

Jan., Feb., March-1940

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 h = 24 m  
 a = + .210  
 b = - .726  
 c = + .654

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### Instrumental Bulletin of the Seismic Observatory

INSTRUMENTS:  
 Wiechert  
 Galitzin-Walip  
 M. S. Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

1.

| Date<br>1940                         | Phase                | G.M.T. |      |    | Distance<br>kms. | Remarks   |
|--------------------------------------|----------------------|--------|------|----|------------------|---|
|                                      |                      | h.     | m.   | s. |                  |   |
| Jan. 2                               | eS                   | 11     | 29   | 19 | 8600             | 31°S, 108°W<br>(USCGS)  |
|                                      | M                    | 11     | 51   | -  |                  |   |
| 6                                    | eL                   | 07     | 04   | -  |                  |   |
| 6                                    | eL                   | 09     | 03   | -  |                  |   |
| 6<br><i>14-17-38</i><br><i>20.4°</i> | iP' <sub>Z</sub>     | 14     | 22   | 17 | 13800            | Compression<br>22°S, 170°E<br>(USCGS)<br>Nature, p.301<br>Feb. 24                         |
|                                      | iPR <sub>1ZL</sub>   | 14     | 23   | 55 |                  |   |
|                                      | iSKP <sub>E</sub>    | 14     | 25   | 53 |                  |   |
|                                      | i <sub>Z</sub>       | 14     | 26   | 02 |                  |   |
|                                      | iPS <sub>E</sub>     | 14     | 33   | 43 |                  |   |
|                                      | i <sub>Z</sub> (PPS) | 14     | 35   | 27 |                  |   |
|                                      | iSR <sub>1E</sub>    | 14     | 40   | 07 |                  |   |
|                                      | iN                   | 14     | 41   | 13 |                  |   |
|                                      | eL                   | 14     | 58   | -  |                  |   |
|                                      | M                    | 15     | 09   | -  |                  |   |
| 7                                    | eL                   | 01     | 43   | -  |                  |   |
| 7                                    | eL                   | 04     | 16   | -  |                  |   |
| 10                                   | eL                   | 12     | 12   | -  |                  |   |
| 13                                   | eL                   | 05     | 31.5 | -  |                  |   |
| 17<br><i>01-22-18</i><br><i>76.4</i> | iP'                  | 01     | 34   | 05 | 12,250           | Dilatation<br>17°N, 148°E<br>(USCGS)<br>Nature p.302<br>Feb. 24<br>Science p.9<br>Jan. 26 |
|                                      | i <sub>Z</sub>       | 01     | 35   | 02 |                  |   |
|                                      | iPS <sub>ZNE</sub>   | 01     | 43   | 36 |                  |   |
|                                      | i <sub>Z</sub>       | 01     | 44   | 36 |                  |   |
|                                      | eSR <sub>2N</sub>    | 01     | 53   | 38 |                  |   |
|                                      | eL                   | 02     | 03.3 | -  |                  |   |
|                                      | M                    | 02     | 15.5 | -  |                  |   |
| 20                                   | e <sub>ZN</sub>      | 10     | 26   | 41 |                  |   |
|                                      | eN                   | 10     | 32   | 35 |                  |   |
|                                      | eL                   | 10     | 48.7 | -  |                  |   |
| 26                                   | eN                   | 07     | 37   | 13 |                  | Severe<br>microseisms   |
|                                      | eLN                  | 07     | 43   | -  |                  |   |
|                                      | M <sub>1</sub>       | 07     | 46   | -  |                  |   |
|                                      | M <sub>2</sub>       | 07     | 54   | -  |                  |   |

$\varphi = 40^\circ 51' 47'' \text{ N}$   
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 vertical)  
 Foundation:  
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2.

| Date<br>1940 | Phase         | G.M.T. |      |        | Distance<br>kms. | Remarks  |
|--------------|---------------|--------|------|--------|------------------|--|
|              |               | h.     | m.   | s.     |                  |  |
| Jan. 26      | $e_z$         | 17     | 23   | 02     |                  | Severe microseisms.                                |
|              | $e_z$         | 17     | 25   | 34     |                  |  |
|              | $e_N$         | 17     | 29   | 22     |                  |  |
|              | $e_N$         | 17     | 32   | 31     |                  |  |
|              | $e_N$         | 17     | 43   | 02     |                  |  |
|              | $e_{LN}$      | 17     | 55.8 | -      |                  |  |
|              | M             | 18     | 09   | -      |                  |  |
| 27           | $e_{LN}$      | 10     | 17.8 | -      |                  |  |
|              | M             | 10     | 34   | -      |                  |  |
| 28           | $e_N$         | 07     | 43   | -      |                  |  |
|              | M             | 07     | 50   | -      |                  |  |
| 28           | $i_{NE}$      | 08     | 51   | 00     |                  |  |
|              | $i_{ZL}$      | 08     | 54   | 06     |                  |  |
| 28           | $i_S$         | 23     | 13   | 08     |                  | NESA 38, 40<br>Vicinity of<br>Mattapoissett, Mass. |
|              |               |        |      |        |                  |  |
| 30           | $iP_2$        | 19     | 05   | 19     | 152              | Compression  |
|              | $i_2(P_1P_1)$ | 19     | 05   | 21     |                  | NESA 38  |
|              | $iS_2$        | 19     | 05   | 37     |                  |  |
|              | $iS_1$        | 19     | 05   | 39     |                  |  |
|              | $i$           | 19     | 05   | 40max. |                  |  |
| Feb. 2       | $e_{LN}$      | 06     | 41.3 | -      | 7800             |  |
| 7            | $iP_z$        | 17     | 27   | 19     |                  | Dilatation<br>52°N, 174.5°E<br>USCGS               |
|              | $i_z$         | 17     | 27   | 38     |                  |  |
|              | $iS_{NE}$     | 17     | 36   | 21     |                  |  |
|              | $i_{NE}$      | 17     | 37   | 12     |                  |  |
|              | $eSR_{1N}$    | 17     | 41   | 33     |                  |  |
|              | $e_{LN}$      | 17     | 47.5 | -      |                  |  |
| 8            | $e_{LN}$      | 08     | 24   | -      |                  |  |
| 8            | $e_{LN}$      | 23     | 46.8 | -      |                  |  |
| 9            | $iP$          | 13     | 32   | 20     |                  | NESA 39<br>Compression                             |

190455  
1.3°

11 16 01  
70.1

$\varphi = 40^{\circ} 51' 47'' \text{ N}$   
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 $h = 24 \text{ m}$   
 $a = +.210$   
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 vertical)  
 Foundation:  
 Fordham Gneiss

3

| Date<br>1940   | Phase               | G.M.T. |      |      | Distance<br>kms. | Remarks   |
|----------------|---------------------|--------|------|------|------------------|---|
|                |                     | h.     | m.   | s.   |                  |   |
| Feb. 9         | iP                  | 14     | 06   | 08   |                  | NESA 39   |
| 10             | iS(?)               | 21     | 00   | 19   |                  | NESA 39   |
| 12             | iP <sub>z</sub>     | 00     | 12   | 26   | 7300             | Compression   |
|                | i <sub>z</sub>      | 00     | 12   | 39   |                  | Deep?   |
| 00109<br>70.5  | iS <sub>N</sub>     | 00     | 21   | 27   |                  |   |
|                | i <sub>N</sub>      | 00     | 22   | 30   |                  |   |
|                | iSR <sub>1N</sub>   | 00     | 26   | 04   |                  |   |
|                | eL                  | 00     | 35.3 | -    |                  |   |
| 12             | i <sub>z</sub>      | 05     | 36   | 40   |                  | NESA 39   |
|                | i <sub>z</sub>      | 05     | 36   | 44   |                  |   |
|                | i <sub>z</sub>      | 05     | 37   | 09   |                  |   |
| 12             | e <sub>z</sub>      | 08     | 39   | 20   |                  |   |
|                | e <sub>z</sub>      | 08     | 40   | 19   |                  |   |
|                | e <sub>N</sub>      | 08     | 47   | 52   |                  |   |
|                | i <sub>N</sub>      | 08     | 56   | 32   |                  |   |
| 12             | iP <sub>z</sub>     | 09     | 27   | 27   |                  | Dilatation  |
| 91738<br>57.3° | i <sub>z</sub> (pP) | 09     | 27   | 44   |                  | 100 kms. deep?  |
|                | iS <sub>E</sub>     | 09     | 35   | 18   |                  |   |
|                | i <sub>E</sub>      | 09     | 35   | 36   |                  |   |
|                | i <sub>E</sub> (sS) | 09     | 36   | 09   |                  |   |
| 12             | iP                  | 16     | 55   | 54   |                  | Compression   |
| 13             | iP <sub>2</sub>     | 20     | 53   | 58   | 152              | Dilatation  |
| 205334<br>1.3° | iS <sub>2</sub>     | 20     | 54   | 16   |                  | NESA 39<br>Probably blast<br>southeast of<br>Hudson, N.Y. |
| 14             | eL                  | 00     | 13   | -    |                  |   |
| 14             | i                   | 02     | 17   | 22   |                  | Compression   |
|                | i                   | 02     | 17   | 25   |                  | Deep  |
|                | i                   | 02     | 17   | 28.5 |                  | NESA 39   |
| 14             | eL                  | 03     | 18   | -    |                  |   |
| 14             | M                   | 11     | 19   | -    |                  |   |

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 vertical)  
 Foundation:  
 Fordham Gneiss

4.

| Date<br>1940 | Phase           | G.M.T. |      |    | Distance<br>kms. | Remarks  |
|--------------|-----------------|--------|------|----|------------------|--|
|              |                 | h.     | m.   | s. |                  |  |
| Feb. 16      | eL              | 14     | 39.8 | -  |                  |  |
| 19           | M               | 07     | 40   | -  |                  |  |
| 20           | i <sub>z</sub>  | 02     | 36   | 08 | 13300            | 12°S, 167°E<br>USCGS<br>Microseisms<br>strong. |
|              | i <sub>z</sub>  | 02     | 39   | 18 |                  |  |
|              | e <sub>N</sub>  | 02     | 47   | 34 |                  |  |
|              | i <sub>N</sub>  | 02     | 48   | 17 |                  |  |
|              | i <sub>N</sub>  | 03     | 05   | 34 |                  |  |
|              | eL <sub>N</sub> | 03     | 10.5 | -  |                  |  |
|              | M               | 03     | 22   | -  |                  |  |

Additional phases on short period Benioff only:

|    |                    |    |      |    |  |                                      |
|----|--------------------|----|------|----|--|--------------------------------------|
|    | i <sub>z</sub>     | 02 | 47   | 01 |  |                                      |
|    | e <sub>z</sub>     | 02 | 50   | 55 |  |                                      |
|    | e <sub>z</sub>     | 03 | 05   | 34 |  |                                      |
| 20 | eL                 | 14 | 12.5 | -  |  |                                      |
| 22 | eL                 | 06 | 06   | -  |  |                                      |
| 23 | i                  | 00 | 50   | 50 |  |                                      |
| 24 | M                  | 13 | 10   | -  |  |                                      |
| 25 | M                  | 08 | 20   | -  |  |                                      |
| 29 | iP                 | 07 | 50   | 36 |  | Dilatation.                          |
|    | i                  | 07 | 50   | 42 |  |                                      |
| 29 | iP <sub>z</sub>    | 16 | 19   | 22 |  | Dilatation<br>Microseisms<br>strong. |
|    | i <sub>z</sub>     | 16 | 19   | 33 |  |                                      |
|    | i <sub>N</sub> (S) | 16 | 28   | 54 |  |                                      |
| 29 | i(S)               | 23 | 23   | 39 |  | NESA 38 and 40                       |
|    |                    | 23 | 23   | 57 |  |                                      |

March 2

41535

1.2°

|                 |    |    |    |     |  |
|-----------------|----|----|----|-----|--|
| iP <sub>2</sub> | 04 | 15 | 58 | 142 | Compression.<br>NESA 41; Near<br>MOODUS, CONN.<br>04h 15m 36.5s<br>41°29'N, 72°29'W. |
| iS <sub>2</sub> | 04 | 16 | 15 |     |  |

Compression.  
 NESA 41; Near  
 MOODUS, CONN.  
 04h 15m 36.5s  
 41°29'N, 72°29'W.

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5.

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 vertical)  
 Foundation:  
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| Date<br>1940    | Phase                              | G.M.T. |      |        | Distance<br>kms. | Remarks            |
|-----------------|------------------------------------|--------|------|--------|------------------|--------------------|
|                 |                                    | h.     | m.   | s.     |                  |                    |
| March 3         | M                                  | 01     | 14   | -      |                  |                    |
| 4               | iP <sub>z</sub>                    | 20     | 06   | 08     |                  |                    |
| <i>19-58-42</i> | i <sub>z</sub>                     | 20     | 06   | 14     |                  |                    |
| <i>38.6°</i>    | eS <sub>z</sub> NE                 | 20     | 11   | 54     |                  |                    |
|                 | eSR <sub>2</sub>                   | 20     | 14   | 46     |                  |                    |
| 5-6             | e <sub>z</sub>                     | 23     | 29   | 00     |                  |                    |
|                 | (M)                                | 00     | 23   | -      |                  |                    |
| 6               | iP <sub>z</sub>                    | 06     | 08   | 18     |                  | Dilatation         |
|                 | i                                  | 06     | 08   | 23     |                  | Deep focus?        |
| 6               | eL <sub>N</sub>                    | 19     | 38.2 | -      |                  |                    |
| 7               | eP <sub>z</sub>                    | 07     | 20   | 53     | 8700             |                    |
|                 | e <sub>z</sub>                     | 07     | 21   | 04     |                  |                    |
| <i>7-08-34</i>  | eS <sub>N</sub>                    | 07     | 30   | 52     |                  |                    |
| <i>81.6</i>     | ePS <sub>N</sub>                   | 07     | 31   | 47     |                  |                    |
|                 | M                                  | 07     | 52.5 | -      |                  |                    |
| 9               | M                                  | 05     | 32.5 | -      |                  |                    |
| 13              | iP <sub>2</sub>                    | 01     | 29   | 23     | 143              | NESA 41            |
| <i>12900</i>    | iS <sub>2</sub>                    | 01     | 29   | 40     |                  | Near MOODUS, CONN. |
| <i>1.2°</i>     |                                    |        |      |        |                  |                    |
| 14              | iP' <sub>z</sub>                   | 18     | 42   | 31     | 14200            |                    |
|                 | iPR <sub>1z</sub>                  | 18     | 44   | 01     |                  |                    |
|                 | ePR <sub>2z</sub>                  | 18     | 47   | 36     |                  |                    |
|                 | eSR <sub>2z</sub>                  | 19     | 05   | 50     |                  |                    |
|                 | M                                  | 19     | 44   | -      |                  |                    |
| 14              | M                                  | 21     | 46   | -      |                  |                    |
| 14              | M                                  | 22     | 55   | -      |                  |                    |
| 16              | iP <sub>2</sub>                    | 18     | 53   | 20     | 170              |                    |
|                 | iP <sub>1</sub> P <sub>1</sub>     | 18     | 53   | 21.5   |                  |                    |
| <i>185253</i>   | i                                  | 18     | 53   | 23     |                  |                    |
| <i>1.5°</i>     | iS <sub>2</sub>                    | 18     | 53   | 40     |                  |                    |
|                 | i                                  | 18     | 53   | 41max. |                  |                    |
|                 | i2(S <sub>1</sub> S <sub>1</sub> ) | 18     | 53   | 44.5   |                  |                    |
| 16              | M                                  | 21     | 15   | -      |                  |                    |

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 vertical)  
 Foundation:  
 Fordham Gneiss

6.

| Date<br>1940 | Phase   | G.M.T. |      |        | Distance<br>kms | Remarks          |
|--------------|---|--------|------|--------|-----------------|------------------|
|              |   | h.     | m.   | s.     |                 |                  |
| March 18     | M   | 06     | 43   | -      |                 |                  |
| 19           | i   | 19     | 34   | 15     |                 |                  |
|              | i   | 19     | 34   | 18     |                 |                  |
|              | i   | 19     | 34   | 36     |                 |                  |
|              | i   | 19     | 34   | 40     |                 |                  |
| 20           | eL <sub>NE</sub>                              | 00     | 57   | --     |                 |                  |
| 20           | eL <sub>NE</sub>                              | 03     | 05.6 | --     |                 |                  |
| 21           | iP' <sub>1</sub>                              | 14     | 12   | 39     | 16500           | Compression      |
|              | i <sub>z</sub>                                | 14     | 12   | 43     |                 |                  |
|              | i <sub>z</sub> (P' <sub>2</sub> )             | 14     | 12   | 50     |                 |                  |
|              | eSKP <sub>zN</sub>                            | 14     | 16   | 23     |                 |                  |
|              | eSR <sub>1E</sub>                             | 14     | 35   | 17     |                 |                  |
|              | eSR <sub>1N</sub>                             | 14     | 35   | 21     |                 |                  |
|              | M   | 15     | 17   | --     |                 |                  |
| 22           | i   | 18     | 11   | 33     |                 |                  |
| 22           | iP <sub>2</sub>                               | 21     | 02   | 47     | 155             | Dilatation       |
|              | iS <sub>1</sub> P <sub>2</sub> S <sub>1</sub> | 21     | 02   | 52     |                 |                  |
|              | iS <sub>2</sub>                               | 21     | 03   | 05.5   |                 |                  |
|              | iS <sub>1</sub> S <sub>1</sub>                | 21     | 03   | 08     |                 |                  |
|              | i   | 21     | 03   | 09max. |                 |                  |
| 22           | e <sub>N</sub>                                | 20     | 55   | 57     |                 | Microseisms very |
|              | M   | 21     | 22   | --     |                 | strong on short  |
|              |   |        |      |        |                 | period.          |
| 27           | iP <sub>z</sub>                               | 12     | 42   | 18     | 7575            | Compression      |
|              | iS <sub>E</sub>                               | 12     | 51   | 15     |                 | 51°N, 180°W      |
|              | iS <sub>N</sub>                               | 12     | 51   | 19     |                 | (USCGS)          |
|              | i <sub>N</sub>                                | 12     | 52   | 41     |                 |                  |
|              | M   | 13     | 12   | --     |                 |                  |
| 27           | M   | 21     | 41   | --     |                 |                  |
| 28           | iP' <sub>z</sub>                              | 16     | 07   | 29     |                 | Dilatation       |
|              | iPR <sub>1zN</sub>                            | 16     | 09   | 11     |                 | Surface waves    |
|              | iPS <sub>N</sub>                              | 16     | 19   | 09     |                 | weak.            |
|              | iSR <sub>1NE</sub>                            | 16     | 25   | 38     |                 |                  |

~~14-07-50~~  
21.3

~~210223~~  
1.3°

12-31-05  
69.8

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7.

| Date<br>1940 | Phase       | G.M.T. |    |    | Distance<br>kms. | Remarks     |
|--------------|-------------|--------|----|----|------------------|-------------|
|              |             | h.     | m. | s. |                  |             |
| March 28     | $iP_z$      | 17     | 54 | 53 | 3800             | Compression |
| 17-47-58     | $i_z$       | 17     | 55 | 09 |                  |             |
| 35.5         | $eS_{NE}$   | 18     | 00 | 24 |                  |             |
|              | M           | 18     | 09 | -- |                  |             |
| 29           | $e_z$       | 03     | 46 | 48 |                  |             |
|              | M           | 04     | 03 | -- |                  |             |
| 30           | M           | 05     | 07 | -- |                  |             |
| 31           | $i_z(?)$    | 17     | 02 | 34 |                  |             |
| 16-52-18     | $iP_z$      | 17     | 02 | 52 |                  |             |
| 61.0         | $i_z(P_cP)$ | 17     | 03 | 41 |                  |             |
|              | $eS_{NE}$   | 17     | 10 | 45 |                  |             |
|              | M           | 17     | 29 | -- |                  |             |

J. J. L., S. J.  
 W. A. L.

April, May, June - 1940

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 Foundation:  
 Fordham Gneiss

8.

1941 JAN 11 AM 9:44

11 2203  
 1170

| Date<br>1940           | Phase              | G.M.T. |      |         | Distance<br>kms. | Remarks       |
|------------------------|--------------------|--------|------|---------|------------------|---------------|
|                        |                    | h.     | m.   | s.      |                  |               |
| April 1                | iP <sub>z</sub> '  | 11     | 40   | 33      | 13000            |               |
|                        | iPR <sub>1z</sub>  | 11     | 41   | 39      |                  |               |
|                        | iE                 | 11     | 42   | 34      |                  |               |
|                        | eSP <sub>z</sub>   | 11     | 50   | 31      |                  |               |
|                        | iPS <sub>NE</sub>  | 11     | 50   | 43      |                  |               |
|                        | iSR <sub>1NE</sub> | 11     | 58   | 09      |                  |               |
|                        | M                  | 12     | 28   | --      |                  |               |
| 6                      | eL                 | 14     | 48   | --      |                  |               |
| 7                      | eL                 | 10     | 05.3 | -       |                  |               |
| 8<br>8-19-13,<br>75.2  | eP <sub>z</sub>    | 09     | 00   | 56      | 4950             |               |
|                        | eS <sub>N</sub>    | 09     | 10   | 21      |                  |               |
|                        | eL                 | 09     | 26   | --      |                  |               |
|                        | M                  | 09     | 34   | --      |                  |               |
| 8                      | iS                 | 20     | 15   | 09      |                  | NESA 43       |
| 10                     | M                  | 21     | 16   | --      |                  |               |
| 11<br>14-58-35,<br>0.9 | iP <sub>1</sub>    | 14     | 58   | 51.5    | 100              | Blast NESA 43 |
|                        | i                  | 14     | 58   | 52.6    |                  |               |
|                        | iS <sub>1</sub>    | 14     | 59   | 03.8    |                  |               |
|                        | i                  | 14     | 59   | 06.1    |                  |               |
|                        | i                  | 14     | 59   | 06.7max |                  |               |
| 12                     | iS <sub>1</sub>    | 01     | 59   | 11      | 2.5              | NESA 43       |
| 12                     | e <sub>z</sub> NE  | 20     | 08.8 | -       |                  |               |
|                        | M                  | 20     | 28   | --      |                  |               |
| 13                     | i                  | 01     | 59   | 56      |                  | NESA 43       |
|                        | i                  | 02     | 00   | 20      |                  |               |
| 14                     | iP <sub>z</sub>    | 15     | 01   | 57      |                  | maybe 08      |
|                        | eL <sub>N</sub>    | 15     | 39.3 | -       |                  |               |



$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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**INSTRUMENTS:**  
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 Milne-Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

9.

| Date<br>1940 | Phase             | G.M.T. |    |    | Distance<br>Kms. | Remarks                                     |
|--------------|-------------------|--------|----|----|------------------|---|
|              |                   | h.     | m. | s. |                  |   |
| April 16     | iP <sub>z</sub>   | 06     | 18 | 56 | 7700             | Compression<br>52.6°N<br>173.8°E<br>(USCGS) |
|              | i <sub>z</sub>    | 06     | 19 | 52 |                  |   |
|              | iPR <sub>1z</sub> | 06     | 21 | 32 |                  |   |
|              | iS <sub>E</sub>   | 06     | 28 | 06 |                  |   |
|              | iS <sub>N</sub>   | 06     | 28 | 21 |                  |   |
|              | iNE               | 06     | 29 | 09 |                  |   |
|              | iL <sub>E</sub>   | 06     | 42 | 37 |                  |   |
|              | M                 | 06     | 51 | -- |                  |   |

6-07-29,  
72.3

16 The following additional phases appeared on the short period Benioff; they were probably late phases and aftershocks.

|                |    |    |    |
|----------------|----|----|----|
| e <sub>z</sub> | 06 | 46 | 09 |
| i <sub>z</sub> | 06 | 54 | 18 |
| i <sub>z</sub> | 06 | 54 | 31 |
| e <sub>z</sub> | 07 | 21 | 42 |
| e <sub>z</sub> | 07 | 22 | 18 |
| i <sub>z</sub> | 07 | 59 | 51 |
| i <sub>z</sub> | 08 | 02 | 55 |
| i <sub>z</sub> | 08 | 14 | 42 |

17 M 22 57 --

18 eL 20 44 --

|    |                 |    |    |    |      |            |
|----|-----------------|----|----|----|------|------------|
| 19 | iP <sub>z</sub> | 00 | 18 | 23 | 7880 | Dilatation |
|    | eS <sub>N</sub> | 00 | 27 | 22 |      |            |
|    | eL              | 00 | 42 | -- |      |            |

0-07-08,  
70.1

|    |                 |    |    |    |
|----|-----------------|----|----|----|
| 19 | eP <sub>z</sub> | 14 | 51 | 57 |
|    | eL              | 15 | 22 | -- |

|    |                 |    |    |      |     |                |
|----|-----------------|----|----|------|-----|----------------|
| 20 | iS <sub>2</sub> | 14 | 43 | 44   | 156 | Blast NESAs 44 |
|    | iS <sub>1</sub> | 14 | 43 | 45.5 |     |                |

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 Milne-Shaw  
 Wood-Anderson  
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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940     | Phase           | G.M.T. |    |      | Distance<br>kms. | Remarks                         |
|------------------|-----------------|--------|----|------|------------------|---------------------------------|
|                  |                 | h.     | m. | s.   |                  |                                 |
| April 20         | iP <sub>2</sub> | 14     | 49 | 39.8 | 170              | Blast                           |
|                  | iP <sub>1</sub> | 14     | 49 | 41.0 |                  | NESA 44                         |
|                  | i               | 14     | 49 | 44.5 |                  |                                 |
|                  | iS <sub>2</sub> | 14     | 50 | 02.5 |                  |                                 |
|                  | iS <sub>1</sub> | 14     | 50 | 05.5 |                  |                                 |
| 14-49-09,<br>1.8 |                 |        |    |      |                  |                                 |
| 21               | M               | 06     | 57 | --   |                  |                                 |
| 23               | iP <sub>2</sub> | 20     | 50 | 20.0 | 159              | NESA 44                         |
|                  | iS <sub>2</sub> | 20     | 50 | 38.5 |                  |                                 |
| 20-49-55,<br>1.4 |                 |        |    |      |                  |                                 |
| 24               | iP <sub>2</sub> | 20     | 08 | 45.5 | 159              | NESA 44                         |
|                  | iS <sub>2</sub> | 20     | 09 | 04.0 |                  |                                 |
| 20-08-22,<br>1.3 |                 |        |    |      |                  |                                 |
| 26               | i               | 15     | 14 | 19   |                  |                                 |
|                  | i               | 15     | 14 | 27   |                  |                                 |
| 27               | e <sub>Z</sub>  | 09     | 55 | 43   |                  |                                 |
|                  | e <sub>N</sub>  | 10     | 03 | 39   |                  |                                 |
|                  | e <sub>NE</sub> | 10     | 12 | 17   |                  |                                 |
|                  | (M)             | 10     | 37 | --   |                  |                                 |
| 27               | i <sub>Z</sub>  | 10     | 43 | 43   |                  | Confused by<br>previous quakes. |
|                  | i <sub>Z</sub>  | 10     | 43 | 55   |                  |                                 |
|                  | i <sub>NE</sub> | 10     | 53 | 03   |                  |                                 |
|                  | iL <sub>N</sub> | 10     | 59 | 57   |                  |                                 |
|                  | M               | 11     | 06 | --   |                  |                                 |
| 27               | iP              | 13     | 27 | 50   |                  |                                 |
| 27               | e <sub>Z</sub>  | 18     | 24 | 46   |                  |                                 |
|                  | e <sub>Z</sub>  | 18     | 34 | 58   |                  |                                 |
|                  | M               | 19     | 05 | --   |                  |                                 |

$\varphi = 40^{\circ} 51' 47'' \text{ N}$   
 $\lambda = 73^{\circ} 53' 8'' \text{ W}$   
 $h = 24 \text{ m}$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

11.

| Date<br>1940                         | Phase           | G.M.T. |    |         | Distance<br>kms. | Remarks   |
|--------------------------------------|-----------------|--------|----|---------|------------------|---|
|                                      |                 | h.     | m. | s.      |                  |   |
| April 27<br><i>22-13-04,<br/>1.8</i> | iP <sub>2</sub> | 22     | 13 | 35      | 207              | Epicenters<br>about 110<br>miles off<br>coast of<br>central New<br>Jersey in<br>Atlantic Ocean<br>between Lat.<br>39.6° and<br>40.1° N and<br>Long. 71.8°<br>and 72° W.<br>NESA 44. |
|                                      | iS <sub>2</sub> | 22     | 13 | 58      |                  |   |
|                                      | iP <sub>2</sub> | 22     | 14 | 24      | 207              |   |
|                                      | iS <sub>2</sub> | 22     | 14 | 47      |                  |   |
|                                      | iP <sub>2</sub> | 22     | 31 | 39      | 225              |   |
|                                      | iS <sub>3</sub> | 22     | 32 | 03      |                  |   |
|                                      | iP <sub>2</sub> | 22     | 37 | 37      | 180              |   |
|                                      | iS <sub>2</sub> | 22     | 37 | 58      |                  |   |
|                                      | iP <sub>2</sub> | 22     | 43 | 17      | 205              |   |
|                                      | iS <sub>3</sub> | 22     | 43 | 39      |                  |   |
|                                      | iP <sub>2</sub> | 22     | 44 | 52      | 180              |   |
|                                      | iS <sub>2</sub> | 22     | 45 | 13      |                  |   |
| May 4                                | iP <sub>Z</sub> | 07     | 35 | 22      | 7800             | 53.0° N<br>173.0° E<br>(USCGS)  |
|                                      | iS <sub>E</sub> | 07     | 44 | 44      |                  |   |
|                                      | iS <sub>N</sub> | 07     | 44 | 46      |                  |   |
|                                      | M               | 08     | 05 | --      |                  |   |
| 4                                    | iP              | 13     | 56 | 15.5    |                  |   |
|                                      | i               | 13     | 56 | 22.5    |                  |   |
|                                      | i               | 13     | 56 | 25.8    |                  |   |
|                                      | i               | 13     | 56 | 30.0max |                  |   |
| 4                                    | iP <sub>1</sub> | 15     | 16 | 33.7    | 118              | Blast at<br>Meriden, Conn.<br>NESA 45   |
|                                      | iS <sub>1</sub> | 15     | 16 | 48.0    |                  |   |
|                                      | i               | 15     | 16 | 50.0max |                  |   |
|                                      | i               | 15     | 16 | 53.0    |                  |   |
| 4                                    | iS              | 17     | 53 | 32      |                  | NESA 45   |
| 4                                    | e <sub>N</sub>  | 21     | 25 | 46      |                  |   |
|                                      | M               | 21     | 57 | --      |                  |   |

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

12.

| Date<br>1940 | Phase                             | G.M.T. |      |         | Distance<br>kms. | Remarks  |
|--------------|-----------------------------------|--------|------|---------|------------------|--|
|              |                                   | h.     | m.   | s.      |                  |  |
| May 5        | iP <sub>z</sub>                   | 02     | 12   | 22      | 5250             |  |
|              | iPR <sub>1z</sub>                 | 02     | 14   | 19      |                  |  |
|              | eN                                | 02     | 17   | 45      |                  |  |
|              | iS <sub>E</sub>                   | 02     | 19   | 21      |                  |  |
|              | iE                                | 02     | 20   | 47      |                  |  |
|              | 2-03-32,<br>iE (S <sub>c</sub> S) | 02     | 22   | 13      |                  |  |
|              | 49.2<br>eL <sub>N</sub>           | 02     | 28   | --      |                  |  |
|              | M                                 | 02     | 34   | --      |                  |  |
| 7            | iP <sub>z</sub>                   | 22     | 35   | 02      |                  | Dilatation   |
|              | iE                                | 22     | 46   | 00      |                  |  |
|              | eL <sub>N</sub>                   | 23     | 05   | --      |                  |  |
|              | M                                 | 23     | 13   | --      |                  |  |
| 8            | iP <sub>1</sub>                   | 20     | 59   | 17.2    | 110              | Compression<br>Blast near<br>E. Wallingford,<br>Conn. NESAs 45 |
|              | iS <sub>1</sub>                   | 20     | 59   | 20.5    |                  |  |
|              | i                                 | 20     | 59   | 23.0max |                  |  |
| 9            | iP <sub>2</sub>                   | 15     | 59   | 17.5    | 165              | Blast NESAs 45   |
|              | iS <sub>2</sub>                   | 15     | 59   | 37.1    |                  |  |
| 10           | eL <sub>N</sub>                   | 01     | 37.4 | -       |                  |  |
| 10           | iP <sub>z</sub>                   | 19     | 19   | 18      |                  | Compression  |
|              | i <sub>z</sub>                    | 19     | 19   | 36      |                  |  |
|              | e <sub>z</sub>                    | 19     | 22   | 52      |                  |  |
|              |                                   |        |      |         |                  |  |
| 11           | eP <sub>z</sub>                   | 14     | 05   | 54      | 7800             | 53.2°N<br>172.0°E<br>(USCGS)                                   |
|              | i <sub>z</sub>                    | 14     | 06   | 03      |                  |  |
|              | eN                                | 14     | 11   | 06      |                  |  |
|              | iS <sub>E</sub>                   | 14     | 15   | 06      |                  |  |
|              | iE                                | 14     | 15   | 58      |                  |  |
|              | 13-54-25<br>eL <sub>N</sub>       | 14     | 29.0 | -       |                  |  |
|              | 72.6<br>M                         | 14     | 39.5 | -       |                  |  |
|              |                                   |        |      |         |                  |  |
| 12           | eNE                               | 16     | 47   | 54      |                  |  |

$\phi = 40^\circ 51' 47''$  N  
 $\lambda = 73^\circ 53' 8''$  W  
 h = 24 m  
 a = + .210  
 b = - .726  
 c = + .654

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 Milne-Shaw  
 Wood-Anderson  
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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

13.

| Date<br>1940                                 | Phase              | G.M.T. |    |           | Distance<br>kms. | Remarks   |
|--|--------------------|--------|----|-----------|------------------|---|
|  |                    | h.     | m. | s.        |                  |   |
| May 12                                       | eP <sub>z</sub>    | 17     | 13 | 26        | 2300             | NESA 45   |
|  | i <sub>z</sub>     | 17     | 13 | 40        |                  |   |
|  | e <sub>z</sub> (S) | 17     | 17 | 10        |                  |   |
|  | e <sub>NE</sub>    | 17     | 17 | 22        |                  |   |
|  | i <sub>z</sub>     | 17     | 17 | 38        |                  |   |
| 12   | e <sub>NE</sub>    | 20     | 56 | 20        |                  |   |
|  | M                  | 21     | 04 | --        |                  |   |
| 13<br><i>16-29-17,</i><br><i>1.1</i>         | iP <sub>1</sub>    | 16     | 29 | 38.0      | 115              | NESA 45   |
|  | i                  | 16     | 29 | 42.3      |                  |   |
|  | iS <sub>1</sub>    | 16     | 29 | 52.0      |                  |   |
|  | i                  | 16     | 29 | 55.5max   |                  |   |
| 14   | iP <sub>z</sub>    | 15     | 11 | 29        |                  |   |
| 16   | i                  | 14     | 02 | 49        |                  |   |
|  | i                  | 14     | 02 | 56        |                  |   |
| 16<br><i>19-44-21</i><br><i>1.7</i>          | iP <sub>2</sub>    | 19     | 44 | 50.5      | 186              |   |
|  | iS <sub>2</sub>    | 19     | 45 | 12.5      |                  |   |
|  | i                  | 19     | 45 | 14.5      |                  |   |
| 17<br><i>1-59-33,</i><br><i>34.7</i>         | eP <sub>zN</sub>   | 02     | 06 | 24        | 3700             | 7.9°N   |
|  | ePR <sub>1zN</sub> | 02     | 07 | 38        |                  | 81.8°W  |
|  | eS <sub>N</sub>    | 02     | 11 | 50        |                  | (USCGS)   |
|  | iS <sub>E</sub>    | 02     | 11 | 56        |                  |   |
|  | eL <sub>N</sub>    | 02     | 16 | 12        |                  |   |
|  | i <sub>E</sub>     | 02     | 16 | 49        |                  |   |
|  | M                  | 02     | 21 | --        |                  |   |
| 18   | eL <sub>N</sub>    | 05     | 19 | --        |                  |   |
| 19<br><i>4-36-40,</i><br><i>35.1</i>         | iP <sub>z</sub>    | 04     | 43 | 35        | 3700             | Imperial<br>Valley, Cal.<br>Science p.8<br>May 31, 1940 |
|  | i <sub>z</sub>     | 04     | 43 | 51        |                  |   |
|  | iS <sub>NE</sub>   | 04     | 49 | 03        |                  |   |
|  | M                  | 04     | 54 | 34(Sharp) |                  |   |
|  |                    |        |    |           |                  |   |
| Numerous aftershocks; the most intense were: |                    |        |    |           |                  |   |
|  | i <sub>z</sub>     | 06     | 09 | 20        |                  |   |
|  | i <sub>z</sub>     | 06     | 51 | 11        |                  |   |

$\phi = 40^{\circ} 51' 47'' N$   
 $\lambda = 73^{\circ} 53' 8'' W$   
 $h = 24 m$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

14.

| Date<br>1940 | Phase                  | G.M.T. |      |                  | Distance<br>kms. | Remarks   |
|--------------|------------------------|--------|------|------------------|------------------|---|
|              |                        | h.     | m.   | s.               |                  |   |
| May 19       | iP <sub>z</sub>        | 15     | 29   | 15               | 9100             | Small dilatation followed by large compression. Depth of focus about 600 kms; by Brunner's chart. |
|              | i <sub>z</sub>         | 15     | 29   | 20               |                  |   |
|              | ipP <sub>z</sub>       | 15     | 31   | 20               |                  |   |
|              | iPR <sub>1z</sub>      | 15     | 32   | 17               |                  |   |
|              | iS <sub>e</sub>        | 15     | 38   | 37               |                  |   |
|              | i <sub>N</sub>         | 15     | 38   | 44               |                  |   |
|              | iSSE                   | 15     | 42   | 07               |                  |   |
|              | i <sub>N</sub>         | 15     | 42   | 11               |                  |   |
|              | iSR <sub>1E</sub>      | 15     | 46   | 54               |                  |   |
|              | i <sub>E</sub>         | 15     | 47   | 14               |                  |   |
| 19           | M                      | 19     | 21   | --               |                  |   |
| 21           | i <sub>E</sub>         | 19     | 13   | 11               |                  |   |
|              | i <sub>E</sub>         | 19     | 14   | 23               |                  |   |
|              | i <sub>N</sub>         | 19     | 15   | 17               |                  |   |
|              | e <sub>z</sub>         | 19     | 17   | 07               |                  |   |
| 23           | M                      | 06     | 39   | --               |                  |   |
| 23           | i                      | 17     | 19   | 08               |                  |   |
| 24           | iP <sub>z</sub>        | 16     | 42   | 59               | 5700             | Compression Science, p.13 June 7: off the coast of Peru, near Callo.                              |
|              | i <sub>z</sub>         | 16     | 43   | 22               |                  |   |
|              | iS <sub>NE</sub>       | 16     | 50   | 22               |                  |   |
|              | i <sub>NE</sub>        | 16     | 50   | 51 (very strong) |                  |   |
|              | iL                     | 17     | 00   | 21               |                  |   |
|              | M                      | 17     | 05   | --               |                  |   |
| 24           | iP <sub>z</sub>        | 22     | 06   | 57               | 5800             | Aftershock.   |
|              | iS <sub>NE</sub>       | 22     | 14   | 25               |                  |   |
| 25           | iP <sub>1</sub>        | 13     | 14   | 11.5             | 106              | Blast.  |
|              | iS <sub>1</sub>        | 13     | 14   | 24.5             |                  |   |
|              | i                      | 13     | 14   | 26.5             |                  |   |
|              | i                      | 13     | 14   | 27.5max          |                  |   |
| 28           | iP <sub>z</sub>        | 09     | 59   | 57               | 14500            |   |
|              | iPR <sub>1z</sub>      | 10     | 02   | 15               |                  |   |
|              | i <sub>zNE</sub> (SKP) | 10     | 03   | 25               |                  |   |
|              | c <sub>zN</sub> (PS)   | 10     | 12   | 34               |                  |   |
|              | cSR <sub>1NE</sub>     | 10     | 19   | 49               |                  |   |
|              | M                      | 10     | 53.5 | -                |                  |   |

15-17-36,  
74.5

16-33-43,  
52.8

21 57 35  
53.6

13-13-53,  
1.0

9-55-26  
19.6

1305

$\phi = 40^{\circ} 51' 47'' N$   
 $\lambda = 73^{\circ} 53' 8'' W$   
 $h = 24 m$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

15.

| Date<br>1940 | Phase                | G.M.T. |      |         | Distance<br>kms. | Remarks         |
|--------------|----------------------|--------|------|---------|------------------|-----------------|
|              |                      | h.     | m.   | s.      |                  |                 |
| May 29       | iP <sub>z</sub>      | 02     | 05   | 43      | 4500             | Science         |
|              | ePR <sub>1z</sub> NE | 02     | 07   | 15      |                  | p.13 June 7:    |
|              | iS <sub>NE</sub>     | 02     | 12   | 03      |                  | near Alaska-    |
|              | iSR <sub>1</sub> NE  | 02     | 14   | 59      |                  | Canada boundary |
|              | iL <sub>NE</sub>     | 02     | 17   | 17      |                  | in vicinity of  |
|              | M                    | 02     | 20   | --      |                  | 68°N, 139°W.    |
|              |                      |        |      |         |                  |                 |
| 29           | e <sub>z</sub>       | 05     | 32   | 48      |                  |                 |
|              | e <sub>z</sub> NE    | 05     | 36   | 00      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 31           | e <sub>z</sub>       | 00     | 07   | 26      |                  | Surface waves   |
|              | cL <sub>N</sub>      | 01     | 14   | --      |                  | followed inter- |
|              |                      |        |      |         |                  | mittently for   |
|              |                      |        |      |         |                  | about 9 hours.  |
| June 1       | e <sub>z</sub>       | 16     | 46   | 49      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 2            | iP <sub>z</sub>      | 11     | 48   | 36      | 7500             | Dilatation      |
|              | cS <sub>NE</sub>     | 11     | 57   | 38      |                  |                 |
|              | M                    | 12     | 18   | --      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 2            | e <sub>z</sub> NE    | 15     | 09   | 37      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 2            | M                    | 23     | 49   | --      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 3            | iP <sub>z</sub>      | 18     | 12   | 07      | 3600             | Compression     |
|              | cPR <sub>2z</sub>    | 18     | 13   | 24      |                  |                 |
|              | iS <sub>N</sub>      | 18     | 17   | 30      |                  |                 |
|              | iSR <sub>1</sub> N   | 18     | 19   | 32      |                  |                 |
|              | M                    | 18     | 23.4 | -       |                  |                 |
|              |                      |        |      |         |                  |                 |
| 5            | iP <sub>z</sub>      | 11     | 09   | 09      | 4600             | Compression     |
|              | iPR <sub>1z</sub> N  | 11     | 10   | 48      |                  |                 |
|              | iS <sub>NE</sub>     | 11     | 15   | 30      |                  |                 |
|              | iSR <sub>1z</sub> NE | 11     | 18   | 39      |                  |                 |
|              | M                    | 11     | 24   | --      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 8            | cL <sub>N</sub>      | 04     | 48   | --      |                  |                 |
|              |                      |        |      |         |                  |                 |
| 8            | iP <sub>2</sub>      | 12     | 55   | 36.0    | 184              |                 |
|              | iP <sub>1</sub>      | 12     | 55   | 37.3    |                  |                 |
|              | iS <sub>2</sub>      | 12     | 55   | 57.5    |                  |                 |
|              | i                    | 12     | 55   | 58.8    |                  |                 |
|              | i                    | 12     | 55   | 59.5max |                  |                 |

1-57-40,  
43.3

11-37-36,  
70.7

18-05-21,  
34.2

11-00-59,  
43.8

12-55-06,  
1.7

$\phi = 40^\circ 51' 47''$  N  
 $\lambda = 73^\circ 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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### Instrumental Bulletin of the Seismic Observatory

INSTRUMENTS:  
 Wiechert  
 Galitzin-Wilhe  
 Milne-Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

16.

| Date<br>1940 | Phase      | G.M.T. |      |      | Distance<br>km. | Remarks                               |
|--------------|------------|--------|------|------|-----------------|---------------------------------------|
|              |            | h.     | m.   | s.   |                 |                                       |
| June 10      | $i_z$      | 21     | 25   | 11.0 |                 | Compression                           |
|              | $i_z$      | 21     | 25   | 31.5 |                 |                                       |
|              | $i_z$      | 21     | 25   | 33.0 |                 |                                       |
|              | $i_z$      | 21     | 25   | 34.0 |                 |                                       |
| 11           | $e_z$      | 09     | 01   | 40   |                 |                                       |
| 11           | $i_z$      | 16     | 00   | 00   |                 |                                       |
| 14           | $i_z$      | 17     | 23   | 42   |                 | Deep focus                            |
|              | $i_z$      | 17     | 24   | 02   |                 | NESA 47                               |
| 17           | $iP_z$     | 10     | 38   | 00   | 7800            | 21.0°N, 155.3°W<br>(USCGS)            |
|              | $i_z$      | 10     | 38   | 54   |                 |                                       |
|              | $iPR_{1z}$ | 10     | 40   | 46   |                 |                                       |
|              | $eS_{NE}$  | 10     | 47   | 14   |                 |                                       |
|              | M          | 11     | 03   | --   |                 |                                       |
| June 18      | $i_z$      | 14     | 13   | 17   |                 | Compression                           |
|              | $e_{2N}$   | 14     | 14   | 12   |                 |                                       |
|              | $e_z$      | 14     | 14   | 58   |                 |                                       |
|              | $e_N$      | 14     | 16   | 20   |                 |                                       |
|              | $i_E$      | 14     | 29   | 46   |                 |                                       |
|              | $i_{NE}$   | 14     | 32   | 08   |                 |                                       |
|              | 18         | $i_z$  | 16   | 57   | 30              |                                       |
| 18           | $iP_z$     | 18     | 50   | 15   | 7500            | Compression<br>54°N, 173°E<br>(USCGS) |
|              | $eS_{NE}$  | 18     | 59   | 16   |                 |                                       |
|              | $i_E$      | 19     | 00   | 35   |                 |                                       |
|              | $e_L$      | 19     | 14.6 | --   |                 |                                       |
|              | M          | 19     | 24   | --   |                 |                                       |
| 20           | $iP_1$     | 16     | 00   | 53.0 | 106             | NESA 48                               |
|              | $i$        | 16     | 00   | 55.0 |                 |                                       |
|              | $iS_1$     | 16     | 01   | 06.0 |                 |                                       |

10-26-29,  
73.0

18-38-58,  
70.5

16-00-34,  
11.0



$\phi = 40^\circ 51' 47'' \text{ N}$   
 $\lambda = 73^\circ 53' 8'' \text{ W}$   
 $h = 24 \text{ m}$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 vertical)  
 Foundation:  
 Fordham Gneiss

17.

| Date<br>1940                    | Phase                        | G.M.T. |      |          | Distance<br>km. | Remarks  |
|---------------------------------|------------------------------|--------|------|----------|-----------------|--|
|                                 |                              | h.     | m.   | s.       |                 |  |
| June 20<br><br>17-23-49,<br>1.5 | iP <sub>2</sub>              | 17     | 34   | 16.0     | 170             | Dilation<br>NESA 48                                    |
|                                 | i                            | 17     | 34   | 17.5     |                 |  |
|                                 | iS <sub>2</sub>              | 17     | 34   | 36.0     |                 |  |
|                                 | i                            | 17     | 34   | 37.0max. |                 |  |
| June 22                         | iP <sub>z</sub> <sup>1</sup> | 11     | 55   | 45       | 15000ca.        |  |
|                                 | e <sub>z</sub>               | 11     | 56   | 50       |                 |  |
|                                 | i <sub>zNE</sub>             | 11     | 59   | 03       |                 |  |
|                                 | i <sub>N</sub>               | 12     | 00   | 06       |                 |  |
|                                 | i <sub>z</sub>               | 12     | 00   | 22       |                 |  |
|                                 | i <sub>zNE</sub>             | 12     | 05   | 06       |                 |  |
|                                 | i <sub>z</sub>               | 12     | 10   | 30       |                 |  |
|                                 | iSR <sub>LNE</sub>           | 12     | 16   | 18       |                 |  |
| June 23                         | eS <sub>N</sub>              | 21     | 53   | 37       | 3750            | 25° N, 111.0° W<br>(USCGS)<br>26° N, 110.5° W<br>(JSA) |
|                                 | eL <sub>N</sub>              | 21     | 55.1 | --       |                 |  |
|                                 | M                            | 22     | 01.5 | --       |                 |  |
| 25                              | iP <sub>z</sub>              | 03     | 04   | 15       |                 | Dilation<br>NESA 48                                    |
|                                 | i <sub>z</sub>               | 03     | 04   | 29       |                 |  |
|                                 | i <sub>z</sub>               | 03     | 04   | 35       |                 |  |
|                                 | (M)                          | 03     | 47   | --       |                 |  |
| Date<br>1940                    | Phase                        | G.M.T. |      |          | Distance<br>km. | Remarks  |
|                                 |                              | h.     | m.   | s.       |                 |  |
| 25                              | M                            | 05     | 00   | --       |                 |  |
| June 26                         | M <sub>2</sub>               | 09     | 32   | 18.0     | 170             | Dilation<br>NESA 48                                    |
|                                 | i                            | 17     | 34   | 17.5     |                 |  |
| 28<br><br>12-29-58,<br>1.5      | iP <sub>2</sub>              | 19     | 40   | 25.0     | 165             | Dilation<br>NESA 48                                    |
|                                 | iS <sub>2</sub>              | 19     | 40   | 44.5max. |                 |  |
|                                 | iS <sub>1</sub>              | 19     | 40   | 46.0     |                 |  |
| June 22                         | iP <sub>z</sub> <sup>1</sup> | 11     | 55   | 45       | 15000ca.        |  |
|                                 | e <sub>z</sub>               | 11     | 56   | 50       |                 |  |
|                                 | i <sub>zNE</sub>             | 11     | 59   | 03       |                 |  |
|                                 | i <sub>N</sub>               | 12     | 00   | 06       |                 |  |
|                                 | i <sub>z</sub>               | 12     | 00   | 22       |                 |  |
|                                 | i <sub>zNE</sub>             | 12     | 05   | 06       |                 |  |
|                                 | i <sub>z</sub>               | 12     | 10   | 30       |                 |  |
|                                 | iSR <sub>LNE</sub>           | 12     | 16   | 18       |                 |  |
| June 23                         | eS <sub>N</sub>              | 21     | 53   | 37       | 3750            | 25° N, 111.0° W  |

July, Aug., Sept. 1940

INSTRUMENTS:  
 Wiechert  
 Galitzin-Wilp  
 Milne-Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period, vertical)  
 Foundation:  
 Fordham Gneiss

$\phi = 40^\circ 51' 47''$  N  
 $\lambda = 73^\circ 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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1941 FEB 7 AM 9:10

| Date<br>1940 | Phase              | 18.<br>G. M. T. |      |      | Distance<br>km. | Remarks         |
|--------------|--------------------|-----------------|------|------|-----------------|-----------------|
|              |                    | h.              | m.   | s.   |                 |                 |
| July 1       | iP <sub>2</sub>    | 16              | 39   | 09   | 180             |                 |
|              | iS <sub>2</sub>    | 16              | 39   | 30   |                 |                 |
|              | iS <sub>1</sub>    | 16              | 39   | 32.5 |                 |                 |
| 1            | eP <sub>z</sub>    | 21              | 36   | 25   | 3800            |                 |
|              | eS <sub>NE</sub>   | 21              | 41   | 48   |                 |                 |
|              | eL                 | 21              | 46   | --   | 21 29 39        | 34.2°           |
| 2            | e <sub>z</sub> (?) | 19              | 28   | 14   |                 |                 |
|              | e <sub>E</sub>     | 19              | 34   | 44   |                 |                 |
|              | eLN                | 19              | 59.2 | --   |                 |                 |
|              | M                  | 20              | 06.5 | --   |                 |                 |
| 3            | M                  | 16              | 26.5 | --   |                 |                 |
| 6            | iP <sub>z</sub>    | 03              | 46   | 12   | 3550            | 11 N, 61 W      |
|              | ipP <sub>z</sub>   | 03              | 46   | 48   |                 | (USCGS)         |
|              | iNE                | 03              | 47   | 44   |                 | 12.3 N, 64.4 W  |
|              | iS <sub>NE</sub>   | 03              | 50   | 56   |                 | (JSA)           |
|              | i <sub>N</sub>     | 03              | 51   | 18   |                 | Depth, 180 km.  |
|              | i <sub>N</sub>     | 03              | 51   | 54   |                 |                 |
|              | i <sub>N</sub>     | 03              | 52   | 38   |                 | 3 40 21 27.9°   |
| 6            | e <sub>E</sub>     | 18              | 13   | 55   |                 |                 |
|              | e <sub>zNE</sub>   | 18              | 15   | 38   |                 |                 |
|              | i <sub>E</sub>     | 18              | 15   | 59   |                 |                 |
|              | i <sub>zNE</sub>   | 18              | 18   | 35   |                 |                 |
| 6            | e <sub>z</sub>     | 21              | 07   | 09   |                 |                 |
|              | e <sub>z</sub>     | 21              | 08   | 07   |                 |                 |
| 8            | iP <sub>2</sub>    | 15              | 47   | 41   | 168             |                 |
|              | iS <sub>2</sub>    | 15              | 48   | 01   |                 |                 |
| 10           | eP <sub>z</sub>    | 06              | 02   | 08   | 10350           | 45 N, 128.6 E   |
|              | ipP <sub>z</sub>   | 06              | 02   | 14   |                 | (USCGS)         |
|              | e <sub>z</sub>     | 06              | 04   | 12   |                 |                 |
|              | ipP <sub>z</sub>   | 06              | 04   | 18   |                 | 45.6 N, 128.6 E |
|              | e <sub>z</sub>     | 06              | 05   | 11   |                 | (JSA)           |

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940 | Phase          | 19.   |       |       | Distance<br>km. | Remarks  |
|--------------|----------------|-------|-------|-------|-----------------|--|
|              |                | G. h. | M. m. | T. s. |                 |  |
| July 10      | $i_z$          | 06    | 06    | 04    |                 | Depth, 500 km.   |
|              | $e_N$          | 06    | 11    | 46    |                 |  |
|              | $i_{SKSN}$     | 06    | 11    | 50    |                 |  |
|              | $i_{SE}$       | 06    | 12    | 22    |                 |  |
|              | $i_N$          | 06    | 15    | 50    |                 |  |
|              | $i_E$          | 06    | 16    | 09    |                 |  |
|              | $i_{zNE}$ (SR) | 06    | 19    | 06    |                 |  |
| 11           | $iP_1$         | 21    | 20    | 39    | 101             | Compression<br>Quarry blast at<br>No. Branford, Conn.<br>NESA 49, 50 |
|              | $iS_1$         | 21    | 20    | 51.5  |                 |  |
| 12           | $iP_2$         | 15    | 33    | 21    | 152             |  |
|              | $iS_2$         | 15    | 33    | 39    |                 |  |
| 12           | $eL_N$         | 19    | 20    | --    |                 |  |
| 13           | $eP_z$         | 16    | 54    | 10    | 3850            | 7.1 N, 83 W.   |
|              | $iS_{NE}$      | 16    | 59    | 38    |                 | (USCGS)  |
|              | $eL_N$         | 17    | 04    | --    |                 | 9.1 N, 82.5 W.   |
|              | M              | 17    | 08    | --    | 16 47 15 35.1   | (JSA)  |
| 14           | $iP_z$         | 06    | 03    | 51    | 7600            | Compression  |
|              | $i_{zNE}$      | 06    | 09    | 10    |                 | 52 N, 178 E.   |
|              | $iS_E$         | 06    | 12    | 46    |                 | (USCGS)  |
|              | $i_z$          | 06    | 14    | 14    |                 | 52.7 N, 177.6 E  |
|              | $eL_N$         | 06    | 23.8  | --    |                 | (JSA)  |
|              | M              | 06    | 33    | --    | 5 52 41 69.3    |  |
| 16           | $eL$           | 00    | 29    | --    |                 |  |
|              | $eL$           | 03    | 49    | --    |                 |  |
|              | M              | 20    | 21    | --    |                 |  |
|              | M              | 00    | 27    | --    |                 |  |

W  
 (see JSA)

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 h = 24 m  
 a = + .210  
 b = - .726  
 c = + .654

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 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

20.

| Date<br>1940 | Phase               | G. M. T. |      |    | Distance<br>km. | Remarks                 |
|--------------|---------------------|----------|------|----|-----------------|-------------------------|
|              |                     | h.       | m.   | s. |                 |                         |
| July 17      | e <sub>z</sub>      | 20       | 57   | 32 |                 | NESA 49, 50,<br>51, 52. |
|              | e <sub>z</sub>      | 18       | 36   | 03 |                 |                         |
|              | eP <sub>z</sub>     | 04       | 58   | 46 | 7600            | 54° N, 173° E           |
|              | eS <sub>E</sub>     | 05       | 07   | 52 |                 | (USCGS)                 |
|              | eNE                 | 05       | 08   | 44 |                 | 50.7° N, 177.9° E       |
|              | eL                  | 05       | 22.8 | -- |                 | (JSA)                   |
|              | M                   | 05       | 30   | -- | 4 47 23         | 71.5°                   |
|              | ePR <sub>1z</sub>   | 02       | 12   | 32 | 12000           |                         |
|              | eSKS <sub>E</sub>   | 02       | 18   | 56 |                 |                         |
|              | eN                  | 02       | 20   | 18 |                 |                         |
|              | M                   | 02       | 49   | -- |                 |                         |
|              | e <sub>z</sub>      | 15       | 57   | 50 |                 |                         |
|              | e <sub>z</sub>      | 16       | 00   | 22 |                 |                         |
|              | i <sub>z</sub> NE   | 16       | 01   | 17 |                 |                         |
|              | i <sub>z</sub> N    | 16       | 07   | 15 |                 |                         |
|              | e <sub>NE</sub>     | 16       | 18   | 15 |                 |                         |
|              | e(L)                | 16       | 46   | -- |                 |                         |
|              | (M)                 | 16       | 54   | -- |                 |                         |
|              | M                   | 14       | 30   | -- |                 |                         |
|              | e                   | 21       | 33   | 36 |                 |                         |
|              | iP <sub>z</sub>     | 13       | 38   | 41 | 3400            | Compression             |
|              | iP <sub>z</sub>     | 13       | 38   | 56 |                 | 1366° N, 91.6° W        |
|              | i <sub>z</sub>      | 13       | 42   | 26 |                 | (USCGS)                 |
|              | iS <sub>z</sub> NE  | 13       | 43   | 44 |                 | 13.7° N, 91.3° W        |
|              | iS <sub>z</sub> NE  | 13       | 44   | 18 |                 | (JSA)                   |
|              | iSR <sub>1z</sub> N | 13       | 45   | 19 |                 | Depth, 80km             |
|              | M                   | 13       | 52.5 | -- | 13 32 21        | 34.2°                   |
|              | e                   | 16       | 19   | 13 |                 |                         |
|              | iP <sub>z</sub>     | 00       | 24   | 09 | 8500            | Compression             |
|              | eS <sub>NE</sub>    | 00       | 33   | 57 | 0 12 00         | 79.6°                   |
|              | e(L) <sub>N</sub>   | 00       | 46   | -- |                 |                         |
|              | M                   | 00       | 56   | -- |                 |                         |
|              | e <sub>z</sub>      | 16       | 10   | 21 |                 |                         |
|              | e <sub>NE</sub>     | 16       | 14   | 17 |                 |                         |
|              | eL                  | 19       | 44   | 3  |                 |                         |

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 vertical)  
 Foundation:  
 Fordham Gneiss

21.

| Date<br>1940 | Phase          | G. M. T. |    |      | Distance<br>km. | Remarks         |
|--------------|----------------|----------|----|------|-----------------|-----------------|
|              |                | h.       | m. | s.   |                 |                 |
| August 1     | $i_z$          | 12       | 58 | 52   |                 |                 |
|              | $i_E$          | 13       | 03 | 34   |                 |                 |
|              | $i_E$          | 13       | 05 | 00   |                 |                 |
|              | $i_N$          | 13       | 14 | 38   |                 |                 |
|              | $i_{P_z}$      | 15       | 21 | 21   | 10,000          | 44.5 N, 140 E   |
|              | $ip_{P_z} (?)$ | 15       | 21 | 35   |                 | (USCGS)         |
|              | $i_z$          | 15       | 23 | 33   |                 | 44.0 N, 139.6 E |
|              | $iPR_{2z}$     | 15       | 27 | 09   |                 | (JSA)           |
|              | $iSKKS_{NE}$   | 15       | 32 | 11   |                 |                 |
|              | $iPS_{zNE}$    | 15       | 33 | 34   |                 |                 |
|              | eL             | 15       | 47 | --   |                 |                 |
|              | M              | 16       | 04 | --   |                 |                 |
|              | Aug 3          | $iP_2$   | 12 | 12   | 49.2            | 185             |
| $iP_1$       |                | 12       | 12 | 50.3 |                 |                 |
| i            |                | 12       | 12 | 54.5 |                 |                 |
| $iS_2$       |                | 12       | 13 | 10.8 |                 |                 |
| 5            | $eP_z$         | 08       | 30 | 51   | 7700            |                 |
|              | $i_z$          | 08       | 31 | 12   |                 |                 |
|              | $e_{NE}$       | 08       | 39 | 52   |                 |                 |
|              | eL             | 08       | 53 | --   |                 |                 |
|              | M              | 09       | 01 | --   |                 |                 |
| 6            | $i_z$          | 16       | 38 | 27   |                 |                 |
|              | $i_z$          | 16       | 38 | 30   |                 |                 |
| 7            | $iP_z$         | 03       | 06 | 17   | 6900            | Depth, about    |
|              | $ip_{P_z}$     | 03       | 06 | 47   |                 | 100 km.         |
|              | $e_z$          | 03       | 09 | 33   |                 | 2 22 46 63.20   |
|              | $iS_E$         | 03       | 14 | 41   |                 |                 |
|              | $isS_{NE}$     | 03       | 15 | 27   |                 |                 |

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940 | Phase               | 22.<br>G. M. T. |    |      | Distance<br>km. | Remarks          |
|--------------|---------------------|-----------------|----|------|-----------------|------------------|
|              |                     | h.              | m. | s.   |                 |                  |
| August 8     | M                   | 13              | 34 | --   |                 |                  |
|              | 11                  | 17              | 11 | 44   |                 |                  |
|              | e <sub>E</sub>      | 17              | 13 | 03   |                 |                  |
|              | e <sub>N</sub>      | 17              | 14 | 48   |                 |                  |
|              | e <sub>zE</sub>     | 17              | 43 | --   |                 |                  |
|              | M                   |                 |    |      |                 |                  |
|              | 13                  | 15              | 50 | 35   | 11,100          |                  |
|              | iP <sub>z</sub>     | 15              | 54 | 43   |                 |                  |
|              | ePR <sub>1zNE</sub> | 16              | 01 | 09   |                 |                  |
|              | iSKS <sub>N</sub>   | 16              | 40 | --   |                 |                  |
|              | M                   |                 |    |      |                 |                  |
|              | 15                  | 05              | 01 | --   |                 |                  |
|              | M                   |                 |    |      |                 |                  |
|              | 15                  | 21              | 51 | 35   |                 |                  |
|              | e <sub>zNE</sub>    |                 |    |      |                 |                  |
|              | 16                  | 19              | 57 | 22.5 | 165             | NESA 51, 52.     |
|              | iP <sub>2</sub>     | 19              | 57 | 23.8 |                 |                  |
|              | iP <sub>1</sub>     | 19              | 57 | 42.0 |                 |                  |
|              | iS <sub>2</sub>     | 19              | 57 | 44.0 |                 |                  |
|              | iS <sub>1</sub>     | 19              | 57 | 49.0 |                 |                  |
|              | i                   |                 |    |      |                 |                  |
|              | 18                  | 06              | 56 | --   |                 |                  |
|              | eL                  |                 |    |      |                 |                  |
|              | 20                  | 17              | 42 | 53   |                 |                  |
|              | e <sub>NE</sub>     |                 |    |      |                 |                  |
|              | e <sub>NE</sub>     | 17              | 52 | 11   |                 |                  |
|              | eL                  | 18              | 25 | --   |                 |                  |
|              | M                   | 18              | 38 | --   |                 |                  |
|              | 22                  | 03              | 37 | 19   | 6600            | 51.9°N, 164.9°W. |
|              | eP <sub>z</sub>     |                 |    |      |                 | (USCGS)          |
|              | iP <sub>z</sub>     | 03              | 37 | 29   |                 |                  |
|              | iPR <sub>1z</sub>   | 03              | 39 | 43   |                 |                  |
|              | iPR <sub>2z</sub>   | 03              | 41 | 07   |                 |                  |
|              | iS <sub>E</sub>     | 03              | 45 | 32   |                 |                  |
|              | i <sub>N</sub>      | 03              | 45 | 40   |                 |                  |
|              | i <sub>z</sub>      | 03              | 45 | 45   |                 |                  |
|              | M                   | 04              | 00 | --   |                 |                  |

$\phi = 40^\circ 51' 47''$  N  
 $\lambda = 73^\circ 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 Milne-Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940  | Phase                        | 23.      |          |          | Distance<br>km. | Remarks     |
|---------------|------------------------------|----------|----------|----------|-----------------|-------------|
|               |                              | G.<br>h. | M.<br>m. | T.<br>s. |                 |             |
| Aug. 22       | iP <sub>Z</sub>              | 06       | 04       | 04       |                 |             |
|               | i <sub>Z</sub>               | 06       | 04       | 18       |                 |             |
| <del>24</del> | eL                           | 08       | 19       | --       |                 |             |
| 24            | eE                           | 13       | 56       | 10       |                 |             |
|               | e <sub>N</sub>               | 13       | 57       | 30       |                 |             |
|               | M                            | 14       | 27       | --       |                 |             |
| 24            | iP <sub>2</sub>              | 15       | 46       | 24.5     | 147             |             |
|               | i                            | 15       | 46       | 26.2     |                 |             |
|               | iS <sub>2</sub>              | 15       | 46       | 42.0     |                 |             |
|               | iS <sub>1</sub>              | 15       | 46       | 43.0     |                 |             |
|               | i                            | 15       | 45       | 45.0     |                 |             |
| 26            | M                            | 05       | 25       | --       |                 |             |
| Sept. 3       | e <sub>N</sub>               | 15       | 05       | 36       |                 |             |
|               | eL                           | 15       | 36       | --       |                 |             |
|               | M                            | 15       | 48       | --       |                 |             |
| 4             | iP <sub>2</sub>              | 15       | 10       | 11.5     | 156             | NESA #53    |
| <i>150946</i> | iS <sub>2</sub>              | 15       | 10       | 30.0     |                 |             |
| <i>1.4</i>    | eL                           | 06       | 32.5     | --       |                 |             |
| 8             | iP <sub>Z</sub>              | 10       | 26       | 28       |                 | Compression |
|               | eL                           | 10       | 52.5     | --       |                 |             |
|               | M                            | 10       | 58.5     |          |                 |             |
| 12            | i <sub>Z</sub>               | 00       | 40       | 23       |                 | NESA #53    |
|               | e <sub>Z</sub>               | 00       | 43       | 04       |                 |             |
|               | i <sub>Z</sub>               | 00       | 43       | 41       |                 |             |
| 12            | eP <sub>Z</sub> <sup>1</sup> | 13       | 36       | 21       | 14000           |             |
|               | iPR <sub>1Z</sub>            | 13       | 38       | 23       |                 |             |
|               | ePPS <sub>NE</sub>           | 13       | 50       | 07       |                 |             |
|               | eSR <sub>1NE</sub>           | 13       | 55       | 07       |                 |             |
|               | eL                           | 14       | 10       | --       |                 |             |
|               | M                            | 14       | 21       | --       |                 |             |

$\phi = 40^{\circ} 51' 47'' \text{ N}$   
 $\lambda = 73^{\circ} 53' 8'' \text{ W}$   
 $h = 24 \text{ m}$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940 | Phase                        | 24.      |          |          | Distance<br>km. | Remarks                                    |
|--------------|------------------------------|----------|----------|----------|-----------------|--|
|              |                              | G.<br>h. | M.<br>m. | T.<br>s. |                 |  |
| Sept. 12     | i                            | 17       | 29       | 29.0     |                 | NESA #53,<br>Explosion at<br>Kenvil, N. J. |
| 13           | iP <sub>2</sub>              | 15       | 08       | 36.5     | 170             | Dilation<br>Blast NESA #53                 |
| 14           | M                            | 23       | 32       | --       |                 |  |
| 18           | e <sub>Z</sub>               | 15       | 19       | 57       |                 |  |
|              | i <sub>E</sub>               | 15       | 27       | 49       |                 |  |
|              | e <sub>E</sub>               | 15       | 28       | 38       |                 |  |
|              | i <sub>E</sub>               | 15       | 30       | 04       |                 |  |
| 19           | iP <sub>Z</sub> <sup>1</sup> | 18       | 38       | 39       | 14,000          | Compression                                |
|              | iPR <sub>1Z</sub>            | 18       | 40       | 25       |                 | 23 S, 171 E.                               |
|              | iSKS <sub>E</sub>            | 18       | 45       | 47       |                 | (USCGS)                                    |
|              | i <sub>E</sub> (SKKS)        | 18       | 47       | 21       |                 |  |
|              | i <sub>N</sub>               | 18       | 48       | 31       |                 |  |
|              | i <sub>E</sub> (PPS)         | 18       | 51       | 57       |                 |  |
|              | i <sub>N</sub>               | 19       | 00       | 19       |                 |  |
|              | iL <sub>N</sub> (G)          | 19       | 11       | 31       |                 |  |
|              | M                            | 19       | 25       | --       |                 |  |
| 20           | M                            | 01       | 08       | --       |                 |  |
| 21           | iP <sub>2</sub>              | 16       | 01       | 57       | 199             | NESA #54                                   |
|              | iS <sub>2</sub>              | 16       | 02       | 20       |                 |  |
| 22           | i <sub>Z</sub>               | 23       | 09       | 50       |                 | Sharp phases;<br>probably deep<br>focus.   |
|              | i <sub>ZE</sub>              | 23       | 12       | 11       |                 |  |
|              | i <sub>NE</sub>              | 23       | 13       | 17       |                 |  |
|              | i <sub>Z</sub>               | 23       | 14       | 19       |                 |  |
|              | i <sub>N</sub>               | 23       | 17       | 57       |                 |  |
|              | i <sub>N</sub>               | 23       | 30       | 59       |                 |  |
| 23           | i <sub>Z</sub>               | 07       | 24       | 55       |                 | Compression,<br>probably deep<br>focus.    |
|              | i <sub>Z</sub>               | 07       | 25       | 25       |                 |  |
|              | i <sub>E</sub>               | 07       | 32       | 51       |                 |  |
|              | i <sub>E</sub>               | 07       | 33       | 55       |                 |  |
|              | e <sub>E</sub>               | 07       | 36       | 09       |                 |  |

182939  
50.5

100126  
1.8



$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940        | Phase           | <sup>25.</sup><br>G. M. T. |      |      | Distance<br>km. | Remarks       |
|---------------------|-----------------|----------------------------|------|------|-----------------|---------------|
|                     |                 | h.                         | m.   | s.   |                 |               |
| Sept. 24            | eL <sub>N</sub> | 01                         | 51.4 | --   |                 |               |
| 152004<br>1.5<br>25 | iP <sub>2</sub> | 15                         | 20   | 31.5 | 165             | NESA #54      |
|                     | iS <sub>2</sub> | 15                         | 20   | 51.0 |                 |               |
| 26                  | M               | 05                         | 04   | --   |                 |               |
| 27                  | eL <sub>N</sub> | 17                         | 23.5 | --   |                 |               |
| 175305<br>1.3<br>27 | iP <sub>2</sub> | 17                         | 53   | 29.0 | 156             | NESA #53, 54. |
|                     | iS <sub>2</sub> | 17                         | 53   | 47.5 |                 |               |
| 12109<br>75.7<br>29 | iP <sub>Z</sub> | 01                         | 32   | 55   | 8000            | Dilation      |
|                     | i <sub>Z</sub>  | 01                         | 33   | 00   |                 |               |
|                     | iS <sub>E</sub> | 01                         | 42   | 23   |                 |               |
|                     | i <sub>E</sub>  | 01                         | 43   | 03   |                 |               |
|                     | M               | 06                         | 33   | --   |                 |               |
| 30                  | eL <sub>N</sub> | 12                         | 04   | --   |                 |               |
| 30                  | M               | 15                         | 17   | --   |                 |               |
| 214116<br>0.5<br>30 | iP <sub>1</sub> | 21                         | 41   | 26   | 59              | NESA #54      |
|                     | iS <sub>1</sub> | 21                         | 41   | 33   |                 |               |

J. J. L., S.J.  
 W. A. L.

Oct. Nov. Dec. 1940

$\phi = 40^\circ 51' 47''$  N  
 $\lambda = 73^\circ 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 Wood-Anderson  
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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

26.

114231  
 70.9

75430  
 62.7

143826  
 32.7

| Date<br>1940 | Phase             | G, M. T.<br>h. m. s. | Distance<br>km. | Remarks                          |
|--------------|-------------------|----------------------|-----------------|----------------------------------|
| October 1    | iP <sub>Z</sub>   | 10 53 50             | 7500            | Depth, about<br>70 km.           |
|              | ipP <sub>Z</sub>  | 10 54 07             |                 |                                  |
|              | ePR <sub>2Z</sub> | 10 58 11             |                 |                                  |
|              | iS <sub>E</sub>   | 11 02 53             |                 |                                  |
|              | isS <sub>E</sub>  | 11 03 13             |                 |                                  |
|              | iN                | 11 04 14             |                 |                                  |
|              | iSR <sub>1E</sub> | 11 07 25             |                 |                                  |
|              | eL <sub>N</sub>   | 11 16.6 --           |                 |                                  |
|              | M                 | 11 25.6 --           |                 |                                  |
| 1            | M                 | 21 17 --             |                 |                                  |
| 1            | e <sub>Z</sub>    | 21 58 37             |                 |                                  |
|              | eN                | 22 24 54             |                 |                                  |
|              | M                 | 22 49 --             |                 |                                  |
| 2            | e <sub>ZN</sub>   | 03 22 18             |                 |                                  |
|              | i <sub>ZN</sub>   | 03 23 34             |                 |                                  |
|              | eL <sub>N</sub>   | 03 32.5 --           |                 |                                  |
|              | M                 | 03 36 --             |                 | NESA 55.                         |
| 2            | i <sub>Z</sub>    | 23 00 28.5           |                 |                                  |
| 4            | eP <sub>Z</sub>   | 08 04 58             | 6700            | 19 S, 67 W.<br>(USCGS)           |
|              | iP <sub>Z</sub>   | 08 05 05             |                 |                                  |
|              | i <sub>Z</sub>    | 08 05 14             |                 |                                  |
|              | i <sub>Z</sub>    | 08 05 26             |                 |                                  |
|              | iS <sub>E</sub>   | 08 13 19             |                 |                                  |
|              | i <sub>E</sub>    | 08 14 47             |                 |                                  |
|              | eL <sub>N</sub>   | 08 24.3 --           |                 |                                  |
|              | M                 | 08 30 --             |                 |                                  |
| 5            | i <sub>Z</sub>    | 09 43 30             |                 | Dilation, Deep<br>focus. NESA 55 |
| 5            | iP <sub>Z</sub>   | 14 45 17             | 3700            | Compression,<br>9 N, 84 W.       |
|              | i <sub>Z</sub>    | 14 45 27             |                 |                                  |
|              | iPR <sub>1Z</sub> | 14 46 29             |                 |                                  |
|              | iPR <sub>2Z</sub> | 14 46 49             |                 |                                  |
|              | e <sub>E</sub>    | 14 50 36             |                 |                                  |
|              | iS <sub>N</sub>   | 14 50 43             |                 |                                  |
|              | i <sub>ZNE</sub>  | 14 50 53             |                 |                                  |
|              | eL <sub>N</sub>   | 14 56.1 --           |                 |                                  |
|              | M                 | 15 00 --             |                 |                                  |

$\phi = 40^\circ 51' 47'' \text{ N}$   
 $\lambda = 73^\circ 53' 8'' \text{ W}$   
 $h = 24 \text{ m}$   
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

27.

| Date<br>1940 | Phase                             | G. M. T. |      |      | Distance<br>km. | Remarks   |
|--------------|-----------------------------------|----------|------|------|-----------------|---|
|              |                                   | h.       | m.   | s.   |                 |   |
| Oct. 6       | eP <sub>Z</sub>                   | 15       | 48   | 32   | 6550            |   |
|              | iP <sub>Z</sub>                   | 15       | 48   | 41   |                 |   |
|              | iS <sub>NE</sub>                  | 15       | 56   | 44   |                 |   |
|              | iPS <sub>E</sub>                  | 15       | 57   | 21   |                 |   |
|              | iL <sub>NE</sub>                  | 16       | 08   | 41   |                 |   |
|              | M                                 | 16       | 16   | --   |                 |   |
| 7            | e <sub>Z</sub>                    | 07       | 02   | 03   |                 |   |
|              | e <sub>Z</sub>                    | 07       | 02   | 33   |                 |   |
|              | i <sub>Z</sub>                    | 07       | 05   | 14   |                 |   |
|              | e <sub>NE</sub>                   | 07       | 11   | 04   |                 |   |
|              | M(?)                              | 08       | 00.5 | --   |                 |   |
| 11           | iP <sub>Z</sub>                   | 08       | 02   | 03   | 5450            | Dilatation  |
|              | i <sub>Z</sub>                    | 08       | 02   | 19   |                 |   |
|              | i <sub>Z</sub> (P <sub>C</sub> P) | 08       | 03   | 25   |                 |   |
|              | eS <sub>N</sub>                   | 08       | 03   | 12   |                 |   |
|              | eL(?)                             | 08       | 13   | --   |                 |   |
|              | M(?)                              | 08       | 23   | --   |                 |   |
| 11           | iP <sub>Z</sub>                   | 18       | 53   | 34   | 9500            | Compression<br>45°S, 75°W.<br>(USCGS)             |
|              | i <sub>Z</sub>                    | 18       | 54   | 50   |                 |   |
|              | iS <sub>NE</sub>                  | 19       | 03   | 55   |                 |   |
|              | eL <sub>N</sub>                   | 19       | 23.3 | --   |                 |   |
|              | M                                 | 19       | 23   | --   |                 |   |
| 12           | i <sub>Z</sub>                    | 03       | 53   | 48   |                 | Compression<br>NESA 55.                           |
| 13           | M                                 | 14       | 26   | --   |                 |   |
| 15           | eL <sub>N</sub>                   | 07       | 16   | --   |                 |   |
| 19           | iP <sub>Z</sub>                   | 13       | 53   | 58.0 | 138             | Dilatation<br>NESA 55.                            |
|              | iS <sub>Z</sub>                   | 13       | 53   | 20.0 |                 |   |
| 22           | iP <sub>Z</sub>                   | 06       | 47   | 47   | 7550            | Compression<br>Depth about<br>125 km.<br>Rumania. |
|              | iPP <sub>Z</sub>                  | 06       | 48   | 21   |                 |   |
|              | i <sub>Z</sub>                    | 06       | 48   | 32   |                 |   |
|              | iS <sub>NE</sub>                  | 06       | 56   | 40   |                 |   |
|              | iS <sub>SE</sub>                  | 06       | 57   | 36   |                 |   |
|              | iSR <sub>2N</sub>                 | 07       | 04   | 26   |                 |   |

153815  
61.1

7530v  
50.7

184056  
85.4

135828-1.7

63639  
69.0

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 h = 24 m  
 a = + .210  
 b = - .726  
 c = + .654

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 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940      | Phase               | 28.      |          |          | Distance<br>km. | Remarks  |
|-------------------|---------------------|----------|----------|----------|-----------------|--|
|                   |                     | G.<br>h. | M.<br>m. | T.<br>s. |                 |  |
| Oct. 23           | iP <sub>z</sub>     | 02       | 31       | 05       | 140             | NESA 56.   |
|                   | ipP <sub>z</sub>    | 02       | 31       | 36       |                 |  |
| 1859-24<br>1.3 23 | iP <sub>z</sub>     | 18       | 59       | 48.5     | 8200            | Compression<br>Depth about<br>75 km.                   |
|                   | iS <sub>z</sub>     | 19       | 00       | 05.5     |                 |  |
| 24                | iP <sub>z</sub>     | 20       | 18       | 22       | 103             | NESA 56.   |
|                   | ipP <sub>z</sub>    | 20       | 18       | 39       |                 |  |
|                   | i <sub>z</sub>      | 20       | 18       | 42       |                 |  |
|                   | e <sub>z</sub>      | 20       | 19       | 38       |                 |  |
|                   | iS <sub>NE</sub>    | 20       | 28       | 24       |                 |  |
|                   | iS <sub>SE</sub>    | 20       | 28       | 24       |                 |  |
|                   |                     |          |          |          |                 |  |
| 201439-1.0 25     | iP <sub>1</sub>     | 20       | 14       | 58.5     | 3550            | Compression<br>9.9°N, 84.4°W.<br>(USCGS)<br>Costa Rica |
|                   | iS <sub>1</sub>     | 20       | 15       | 11.0     |                 |  |
| 53528<br>33.3 27  | iP <sub>zN</sub>    | 05       | 42       | 06       | 61              | NESA 56.   |
|                   | iPR <sub>1zN</sub>  | 05       | 43       | 06       |                 |  |
|                   | iPR <sub>2zNE</sub> | 05       | 43       | 26       |                 |  |
|                   | iS <sub>NE</sub>    | 05       | 47       | 23       |                 |  |
|                   | M                   | 05       | 55       | --       |                 |  |
|                   |                     |          |          |          |                 |  |
| 27                | iP <sub>z</sub>     | 10       | 46       | 30       | 170             | NESA 56  |
|                   | eL <sub>N</sub>     | 11       | 10.6     | --       |                 |  |
| 28                | iP <sub>z</sub>     | 01       | 29       | 57       | 170             | NESA 56  |
|                   | eL <sub>N</sub>     | 02       | 03       | --       |                 |  |
| 28                | eL <sub>N</sub>     | 21       | 40       | --       |                 |  |
| 214510<br>0.5 28  | iP <sub>1</sub>     | 21       | 45       | 20.0     | 61              | NESA 56.   |
|                   | iS <sub>1</sub>     | 21       | 45       | 27.5     |                 |  |
| 30                | iP <sub>z</sub>     | 03       | 20       | 45       | 170             | NESA 56  |
|                   | e <sub>N</sub>      | 03       | 29       | 15       |                 |  |
|                   | eL <sub>N</sub> (?) | 03       | 36       | --       |                 |  |
| 182518<br>1.5 30  | iP <sub>z</sub>     | 18       | 25       | 45       | 170             | NESA 56  |
|                   | iS <sub>z</sub>     | 18       | 26       | 05       |                 |  |
| 31                | e <sub>N</sub>      | 11       | 12       | 14       | 170             | NESA 56  |
|                   | eL <sub>N</sub>     | 11       | 48.7     | --       |                 |  |

$\varphi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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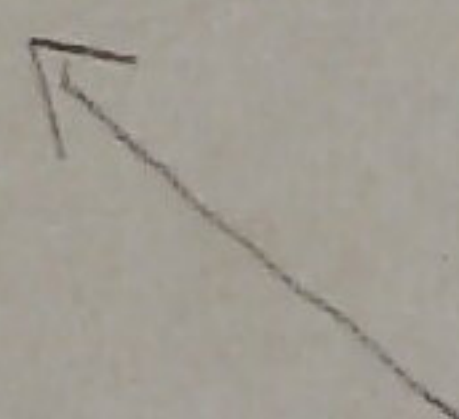
INSTRUMENTS:  
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 Milne-Shaw  
 Wood-Anderson  
 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

29.

| Date<br>1940 | Phase             | G. M. T. |      |      | Distance<br>km. | Remarks                           |
|--------------|-------------------|----------|------|------|-----------------|-----------------------------------|
|              |                   | h.       | m.   | s.   |                 |                                   |
| Nov. 1       | M                 | 16       | 13   | --   |                 |                                   |
|              | 2-3               | 23       | 54   | 03   |                 |                                   |
|              | e <sub>E</sub>    | 00       | 05   | --   |                 |                                   |
|              | e <sub>L</sub> N  | 00       | 10   | --   |                 |                                   |
|              | M                 | 02       | 41   | --   |                 |                                   |
|              | 3                 | 02       | 48   | --   |                 |                                   |
|              | e <sub>L</sub> N  | 02       | 48   | --   |                 |                                   |
|              | M                 | 19       | 00   | 00.5 | 100             | Dilation<br>NESA 57               |
|              | 5                 | 19       | 00   | 00.5 |                 |                                   |
|              | 1 <sub>z</sub>    | 14       | 15   | 35   |                 |                                   |
|              | 7                 | 14       | 18   | 33   |                 |                                   |
|              | i <sub>z</sub> N  | 14       | 20   | 53   |                 |                                   |
|              | e <sub>z</sub> N  | 14       | 24   | 27   |                 |                                   |
|              | i <sub>NE</sub>   | 14       | 24   | 27   |                 |                                   |
|              | e <sub>N</sub>    | 14       | 24   | 27   |                 |                                   |
|              | 7                 | 18       | 29   | 31.0 |                 | Dilation<br>NESA 57               |
|              | 1 <sub>z</sub>    | 18       | 29   | 31.0 |                 |                                   |
|              | 8                 | 11       | 39   | --   |                 |                                   |
|              | M                 | 11       | 39   | --   |                 |                                   |
|              | 9                 | 12       | 08   | --   |                 |                                   |
|              | M                 | 12       | 08   | --   |                 |                                   |
|              | 10                | 01       | 49   | 56   | 7650            | Dilation                          |
|              | 1P <sub>z</sub>   | 01       | 49   | 56   |                 | 45.0°N, 26.2°E.                   |
|              | ipP <sub>z</sub>  | 01       | 50   | 27   |                 | (USCGS)                           |
|              | 1 <sub>z</sub>    | 01       | 50   | 58   |                 | Rumania.                          |
|              | 1PR <sub>2z</sub> | 01       | 54   | 15   |                 | 175 km. deep.                     |
|              | e <sub>S</sub> N  | 01       | 58   | 39   |                 |                                   |
|              | 1 <sub>S</sub> N  | 01       | 58   | 50   |                 |                                   |
|              | is <sub>S</sub> N | 01       | 59   | 48   |                 |                                   |
|              | 1SR <sub>2N</sub> | 02       | 06   | 32   |                 |                                   |
|              | 1 <sub>N</sub>    | 02       | 10.1 | --   |                 |                                   |
|              | 1 <sub>z</sub>    | 02       | 11.6 | --   |                 |                                   |
|              | 10                | 02       | 18   | 10   |                 |                                   |
|              | e <sub>z</sub>    | 02       | 18   | 10   |                 |                                   |
|              | 1 <sub>z</sub>    | 02       | 18   | 25   |                 | Late phases of<br>previous shock. |
|              | 10                | 20       | 45   | 52.5 | 2700            |                                   |
|              | 1P <sub>z</sub>   | 20       | 45   | 52.5 |                 |                                   |
|              | 1 <sub>z</sub>    | 20       | 46   | 05   |                 |                                   |
|              | e <sub>S</sub> N  | 20       | 50   | 13   |                 |                                   |
|              | 1 <sub>S</sub> E  | 20       | 50   | 19   |                 |                                   |
|              | 1 <sub>L</sub> N  | 20       | 53   | 39   |                 |                                   |
|              | M                 | 20       | 56   | --   |                 |                                   |

13901  
66.9

204021  
25.6



$\varphi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Short Period)  
 Benioff  
 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

| Date<br>1940 | Phase              | 30.         |          |          | Distance<br>km. | Remarks    |
|--------------|--------------------|-------------|----------|----------|-----------------|------------|
|              |                    | G. M.<br>h. | M.<br>m. | T.<br>s. |                 |            |
| Nov. 12      | eL <sub>N</sub>    | 04          | 54.4     | --       |                 |            |
| 14           | M                  | 11          | 39       | --       |                 |            |
| 15           | eL <sub>N</sub>    | 14          | 49.5     | --       |                 |            |
| 16           | iP <sub>Z</sub>    | 02          | 38       | 14       |                 |            |
|              | M                  | 03          | 10       | --       |                 |            |
| 17           | M                  | 04          | 21       | --       |                 |            |
| 17           | eL <sub>N</sub>    | 07          | 09       | --       |                 |            |
| 17           | eL <sub>N</sub>    | 20          | 46.7     | --       |                 |            |
| 19           | eP <sub>ZNE</sub>  | 15          | 14       | 57       | 10200           | Japan      |
|              | eSKS <sub>N</sub>  | 15          | 25       | 33       |                 |            |
|              | iE                 | 15          | 26       | 02       |                 |            |
|              | M                  | 16          | 01       | --       |                 |            |
| 22           | iP <sub>2</sub>    | 16          | 01       | 49.0     | 168             | NESA 58.   |
|              | iP <sub>1</sub>    | 16          | 01       | 50.0     |                 |            |
|              | iS <sub>2</sub>    | 16          | 02       | 09.0     |                 |            |
| 23           | eP <sub>Z</sub>    | 03          | 55       | 28       | 3700            | 9°N, 84°W. |
|              | iP <sub>Z</sub>    | 03          | 55       | 31       |                 | (USCGS)    |
|              | ePR <sub>12N</sub> | 03          | 56       | 29       |                 |            |
|              | eS <sub>N</sub>    | 04          | 00       | 53       |                 |            |
|              | M                  | 04          | 08       | --       |                 |            |
| 27           | eL <sub>N</sub>    | 15          | 37       | --       |                 |            |
| 28           | iP <sub>1</sub>    | 21          | 53       | 30.5     | 57              | NESA 58.   |
|              | iS <sub>1</sub>    | 21          | 53       | 37.8     |                 |            |
| Dec. 1       | eL <sub>N</sub>    | 21          | 22.5     | --       |                 |            |
|              | M                  | 21          | 30.5     | --       |                 |            |
| 4            | eL <sub>N</sub>    | 14          | 21       | --       |                 |            |
| 5            | i <sub>2</sub>     | 20          | 06       | 44.0     |                 | NESA 59    |

150206  
88.1

160122  
1.5

34839  
34.5

215320  
0.5

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 (Long and short period,  
 vertical)  
 Foundation:  
 Fordham Gneiss

31.

| Date<br>1940 | Phase    | G. M. T. |      |      | Distance<br>km. | Remarks                             |
|--------------|----------|----------|------|------|-----------------|-------------------------------------|
|              |          | h.       | m.   | s.   |                 |                                     |
| Dec. 7       | $e_z$    | 22       | 23   | 14   |                 |                                     |
|              | $eLN$    | 22       | 35.5 | --   |                 |                                     |
| 8            | $i_z$    | 06       | 30   | 41   |                 | Compression<br>NESA 59              |
| 11           | $i_z$    | 18       | 02   | 11.9 |                 | NESA 59                             |
| 16           | $eLN$    | 00       | 06.5 | --   |                 |                                     |
| 17           | $e_z(?)$ | 15       | 01   | 21   |                 |                                     |
|              | $i_N$    | 15       | 04   | 48   |                 |                                     |
|              | $e_N$    | 15       | 12   | 36   |                 |                                     |
|              | $eLN$    | 15       | 49.2 | --   |                 |                                     |
|              | M        | 15       | 57   | --   |                 |                                     |
| 18           | $eLN$    | 04       | 41.5 | --   |                 |                                     |
| 20           | $1P_z$   | 07       | 28   | 19.0 | 410             | Dilation                            |
|              | $i_z$    | 07       | 28   | 28   |                 | $44.0^{\circ}$ N, $71.1^{\circ}$ W. |
|              | $i_N$    | 07       | 28   | 33   |                 | (USCGS)                             |
|              | $i_z$    | 07       | 28   | 38   |                 |                                     |
|              | $i_z$    | 07       | 28   | 58   |                 | $43.9^{\circ}$ N, $71.3^{\circ}$ W. |
|              | $i(S)_E$ | 07       | 29   | 03   |                 | (NESA 60)                           |
|              | $i_zN$   | 07       | 29   | 12   |                 | New England.                        |
| 20           | $i_z$    | 08       | 18   | 43   |                 |                                     |
|              | $i_z$    | 08       | 20   | 11   |                 |                                     |
| 20           | $eN$     | 23       | 49   | 34   |                 |                                     |
|              | M        | 00       | 04.5 | --   |                 |                                     |
| 22           | $ePS_E$  | 13       | 00   | 12   | 12400           | $17^{\circ}$ S, $178^{\circ}$ W.    |
|              | M        | 13       | 31   | --   |                 | (USCGS)                             |
| 22           | $1P_z$   | 19       | 09   | 08   | 6000            | Compression                         |
|              | $1pP_z$  | 19       | 10   | 06   |                 | 225 km. deep.                       |
|              | $i_z$    | 19       | 13   | 49   |                 |                                     |
|              | $1SE$    | 19       | 16   | 42   |                 |                                     |
|              | $esS_E$  | 19       | 13   | 04   |                 |                                     |
|              | $1E$     | 19       | 18   | 44   |                 |                                     |

727.8  
3.9

185940  
54.4

$\phi = 40^{\circ} 51' 47''$  N  
 $\lambda = 73^{\circ} 53' 8''$  W  
 $h = 24$  m  
 $a = +.210$   
 $b = -.726$   
 $c = +.654$

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 vertical)  
 Foundation:  
 Fordham Gneiss

32.

| Date<br>1940                           | Phase               | G. M. T.<br>h. m. s. | Distance<br>km. | Remarks  |
|--|---------------------|----------------------|-----------------|--|
| Dec. 24<br><i>134338</i><br><i>3.9</i> | iP <sub>2</sub>     | 13 44 39             | 410             | Compression<br>44.0°N, 71.1°W.<br>(USCGS)<br>New England<br>NESA 60. |
|  | iN                  | 13 44 54             |                 |  |
|  | i(S) <sub>N</sub>   | 13 45 23             |                 |  |
|  | i <sub>2</sub> NE   | 13 45 29             |                 |  |
| 25<br><i>50356</i><br><i>3.6</i>       | iP <sub>1</sub>     | 05 04 53             | 405             | aftershock of<br>previous quake;<br>NESA 60.<br>NESA 60.             |
|  | iS <sub>2</sub>     | 05 05 34             |                 |  |
| 25                                     | e <sub>z</sub>      | 06 49.5 --           |                 |  |
|  | i <sub>z</sub>      | 06 51 14             |                 |  |
|  | i <sub>z</sub>      | 06 51 51             |                 |  |
| 25                                     | i <sub>z</sub>      | 19 54 50             |                 | Compression  |
|  | i <sub>z</sub>      | 19 55 05             |                 |  |
| 26                                     | e <sub>z</sub>      | 06 45 --             |                 |  |
|  | i <sub>z</sub>      | 06 48 07             |                 |  |
|  | i <sub>z</sub> NE   | 06 50 33             |                 |  |
| 27                                     | M                   | 02 38 --             |                 |  |
| 27<br><i>195634</i><br><i>3.3</i>      | iP <sub>2</sub>     | 19 57 26             | 405             | NESA 60.   |
|  | iS <sub>2</sub>     | 19 58 04             |                 |  |
|  | iS <sub>1</sub>     | 19 58 14             |                 |  |
| 27                                     | M                   | 22 30 --             |                 |  |
| 28                                     | PR <sub>1z</sub> NE | 16 56 46             | 12400           | 18.5°N, 147°E.<br>(USCGS)  |
|  | eSKS <sub>NE</sub>  | 17 03 06             |                 |  |
|  | iPSN                | 17 06 26             |                 |  |
|  | M                   | 17 42 --             |                 |  |
| 29                                     | e <sub>N</sub>      | 16 52 09             |                 |  |
|  | M                   | 17 05 --             |                 |  |
| 29                                     | e <sub>N</sub>      | 18 19 53             |                 |  |
|  | M                   | 18 29 --             |                 |  |
| 30                                     | M                   | 21 11 --             |                 |  |

J. J. L., S.J.

W. A. L.