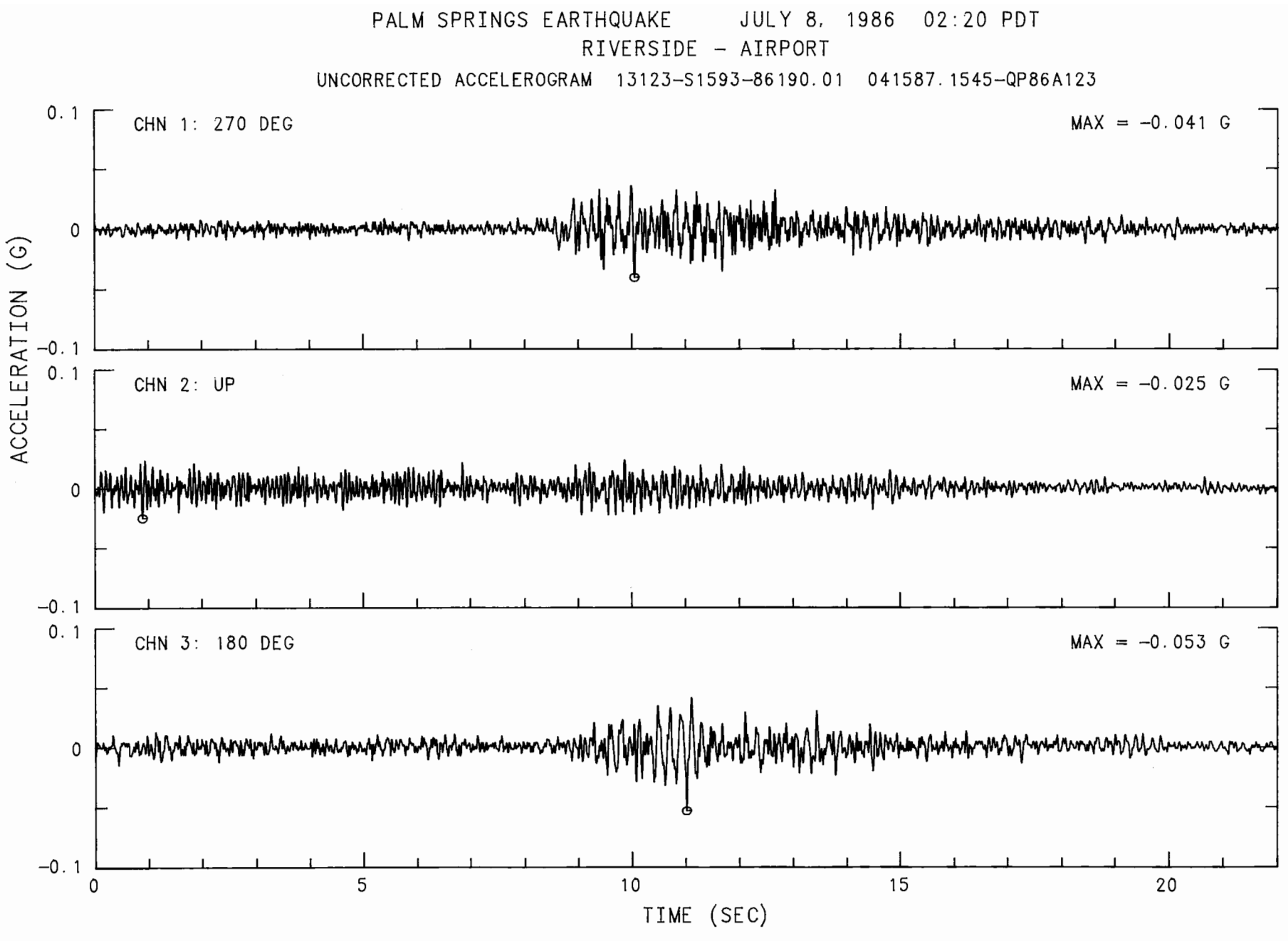
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
12168-S1843-86191.01 060387.0914-QP86A168

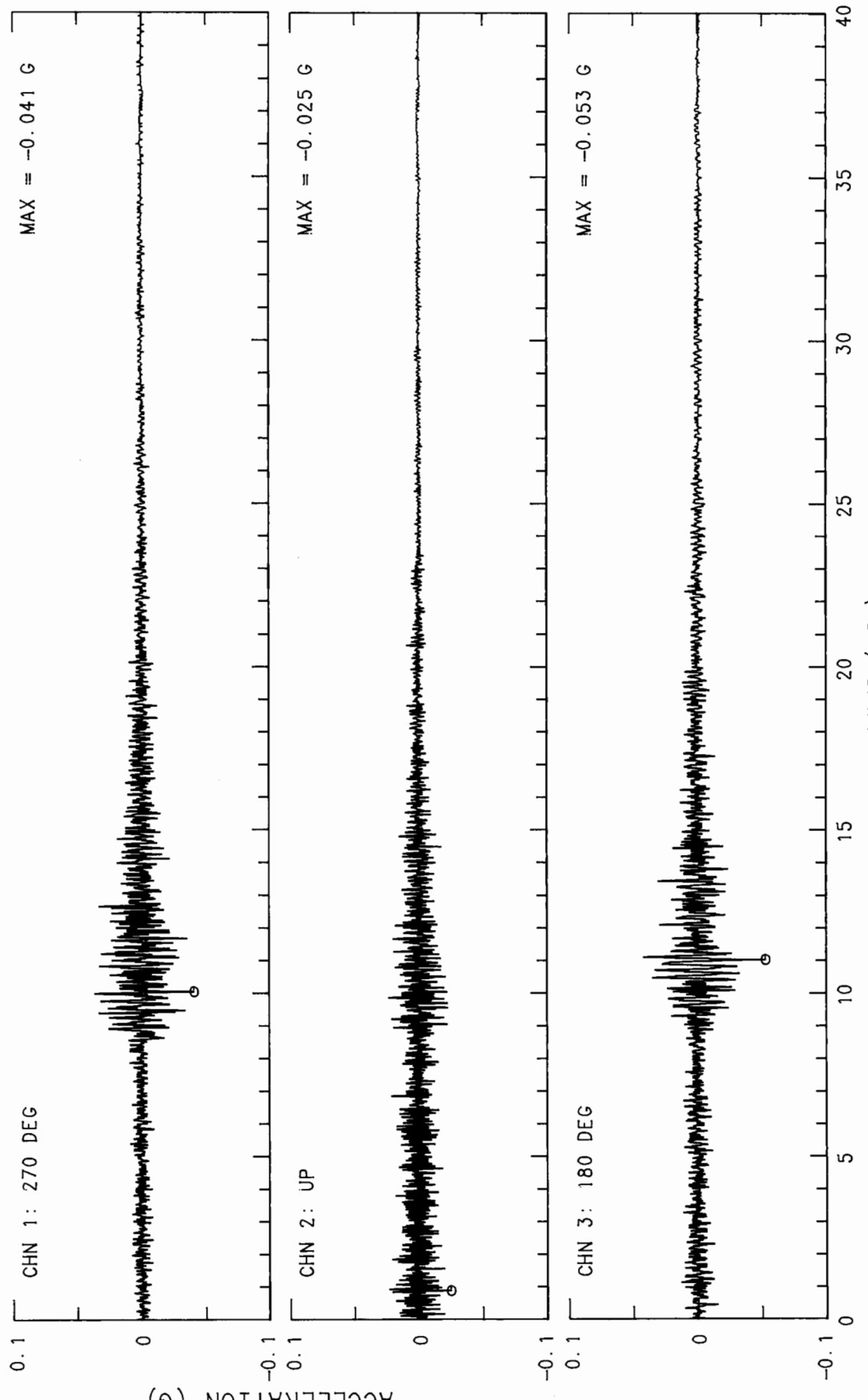


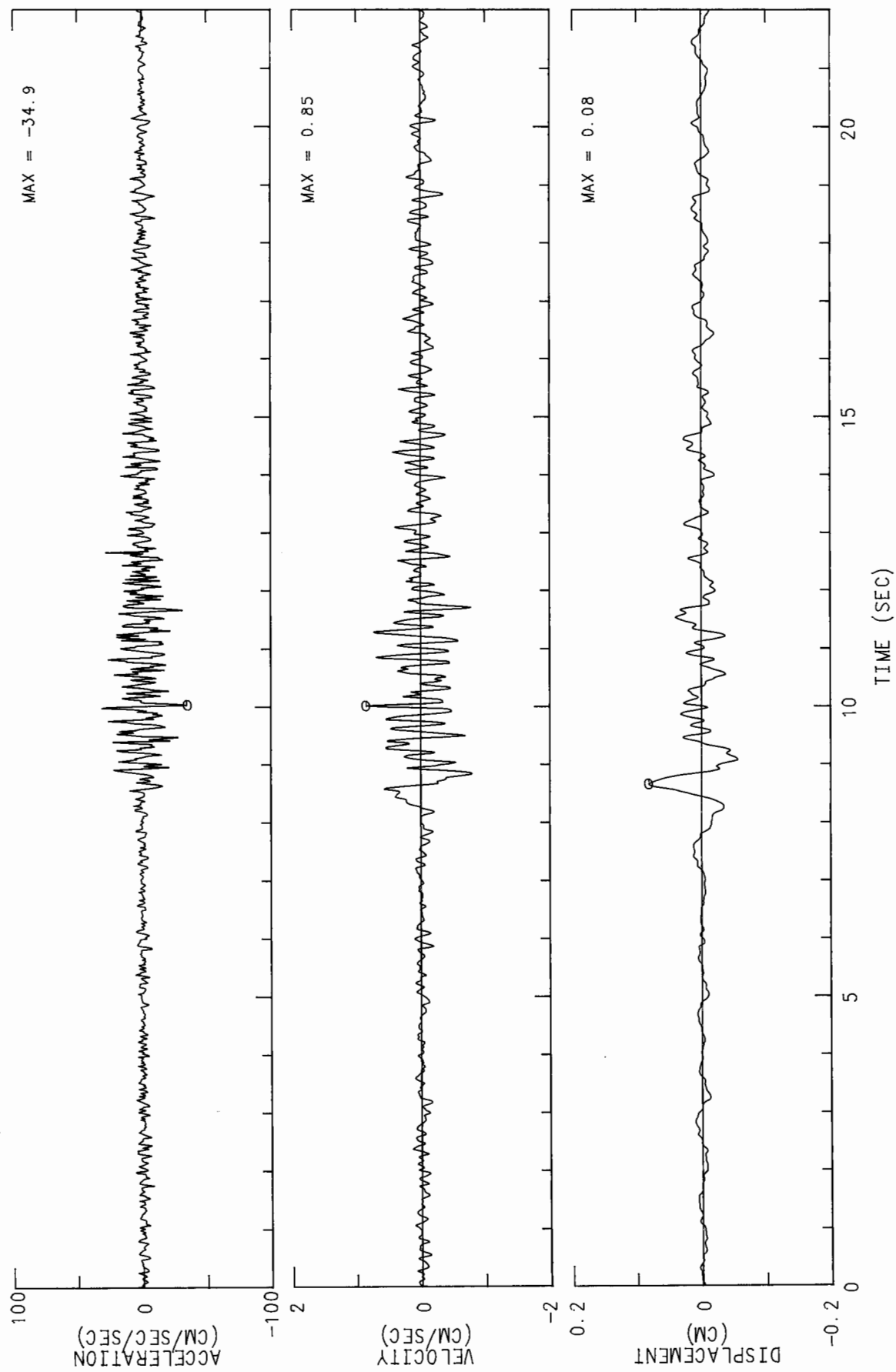
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
PUERTA LA CRUZ
CHN 3: 258 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
12168-S1843-86191.01 060387.0914-QP86A168

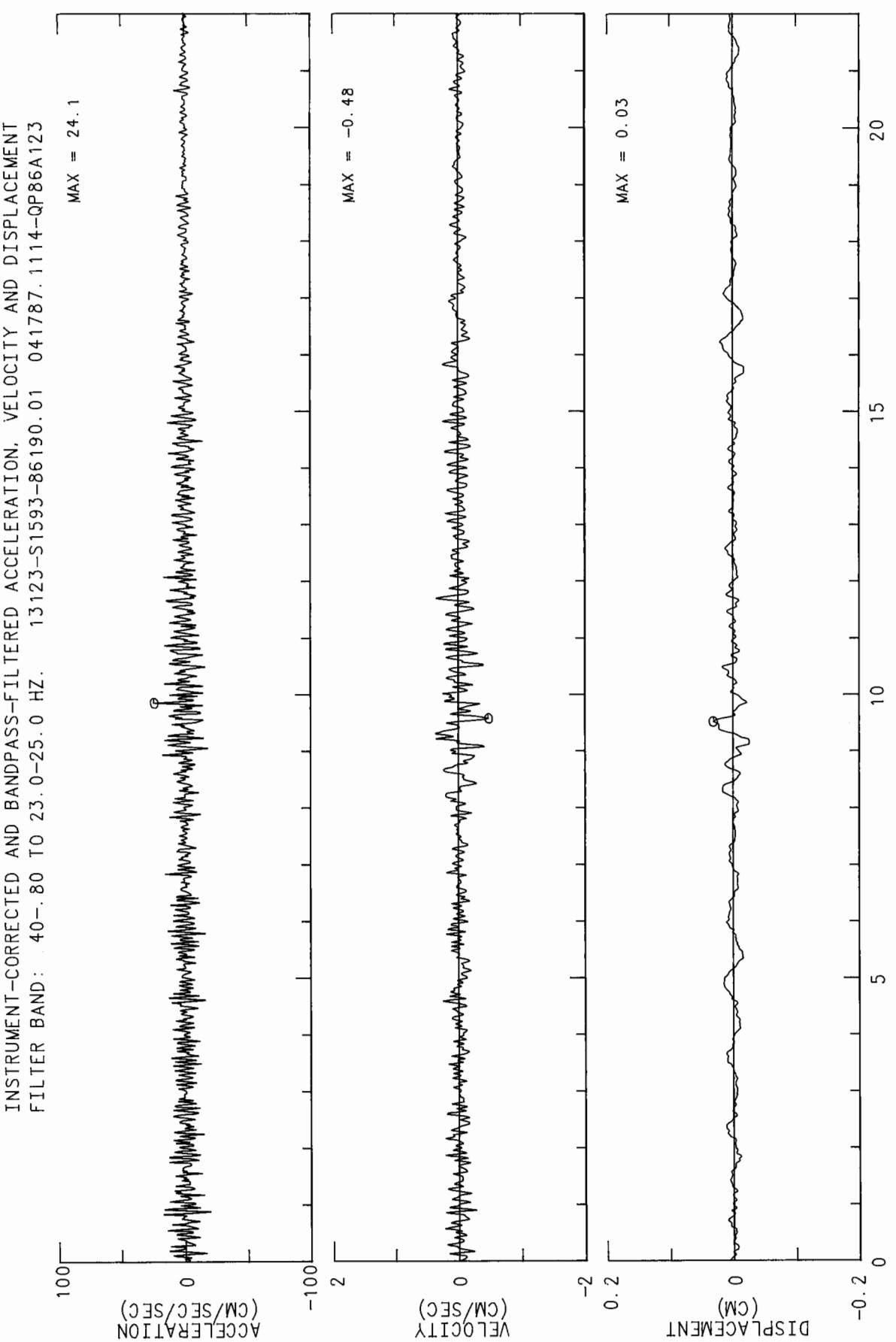


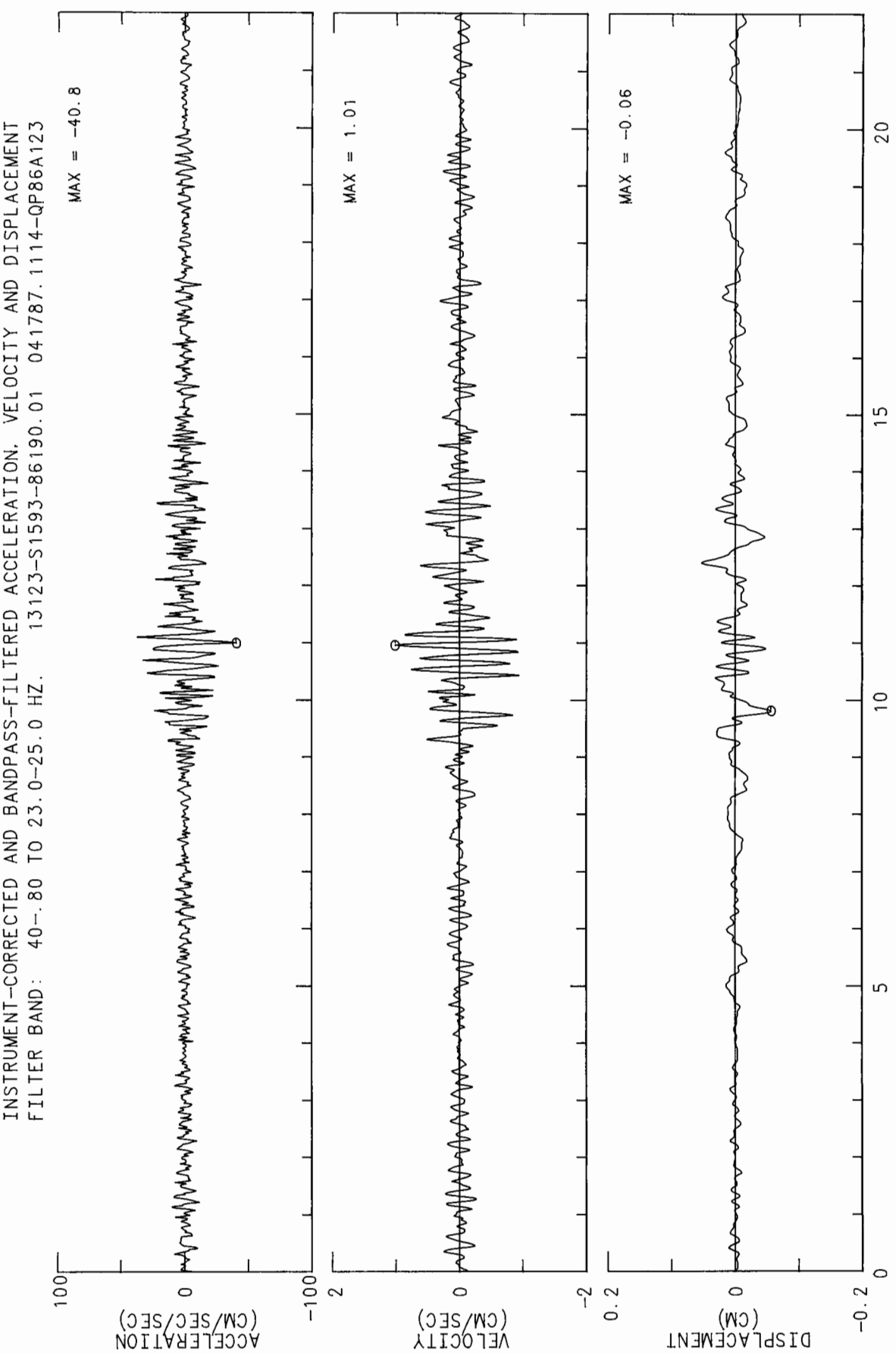
# RIVERSIDE - AIRPORT


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
UNCORRECTED ACCELEROGRAM 13123-S1593-86190.01 041587.1545-QP86A123
CHN 1: 270 DEG
MAX = -0.041 G
CHN 2: UP
MAX = -0.025 G
CHN 3: 180 DEG
MAX = -0.053 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

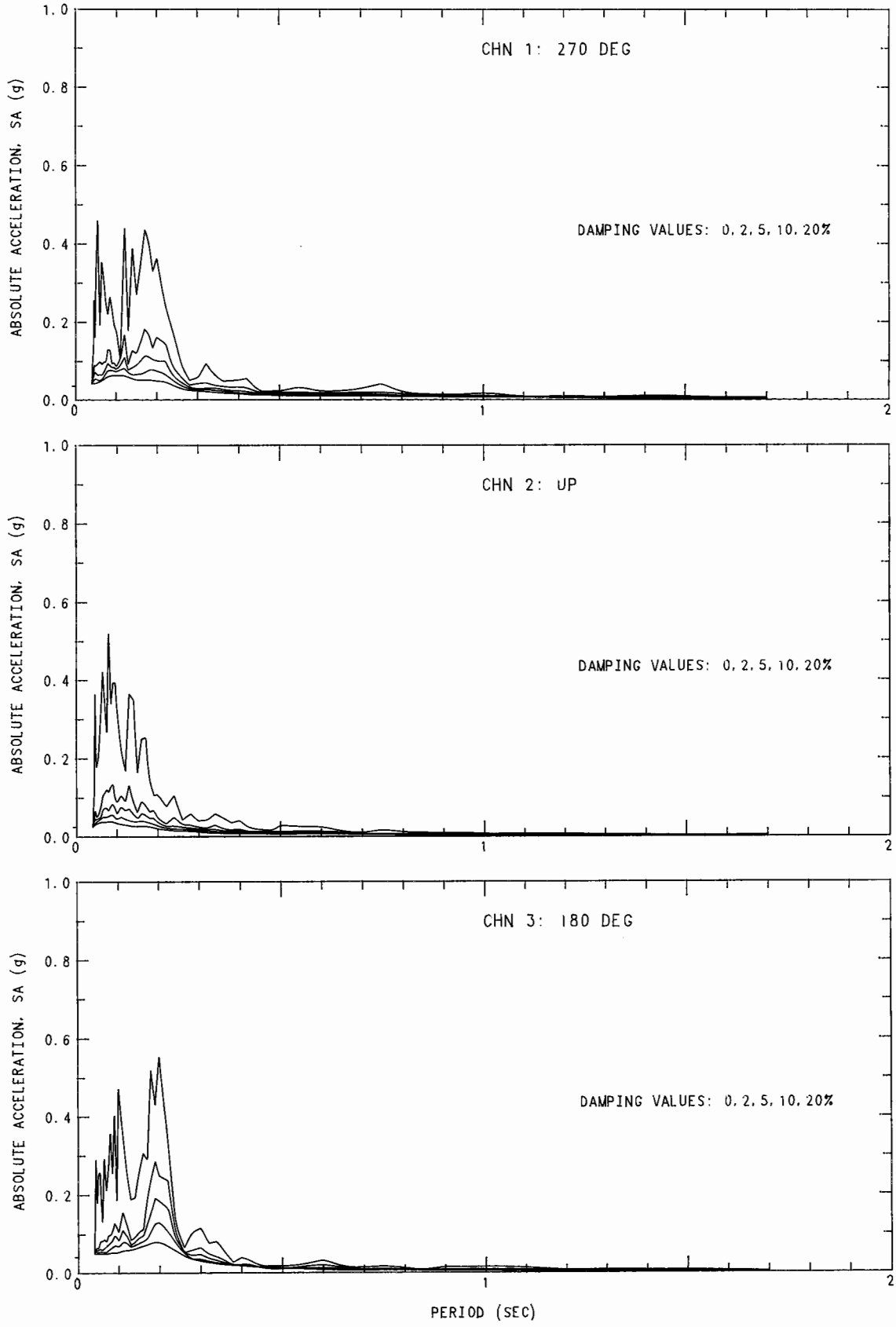

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
UNCORRECTED ACCELEROGRAM 13123-S1593-86190.01 041587.1545-QP86A123
CHN 1: 270 DEG
MAX = -0.041 G
CHN 2: UP
MAX = -0.025 G
CHN 3: 180 DEG
MAX = -0.053 G
ACCELERATION (G)
0.1
0
-0.1
TIME (SEC)
0
5
10
15
20
25
30
35
40


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT CHN 1: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 40-.80 TO 23.0-25.0 HZ. 13123-S1593-86190.01 041787.1114-QP86A123
MAX = -34.9
MAX = 0.85
MAX = 0.08
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.2
0
-0.2
0
5
10
15
20

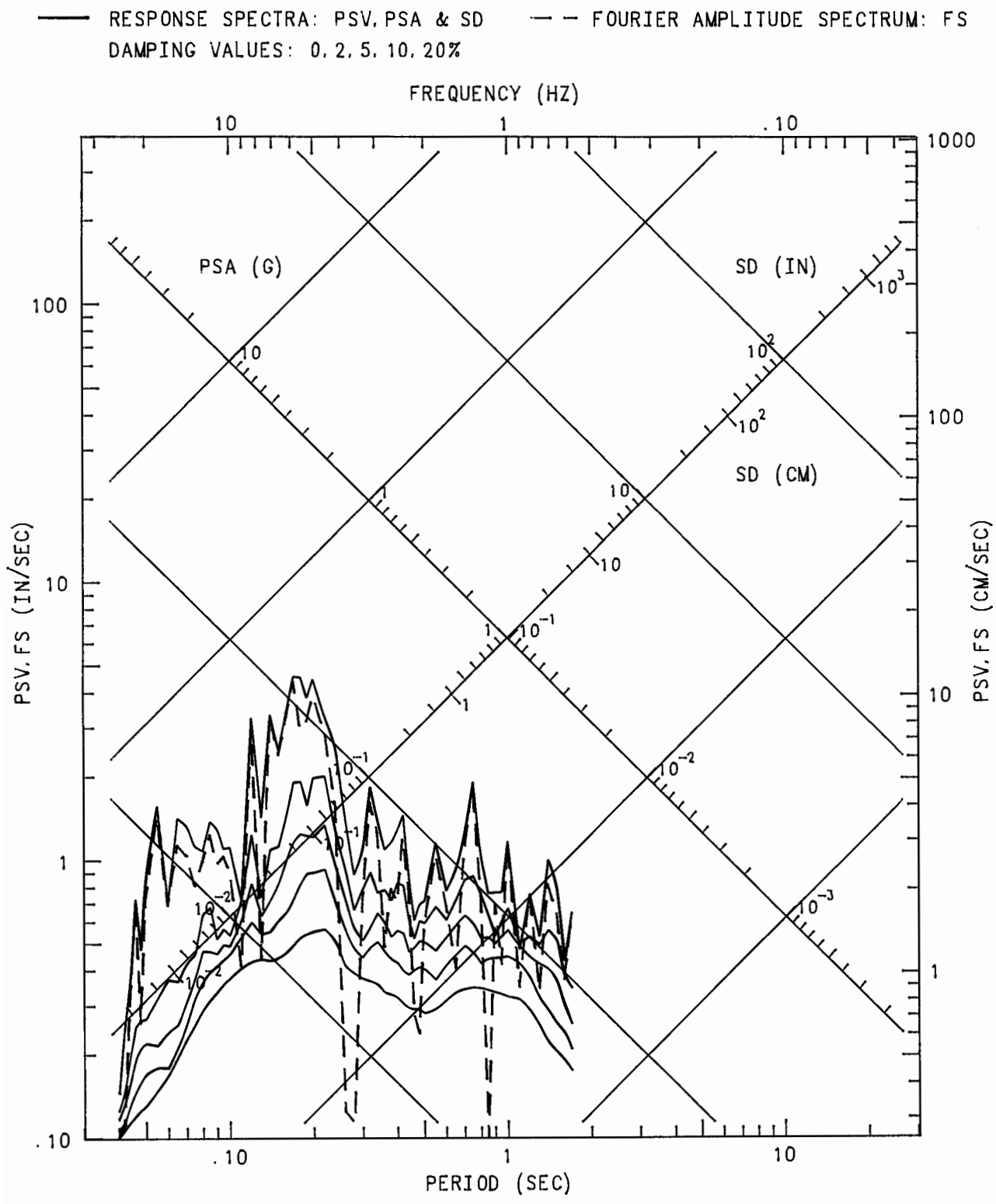

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 13123-S1593-86190.01 041787.1114-QP86A123
MAX = 24.1
MAX = -0.48
MAX = 0.03
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.2
0
-0.2
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT CHN 3: 180 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 40-.80 TO 23.0-25.0 HZ. 13123-S1593-86190.01 041787.1114-QP86A123
MAX = -40.8
MAX = 1.01
MAX = -0.06
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
2
0
-2
0.2
0
-0.2
0
5
10
15
20

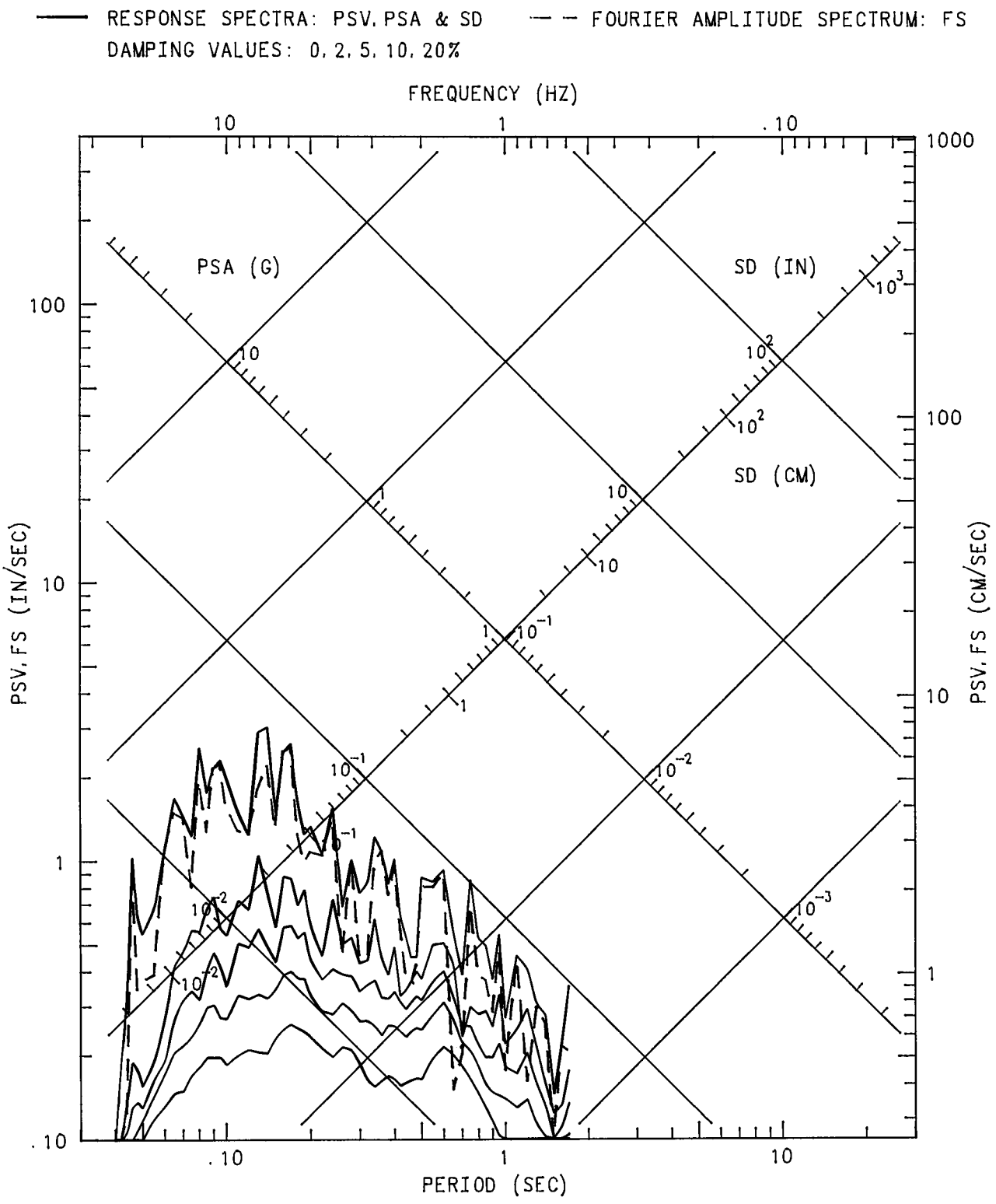
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13123-S1593-86190.01 060387.0956-QPALMSP86G



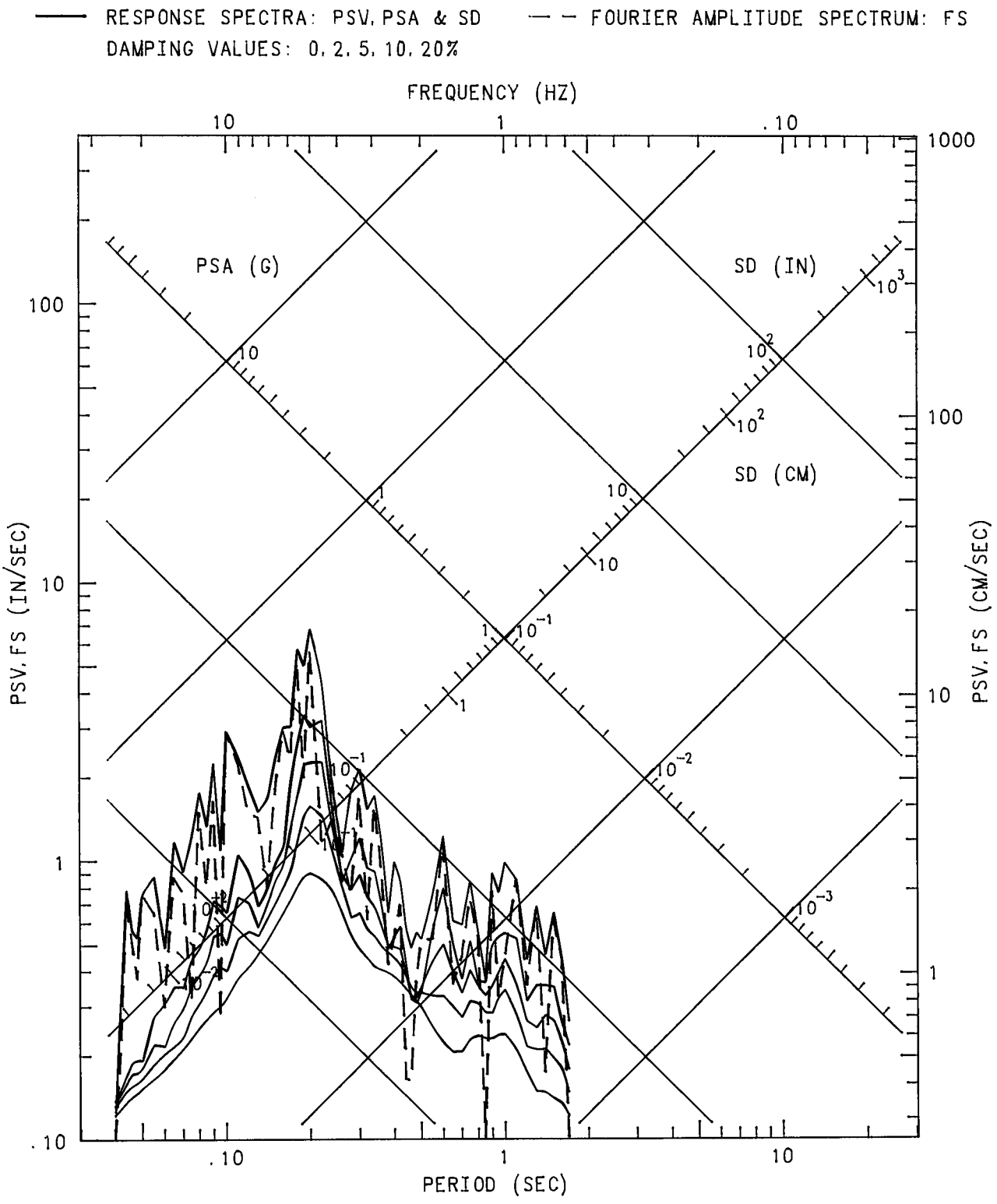
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
CHN 1: 270 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13123-S1593-86190.01 060387.0956-QP86A123



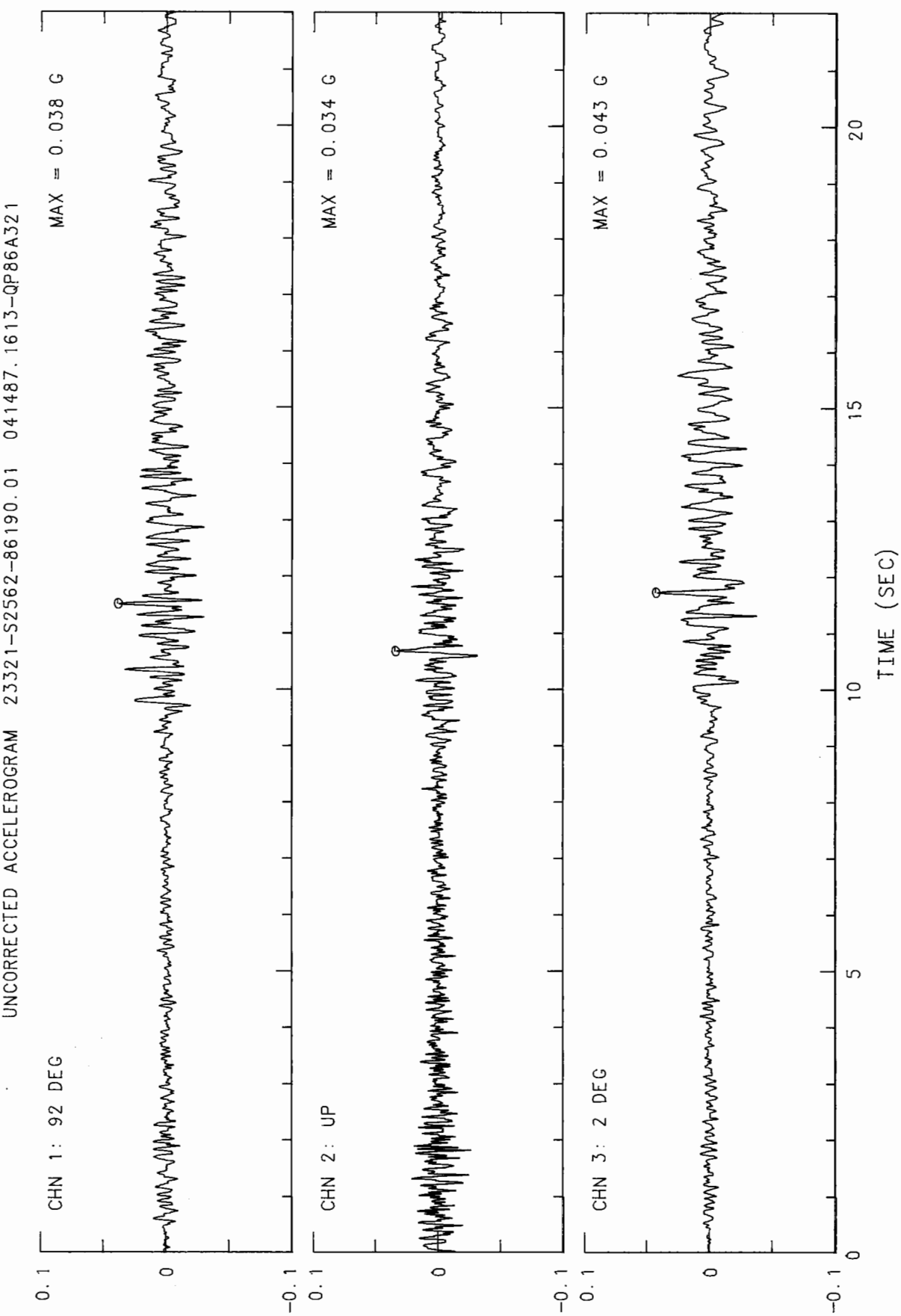
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13123-S1593-86190.01 060387.0956-QP86A123

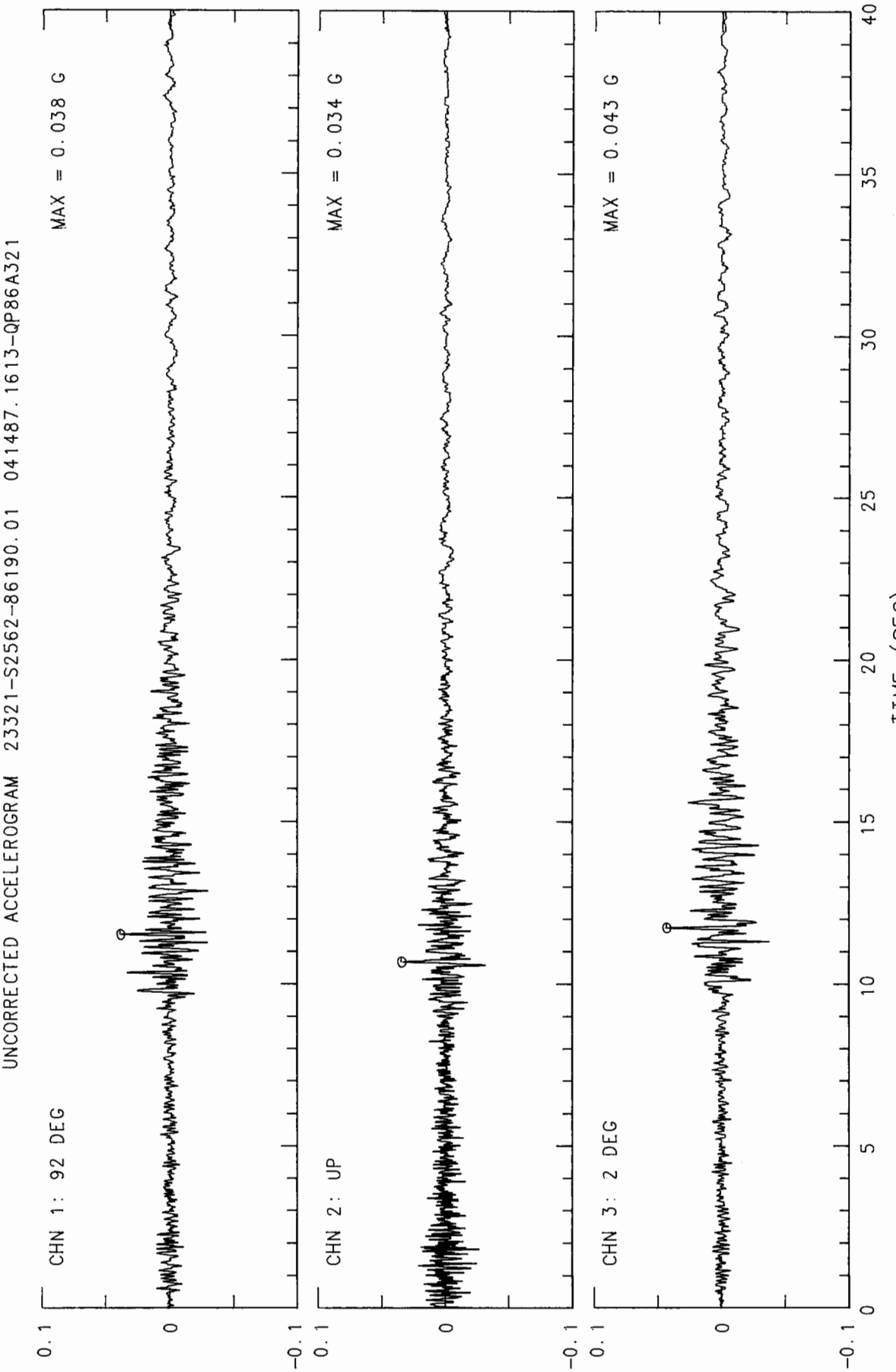


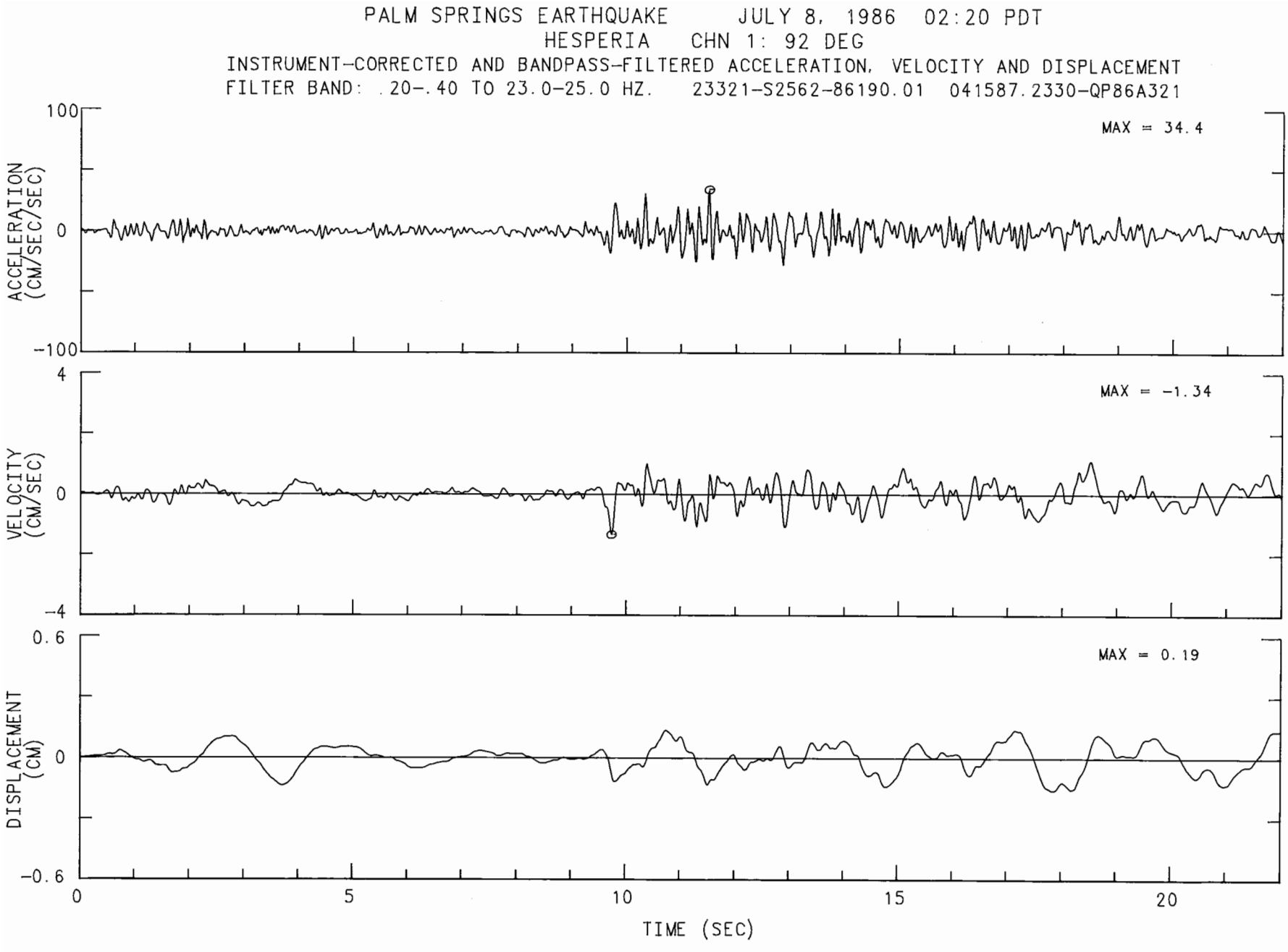
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RIVERSIDE - AIRPORT
CHN 3: 180 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
13123-S1593-86190.01 060387.0956-QP86A123

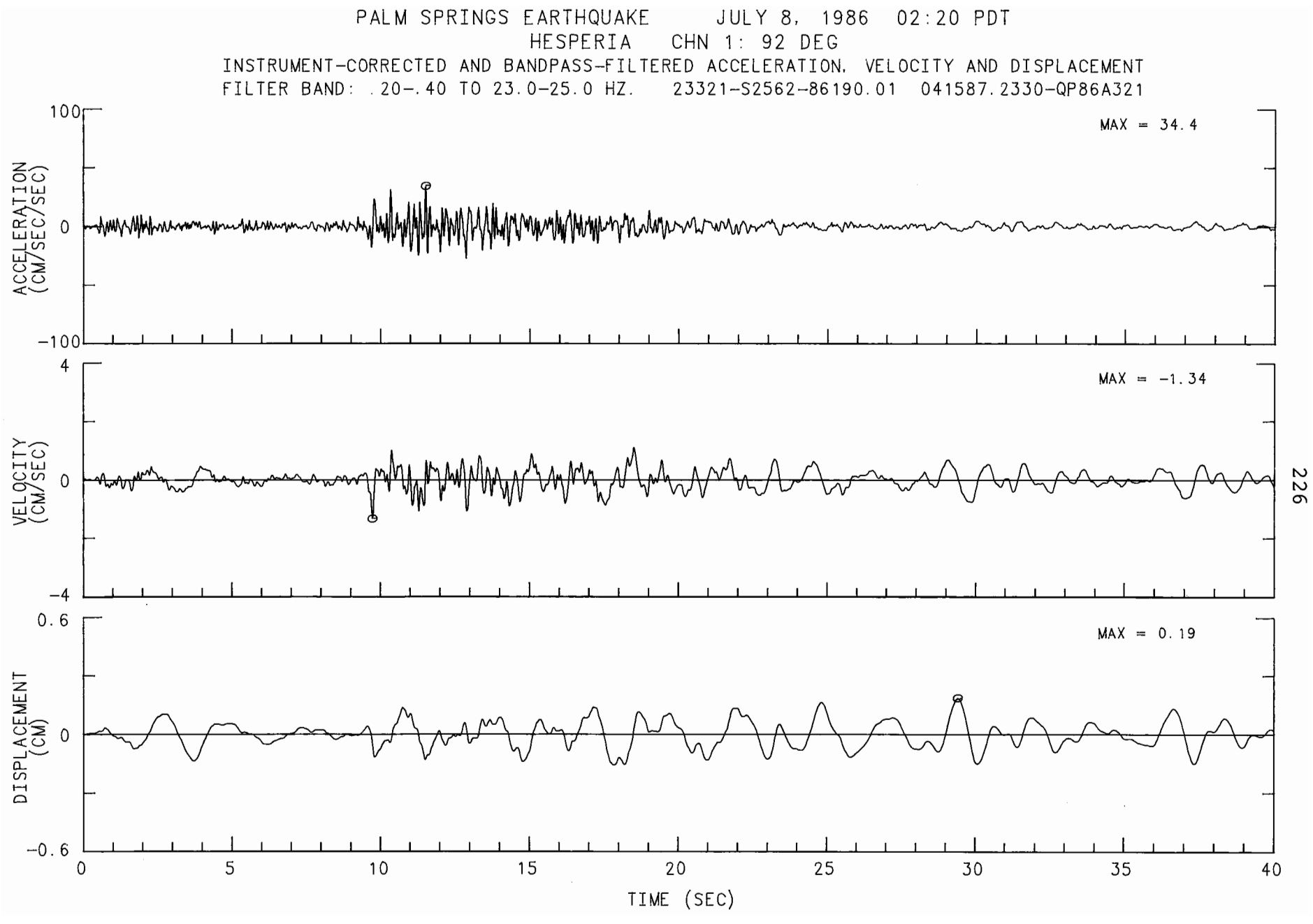


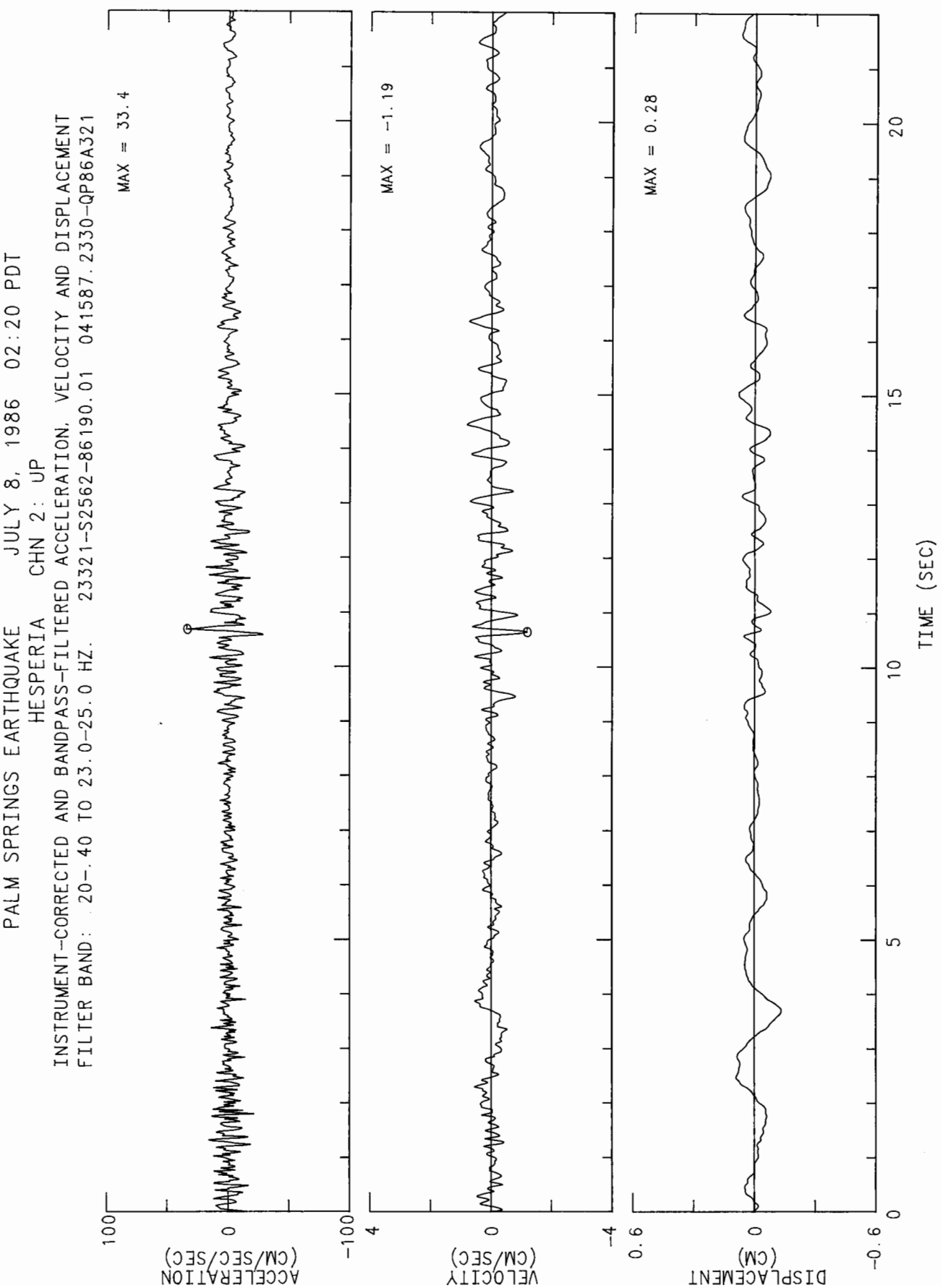
# HESPERIA

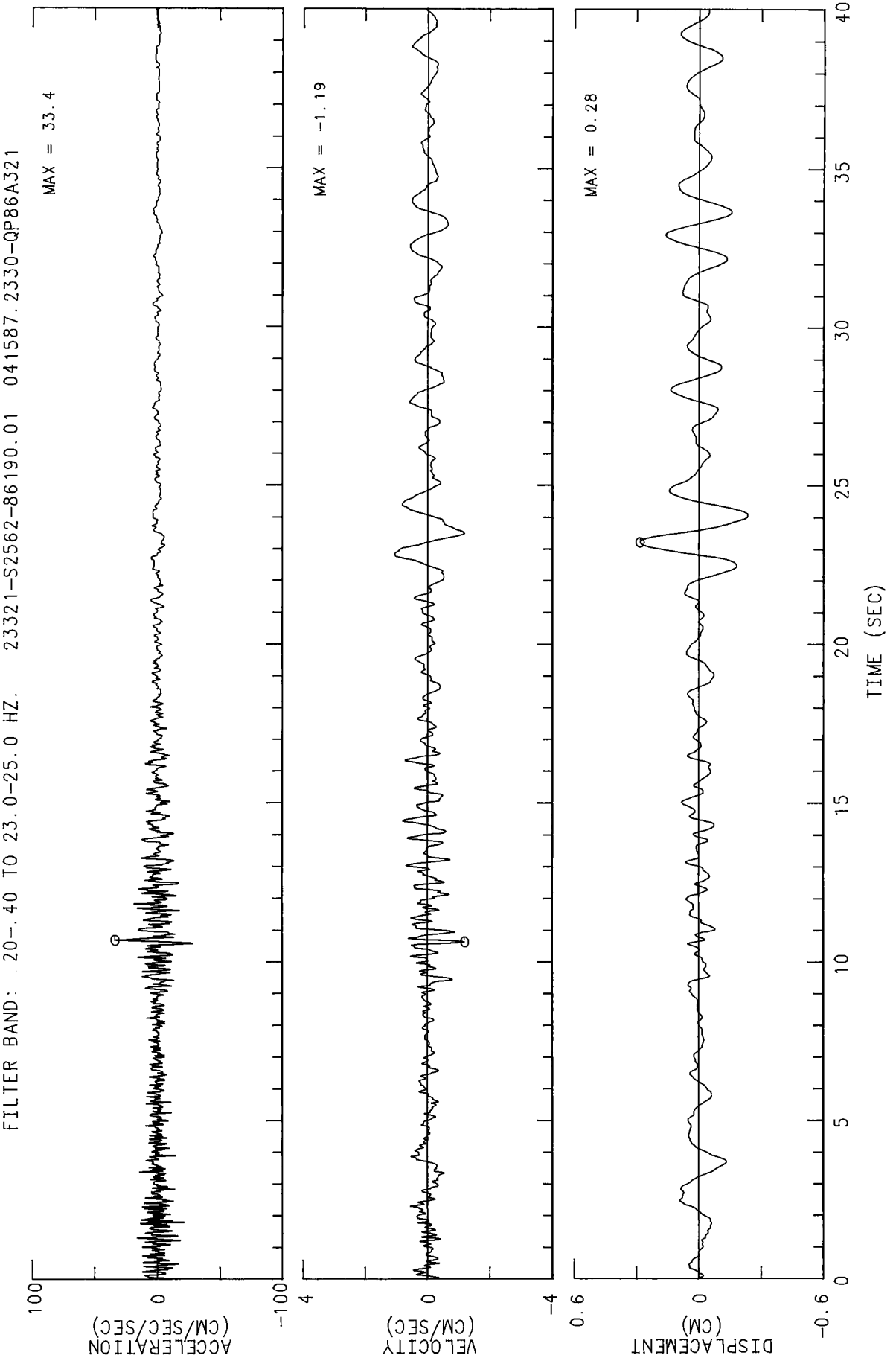

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
UNCORRECTED ACCELEROGRAM 23321-S2562-86190.01 041487.1613-QP86A321
CHN 1: 92 DEG
MAX = 0.038 G
CHN 2: UP
MAX = 0.034 G
CHN 3: 2 DEG
MAX = 0.043 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
TIME (SEC)

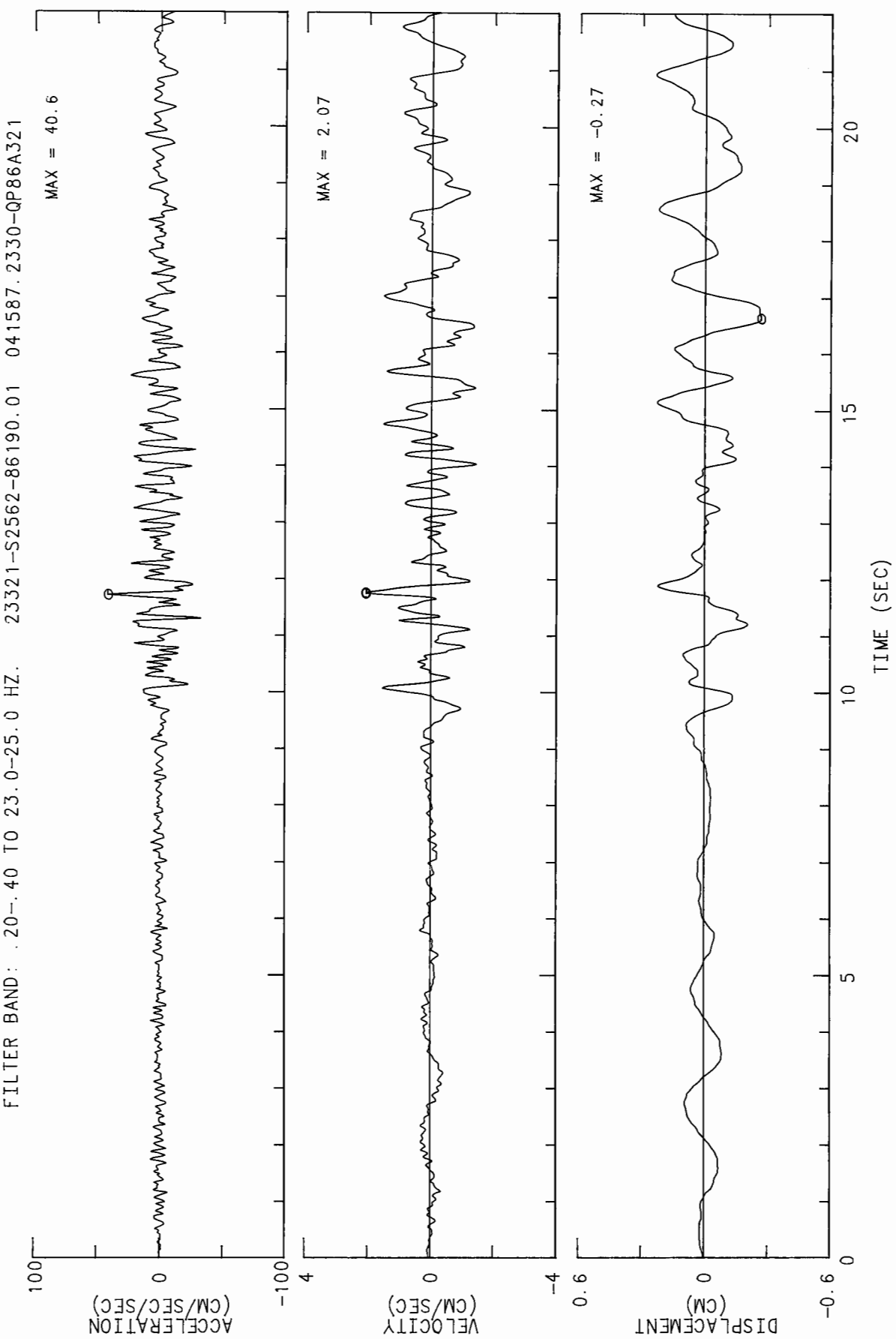

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
UNCORRECTED ACCELEROGRAM 23321-S2562-86190.01 041487.1613-QP86A321
CHN 1: 92 DEG
MAX = 0.038 G
CHN 2: UP
MAX = 0.034 G
CHN 3: 2 DEG
MAX = 0.043 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
25
30
35
40
TIME (SEC)

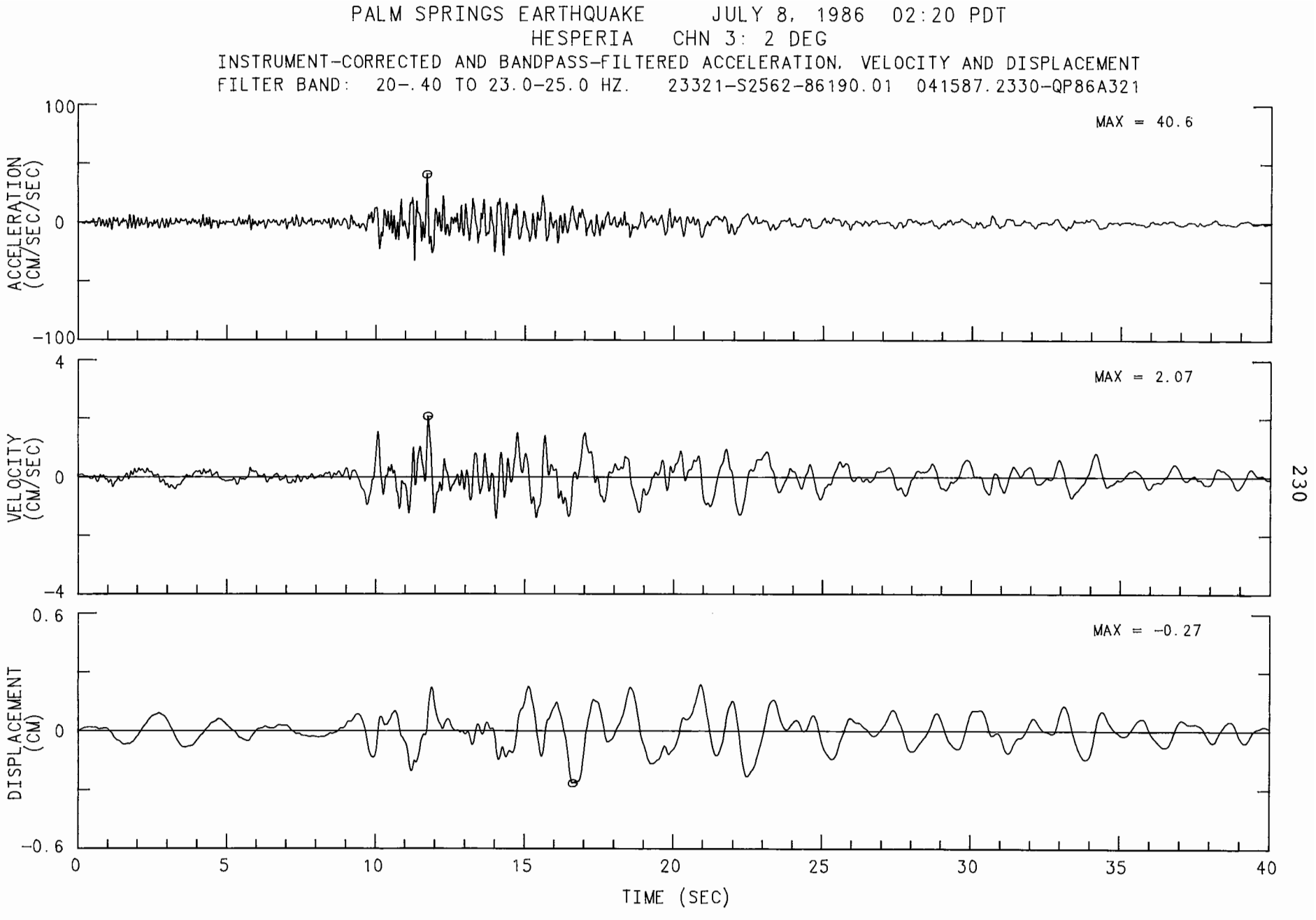

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 1: 92 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 34.4
VELOCITY (CM/SEC)
4
0
-4
MAX = -1.34
DISPLACEMENT (CM)
0.6
0
-0.6
MAX = 0.19
0
5
10
15
20
TIME (SEC)


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 1: 92 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 34.4
VELOCITY (CM/SEC)
4
0
-4
MAX = -1.34
DISPLACEMENT (CM)
0.6
0
-0.6
MAX = 0.19
0
5
10
15
20
25
30
35
40
TIME (SEC)

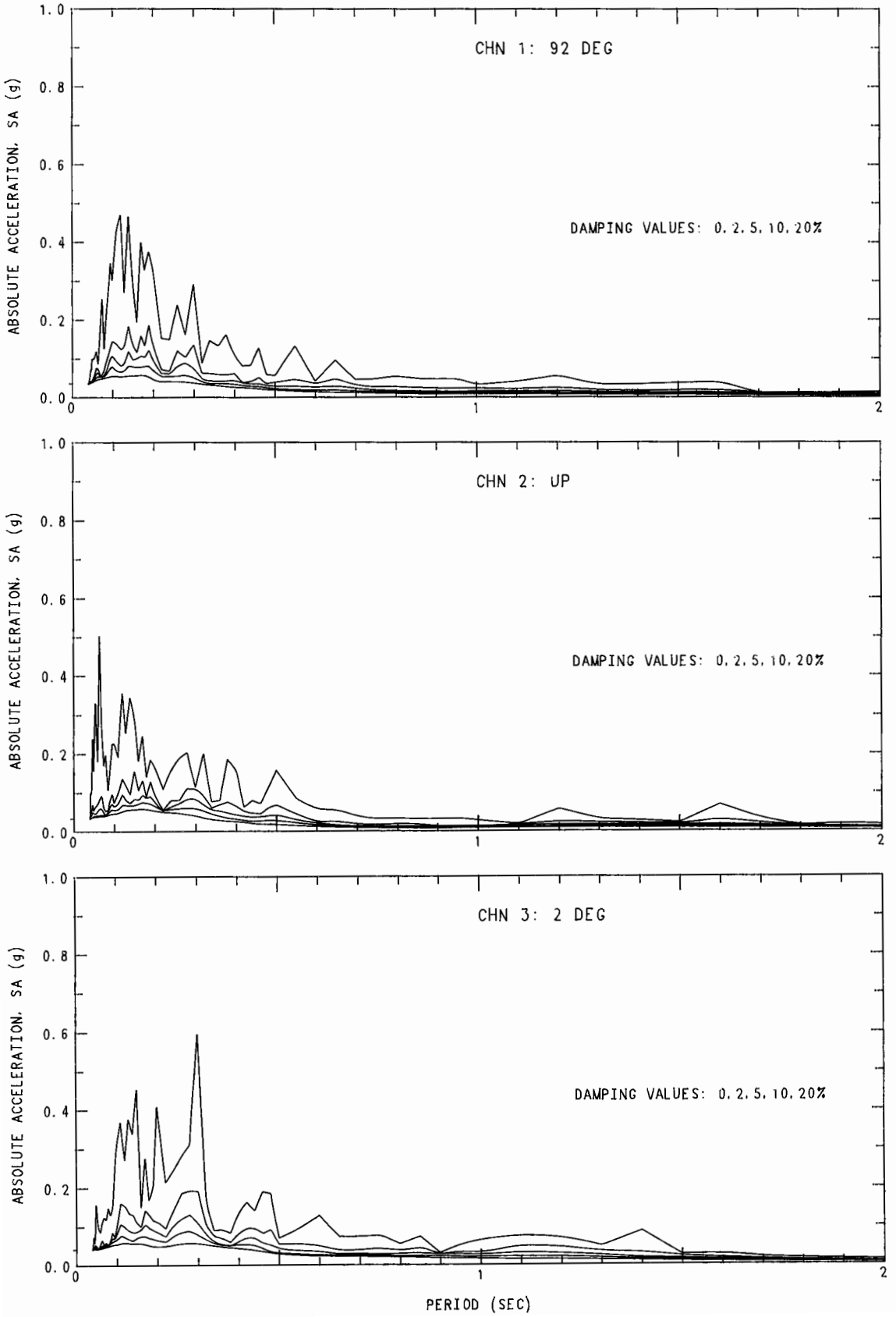

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
MAX = 33.4
MAX = -1.19
MAX = 0.28
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
4
0
-4
0.6
0
-0.6
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
MAX = 33.4
MAX = -1.19
MAX = 0.28
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
4
0
-4
0.6
0
-0.6
0
5
10
15
20
25
30
35
40

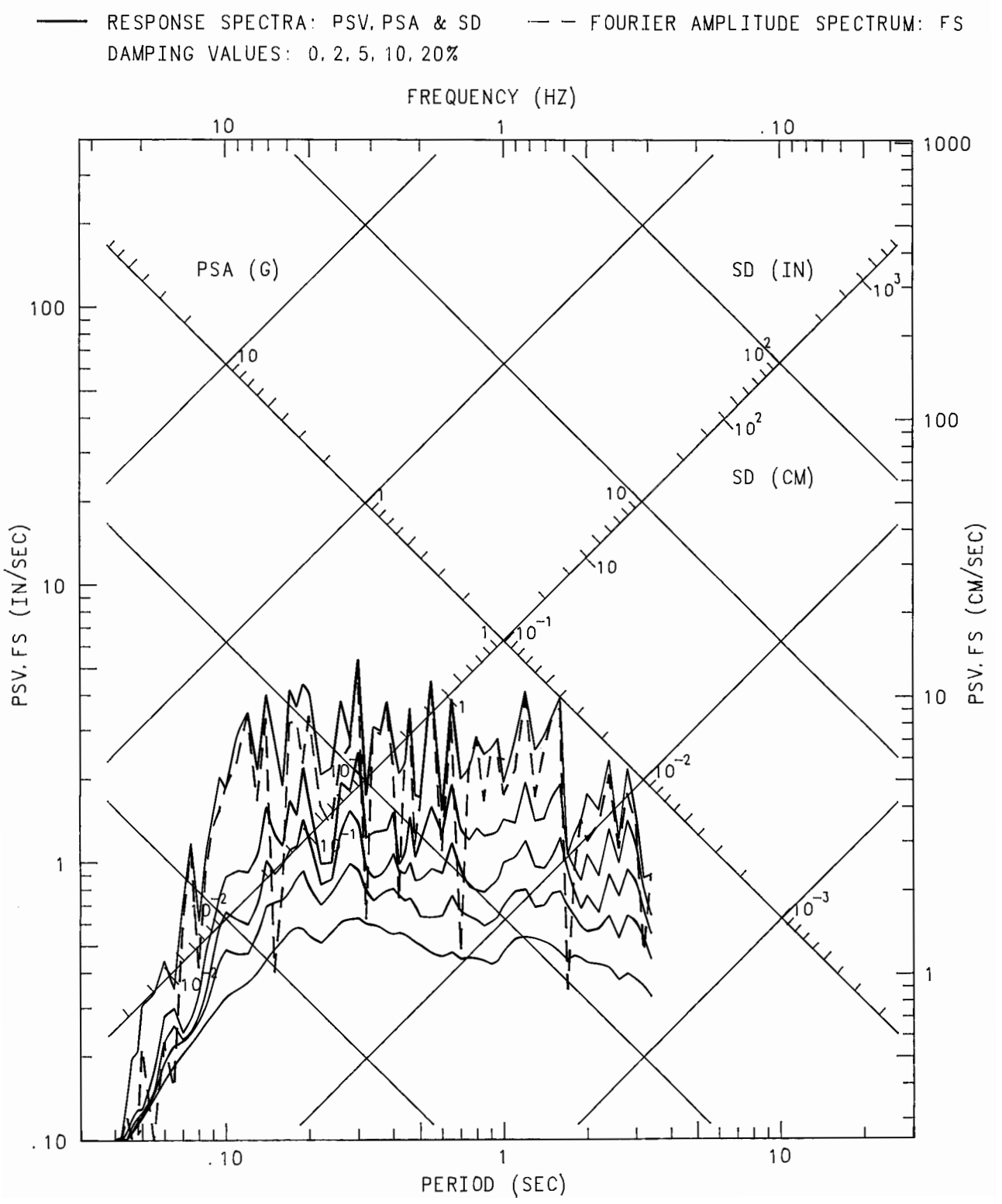

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 3: 2 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION. VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
MAX = 40.6
MAX = 2.07
MAX = -0.27
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
100
0
-100
4
0
-4
0.6
0
-0.6
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA CHN 3: 2 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 20-.40 TO 23.0-25.0 HZ. 23321-S2562-86190.01 041587.2330-QP86A321
ACCELERATION (CM/SEC/SEC)
100
0
-100
MAX = 40.6
VELOCITY (CM/SEC)
4
0
-4
MAX = 2.07
DISPLACEMENT (CM)
0.6
0
-0.6
MAX = -0.27
0
5
10
15
20
25
30
35
40
TIME (SEC)

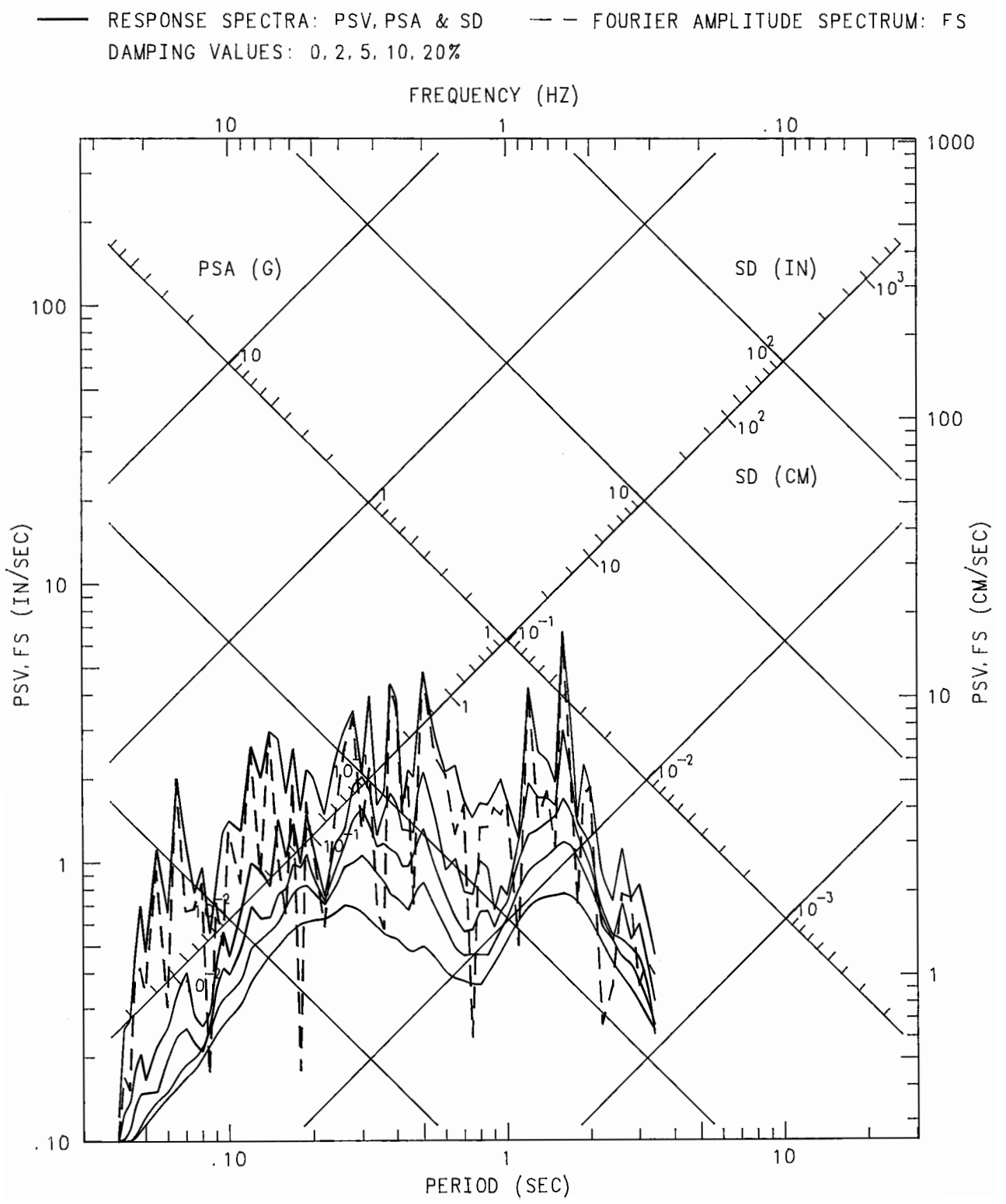
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
23321-S2562-86190.01 060287.1317-QPALMSP86G



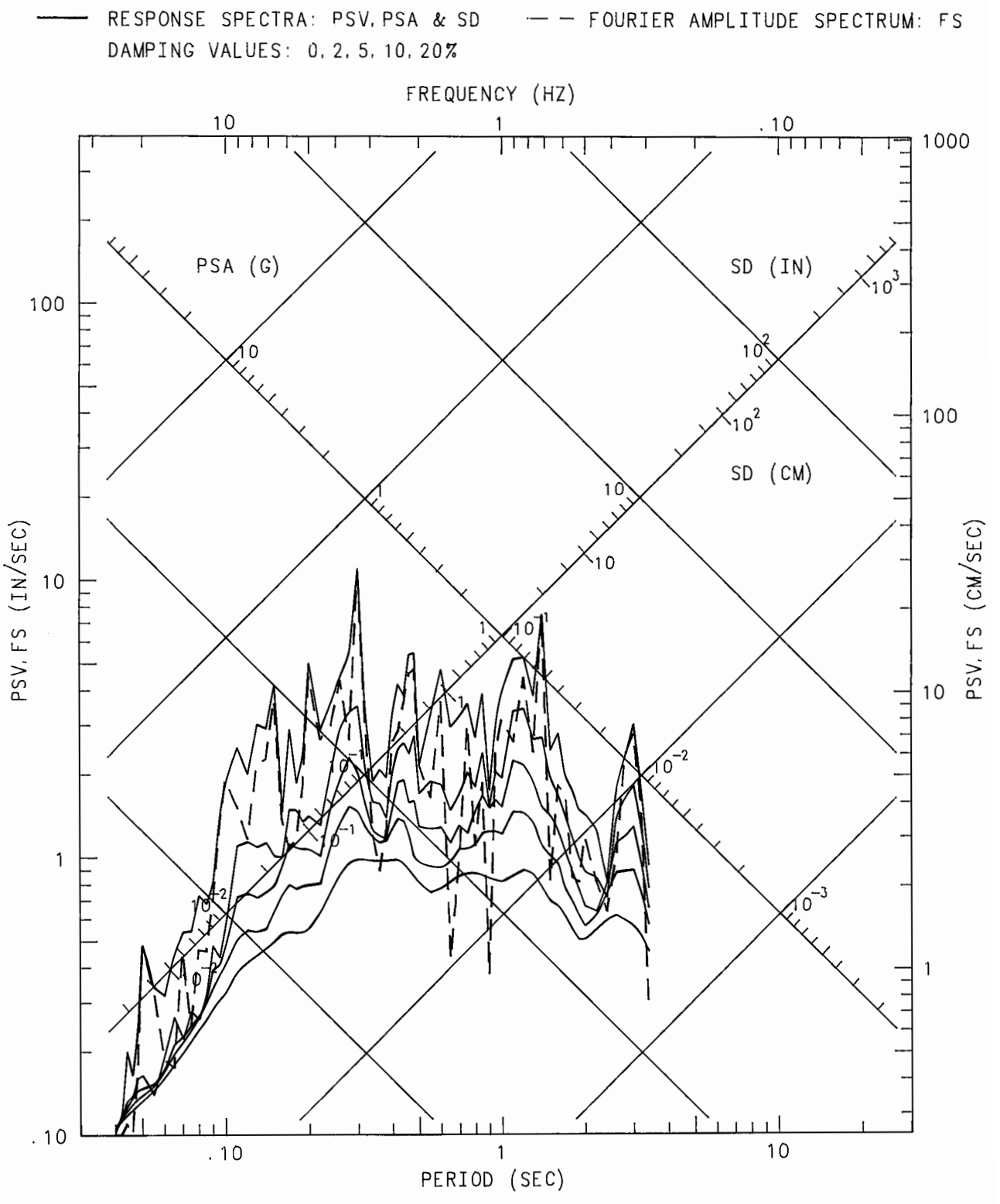
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
CHN 1: 92 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
23321-S2562-86190.01 060287.1317-QP86A321



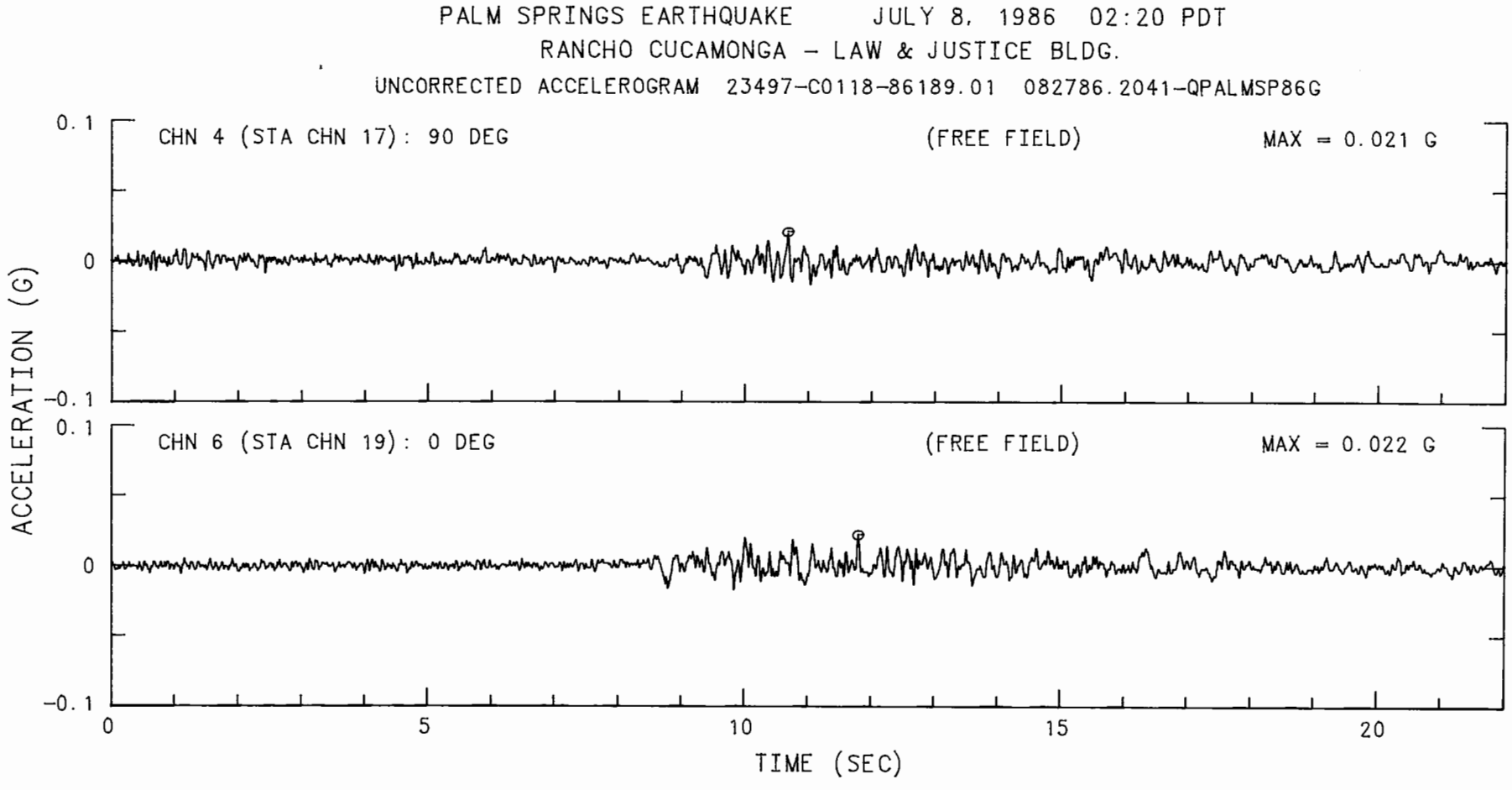
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
23321-S2562-86190.01 060287.1317-QP86A321



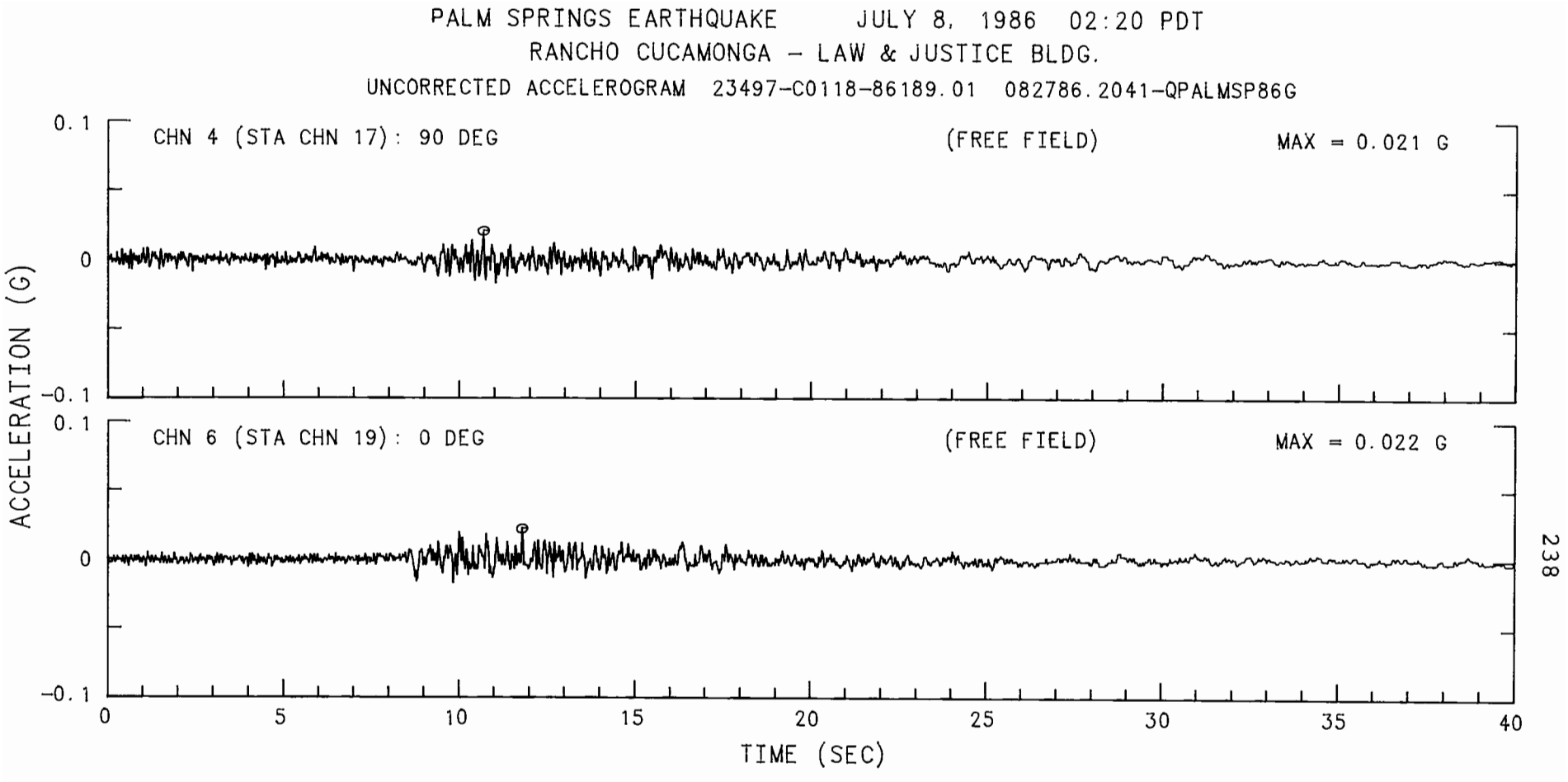
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
HESPERIA
CHN 3: 2 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
23321-S2562-86190.01 060287.1317-QP86A321

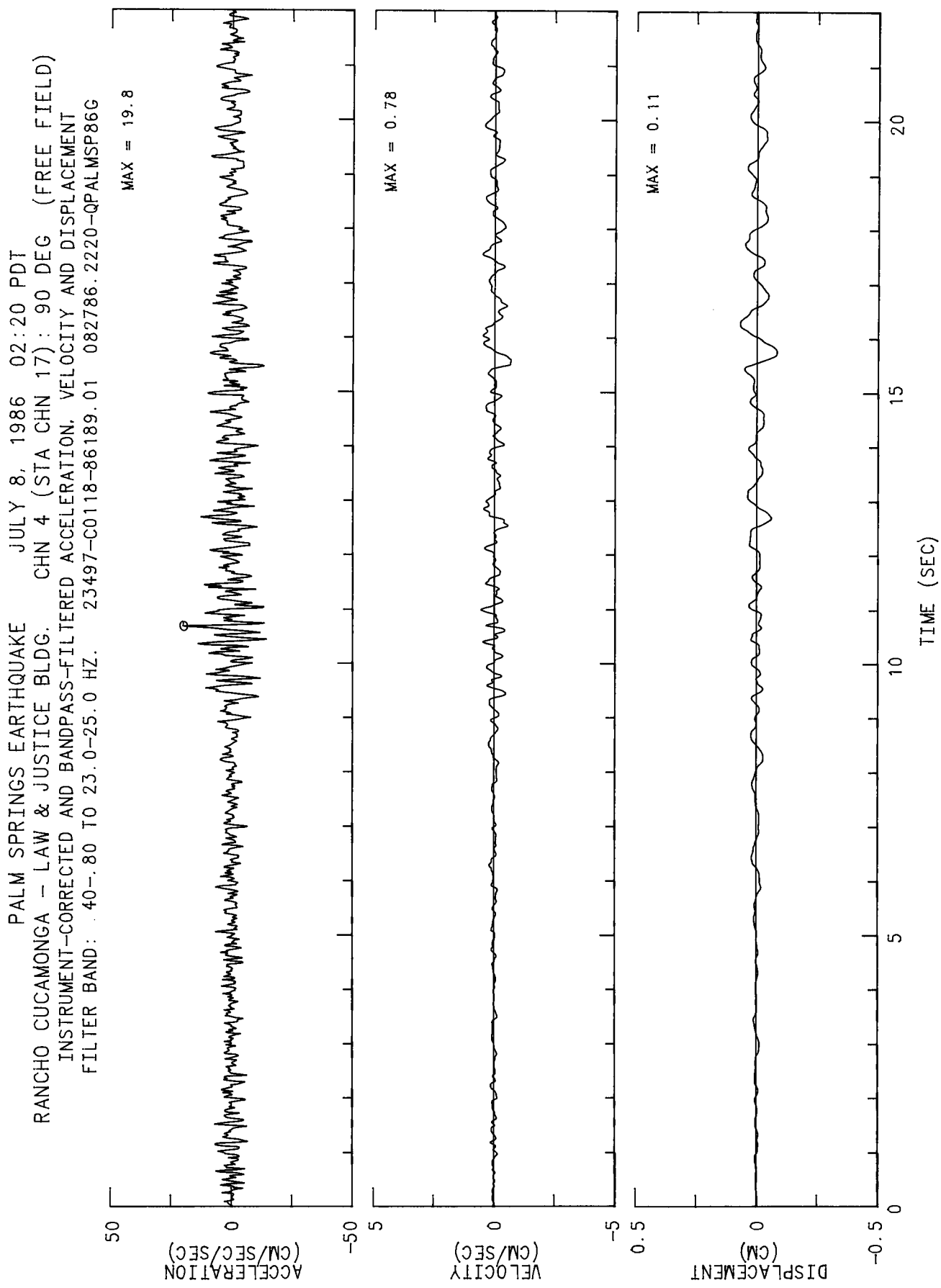


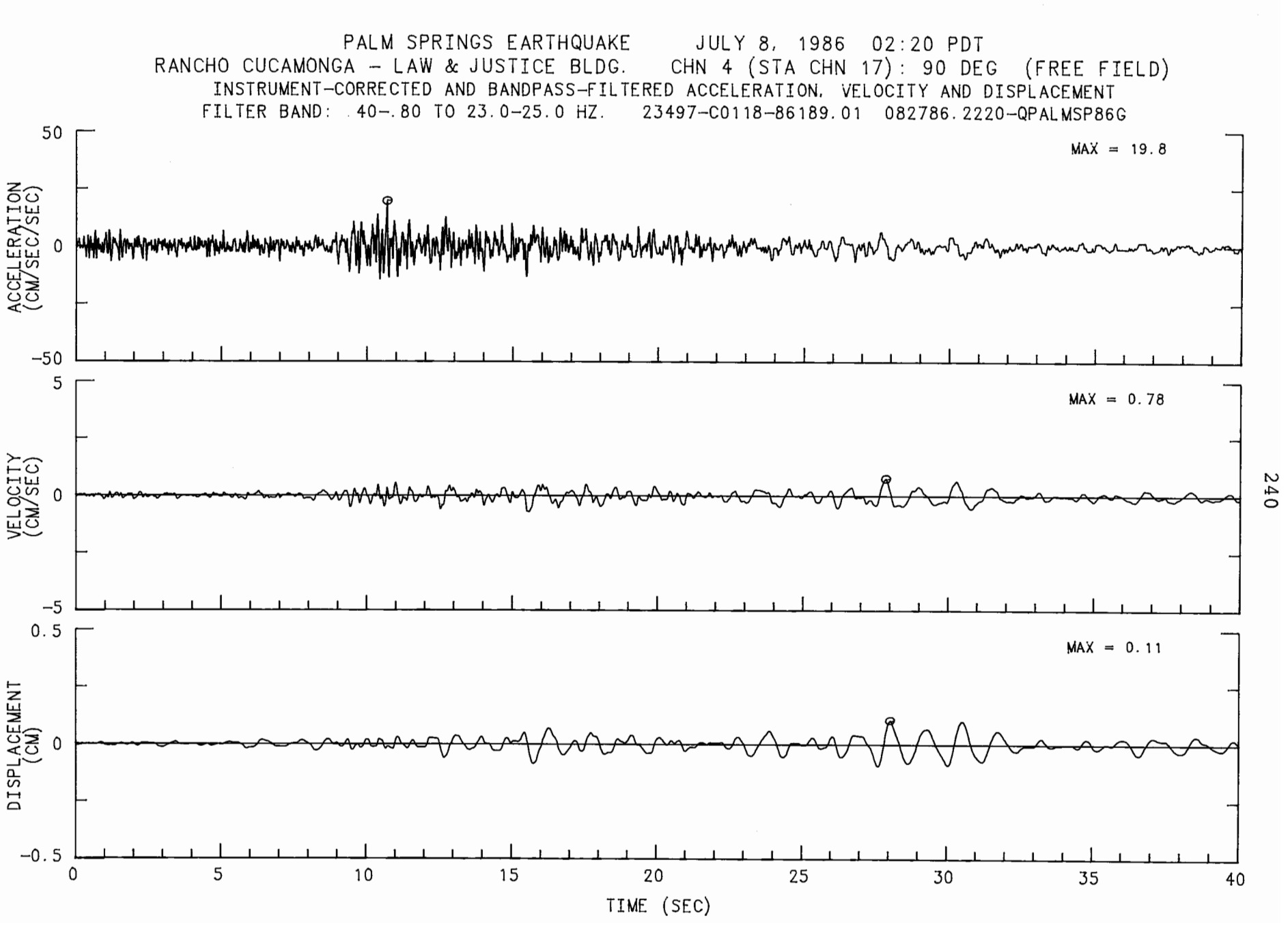
RANCHO CUCAMONGA - LAW & JUSTICE CENTER FREE FIELD

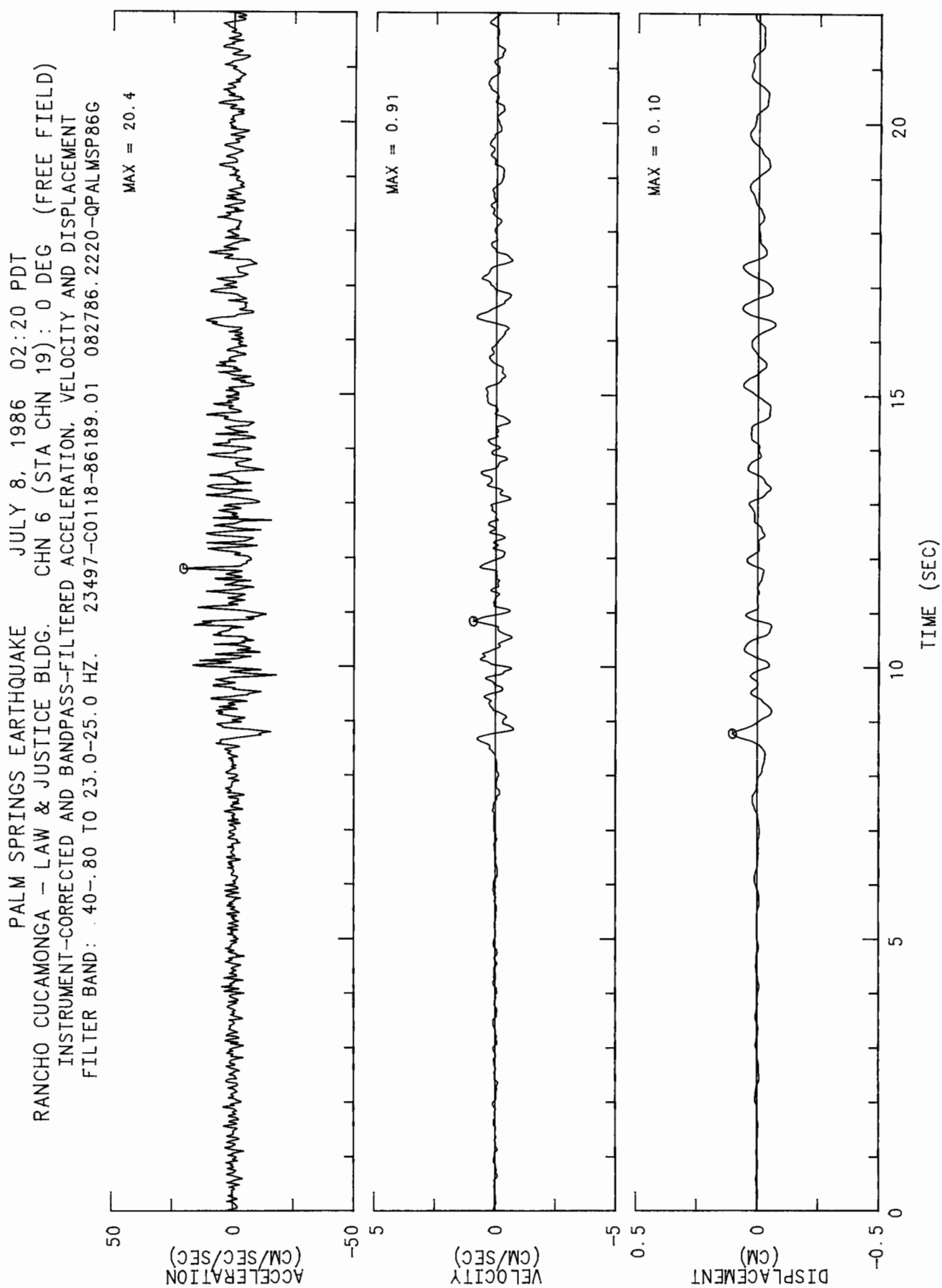


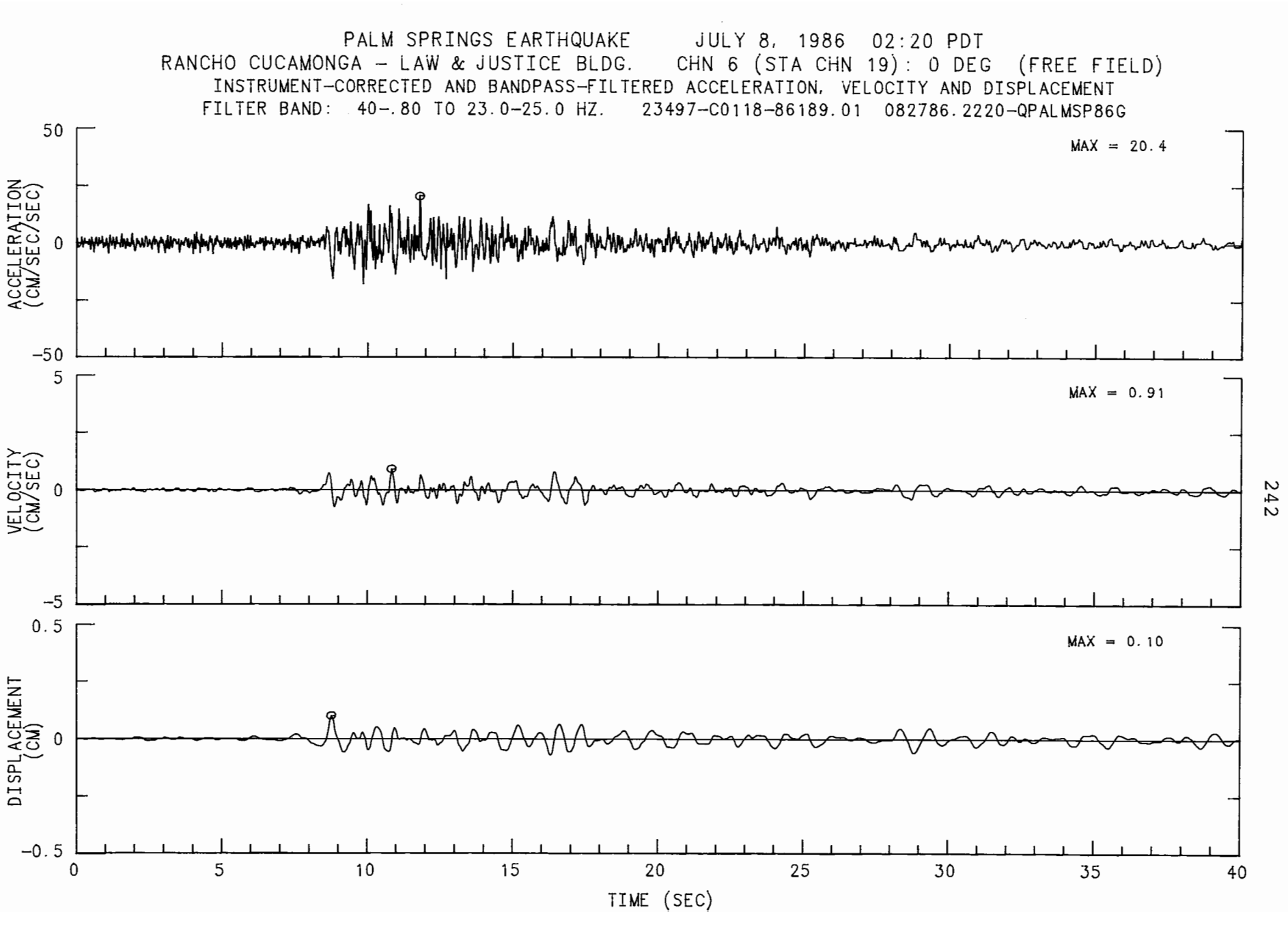

**Note: The vertical sensor malfunctioned during the earthquake.**


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA – LAW & JUSTICE BLDG.
UNCORRECTED ACCELEROGRAM 23497-C0118-86189.01 082786.2041-QPALMSP86G
CHN 4 (STA CHN 17): 90 DEG
(FREE FIELD)
MAX = 0.021 G
CHN 6 (STA CHN 19): 0 DEG
(FREE FIELD)
MAX = 0.022 G
ACCELERATION (G)
0.1
0
-0.1
0
5
10
15
20
25
30
35
40
TIME (SEC)

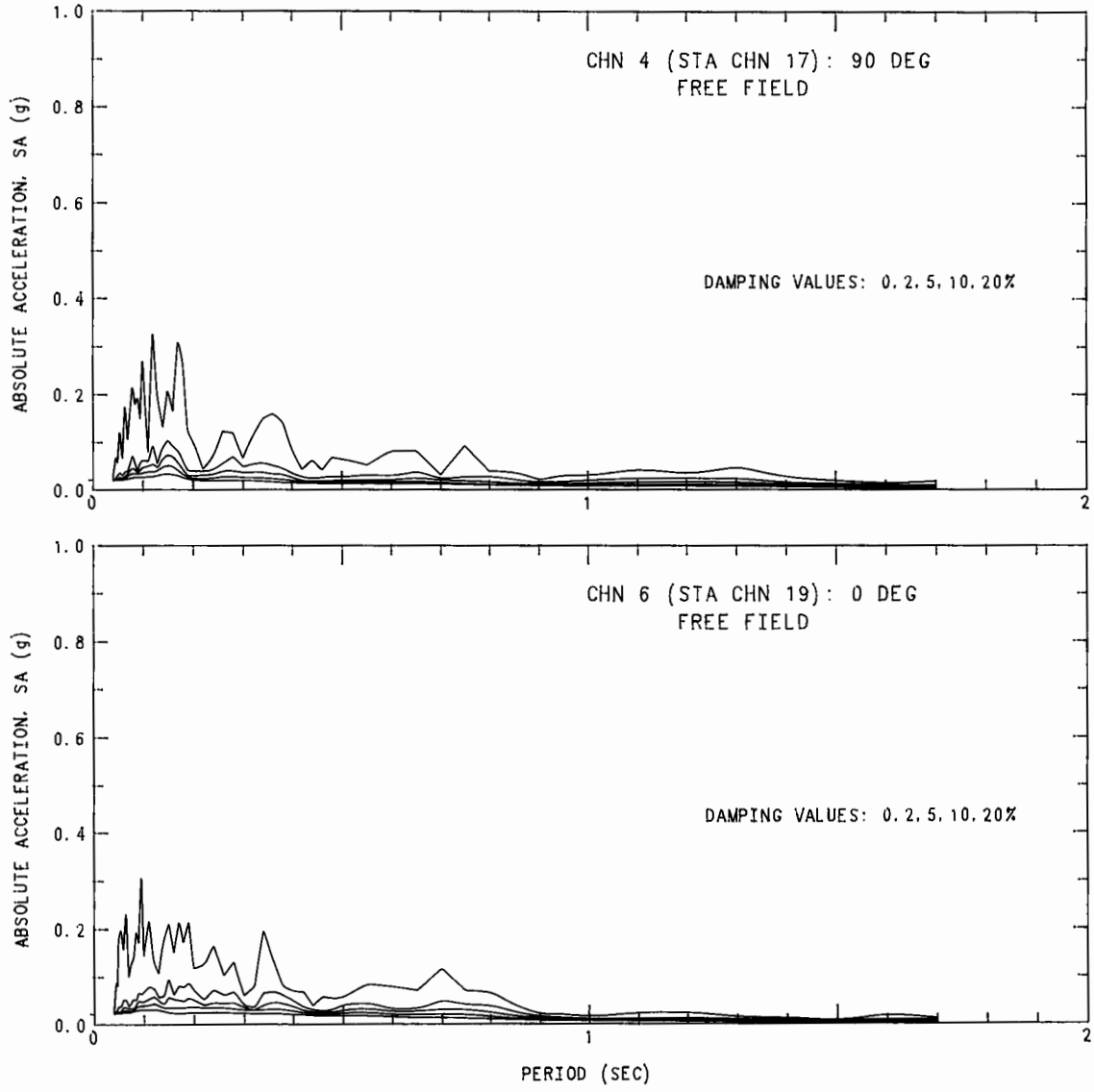

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA - LAW & JUSTICE BLDG. CHN 4 (STA CHN 17): 90 DEG (FREE FIELD)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 23497-C0118-86189.01 082786.2220-QPALMSP86G
MAX = 19.8
MAX = 0.78
MAX = 0.11
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
50
0
-50
5
0
-5
0.5
0
-0.5
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA - LAW & JUSTICE BLDG. CHN 4 (STA CHN 17): 90 DEG (FREE FIELD)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 23497-C0118-86189.01 082786.2220-QPALMSP86G
ACCELERATION (CM/SEC/SEC)
MAX = 19.8
VELOCITY (CM/SEC)
MAX = 0.78
DISPLACEMENT (CM)
MAX = 0.11
TIME (SEC)
240

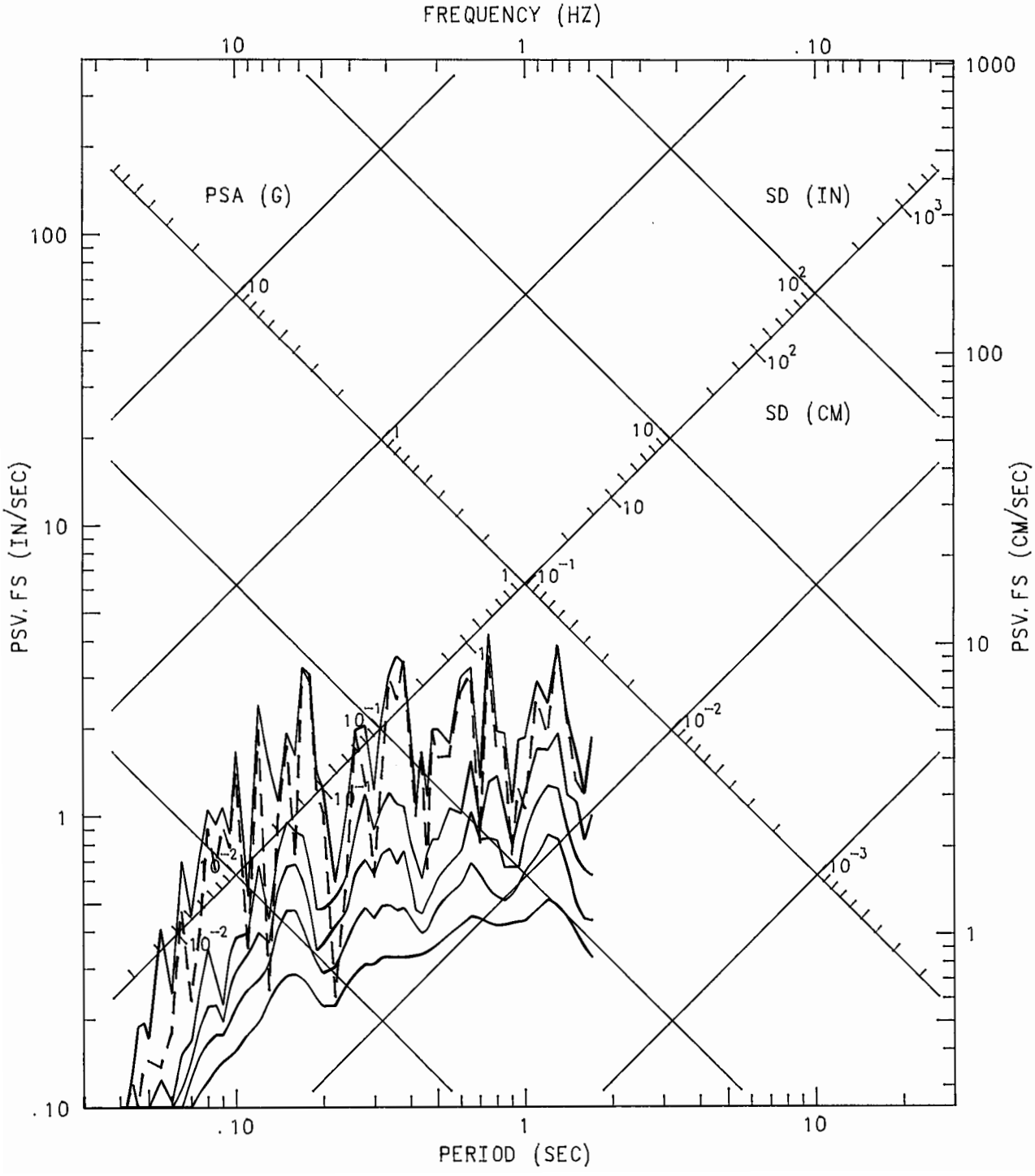

PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA - LAW & JUSTICE BLDG. CHN 6 (STA CHN 19): 0 DEG (FREE FIELD)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .40-.80 TO 23.0-25.0 HZ. 23497-C0118-86189.01 082786.2220-QPALMSP86G
MAX = 20.4
MAX = 0.91
MAX = 0.10
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
50
0
-50
5
0
-5
0.5
0
-0.5
0
5
10
15
20


PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA – LAW & JUSTICE BLDG. CHN 6 (STA CHN 19): 0 DEG (FREE FIELD)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 40-.80 TO 23.0-25.0 HZ. 23497-C0118-86189.01 082786.2220-QPALMSP86G
ACCELERATION (CM/SEC/SEC)
MAX = 20.4
VELOCITY (CM/SEC)
MAX = 0.91
DISPLACEMENT (CM)
MAX = 0.10
TIME (SEC)

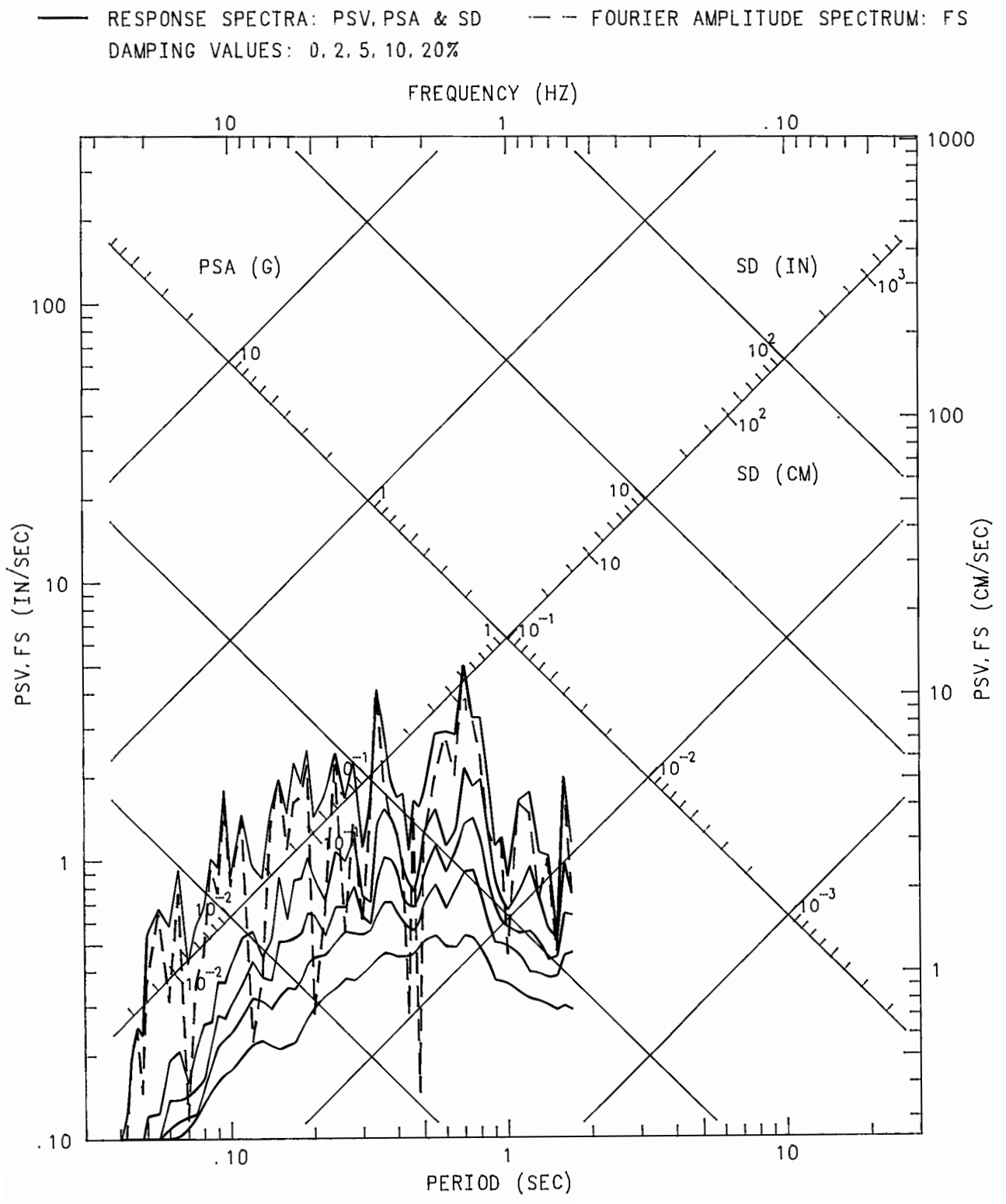
PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA -- LAW & JUSTICE BLDG.
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
23497-C0118-86189.01 011487.0912-QPALMSP86G



PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA - LAW & JUSTICE BLDG.
CHN 4 (STA CHN 17): 90 DEG (FREE FIELD)
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
23497-C0118-86189.01 011487.0912-QPALMSP86G



PALM SPRINGS EARTHQUAKE JULY 8, 1986 02:20 PDT
RANCHO CUCAMONGA - LAW & JUSTICE BLDG.
CHN 6 (STA CHN 19): 0 DEG (FREE FIELD)
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .40-.80 TO 23.0-25.0 HZ.
23497-C0118-86189.01 011487.0912-QPALMSP86G



# LIST OF CSMIP REPORTS AND DATA TAPES

California Department of Conservation
Division of Mines and Geology
Office of Strong Motion Studies
California Strong Motion Instrumentation Program (CSMIP)

AVAILABLE REPORTS:

| Title | Number |
|---|---|
| I. Earthquake Data Reports: | |
| CSMIP Strong-Motion Records from the Chalfant Valley, California Earthquakes of July and August 1986 (in press) | OSMS 86-06 |
| CSMIP Strong-Motion Records from the Palm Springs, California Earthquake of 8 July 1986 | OSMS 86-05 |
| Selected Accelerograms from the Redlands, California Earthquake of October 2, 1985 (Including first records from a Base-Isolated Building) | OSMS 85-02 |
| CSMIP Strong-Motion Records from the Bishop, California Earthquake of 23 November 1984 | OSMS 84-12 |
| CDMG Strong-Motion Records from the Morgan Hill, California Earthquake of 24 April 1984 | OSMS 84-7 |
| Preliminary Summary of CDMG Strong-Motion Records from the 2 May 1983 Coalinga, California, Earthquake | OSMS 83-5.2 |
| Strong-Motion Records from the Mammoth Lakes, California Earthquake of 6 January 1983 | OSMS 83-1.1 |
| Strong-Motion Records Recovered from the Mammoth Lakes, California, Earthquake of 30 September 1981 | OSMS 81-10.1 |
| Strong-Motion Records Recovered from the Westmorland, California, Earthquake of 25 April 1981 | OSMS 81-5.1 |
| Strong-Motion Records Recovered from the Trindad-Offshore, California, Earthquake of 8 November 1980 | OSMS 80-11.1 |
| Strong-Motion Records from the Livermore Earthquakes of 24 and 26 January 1980 | PR 28 |
| Strong-Motion Records from the Mammoth Lakes Earthquakes of May 1980 | PR 27 |
| Compilation of Strong-Motion Records and Preliminary Data from the Imperial Valley Earthquake of 15 October 1979 | PR 26 |
| Compilation of Strong-Motion Records from the Coyote Lake Earthquake of 6 August 1979 | PR 25 |

| Title | Number |
|---|---|
| Compilation of Strong-Motion Records Recovered from the Bishop, California, Earthquake of 4 October 1978 | OSMS 78-7.1 |
| Compilation of Strong-Motion Records Recovered from the Santa Barbara Earthquake of 13 August 1978 | PR 22 |
| Catalog of Strong Motion Accelerograph Records Recovered by Office of Strong Motion Studies During 1982 | SR 154A |
| Catalog of Strong Motion Accelerograph Records Recovered by Office of Strong Motion Studies before January 1, 1982 | SR 154 |

II. Processed Data Reports:

| | |
|---|---|
| Processed Strong Motion Data from the San Salvador Earthquake of October 10, 1986 | OSMS 86-07 |
| Processed Data from the Strong-Motion Record Obtained at a Base-Isolated Building in Rancho Cucamonga, California during the Redlands Earthquake of 2 October 1985 | OSMS 86-01 |
| Processed Data from Strong-Motion Records of the Morgan Hill Earthquake of 24 April 1984: Part I Ground-Response Records | OSMS 85-04 |
| Processed Data from Strong-Motion Records of the Morgan Hill Earthquake of 24 April 1984: Part II Structural-Response Records | OSMS 85-05 |
| Processed Data from the Strong-Motion Records of the Imperial Valley Earthquake of 15 October 1979. Final Results | SP 65 |
| Processed Data from the San Juan Bautista 101/156 Separation Bridge and the San Juan Bautista Freefield Records from the Coyote Lake Earthquake 6 August 1979 | SP 64 |
| Processed Data from the Gilroy Array and Coyote Creek Records, Coyote Lake, California, Earthquake 6 August 1979 (Note: Does not include San Juan Bautista records) | PR 24 |
| Processed Data from the Strong-Motion Records of the Santa Barbara Earthquake of 13 August 1978. Final Results (in three volumes) | SR 144 |

III. Other Reports:

| | |
|---|---|
| Standard Tape Format of CSMIP Strong-Motion Data Tapes | OSMS 85-03 |
| California Strong-Motion Instrumentation Program: Construction and Installation Notes for a Ground-Response Station. | OSMS 85-01 |

There is a nominal charge for these reports.

12/86

AVAILABLE STRONG-MOTION DATA TAPES:

| Tape Name | Description |
|---|---|
| SANTBARB78 | Santa Barbara earthquake of 13 August 1978; Vol. 1, 2, and 3 data. |
| IMPERIAL79 | Imperial Valley earthquake of 15 October 1979 (County Services Bldg. and other CSMIP stations); Vol. 1, 2, and 3 data. |
| COYOTE79A | Coyote Lake earthquake of 6 August 1979, Gilroy Array stations; Vol. 1, 2, and 3 data. |
| COYOTE79B | Coyote Lake earthquake of 6 August 1979, San Juan Bautista overpass and nearest free-field station; Vol. 1, 2, and 3 data. |
| COYOTE79C | Coyote Lake earthquake of 6 August 1979, Halls Valley station; Vol. 1, 2, and 3 data. |
| MAMMOTH80A | Mammoth Lakes earthquakes of 25 May 1980 at 09:34 and 09:49 PDT; Vol. 1, 2, and 3 data. |
| MAMMOTH80B | Mammoth Lakes earthquakes of 25 May 1980 at 12:45 and 13:36 PDT; Vol. 1, 2, and 3 data. |
| MAMMOTH80C | Mammoth Lakes earthquakes of 26 May 1980 at 11:58 PDT and 27 May 1980 at 07:51 PDT, Vol. 1, 2, and 3 data. |
| WESTMOR81 | Westmorland earthquake of 26 April 1981; Vol. 1, 2, and 3 data. |
| COALINGA83 | Coalinga earthquake of 2 May 1983, 16:43 PDT; Vol. 2 and 3 data for 47 records. |
| COALINGA83-IA | Coalinga earthquake of 2 May 1983, Vol. 1 data for first 22 records. |
| COALINGA83-IB | Coalinga earthquake of 2 May 1983, Vol. 1 data for remaining 25 records. |
| COALINGA83AS | Vol. 2 and 3 data for eight aftershocks of the Coalinga 2 May 1983 earthquake. The aftershocks occurred between 8 May and 11 September 1983, and were of magnitude (ML) 4.3 - 6.0. |
| COALINGA83AS-I | Uncorrected acceleration data (Vol. 1) for the Coalinga aftershock records included on the tape COALINGA83AS. |
| RIODEL8083 | Processed data from the Highway 101 Overpass at Rio Dell for the earthquakes of: 8 Nov 1980 (6.9ML Trinidad-Offshore); 16 Dec 1982 (4.4ML Rio Dell) and 24 Aug 1983 (5.5ML Cape Mendicino Offshore); Vol. 1, 2, and 3 data. |
| MAMMOTH83 | Mammoth Lakes earthquakes of 7 Jan 1983 at 01:38 and 03:24 GMT; Vol. 1, 2, and 3 data. |

| Tape Name | Description |
|---|---|
| MORGANHILL84-IG | Morgan Hill earthquake of 24 April 1984; Vol. 1 data for 19 ground-response records. |
| MORGANHILL84-G | Morgan Hill earthquake of 24 April 1984; Vol. 2 and 3 data for 19 ground-response records. |
| MORGANHILL84-IS | Morgan Hill earthquake of 24 April 1984; Vol. 1 data for 9 structural-response records. |
| MORGANHILL84-S | Morgan Hill earthquake of 24 April 1984; Vol. 2 and 3 data for 9 structural-response records. |
| REDLANDS85 | Redlands earthquake of 2 October 1985; Vol. 1, 2 and 3 data for the Law & Justice Building at Rancho Cucamonga. |
| HOLLISTER86 | Hollister earthquake of 26 January 1986; Vol. 1, 2 and 3 data. |
| MTLEWIS86 | Mt. Lewis earthquake of 31 March 1986; Vol. 1, 2 and 3 data. |
| SANSALVADOR86 | San Salvador earthquake of October 10, 1986; Vol. 1, 2 and 3 data. |

Footnotes:

Vol. 1 data - uncorrected accelerations.
Vol. 2 data - instrument and baseline-corrected acceleration, velocity, and displacement.
Vol. 3 data - Response and Fourier amplitude spectra.

The magnetic tapes are provided at cost. Included with each tape is a copy of either the processed data report (if available) or the plots of the data.

Requests for the reports and data tapes and/or for additional information should be addressed to:

Office of Strong Motion Studies
California Division of Mines and Geology
630 Bercut Drive
Sacramento, CA 95814

Phone: (916) 322-3105

12/86

PROCESSED ACCELEROGRAMS ON CSMIP DATA TAPES:



Tape: SANTBARB78

Santa Barbara Earthquake of 13 Aug 1978, 15:54 PDT, ML=5.1(CIT)

UCSB Goleta Free Field, 3 channels
Santa Barbara - UCSB North Hall, 9 channels
Santa Barbara - Freitas Building, 9 channels
Ventura - Holiday Inn, 15 channels

Tape: IMPERIAL79

Imperial Valley Earthquake of 15 Oct 1979, 16:17 PDT, ML=6.6(CIT)

Niland, 3 channels
Westmorland, 3 channels
Westmorland, aftershock record, 3 channels
El Centro - Imperial County Services Bldg. Free Field, 3 channels
El Centro - Imperial County Services Building, 13 channels
El Centro - Highway 8/Meloland Road Overpass, 13 channels

Tape: COYOTE79A

Coyote Lake Earthquake of 6 Aug 1979, 10:05 PDT, ML=5.9(BRK)

Gilroy #1, 3 channels
Gilroy #2, 3 channels
Gilroy #3, 3 channels
Gilroy #4, 3 channels
Gilroy #6, 3 channels
Coyote Lake Dam (San Martin), 3 channels

Tape: COYOTE79B

Coyote Lake Earthquake of 6 Aug 1979, 10:05 PDT, ML=5.9(BRK)

San Juan Bautista - Fire Station, 3 channels
San Juan Bautista - Highway 101/156 Overpass, 12 channels

Tape: COYOTE79C

Coyote Lake Earthquake of 6 Aug 1979, 10:05 PDT, ML=5.9(BRK)

Halls Valley, 3 channels

Tape: MAMMOTH80A

Mammoth Lakes Earthquake of 25 May 1980, 09:34 PDT, ML=6.1(BRK),6.4(CIT)

Convict Creek, 3 channels
Long Valley Dam, 22 channels
Mammoth Lakes - High School Gym, 10 channels

Aftershock at 25 May 1980, 09:36 PDT, ML=unknown

Mammoth Lakes - High School Gym, 10 channels

Mammoth Lakes Earthquake of 25 May 1980, 09:49 PDT, ML=6.0(BRK),5.8(CIT)

Convict Creek, 3 channels
Long Valley Dam, 3 channels
Mammoth Lakes - High School Gym, 4 channels

Tape: MAMMOTH80B

Mammoth Lakes Earthquake of 25 May 1980, 12:45 PDT, ML=6.1(BRK),6.5(CIT)

Convict Creek, 3 channels
Long Valley Dam, 19 channels

Mammoth Lakes Earthquake of 25 May 1980, 13:36 PDT, ML=5.7(BRK),5.5(CIT)

Convict Creek, 3 channels
Long Valley Dam, 19 channels

Aftershock approx 58 seconds after 25 May 1980, 13:36 Event, ML=unknown

Convict Creek, 3 channels

Tape: MAMMOTH80C

Mammoth Lakes Earthquake of 26 May 1980, 11:58 PDT, ML=5.7(BRK),4.9(CIT)

Convict Creek, 3 channels
Long Valley Dam, 9 channels

Mammoth Lakes Earthquake of 27 May 1980, 07:51 PDT, ML=6.2(BRK),6.3(CIT)

Convict Creek, 3 channels
Long Valley Dam, 22 channels
Bishop - Paradise Lodge, 3 channels
Benton, 3 channels

Tape: WESTMOR81

Westmorland Earthquake of 26 Apr 1981, 05:09 PDT, ML=5.7(CIT),6.3(BRK)

Westmorland, 3 channels
Niland, 3 channels

Tapes: COALINGA83, COLINGA83-IA, COLINGA83-IB *

Coalinga Earthquake of 2 May 1983, 16:42 PDT, ML=6.5(BRK)

Cantua Creek School, 3 channels
Slack Canyon, 3 channels
Parkfield - Vineyard Canyon 2E, 3 channels
Parkfield - Vineyard Canyon 1E, 3 channels
Parkfield - Vineyard Canyon 1W, 3 channels
Parkfield - Vineyard Canyon 2W, 3 channels
Parkfield - Vineyard Canyon 3W, 3 channels
Parkfield - Vineyard Canyon 4W, 3 channels
Parkfield - Vineyard Canyon 5W, 3 channels
Parkfield - Vineyard Canyon 6W, 3 channels
Parkfield - Gold Hill 3E, 3 channels
Parkfield - Gold Hill 2E, 3 channels
Parkfield - Gold Hill 1W, 3 channels
Parkfield - Gold Hill 2W, 3 channels
Parkfield - Gold Hill 3W, 3 channels
Parkfield - Gold Hill 4W, 3 channels
Parkfield - Gold Hill 5W, 3 channels
Parkfield - Gold Hill 6W, 3 channels
Parkfield - Stone Corral 4E, 3 channels
Parkfield - Stone Corral 3E, 3 channels
Parkfield - Stone Corral 2E, 3 channels
Parkfield - Stone Corral 1E, 3 channels
Parkfield - Cholame 3E, 3 channels
Parkfield - Cholame 2E, 3 channels
Parkfield - Cholame 1E, 3 channels
Parkfield - Cholame 2WA, 3 channels
Parkfield - Cholame 3W, 3 channels
Parkfield - Cholame 4W, 3 channels
Parkfield - Cholame 4A W, 3 channels
Parkfield - Cholame 5W, 3 channels
Parkfield - Cholame 6W, 3 channels
Parkfield - Cholame 8W, 3 channels
Parkfield - Cholame 12W, 3 channels
Parkfield - Fault Zone 16, 3 channels
Parkfield - Fault Zone 15, 3 channels
Parkfield - Fault Zone 14, 3 channels
Parkfield - Fault Zone 12, 3 channels
Parkfield - Fault Zone 11, 3 channels
Parkfield - Fault Zone 10, 3 channels
Parkfield - Fault Zone 9, 3 channels
Parkfield - Fault Zone 8, 3 channels
Parkfield - Fault Zone 7, 3 channels
Parkfield - Fault Zone 6, 3 channels
Parkfield - Fault Zone 4, 3 channels
Parkfield - Fault Zone 3, 3 channels
Parkfield - Fault Zone 2, 3 channels
Parkfield - Fault Zone 1, 3 channels

* Tape COALINGA83 contains the Vol. 2 and 3 data for the listed accelerograms; the corresponding Vol. 1 data are on tapes COALINGA83-IA and COALINGA83-IB.

Tapes: COALINGA83AS, COLINGA83AS-I **

Records from 8 aftershocks of the Coalinga Earthquake of 2 May 1983

Event #2: 8 May 1983, 19:49 PDT, ML=5.1(BRK)

Coalinga - Sulphur Baths, 3 channels
Coalinga - CHP, 3 channels
Anticline Ridge - Palmer Ave., 3 channels
Oil Fields - Skunk Hollow, 3 channels
Harris Ranch, 3 channels

Event #3: 10 June 1983, 20:10 PDT, ML=5.1(BRK)
Event #4: 9 July 1983, 00:41 PDT, ML=5.3(BRK)
Event #5: 21 July 1983, 19:40 PDT, ML=6.0(BRK)
Event #6: 21 July 1983, 20:43 PDT, ML=5.0(BRK)
Event #7: 25 July 1983, 15:31 PDT, ML=5.1(BRK)
Event #8: 9 Sept 1983, 02:16 PDT, ML=5.3(BRK)
Event #9: 11 Sept 1983, 04:48 PDT, ML=4.3(BRK)

For each of events #3 through #9:

Coalinga - Sulphur Baths, 3 channels
Coalinga - CHP, 3 channels

** Vol. 1 data are on tape COALINGA83AS-I; Vol. 2 and 3 data are on tape COALINGA83AS.

Tape: RIODEL8083

Trinidad Offshore Earthquake of 8 Nov 1980, 02:27 PST, ML=6.9(BRK)

Rio Dell - Highway 101/Painter Street Overpass, 18 channels

Rio Dell Earthquake of 15 Dec 1982, 22:53 PST, ML=4.4(BRK)

Rio Dell - Highway 101/Painter Street Overpass, 15 channels

Cape Mendocino Offshore Earthquake of 24 Aug 1983, 06:36 PDT, ML=5.5(BRK)

Rio Dell - Highway 101/Painter Street Overpass, 15 channels

Tape: MAMMOTH83

Mammoth Lakes Earthquake of 6 Jan 1983, 17:38 PST, ML=5.2(BRK)

Convict Creek, 3 channels

Mammoth Lakes Earthquake of 6 Jan 1983, 19:24 PST, ML=5.4(BRK)

Convict Creek, 3 channels

Tapes: MORGANHILL84-G, MORGANHILL84-IG ***

Ground-response records from the Morgan Hill Earthquake of
24 Apr 1984, 13:15 PST, ML=6.2(BRK)

Halls Valley, 3 channels
Coyote Lake Dam (San Martin), 3 channels
Gilroy #7 - Mantelli Ranch, 3 channels
Gilroy #6, 3 channels
Gilroy #4, 3 channels
Gilroy #3, 3 channels
Gilroy #2, 3 channels
Gilroy #1, 3 channels
Gilroy - Gavilan College, 3 channels
Corralitos, 3 channels
Capitolas, 3 channels
Santa Cruz, 3 channels
San Juan Bautista - Fire Station, 3 channels
Los Banos, 3 channels
Agnews - State Hospital, 3 channels
Redwood City - APEEL #1, 3 channels
San Francisco - International Airport, 3 channels
Fremont - Mission San Jose, 3 channels
Hayward - APEEL #1E, 3 channels

Tapes: MORGANHILL84-S, MORGANHILL84-IS ***

Structural-response records from the Morgan Hill Earthquake of
24 Apr 1984, 13:15 PST, ML=6.2(BRK)

San Jose - Town Park Apartment Towers, 13 channels
San Jose - Great Western Savings Bldg., 13 channels
San Jose - Santa Clara County Bldg., 22 channels
Saratoga - West Valley College Gym, 11 channels
Watsonville - Telephone Bldg., 13 channels
Hollister - Glorietta Warehouse, 13 channels
South San Francisco - Kaiser Medical Center, 11 channels
San Juan Bautista - Highway 101/156 Overpass, 10 channels

*** Vol. 1 data are on tapes MORGANHILL84-IG and MORGANHILL84-IS; Vol. 2 and 3 data are on tapes MORGANHILL84-G and MORGANHILL84-S.

Tape: REDLANDS85

Redlands Earthquake of 2 Oct 1985, 16:44 PDT, ML=4.8(CIT)

Rancho Cucamonga - Law & Justice Building (base-isolated),
16 channels plus 3 free field channels

Tape: HOLLISTER86

Hollister Earthquake of 26 January 1986, 11:21 PST, ML=5.5(BRK)

SAGO South - Tunnel, 3 channels
SAGO South - Surface, 3 channels
Hollister - Glorietta Warehouse, 13 channels

Tape: MTLEWIS86

Mt. Lewis Earthquake of 31 March 1986, 03:56 PST, ML=5.8(BRK)

Halls Valley, 3 channels
San Jose - Santa Clara County Bldg., 22 channels
San Jose - Great Western Savings Bldg., 13 channels
San Jose - Town Park Apartment Towers, 13 channels

Tape: SANSALVADOR86

San Salvador Earthquake of 10 October 1986, 17:49 GMT, MS=5.4(CIG)

National Geographical Institute (IGN), 3 channels
Geotechnical Investigation Center (CIG), 3 channels
Institute Urban Construction (IVU), 2 channels
Hotel Camino Real (HCR) - Basement, 3 channels
Hotel Camino Real (HCR) - 2nd Floor, 3 channels
Hotel Camino Real (HCR) - Roof, 1 channel
Centro Americana University (UCA), 3 channels
Hotel Sheraton (HSH), 3 channels

12/86