



Sección de Sismología e Ingeniería Sísmica, Departamento
de Geología, Instituto Costarricense de Electricidad,
Apdo. 10032-1000 San José

Escuela Centroamericana de Geología
Universidad de Costa Rica
Apdo. 35-2060, Cd. Univ. Rodrigo Facio.

ICE - U.C.R., COSTA RICA

BOLETIN MENSUAL

AÑO

Nº 12²

PERIODO: MARZO 1990.

CONTENIDO:

- A : Parámetros sísmicos de los temblores localizados.
- B : Tiempos de arribo de los sismos regionales, telesismos y temblores con MD \geq 4.0 o reportados como sentidos.

ESTACIONES DE LA RED SISMOLOGICA NACIONAL (RSN : ICE-UCR).

| ESTACION | CODIGO | LATITUD | LONGITUD | ELEVACION |
|-----------------|--------|-----------|-----------|-----------|
| ADAMS | ACR | 8º39.19' | 83º10.08' | 500 m. |
| BUVIS | BUS | 9º33.32' | 83º45.50' | 3487 m. |
| CHIRIPA | AR6 | 10º26.75' | 84º54.59' | 1010 m. |
| JICARAL | JCR | 9º50.99' | 85º06.71' | 575 m. |
| LA LUCHA 2 | LCR2 | 9º44.53' | 84º00.18' | 1730 m. |
| LIMON | LIO | 10º00.30' | 83º02.10' | 62 m. |
| QUEPÓS | QCR | 9º25.67' | 84º09.92' | 45 m. |
| SAN RAMON | SRA | 10º04.95' | 84º26.89' | 1160 m. |
| U de COSTA RICA | SJS | 9º56.35' | 84º03.25' | 1196 m. |
| VISTA DE MAR | VCR | 10º07.59' | 85º37.87' | 960 m. |
| VOLCAN IRAZU | ICR | 9º58.80' | 83º49.87' | 3302 m. |
| VOLCAN POAS 2 | VPS2 | 10º11.41' | 84º14.12' | 2570 m. |
| FORTUNA | FOR | 10º28.30' | 84º40.20' | 400 m. |

EXPLICACION DE LOS DATOS

El presente boletín sismológico mensual contiene la siguiente información:

PARTE A: Eventos locales y parámetros de los sismos localizados mensualmente por las estaciones de la Red Sismológica Nacional (RSN: ICE-UCR).

PARTE B: La lectura de los tiempos de arribo para los eventos locales registrados por la RSN con $M \geq 4.0$, sismos regionales y telesismos; en las estaciones ACR, BUS, AR6, LCR2, LIO, QCR, SRA, SJS, VCR, ICR, VPS2, ya que éstas son, actualmente las que tienen sus respectivos códigos reconocidos internacionalmente.

- 1-EST : Código de la estación que registro el evento.
- 2-DIA : Todas las fechas están reportadas en el tiempo medio de Greenwich (TMG).
- 3-TIEMPO : Tiempo de origen (**PARTE A**) y tiempo de arribo de las fases (**PARTE B**), están dados en horas, minutos segundos y decimas de segundo (TMG).
- 4-FASE : Una "i" o "e" precede el nombre de la fase para indicar el caracter del arribo:
"i" (impetu), indica que el primer arribo fue impulsivo y la dirección del primer movimiento es evidente. "e" (emersio), indica un comienzo gradual en el cual la dirección del movimiento es dudosa.
- 5-COMP. : Designa la componente (N, E o Z), de la estación sismográfica donde el tiempo de arribo fue medido
- 6-POL. : Polaridad, una "C" o una "D" representan un movimiento de compresión o dilatación, respectivamente. Indicada especialmente para las fases designadas con ímpetu (i).
- 7-PER. : Si se trata de la estación LCR2, entonces se anota si el dato es de período corto (PC), período medio (PM), o período largo (PL).
- 8-MAG(Md) : La magnitud reportada para los eventos locales, esta basada en la duración de la señal sísmica en la estación SJS, $MD = -1.21 + 2.38 \log (dur) + 0.0012 (dist. \text{hipoc.})$.
- 9-PROF. : Indica la profundidad en kilómetros a que se produjo el evento.

- 10-RMS. : Indica el error medio estándar, que da como resultado la localización por computadora, a través del programa HYPO71 (versión 1978).
- 11-ERH,ERZ: Datos de errores de la localización horizontal (H) y vertical (V), en kilómetros.
- 12-*** : Datos omitidos por la computadora o localización manual.
- 13- COMEN-
TARIOS: Indica si el epicentro es de sismos locales (con magnitud ≥ 4.0). Para telesismos y/o regionales se utiliza el reporte del NEIS. Los regionales se refieren a sismos fuera de las zonas limítrofes de Costa Rica.

PARTE A

MARZO 1990

| DIA | TIEMPO OR | LAT. N | LONG. W | PROF. | MAG. | GAP | RMS | BH | EZ |
|-----|-----------|----------|----------|-------|------|-----|------|------|------|
| 01 | 135653.62 | 09 25.37 | 84 02.86 | 58.3 | 3.5 | 189 | 0.37 | 3.3 | 1.4 |
| 02 | 083042.41 | 09 05.07 | 83 50.79 | 45.2 | 2.4 | 224 | 0.20 | 14.4 | 19.6 |
| 02 | 125422.95 | 09 30.57 | 84 51.39 | 37.4 | 3.6 | 192 | 0.40 | 4.3 | 2.9 |
| 02 | 161810.24 | 09 30.93 | 84 52.08 | 21.4 | 3.6 | 221 | 0.42 | 1.7 | 15.3 |
| 02 | 214540.76 | 10 08.55 | 84 40.33 | 25.0 | 3.3 | 199 | 0.13 | 8.7 | 4.7 |
| 03 | 003232.18 | 10 06.51 | 84 32.44 | 96.5 | 3.2 | 153 | 0.27 | 7.5 | 2.9 |
| 04 | 002639.23 | 10 23.21 | 84 22.06 | 126.4 | 3.2 | 228 | 0.43 | 9.0 | 3.4 |
| 05 | 012408.78 | 09 50.99 | 83 51.83 | 29.4 | 3.1 | 208 | 0.36 | 7.7 | 5.4 |
| 07 | 084840.48 | 09 41.43 | 83 40.40 | 115.5 | 3.2 | 336 | 0.05 | 7.6 | 2.1 |
| 08 | 093434.13 | 09 26.15 | 83 44.13 | 17.3 | 2.8 | 175 | 0.38 | 2.6 | 7.1 |
| 10 | 060316.10 | 09 31.04 | 84 51.88 | 7.6 | 2.9 | 308 | 0.32 | 3.9 | 6.9 |
| 10 | 102421.47 | 09 25.14 | 84 15.36 | 19.2 | 2.6 | 306 | 0.16 | 3.9 | 20.2 |
| 11 | 115955.73 | 09 40.24 | 84 57.90 | 31.0 | 2.5 | 213 | 0.05 | 3.7 | 0.9 |
| 11 | 201152.98 | 09 43.57 | 84 54.92 | 15.9 | 2.4 | 171 | 0.03 | *** | *** |
| 13 | 070922.03 | 09 44.63 | 84 07.87 | 59.6 | 3.2 | 226 | 0.13 | 1.6 | 1.2 |
| 14 | 030519.18 | 09 56.45 | 83 56.09 | 122.3 | 3.2 | 206 | 0.69 | 50.9 | 14.5 |
| -15 | 051630.52 | 09 03.11 | 83 45.60 | 45.0 | 3.2 | 326 | 0.47 | 17.1 | 24.6 |
| -15 | 074653.40 | 08 57.06 | 83 59.02 | 7.1 | 3.0 | 318 | 0.33 | 14.8 | 15.9 |
| -15 | 082915.61 | 08 59.17 | 84 00.98 | 33.5 | 3.3 | 314 | 0.38 | 10.8 | 6.0 |
| -15 | 083933.93 | 09 35.72 | 83 59.44 | 51.2 | 3.2 | 217 | 0.17 | 2.3 | 1.6 |
| -18 | 055852.70 | 08 56.13 | 83 46.29 | 0.6 | 3.2 | 229 | 0.17 | 9.1 | 2.3 |
| -18 | 114232.73 | 09 34.31 | 84 04.59 | 55.4 | 3.9 | 189 | 0.11 | 2.7 | 2.3 |
| -19 | 025951.59 | 09 30.89 | 84 50.21 | 15.7 | 3.7 | 220 | 0.32 | 2.8 | 9.2 |
| -20 | 115231.46 | 09 16.58 | 84 14.32 | 23.3 | 3.7 | 210 | 0.48 | 4.3 | 21.2 |
| -23 | 080156.93 | 09 46.28 | 84 24.05 | 44.8 | 2.9 | 219 | 0.21 | 3.1 | 2.7 |
| -23 | 093306.80 | 09 42.28 | 84 25.52 | 33.5 | 2.9 | 197 | 0.19 | 1.3 | 1.1 |
| -23 | 162837.85 | 09 44.37 | 84 20.51 | 51.2 | 2.9 | 235 | 0.26 | 3.7 | 3.8 |
| -23 | 165206.32 | 09 21.45 | 83 35.60 | 44.9 | 2.9 | 187 | 0.30 | 19.0 | 8.3 |
| -25 | 131605.23 | 09 33.26 | 84 56.90 | 16.3 | 5.7 | 193 | 0.36 | 3.0 | 7.3 |
| -25 | 131927.35 | 09 41.34 | 84 46.67 | 3.3 | 3.9 | 211 | 0.52 | 7.9 | 14.3 |
| -25 | 132255.36 | 09 37.27 | 84 55.68 | 16.9 | 6.5 | 187 | 0.45 | 3.5 | 10.6 |
| -25 | 133621.56 | 09 40.10 | 84 53.23 | 30.0 | 4.1 | 222 | 0.84 | 15.0 | 19.1 |
| -25 | 140349.29 | 09 31.57 | 84 48.91 | 77.1 | 3.8 | 245 | 0.05 | 1.1 | 2.0 |
| -25 | 140628.35 | 09 45.73 | 84 45.67 | 94.1 | 3.7 | 217 | 0.11 | 2.9 | 3.4 |
| -25 | 145159.80 | 09 30.56 | 84 24.80 | 5.0 | 3.4 | 257 | 0.81 | 9.8 | 8.0 |
| -25 | 150751.67 | 09 26.87 | 84 41.87 | 109.5 | 2.9 | 254 | 0.28 | 7.0 | 7.9 |
| -25 | 150930.89 | 09 00.68 | 84 04.19 | 45.0 | 3.3 | 286 | 0.18 | *** | *** |
| -25 | 151409.49 | 09 35.72 | 84 52.17 | 15.7 | 3.7 | 238 | 0.20 | 1.5 | 4.1 |
| -25 | 154221.65 | 09 31.52 | 84 55.44 | 15.4 | 3.7 | 246 | 0.27 | 1.9 | 3.8 |
| -25 | 154605.45 | 09 28.27 | 84 00.14 | 15.0 | 3.5 | 253 | 0.30 | 2.5 | 8.9 |

MARZO 1990

| DIA | TIEMPO OR | LAT. N | LONG. W | PROF | MAG. | GAP | RMS | EH | EZ |
|-----|-----------|----------|----------|------|------|-----|------|------|------|
| -25 | 160716.45 | 09045.50 | 84050.20 | 40.6 | 3.1 | 218 | 0.55 | 11.0 | 6.7 |
| -25 | 160902.55 | 09032.00 | 84047.85 | 58.5 | 3.7 | 244 | 0.16 | 2.9 | 8.5 |
| -25 | 161225.97 | 09031.70 | 84047.58 | 6.3 | 3.2 | 245 | 0.02 | 0.4 | 0.5 |
| -25 | 161923.22 | 09042.74 | 84056.44 | 82.2 | 3.5 | 226 | 0.01 | *** | *** |
| -25 | 163007.44 | 09032.35 | 84055.89 | 15.3 | 3.9 | 245 | 0.15 | 2.1 | 4.9 |
| -25 | 164651.12 | 09037.20 | 84047.68 | 44.3 | 3.0 | 235 | 0.17 | 3.7 | 11.6 |
| -25 | 164847.58 | 09031.14 | 84048.18 | 7.3 | 3.9 | 246 | 0.23 | 2.4 | 4.8 |
| -25 | 165845.82 | 09032.76 | 84056.71 | 10.0 | 3.9 | 244 | 0.37 | 3.3 | 4.5 |
| -25 | 171141.98 | 09024.31 | 83047.10 | 0.7 | 3.4 | 257 | 0.45 | 5.1 | 2.4 |
| -25 | 172259.57 | 09036.66 | 84045.90 | 37.4 | 3.1 | 236 | 0.45 | 9.1 | 8.0 |
| -25 | 174138.52 | 09024.83 | 84048.60 | 76.3 | 3.3 | 256 | 0.43 | 12.9 | 22.8 |
| -25 | 174344.80 | 09036.16 | 83042.52 | 28.2 | 3.8 | 237 | 0.37 | 8.7 | 25.3 |
| -25 | 175249.68 | 09028.95 | 84048.76 | 27.7 | 3.1 | 235 | 0.35 | 5.9 | 18.3 |
| -25 | 180419.76 | 09026.88 | 84045.68 | 32.9 | 2.4 | 253 | 0.25 | 7.4 | 22.2 |
| -25 | 183521.52 | 09033.97 | 84047.10 | 12.0 | 3.7 | 227 | 0.36 | 2.4 | 3.9 |
| -25 | 190729.88 | 09031.01 | 84046.63 | 6.5 | 3.6 | 231 | 0.42 | 3.1 | 3.9 |
| -25 | 192756.35 | 09029.66 | 84051.22 | 5.0 | 4.0 | 223 | 0.20 | 1.6 | 1.5 |
| -25 | 202416.30 | 09024.19 | 84043.40 | 29.7 | 3.3 | 228 | 0.42 | 4.4 | 9.0 |
| -25 | 202920.94 | 09020.15 | 84046.85 | 5.0 | 3.3 | 235 | 0.36 | 5.0 | 8.1 |
| -25 | 210614.88 | 09027.72 | 84056.16 | 10.4 | 3.2 | 229 | 0.36 | 4.9 | 8.1 |
| -25 | 213519.40 | 09018.64 | 84050.69 | 25.3 | 4.9 | 205 | 0.26 | 3.6 | 5.0 |
| -25 | 215300.03 | 09025.93 | 84046.95 | 13.0 | 3.0 | 194 | 0.36 | 3.3 | 3.9 |
| -25 | 220249.31 | 09034.40 | 84043.55 | 20.0 | 3.2 | 211 | 0.36 | 2.4 | 5.4 |
| -25 | 221318.70 | 09040.98 | 84048.24 | 25.8 | 3.1 | 313 | 0.51 | 10.4 | 15.6 |
| -25 | 222737.22 | 09036.34 | 84047.15 | 29.3 | 2.9 | 209 | 0.13 | 2.0 | 3.2 |
| -25 | 223037.84 | 09033.17 | 84049.44 | 27.1 | 3.0 | 216 | 0.33 | 2.7 | 10.0 |
| -25 | 223443.25 | 09043.90 | 84046.91 | 27.3 | 3.9 | 214 | 0.27 | 2.7 | 1.7 |
| -25 | 230635.17 | 09038.83 | 84048.13 | 32.4 | 3.5 | 257 | 0.30 | 2.5 | 3.1 |
| -25 | 231641.09 | 09036.55 | 84057.57 | 23.7 | 3.0 | 215 | 0.32 | 1.8 | 6.1 |
| -25 | 232025.75 | 09036.43 | 84047.28 | 26.8 | 3.1 | 209 | 0.34 | 2.1 | 3.0 |
| -25 | 234841.44 | 09035.97 | 84056.64 | 29.2 | 4.0 | 270 | 0.18 | 2.9 | 5.6 |
| -26 | 000512.37 | 09022.88 | 84046.56 | 13.7 | 3.2 | 197 | 0.34 | 2.4 | 3.2 |
| -26 | 002110.99 | 09016.52 | 84052.26 | 21.9 | 2.9 | 282 | 0.25 | 3.7 | 28.9 |
| -26 | 004459.55 | 09035.98 | 84042.98 | 17.2 | 3.0 | 207 | 0.32 | 1.8 | 4.2 |
| -26 | 005216.39 | 09035.93 | 84054.95 | 14.3 | 3.4 | 214 | 0.55 | 2.6 | 3.8 |
| -26 | 014607.25 | 09026.31 | 84046.88 | 2.6 | 3.1 | 226 | 0.40 | 3.8 | 4.5 |
| -26 | 014750.95 | 09051.09 | 85001.70 | 66.1 | 3.1 | 184 | 0.45 | 18.9 | 8.8 |
| -26 | 015304.24 | 09031.81 | 84046.85 | 11.4 | 3.1 | 217 | 0.44 | 2.7 | 4.2 |
| -26 | 021057.07 | 09044.37 | 84043.89 | 30.6 | 3.0 | 186 | 0.51 | 2.6 | 4.8 |
| -26 | 021453.66 | 09057.95 | 84052.05 | 23.1 | 2.2 | 182 | 0.27 | *** | *** |

2250

MARZO 1990

| DIA | TIEMPO OR | LAT. N | LONG. W | PROF | MAG. | GAP | RMS | EH | EZ |
|------|-----------|----------|----------|------|------|-----|------|------|------|
| - 26 | 021943.11 | 09013.80 | 84047.69 | 22.5 | 3.0 | 245 | 0.28 | 3.1 | 18.5 |
| - 26 | 022821.40 | 09031.36 | 84047.78 | 25.8 | 3.8 | 218 | 0.44 | 2.6 | 5.0 |
| - 26 | 024018.46 | 09031.93 | 84054.23 | 9.8 | 3.3 | 221 | 0.34 | 2.3 | 3.5 |
| - 26 | 024706.32 | 09025.78 | 84040.95 | 22.9 | 2.5 | 232 | 0.45 | 17.1 | 61.0 |
| - 26 | 025117.51 | 09030.26 | 84045.68 | 0.9 | 2.5 | 219 | 0.07 | *** | *** |
| - 26 | 031350.21 | 10014.33 | 84051.51 | 15.6 | 3.2 | 108 | 0.24 | 0.9 | 1.3 |
| - 26 | 033044.65 | 09019.25 | 84050.74 | 9.3 | 3.4 | 238 | 0.34 | 2.7 | 4.2 |
| - 26 | 033323.20 | 09023.74 | 84043.04 | 1.4 | 3.0 | 228 | 0.43 | 4.8 | 4.0 |
| - 26 | 035511.32 | 10037.75 | 85016.35 | 63.1 | 2.2 | 270 | 0.06 | *** | *** |
| - 26 | 043134.48 | 09033.41 | 84057.07 | 14.9 | 3.2 | 220 | 0.36 | 2.6 | 2.2 |
| - 26 | 045507.19 | 09038.11 | 84048.42 | 15.0 | 2.5 | 223 | 0.39 | 9.2 | 16.8 |
| - 26 | 045653.72 | 09056.80 | 85000.39 | 2.5 | 2.7 | 120 | 0.38 | 3.0 | 6.4 |
| - 26 | 053949.39 | 09035.10 | 84050.19 | 13.0 | 3.1 | 213 | 0.36 | 1.4 | 2.0 |
| - 26 | 055046.05 | 09028.02 | 84051.18 | 5.2 | 3.8 | 225 | 0.41 | 2.9 | 4.3 |
| - 26 | 060204.21 | 09035.36 | 84047.67 | 22.3 | 2.9 | 211 | 0.38 | 10.9 | 33.4 |
| - 26 | 060336.50 | 09041.17 | 84054.59 | 12.9 | 2.7 | 205 | 0.27 | *** | *** |
| - 26 | 061731.87 | 09035.60 | 84050.96 | 25.7 | 3.3 | 213 | 0.46 | 2.5 | 4.0 |
| - 26 | 062502.75 | 09036.95 | 84057.52 | 21.6 | 3.1 | 215 | 0.37 | 2.9 | 4.1 |
| - 26 | 065555.95 | 09027.14 | 84047.29 | 36.5 | 3.2 | 225 | 0.52 | 5.0 | 2.9 |
| - 26 | 071740.63 | 09040.07 | 84055.16 | 22.6 | 2.4 | 207 | 0.14 | 11.0 | 6.6 |
| - 26 | 075354.17 | 09025.32 | 84053.76 | 43.8 | 3.0 | 260 | 0.44 | 5.9 | 12.3 |
| - 26 | 080136.23 | 09010.52 | 84015.76 | 40.7 | 3.3 | 263 | 0.51 | 9.6 | 13.4 |
| - 26 | 082725.70 | 09022.68 | 84046.77 | 63.2 | 3.1 | 247 | 0.42 | 7.4 | 7.6 |
| - 26 | 083746.96 | 09032.95 | 84047.75 | 20.3 | 2.9 | 215 | 0.32 | 3.2 | 15.8 |
| - 26 | 093617.54 | 09037.27 | 84021.98 | 2.5 | 2.7 | 191 | 0.03 | *** | *** |
| - 26 | 093944.41 | 09038.44 | 84046.68 | 11.0 | 2.4 | 205 | 0.01 | *** | *** |
| - 26 | 103847.02 | 09035.43 | 84044.78 | 23.9 | 3.1 | 181 | 0.54 | 2.7 | 6.0 |
| - 26 | 104034.48 | 09025.08 | 84046.48 | 8.2 | 2.8 | 228 | 0.31 | 2.4 | 5.0 |
| - 26 | 104816.72 | 09046.74 | 84055.53 | 23.4 | 4.2 | 168 | 0.29 | 1.8 | 2.0 |
| - 26 | 110951.79 | 09015.48 | 84051.62 | 0.9 | 2.8 | 244 | 0.30 | 5.0 | 3.3 |
| - 26 | 120119.75 | 09016.12 | 84048.31 | 40.2 | 3.0 | 242 | 0.24 | 4.6 | 9.0 |
| - 26 | 121232.70 | 09038.86 | 84051.79 | 6.4 | 3.2 | 207 | 0.24 | 5.0 | 6.7 |
| - 26 | 123445.19 | 09037.16 | 84045.13 | 36.2 | 2.4 | 206 | 0.06 | 1.4 | 0.7 |
| - 26 | 125633.40 | 09057.13 | 84048.61 | 7.5 | 2.8 | 214 | 0.03 | *** | *** |
| - 26 | 130307.99 | 09027.42 | 84045.45 | 31.1 | 2.6 | 191 | 0.52 | 3.8 | 10.4 |
| - 26 | 132958.63 | 09017.58 | 84051.33 | 32.2 | 3.1 | 206 | 0.34 | 4.0 | 6.1 |
| - 26 | 133918.17 | 09028.49 | 84035.50 | 34.1 | 2.9 | 258 | 0.39 | 4.2 | 10.4 |
| - 26 | 134004.55 | 09039.73 | 84044.23 | 27.3 | 3.1 | 201 | 0.28 | 2.5 | 4.0 |
| - 26 | 150210.91 | 09034.76 | 84056.44 | 25.6 | 3.2 | 217 | 0.35 | 3.4 | 4.9 |
| - 26 | 154136.09 | 09047.02 | 84053.66 | 5.0 | 3.8 | 194 | 0.21 | 1.7 | 2.7 |

MARZO 1990

| DIA | TIEMPO OR | LAT. N | LONG. W | PROF | MAG. | GAP | RMS | EH | EZ |
|------|-----------|----------|----------|------|------|-----|------|------|------|
| - 26 | 163120.00 | 09016.29 | 84048.59 | 24.2 | 2.7 | 242 | 0.44 | 5.3 | 29.7 |
| - 26 | 165513.93 | 09025.55 | 84046.67 | 9.3 | 3.4 | 227 | 0.42 | 2.6 | 4.4 |
| - 26 | 170702.00 | 09027.12 | 84044.43 | 24.8 | 2.7 | 266 | 0.56 | *** | *** |
| - 26 | 183103.30 | 09031.56 | 84045.07 | 22.6 | 3.1 | 216 | 0.37 | 3.5 | 10.0 |
| - 26 | 183956.85 | 09030.49 | 84059.28 | 35.5 | 4.2 | 199 | 0.24 | 2.8 | 3.2 |
| - 26 | 191359.29 | 09036.66 | 84000.89 | 33.7 | 3.0 | 218 | 0.57 | 6.4 | 5.9 |
| - 26 | 191509.87 | 09038.83 | 84050.15 | 24.1 | 3.1 | 206 | 0.36 | 2.6 | 6.9 |
| - 26 | 212906.70 | 08051.70 | 84052.44 | 10.0 | 2.9 | 271 | 0.98 | 38.1 | *** |
| - 26 | 235631.27 | 09041.90 | 85006.22 | 34.5 | 2.9 | 213 | 0.31 | 4.4 | 3.6 |
| - 27 | 000251.94 | 09051.10 | 84053.76 | 26.2 | 2.9 | 167 | 0.28 | 1.1 | 2.5 |
| - 27 | 000648.53 | 09024.66 | 84050.73 | 10.4 | 2.7 | 230 | 0.35 | 3.0 | 5.5 |
| - 27 | 000808.49 | 09053.10 | 84055.95 | 14.1 | 2.5 | 169 | 0.38 | 2.4 | 3.1 |
| - 27 | 003637.31 | 09037.98 | 84058.35 | 20.6 | 3.1 | 271 | 0.33 | 3.2 | 8.9 |
| - 27 | 004649.19 | 09025.97 | 85004.55 | 51.3 | 3.7 | 237 | 0.50 | 5.5 | 11.3 |
| - 27 | 013041.38 | 09014.74 | 84047.82 | 30.5 | 3.5 | 281 | 0.10 | 1.3 | 2.4 |
| - 27 | 014656.04 | 09034.69 | 84039.13 | 28.5 | 2.8 | 208 | 0.41 | 2.3 | 3.9 |
| - 27 | 034944.02 | 09039.49 | 84055.69 | 28.5 | 3.6 | 209 | 0.30 | 3.1 | 3.3 |
| - 27 | 035257.36 | 09039.97 | 84047.53 | 19.7 | 2.5 | 204 | 0.35 | 2.2 | 3.5 |
| - 27 | 042544.54 | 09025.90 | 84042.28 | 18.4 | 2.9 | 225 | 0.48 | 4.3 | 8.2 |
| - 27 | 052727.46 | 09035.59 | 84057.21 | 13.0 | 3.1 | 217 | 0.41 | 2.3 | 3.5 |
| - 27 | 075847.34 | 09045.57 | 84051.61 | 14.2 | 1.9 | 182 | 0.10 | 0.8 | 0.7 |
| - 27 | 084602.38 | 09015.83 | 85003.78 | 28.8 | 3.2 | 250 | 0.36 | 4.6 | 6.7 |
| - 27 | 090133.65 | 09017.42 | 85006.81 | 49.2 | 3.3 | 220 | 0.47 | 7.2 | 12.2 |
| - 27 | 112049.13 | 09028.48 | 84043.02 | 23.6 | 3.0 | 264 | 0.48 | 4.4 | 3.9 |
| - 27 | 112851.17 | 09021.45 | 84046.76 | 16.5 | 2.9 | 233 | 0.42 | 2.3 | 9.0 |
| - 27 | 120837.04 | 09017.81 | 85023.80 | 39.9 | 4.0 | 263 | 0.36 | 13.6 | 18.4 |
| - 27 | 142405.48 | 08056.83 | 84054.82 | 6.3 | 4.0 | 261 | 0.23 | 5.0 | 7.1 |
| - 27 | 145219.47 | 09031.18 | 84045.54 | 20.6 | 4.6 | 220 | 0.31 | 3.3 | 3.5 |
| - 27 | 181504.61 | 09041.78 | 84048.98 | 20.3 | 2.6 | 200 | 0.43 | 2.6 | 2.6 |
| - 27 | 201529.87 | 09013.99 | 85015.66 | 31.1 | 3.8 | 232 | 0.31 | 2.8 | 2.2 |
| - 27 | 221916.75 | 09019.50 | 85006.38 | 11.5 | 3.7 | 247 | 0.66 | 6.4 | 8.1 |
| - 27 | 230509.40 | 10004.10 | 84000.56 | 20.9 | 3.5 | 320 | 0.06 | *** | *** |
| - 28 | 004700.50 | 10007.10 | 84000.09 | 15.4 | 3.8 | 213 | 0.01 | 0.3 | 0.2 |
| - 28 | 011435.88 | 09042.26 | 84056.06 | 13.1 | 2.2 | 180 | 0.33 | 2.1 | 1.7 |
| - 28 | 011503.45 | 09039.46 | 84052.20 | 11.3 | 2.6 | 197 | 0.51 | 4.3 | 4.5 |
| - 28 | 042849.98 | 09045.02 | 84050.76 | 4.2 | 3.5 | 151 | 0.46 | 2.1 | 2.3 |
| - 28 | 143130.16 | 10004.40 | 84001.47 | 17.1 | 3.0 | 242 | 0.12 | 1.0 | 0.6 |
| - 28 | 172443.35 | 09021.12 | 84042.79 | 23.6 | 4.2 | 196 | 0.18 | 3.0 | 4.3 |
| - 28 | 185208.48 | 09030.24 | 84050.69 | 19.6 | 3.7 | 218 | 0.53 | 3.9 | 6.7 |
| - 28 | 201716.04 | 09014.15 | 83048.70 | 46.3 | 3.5 | 193 | 0.26 | 2.2 | 5.1 |

MARZO 1990

| DIA | TIEMPO | OR | LAT. | LONG. | PROF | MAG | GAP | RMS | BH | EZ |
|-----|-----------|----|----------|----------|------|-----|-----|------|------|------|
| -28 | 211123.00 | | 09035.25 | 85000.04 | 13.9 | 3.3 | 219 | 0.33 | 1.4 | 1.3 |
| -29 | 000727.15 | | 09043.83 | 84046.62 | 26.8 | 2.5 | 150 | 0.36 | 2.2 | 2.4 |
| -29 | 074433.48 | | 09028.56 | 84048.00 | 28.4 | 3.6 | 223 | 0.31 | 2.2 | 3.7 |
| -29 | 120632.58 | | 09022.74 | 84026.28 | 25.5 | 3.5 | 227 | 0.26 | 1.9 | 4.3 |
| -29 | 143347.99 | | 09021.70 | 84026.05 | 21.5 | 3.3 | 253 | 0.30 | 3.1 | 8.4 |
| -29 | 164227.90 | | 09020.41 | 85014.12 | 36.5 | 4.2 | 252 | 0.56 | 6.3 | 3.1 |
| -29 | 182947.19 | | 09020.20 | 84051.10 | 11.8 | 3.4 | 237 | 0.19 | 2.0 | 2.1 |
| -29 | 222258.74 | | 10007.04 | 84022.52 | 35.0 | 2.3 | 209 | 0.21 | *** | *** |
| -29 | 225315.55 | | 10039.52 | 84044.79 | 25.0 | 2.2 | 262 | 0.10 | *** | *** |
| -30 | 005453.68 | | 09037.28 | 84024.13 | 11.5 | 2.0 | 311 | 0.49 | *** | *** |
| -30 | 031955.80 | | 09052.93 | 84003.86 | 12.8 | 3.1 | 205 | 0.47 | 3.5 | 9.0 |
| -30 | 142104.77 | | 09035.18 | 84045.78 | 25.0 | 3.0 | 192 | 0.38 | 1.6 | 2.1 |
| -30 | 145046.62 | | 09014.24 | 84048.80 | 0.1 | 3.1 | 245 | 0.36 | 4.2 | 3.1 |
| -30 | 212420.44 | | 09021.91 | 84039.64 | 33.1 | 3.5 | 230 | 0.51 | 3.2 | 5.8 |
| -31 | 005700.98 | | 09028.80 | 84041.02 | 35.7 | 3.0 | 210 | 0.50 | 3.1 | 7.0 |
| -31 | 112150.00 | | 09039.78 | 85003.60 | 52.0 | 4.1 | 210 | 0.50 | 11.1 | 13.9 |

PARTE B

LECTURAS DE LOS TIEMPOS DE ARRIBO DE LOS SISMOS
REGIONALES, TELESISMOS Y EVENTOS LOCALES CON M >= 4.0

MARZO 1990

| EST. | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 01 | 080658.60 | iP | Z | C |
| | | 86.00 | S | Z | |
| BUS | 01 | 080651.00 | iP | Z | D |
| | | 69.50 | S | Z | |
| AR6 | 01 | 080713.80 | eP | Z | |
| LCR2 | 01 | 080655.10 | iP | Z | C |
| | | 79.50 | S | Z | |
| ACR | 01 | 080628.40 | iP | Z | C |
| FOR | 01 | 080710.60 | iP | Z | D |

18Km al Noroeste de Puerto Armuelles, frontera entre Costa Rica y Panam , MD= 4.2

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 03 | 084428.40 | eP | Z | |
| LCR2 | 03 | 084430.50 | iP | Z | C |
| BUS | 03 | 084434.50 | iP | Z | D |
| VPS2 | 03 | 084426.20 | eP | Z | |
| VCR | 03 | 084410.30 | eP | Z | |
| SRA | 03 | 084423.20 | iP | Z | C |

Oxaca México, Mb= 5.4

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 04 | 042440.00 | iP | Z | D |
| LCR2 | 04 | 042436.90 | iP | Z | C |
| BUS | 04 | 042433.00 | iP | Z | D |
| VCR | 04 | 042455.10 | iP | Z | C |
| LIO | 04 | 042436.00 | iP | Z | D |
| AR6 | 04 | 042453.30 | iP | Z | C |
| SRA | 04 | 042444.50 | iP | Z | D |

Regional.

| | | | | | |
|-----|----|-----------|----|---|---|
| SJS | 11 | 075657.20 | iP | Z | D |
| SRA | 11 | 075651.30 | iP | Z | D |
| VCR | 11 | 075635.30 | iP | Z | C |
| BUS | 11 | 075703.00 | iP | Z | C |

54Km al Oeste de la Península de Santa Elena Costa Rica, MD= 4.4

MARZO 1990

| EST | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 13 | 194404.10 | iP | Z | C |
| SRA | 13 | 194408.00 | iP | Z | C |
| VPS2 | 13 | 194408.50 | iP | Z | C |
| LCR2 | 13 | 194402.00 | iP | Z | C |
| BUS | 13 | 194357.60 | iP | Z | C |

Norte de Perú, Mb= 5.8

| | | | | | |
|-----|----|-----------|----|---|---|
| SJS | 14 | 033830.30 | eP | Z | D |
|-----|----|-----------|----|---|---|

Oceano Atlantico Norte cerca de Trinidad, Mb= 5.4

| | | | | | |
|-----|----|-----------|----|---|---|
| SJS | 17 | 223051.00 | iP | Z | C |
|-----|----|-----------|----|---|---|

Telesismo.

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 20 | 184233.00 | eP | Z | |
| LCR2 | 20 | 184235.80 | iP | Z | D |
| LIO | 20 | 184301.60 | eP | Z | |
| SRA | 20 | 184229.90 | iP | Z | C |

Perú, Intensidad IV Lima, Mb= 4.0

| | | | | | |
|-----|----|-----------|----|---|--|
| SJS | 24 | 025721.00 | eP | Z | |
| SRA | 24 | 025712.20 | eP | Z | |

Telesismo.

| | | | | | |
|------|----|-----------|-----|---|---|
| SJS | 25 | 131623.60 | iP | Z | + |
| | | 35.80 | S | Z | |
| VCR | 25 | 131621.80 | iP | Z | D |
| | | 32.10 | S | Z | |
| LCR2 | 25 | 131621.80 | iP | Z | D |
| AR6 | 25 | 131621.90 | iP | Z | D |
| FOR | 25 | 131623.00 | iP | Z | - |
| LIO | 25 | 131638.70 | iPn | Z | C |
| BUS | 25 | 131627.50 | iP | Z | C |
| ACR | 25 | 131638.10 | ePn | Z | |

17Km al Este de Cabo Blanco (Puntarenas), Int. V Jacó y Cabuya IV en San José, Costa Rica, MD= 5.7

MARZO 1990

| EST | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 25 | 132313.00 | iP | Z | + |
| | | 25.70 | S | Z | |
| LCR2 | 25 | 132312.50 | iP | Z | D |
| | | 24.10 | S | Z | |
| AR6 | 25 | 132311.20 | iP | Z | D |
| FOR | 25 | 132312.00 | eP | Z | |
| LIO | 25 | 132328.20 | iPn | Z | + |
| VCR | 25 | 132311.90 | iP | Z | D |
| | | 22.70 | S | Z | |
| BUS | 25 | 132317.10 | eP | Z | C |
| ACR | 25 | 132327.70 | ePn | Z | - |

17Km al Este de Cabuya (Puntarenas), Int. VII-VIII Mata Limón y Cóbano, VII Jacó y Tivives y VI en San José, Costa Rica, MD= 6.5

| | | | | | |
|-----|----|-----------|----|---|---|
| SJS | 25 | 133638.00 | iP | Z | |
| | | 49.00 | S | Z | |
| AR6 | 25 | 133638.30 | iP | Z | D |
| FOR | 25 | 133637.10 | eP | Z | |
| | | 48.60 | S | Z | |
| VCR | 25 | 133637.20 | iP | Z | D |
| | | 49.00 | S | Z | |
| LIO | 25 | 133652.20 | eP | Z | + |
| | | 74.80 | S | Z | |

23Km Este sureste de Cóbano (Puntarenas), Int. III Tambor y II en San José, Costa Rica, MD= 4.1

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 25 | 192814.30 | eP | Z | C |
| | | 27.40 | S | Z | |
| FOR | 25 | 192815.90 | iP | Z | D |
| LIO | 25 | 192829.60 | iP | Z | C |
| VCR | 25 | 192816.00 | iP | Z | D |
| | | 30.40 | S | Z | |
| LCR2 | 25 | 192814.10 | iP | Z | D |
| AR6 | 25 | 192815.00 | eP | Z | |
| BUS | 25 | 192818.00 | eP | Z | |
| ACR | 25 | 192828.50 | eP | Z | |
| VPS2 | 25 | 192814.50 | iP | Z | D |
| SRA | 25 | 192810.95 | iP | Z | C |

26Km Suroeste de Jacó (Puntarenas), Int. II Puntarenas y San José, Costa Rica, MD= 4.0

MARZO 1990

| EST | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 25 | 213538.30 | iP | Z | C |
| | | 48.30 | S | Z | |
| LCR2 | 25 | 213537.20 | iP | Z | D |
| FOR | 25 | 213541.70 | iP | Z | D |
| BUS | 25 | 213540.90 | iP | Z | D |
| AR6 | 25 | 213540.95 | iP | Z | D |
| VCR | 25 | 213540.20 | iP | Z | D |
| SRA | 25 | 213535.90 | iP | Z | C |
| VPS2 | 25 | 213539.30 | iP | Z | D |
| LIO | 25 | 213552.50 | iP | Z | C |
| ACR | 25 | 213551.00 | iP | Z | C |
| | | 71.20 | S | Z | |

40Km al Suroeste de Jacó (Puntarenas), Int. III Herradura y II en San José, Costa Rica, MD= 4.9

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 25 | 234859.35 | iP | Z | C |
| | | 72.50 | S | Z | |
| AR6 | 25 | 234857.60 | iP | Z | D |
| BUS | 25 | 234903.90 | iP | Z | C |
| FOR | 25 | 234858.80 | iP | Z | D |
| LCR2 | 25 | 234859.00 | iF | Z | D |
| SRA | 25 | 234855.00 | iF | Z | C |

18Km al Este sureste de Cabuya (Puntarenas), Int. III Tambor y II en San José, Costa Rica, MD= 4.0

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 26 | 104833.40 | iP | Z | C |
| | | 45.00 | S | Z | |
| BUS | 26 | 104838.50 | iP | Z | D |
| AR6 | 26 | 104829.90 | iP | Z | D |
| SRA | 26 | 104827.70 | iP | Z | C |
| LIO | 26 | 104850.00 | iP | Z | D |
| LCR2 | 26 | 104833.80 | iP | Z | C |
| VCR | 26 | 104832.10 | iP | Z | D |
| | | 42.50 | S | Z | |
| ACR | 26 | 104851.70 | eP | Z | |
| FOR | 26 | 104830.80 | iP | Z | D |

7Km al Sur de Paquera (Puntarenas), Int. III Puntarenas y II en San José, Costa Rica, MD= 4.2

MARZO 1990

| EST | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 26 | 184016.20 | iP | Z | C |
| | | 28.70 | S | Z | |
| VPS2 | 26 | 184015.40 | iP | Z | D |
| SRA | 26 | 184012.00 | iP | Z | C |
| BUS | 26 | 184019.80 | iP | Z | D |
| VCR | 26 | 184014.00 | iP | Z | C |
| FOR | 26 | 184015.00 | iP | Z | C |
| LIO | 26 | 184030.30 | iP | Z | C |
| LCR2 | 26 | 184015.40 | iP | Z | D |
| ACR | 26 | 184029.80 | iP | Z | C |

15Km al Sureste de Cabuya (Puntarenas), Int. III Puntarenas y II en San José, Costa Rica, MD= 4.2

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 27 | 120902.50 | iP | Z | D |
| LIO | 27 | 120916.80 | iP | Z | C |
| BUS | 27 | 120905.00 | iP | Z | D |
| LCR2 | 27 | 120901.00 | iP | Z | C |
| VCR | 27 | 120853.70 | iP | Z | D |
| | | 66.50 | S | Z | |
| SRA | 27 | 120858.80 | iP | Z | D |
| | | 75.00 | S | Z | |

50Km al Suroeste de Cabuya (Puntarenas), Costa Rica, MD= 4.0

| | | | | | |
|-----|----|-----------|----|---|---|
| SJS | 27 | 142429.70 | iP | Z | D |
| | | 48.00 | S | Z | |
| SRA | 27 | 142428.10 | iP | Z | D |
| LIO | 27 | 142442.40 | iP | Z | C |
| BUS | 27 | 142430.00 | iP | Z | C |
| VCR | 27 | 142421.30 | iP | Z | C |
| ACR | 27 | 142437.30 | iP | Z | C |
| AR6 | 27 | 142432.90 | iP | Z | C |

74Km al Sureste de Cabo Blanco (Puntarenas), Costa Rica, MD= 4.0

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 27 | 145235.00 | iP | Z | C |
| | | 46.70 | S | Z | |
| PLN | 27 | 145225.00 | iP | Z | D |
| TIV | 27 | 145226.80 | iP | Z | D |
| JCR | 27 | 145228.90 | iP | Z | D |
| SRA | 27 | 145232.00 | iP | Z | C |
| LCR2 | 27 | 145234.00 | iP | Z | |
| VCR | 27 | 145238.00 | iP | Z | C |
| | | 50.90 | S | Z | |
| BUS | 27 | 145237.90 | iP | Z | D |
| LIO | 27 | 145249.80 | iP | Z | C |

18Km al Sur de Jacó, Int. III Herradura II San José, Costa Rica.
MD= 4.6

MARZO 1990

| EST | DIA | TIEMPO | FASE | COMP | POL |
|------|-----|-----------|------|------|-----|
| SJS | 28 | 172459.80 | eP | Z | + |
| LCR2 | 28 | 172458.80 | iP | Z | D |
| VPS2 | 28 | 172500.60 | iP | Z | D |
| SRA | 28 | 172457.30 | iP | Z | C |
| ACR | 28 | 172512.80 | eP | Z | |
| VCR | 28 | 172505.30 | iP | Z | D |
| LIO | 28 | 172514.20 | iP | Z | D |
| BUS | 28 | 172502.00 | iP | Z | C |

40Km al Suroeste de Jacó (Puntarenas), Int. III Jacó y II en San José, Costa Rica, MD= 4.2

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 29 | 164253.10 | eP | Z | + |
| | | 67.90 | S | Z | |
| SRA | 29 | 164247.30 | eP | Z | C |
| | | 62.00 | S | Z | |
| BUS | 29 | 164253.80 | iP | Z | C |
| VCR | 29 | 164245.20 | eP | Z | - |
| AR6 | 29 | 164249.70 | iP | Z | + |
| VPS2 | 29 | 164251.30 | eP | Z | + |

28Km al Suroeste de Cabo Blanco (Puntarenas), Costa Rica, MD= 4.2

| | | | | | |
|------|----|-----------|----|---|---|
| SJS | 31 | 112208.70 | iP | Z | C |
| | | 23.50 | S | Z | |
| VPS2 | 31 | 112208.60 | eP | Z | |
| LIO | 31 | 112224.00 | eP | Z | |
| LCR2 | 31 | 112225.70 | iP | Z | D |
| SRA | 31 | 112205.20 | iP | Z | C |
| | | 09.60 | S | Z | |
| ACR | 31 | 112222.90 | eP | Z | |

11Km al Sureste de Cóbano (Puntarenas), Int II Cóbano, Costa Rica, MD= 4.1

PGM ANASIS Ver 2.0

Diseño:

Guillermo A Avila R

FEC m:01-03-1990

FEC M:31-03-1990

GMT=00h-24h

LAT= 7.50°-11.50°

LOX=82.50°-86.50°

PRF= 0.0- 999.0 Km

MAG= 0.0- 9.9

SIMBOLOGIA:

M=3 □ M=4 ◇ M=5 +

M=6 △ M=7 ▽ M=8 ○

STA *

BASE.:MAR90

N SIS: 176

M<3.9: 162 4<M<5: 12

5<M<6: 1 6<M<7: 1

7<M<8: 0 M>8: 0

RED SISMOLOGICA NACIONAL, ICE-UCR
MAPA DE EPICENTROS DE COSTA RICA

