191_3

No. 1

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM Jan. 1st TO Jan. 31st

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 1-2 | | | | | | | Reports came of a quake in S. Carol.; was felt in Greenville and Spartanburg S. C. local time 1:26 p.m. was also felt in Charlotte, N. C. on Jan 1st. On our blank we fail to see any sure record.— We can notice, however, a very weak disturbance from 18:48 to 19:20 on the 1st and another on the 2d from 13:40 to 14-20. The last is very doubtful.— S. W. Farrell |

1913

No. 2

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM Febr. 15th TO Febr. 28th

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 8 | | | | | | | Microseisms and apparent activity on E-W comp. especially.- |
| 15 | | | | | | | Microseisms and microtremors on E-W comp. but too small to be measured.- |
| 22 | | | | | | | Evident activity on E-W.- Possibly this is Guayaquil quake, S.A. oscillations almost imperceptible.- |
| 26 | | | | | | | Continued activity on E-W.- Possibly Quenca quake. (Ecuador. S.A.) |

A. W. Forstall S.J.

191 3

No. 3

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM March 1st TO March 31st

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 8 | Ir e | Pe | 16 4 | | | | This record is superposed on that of heavy |
| | | Se | ? | | | | machinery in motion |
| | | Te | 16 9 | | | 4 | nearby — Clear on E-W |
| | | Me | 16 10 | 15 | | 6.2 | but untrusty on N-S |
| | | Ce | 16 13 | | | | Probably Guatemala |
| | | Fe | 16 21 | | | | quake. — |
| 14 | | | | | | | Seismic activity during day but a severe wind was raging and no clear record to be seen of quake in Indies at Cavazi and Calau. |
| 18-19 | | | | | | | activity and minor tremors but doubtful. No record of quake reported by Georgetown Univ. and Cleveland. O. |
| 31 | Ir e | Pe | 4 3 | | | | Very distinct but very small oscillations. |
| | | Pn | ? | | | | Probably quake reported by Georgetown Univ. |
| | | Se | 4 13 | | | | The times coincide. |
| | | Sn | 4 12 | | | | |
| | | Me | 4 16 | | | | |
| | | Mn | 4 17 | | | | A. W. Forstall S.J. |
| | | Ce | ? | | | | |
| | | Cn | ? | | | | |
| | | Fe | 4 24 | | | | |
| | | Fn | 4 24 | | | | |

1913 No. 4

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM April 1st TO April 30th

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 3 | | | 17 1 | | | | No sure record of Behring Str. quake except perhaps at 17:1 whilst heavy machinery was in motion near by. |
| 12 | i v i | Ie | 8 13 | | | | Feeble quake near Salt-Lake, Utah. Period is so small that it cannot be measured. |
| | | In | 8 13 | | | | |
| | | Me | 8 13 40 | | | 20 | |
| | | Mn | 8 14 | | 25 | | |
| | | Fe | 8 14 | | | | |
| | | Fn | 8 14 | | | | |
| 13 | | | | | | | No perceptible record of minor quake in S. Bernardino, Cal. — |
| 17 | | | | | | | No perceptible record of quake of N. Carolina. |
| 28 | | | | | | | No sure record of N. J. quake; only slight oscillations of doubtful character. — |

F. W. Forstall S.J.

191 3

No. 5

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM May 1st TO May 31st

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 30 | Ir e | Pe | 12 29 | | | | Very distinct record on E-W but preliminary are obscure and no record seen on N-S. |
| | | Se | ? | | | | |
| | | Te | 12 40 | 18 | | 8 | |
| | | Me | 12 44 | 30 | | 12 | |
| | | Ce | 12 48 | | | | |
| | | Fe | 12 58 | | | | A. W. Frantall S.J. |

1913 No. 6

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM June 1st TO June 30th.

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 14 | | | | | | | Feeble and doubtful traces |
| 15 | | | 18 7 | | | | of Cisnova quake (Balkan States). |
| | | | 18 13 | | | | But on 15th from 18:7 to 18:13 distinct and feeble waves and activity the rest of the day. |
| 22 | | Mu | 15 3 | 20 | | | |
| | | Me | 15 3 | 20 | | | |
| | | Fu | 15 22 | | | | Better defined and clearer on |
| | | Fe | 15 22 | | | | E-W.- |
| 25 | | | | | | | |
| 26 | | Mu | 5 20 | | | | Activity evident during day; |
| | | Me | 5 20 | | | | at times very small. |
| | | Fu | 6 2 | | | | waves of very small period, |
| | | Fe | 6 2 | | | | at times period very large, but amplitude always small |
| 18 | | | | | | | Only doubtful traces of Martinique quake – Fort de France. |

A. W. Frontall S.J.

1913 No. 7

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENOLATURE: International.

FROM July 1st TO July 31st.

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 10-11 | | | | | | | Activity all day. Ill defined waves, generally long period and small amplitude. |
| 12-13 | | | | | | | Activity as yesterday but weaker. |
| 21 | | | 19 30 | | | | Activity during day. Most marked for 1 minute at 19:30. |

A. W. Forstall S.J.

1913 No. 8

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

### DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM August 1st TO August 31st.

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | I I r.e. | Pn | 22 33 ? | | | | This is a Peruvian quake in which the towns of Cosavelic and Luicacha are reported to have have been destroyed. Preliminary indistinct. Only one portion of record is regular; most of it is made up of waves that are not smooth, but very angular and ill formed. Possibly owing to local conditions; weather was stormy at the time. |
| | | Pe | 22 28 ? | | | | |
| | | Sn | ? ? ? | | | | |
| | | Se | 22 36 | | | | |
| | | Ln | 22 42 | 20-30 | | | |
| | | Le | 22 44 | 20-30 | | | |
| | | Mn | 22 50 | 20-30 | 8-10 | | |
| | | Me | 22 47 | 20-30 | | 12-15 | |
| | | Cn | 22 58 | | | | |
| | | Ce | 23 5 | | | | |
| | | Fn | 23 7 | | | | |
| | | Fe | 23 14 | | | | |
| 10-11 | | | | | | | Activity during day. No sure indications however of Lake Placid quake, N. Y. |
| | | | | | | | |
| | | | | | | | |
| 29 | I r.e. | Pn | 1 32 | | | | Messina quake not seen. Curve very irregular especially on E-W. What is remarkable about this record is that activity is noticed the whole night from 1:32 on. These wavelets are on the contrary very smooth but very small. |
| | | Pe | 1 32 | | | | |
| | | Sn | ? ? | | | | |
| | | Se | ? ? | | | | |
| | | Ln | ? ? | | | | |
| | | Le | ? ? | | | | |
| | | Mn | 1 39 | 30 | 10-12 | | |
| | | Me | 1 37 | ? | | ? | |
| | | Cn | ? | | | | |
| | | Ce | ? | | | | |
| | | Fn | 1 49 | | | | |
| | | Fe | 1 49 | | | | |
| 30 | | | | | | | Activity but much less than preceding day. |
| | | | | | | | |
| | | | | | | | A. W. Forstall S.J. |

1913

No. 9

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM Sept. 1st TO Sep 30th

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | Activity but weak. At times slight tremors but of doubtful character. |
| 6-7 | | | | | | | Activity but very weak. Small tremors of doubtful character. |
| 7-8 | | | | | | | Activity. Small tremors possibly caused by the Martinique quake. |

A. W. Forstall S.J.

1913 No. 10

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM October 1st TO October 31st

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 2 | | ?n | 4 40 | | | | Colon quake. Visible but extremely small. Time must be considered as doubtful. Tremors during day and activity. |
| | | Pe | 8 | | | | |
| | | Mn | 4 45 | | | | |
| | | Me | 4 45 | | | | |
| | | Fn | 4 52 | | | | |
| | | Fe | 4 52 | | | | |
| 4-5 | | | | | | | Second Panama quake and quake in Naples. Activity during day but no sure record of these. |
| 14 | | Mn | 21 28 | | | | Seven Devils quake (Oregon) near Snake river. Only doubtful record. Max disturb. 21:28 to 21:37 |
| | | Me | 21 28 | | | | |
| | | Fn | 21 37 | | | | |
| | | Fe | 21 37 | | | | |
| 17 | | Mn | 20 13 | | | | Zuogue reported in Nicaragua. Only doubtful record. Max between 20:13 and 20:31. |
| | | Me | 20 13 | | | | |
| | | Fn | 20 31 | | | | |
| | | Fe | 20 31 | | | | |
| 24 | | Mn | 15 3 | | | | No sure record of the 3rd Panama quake. More prominent tremors at 15:3. |
| | | Me | 15 3 | | | | |
| 25 | | Mn | 18 29 | | | | San Francisco quake. No record proper was secured. Activity considerable the whole day. Max. 18:29-19. |
| | | Me | 18 29 | | | | |

A. W. Forstall S.J.

1913 No. 11

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM November 1st TO November 30th

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN | AMPLITUDE AE | REMARKS |
|---|---|---|---|---|---|---|---|
| 7 | | Pn | | | | | Lima Peru quake. |
| | | Pe | | | | | Doubtful record. If it is |
| | | Mn | | | | | one, it is on top of the |
| | | Me | | | | | record made by machin- |
| | | Fn | | | | | ery in motion near by |
| | | Fe | | | | | Activity visible during day. |
| 11 | | Mn | | | | | Colorado quake. Felt |
| | | Me | | | | | all over the S. Western |
| | | Fn | | | | | portion. Record very |
| | | Fe | | | | | poor. Has not the appear- |
| | | | | | | | ance of a near quake. |
| | | | | | | | Tremors visible all day. |
| | | | | | | | A. W. Forstall S.J. |

1913 No. 12

# Jesuit Seismological Service

## RECORD

OF THE

## Earthquake Station, Sacred Heart College

DENVER, COLO., U. S. A.

International Seismological Centre

ALTITUDE: 1655 M.
LONGITUDE. 104° 56′ 54″ W. Gr. LATITUDE: 39° 40′ 36″ N.
TIME: Mean Greenwich, midnight to midnight.
INSTRUMENT: Wiechert 80 Kg., astatic, horizontal pendulum.
NOMENCLATURE: International.

FROM December 1st TO December 31st

| DATE | CHAR. | PHASE | TIME h. m. s. | PERIOD s. | AMPLITUDE AN μ | AMPLITUDE AE μ | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | I v.i | Pn | ? | | | | This record is quite clear but waves come suddenly without visible prelimin. Visible activity during day. |
| | | Pe | ? | | | | |
| | | Sn | ? | | | | |
| | | Se | ? | | | | |
| | | Ln | 0 17 | | | | |
| | | Le | 0 17 | | | | |
| | | Mn | 0 17 30 | 8-9 | 37 | | |
| | | Me | 0 17 30 | 7-9 | | 37 | |
| | | Gn | 0 19 | | | | |
| | | Ge | 0 19 | | | | |
| | | Fn | 0 21 | | | | |
| | | Fe | 0 21 | | | | |
| 13 | | | | | | | No sure record of Chemnitz quake. Germ. |
| 15 | | | | | | | Poor and doubtful record of Tokio quake. |
| 25 | | | | | | | No record of Seattle quake. Wash. — |

A. W. Forstall