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October 9, 1992

Plots to Accompany Data Set: Landers (Release No. 1)

Preliminary Processed Strong-Motion Data for the Landers Earthquake of 28 June 1992

California Strong Motion Instrumentation Program (CSMIP)

OSMS 92-11

The attached plots are for the records from 6 selected ground-response stations for the 28 June 1992 Landers earthquake. For each station there is a set of plots which is identified by an index number at the upper corner of each page as follows:

Set No.	Station Name	No. of Channels
1	Yermo - Fire Station	3
2	Barstow - Vineyard & H St.	3
3	Joshua Tree - Fire Station	3
4	Desert Hot Springs - Fire Station	3
5	Palm Springs - Airport	3
6	Inglewood - Union Oil Yard	3

A preliminary release of these processed data is being made because of their unprecedented long-period content, probably due to the large magnitude of the earthquake. The bandwidth of the data extends beyond the traditional broadest bandwidth used by CSMIP, which dates back to the Caltech Bluebook processing. This bandwidth is 0.05-0.07 to 23-25 Hz, or 0.04 to 15 seconds period. The data appear to have reliable signal beyond 15 seconds period, but we need to extend the noise analysis of the CSMIP digitization system to increase knowledge about the noise in this period range. In the meantime, this preliminary release of the processed data within the traditional 0.04 to 15 sec bandwidth is being made so that users will not be delayed from analyzing the data. We expect the final release to differ inconsequentially in acceleration and response spectra; differences will be small in velocity, but could be important in long-period displacement.

For each of the stations listed above plots of the processed data are presented here. The order of the plots for each station is as follows:

1. Phase 1 (Vol. 1) data: uncorrected accelerations. Acceleration for the first 22 seconds is plotted with a common scaling factor of 0.3 g for all channels; three channels are plotted on one page. This plot is followed by a second plot with the full processed length (generally, 80 seconds), again with common scaling factor of 0.3 g for all channels.

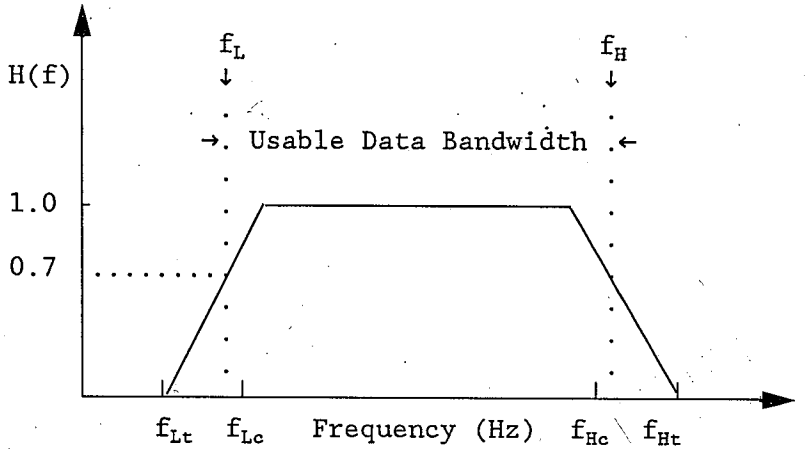
2. Phase 2 (Vol. 2) data: instrument and baseline-corrected acceleration, velocity and displacement. The data for the full processed length of 80 seconds are plotted with equal scaling for all 6 stations. The filter frequencies used in the processing are indicated on the plots (see Usable Data Bandwidth).

3. Phase 3 (Vol. 3) data: response spectra. The pseudo-velocity spectra (PSV), the pseudo-acceleration spectra (PSA), and the displacement spectra (SD) for 0%, 2%, 5%, 10%, and 20% dampings are presented on one tripartite logarithmic plot for each channel. The spectra are plotted for periods within the Usable Data Bandwidth.

4. Phase 3 (Vol. 3) data: response spectra. The absolute acceleration spectra (SA) for 0%, 2%, 5%, 10% and 20% dampings are plotted against period with linear-linear scaling.

DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. The digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered by a high-frequency filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz. Then the data are high-pass filtered by a low-frequency filter with a corner frequency of 0.07 Hz and a roll-off termination of 0.05 Hz. Therefore, the Phase 2 data is the result of the digitized data being filtered by the bandpass filter H(f) with ramps as shown in the figure:

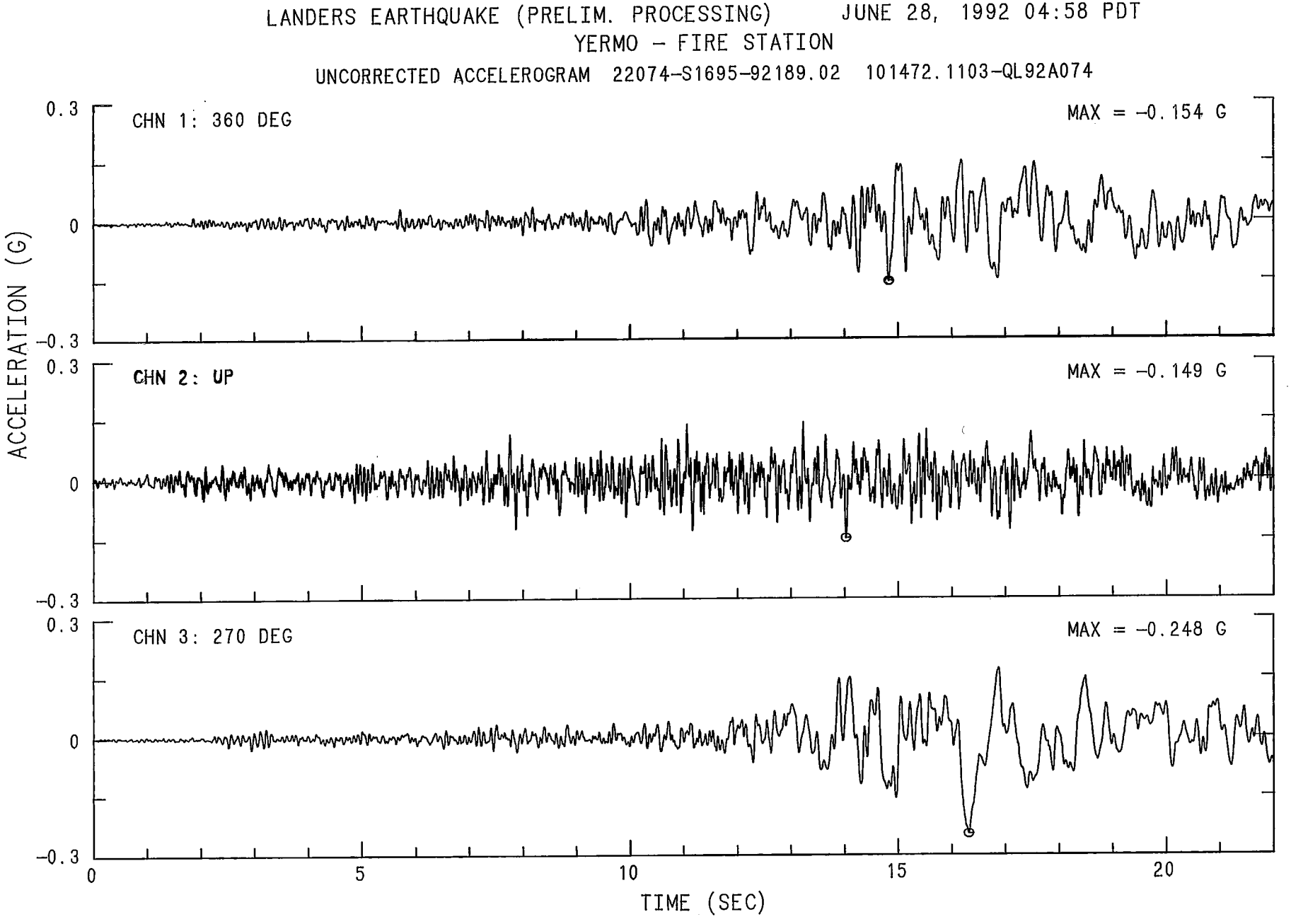


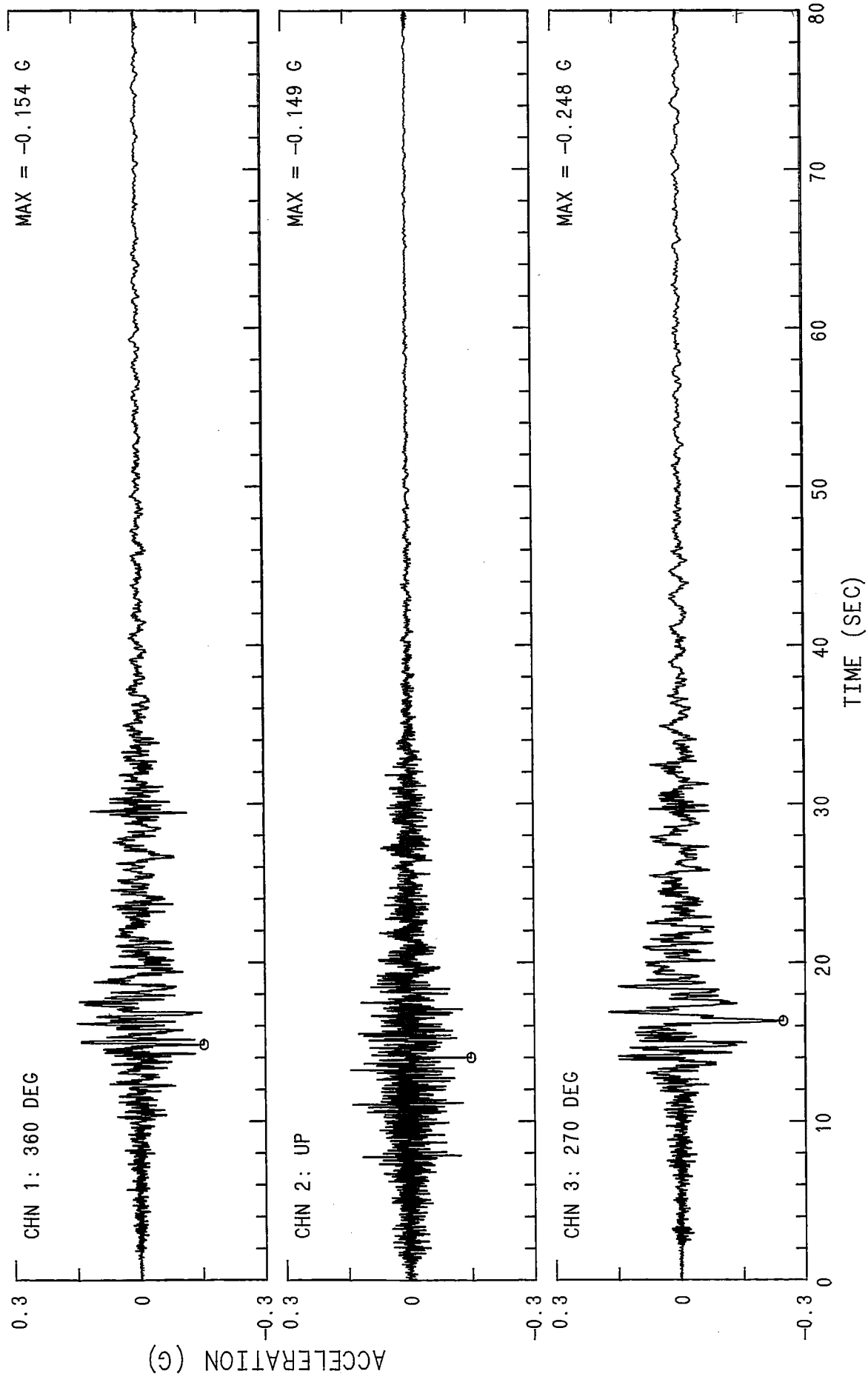
The usable data bandwidth is defined as the band between frequencies f_H and f_L, where f_H and f_L are the -3 dB points on the high-frequency and low-frequency ramps, respectively. The value of H(f) is approximately equal to 0.7 for -3 dB (see Notes). The user should only use these data for analyses within this bandwidth.

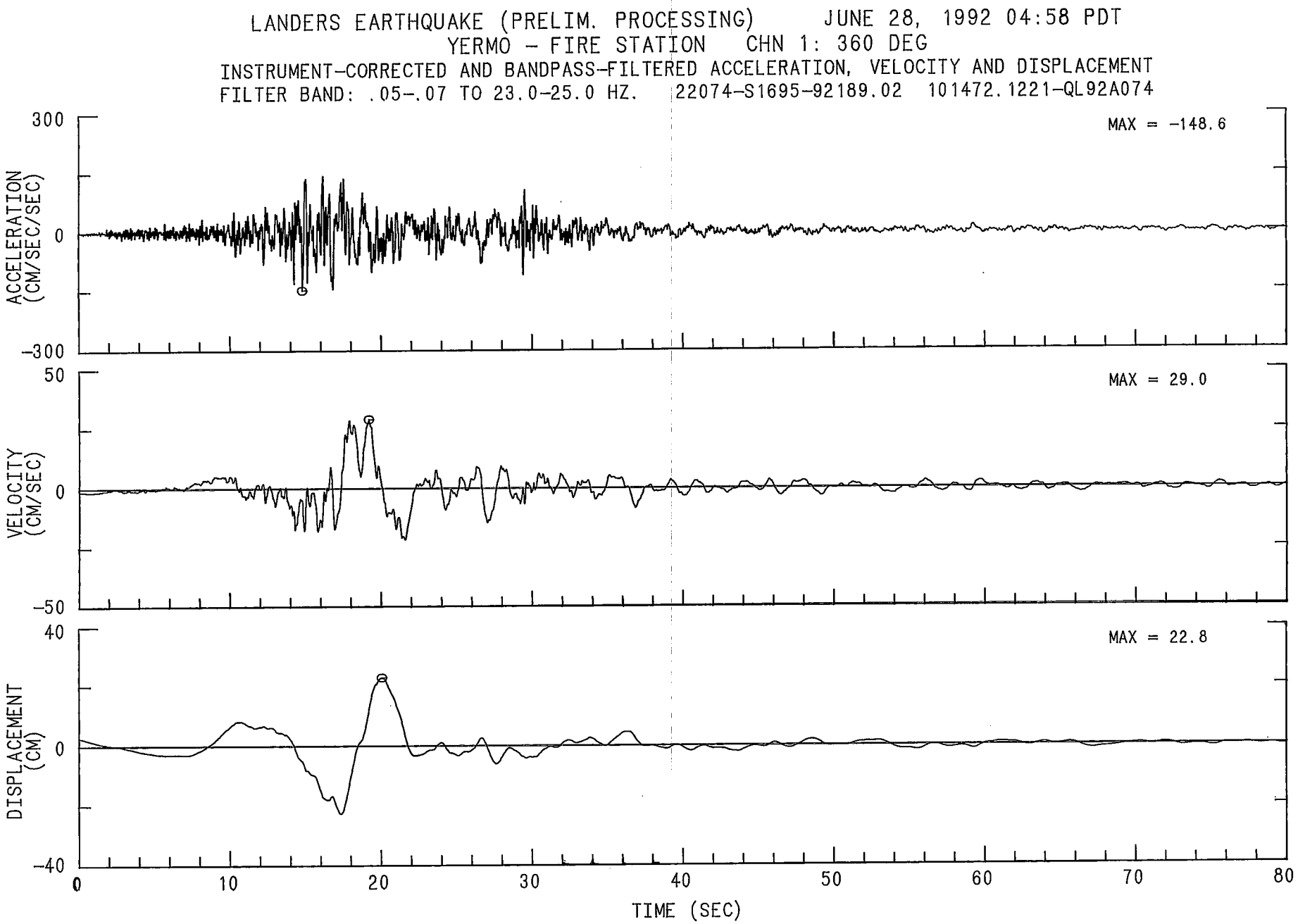
Notes:

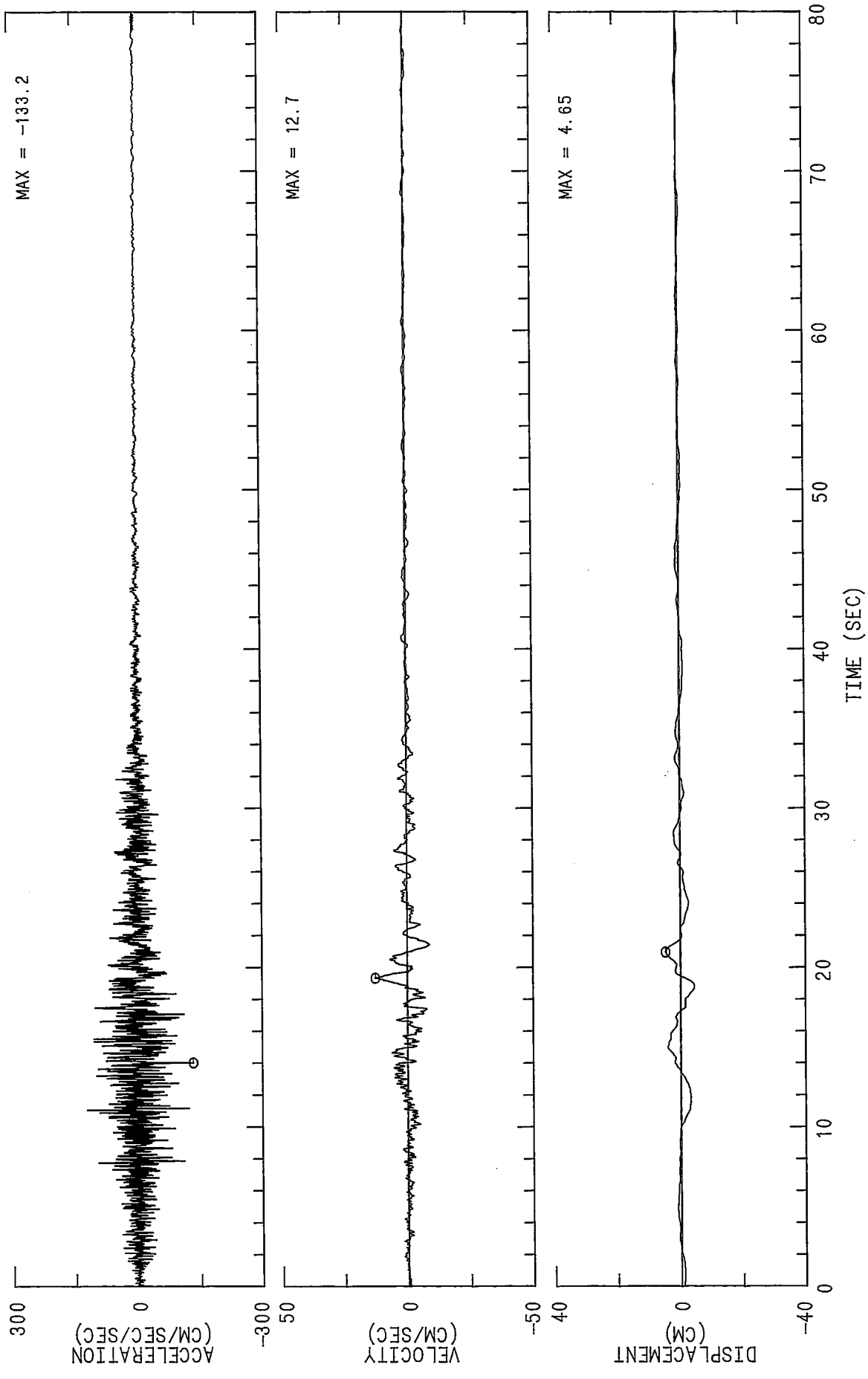
1) The values of f_H and f_L can be calculated from the corner frequencies (f_{Hc}, f_{Lc}) and the roll-off termination frequencies (f_{Ht}, f_{Lt}) used in the processing by using the formulas $f_H = f_{Hc} + 0.3 * (f_{Ht} - f_{Hc})$ and $f_L = f_{Lc} - 0.3 * (f_{Lc} - f_{Lt})$. For this preliminary processing, the usable data bandwidth for data bandpass-filtered with ramps at 0.05 to 0.07 Hz and 23.0 to 25.0 Hz is 0.064 Hz to 23.6 Hz (0.04 to 15 seconds period).

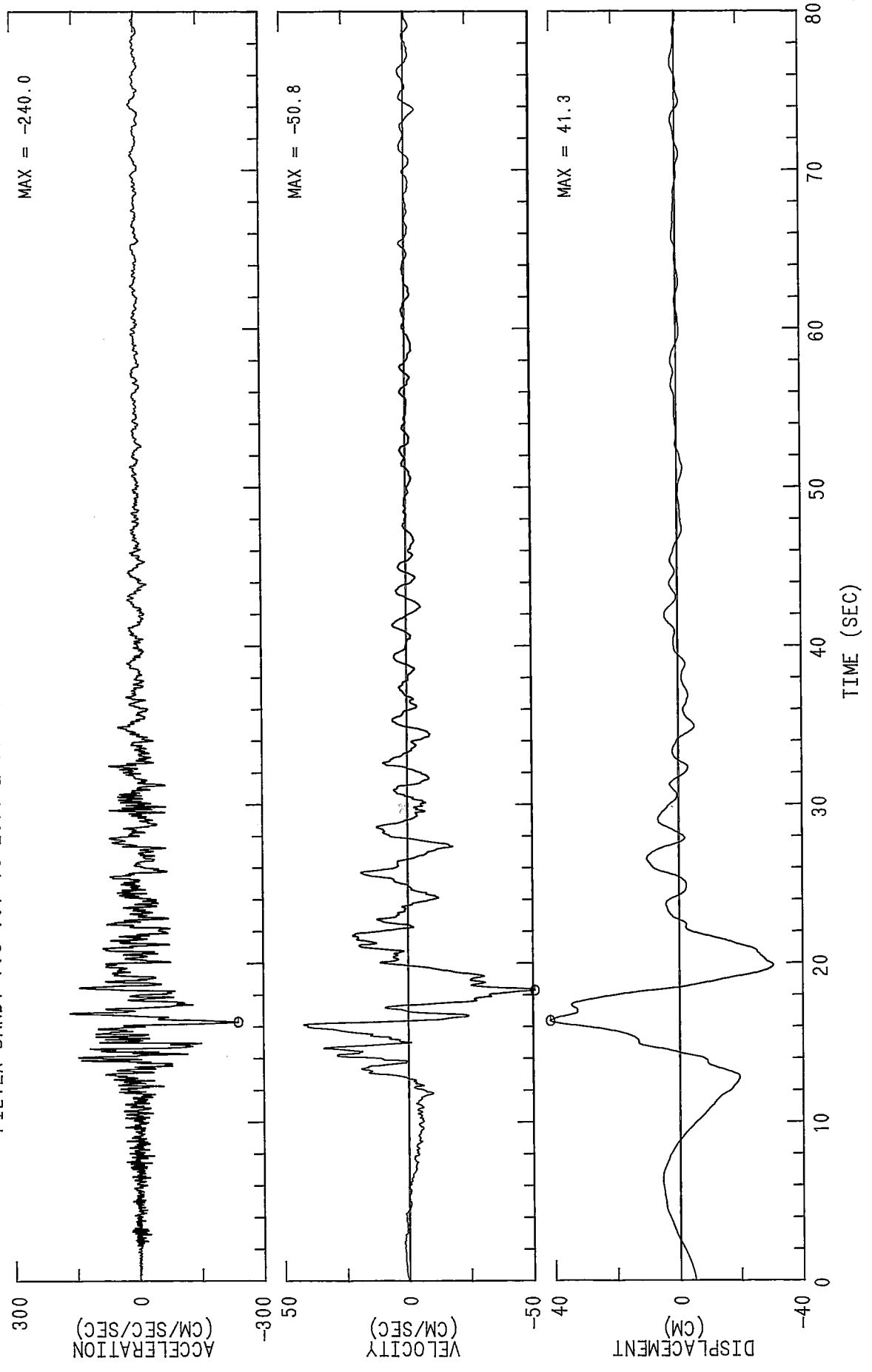
2) It is common in signal processing to plot 20 $\log_{10}[H(f)]$ versus frequency, and express the ordinate value in decibels (abbreviated dB). Accordingly, 0 dB corresponds to a value of H(f) equal to 1; 20 dB is equivalent to H(f) = 10, and -20 dB corresponds to H(f) = 0.1. Thus, at the -3 dB frequency point, the amplitude of the transfer function, H(f) is reduced to 0.7, while the power transmitted by the filter, $H^2(f)$, is reduced to 0.5.


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
UNCORRECTED ACCELEROGRAM 22074-S1695-92189.02 101472.1103-QL92A074
CHN 1: 360 DEG
MAX = -0.154 G
CHN 2: UP
MAX = -0.149 G
CHN 3: 270 DEG
MAX = -0.248 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

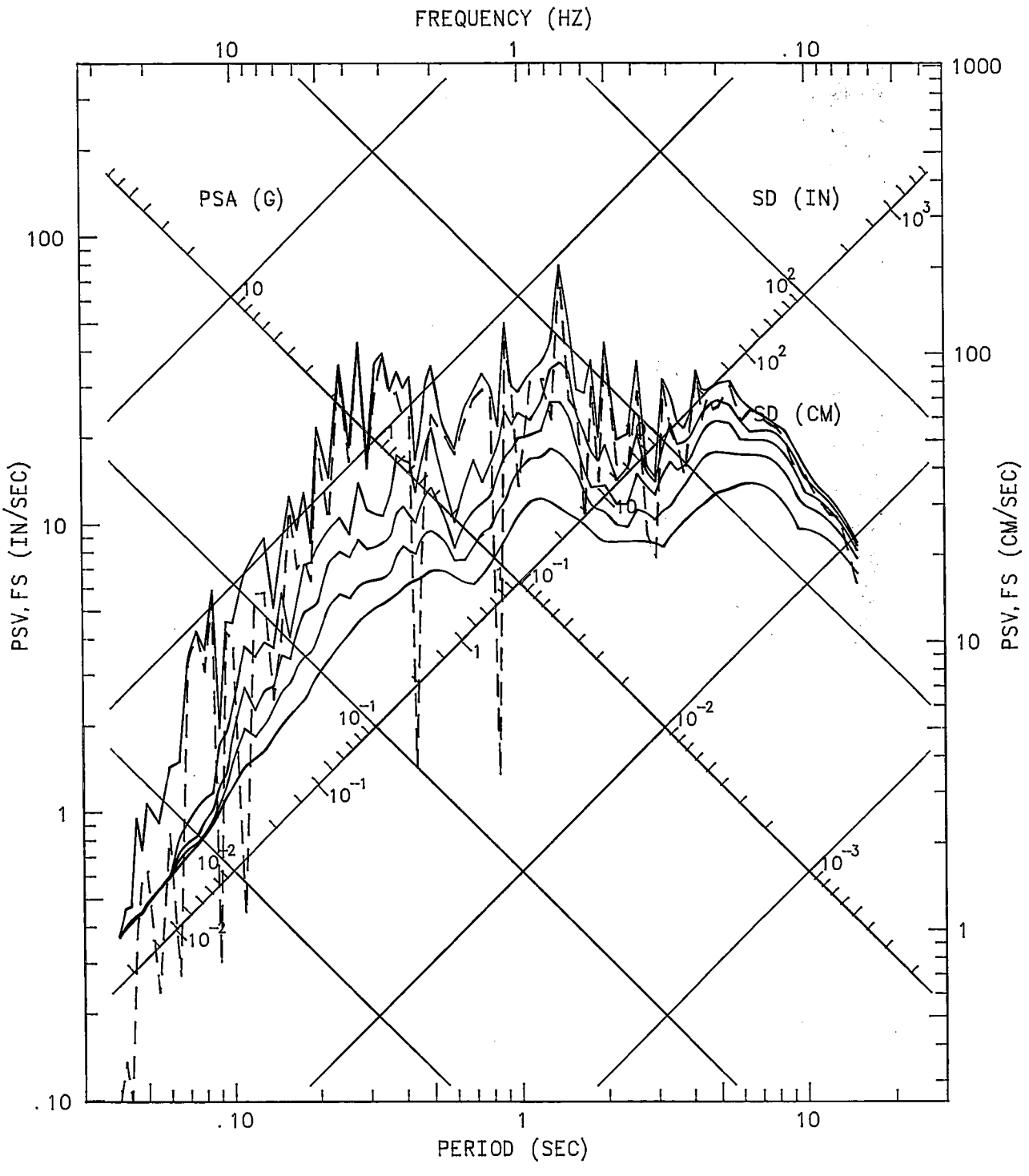

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
UNCORRECTED ACCELEROGRAM 22074-S1695-92189.02 101472.1103-QL92A074
CHN 1: 360 DEG
MAX = -0.154 G
CHN 2: UP
MAX = -0.149 G
CHN 3: 270 DEG
MAX = -0.248 G
ACCELERATION (G)
0.3
0
-0.3
TIME (SEC)
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101472.1221-QL92A074
ACCELERATION (CM/SEC/SEC)
300
0
-300
MAX = -148.6
VELOCITY (CM/SEC)
50
0
-50
MAX = 29.0
DISPLACEMENT (CM)
40
0
-40
MAX = 22.8
0
10
20
30
40
50
60
70
80
TIME (SEC)

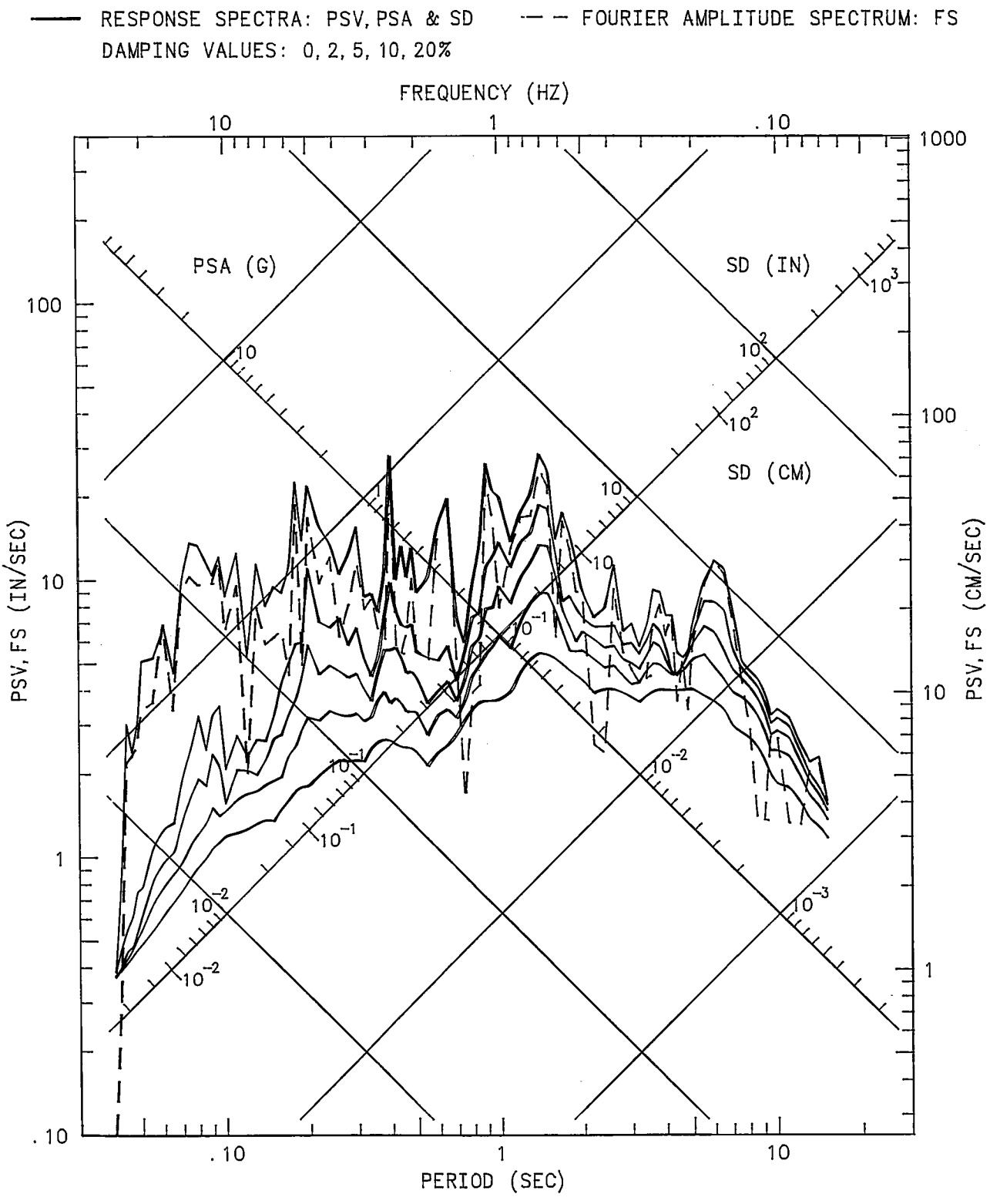

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101472.1221-QL92A074
MAX = -133.2
MAX = 12.7
MAX = 4.65
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101472.1221-QL92A074
MAX = -240.0
MAX = -50.8
MAX = 41.3
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80

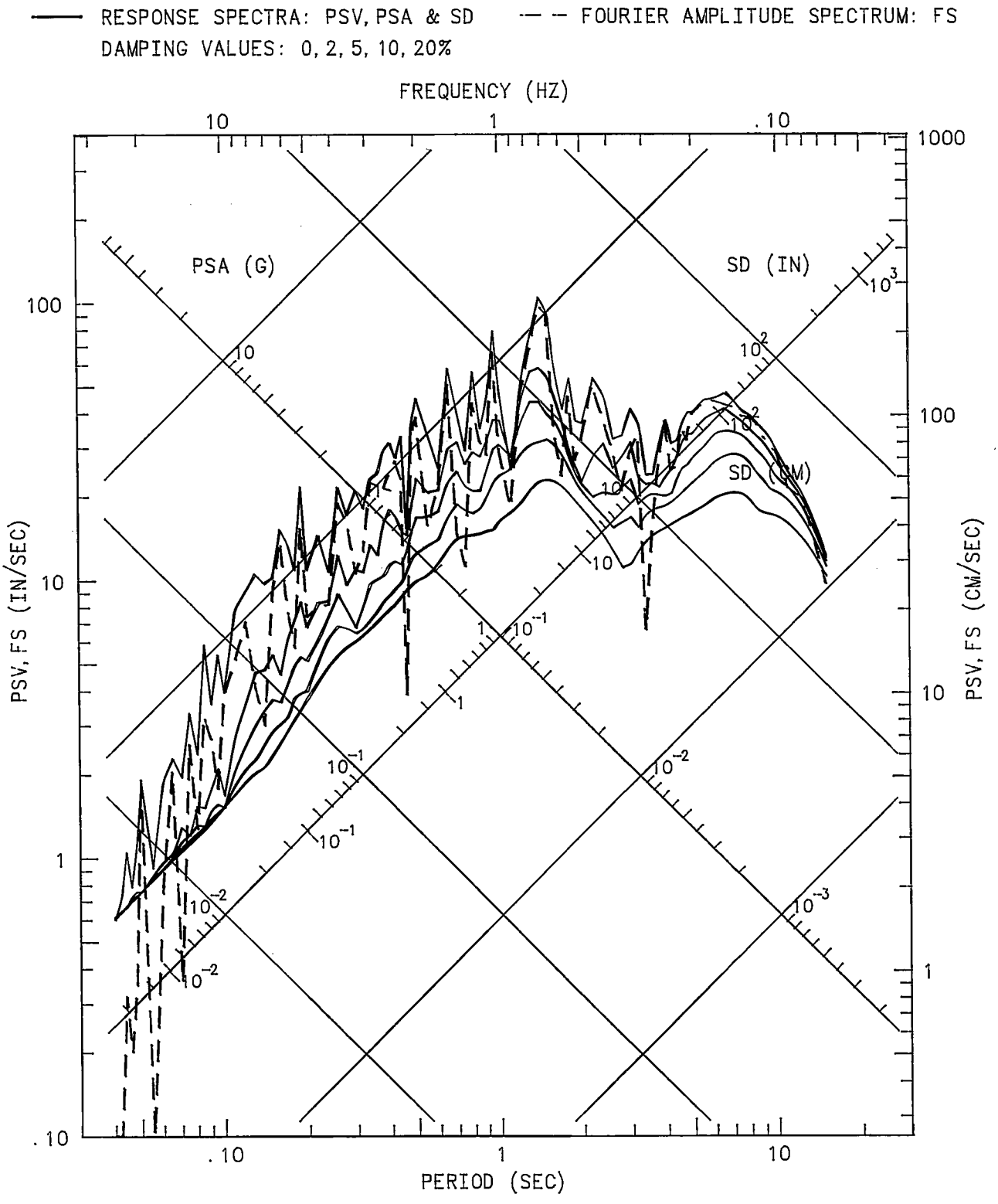
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO – FIRE STATION
CHN 1: 360 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02 101192.0048-QL92A074



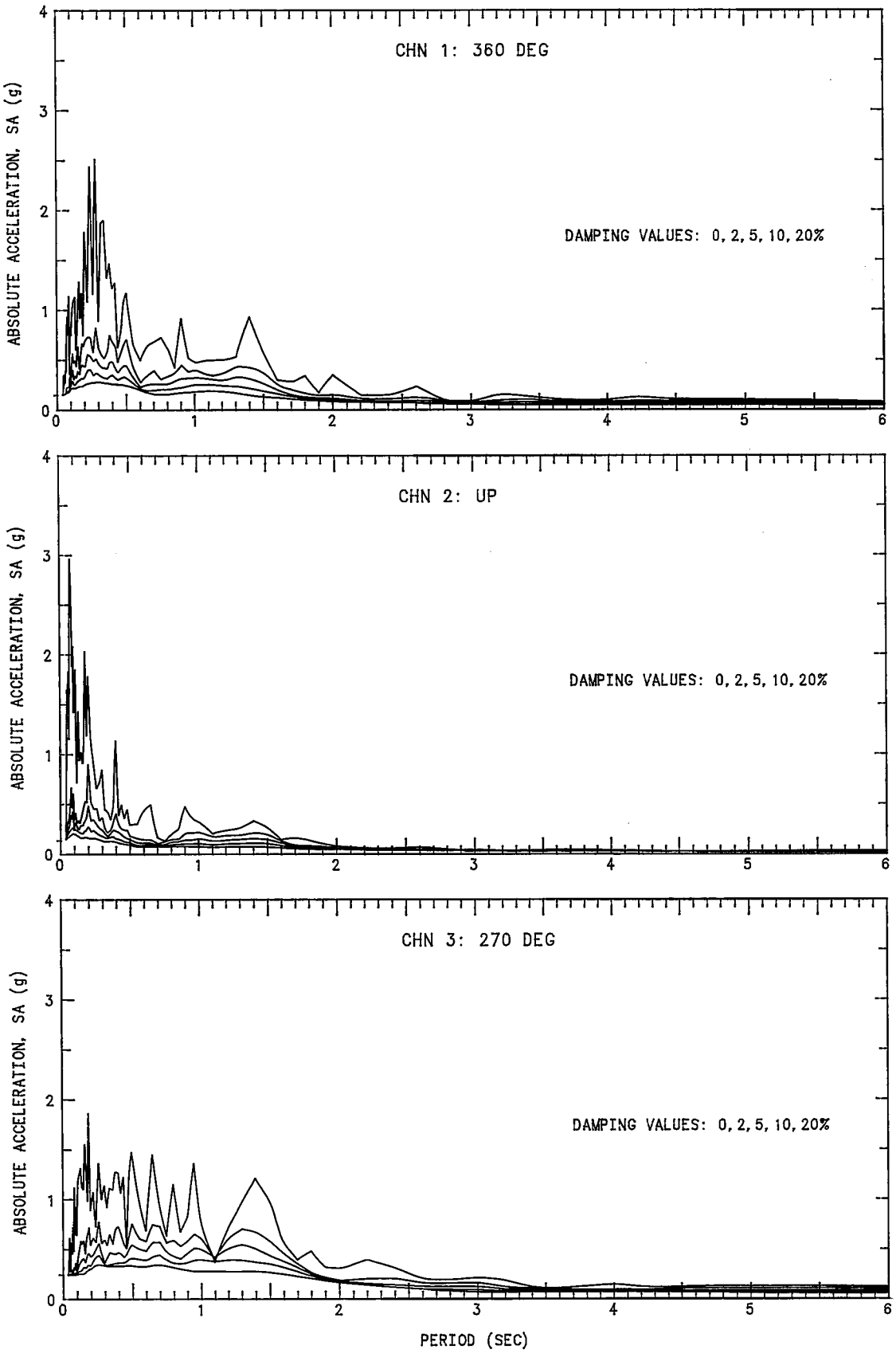
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02 101192.0048-QL92A074

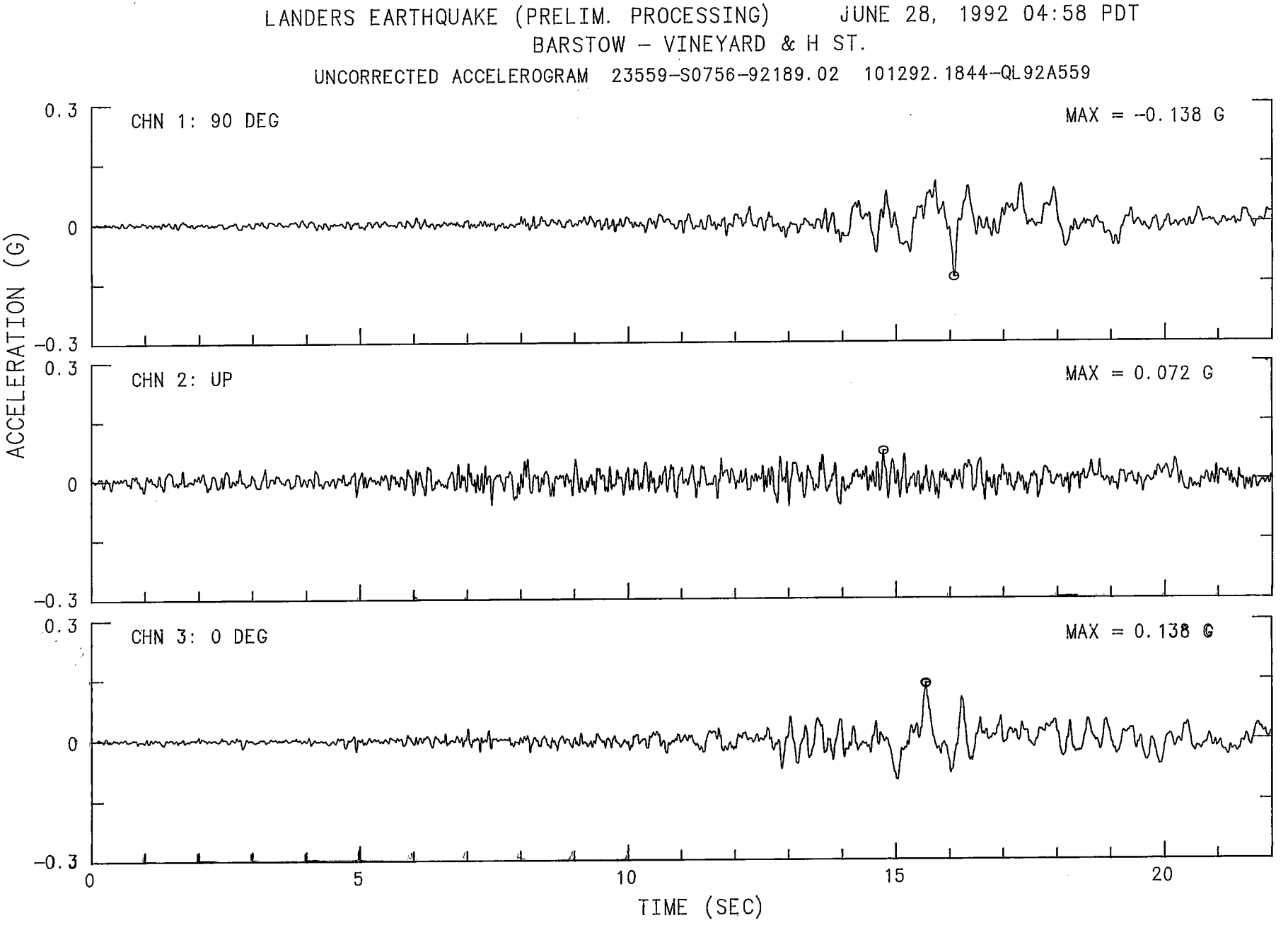


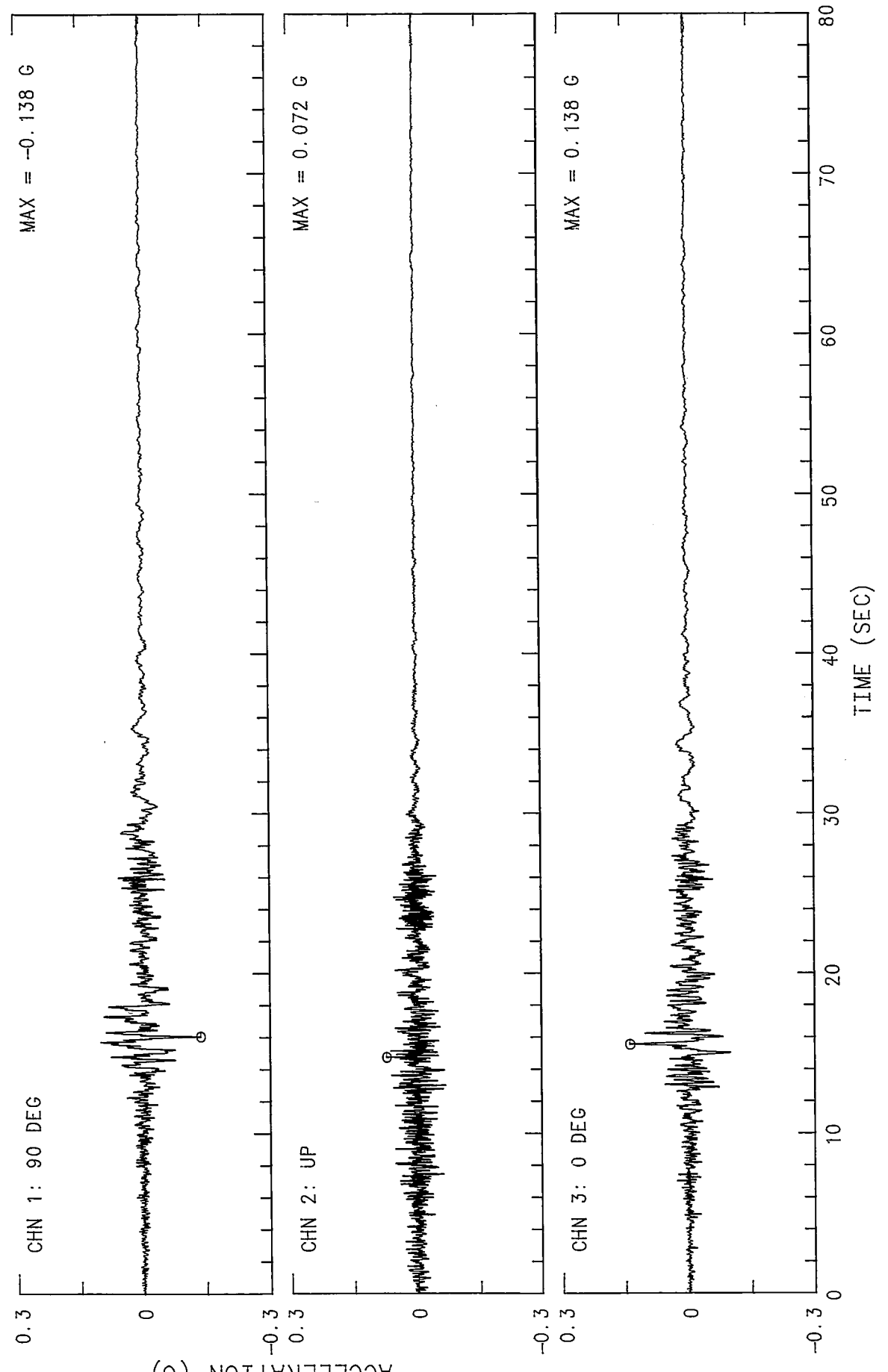
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
CHN 3: 270 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02 101192.0048-QL92A074

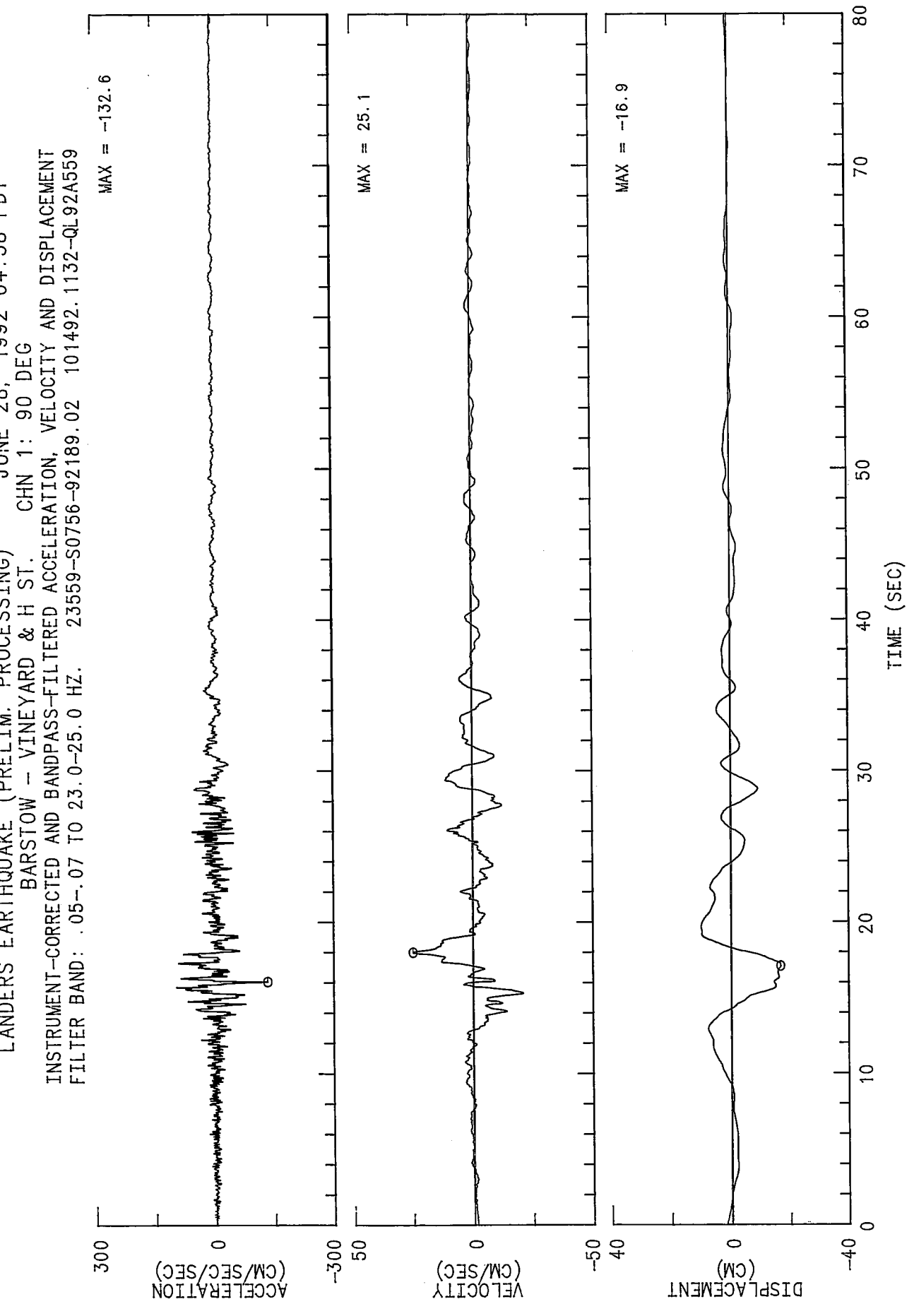


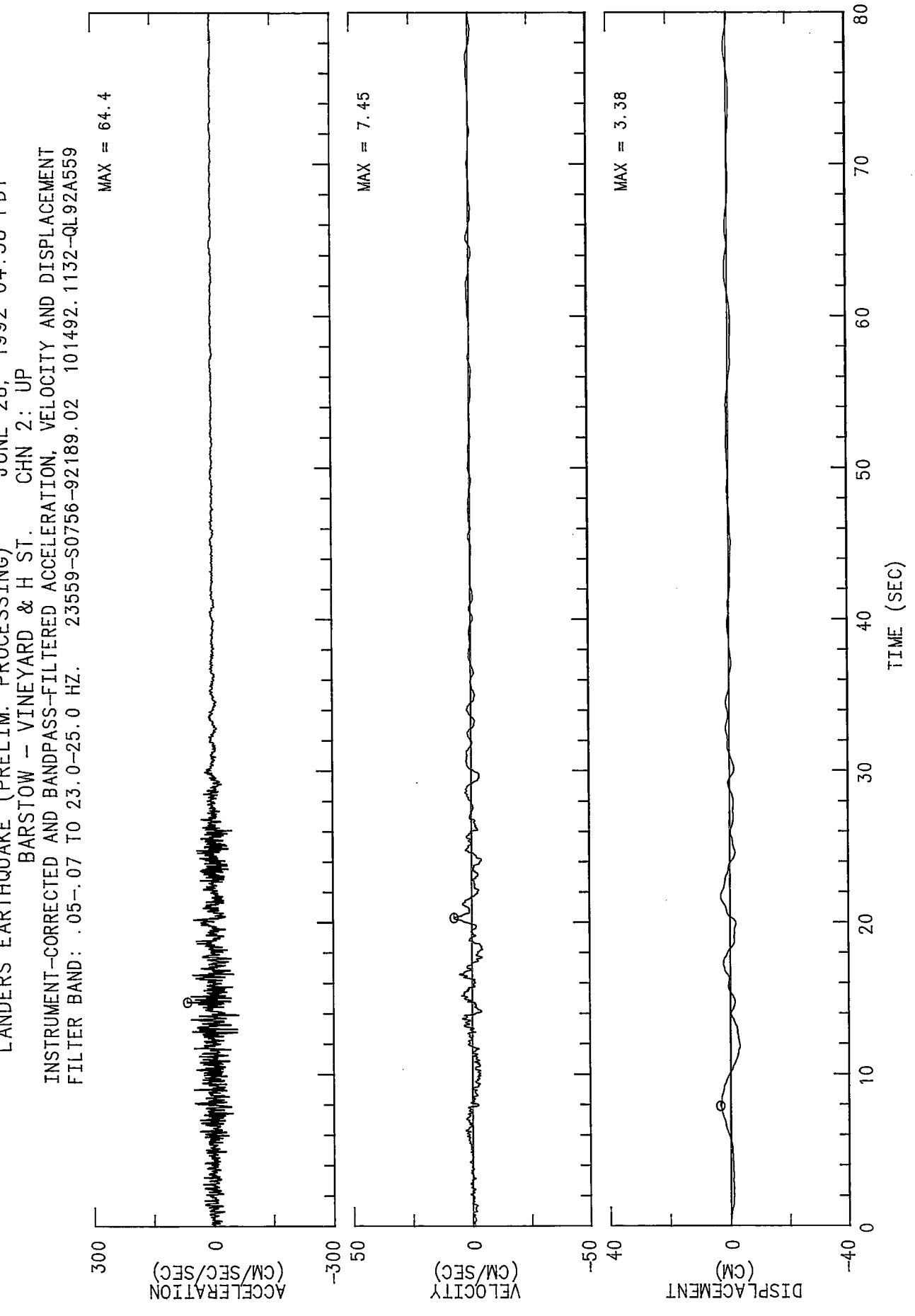
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02 101192.0048-QL92A074

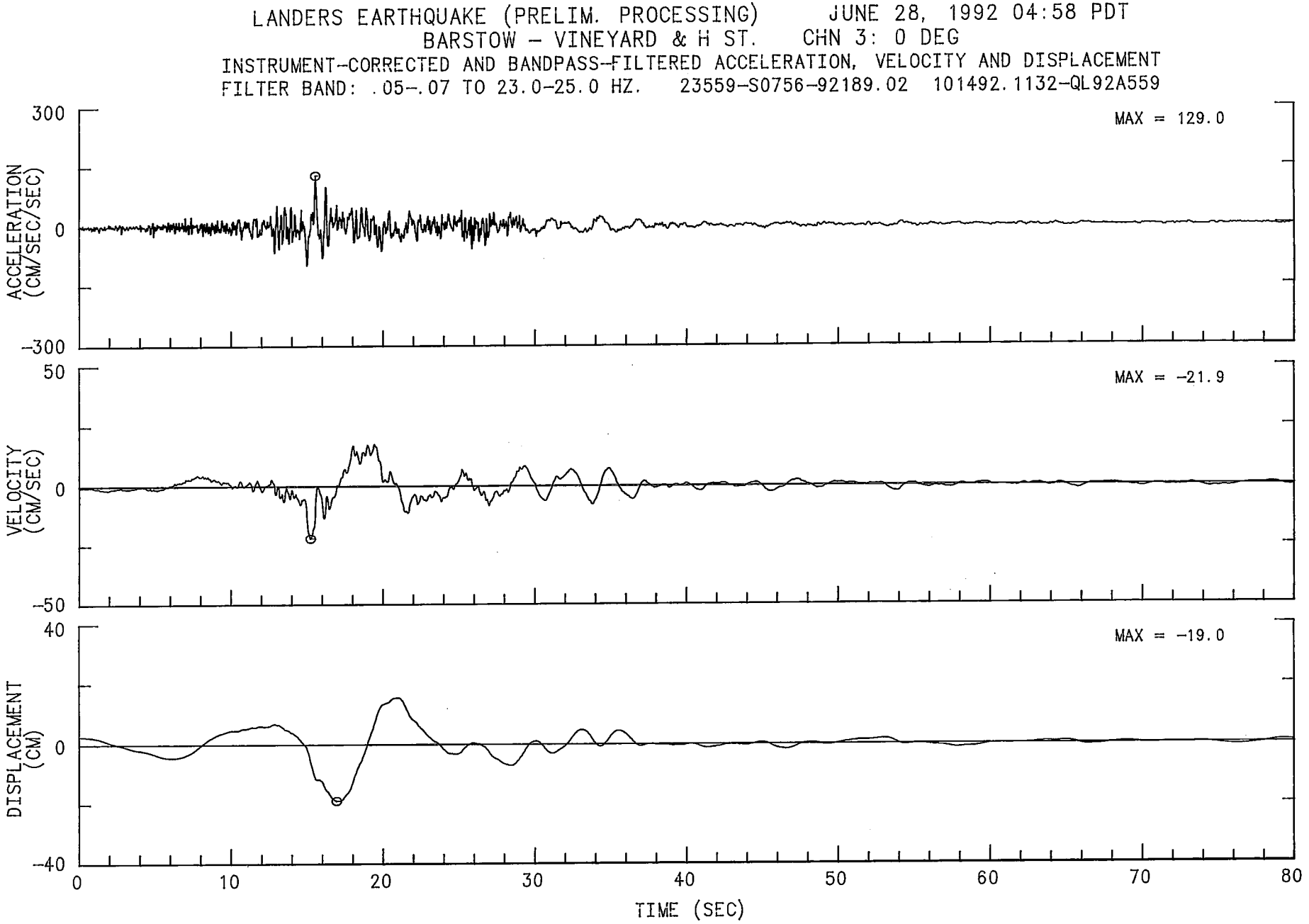



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW – VINEYARD & H ST.
UNCORRECTED ACCELEROGRAM 23559-S0756-92189.02 101292.1844-QL92A559
CHN 1: 90 DEG
MAX = -0.138 G
CHN 2: UP
MAX = 0.072 G
CHN 3: 0 DEG
MAX = 0.138 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

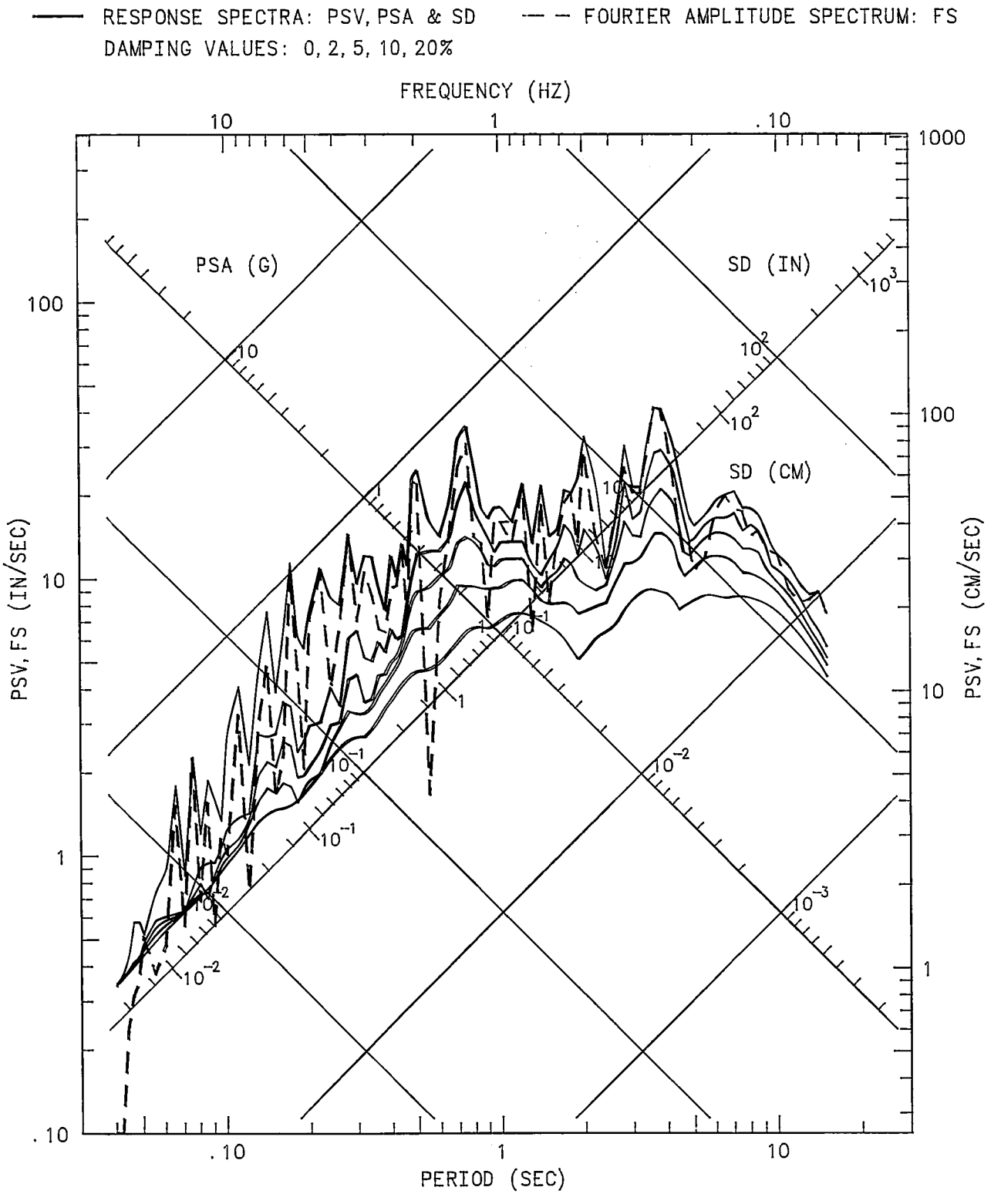

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW – VINEYARD & H ST.
UNCORRECTED ACCELEROGRAM 23559-S0756-92189.02 101292.1844-QL92A559
CHN 1: 90 DEG
MAX = -0.138 G
CHN 2: UP
MAX = 0.072 G
CHN 3: 0 DEG
MAX = 0.138 G
ACCELERATION (G)
0.3
0
-0.3
TIME (SEC)
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST. CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 23559-S0756-92189.02 101492.1132-QL92A559
MAX = -132.6
MAX = 25.1
MAX = -16.9
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80

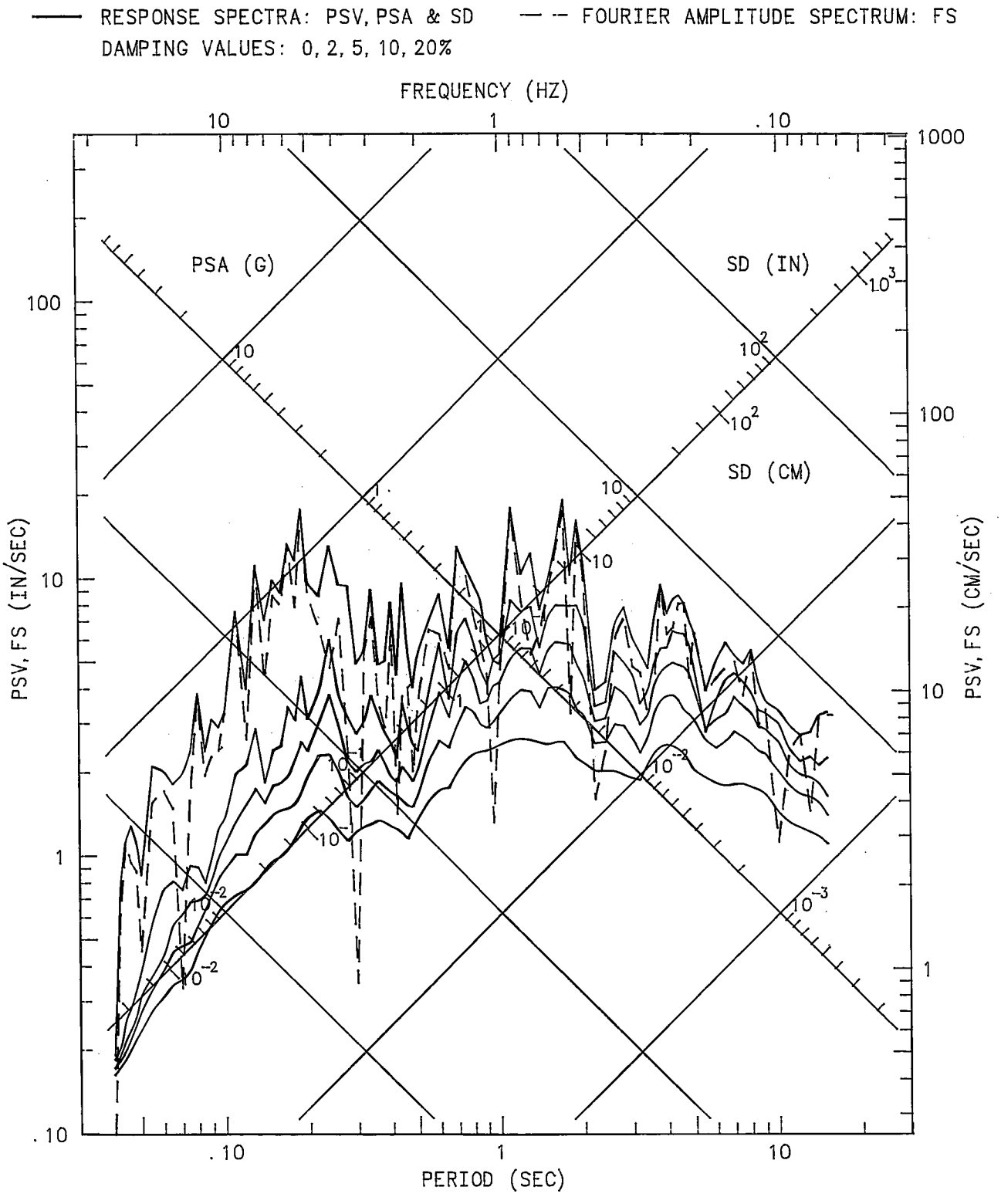

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST. CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 23559-S0756-92189.02 101492.1132-QL92A559
MAX = 64.4
MAX = 7.45
MAX = 3.38
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW – VINEYARD & H ST. CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 23559-S0756-92189.02 101492.1132-QL92A559
MAX = 129.0
MAX = -21.9
MAX = -19.0
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80
TIME (SEC)

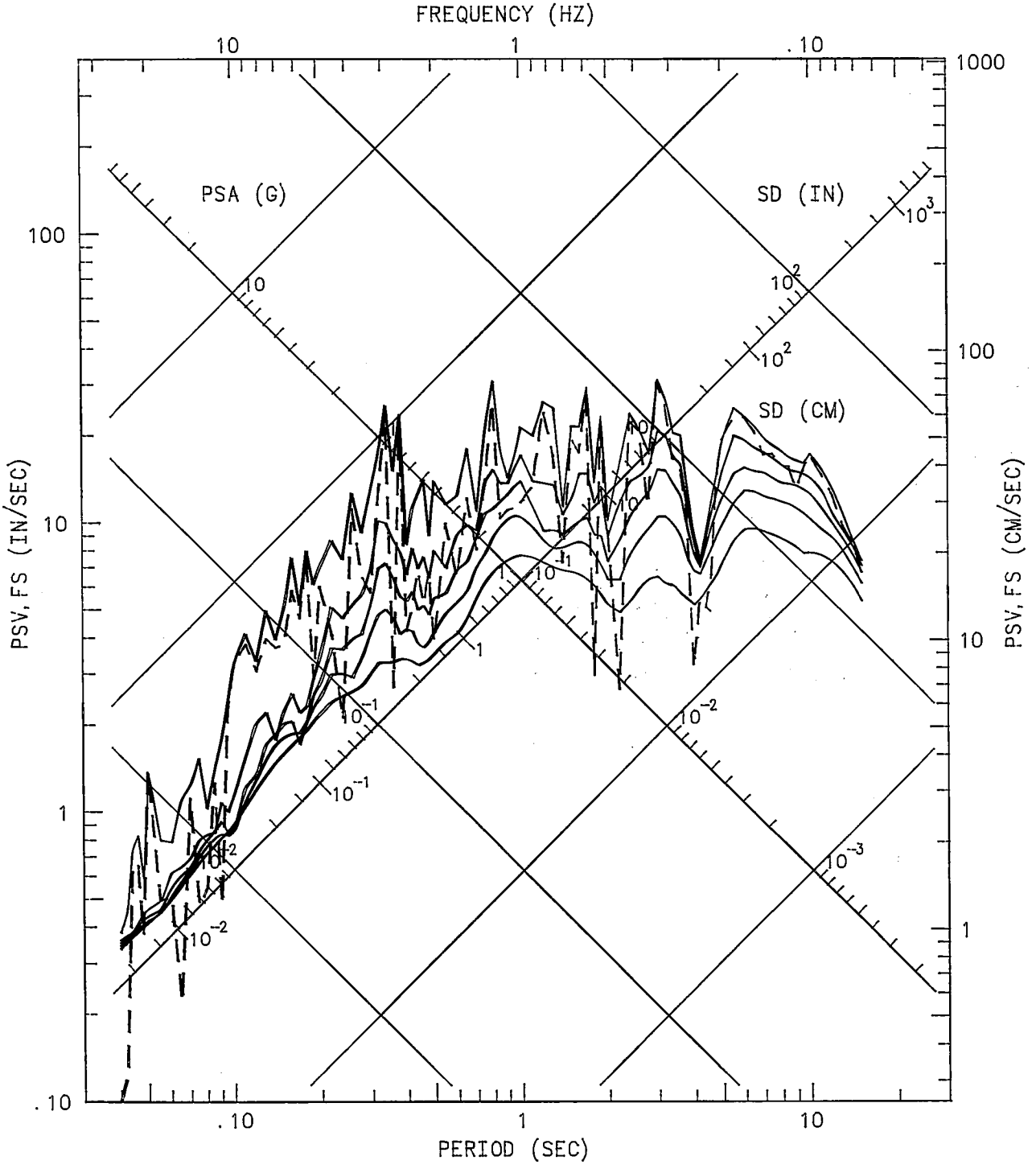
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW -- VINEYARD & H ST.
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS--FILTERED WITH RAMPS AT .05--.07 TO 23.0--25.0 HZ.
23559--S0756--92189.02 101492.1149--QL92A559



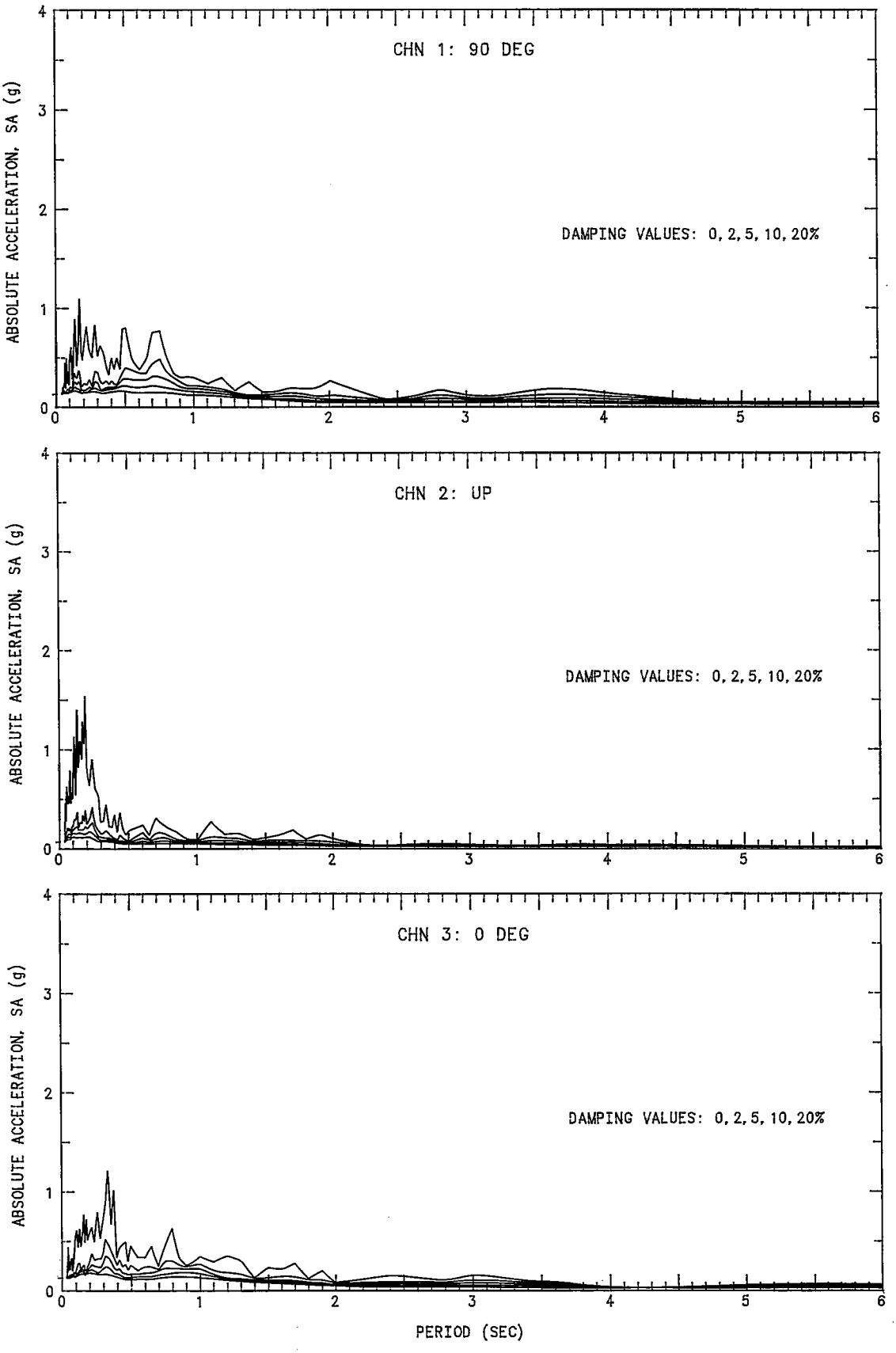
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST.
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
23559-S0756-92189.02 101492.1149-QL92A559

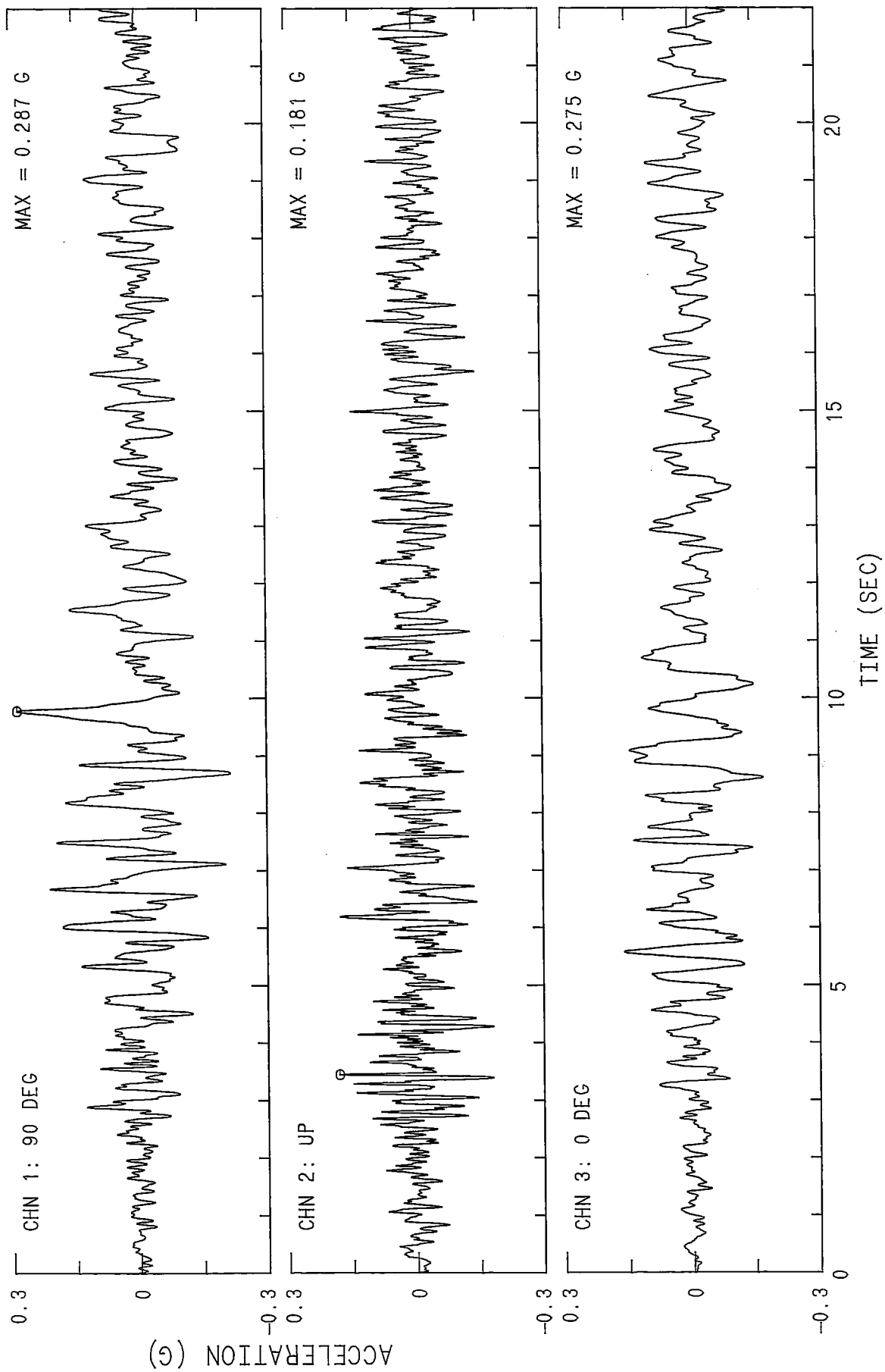


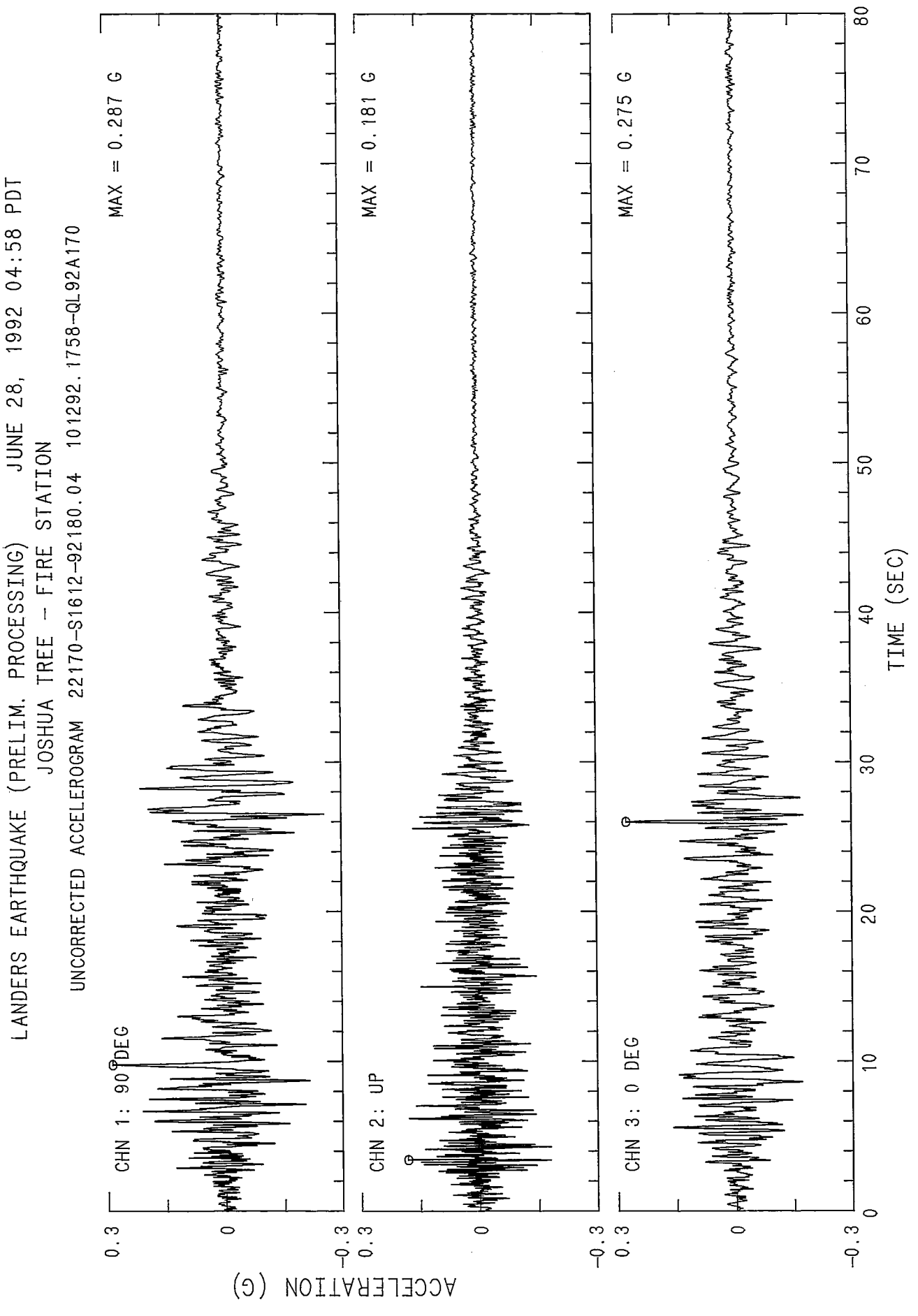
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST.
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
23559-S0756-92189.02 101492.1149-QL92A559

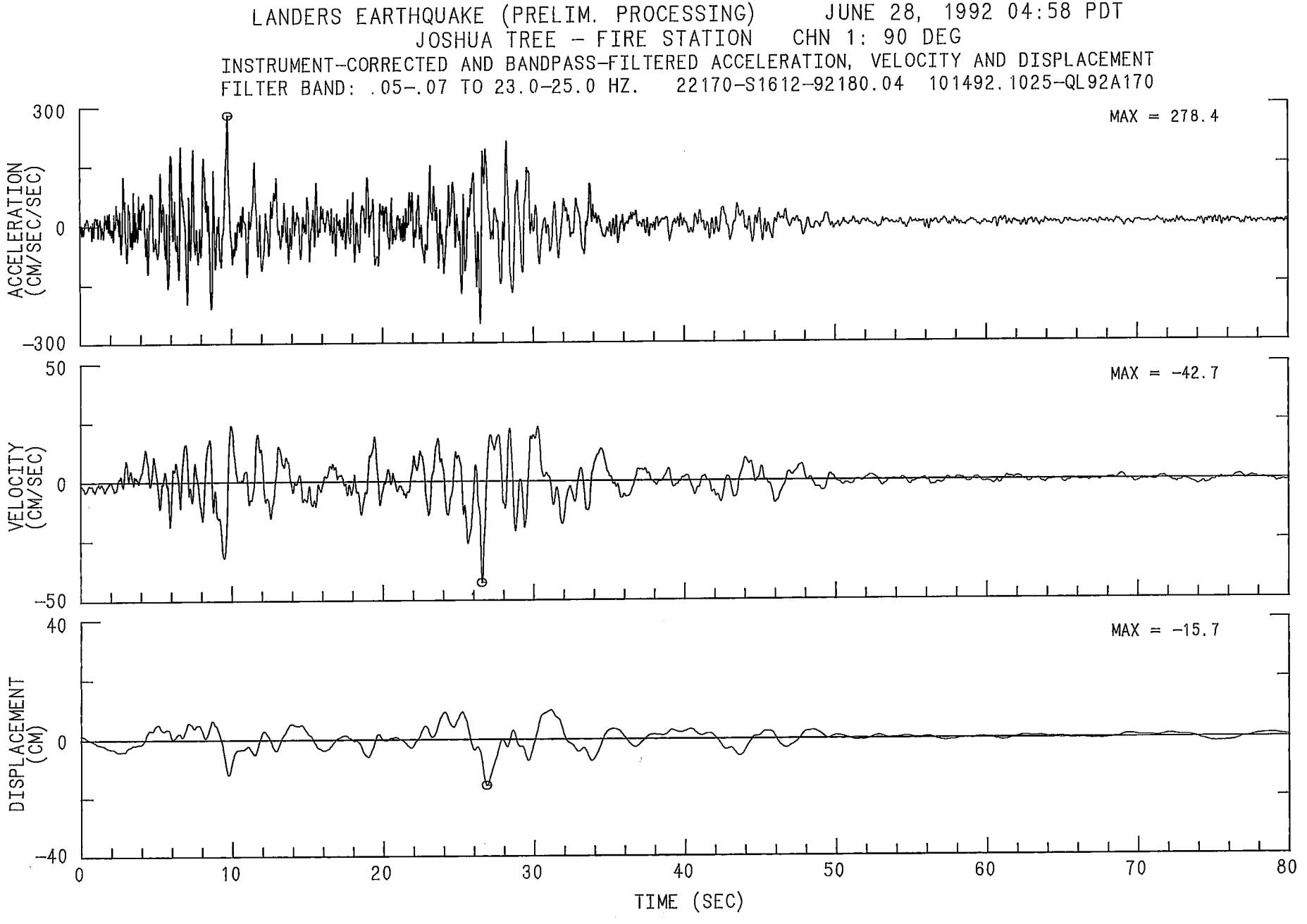


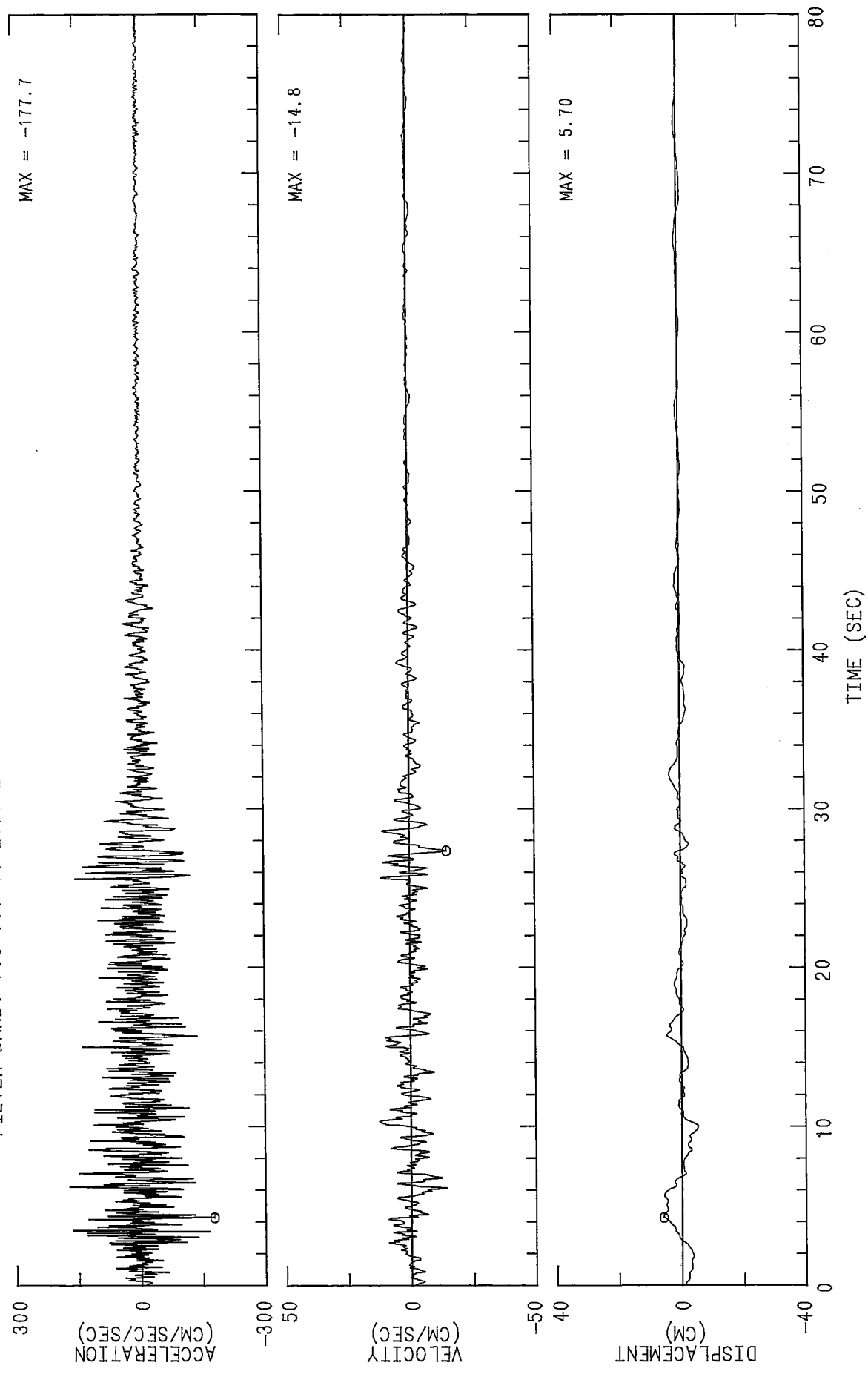
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST.
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
23559-S0756-92189.02 101492.1149-QL92A559

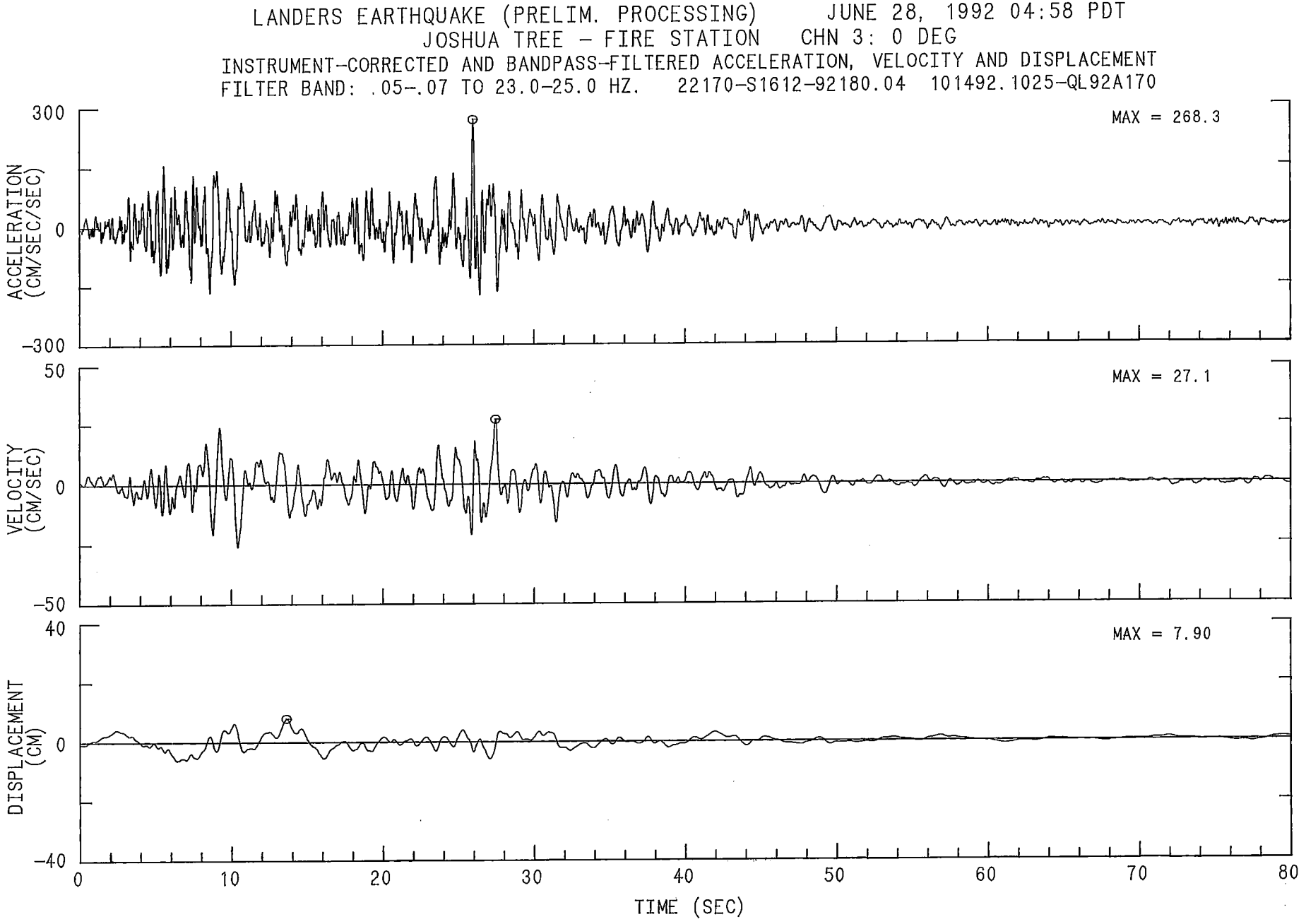



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
UNCORRECTED ACCELEROGRAM 22170-S1612-92180.04 101292.1758-QL92A170
CHN 1: 90 DEG
MAX = 0.287 G
CHN 2: UP
MAX = 0.181 G
CHN 3: 0 DEG
MAX = 0.275 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

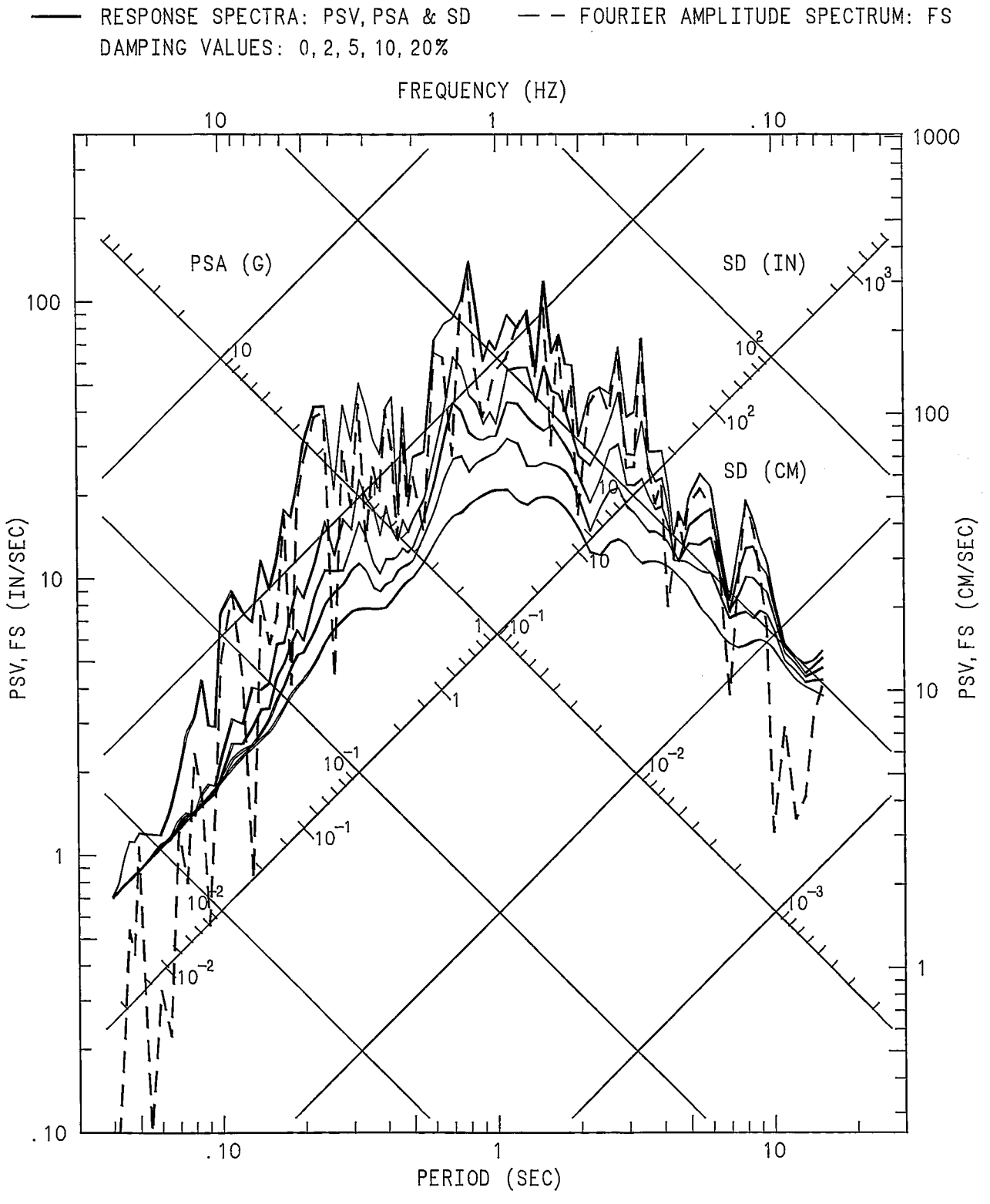

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
UNCORRECTED ACCELEROGRAM 22170-S1612-92180.04 101292.1758-QL92A170
CHN 1: 90 DEG
MAX = 0.287 G
CHN 2: UP
MAX = 0.181 G
CHN 3: 0 DEG
MAX = 0.275 G
ACCELERATION (G)
0.3
0
-0.3
0
10
20
30
40
50
60
70
80
TIME (SEC)


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22170-S1612-92180.04 101492.1025-QL92A170
ACCELERATION (CM/SEC/SEC)
300
0
-300
MAX = 278.4
VELOCITY (CM/SEC)
50
0
-50
MAX = -42.7
DISPLACEMENT (CM)
40
0
-40
MAX = -15.7
0
10
20
30
40
50
60
70
80
TIME (SEC)

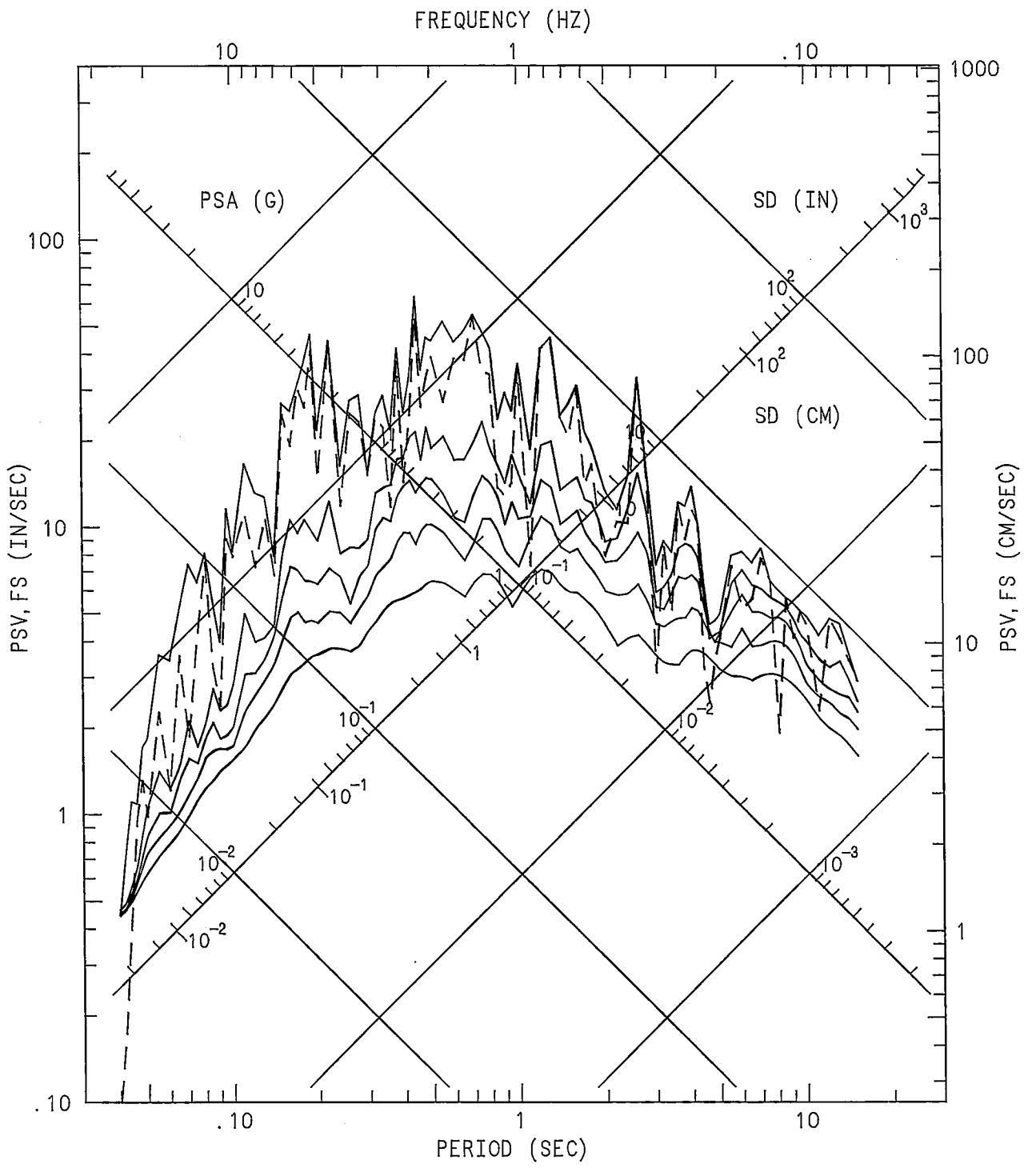

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22170-S1612-92180.04 101492.1025-QL92A170
MAX = -177.7
MAX = -14.8
MAX = 5.70
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22170-S1612-92180.04 101492.1025-QL92A170
ACCELERATION (CM/SEC/SEC)
300
0
-300
MAX = 268.3
VELOCITY (CM/SEC)
50
0
-50
MAX = 27.1
DISPLACEMENT (CM)
40
0
-40
MAX = 7.90
0
10
20
30
40
50
60
70
80
TIME (SEC)

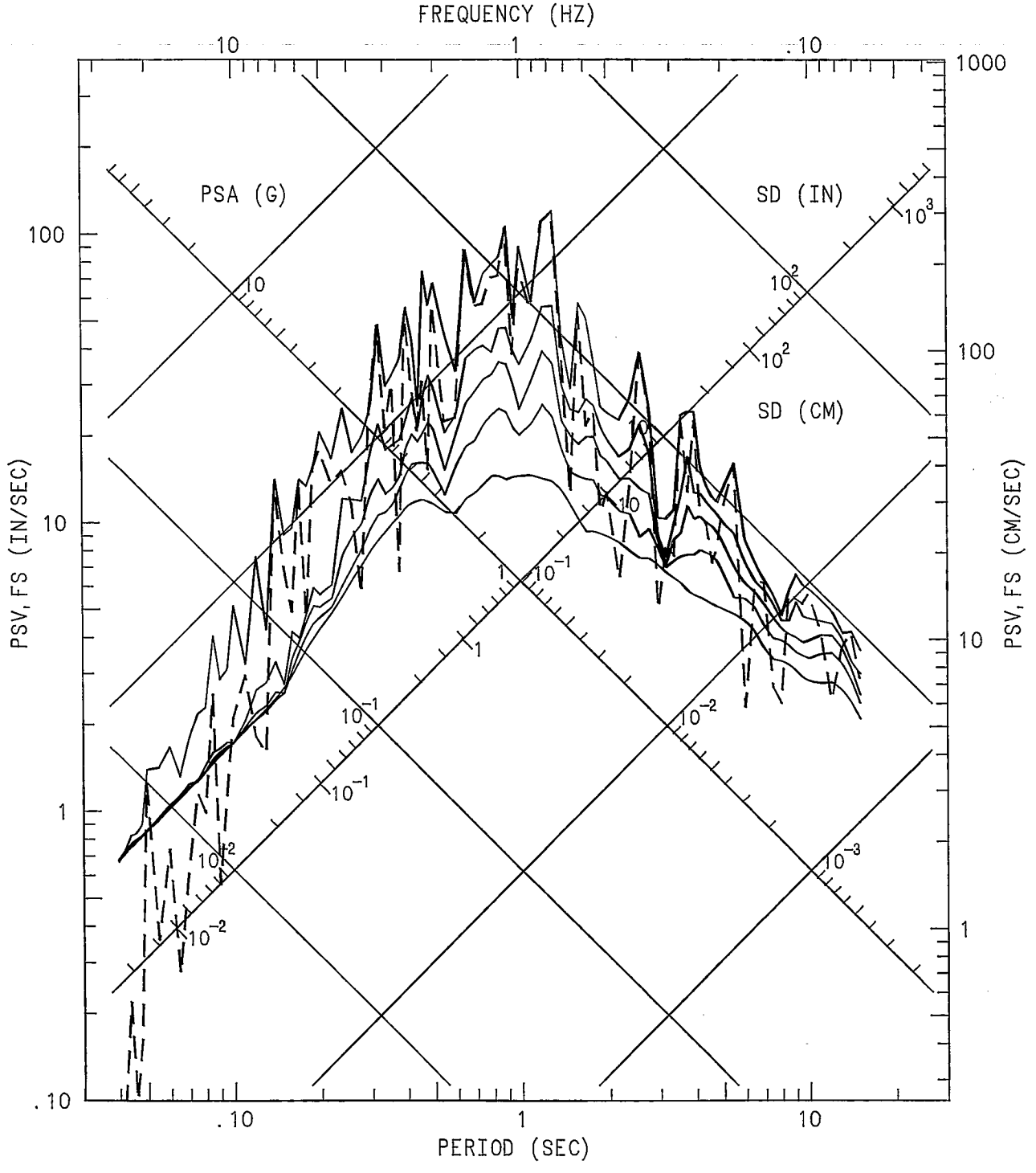
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22170-S1612-92180.04 101492.1042-QL92A170



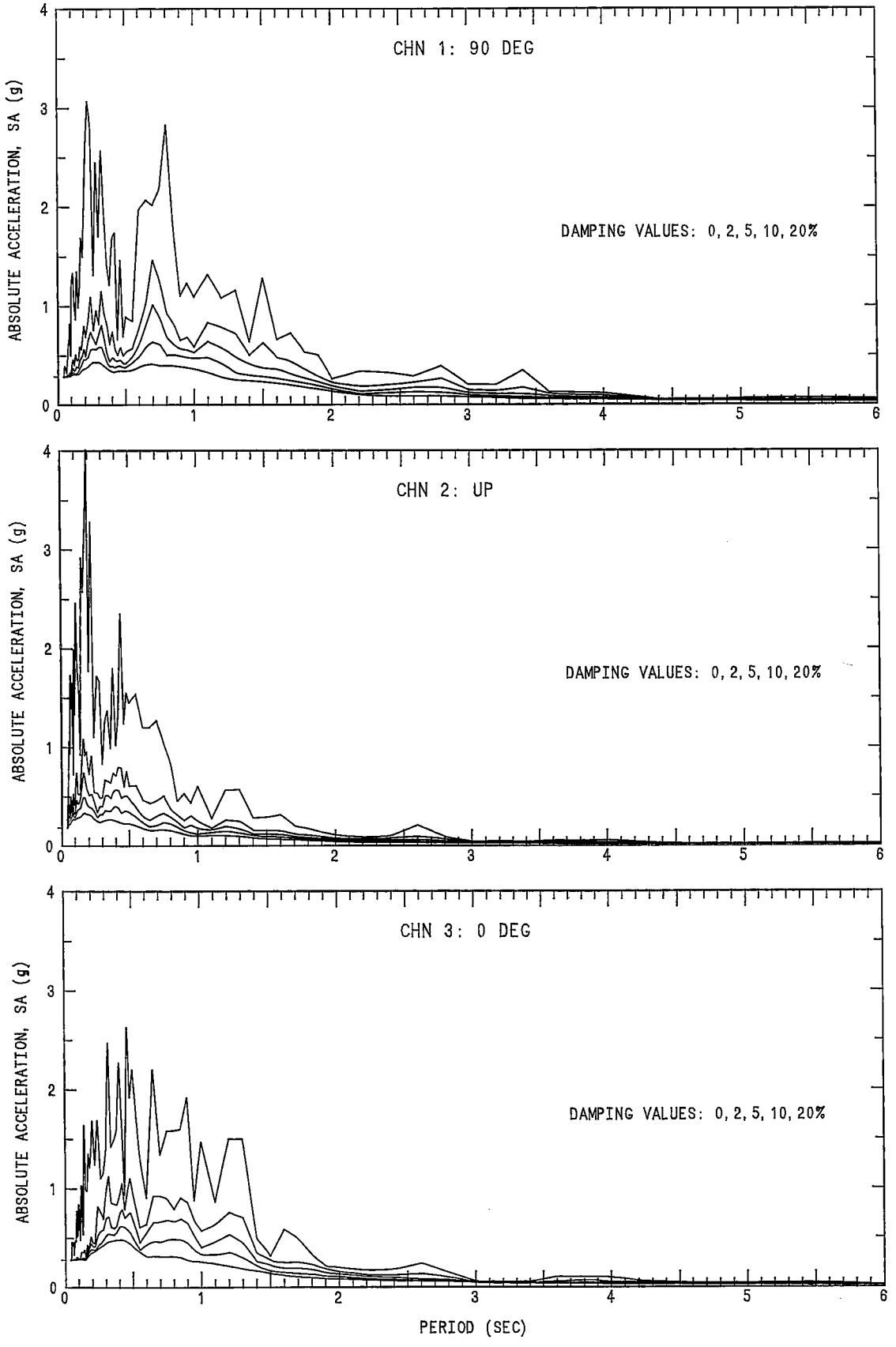
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22170-S1612-92180.04 101492.1042-QL92A170

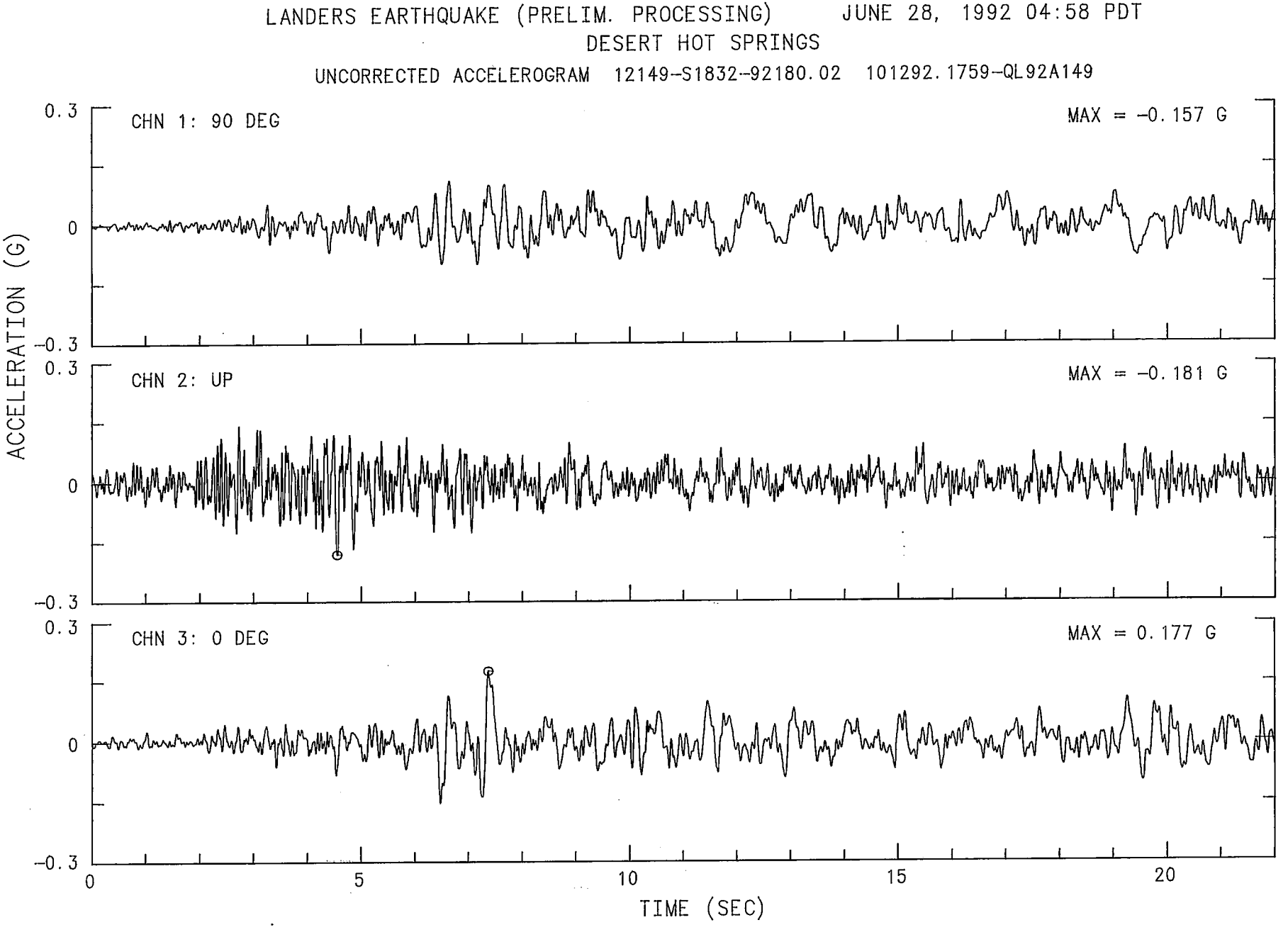


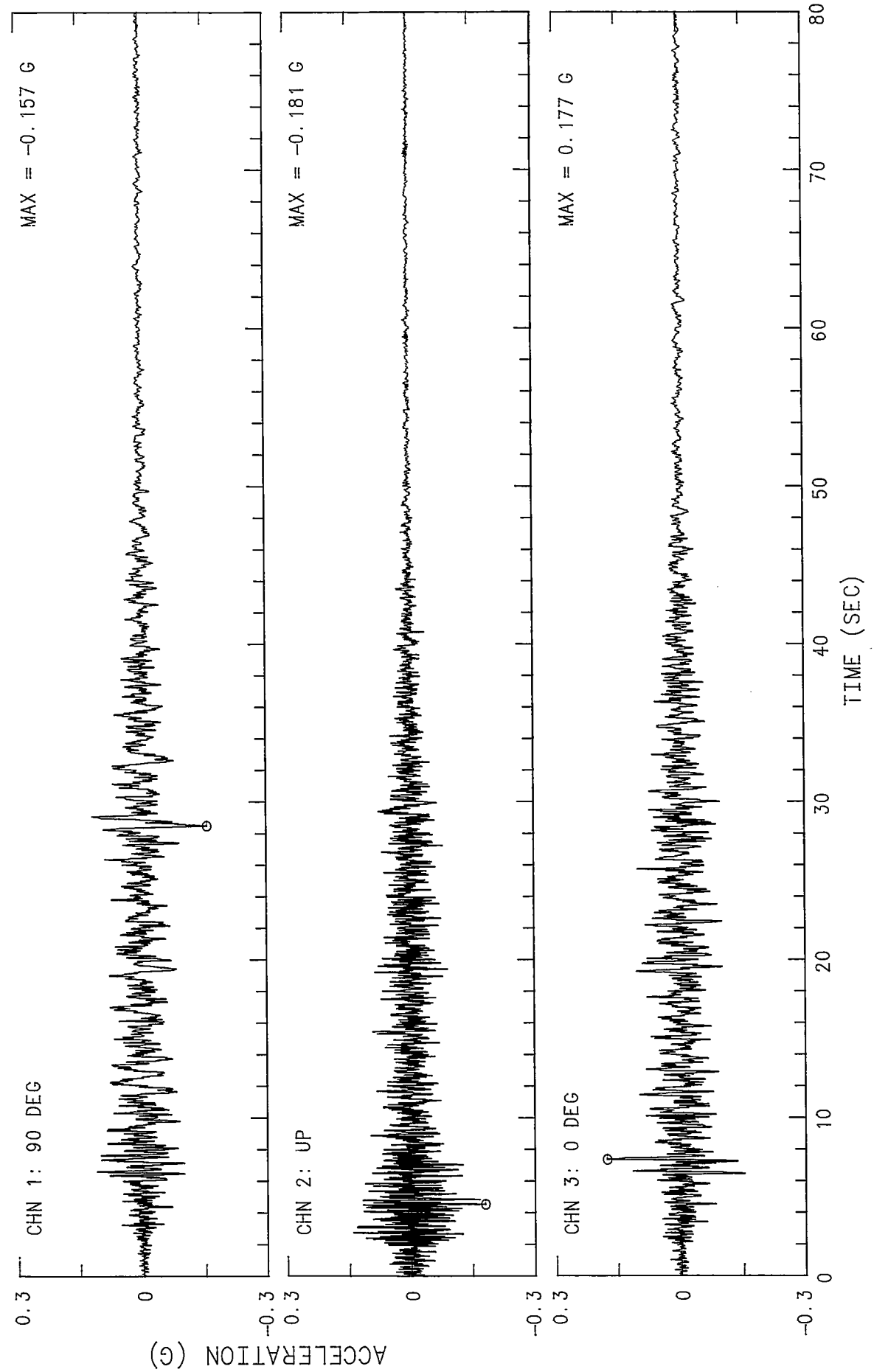
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22170-S1612-92180.04 101492.1042-QL92A170

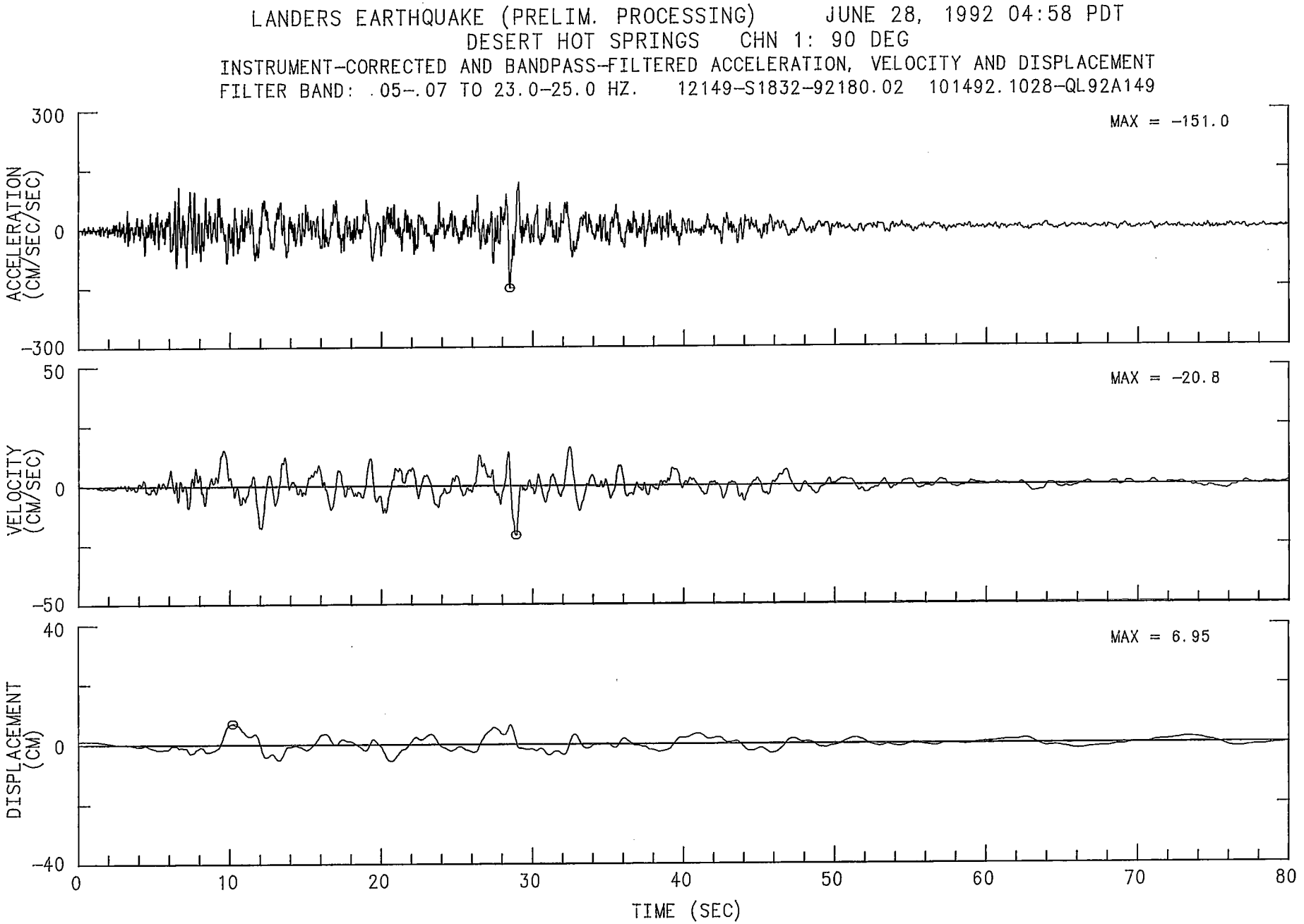


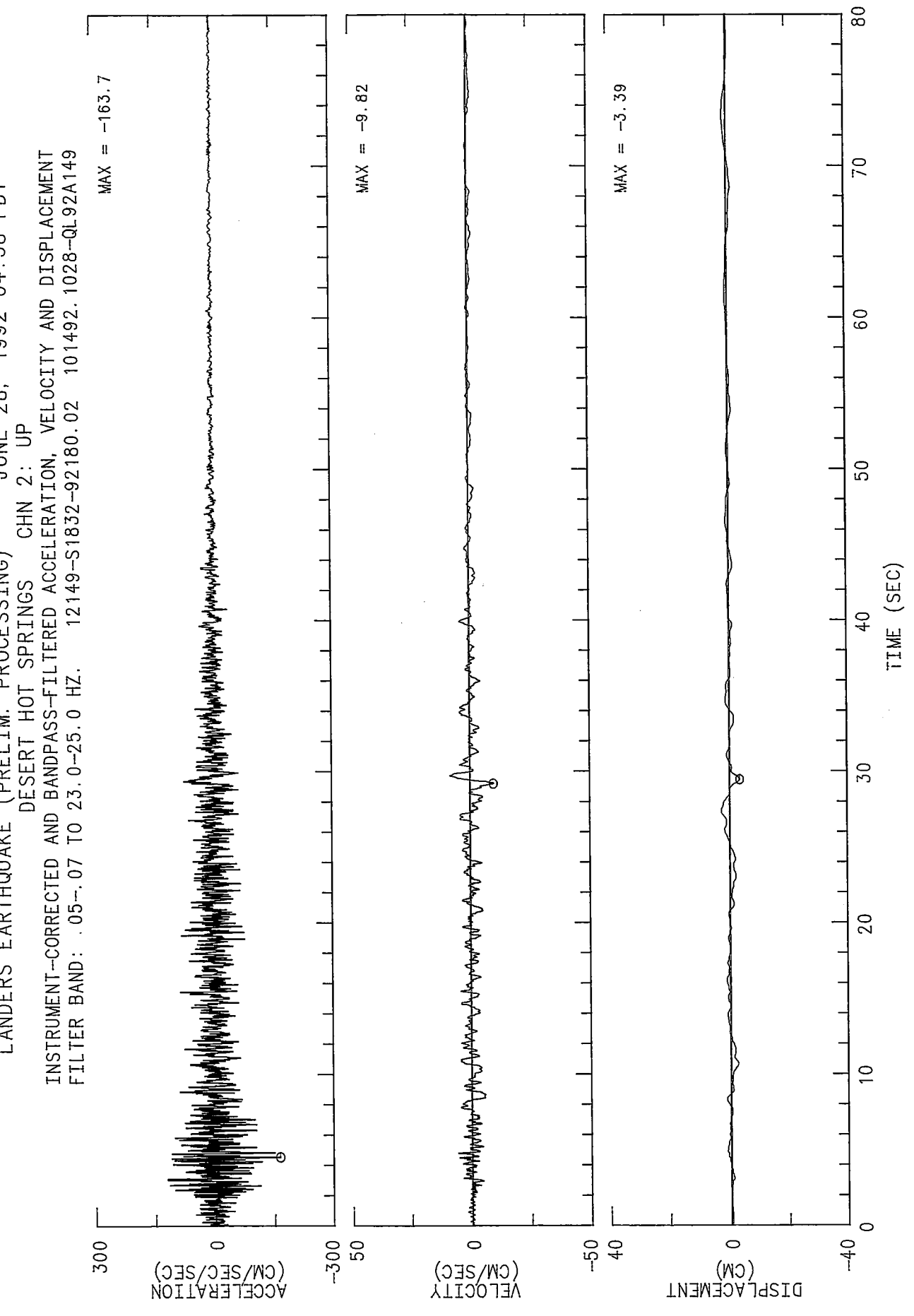
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22170-S1612-92180.04 101492.1042-QL92A170

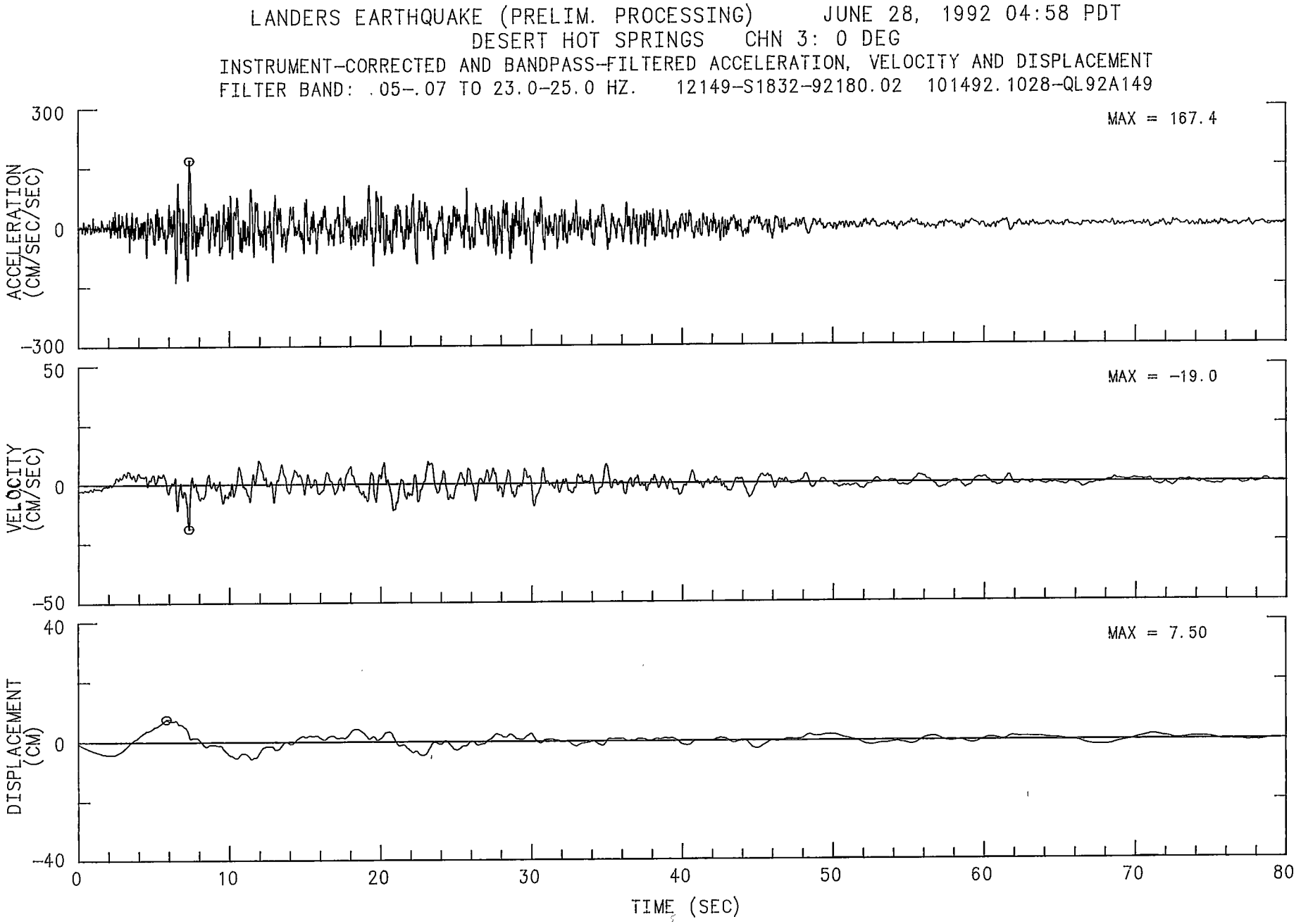



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROGRAM 12149-S1832-92180.02 101292.1759-QL92A149
CHN 1: 90 DEG
MAX = -0.157 G
CHN 2: UP
MAX = -0.181 G
CHN 3: 0 DEG
MAX = 0.177 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

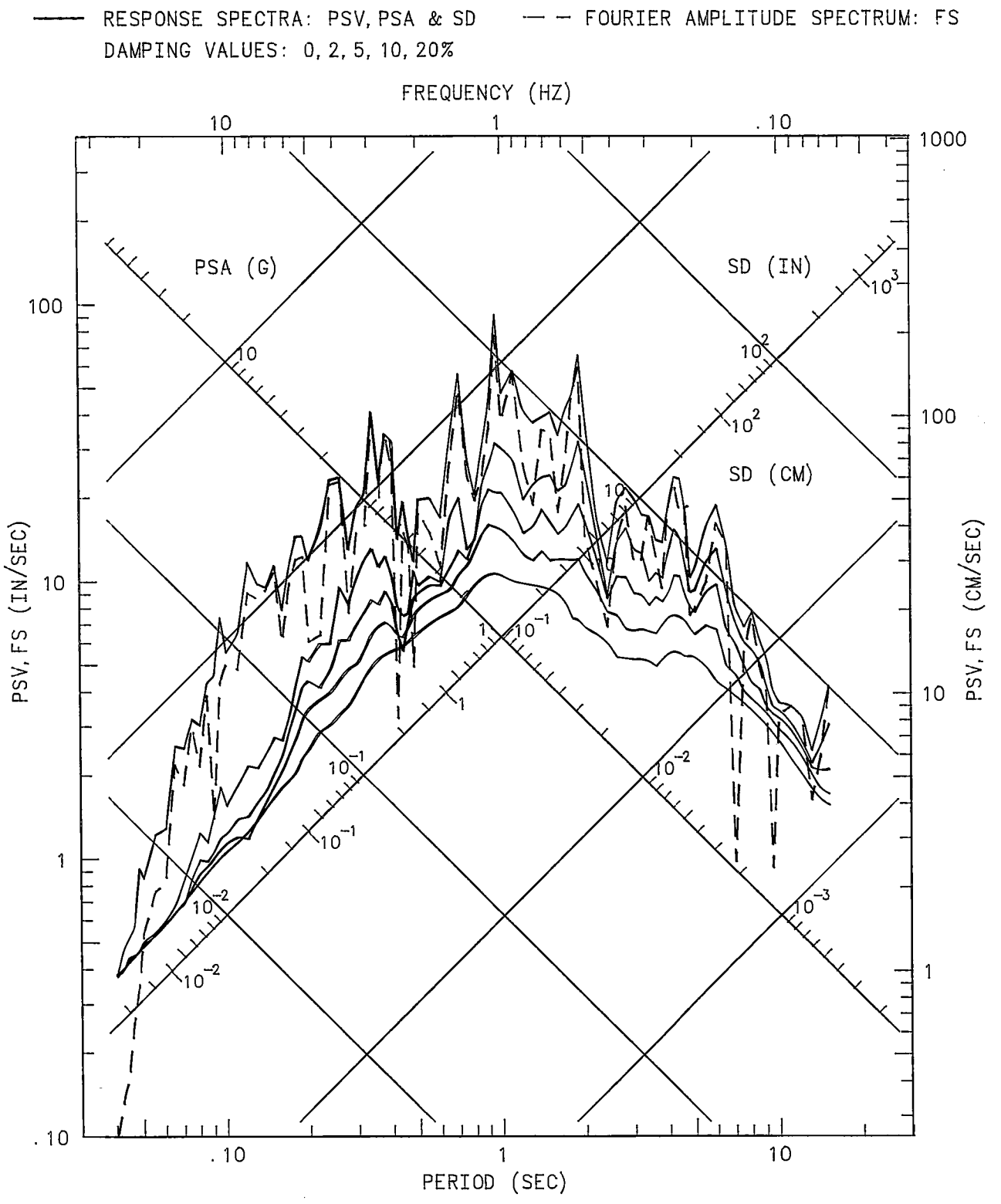

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROGRAM 12149-S1832-92180.02 101292.1759-QL92A149
CHN 1: 90 DEG
MAX = -0.157 G
CHN 2: UP
MAX = -0.181 G
CHN 3: 0 DEG
MAX = 0.177 G
ACCELERATION (G)
0.3
0
-0.3
TIME (SEC)
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12149-S1832-92180.02 101492.1028-QL92A149
MAX = -151.0
MAX = -20.8
MAX = 6.95
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80
TIME (SEC)

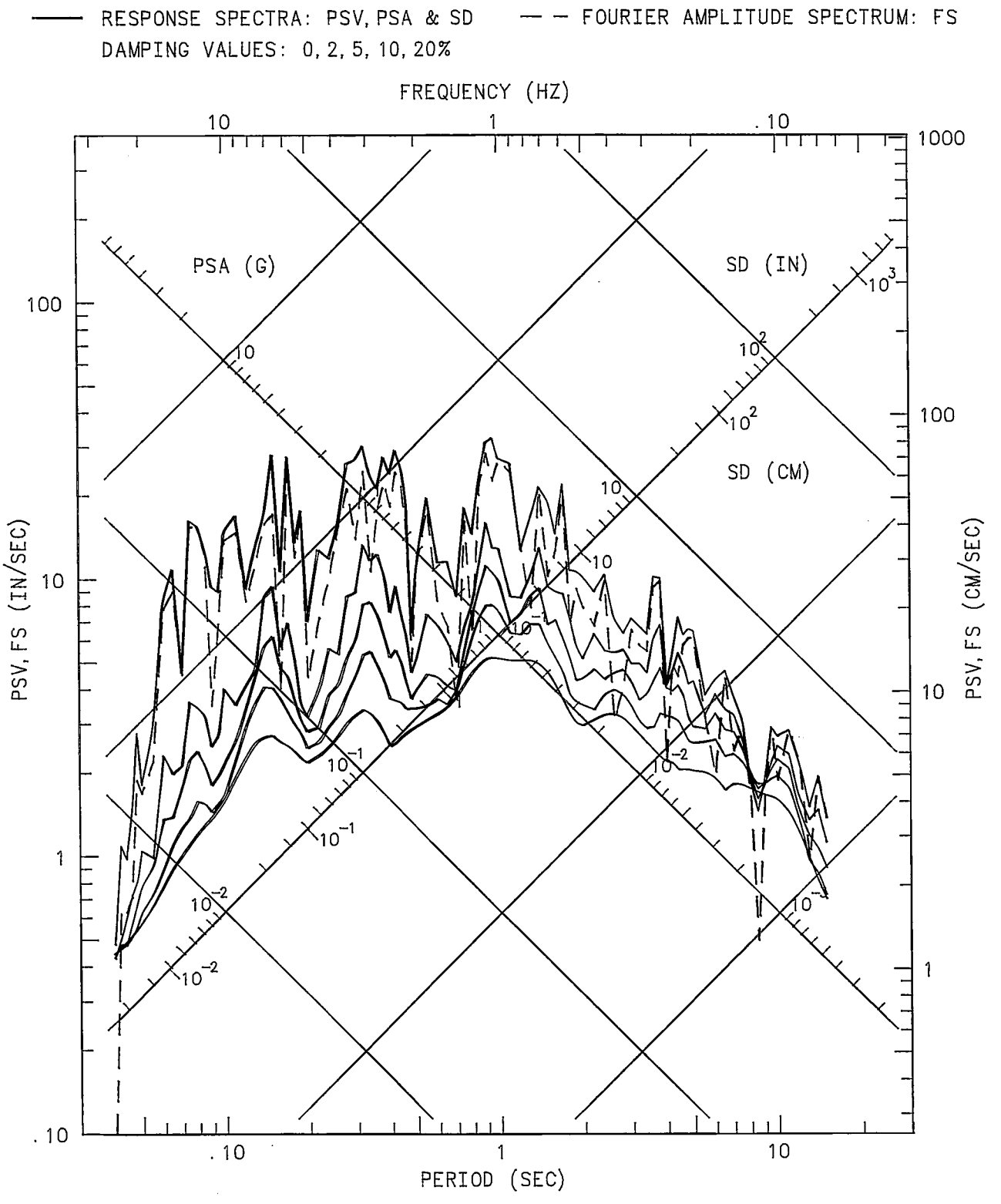

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12149-S1832-92180.02 101492.1028-QL92A149
MAX = -163.7
MAX = -9.82
MAX = -3.39
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12149-S1832-92180.02 101492.1028-QL92A149
ACCELERATION (CM/SEC/SEC)
MAX = 167.4
VELOCITY (CM/SEC)
MAX = -19.0
DISPLACEMENT (CM)
MAX = 7.50
TIME (SEC)

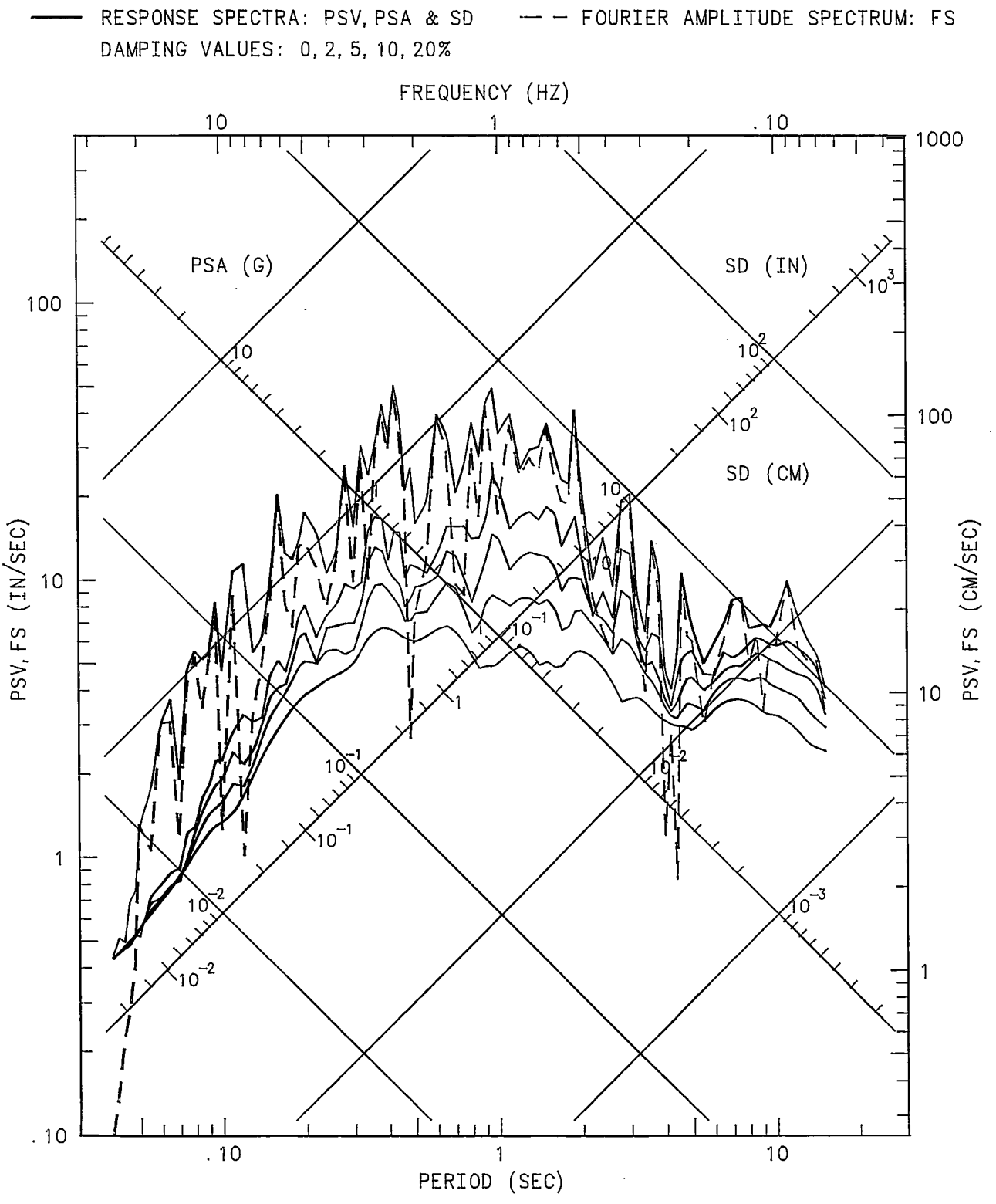
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149



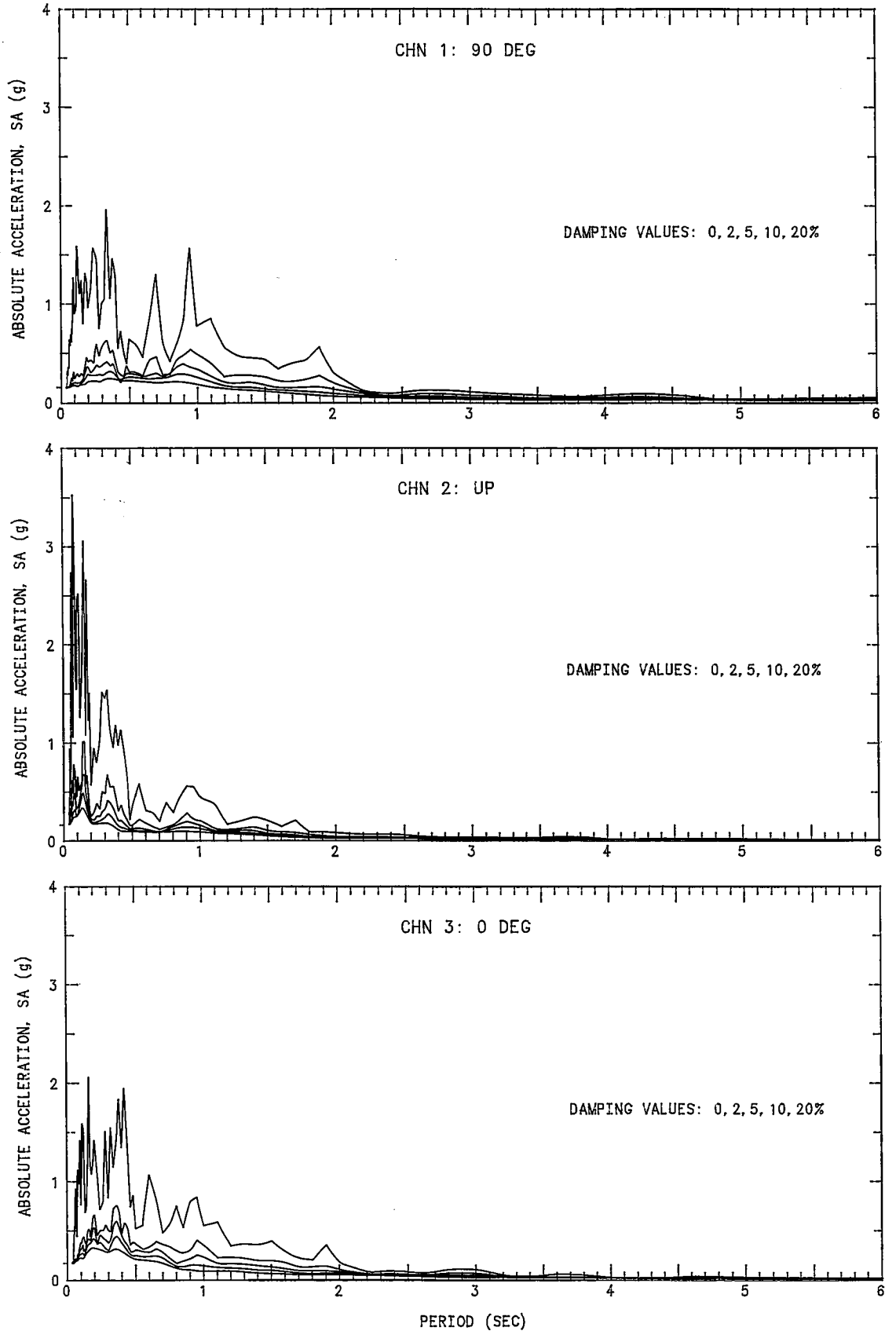
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149

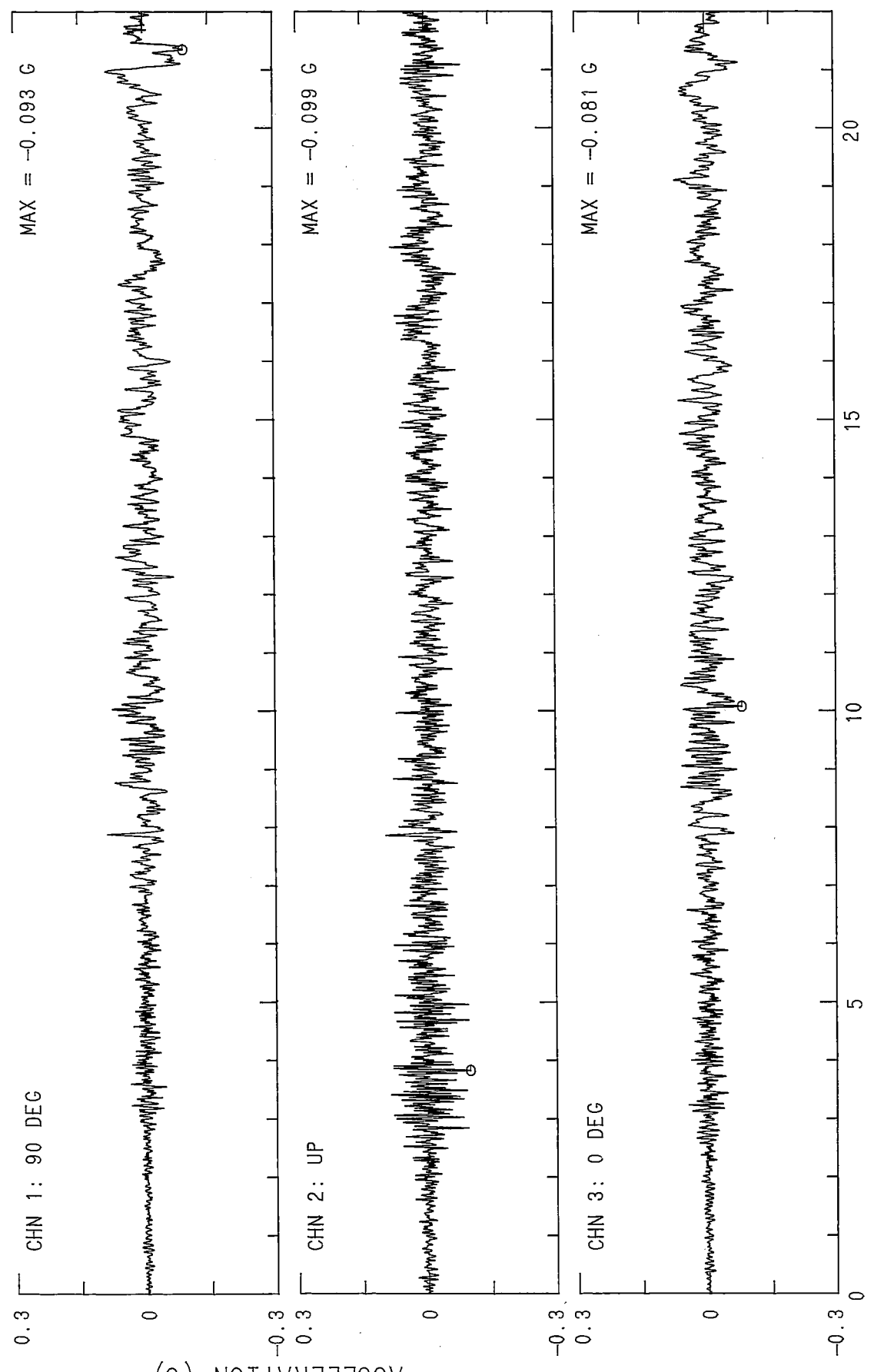


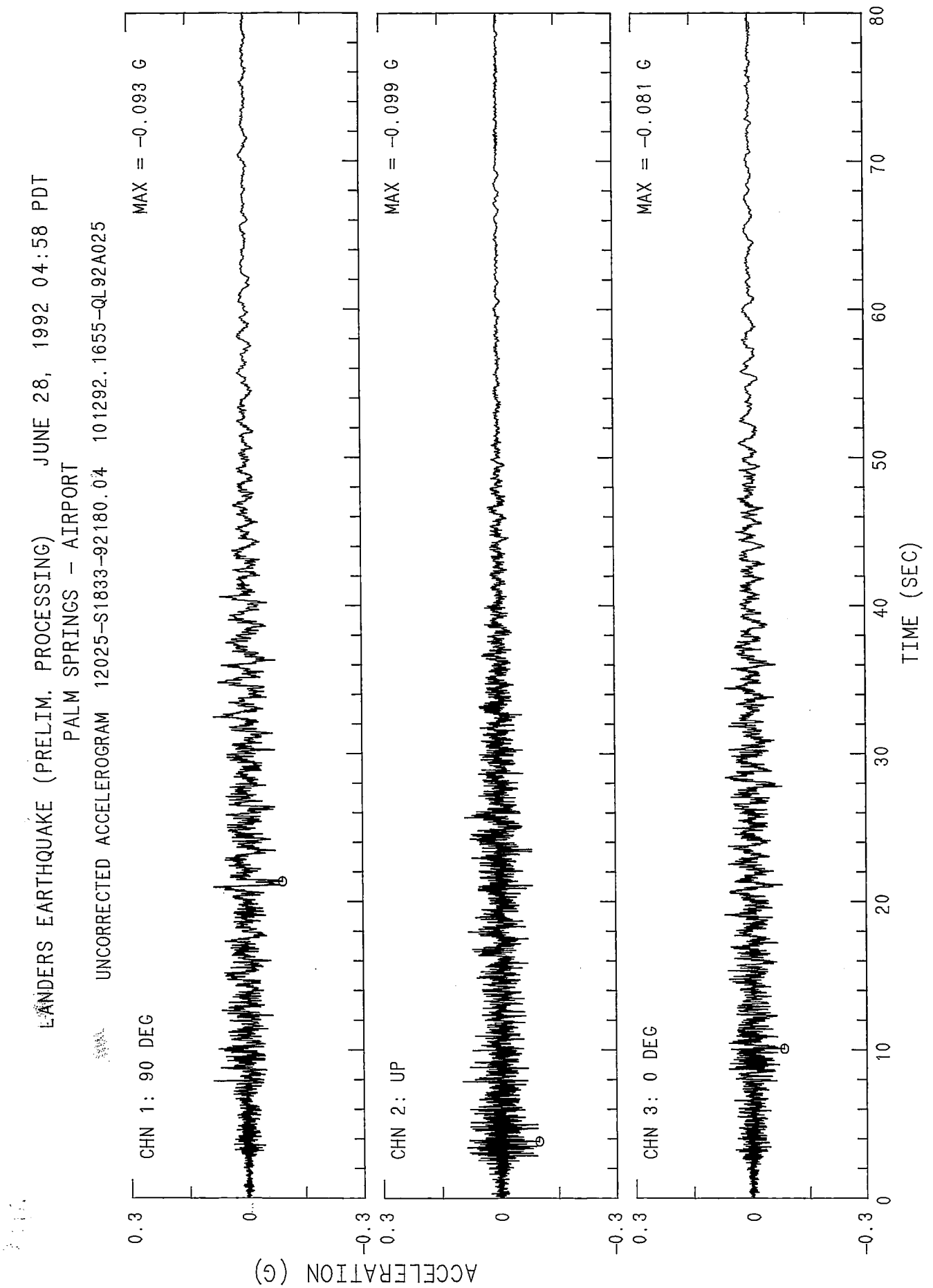
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149

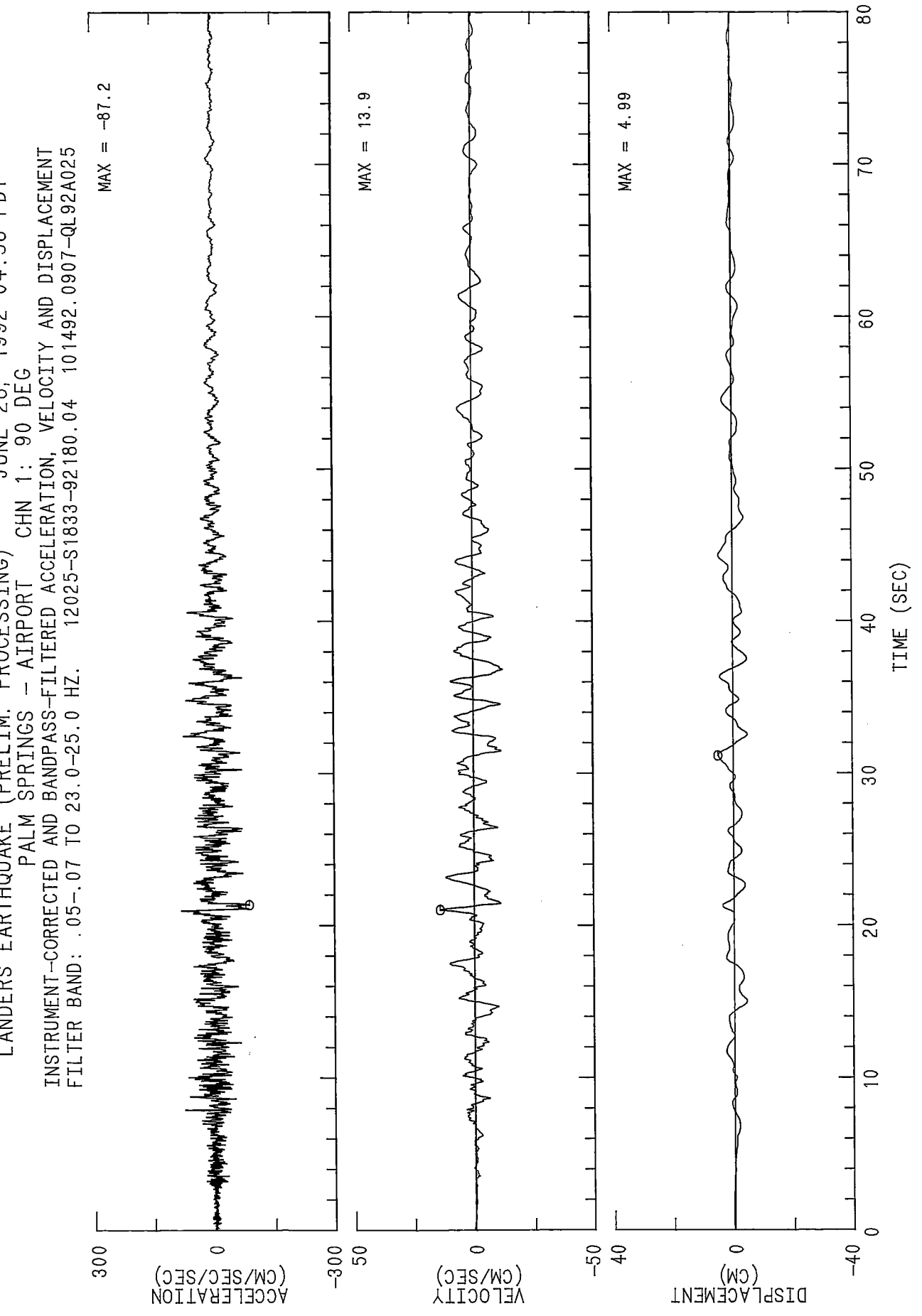


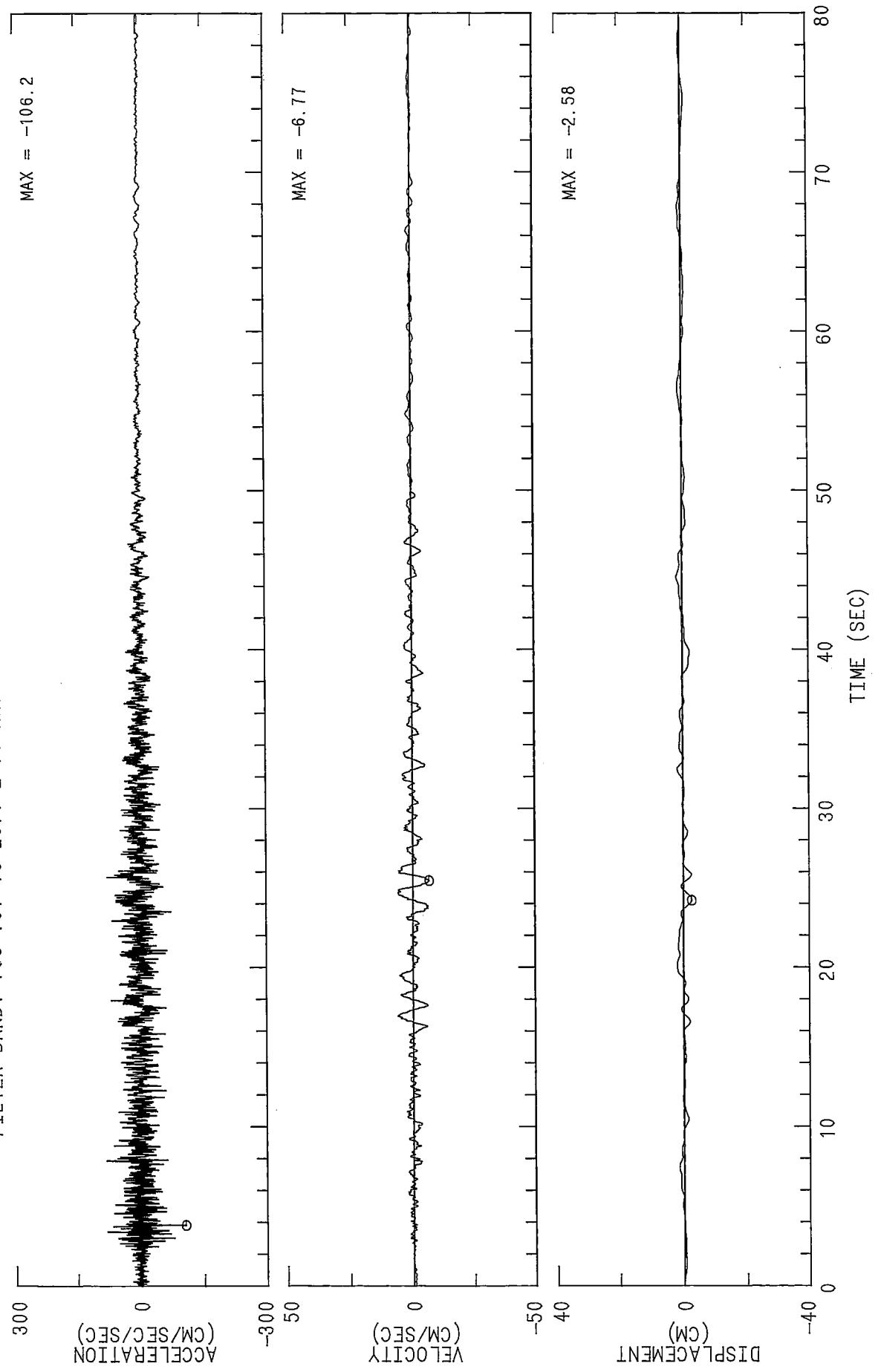
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149

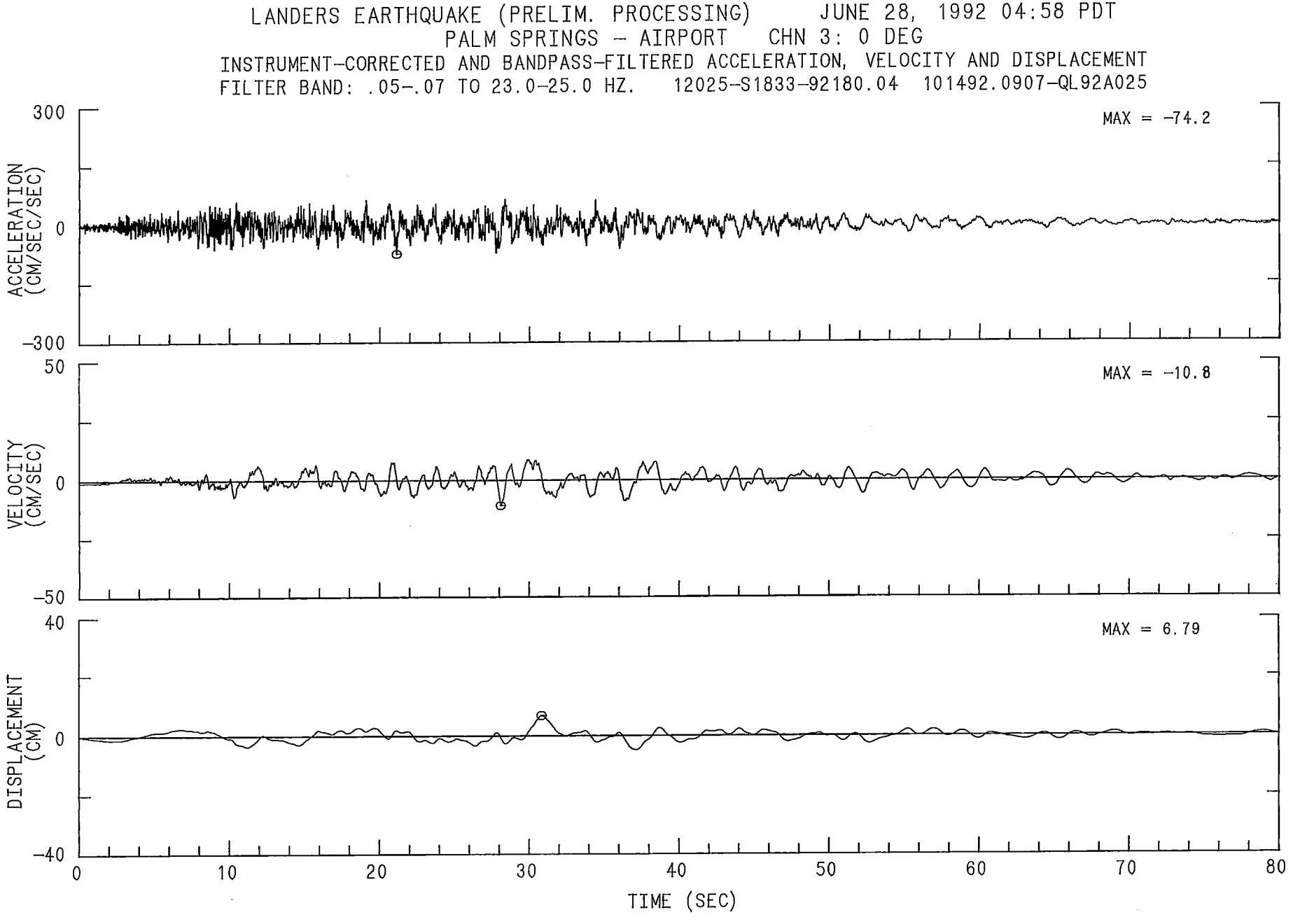



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
UNCORRECTED ACCELEROGRAM 12025-S1833-92180.04 101292.1655-QL92A025
CHN 1: 90 DEG
MAX = -0.093 G
CHN 2: UP
MAX = -0.099 G
CHN 3: 0 DEG
MAX = -0.081 G
ACCELERATION (G)
0.3
0
-0.3
0
5
10
15
20
TIME (SEC)

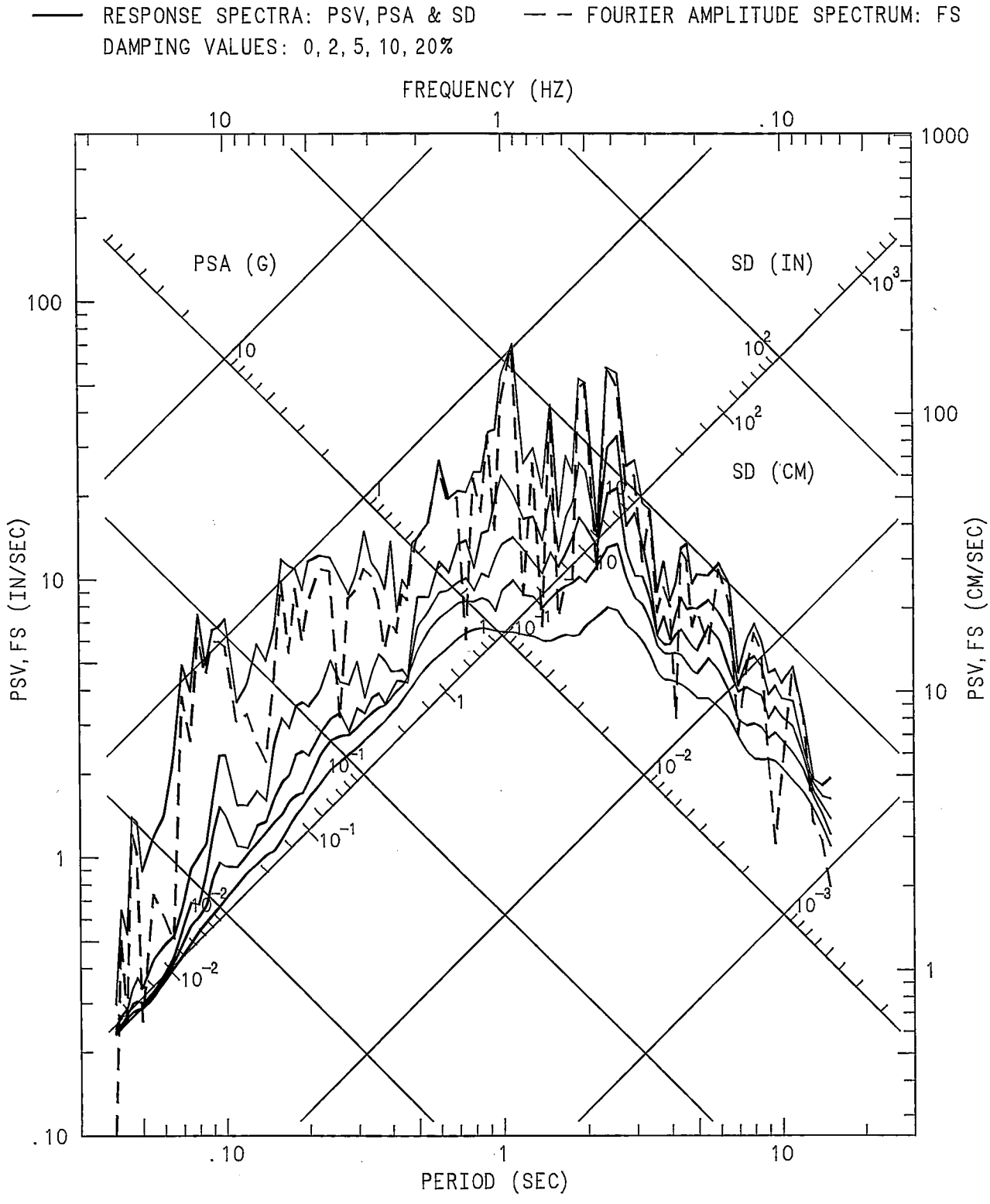

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
UNCORRECTED ACCELEROGRAM 12025-S1833-92180.04 101292.1655-QL92A025
CHN 1: 90 DEG
MAX = -0.093 G
CHN 2: UP
MAX = -0.099 G
CHN 3: 0 DEG
MAX = -0.081 G
ACCELERATION (G)
0.3
0
-0.3
0
10
20
30
40
50
60
70
80
TIME (SEC)


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS – AIRPORT CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12025-S1833-92180.04 101492.0907-QL92A025
MAX = -87.2
MAX = 13.9
MAX = 4.99
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80

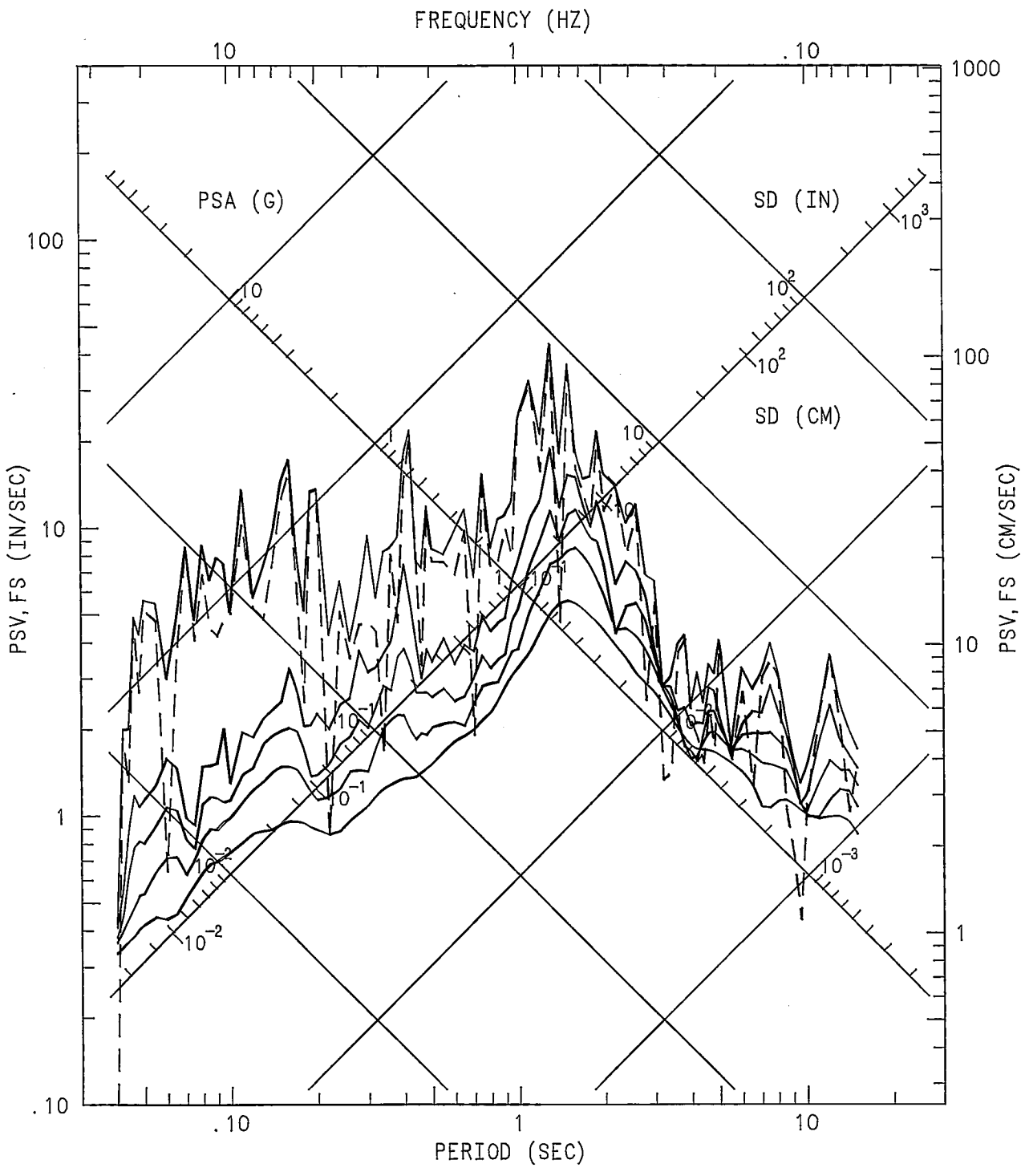

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS -- AIRPORT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12025-S1833-92180.04 101492.0907-QL92A025
MAX = -106.2
MAX = -6.77
MAX = -2.58
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12025-S1833-92180.04 101492.0907-QL92A025
ACCELERATION (CM/SEC/SEC)
MAX = -74.2
VELOCITY (CM/SEC)
MAX = -10.8
DISPLACEMENT (CM)
MAX = 6.79
TIME (SEC)

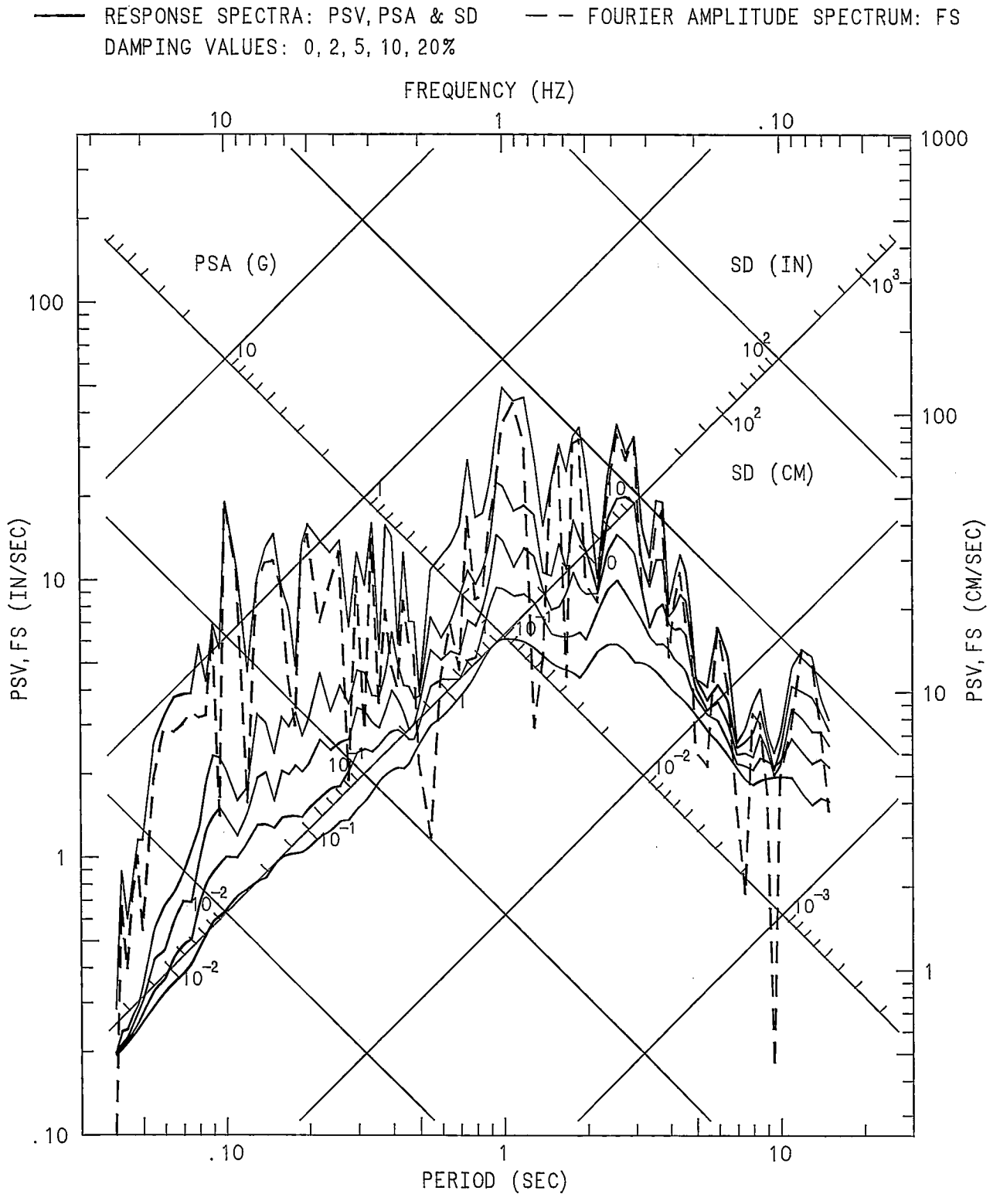
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025



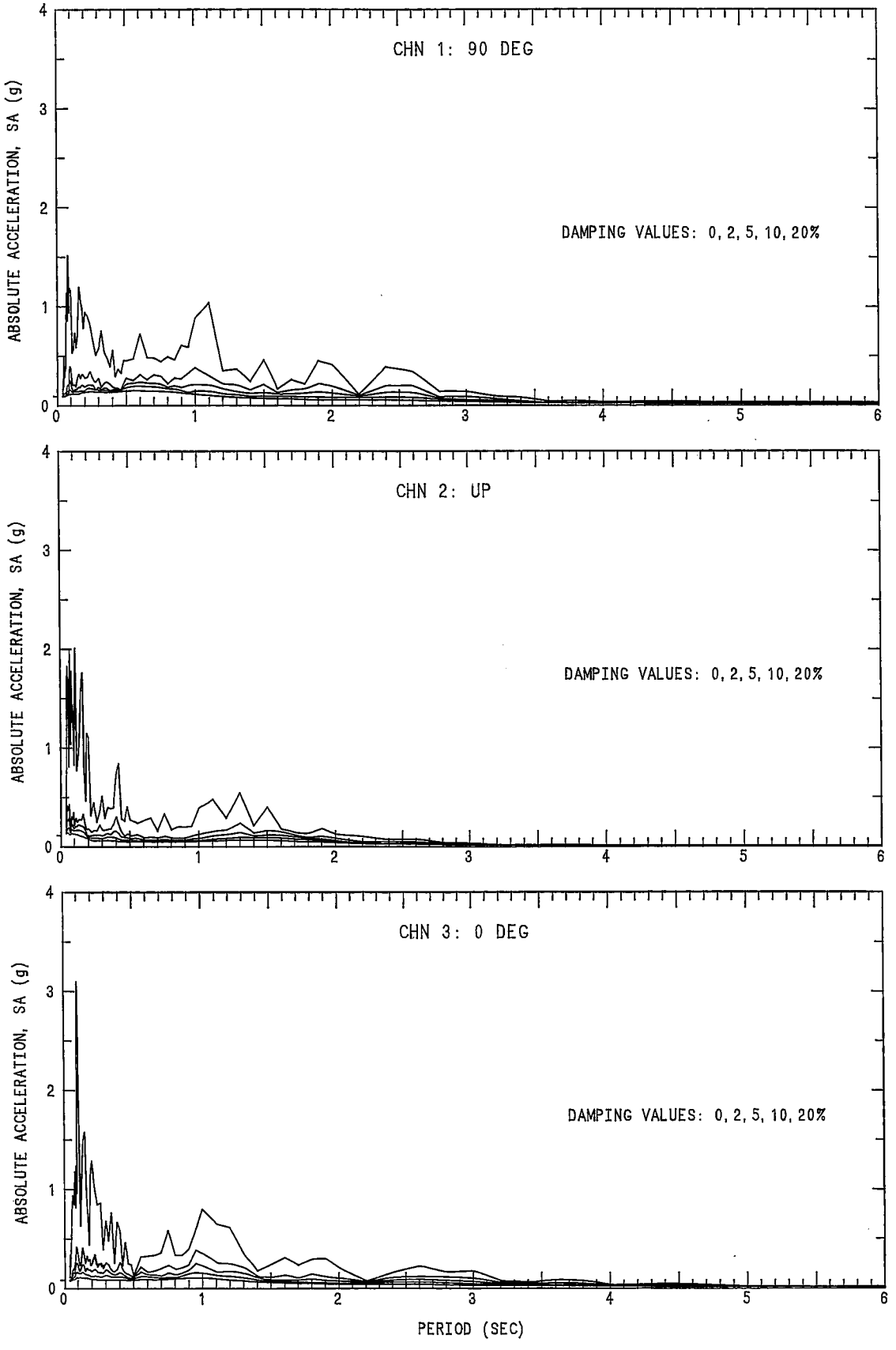
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 2: UP
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025

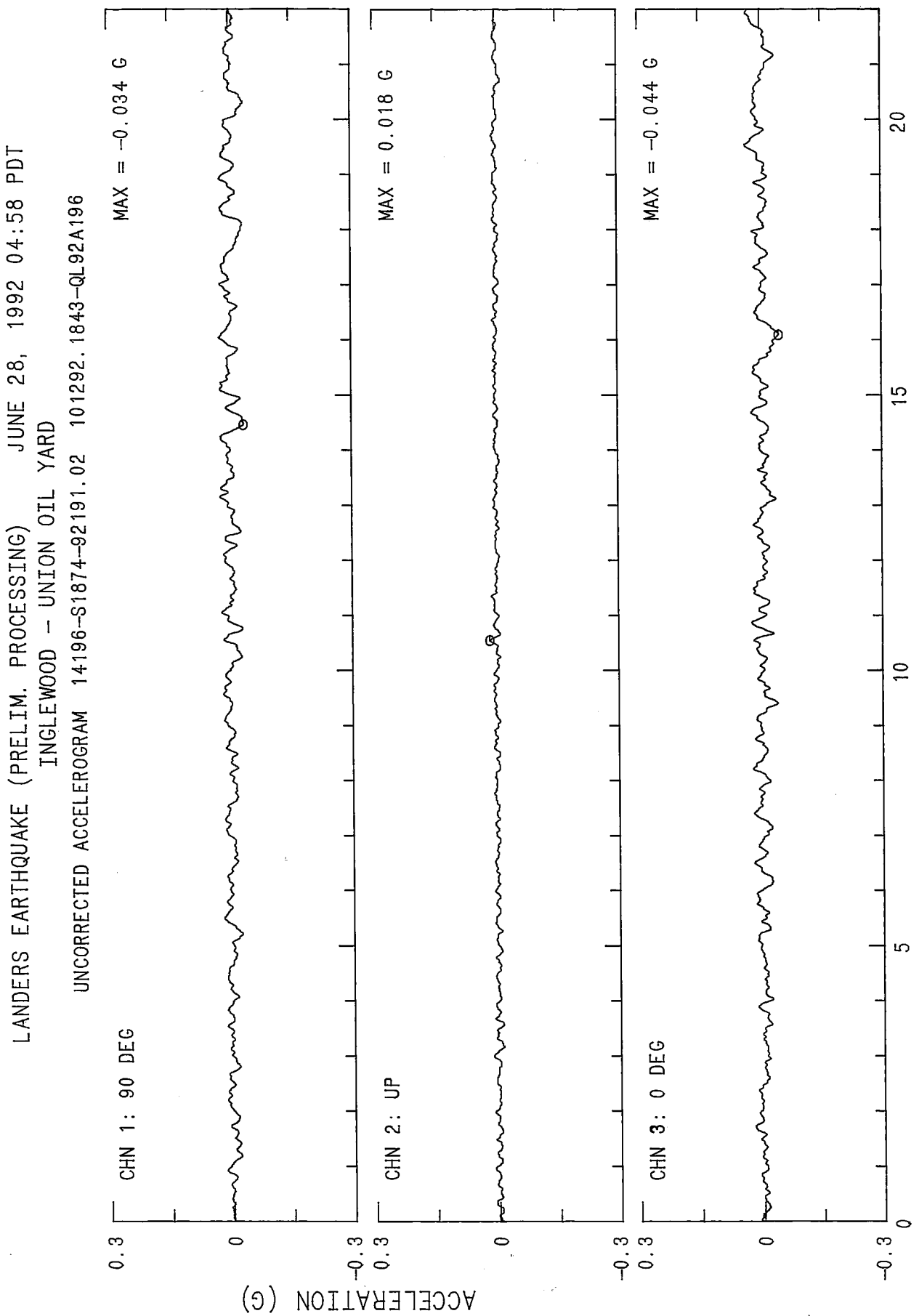


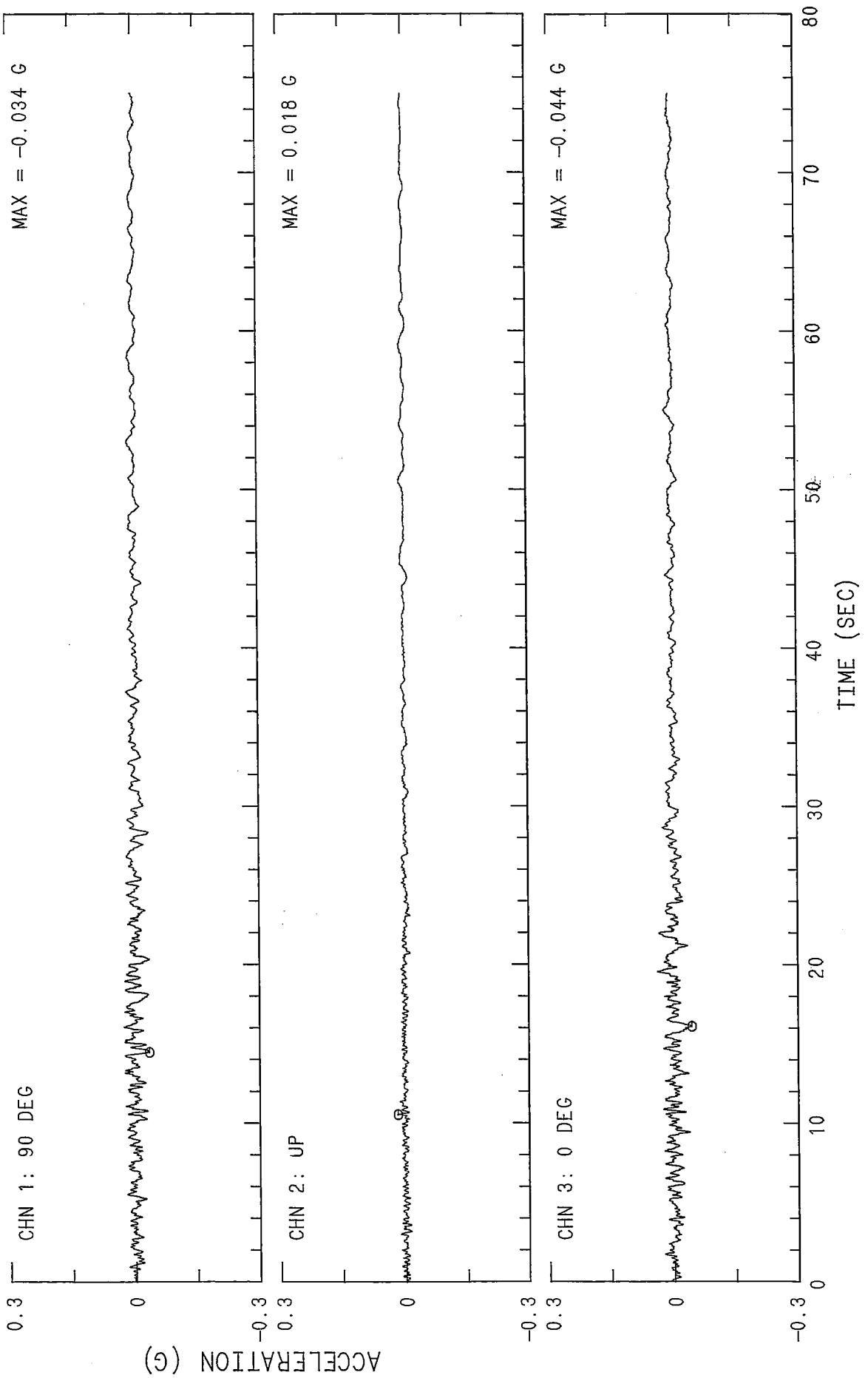
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 3: 0 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025

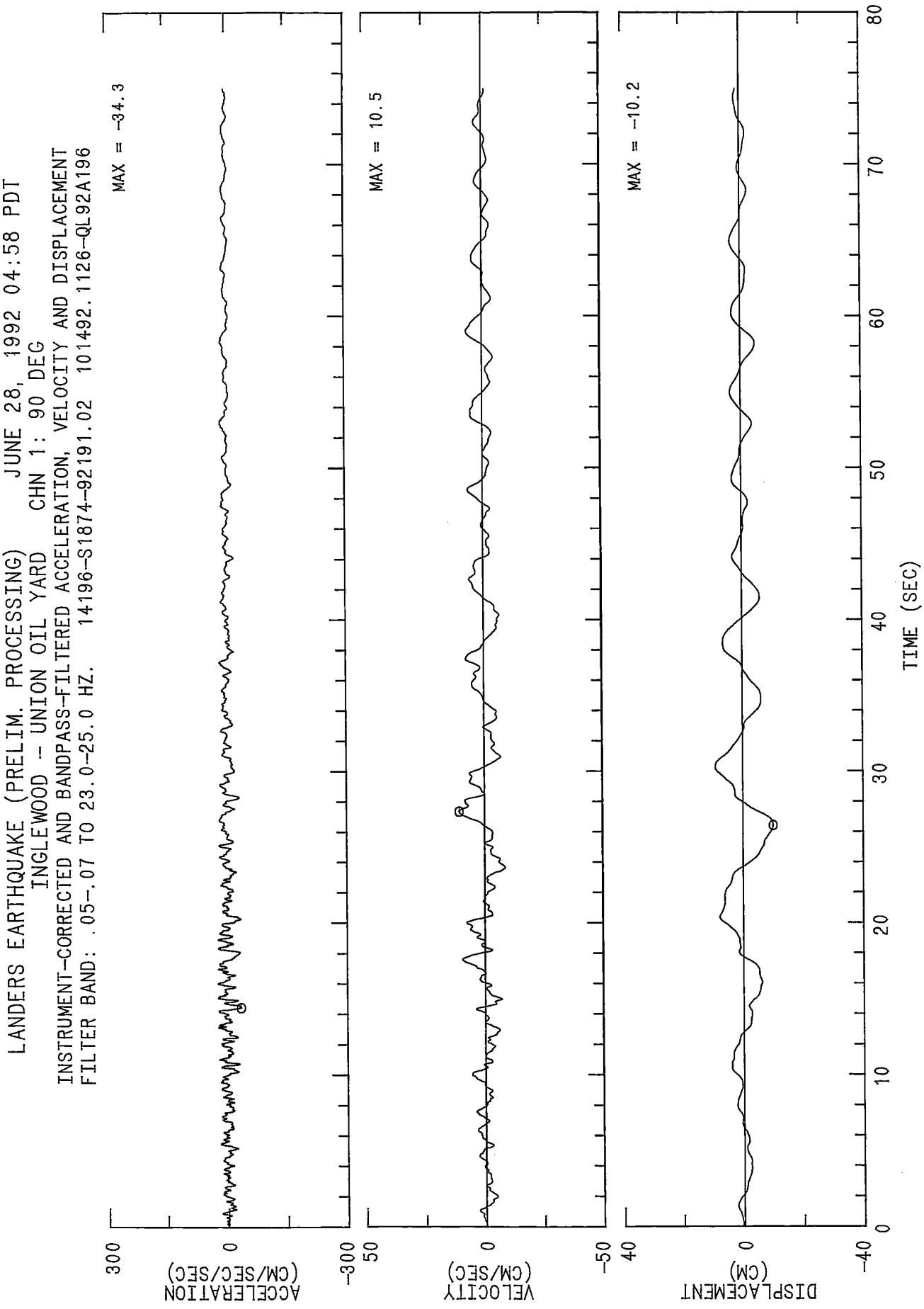


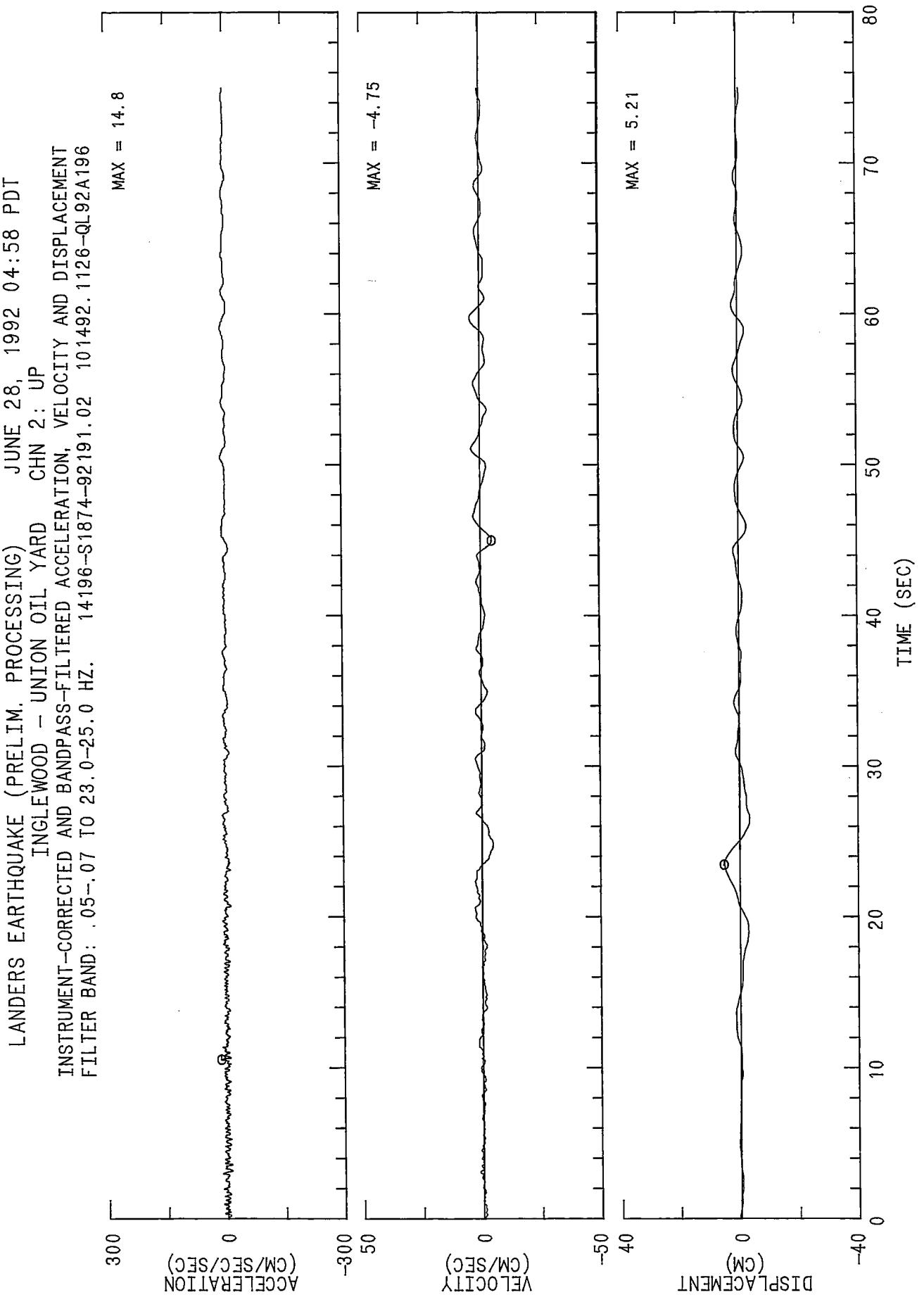
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025

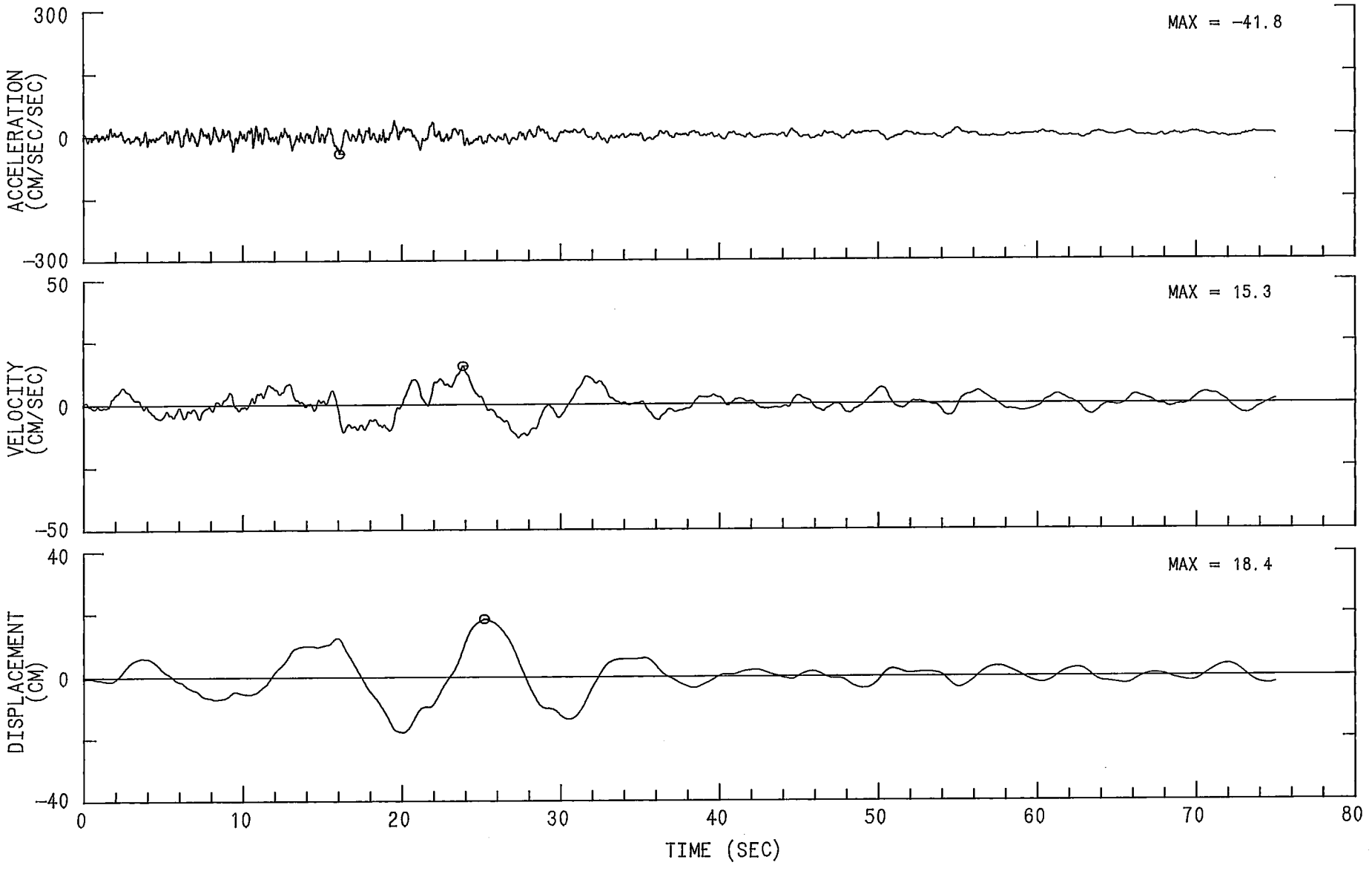



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD
UNCORRECTED ACCELEROGRAM 14196-S1874-92191.02 101292.1843-QL92A196
CHN 1: 90 DEG
MAX = -0.034 G
CHN 2: UP
MAX = 0.018 G
CHN 3: 0 DEG
MAX = -0.044 G
0.3
0
-0.3
ACCELERATION (G)
0
5
10
15
20
TIME (SEC)

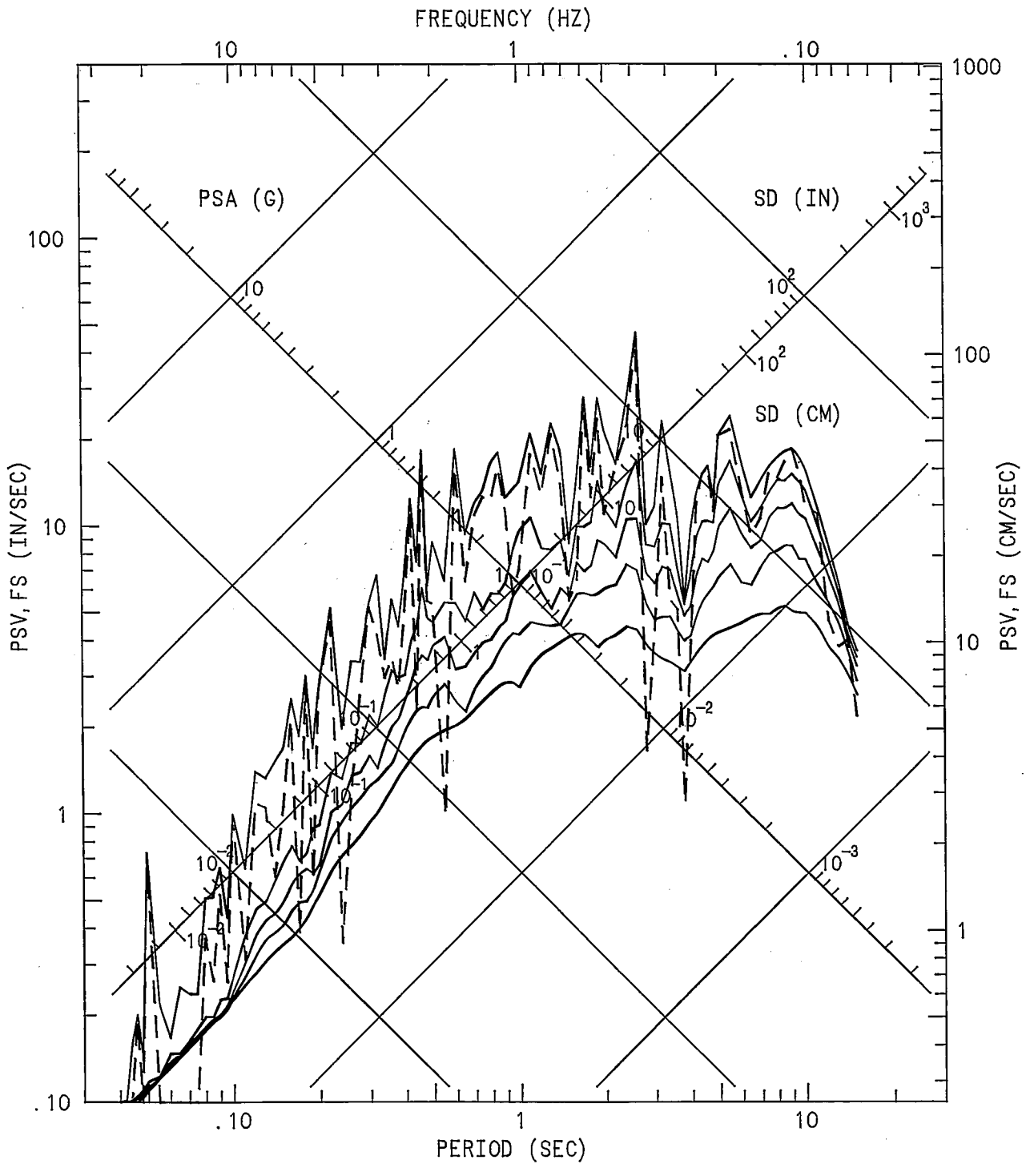

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD
UNCORRECTED ACCELEROGRAM 14196-S1874-92191.02 101292.1843-QL92A196
CHN 1: 90 DEG
MAX = -0.034 G
CHN 2: UP
MAX = 0.018 G
CHN 3: 0 DEG
MAX = -0.044 G
ACCELERATION (G)
0.3
0
-0.3
0
10
20
30
40
50
60
70
80
TIME (SEC)


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 14196-S1874-92191.02 101492.1126-QL92A196
MAX = -34.3
MAX = 10.5
MAX = -10.2
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 14196-S1874-92191.02 101492.1126-QL92A196
MAX = 14.8
MAX = -4.75
MAX = 5.21
ACCELERATION (CM/SEC/SEC)
VELOCITY (CM/SEC)
DISPLACEMENT (CM)
TIME (SEC)
300
0
-300
50
0
-50
40
0
-40
0
10
20
30
40
50
60
70
80


LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 14196-S1874-92191.02 101492.1126-QL92A196
ACCELERATION (CM/SEC/SEC)
300
0
-300
MAX = -41.8
VELOCITY (CM/SEC)
50
0
-50
MAX = 15.3
DISPLACEMENT (CM)
40
0
-40
MAX = 18.4
0
10
20
30
40
50
60
70
80
TIME (SEC)

LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD
CHN 1: 90 DEG
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
14196-S1874-92191.02 101492.1142-QL92A196



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD
CHN 2: UP
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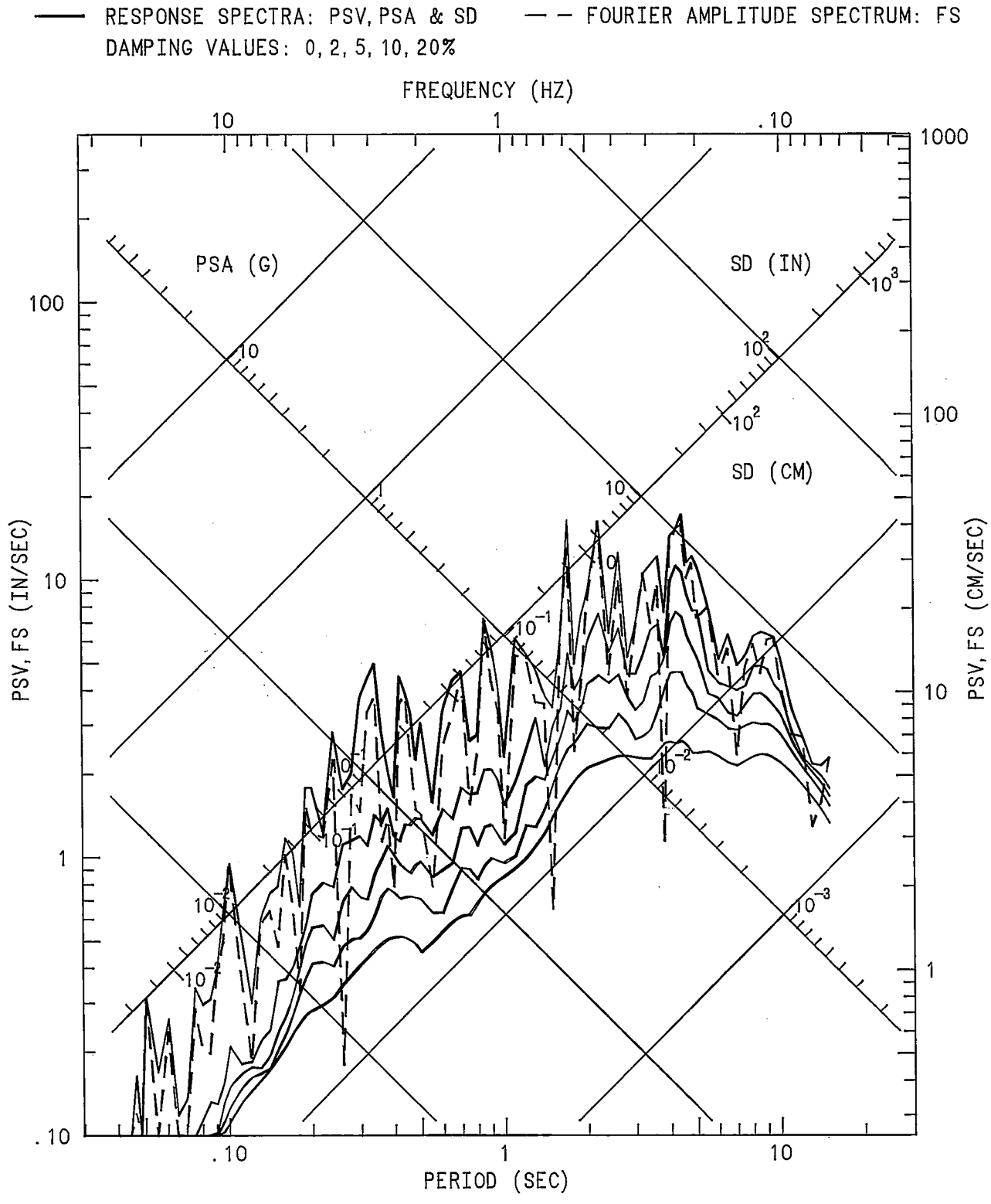

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INGLEWOOD – UNION OIL YARD
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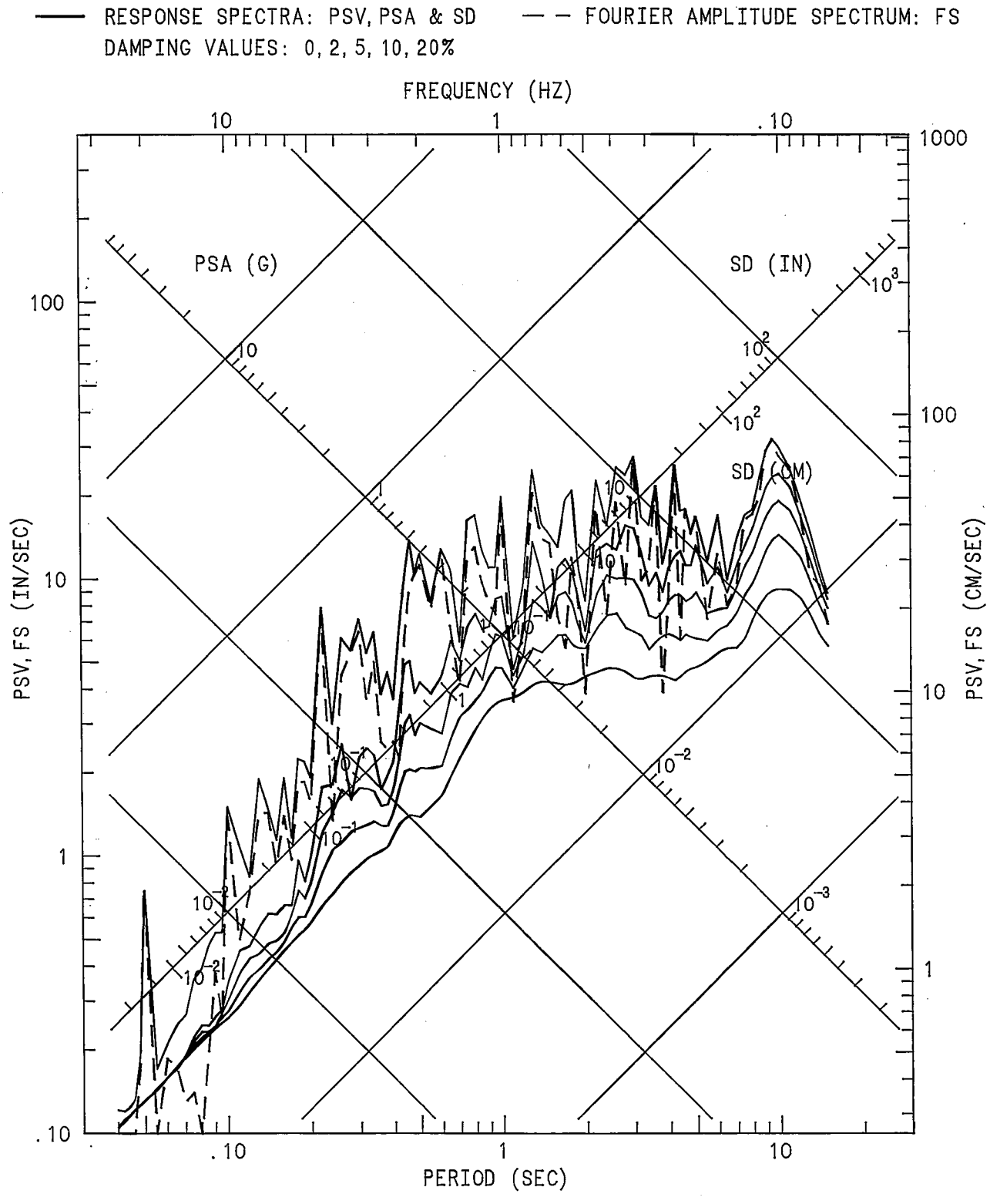
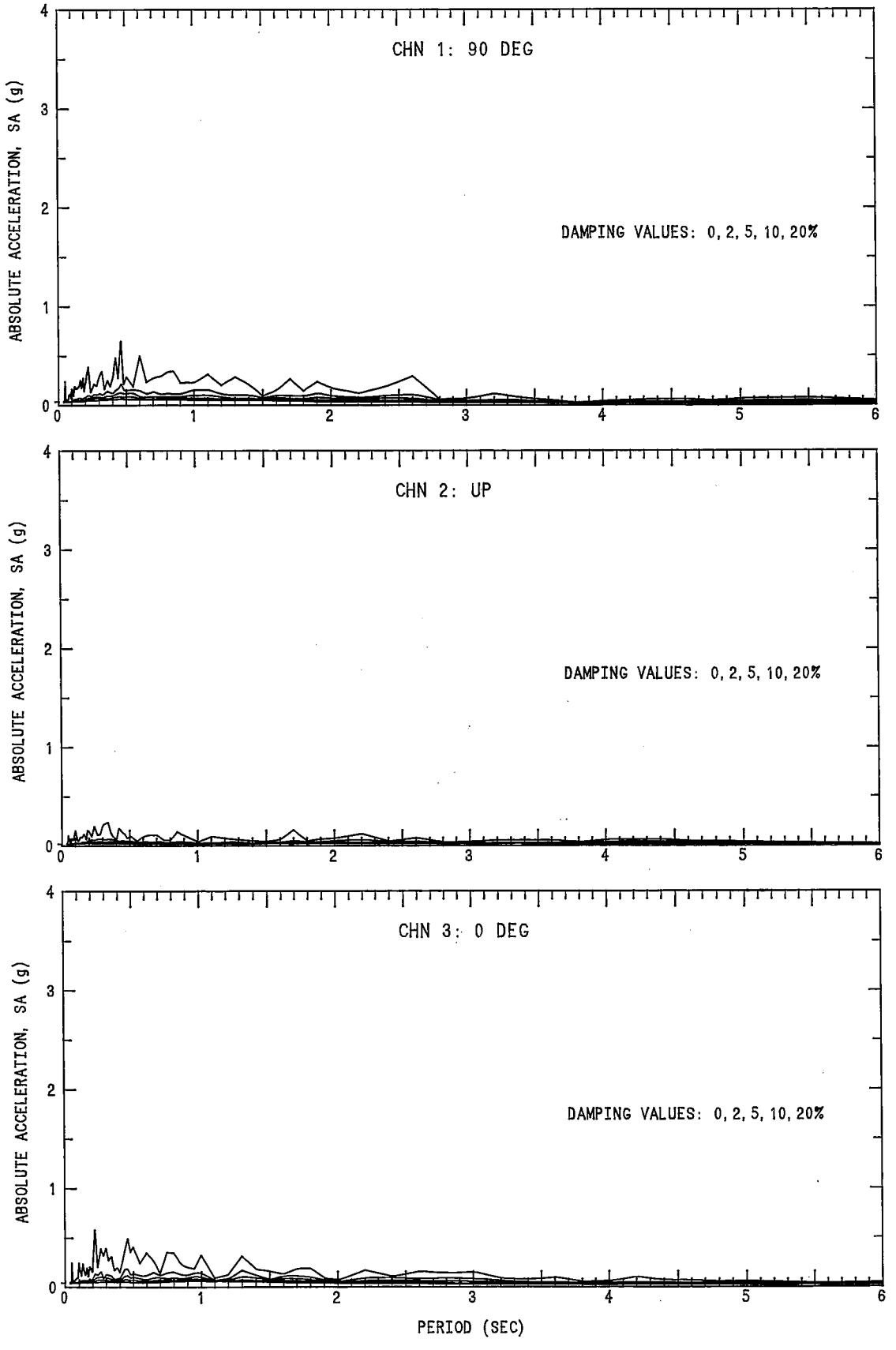
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
14196-S1874-92191.02 101492.1142-QL92A196