

# LITTLE ROCK



From the ISC collection scanned by SISMOS

LITTLE ROCK COLLEGE SEISMOLOGICAL OBSERVATORY, PULASKI HEIGHTS, LITTLE ROCK, ARK., U. S. A. <sup>1.</sup>  
 (In cooperation with St. Louis University, St. Louis, Mo.—Records kept in St. Louis)

Two Wood-Anderson short-period seismographs, Howard clock, time checked by radio signals.

BULLETIN FOR JANUARY, 1932

| No. | Date       | Char. | Phase  | G.M. Time<br>h. m. s.   | Instruments   | Remarks  |
|-----|------------|-------|--|---|---|--|
| 1   | January 5  | I     | iP <sub>EN</sub><br>iS <sub>EN</sub><br>F  | 2 04 40<br>2 13 23<br>2 20 +<br>-   | W-A<br>W-A  | $\Delta_{S-P} = 64^{\circ}$  |
| 2   | January 9  | I     | e <sub>E</sub><br>i <sub>E</sub><br>e <sub>E</sub><br>i <sub>EN</sub><br>i <sub>E</sub><br>e <sub>E</sub><br>e <sub>E</sub><br>e <sub>E</sub><br>e <sub>E</sub><br>F | 10 39 35<br>10 40 31<br>10 41 51<br>10 45 47<br>10 46 56<br>10 49 24<br>10 51 40<br>10 53 17<br>10 57 59<br>End covered by following. | W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A | Possibly deep focus.<br>Surface waves very small.                                |
| 3   | January 9  | I     | eP <sub>EN</sub><br>iS <sub>EN</sub><br>i <sub>EN</sub><br>F   | 10 50 38<br>11 00 41<br>11 00 47<br>12 15 +<br>-  | W-A<br>W-A<br>W-A   | $\Delta_{S-P} = 79.5^{\circ}$  |
| 4   | January 13 | I     | e <sub>EN</sub><br>e <sub>M</sub><br>F   | 16 27 43<br>16 52 30<br>17 45 +<br>-  | W-A<br>W-A  |  |
| 5   | January 14 | I     | i <sub>N</sub><br>e <sub>EN</sub><br>F   | 7 47 55<br>7 51 35<br>8 00 +<br>-   | W-A<br>W-A  |  |
| 6   | January 20 | I     | eP <sub>EN</sub><br>eS <sub>EN</sub><br>e <sub>EN</sub><br>F   | 2 39 27<br>2 46 18<br>2 46 44<br>3 00 +<br>-  | W-A<br>W-A<br>W-A   | $\Delta_{S-P} = 46^{\circ}$<br>Destructive in Lima, Peru, and other coast towns. |



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BULLETIN FOR JANUARY, 1933

| No.                      | Date       | Time   | Phase  | Instrument   | Remarks   |
|--------------------------|------------|--|--|--|---|
| 1                        | January 3  | 3 04 40<br>3 05 23<br>3 30   | I<br>II<br>F   | W-A<br>W-A   | Δ-9 = 64°   |
| 2                        | January 3  | 10 39 35<br>10 40 31<br>10 41 51<br>10 42 57<br>10 43 58<br>10 44 54<br>10 45 50<br>10 46 47<br>10 47 43<br>10 48 39 | I<br>II<br>III<br>IV<br>V<br>VI<br>VII<br>VIII<br>IX<br>X<br>XI<br>XII | W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A | Possibly deep<br>Surface waves<br>very small.                               |
| Not covered by following |            |  |  |  |   |
| 3                        | January 3  | 10 50 58<br>11 00 41<br>11 00 47<br>12 15  | I<br>II<br>III<br>F  | W-A<br>W-A<br>W-A  | Δ-9 = 68°   |
| 4                        | January 12 | 18 37 48<br>18 38 30<br>19 45  | I<br>II<br>F   | W-A<br>W-A   |   |
| 5                        | January 14 | 7 42 58<br>7 51 38<br>8 00   | I<br>II<br>F   | W-A<br>W-A   |   |
| 6                        | January 20 | 3 56 37<br>3 58 18<br>3 58 44<br>3 59  | I<br>II<br>III<br>F  | W-A<br>W-A<br>W-A  | Δ-9 = 48°<br>Destructive<br>in line,<br>fair, and<br>other corner<br>towns. |

## LITTLE ROCK BULLETIN FOR 1932

| No. | Date       | Char. | Phase                | G.M. Time<br>h. m. s.           | Instruments | Remarks                       |
|-----|------------|-------|----------------------|---------------------------------|-------------|-------------------------------|
| 7   | January 21 | I     | eP <sub>N</sub>      | 20 00 40                        | W-A         | Guatamala ?                   |
|     |            |       | eS <sub>N</sub>      | 20 04 24                        | W-A         |                               |
|     |            |       | F                    | 20 15 <sup>+</sup> <sub>-</sub> |             |                               |
| 8   | January 21 | I     | e <sub>EN</sub>      | 23 25 16                        | W-A         |                               |
|     |            |       | e <sub>EN</sub>      | 23 28 47                        | W-A         |                               |
|     |            |       | F                    | 23 40 <sup>+</sup> <sub>-</sub> |             |                               |
| 9   | January 24 | I     | e <sub>EN</sub>      | 4 03 10                         | W-A         |                               |
|     |            |       | e <sub>EN</sub>      | 4 13 25                         | W-A         |                               |
|     |            |       | e <sub>E</sub>       | 4 18 30                         | W-A         |                               |
|     |            |       | eM <sub>E</sub>      | 4 39 00                         | W-A         |                               |
|     |            |       | F                    | 5 20 <sup>+</sup> <sub>-</sub>  |             |                               |
| 10  | January 26 | I     | e <sub>E</sub>       | 10 17 45                        | W-A         |                               |
|     |            |       | eM <sub>E</sub>      | 10 22 16                        | W-A         |                               |
|     |            |       | F                    | 10 30 <sup>+</sup> <sub>-</sub> |             |                               |
| 11  | January 27 | I     | e <sub>EN</sub>      | 20 49 30                        | W-A         |                               |
|     |            |       | e <sub>EN</sub>      | 20 56 27                        | W-A         |                               |
|     |            |       | F                    | 21 30 <sup>+</sup> <sub>-</sub> |             |                               |
| 12  | January 29 | I     | eP <sub>N</sub>      | 13 55 57                        | W-A         | Epicenter,<br>Solomon Islands |
|     |            |       | ePR <sub>1E(N)</sub> | 14 00 44                        | W-A         |                               |
|     |            |       | e <sub>E</sub>       | 14 06 34                        | W-A         |                               |
|     |            |       | iP <sub>SE</sub>     | 14 10 09                        | W-A         |                               |
|     |            |       | eSR <sub>1E</sub>    | 14 16 12                        | W-A         |                               |
|     |            |       | eSR <sub>2E</sub>    | 14 20 17                        | W-A         |                               |
|     |            |       | eL <sub>N</sub>      | 14 28 24                        | W-A         |                               |
|     |            |       | iM <sub>E</sub>      | 14 36 27                        | W-A         |                               |
|     |            |       | F                    | 16 20 <sup>+</sup> <sub>-</sub> |             |                               |
| 13  | January 29 | I     | e <sub>EN</sub>      | 14 10 53                        | W-A         |                               |
|     |            |       | e <sub>E</sub>       | 14 21 27                        | W-A         |                               |
|     |            |       | i <sub>E</sub>       | 14 21 32                        | W-A         |                               |

Besides the above/traces of seismic movement at: 18d. 13.6h-13.8h, 18d. 17.8h-17.9h, 21 d. 16.0h-16.3h, 31d. 9.4h.-9.7h.



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(In cooperation with St. Louis University, St. Louis, Mo.—Records kept in St. Louis)

Two Wood-Anderson short-period seismographs, Howard clock, time checked by radio signals.

BULLETIN FOR FEBRUARY, 1932

| No. | Date             | Char.                                 | Phase  | G.M. Time<br>h. m. s.  | Instruments  | Remarks  |
|-----|------------------|---------------------------------------|--|--|--|--|
| 14  | February 3       | II                                    | eP <sub>EN</sub><br>iP <sub>E</sub><br>iPR <sub>1E</sub><br>iS <sub>N</sub><br>iSR <sub>1E</sub><br>iSR <sub>2E</sub><br>eL <sub>N</sub><br>eM <sub>E</sub><br>F | 6 20 41<br>6 20 44<br>6 21 03<br>6 24 30<br>6 25 17<br>6 25 27<br>6 26 14<br>6 27 19<br>8 00 ± | W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A | Epicenter 19°2 N.<br>76°W.<br>Destructive in<br>Santiago, Cuba |
| 15  | February 3       | I                                     | eP <sub>E</sub><br>e <sub>EN</sub><br>F  | 12 41 18<br>12 45 30<br>13 00 ±  | W-A<br>W-A<br>W-A                                    | Aftershock of the<br>preceding.                                |
|     | February 5<br>-6 | Heavy Microseisms Maximum at 6d. 4h.  |  |  |  |  |
| 16  | February 5       | I                                     | e <sub>E</sub><br>e <sub>EN</sub><br>e <sub>N</sub><br>F   | 3 30 49<br>3 33 33<br>3 34 46<br>3 40 ±  | W-A<br>W-A<br>W-A                                    |  |
|     | February 7<br>-8 | Heavy Microseisms Maximum at 7d. 20h. |  |  |  |  |
| 17  | February 8       | I                                     | e <sub>N</sub><br>e <sub>EN</sub><br>F   | 17 00 34<br>17 03 37<br>17 15 ±  | W-A<br>W-A   |  |
|     | February 10      | Strong Microseisms beginning at 10h.  |  |  |  |  |
| 18  | February 16      | I                                     | eP <sub>E</sub><br>eM <sub>N</sub><br>F  | 14 02 34<br>14 38 00<br>15 10 ±  | W-A<br>W-A   | Epicenter 13°S.<br>180°W.                                      |

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|-----|-------------|---|------------------|-----------------------|-------------|---------|
| 19  | February 17 | I                                       | eP <sub>EN</sub> | 16 12 56              | W-A         |         |
|     |             |   | eS <sub>E</sub>  | 16 18 04              | W-A         |         |
|     |             |   | e <sub>E</sub>   | 16 22 08              | W-A         |         |
|     |             |   | eM <sub>E</sub>  | 16 25 10              | W-A         |         |
|     |             |   | F                | 16 40 +<br>-          |             |         |
|     | February 19 | Strong Microseisms. Maximum at 12h.     |                  |                       |             |         |
|     | February 22 | Strong Microseisms. Maximum at 2h.      |                  |                       |             |         |
|     | February 25 | Heavy Microseisms. Maximum at 25d. 00h. |                  |                       |             |         |

Besides the above/seismic movement at: 4d. 10.1h-10.3h, 5d. 8.6h-8.8h, 5d. 19.9h-20.1h, 14d. 23.5h-23.6h, 16d. 13.9h-14.0h, 17d. 23.2h-23.3h.



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| No. | Date     | Char.                               | Phase            | G.M. Time<br>h. m. s. | Instruments | Remarks  |
|-----|----------|-------------------------------------|------------------|-----------------------|-------------|--|
| 20  | March 2  | I                                   | e <sub>N</sub>   | 11 58 59              | W-A         |  |
|     |          |                                     | i <sub>N</sub>   | 11 59 07              | W-A         |  |
|     |          |                                     | e <sub>N</sub>   | 12 01 46              | W-A         |  |
|     |          |                                     | F                | 12 05 ±               |             |  |
|     | March 3  | Strong Microseisms. Maximum at 12h. |                  |                       |             |  |
|     | March 6  | Strong Microseisms. Maximum at 18h. |                  |                       |             |  |
| 21  | March 8  | I                                   | iP <sub>EN</sub> | 4 39 47               | W-A         | $\Delta_{S-P} 59^{\circ}.7$  |
|     |          |                                     | iS <sub>N</sub>  | 4 48 04               | W-A         |  |
|     |          |                                     | i <sub>EN</sub>  | 4 49 35               | W-A         |  |
|     |          |                                     | F                | 5 10 ±                |             |  |
|     | March 9  | Strong Microseisms. Maximum at 12h. |                  |                       |             |  |
| 22  | March 10 | I                                   | eP <sub>E</sub>  | 23 05 23              | W-A         | $\Delta_{S-P} 16^{\circ}.3$<br><br>No surface waves.                                   |
|     |          |                                     | i <sub>E</sub>   | 23 05 43              | W-A         |  |
|     |          |                                     | e <sub>E</sub>   | 23 08 22              | W-A         |  |
|     |          |                                     | iS <sub>E</sub>  | 23 08 29              | W-A         |  |
|     |          |                                     | i <sub>E</sub>   | 23 08 44              | W-A         |  |
|     |          |                                     | F                | 23 15 ±               |             |  |
| 23  | March 14 | I                                   | iP <sub>EN</sub> | 4 10 26               | W-A         | $\Delta_{S-P} 20^{\circ}$<br>Epicenter<br>20 <sup>o</sup> .5 N. 110 <sup>o</sup> W.    |
|     |          |                                     | i <sub>EN</sub>  | 4 11 01               | W-A         |  |
|     |          |                                     | i <sub>EN</sub>  | 4 11 34               | W-A         |  |
|     |          |                                     | iS <sub>E</sub>  | 4 14 07               | W-A         |  |
|     |          |                                     | eM <sub>N</sub>  | 4 16 20               | W-A         |  |
|     |          |                                     | F                | 4 50 ±                |             |  |
| 24  | March 14 | I                                   | iP <sub>EN</sub> | 22 49 23              | W-A         | $\Delta_{S-P} 30^{\circ}.9$<br>Epicenter<br>9 <sup>o</sup> .7 N. 72 <sup>o</sup> .2 W. |
|     |          |                                     | i <sub>EN</sub>  | 22 49 29              | W-A         |  |
|     |          |                                     | iS <sub>E</sub>  | 22 54 35              | W-A         |  |
|     |          |                                     | eM <sub>EN</sub> | 23 03 00              | W-A         |  |
|     |          |                                     | F                | 23 30 ±               |             |  |



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The Westward time zone is Mountain Standard Time, which is standard for this district.

## BULLETIN FOR 1932

| Station                            | Instrument | Time     | Remarks |
|------------------------------------|------------|----------|---------|
| 30 March 2                         | W-A        | 11 05 30 |         |
|                                    | W-A        | 11 09 07 |         |
|                                    | W-A        | 12 01 48 |         |
|                                    | W-A        | 12 05 1  |         |
| Strong Microseism. Maximum at 12h. |            |          |         |
| Strong Microseism. Maximum at 12h. |            |          |         |
| 31 March 3                         | W-A        | 4 05 47  |         |
|                                    | W-A        | 4 08 04  |         |
|                                    | W-A        | 4 09 35  |         |
| Strong Microseism. Maximum at 12h. |            |          |         |
| 30 March 10                        | W-A        | 33 05 33 |         |
|                                    | W-A        | 33 05 43 |         |
|                                    | W-A        | 33 08 33 |         |
|                                    | W-A        | 33 08 30 |         |
|                                    | W-A        | 33 08 44 |         |
|                                    | W-A        | 33 08 54 |         |
| No surface waves                   |            |          |         |
| 29 March 14                        | W-A        | 4 10 38  |         |
|                                    | W-A        | 4 11 31  |         |
|                                    | W-A        | 4 11 34  |         |
|                                    | W-A        | 4 14 07  |         |
|                                    | W-A        | 4 16 20  |         |
|                                    | W-A        | 4 20 2   |         |
| Epicenter 30.7 N. 110.0 W.         |            |          |         |
| 28 March 24                        | W-A        | 33 05 33 |         |
|                                    | W-A        | 33 05 38 |         |
|                                    | W-A        | 33 04 35 |         |
|                                    | W-A        | 33 08 00 |         |
|                                    | W-A        | 33 06 31 |         |
| Epicenter 30.7 N. 110.0 W.         |            |          |         |



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|-----|-----------------|---|-------------------|---------------------------|-------------|---|
| 25  | March 19        | I   | e <sub>N</sub>    | 11 18 10                  | W-A         |   |
|     |                 |   | e <sub>E</sub>    | 11 24 25                  | W-A         |   |
|     |                 |   | eM <sub>E</sub>   | 11 55 00                  | W-A         |   |
|     |                 |   | F                 | 12 20 ±                   |             |   |
| 26  | March 26        | I   | e <sub>N</sub>    | 00 03 19                  | W-A         |   |
|     |                 |   | i <sub>N</sub>    | 00 03 27                  | W-A         |   |
|     |                 |   | F                 | End covered by following. |             |   |
| 27  | March 26        | II  | iP <sub>EN</sub>  | 00 07 01                  | W-A         | Δ <sub>S-P</sub> 45° <sub>7</sub><br>Phases confused<br>by superposition<br>of the preceding<br>epicenter 61 N.<br>151°W. |
|     |                 |   | i <sub>EN</sub>   | 00 07 10                  | W-A         |   |
|     |                 |   | e <sub>N</sub>    | 00 08 54                  | W-A         |   |
|     |                 |   | i <sub>N</sub>    | 00 09 10                  | W-A         |   |
|     |                 |   | eS <sub>EN</sub>  | 00 13 53                  | W-A         |   |
|     |                 |   | iS <sub>EN</sub>  | 00 13 55                  | W-A         |   |
|     |                 |   | e <sub>N</sub>    | 00 16 53                  | W-A         |   |
|     |                 |   | eSR <sub>IN</sub> | 00 17 17                  | W-A         |   |
|     |                 |   | eL <sub>E</sub>   | 00 19 50                  | W-A         |   |
|     |                 |   | iM <sub>EN</sub>  | 00 23 00                  | W-A         |   |
|     |                 |   | F                 | 1 30 ±                    |             |   |
| 28  | March 26        | I   | e <sub>E</sub>    | 10 08 04                  | W-A         |   |
|     |                 |   | i <sub>EN</sub>   | 10 11 40                  | W-A         |   |
|     |                 |   | i <sub>E</sub>    | 10 15 00                  | W-A         |   |
|     |                 |   | i <sub>EN</sub>   | 10 15 25                  | W-A         |   |
|     |                 |   | eM <sub>E</sub>   | 11 00 00                  | W-A         |   |
|     |                 |   | F                 | 12 00 ±                   |             |   |
|     | March 28-<br>29 | Strong Microseisms. Maximum at 6h. on 29th. |                   |                           |             |   |
| 29  | March 31        | I   | e <sub>N</sub>    | 18 58 32                  | W-A         |   |
|     |                 |   | e <sub>EN</sub>   | 19 14 33                  | W-A         |   |
|     |                 |   | F                 | 19 25 ±                   |             |   |

Besides the above, there was seismic movement recorded at 2d. 519h-5.1h; 9d. 2.8h-3.1h; 25d. 3.7h-3.8h.







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|-----|-----------|-------|-------------------|-----------------------|------------|---|
| 30  | April 4   | I     | e <sup>P</sup> EN | 19 33 53              | W-A        | △ <sub>S-P</sub> 35°  |
|     |           |       | i <sup>S</sup> EN | 19 39 32              | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 19 40 24              | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 19 42 49              | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 19 43 55              | W-A        |   |
|     |           |       | F                 | 21 00 ±               |            |   |
| 31  | April 5   | I     | i <sup>N</sup>    | 2 31 37               | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 2 31 47               | W-A        |   |
|     |           |       | F                 | 2 45 ±                |            |   |
| 32  | April 13  | I     | e <sup>N</sup>    | 00 05 53              | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 00 17 43              | W-A        |   |
| 33  | April 16  | I     | i <sup>P</sup> EN | 3 00 35               | W-A        | △ <sub>S-P</sub> 22°  |
|     |           |       | i <sup>E</sup> N  | 3 01 01               | W-A        |   |
|     |           |       | i <sup>S</sup> E  | 3 04 34               | W-A        |   |
|     |           |       | i <sup>E</sup>    | 3 05 49               | W-A        |   |
|     |           |       | i <sup>E</sup>    | 3 06 39               | W-A        |   |
|     |           |       | i <sup>E</sup> N  | 3 06 56               | W-A        |   |
|     |           |       | F                 | 4 10 ±                |            |   |
| 34  | April 22  | I     | i <sup>P</sup> EN | 5 17 53               | W-A        |   |
|     |           |       | e <sup>E</sup> N  | 5 18 36               | W-A        |   |
|     |           |       | F                 | 5 30 ±                |            |   |
| 35  | April 24  | I     | i <sup>P</sup> EN | 6 15 16               | W-A        | Time uncertain.   |
|     |           |       | i <sup>S</sup> EN | 6 18 05               | W-A        |   |
|     |           |       | i <sup>L</sup> EN | 6 22 39               | W-A        |   |
|     |           |       | F                 | 7 00 ±                |            |   |
| 36  | April 26, | I     | i <sup>P</sup> EN | 8 05 14               | W-A        | △ <sub>S-P</sub> 61°.1                                      |
|     |           |       | i <sup>S</sup> EN | 8 13 40               | W-A        |   |
|     |           |       | F                 | 8 40 ±                |            |   |
| 37  | May 1     | I     | e <sup>P</sup> E  | 19 14 18              | W-A        | △ <sub>S-P</sub> 14°.2<br>30° N. 109° W.<br>Time uncertain. |
|     |           |       | i <sup>P</sup> EN | 19 14 30              | W-A        |   |
|     |           |       | i <sup>S</sup> EN | 19 17 10              | W-A        |   |
|     |           |       | i <sup>L</sup> EN | 19 18 09              | W-A        |   |
|     |           |       | i <sup>L</sup> EN | 19 19 23              | W-A        |   |
|     |           |       | F                 | 19 40 ±               |            |   |



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|-----|--------|-------|--------------------|-----------------------|------------|---------------------------|
| 38  | May 5  | I     | eP <sub>EN</sub>   | 13 30 11              | W-A        | △ 131.5<br>1.3 N. 124° E. |
|     |        |       | iP <sub>EN</sub>   | 13 30 27              | W-A        |                           |
|     |        |       | iPR <sub>1E</sub>  | 13 32 32              | W-A        |                           |
|     |        |       | ScPcP <sub>E</sub> | 13 33 33              | W-A        |                           |
|     |        |       | SR <sub>1E</sub>   | 13 49 35              | W-A        |                           |
|     |        |       | F                  | 16 00 ±               |            |                           |
| 39  | May 21 | I     | iP <sub>E</sub>    | 10 15 28              | W-A        | △ S-P 21.7                |
|     |        |       | iS <sub>E</sub>    | 10 19 25              | W-A        |                           |
|     |        |       | F                  | 11 45 ±               |            |                           |
| 40  | May 22 | I     | e <sub>E</sub>     | 21 46 12              | W-A        | Time uncertain.           |
|     |        |       | i <sub>E</sub>     | 21 50 09              | W-A        |                           |
|     |        |       | F                  | 22 10 ±               |            |                           |

Instruments not in operation during the summer.



Little Rock Bulletin for 1935

| No. | Date   | Char. | Phase | G.M. Time<br>h. m. s. | Instrument | Remarks                      |
|-----|--------|-------|-------|-----------------------|------------|------------------------------|
| 38  | May 5  | I     | P     | 15 30 12              | W-A        | I.S.N. 134.5<br>I.S.N. 134.5 |
|     |        |       |       | 15 30 27              | W-A        |                              |
|     |        |       |       | 15 32 32              | W-A        |                              |
|     |        |       |       | 15 32 53              | W-A        |                              |
|     |        |       |       | 15 42 38              | W-A        |                              |
| 39  | May 21 | I     | P     | 10 18 28              | W-A        | I.S.N. 134.5<br>I.S.N. 134.5 |
|     |        |       |       | 10 19 25              | W-A        |                              |
|     |        |       |       | 11 45 4               | W-A        |                              |
| 40  | May 22 | I     | P     | 21 46 12              | W-A        | Time uncertain               |
|     |        |       |       | 21 50 02              | W-A        |                              |
|     |        |       |       | 22 10 4               | W-A        |                              |

Instruments not in operation during the night.



# LITTLE ROCK



From the ISC collection scanned by SISMOS

## LITTLE ROCK COLLEGE SEISMOLOGICAL OBSERVATORY, PULASKI HEIGHTS, LITTLE ROCK, ARK., U. S. A.

(In cooperation with St. Louis University, St. Louis, Mo.—Records kept in St. Louis)  
 Bulletin for October-December, 1932  
 Two Wood-Anderson short-period seismographs, Howard Beck, time checked by radio signals.

| No.        | Date    | Inst.                 | C/D | Phase              | G.M.C.T.   | S-P      | $\Delta$           | P-O    | Remarks  |
|------------|---------|-----------------------|-----|--------------------|------------|----------|--------------------|--------|--|
| 41         | Oct. 11 | W-A                   |     | eP <sub>E</sub>    | 19-12-35.2 | 3'28"    | 18 <sup>o</sup> .6 | 4'12"  | 19 <sup>h</sup> 08 <sup>m</sup> 21 <sup>s</sup> .<br>Epicenter:<br>25 <sup>o</sup> N. 110 <sup>o</sup> W.    |
|            |         | W-A                   |     | iPR <sub>1E</sub>  | 19-13-55.1 |          |                    |        |  |
|            |         | W-A                   |     | iS <sub>E</sub>    | 19-16- 3.0 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 19-17-57.6 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 19-17-52   |          |                    |        |  |
|            |         | W-A                   |     | iL <sub>EN</sub>   | 19-18-10   |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 19-19-18   |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 19-19-49   |          |                    |        |  |
|            |         | W-A                   |     | iM <sub>EN</sub>   | 19-21-34.5 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 19-21-44.0 |          |                    |        |  |
| 42         | Oct 16  | W-A                   |     | eP <sub>N</sub>    | 12-16-46   | 6'59"    | 47 <sup>o</sup>    | 8'29"  | 12 <sup>h</sup> 03 <sup>m</sup> 17 <sup>s</sup> s<br>Epicenter:<br>55 <sup>o</sup> N.<br>155 <sup>o</sup> W. |
|            |         | W-A                   |     | eS <sub>EN</sub>   | 12-23-46.5 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 12-26-33.0 |          |                    |        |  |
|            |         | W-A                   |     | iSR <sub>1NE</sub> | 12-26-49.5 |          |                    |        |  |
|            |         | W-A                   |     | iL <sub>E</sub>    | 12-31-15.0 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>EN</sub>    | 12-32-23.0 |          |                    |        |  |
|            |         | W-A                   |     | iM <sub>NE</sub>   | 12-36-0.5  |          |                    |        |  |
| Oct. 24-29 |         | No records available. |     |                    |            |          |                    |        |  |
| 43         | Oct. 30 | W-A                   |     | eP <sub>E</sub>    | 20-55-23   | 6'59"    | 47 <sup>o</sup>    | 8'29"  |  |
|            |         | W-A                   |     | iS <sub>E</sub>    | 21-02-22   |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 21-05- 5.5 |          |                    |        |  |
|            |         | W-A                   |     | e <sub>E</sub>     | 21-09-33   |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 21-10-36   |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 21-15-47.5 |          |                    |        |  |
| 44         | Nov. 2  | W-A                   |     | eP <sub>EN</sub>   | 11-13-31.5 | 8'21"    | 60 <sup>o</sup> .3 | 10'04" | 11 <sup>h</sup> 03 <sup>m</sup> 28 <sup>s</sup> .<br>Epicenter:<br>23 <sup>o</sup> S.<br>111 <sup>o</sup> W. |
|            |         | W-A                   |     | i <sub>E</sub>     | 11-14-33.4 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 11-14-44.5 |          |                    |        |  |
|            |         | W-A                   |     | i <sub>E</sub>     | 11-15-16.5 |          |                    |        |  |
|            |         | W-A                   |     | e <sub>E</sub>     | 11-21-54.5 |          |                    |        |  |
|            |         | W-A                   |     | eS <sub>EN</sub>   | 11-21-51.5 |          |                    |        |  |
| 45         | Nov. 13 | W-A                   |     | iP <sub>EN</sub>   | 4-59-22.5  | 10'22".5 |                    | 12'31" | Deep focus.<br>90 <sup>o</sup> .1 measured Epicenter:<br>43.4 N.<br>137 <sup>o</sup> E.                      |
|            |         | W-A                   |     | iS <sub>N</sub>    | 5-09-45    |          |                    |        |  |
|            |         | W-A                   |     | iS <sub>EN</sub>   | 5-09-20    |          |                    |        |  |



# LITTLE ROCK

LITTLE ROCK COLLEGE SEISMOLOGICAL OBSERVATORY, PULASKI HEIGHTS, LITTLE ROCK, ARK., U.S.A.  
 Bulletin for October-December, 1952

| No.                              | Date    | Inst. | C/D | Phase | O.M.C.T.   | S-P     | Δ       | P-0  | O-Remarks   |
|----------------------------------|---------|-------|-----|-------|------------|---------|---------|--|-------------|
| 41                               | Oct. 11 | W-A   |     | ep    | 10-13-38.3 | 3' 28"  | 4' 12"  | 25° N. 120° W.<br>Epicenter:                 |             |
|                                  |         |       |     | ep    | 10-13-38.1 |         |         |  |             |
|                                  |         |       |     | ep    | 10-16-38.0 |         |         |  |             |
|                                  |         |       |     | ep    | 10-17-37.6 |         |         |  |             |
|                                  |         |       |     | ep    | 10-17-38.2 |         |         |  |             |
|                                  |         |       |     | ep    | 10-18-10   |         |         |  |             |
|                                  |         |       |     | ep    | 10-18-19   |         |         |  |             |
|                                  |         |       |     | ep    | 10-19-49   |         |         |  |             |
|                                  |         |       |     | ep    | 10-21-34.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-21-44.0 |         |         |  |             |
| 42                               | Oct. 16 | W-A   |     | ep    | 10-16-10   | 6' 30"  | 12' 00" | 25° N. 120° W.<br>Epicenter:                 |             |
|                                  |         |       |     | ep    | 10-23-46.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-28-35.0 |         |         |  |             |
|                                  |         |       |     | ep    | 10-28-48.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-31-11.0 |         |         |  |             |
|                                  |         |       |     | ep    | 10-32-33.0 |         |         |  |             |
|                                  |         |       |     | ep    | 10-32-33.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-32-33.8 |         |         |  |             |
| Oct. 24-25 No records available. |         |       |     |       |            |         |         |  |             |
| 43                               | Oct. 20 | W-A   |     | ep    | 10-20-38.1 | 8' 20"  | 12' 00" | 25° N. 120° W.<br>Epicenter:                 |             |
|                                  |         |       |     | ep    | 10-20-38.2 |         |         |  |             |
|                                  |         |       |     | ep    | 10-20-38.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-20-38.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-20-38.8 |         |         |  |             |
|                                  |         |       |     | ep    | 10-20-38.8 |         |         |  |             |
| 44                               | Nov. 2  | W-A   |     | ep    | 11-13-31.8 | 4' 21"  | 10' 04" | 25° N. 110° W.<br>Epicenter:                 |             |
|                                  |         |       |     | ep    | 11-14-38.4 |         |         |  |             |
|                                  |         |       |     | ep    | 11-14-44.5 |         |         |  |             |
|                                  |         |       |     | ep    | 11-15-18.5 |         |         |  |             |
|                                  |         |       |     | ep    | 11-21-24.5 |         |         |  |             |
|                                  |         |       |     | ep    | 11-21-31.8 |         |         |  |             |
|                                  |         |       |     | ep    | 11-21-31.8 |         |         |  |             |
| 45                               | Nov. 13 | W-A   |     | ep    | 11-13-38.5 | 10' 20" | 13' 31" | 25° N. 110° W.<br>Epicenter:<br>90% measured | Deep focus. |
|                                  |         |       |     | ep    | 11-13-38.5 |         |         |  |             |
|                                  |         |       |     | ep    | 11-13-38.5 |         |         |  |             |



## Little Rock Bulletin for 1932

| No.         | Date    | Inst.                    | C/D | Phase  | G.M.C.T.                                 | S-P   | $\Delta$                     | P-O    | O--Remarks                                       |
|-------------|---------|--------------------------|-----|--|--|---|------------------------------|--------|--|
| 45<br>cont. | Nov. 13 | W-A<br>W-A               |     | $i_{EN}$<br>$i_{EN}$                           | 5-12-23.5<br>5-15-23.4                   |   |                              |        |  |
| 46          | Nov. 15 | W-A<br>W-A<br>W-A        |     | $e_E$<br>$eS_E$                                | 10-34-26.9<br>10-37-48.7<br>10-38-10.9   | 3'22"   | 20°8                         | 4'05"  | Deep focus.                                      |
| 47          | Nov. 17 | W-A<br>W-A<br>W-A<br>W-A |     | $eP_{EN}$<br>$iS_{EN}$<br>$i_{EN}$<br>$i_{EN}$ | 6-07-20<br>6-11-03<br>6-13-43<br>6-15-45 | 3'43"   | 20°2                         | 4'30"  | 6 <sup>h</sup> 02 <sup>m</sup> 43 <sup>s</sup> . |
| 48          | Nov. 18 | W-A                      |     | $iP_{EN}$<br>$e_E$<br>$iS_{EN}$<br>$i_{EN}$    | 1-04-12<br>1-07-42<br>1-07-51<br>1-08-00 | 3'48"   | 20°7                         | 4'35"  | 0 <sup>h</sup> 59 <sup>m</sup> 37 <sup>s</sup> . |
| 49          | Nov. 18 | W-A<br>W-A               |     | $eP_E$<br>$eS_E$                               | 1-43-28<br>1-47-16                       | 3'48"   | 20°7                         | 4'35"  |  |
| 50          | Nov. 19 | W-A<br>W-A               |     | $eP_{EN}$<br>$eS_E$                            | 9-03-20<br>9-07-05                       | 3'45"   | 20°4                         | 4'32"  | 8 <sup>h</sup> 58 <sup>m</sup> 48 <sup>s</sup> . |
| 51          | Nov. 22 | W-A<br>W-A               |     | $iP_{gEN}$<br>$iS_{gEN}$                       | 7-56-42<br>7-57-06                       | Between Blytheville, and<br>Paragould, Ark. Local quake<br>131 miles. |                              |        | 7 <sup>h</sup> 56 <sup>m</sup> 03 <sup>s</sup> . |
| 52          | Nov. 26 | W-A<br>W-A               |     | $eP_{EN}$<br>$iS_{EN}$                         | 4-36-47<br>4-47-34                       | 10'39"  | 86°6                         | 12'41" |  |
| 53          | Nov. 26 | W-A<br>W-A               |     | $eP_{EN}$<br>$eS_{EN}$                         | 8-39-56<br>8-43-37                       | 3'41"   | 20°0                         | 4'28"  |  |
| 54          | Nov. 29 | W-A                      |     | $iP_N$<br>$iS_N$                               | 11-22-07<br>11-31-04                     | 8'57"   | 66°4<br>$\Delta$ meas. = 71° |        | 32°7 S.<br>69° W.<br>Deep focus                  |
| 55          | Dec. 4  | W-A<br>W-A               |     | $eP_{EN}$<br>$eS_{EN}$                         | 4-12-17<br>4-19-13                       | 6'56"   | 53°0                         | 8'41"  |  |



LIST OF ROCK BURSTS FOR 1952

| No. | Date    | Inst. C/D Phase | S.M.C.T.   | M-F | Δ | P-O | O-Remarks  |
|-----|---------|-----------------|------------|-----|---|-----|------------|
| 15  | Nov. 13 | W-A             | 10-31-23.5 |     |   |     |            |
| 16  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     | Deep focus |
| 17  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 18  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 19  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 20  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 21  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 22  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 23  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 24  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 25  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 26  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 27  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 28  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 29  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 30  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 31  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 32  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 33  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 34  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 35  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 36  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 37  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 38  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 39  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 40  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 41  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 42  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 43  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 44  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 45  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 46  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 47  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 48  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 49  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 50  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 51  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 52  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 53  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 54  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 55  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 56  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 57  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 58  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 59  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 60  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 61  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 62  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 63  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 64  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 65  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 66  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 67  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 68  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 69  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 70  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 71  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 72  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 73  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 74  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 75  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 76  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 77  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 78  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 79  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 80  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 81  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 82  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 83  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 84  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 85  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 86  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 87  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 88  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 89  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 90  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 91  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 92  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 93  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 94  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 95  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 96  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 97  | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |
| 98  | Nov. 15 | W-A             | 10-31-23.7 |     |   |     |            |
| 99  | Nov. 15 | W-A             | 10-31-23.9 |     |   |     |            |
| 100 | Nov. 15 | W-A             | 10-31-23.5 |     |   |     |            |



## Little Rock Bulletin for 1932

| No. | Date    | Inst.   | C/D | Phase   | G.M.C.T.   | S-P   |      | P-O   | O--Remarks  |
|-----|---------|---|-----|---|--|-------|------|-------|---|
| 56  | Dec. 4  | W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A<br>W-A |     | iP <sub>EN</sub> <sup>?</sup><br>i <sub>EN</sub><br>i <sub>EN</sub><br>iPR <sub>1EN</sub><br>eScPcP <sub>EN</sub><br>e <sub>E</sub><br>e <sub>E</sub><br>eSR <sub>2EN</sub> | 8-30-23<br>8-30-34.0<br>8-30-40.2<br>8-32-44.0<br>8-33-53.2<br>8-34- 7.0<br>8-36-24.0<br>8-55-32.0 |       |      |       | According to Batavia<br>Epicenter:<br>2°N. 122°E. |
| 57  | Dec. 7  | W-A<br>W-A                                    |     | iP <sub>EN</sub><br>iS <sub>EN</sub>  | 16-06-33<br>16-30-14   | 3'41" | 20°  | 4'28" |   |
| 58  | Dec. 9  | W-A<br>W-A                                    |     | iP <sub>N</sub><br>eS <sub>N</sub>  | 8-44-04<br>8-51-20   | 7'16" | 56°2 | 9'03" |   |
| 59  | Dec. 20 | W-A<br>W-A                                    |     | eP <sub>EN</sub><br>iS <sub>E</sub>   | 2-43-50<br>2-50-53   | 7'03" | 54°0 | 8'48" |   |
| 60  | Dec. 29 | W-A<br>W-A<br>W-A                             |     | eP <sub>EN</sub><br>eS <sub>EN</sub><br>e <sub>EN</sub>   | 6-25-17<br>6-31-52<br>6-56-12  | 6'35" | 49°7 | 8'15" |   |
| 61  | Dec. 30 | W-A<br>W-A                                    |     | iP <sub>N</sub><br>eS <sub>E</sub>  | 18-52-22<br>18-56-23   | 4'06" |      | 4'57" | 12 <sup>h</sup> 47 <sup>m</sup> 25 <sup>s</sup> . |
| 62  | Dec. 31 | W-A<br>W-A                                    |     | eP <sub>EN</sub><br>e <sub>EN</sub>   | 6-50-19<br>6-53-43   |       |      |       |   |

