

NEDERLANDSCH METEOROLOGISCH INSTITUUT.

N<sup>o</sup>. 108.

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SEISMISCHE REGISTRERINGEN  
IN DE BILT.

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28.

1940.

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1942.

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1929-2012

TE VERKRIJGEN BIJ | EN VENTE CHEZ  
DE RIJKSUITGEVERIJ TE 'S GRAVENHAGE.

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## EINLEITUNG

Die geographischen Koordinaten der Station sind:  $52^{\circ}6' N$ ,  $5^{\circ}11' E$ . Die Höhe des Terrains über dem Meeresniveau ist 3 m. Der Untergrund besteht aus Sand (diluvialen Ablagerungen).

Die folgenden Instrumente waren regelmässig in Betrieb:  
zwei Horizontalseismographen und ein Verticalseismograph mit galvanometrischer Registrierung nach GALITZIN.  
ein astatischer Horizontalseismograph nach WIECHERT,  $M = 200$  kg.  
zwei Horizontalpendel von BOSCH,  $M = 25$  kg.

DIE SEISMOGRAPHEN GALITZIN. Unten sind angegeben: die Galvanometerperiode  $T_I$ , die reduzierte Pendellänge  $l$ , die Entfernung des Galvanometerspiegels von Registrierpapier  $A_I$ , und weiter die Grenzen der Werte der Eigenperiode des ungedämpften Pendels  $T$ , der Dämpfungskonstante  $\mu$  und des Übertragungsfaktors  $k$  während 1940.

|                            | Komp. NS        | Komp. EW        | Komp. Z  |
|----------------------------|-----------------|-----------------|----------|
| Galvanometerperiode $T_I$  | 24,43 sec       | 24,96 sec       | 12,0 sec |
| Reduzierte Pendellänge $l$ | 123,1 mm        | 122,6 mm        | 406 mm   |
| Entfernung $A_I$           | 1380 mm         | 1380 mm         | 1380 mm  |
| Pendelperiode $T$          | 24,77—24,28 sec | 24,93—24,33 sec | 12 sec   |
| Dämpfungskonstante $\mu$   | 0,09; -0,04     | 0,06; -0,08     | 0        |
| Übertragungsfaktor $k$     | 10,98—10,36     | 11,05—10,48     | 175      |

DIE SEISMOGRAPHEN WIECHERT UND BOSCH. Die mittleren Werte der Eigenperiode des Pendels ohne Dämpfung  $T$ , des Dämpfungsverhältnisses  $\varepsilon$  und der Indikatorvergrößerung  $V$  waren in 1940:

|                     | $T$      | $\varepsilon$ | $V$  |
|---------------------|----------|---------------|------|
| WIECHERT (NS Komp.) | 4,9 sec  | 4             | 156  |
| „ (EW „ )           | 4,9 sec  | 4             | 166  |
| BOSCH (NS Komp.)    | 18,1 sec | 4             | 20,4 |
| „ (EW „ )           | 17,8 sec | 4             | 20,4 |

## VORWORT.

Die vorliegende acht und zwanzigste Nummer der Seismischen Registrierungen ist hauptsächlich in derselben Weise abgefasst wie die vorangehende. Die Registrierungen wurden von Dr. J. Veldkamp, der am 1 August 1941 zum adjunkt-Direktor und Leiter der Abteilung Erdmagnetismus und Seismologie ernannt wurde, bearbeitet und in der Einleitung erläutert. In einem Anhang wird ein Vergleich zwischen den verschiedenen Seismographen gegeben.

*Der Hauptdirektor  
des Niederl. Meteor. Instituts*

DE BILT, Juni 1942.

This book was donated to the  
to the collection of  
Professor Nicolaus H. Andriessen  
1953-2013

## BEARBEITUNG DER REGISTRIERUNGEN.

Zur Bearbeitung der Registrierungen haben fast ausschliesslich die Diagramme der Seismographen nach Galitzin gedient. Die Registriergeschwindigkeit ist hier 30 mm pro Minute. In den seltenen Fällen, wo die Russregistrierungen der Seismographen WIECHERT und BOSCH zu Hilfe genommen worden sind, ist dies in der Spalte „Bewerkungen“ erwähnt worden. Die Zeit ist in mittlerer Greenwicher Zeit, von Mitternacht bis Mitternacht gezählt von 0 bis 24 h, angegeben worden. In der Spalte „Richtung“ bedeutet + eine Bewegung nach oben (Kompression), — eine Bewegung nach unten (Dilatation). Fragliche Grössen sind in Klammern gesetzt. Für die Phasen wurden die folgenden Zeichen angewandt.

- P = Anfang der ersten Longitudinalwelle.  
 pP = P-Welle, einmal an der Erdoberfläche nahe am Epizentrum reflektiert.  
 PP = halbweg zwischen Herd und Station reflektierte P-Welle.  
 PPP = zweimal reflektierte P-Welle.  
 PPPP = dreimal reflektierte P-Welle.  
 S = Anfang der ersten Transversalwelle.  
 sS = S-Welle, einmal an der Erdoberfläche nahe am Epizentrum reflektiert.  
 PS = einmal reflektierte Wechselwelle.  
 PPS = zweimal reflektierte Wechselwelle.  
 SS = halbweg zwischen Herd und Station reflektierte S-welle.  
 PcP = am Erdkern reflektierte P-welle.  
 ScS = am Erdkern reflektierte S-welle.  
 P' = durch den Erdkern gelaufene Longitudinalwelle (= PkP = PcPcP).  
 pP' = nahe am Epizentrum reflektierte P'-welle.  
 S' = Transversalwelle, welche als P-welle durch den Kern gelaufen hat (= SkS = ScPcS).  
 sS' = nahe am Epizentrum reflektierte S'-welle.  
 ScPcP = durch den Kern gelaufene Wechselwelle.  
 L = Oberflächenwelle.  
 M = Maximum der Bodenbewegung.  
 L' = Oberflächenwellen, welche die Station über den Gegenpunkt erreichen.  
 M' = Maximum dieser Wellen.

- i = scharfes Auftreten einer Phase.  
 e = allmähliches Auftreten einer Phase.  
 F = Ende der sichtbaren Bewegung.  
 H = Herdzeit.  
 h = Herdtiefe.  
 $\Delta$  = Epizentralentfernung.

Die Indizes H, N, E, Z beziehen sich auf die Horizontal, Nord-Süd, Ost-West und Vertikalkomponenten.

Die Epizentralentfernung und die Herdtiefe wurden mit Hilfe der Laufzeitkurven von Brunner's „Focal Depth-Time-Distance Chart“ und der Laufzeitabellen von Macelwane (1933) berechnet.

Die in der Spalte „Amplitudo“ angegebenen Werte sind die maximalen Ausschläge, von der Ruhelinie aus gemessen. Meistens wurde nur das erste und grösste Maximum der L-wellen angegeben. Falls die Schwingungen zu klein oder zu unregelmässig waren, ist die Angabe der Amplitudo fortgelassen. Weiteres über die Berechnung der Bodenbewegung findet man im Anhang.

Die Erdbebenwarten, deren Berichte für das ganze Jahr oder für ein Teil des Jahres zur Verfügung standen, waren:

Algier, Basel, Bukarest, Christchurch, Chur, Cluj, Collmburg, Florissant, Hamburg, Helgoland, Hong Kong, Hukuoka, Kew, Ksara, Manila, Neuchâtel, Ottawa, Parc St. Maur, Pasadena, Pittsburg, Saint Louis, Strassburg, Sydney Riverview, Toledo, Triest, Uppsala, Wellington und Zürich.

Die folgenden Abkürzungen wurden benutzt:

- IGGU = Internationale Geodetische und Geophysische Union, Strassburg.  
 JSA = Jesuit Seismological Association, Saint Louis.  
 USCGS = United States Coast and Geodetic Survey, Washington.

## DIE MIKROSEISMISCHE BEWEGUNG.

Die Tabelle S VII, die den Charakter der mikroseismischen Bewegung angibt, ist in derselben Weise zusammengestellt wie für die früheren Jahre (vgl. 1915, S 101, 1916, S 101). Es bedeutet:

- 0 sehr schwach und schwach  
 1 mäßig  
 2 stark  
 3 sehr stark.

Die Daten sind den Registrierungen des Seismographen WIECHERT entnommen; die Amplituden des Diagrammes (von der Ruhelinie aus gemessen) und die annähernden Amplituden der Bodenbewegung, die den Klassen 0, 1, 2 und 3 entsprechen, sind unten zusammengefasst.

| Klasse | Ampl. Diagramm      | Ampl. Bodenbewegung     |
|--------|---------------------|-------------------------|
| 0      | 0— $\frac{1}{4}$ mm | 0— $1\frac{1}{4}$ $\mu$ |
| 1      | $\frac{1}{4}$ —1 „  | $1\frac{1}{4}$ —5 „     |
| 2      | 1—2 „               | 5—10 „                  |
| 3      | >2 „                | >10 „                   |

## Charakter der mikroseismischen Bewegung.

| Datum<br>1940 | Jan.    | Febr.   | März | April   | Mai     | Juni    | Juli    | Aug.    | Sept.   | Okt.    | Nov.    | Dez.    |
|---------------|---------|---------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1             | 1, 2, 1 | 2, 1    | 1    | 2       | 1       | 0       | 0       | 0, 1, 0 | 0, 1    | 0       | 2, 1    | 1       |
| 2             | 1, 2    | 1       | 1, 2 | 2, 1    | 1, 0    | 0       | 0       | 0       | 1, 0    | 0, 1    | 1, 3    | 1       |
| 3             | 2       | 1, 2    | 2, 1 | 1, 2    | 0, 1    | 0       | 0       | 0       | 0       | 1       | 3, 2    | 1       |
| 4             | 2, 1    | 2       | 1, 2 | 2, 1    | 1, 0    | 0       | 0, 1    | 0, 1    | 0       | 1       | 2, 3, 2 | 1, 2    |
| 5             | 1, 0    | 2, 1    | 2    | 1       | 0       | 0       | 1, 0    | 1, 0    | 0       | 1, 2    | 2, 1    | 2, 3    |
| 6             | 0, 1, 0 | 1       | 2, 1 | 1       | 0       | 0       | 0, 1, 0 | 0       | 0       | 2, 1, 2 | 1, 3    | 3       |
| 7             | 0, 1    | 1       | 1    | 1, 2    | 0       | 0       | 0, 1, 0 | 0       | 0, 1    | 2, 1    | 3, 1    | 3       |
| 8             | 1       | 1, 2, 1 | 1    | 2, 1    | 0       | 0       | 0       | 0, 1    | 1       | 1, 2, 1 | 1, 2    | 3       |
| 9             | 1       | 1, 2    | 1    | 1       | 0       | 0       | 0       | 1       | 1       | 1, 2    | 2       | 3, 2    |
| 10            | 1       | 2, 1    | 1    | 1       | 0       | 0       | 0       | 1       | 1       | 2, 1, 2 | 2, 1    | 2       |
| 11            | 1       | 1, 2, 1 | 1    | 1       | 0       | 0       | 0, 1    | 1, 2, 1 | 1       | 2, 1    | 1, 3    | 2       |
| 12            | 1       | 1       | 1, 2 | 1, 2    | 0, 1, 0 | 0       | 1       | 1       | 1, 2    | 1       | 3       | 2, 1    |
| 13            | 1       | 1       | 2    | 2, 1    | 0, 1    | 0, 1    | 1       | 1, 0    | 2, 1    | 1, 2    | 3, 2    | 1, 2    |
| 14            | 1       | 1       | 2    | 1       | 1, (0)  | 1, 0    | 1, 0    | 0, 1    | 1, 2    | 2, 1, 2 | 2, 3, 2 | 2, 3    |
| 15            | 1, 2    | 1       | 2    | 1, 2, 1 | (0), 1  | 0       | 0       | 1, 0    | 2, 1    | 2, 1    | 2, 1, 2 | 3, 2, 3 |
| 16            | 2, 3    | 1, 3    | 2    | 1, 2, 1 | 1, 0    | 0       | 0, 1, 0 | 0       | 1, 2    | 1       | 2       | 3       |
| 17            | 3, 2    | 3, 2    | 2, 1 | 1       | 0, 1    | 0       | 0, 1    | 0, 1, 0 | 2       | 1       | 2, 3, 2 | 3, 2    |
| 18            | 2       | 2       | 1, 2 | 1       | 1, 0    | 0       | 1       | 0, 1    | 2       | 1       | 2       | 2       |
| 19            | 2       | 2, 1    | 2    | 1, 3, 2 | 0       | 0       | 1, 0    | 1, 0    | 2, 1    | 1       | 2, 1    | 2       |
| 20            | 2       | 1, 2    | 2, 1 | 2, 1    | 0       | 0       | 0, 1    | 0, 2    | 1, 2, 1 | 1       | 1, 2    | 2, 1    |
| 21            | 2, 3, 2 | 2, 3, 2 | 1    | 1, 2    | 0       | 0       | 1       | 2, 1    | 1, 0    | 1       | 2       | 1, 2    |
| 22            | 2, 1    | 2       | 1    | 2, 1    | 0       | 0       | 1       | 1, 2    | 0, 1    | 1       | 2, 3, 1 | 2       |
| 23            | 1, 2, 1 | 2, 1    | 1    | 1       | 0       | 0, 1, 0 | 1, 0    | 2       | 1       | 1       | 1       | 2, 3, 2 |
| 24            | 1, 2    | 1, 2, 1 | 1    | 1       | 0       | 0       | 0, 1    | 2, 1    | 1       | 1       | 1       | 2, 1    |
| 25            | 2       | 1, 2    | 1    | 1       | 0       | 0, 1, 0 | 1, 0    | 1, 0    | 1       | 1       | 1       | 1       |
| 26            | 2       | 2, 1, 2 | 1    | 1, 0    | 0       | 0, 1, 0 | 0       | 0       | 1       | 1, 0    | 1       | 1       |
| 27            | 2       | 2       | 1, 2 | 0, 1, 0 | 0       | 0, 1    | 0       | 0       | 1       | 0       | 1, 2, 1 | 1       |
| 28            | 2       | 2, 1, 2 | 2    | 0       | 0       | 1, 0    | 0, 1    | 0, 1    | 1       | 0, 1    | 1, 2, 1 | 1, 2    |
| 29            | 2       | 2, 1    | 2    | 0, 1    | 0       | 0       | 1       | 1, 2, 1 | 1, 0    | 1, 2    | 1, 2, 1 | 2       |
| 30            | 2, 3, 2 |         | 2, 1 | 1       | 0       | 0       | 1, 0    | 1       | 0       | 2, 1, 2 | 1       | 2       |
| 31            | 2       |         | 1, 2 |         | 0       |         | 0       | 1, 0    |         | 2, 1, 2 |         | 2, 1    |

## ANHANG

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DIE BERECHNUNG DER BODENBEWEGUNG NACH DEN SEISMOGRAPHEN  
GALITZIN, WIECHERT UND BOSCH.

Es erschien wünschenswert ein Vergleich zu machen zwischen den Werten der Bodenbewegung, welche aus den Registrierungen der verschiedenen Seismographen berechnet werden können. Dazu wurden von den starken Beben in 1939, 1940 und 1941 mehrere regelmässigen Wellengruppen ausgewählt und die Bodenamplituden in der Maximalbewegung berechnet. Das Resultat dieser Berechnung ist unten angegeben; T ist die Periode der Wellengruppe; AG, AW und AB sind die Amplituden in mm nach Galitzin, Wiechert und Bosch. Die grösste der drei Amplituden ist fett gedruckt worden, die kleinste ist klein angegeben.

| T sec | AG          | AW          | AB         | T sec | AG          | AW          | AB   |
|-------|-------------|-------------|------------|-------|-------------|-------------|------|
| 8     | 0.6         | <b>0.75</b> | 0.5        | 19    | 0.7         | <b>1.0</b>  | 0.3  |
| 8     | 0.55        | <b>0.7</b>  | 0.5        | 19    | <b>0.3</b>  | <b>0.3</b>  | 0.1  |
| 8     | 0.6         | <b>0.8</b>  | 0.5        | 19    | <b>0.3</b>  | 0.25        | 0.05 |
| 10    | 0.6         | <b>0.7</b>  | 0.6        | 19    | <b>0.45</b> | 0.35        | 0.2  |
| 10    | 0.2         | <b>0.5</b>  | 0.4        | 20    | <b>0.35</b> | 0.3         | 0.15 |
| 11    | 0.8         | <b>1.4</b>  | 1.0        | 20    | <b>0.35</b> | <b>0.35</b> | 0.05 |
| 11    | 0.8         | <b>1.0</b>  | —          | 20    | <b>0.35</b> | 0.3         | 0.1  |
| 11    | 0.9         | <b>1.6</b>  | 0.4        | 20    | <b>0.8</b>  | 0.7         | 0.3  |
| 12    | 0.25        | <b>0.5</b>  | 0.2        | 20    | <b>0.4</b>  | <b>0.4</b>  | 0.2  |
| 12    | 0.25        | <b>0.3</b>  | <b>0.3</b> | 20    | <b>0.2</b>  | <b>0.2</b>  | 0.05 |
| 13    | 0.25        | <b>0.3</b>  | 0.2        | 20    | <b>0.3</b>  | <b>0.3</b>  | 0.1  |
| 13    | <b>0.2</b>  | <b>0.2</b>  | 0.05       | 22    | <b>0.5</b>  | <b>0.5</b>  | 0.2  |
| 13    | 0.6         | <b>0.8</b>  | 0.6        | 23    | <b>0.7</b>  | 0.4         | —    |
| 14    | <b>0.3</b>  | 0.25        | 0.1        | 23    | <b>0.25</b> | <b>0.25</b> | 0.1  |
| 14    | <b>0.2</b>  | 0.1         | 0.1        | 24    | 1.25        | <b>1.35</b> | 0.7  |
| 14    | 0.2         | <b>0.3</b>  | 0.1        | 24    | <b>0.9</b>  | <b>0.9</b>  | 0.3  |
| 15    | <b>0.3</b>  | 0.2         | 0.1        | 24    | <b>0.45</b> | 0.3         | 0.1  |
| 15    | <b>0.15</b> | 0.1         | 0.05       | 24    | <b>0.4</b>  | <b>0.4</b>  | 0.05 |
| 16    | <b>0.2</b>  | <b>0.2</b>  | 0.1        | 25    | <b>0.2</b>  | 0.15        | 0.1  |
| 17    | <b>0.5</b>  | 0.4         | 0.4        | 25    | <b>0.6</b>  | 0.5         | 0.4  |
| 17    | <b>0.25</b> | 0.2         | 0.05       | 26    | <b>0.8</b>  | 0.7         | 0.25 |
| 18    | <b>0.2</b>  | <b>0.2</b>  | 0.05       | 26    | <b>0.4</b>  | 0.25        | 0.25 |
| 18    | <b>0.45</b> | 0.3         | 0.25       | 26    | <b>0.7</b>  | <b>0.7</b>  | 0.5  |
| 18    | <b>0.3</b>  | 0.2         | 0.05       | 28    | <b>0.8</b>  | <b>0.8</b>  | —    |
| 18    | <b>0.5</b>  | 0.4         | 0.4        | 29    | 0.8         | <b>0.9</b>  | 0.3  |
| 18    | 1.0         | <b>1.4</b>  | <b>1.4</b> | 32    | 0.6         | <b>1.0</b>  | 0.1  |
| 18    | <b>0.16</b> | 0.15        | 0.05       | 34    | 1.1         | <b>1.7</b>  | 0.8  |
| 18    | 0.14        | <b>0.15</b> | 0.02       | 34    | 1.8         | <b>2.6</b>  | 1.4  |
| 19    | <b>0.4</b>  | 0.3         | 0.05       | 34    | 2.2         | <b>3.0</b>  | 1.0  |
| 19    | <b>0.3</b>  | 0.25        | 0.2        | 37    | <b>0.8</b>  | 0.5         | —    |
| 19    | <b>0.25</b> | 0.2         | 0.05       | 37    | <b>1.5</b>  | 1.0         | 0.3  |

Aus dieser Tabelle können folgende Schlüsse gezogen werden.

1. Die Berechnung nach Bosch gibt fast immer viel zu kleine Werte. Die Erklärung ist folgende. Das gemessene Dämpfungsverhältnis  $\epsilon$  enthält nicht nur die Dämpfung sondern auch die Reibung. Bei der kleinen Massa von 25 kg ist die Reibung im Verhältnis zur auf die Massa wirkende Trägheitskraft ziemlich gross. Dies verursacht kleinere Ausschläge als die Theorie erwarten lässt.

2. Die Werte nach Wiechert schliessen sich besser an denen nach Galitzin an. Doch sind Abweichungen bis 50% nicht selten. Ins Besondere gibt Wiechert bei Perioden unterhalb 15 sec systematisch zu grosse Werte. Auch bei diesem Seismograph spielt die Reibung noch eine nicht zu unterschätzende Rolle. Dadurch weicht das wahre Dämpfungsverhältnis merklich von dem gemessenen Wert ( $\epsilon = 4$ ) ab. Namentlich in der Nähe der Eigenperiode, also im Gebiet 0—10 sec, wird die Vergrösserung von der Theorie abweichen.

3. Im Allgemeinen hat es kein Zweck Bodenamplituden mit grosser Genauigkeit anzugeben. Die benutzten Formeln gelten ja nur für rein harmonische Schwingungen, welche niemals verwirklicht sind.

Auf Grund des oben gegebenen Vergleichs sind die Amplituden in den folgenden Tabellen der vorliegenden Abhandlung aus den Registrierungen Galitzin berechnet worden. Einfachheitshalber wurde dabei in der Formel für die Vergrösserung  $\mu = 0$  und  $T = T_1$  gesetzt. Diese vereinfachte Formel ist also:

$$V = \frac{A_1 k T_b}{\mu l} \cdot \frac{1}{\left\{1 + \left(\frac{T_b}{T}\right)^2\right\}^2}$$

$T_b$  ist die Periode der Bebenwelle. Die andern Grössen wurden in der Einleitung festgelegt. Für die Horizontalkomponenten wurde  $T = 24,5$  sec und  $k = 10,9$  und für die Vertikalkomponente  $T = 12,0$  sec und  $k = 175$  angesetzt. Die Fehler, welche durch die Vereinfachung und Abründung entstehen, sind in allen Fällen kleiner als 10%.

| Datum<br>1940 | Phase                                    | Zeit |    |    | Richtung | Periode  | Amplitudo | Bemerkungen  |
|---------------|--|------|----|----|----------|----------|-----------|--|
|               |  | h    | m  | s  |          |          |           |  |
| Jan. 1<br>(1) | iz<br>F                                  | 12   | 33 | 51 | +        |          |           | (1) IGGU: Gebiet der Tonga Inseln, nach Pasadena: $h = 550$ km, dil.   |
| " 2<br>(2)    | eN<br>eE<br>F                            | 0    | 16 | 8  |          |          |           | (2) Zürich: verm. Anatolien; $\Delta = 2800$ km.<br>Bucarest: $\Delta = 1510$ km.  |
| " 2<br>(3)    | eL<br>M<br>LE<br>F                       | 12   | 9  |    |          | 25<br>18 | 9<br>7    | (3) Starke Mikroseismen.<br>IGGU: $31^{\circ}\text{S } 108^{\circ}\text{W}$ , $H = 11^{\text{h}}7,6^{\text{m}}$ (USCGS)  |
| " 4<br>(4)    | eN<br>F                                  | 19   | 36 |    |          |          |           |  |
| " 6<br>(5)    | iz<br>eL<br>MH<br>F                      | 8    | 27 | 41 | +        | 25       | 6         | (5) Ksara $\Delta = 9700$ km.  |
| " 6<br>(6)    | iP'<br>ipP'<br>iz<br>eE<br>eL<br>LE<br>F | 14   | 23 | 1  | —        |          |           | (6) JSA: $21^{\circ},8\text{S } 169^{\circ},4\text{E}$ , $h = 85$ km.<br>IGGU: $22^{\circ}\text{S } 170^{\circ}\text{E}$ , $H = 14^{\text{h}}3,4^{\text{m}}$ .<br>Gegend von Neu-Kaledonien. |
| " 6<br>(7)    | iP<br>iS<br>eL<br>F                      | 19   | 9  | 31 | +        |          |           | (7) $\Delta = 2500$ km, $H = 9^{\text{h}}4^{\text{m}}30^{\text{s}}$ .<br>IGGU: $35^{\circ},7\text{N } 25^{\circ},9\text{E}$ ; gefühlt auf Kreta und Santorin.                                |
| " 7<br>(8)    | eL<br>MH<br>F                            | 4    | 8  |    |          | 20       | 4         | (8) Trieste: $\Delta = 11100$ km.  |
| " 7<br>(9)    | e<br>F                                   | 9    | 37 |    |          |          |           |  |
| " 10<br>(10)  | eL<br>MH<br>F                            | 11   | 52 |    |          | 20       | 7         | (10) Uppsala: Herdgebiet Türkei.   |
| " 14<br>(11)  | eL<br>MH<br>F                            | 10   | 40 | 30 |          | 18       | 3         |  |
| " 14<br>(12)  | e<br>F                                   | 19   | 11 |    |          |          |           |  |

| Datum<br>1940   | Phase   | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen  |
|-----------------|---|------|----|----|----------|--------------|--------------------|--|
|                 |   | h    | m  | s  |          |              |                    |  |
| Jan. 15<br>(13) | eL<br>MN<br>F   | 13   | 28 |    |          | 15           | 3                  | (13) Zerstörendes Beben in Palermo, Sicilien.  |
| " 17<br>(14)    | i(PP)<br>i(S')<br>i(S)<br>e(SS)<br>eL<br>MH<br>F          | 1    | 33 | 16 | —        |              |                    | (14) Starke Mikroseismen. $\Delta = 11500$ km.<br>JSA: $17^{\circ}.2N$ $147^{\circ}.3E$ (Marianen). $H = 1^h$<br>$14^m57^s$ .<br>USCGS: $17^{\circ}N$ $148^{\circ}E$ ; $H = 1^h14^m53^s$ .<br>Keine Registrierung 17 Jan. 13.39—14.53. |
| " 19<br>(15)    | eL<br>MN<br>F   | 5    | 58 | 30 |          | 24           | 10                 |  |
| " 20<br>(16)    | eL<br>ME<br>F   | 11   | 16 |    |          | 22           | 6                  |  |
| " 24<br>(17)    | eL<br>F   | 23   | 37 |    |          |              |                    | (17) IGGU: gefühlt in Verona, Veneto.  |
| " 26<br>(18)    | eL<br>eL<br>MH<br>F                                       | 7    | 56 |    |          | 25           | 7                  | (18) Wellington: $15^{\circ}S$ $167^{\circ}E$ , Neu-Hebriden.  |
| " 26<br>(19)    | iP<br>iPP<br>eS<br>eSS<br>eH<br>eL<br>ME<br>ME<br>MN<br>F | 17   | 17 | 16 | —        |              |                    | (19) $\Delta = 9900$ km, $h = 100$ km, $H =$<br>$17^h4^m30^s$ .<br>Osaka: $26^{\circ}.8N$ $131^{\circ}.9E$ , Riu-Kiu Inseln.   |
| " 26<br>(20)    | eL<br>MN<br>ME<br>F                                       | 23   | 37 | 30 |          | 18           | 5                  |  |
| " 27<br>(21)    | eL<br>MN<br>F   | 15   | 36 | 20 |          | 13           | 5                  |  |

| Datum<br>1940  | Phase                                   | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen  |
|----------------|---|------|----|----|----------|--------------|--------------------|--|
|                |   | h    | m  | s  |          |              |                    |  |
| Feb. 1<br>(22) | eL<br>MN<br>F                           | 6    | 28 | 30 |          | 15           | 10                 | Keine Registrierung: 1 Feb. 10.16—11.49<br>2 Feb. 9.25—9.49<br>3 Feb. 9.16—11.09   |
| " 2<br>(23)    | eL<br>MH<br>F                           | 6    | 31 | 30 |          | 20           | 7                  |  |
| " 7<br>(24)    | iP<br>ipP<br>iS<br>eLE<br>ME<br>MN<br>F | 17   | 27 | 49 | —        |              |                    | (24) $\Delta = 8400$ km, $H = 17^h16^m16^s$ .<br>JSA: $52^{\circ}.0N$ $177^{\circ}.1E$ , $H = 17^h16^m16^s$ , $h =$<br>$60$ km, Aleuten.<br>USCGS: $52^{\circ}N$ $174^{\circ}.5E$ , $H = 17^h15^m56^s$ . |
| " 8<br>(25)    | eLE<br>ME<br>F                          | 8    | 48 |    |          | 20           | 5                  |  |
| " 9<br>(26)    | eL<br>MN<br>F                           | 14   | 36 |    |          | 19           | 7                  |  |
| " 12<br>(27)   | eL<br>eL<br>ME<br>F                     | 0    | 48 |    |          | 19           | 10                 | (27) Starke Mikroseismen.<br>JSA: $26^{\circ}.0S$ $71^{\circ}.0W$ , $H = 0^h1^m32^s$ .<br>Starkes Beben in Chili.  |
| " 12<br>(28)   | iP'<br>ipP'<br>iPP<br>F                 | 8    | 40 | 25 | —        |              |                    | (28) JSA: $22^{\circ}.6S$ $177^{\circ}.5W$ , $H = 8^h21^m5^s$ ,<br>$h = 200$ km, Tonga-Inseln.   |
| " 12<br>(29)   | iP<br>ipP<br>eL<br>F                    | 9    | 29 | 14 | +        |              |                    | (29) JSA: $54^{\circ}.0N$ $160^{\circ}.0W$ , $H = 9^h17^m57^s$ ,<br>$h = 100$ km, Kamchatka.   |
| " 14<br>(30)   | iz<br>eL<br>ME<br>F                     | 2    | 6  | 40 |          | 20           | 4                  |  |
| " 14<br>(31)   | eL<br>F                                 | 11   | 44 |    |          |              |                    | (31) Manila: $\Delta = 2655$ km.   |
| " 16<br>(32)   | eL<br>F                                 | 1    | 37 |    |          |              |                    |  |

| Datum<br>1940   | Phase  | Zeit  | Richtung           | Periode | Amplitudo | Bemerkungen   |
|-----------------|--|---|--------------------|---------|-----------|---|
|                 |  | h m s   |                    | s       | $\mu$     |   |
| Feb. 20<br>(33) | eP'<br>ipP'<br>iPP<br>ipPP<br>e(PPS)<br>e(SS)<br>e(SSS)<br>F | 2 37 20<br>2 38 18<br>2 40 20<br>2 41 4<br>2 54<br>3 2<br>3 5<br>4 41 | —<br>(—)<br>—<br>+ |         |           | (33) $\Delta = 15500$ km, $H = 2^h 18^m 20^s$ , $h = 200$ km.<br>JSA: $14^\circ.4S$ $166^\circ.5E$ , $h = 200$ km. Gegend von Neu-Hebriden. |
| " 20<br>(34)    | eL<br>F  | 14 5<br>14 47   |                    | 20      | 4         |   |
| " 20<br>(35)    | eL<br>F  | 22 13<br>22 19  |                    |         |           |   |
| " 21<br>(36)    | eL<br>F  | 1 2<br>1 10   |                    |         |           | (36) Trieste: Herdgebiet Anatolien.   |
| " 22<br>(37)    | eL<br>MN<br>F  | 14 19<br>14 22<br>14 32   |                    | 18      | 4         | (37) Manila: $19^\circ N$ $121^\circ E$ , gefühlt in Nord-Luzon.  |
| " 23<br>(38)    | eL<br>MN<br>F  | 0 47 30<br>0 50<br>1 0  |                    |         |           | (38) Zürich: Herdregion Küste von Albanien.   |
| " 24<br>(39)    | ez<br>eL<br>MN<br>F  | 12 30 0<br>12 59<br>13 3 30<br>13 39                                  |                    | 20      | 10        |   |
| " 29<br>(40)    | iP<br>iS<br>eL<br>MH<br>F                                    | 16 12 44<br>16 16 49<br>16 19<br>16 22<br>17 0                        | +                  |         | 75        | (40) $\Delta = 2500$ km. Zerstörend in Karahissar (Klein Asien).<br><i>1940 März 23/2023</i>  |
| März 3<br>(41)  | iz<br>eL<br>F  | 0 25 12<br>1 14<br>2 19   | —                  |         |           | (41) Wellington: $17^\circ.5S$ $167^\circ E$ , Neu-Hebriden.  |
| " 4<br>(42)     | eS<br>eL<br>ME<br>F  | 20 16 20<br>20 24<br>20 30<br>20 51                                   |                    | 16      | 8         | (42) Starke Mikroseeismen.<br>USCGS: $13^\circ N$ $42^\circ W$ , $H = 19^h 59^m 19^s$ .   |
| " 6<br>(43)     | e<br>LH<br>F   | 20 1<br>20 12<br>20 29  |                    | 18      | 2         |   |

| Datum<br>1940  | Phase                     | Zeit   | Richtung | Periode  | Amplitudo | Bemerkungen  |
|----------------|---------------------------|--|----------|----------|-----------|--|
|                |                           | h m s  |          | s        | $\mu$     |  |
| März 7<br>(44) | eL<br>F                   | 5 19<br>5 26                                   |          |          |           | (44) Ksara: Herdgebiet Anatolien.                                      |
| " 7<br>(45)    | eL<br>F                   | 8 10<br>8 34                                   |          |          |           | (45) Papierwechsel 8.25—8.33.  |
| " 11<br>(46)   | eL<br>MH<br>F             | 12 8<br>12 15<br>12 22                         |          | 25       | 3         |  |
| " 12<br>(47)   | eL<br>MH<br>F             | 23 14 30<br>23 16<br>23 18                     |          | 16       | 3         |  |
| " 14<br>(48)   | iz<br>ez<br>LE<br>ME<br>F | 18 44 7<br>18 50 27<br>19 36<br>19 43<br>20 54 |          | 35       | 35        | (48) Wellington: $60^\circ S$ $145^\circ E$ .<br>Starke Mikroseeismen. |
| " 15<br>(49)   | eL<br>MN<br>F             | 6 19<br>6 23<br>6 38                           |          | 16       | 3         |  |
| " 16<br>(50)   | e<br>F                    | 7 44<br>7 48                                   |          |          |           |  |
| " 16<br>(51)   | e<br>F                    | 21 22<br>21 31                                 |          |          |           |  |
| " 17<br>(52)   | eL<br>MN<br>F             | 9 24<br>9 27<br>9 31                           |          | 23       | 4         | (52) Ksara: Herdgebiet Anatolien.                                      |
| " 17<br>(53)   | eL<br>F                   | 15 35 30<br>15 43                              |          |          |           |  |
| " 18<br>(54)   | eL<br>MN<br>F             | 7 1<br>7 8<br>7 44                             |          | 20       | 4         |  |
| " 19<br>(55)   | eN<br>eL<br>MN<br>LN<br>F | 4 51 16<br>4 59<br>5 2<br>5 6<br>5 13          |          | 36<br>16 | 15<br>8   | (55) Uppsala: $\Delta = 4360$ km.<br>Trieste: $\Delta = 4500$ km.      |



| Datum<br>1940   | Phase  | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen   |
|-----------------|--------|------|----|----|----------|--------------|--------------------|---|
|                 |        | h    | m  | s  |          |              |                    |   |
| März 21<br>(56) | ePP    | 14   | 11 | 31 |          | 22           | 15                 | (56) Zürich: Nach Batavia $9^{\circ}.3S$ $108^{\circ}.7E$ ,<br>auf Java und den Christmasinseln verspürt.<br>$\Delta = 11700$ km.   |
|                 | cPPP   | 14   | 13 | 48 |          |              |                    |   |
|                 | c(PS)  | 14   | 21 | 10 |          |              |                    |   |
|                 | eL     | 14   | 49 |    |          |              |                    |   |
|                 | MN     | 14   | 54 | 30 |          |              |                    |   |
|                 | F      | 15   | 30 |    |          |              |                    |   |
| " 22<br>(57)    | ez     | 20   | 39 | 54 |          | 18           | 7                  |   |
|                 | (ez)   | 20   | 43 | 36 |          |              |                    |   |
|                 | L      | 21   | 53 |    |          |              |                    |   |
|                 | ME     | 21   | 54 | 30 |          |              |                    |   |
|                 | F      | 22   | 25 |    |          |              |                    |   |
| " 27<br>(58)    | eP     | 12   | 43 | 8  | +        | 28           | 10                 | (58) $\Delta = 8600$ km, $H = 12h31m20s$ , $h = 100$ km.<br>JSA: $51^{\circ}.5N$ $177^{\circ}.5$ W, Aleuten, $H = 12h31m31s$ .<br>USCGS: $51^{\circ}N$ $180^{\circ}W$ , $H = 12h31m18s$ . |
|                 | cPP    | 12   | 45 | 46 |          |              |                    |   |
|                 | cPPP   | 12   | 47 | 57 |          |              |                    |   |
|                 | iS     | 12   | 53 | 0  |          |              |                    |   |
|                 | eSS    | 12   | 58 | 3  |          |              |                    |   |
|                 | eL     | 13   | 4  |    |          |              |                    |   |
|                 | MN     | 13   | 11 |    |          |              |                    |   |
|                 | F      | 14   | 30 |    |          |              |                    |   |
| " 28<br>(59)    | eP     | 16   | 1  | 46 | +        | 25           | 38                 | (59) $\Delta = 9100$ km, $H = 15h49m40s$ .<br>Zürich: $14^{\circ}.5$ N $120^{\circ}E$ , nach Pasadena. Herd-<br>gebiet Luzon.<br>Trieste: $H = 15h53m41s$ nach Pittsburgh.                |
|                 | e(pP)  | 16   | 2  | 36 |          |              |                    |   |
|                 | iPP    | 16   | 5  | 39 |          |              |                    |   |
|                 | iPS    | 16   | 13 | 51 |          |              |                    |   |
|                 | i(PPS) | 16   | 14 | 17 |          |              |                    |   |
|                 | eS     | 16   | 12 | 6  |          |              |                    |   |
|                 | i(sS)  | 16   | 12 | 45 |          |              |                    |   |
|                 | e(SS)  | 16   | 19 | 5  |          |              |                    |   |
|                 | e(L)   | 16   | 36 |    |          |              |                    |   |
|                 |        | MN   | 16 | 39 |          |              |                    |   |
|                 | F      | 17   | 30 |    |          |              |                    |   |
| " 30<br>(60)    | e      | 0    | 52 |    |          |              |                    |   |
|                 | F      | 1    | 4  |    |          |              |                    |   |
| " 30<br>(61)    | e      | 7    | 24 |    |          |              |                    |   |
|                 | F      | 7    | 42 |    |          |              |                    |   |
| " 31<br>(62)    | eL     | 17   | 45 |    |          |              |                    | (62) Starke Mikroscismen.<br>Ksara: $\Delta = 13900$ km.  |
|                 | F      | 18   | 0  |    |          |              |                    |   |
| April 1<br>(63) | i(PP)  | 11   | 39 | 7  | -        | 30           | 20                 | (63) $\Delta$ etwa $13000$ km.<br>Manila: Herd in der Gegend von Nord-Neu-<br>Guinea.<br>Trieste: $2^{\circ}S$ $139^{\circ}E$ , $H = 11h39m12s$ nach<br>Bombay (Herdzeit stimmt nicht).   |
|                 | e(PS)  | 11   | 48 | 51 |          |              |                    |   |
|                 | e(SS)  | 11   | 55 | 20 |          |              |                    |   |
|                 | eL     | 12   | 14 | 20 |          |              |                    |   |
|                 | eL     | 12   | 19 |    |          |              |                    |   |
|                 | MN     | 12   | 29 | 30 |          |              |                    |   |
|                 | MH     | 13   | 30 |    |          |              |                    |   |
|                 | F      | 13   | 56 |    |          |              |                    |   |

| Datum<br>1940   | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen  |
|-----------------|-------|------|----|----|----------|--------------|--------------------|--|
|                 |       | h    | m  | s  |          |              |                    |  |
| April 6<br>(64) | eL    | 14   | 20 | 30 |          | 28           | 15                 | (64) Trieste: $27^{\circ}N$ $105^{\circ}E$ , nach Bombay.  |
|                 | MN    | 14   | 24 | 30 |          |              |                    |  |
|                 | F     | 15   | 0  |    |          |              |                    |  |
| " 6<br>(65)     | e     | 19   | 34 |    |          |              |                    |  |
|                 | F     | 19   | 42 |    |          |              |                    |  |
| " 8<br>(66)     | e(P)  | 3    | 2  | 38 |          |              |                    | (66) $\Delta = 2100$ km.   |
|                 | e(S)  | 3    | 6  | 10 |          |              |                    |  |
| " 8<br>(67)     | eL    | 3    | 43 | 30 |          |              |                    |  |
|                 | F     | 3    | 53 |    |          |              |                    |  |
| " 8<br>(68)     | eL    | 9    | 46 |    |          | 20           | 4                  |  |
|                 | ME    | 9    | 51 |    |          |              |                    |  |
|                 | F     | 10   | 15 |    |          |              |                    |  |
| " 10<br>(69)    | eL    | 21   | 3  | 30 |          | 20           | 7                  |  |
|                 | MN    | 21   | 9  |    |          |              |                    |  |
|                 | F     | 21   | 25 |    |          |              |                    |  |
| " 11<br>(70)    | iz    | 9    | 16 | 2  |          | 20           | 4                  |  |
|                 | e     | 9    | 45 | 0  |          |              |                    |  |
|                 | MN    | 9    | 57 |    |          |              |                    |  |
|                 | F     | 10   | 16 |    |          |              |                    |  |
| " 12<br>(71)    | e     | 6    | 35 | 20 |          | 14           | 5                  |  |
|                 | eL    | 6    | 37 | 30 |          |              |                    |  |
|                 | MN    | 6    | 39 |    |          |              |                    |  |
|                 | F     | 6    | 46 |    |          |              |                    |  |
| " 13<br>(72)    | iP    | 6    | 34 | 54 | (+) +    | 32           | 25                 | (72) $\Delta = 2400$ km. Herdregion Anatolien?   |
|                 | eS    | 6    | 38 | 49 |          |              |                    |  |
|                 | eL    | 6    | 40 | 30 |          |              |                    |  |
|                 | MN    | 6    | 42 |    |          |              |                    |  |
|                 | F     | 7    | 10 |    |          |              |                    |  |
| " 14<br>(73)    | eL    | 9    | 45 | 30 |          | 20           | 4                  |  |
|                 | MN    | 9    | 47 |    |          |              |                    |  |
|                 | F     | 9    | 49 |    |          |              |                    |  |
| " 14<br>(74)    | e     | 15   | 28 | 0  |          | 25           | 6                  | (74) Trieste: $9^{\circ}N$ $126^{\circ}.8E$ , gefühlt auf Min-<br>danao.   |
|                 | MH    | 15   | 45 |    |          |              |                    |  |
|                 | F     | 16   | 0  |    |          |              |                    |  |
| " 16<br>(75)    | iP    | 6    | 19 | 31 | +        | 30           | 90                 | (75) Aleutenbeben. $\Delta = 8300$ km, $H = 6h7m50s$ .<br>JSA: $53^{\circ}.7N$ $175^{\circ}.3E$ , $H = 6h7m56s$ .<br>USCGS: $52^{\circ}.6N$ $173^{\circ}.8E$ , $H = 6h7m42s$ ,<br>compr. |
|                 | iS    | 6    | 29 | 11 |          |              |                    |  |
|                 | eSS   | 6    | 34 | 20 |          |              |                    |  |
|                 | eL    | 6    | 43 |    |          |              |                    |  |
|                 | MN    | 6    | 46 | 30 |          |              |                    |  |
|                 | F     | 9    | 47 |    |          |              |                    |  |

| Datum<br>1940    | Phase   | Zeit  | Richtung | Periode        | Amplitudo      | Bemerkungen  |
|------------------|---|---|----------|----------------|----------------|--|
|                  |   |   |          |                |                |  |
| April 18<br>(76) | eL<br>F   | 20 55<br>21 1   |          | 25             | 2              |  |
| " 19<br>(77)     | e<br>F  | 0 44<br>1 20  |          |                |                |  |
| " 20<br>(78)     | eL<br>MN  | 20 38 30<br>20 40 30  |          | 17             | 2              | (78) Trieste: Herdgebiet Anatolien.<br>Keine Registrierung: 24 März 10.6—15.36<br>25 März 9.46—13.49 |
| " 22<br>(79)     | e<br>MN<br>F  | 12 31 20<br>12 38 30<br>12 53   |          | 19             | 5              |  |
| " 26<br>(80)     | e<br>MH<br>F  | 7 57 0<br>8 0<br>8 2  |          | 11             | 3              | (80) Trieste: Herdgebiet Kalabrien.  |
| " 26<br>(81)     | eL<br>MH<br>F   | 21 15 25<br>21 17<br>21 23  |          | 12             | 3              |  |
| " 27<br>(82)     | e   | 9 57 30   |          |                |                | (82) F im folgenden Beben.   |
| " 27<br>(83)     | iz<br>iz<br>eE<br>eN<br>eH<br>eL<br>MH<br>eL<br>MN<br>ME<br>F | 10 42 59<br>10 43 26<br>10 47 0<br>10 48 55<br>10 50 55<br>10 57<br>10 58<br>11 9<br>11 12<br>11 12<br>11 12<br>13 48 |          | 40<br>17<br>17 | 45<br>15<br>10 |  |
| " 27<br>(84)     | eP'<br>eL<br>MH<br>MH<br>F                                    | 18 27 0<br>19 15 30<br>19 19<br>19 25<br>20 28  |          | 27<br>22       | 5<br>4         | (84) $\Delta$ etwa 16000 km.   |
| " 29<br>(85)     | e<br>F  | 15 55<br>16 5   |          |                |                |  |
| " 30<br>(86)     | e<br>F  | 5 35<br>5 53  |          |                |                |  |
| Mai 1<br>(87)    | e<br>F  | 13 31<br>14 2   |          |                |                |  |

| Datum<br>1940 | Phase   | Zeit  | Richtung | Periode | Amplitudo | Bemerkungen  |
|---------------|---|---|----------|---------|-----------|--|
|               |   |   |          |         |           |  |
| Mai 4<br>(88) | iP<br>iS<br>eSS<br>eL<br>MH<br>F              | 7 35 50<br>7 45 34<br>7 50 46<br>8 2<br>8 5 30<br>9 30                          | +        |         |           | (88) Aleutenbeben. $\Delta = 8300$ km.<br>USCGS: $53^{\circ}.0N$ $173^{\circ}.0E$ , $H = 7^{h}24^{m}6^{s}$ .   |
| " 4<br>(89)   | e<br>F  | 17 29<br>17 55  |          | 23      | 10        |  |
| " 4<br>(90)   | iP<br>ePP<br>iS<br>eSS<br>eL<br>MN<br>MN<br>F | 21 9 42<br>21 11 25<br>21 15 50<br>21 18 45<br>21 22<br>21 26<br>21 32<br>22 56 | +        |         |           | (90) $\Delta = 4300$ km, $H = 21^{h}2^{m}12^{s}$ .<br>Herdgebiet N.O. Iran, nach Bombay.   |
| " 5<br>(91)   | iP<br>iPP<br>eS<br>eL<br>ME<br>F              | 2 16 57<br>2 20 40<br>2 27 30<br>2 47 30<br>2 52<br>3 31                        | +        |         |           | (91) $\Delta = 9550$ km, $H = 2^{h}4^{m}17^{s}$ .<br>JSA: $5^{\circ}.9 S$ $81^{\circ}.4 W$ , Küste von Peru.   |
| " 5<br>(92)   | e<br>F  | 6 28<br>6 37  |          | 26      | 11        |  |
| " 7<br>(93)   | iP<br>iPP<br>eS<br>eL<br>MN<br>F              | 22 29 35<br>22 30 12<br>22 34 21<br>22 37 20<br>22 39 30<br>24 10               | +        |         |           | (93) $\Delta = 3030$ km.<br>Zürich: $42^{\circ}N$ $34^{\circ}E$ , Herdgebiet Transkaukasien.   |
| " 10<br>(94)  | e<br>F  | 2 12<br>2 43  |          |         |           |  |
| " 10<br>(95)  | e<br>F  | 19 56<br>20 24  |          |         |           |  |
| " 11<br>(96)  | eS<br>eSS<br>eSSS<br>eL<br>MN<br>F            | 14 16 7<br>14 21 23<br>14 27 0<br>14 32<br>14 36<br>16 40                       |          | 24      | 12        | (96) Aleutenbeben. Keine Z-Registrierung.<br>USCGS: $53^{\circ}.2N$ $172^{\circ}.0E$ , $H = 13^{h}54^{m}37^{s}$ .  |
| " 11<br>(97)  | eL<br>MN<br>F                                 | 21 35<br>21 40<br>22 0  |          | 33      | 9         | (97) Keine Z-Registrierung.<br>Bombay: $23^{\circ}N$ $95^{\circ}E$ , $H = 21^{h}0^{m}20^{s}$ .<br>Keine Registrierung wegen Kriegshandlungen<br>14 Mai 7.50—15 Mai 8.10. |

| Datum<br>1940  | Phase  | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$  | Bemerkungen |     |
|----------------|--------|------|----|----|----------|--------------|---|-------------|-----|
|                |        | h    | m  | s  |          |              |   |             |     |
| Mai 17<br>(98) | iP     | 2    | 12 | 4  | +        |              | (98) $\Delta = 9200$ km.<br>USCGS: $7^{\circ}.9N$ $81^{\circ}.8W$ , Costa Rica.   |             |     |
|                | eS     | 2    | 22 | 24 |          |              |   |             |     |
|                | ME     | 2    | 44 |    |          |              |   | 22          | 6   |
|                | ME     | 2    | 54 |    |          |              |   | 17          | 4   |
|                | ME     | 3    | 0  |    |          |              |   | 15          | 3   |
|                | F      | 3    | 20 |    |          |              |   |             |     |
| " 18<br>(99)   | e      | 5    | 51 |    |          |              | (99) Trieste: $34^{\circ}N$ $116^{\circ}W$ , California, $H = 5^h3^m59^s$ , nach Pasadena.  |             |     |
|                | F      | 5    | 55 |    |          |              |   |             |     |
| " 19<br>(100)  | iP     | 4    | 49 | 5  | -        |              | (100) Herd: Imperial Valley, California.<br>USCGS: $32^{\circ}.8N$ $115^{\circ}.6W$ , $H = 4^h36^m46^s$ .<br>Pasadena: $32^{\circ}.8N$ $115^{\circ}.5W$ .   |             |     |
|                | ipP    | 4    | 49 | 13 |          |              |   |             |     |
|                | i(PcP) | 4    | 49 | 28 |          |              |   | +           |     |
|                | eS     | 4    | 59 | 14 |          |              |   |             |     |
|                | e(SS)  | 5    | 10 | 0  |          |              |   |             |     |
|                | ME     | 5    | 15 |    |          |              |   | 35          | 110 |
|                | ME     | 5    | 22 |    |          |              |   | 20          | 185 |
|                | MN     | 5    | 22 |    |          |              |   | 20          | 110 |
|                | ME     | 5    | 27 |    |          |              |   | 15          | 185 |
|                | Mz     | 5    | 27 |    |          |              |   | 15          | 105 |
| F              | 9      | 5    |    |    |          |              |   |             |     |
| " 19<br>(101)  | iP     | 15   | 28 | 31 | -        |              | (101) Tiefes Beben, Herdgebiet Ochotskisches Meer, $\Delta = 8100$ km, $h = 600$ km.<br>USCGS: $51^{\circ}N$ $148^{\circ}E$ , $H = 15^h17^m55^s$ , $h = 580$ km.<br>Zürich: $49^{\circ}N$ $154^{\circ}E$ , $h = 650$ km.<br>Trieste: $\Delta = 77^{\circ}$ , $H = 15^h17^m57^s$ , $h = 580$ km. |             |     |
|                | iPcP   | 15   | 28 | 38 |          |              |   | +           |     |
|                | ipP    | 15   | 30 | 38 |          |              |   | (-)         |     |
|                | ePP    | 15   | 31 | 29 |          |              |   |             |     |
|                | ez     | 15   | 33 | 8  |          |              |   |             |     |
|                | ez     | 15   | 34 | 6  |          |              |   |             |     |
|                | ez     | 15   | 35 | 52 |          |              |   |             |     |
|                | eS     | 15   | 37 | 15 |          |              |   |             |     |
|                | eScS   | 15   | 37 | 50 |          |              |   |             |     |
|                | esS    | 15   | 40 | 45 |          |              |   |             |     |
| MN             | 15     | 47   | 20 | 24 | 19       |              |   |             |     |
| F              | 16     | 50   |    |    |          |              |   |             |     |
| " 19<br>(102)  | iP     | 18   | 28 | 32 | -        |              | (102) $\Delta = 8800$ km, $h = 50$ km, $H = 18^h16^m30^s$ .   |             |     |
|                | ipP    | 18   | 28 | 43 |          |              |   |             |     |
|                | iS     | 18   | 38 | 33 |          |              |   |             |     |
|                | isS    | 18   | 38 | 50 |          |              |   |             |     |
|                | eL     | 18   | 54 |    |          |              |   |             |     |
|                | MN     | 18   | 57 | 30 |          |              |   | 35          | 7   |
| F              | 19     | 55   |    |    |          |              |   |             |     |
| " 19<br>(103)  | c      | 20   | 48 |    |          |              |   |             |     |
|                | F      | 20   | 58 |    |          |              |   |             |     |
| " 21<br>(104)  | iP'    | 19   | 8  | 2  |          |              | (104) Tiefes Beben, $h = 400$ km.<br>USCGS: $23^{\circ}S$ $178^{\circ}W$ , Gegend der Tonga Inseln, $H = 18^h48^m54^s$ , $h = 400$ km.  |             |     |
|                | ipP'   | 19   | 9  | 32 |          |              |   |             |     |
|                | F      | 20   | 25 |    |          |              |   |             |     |

| Datum<br>1940   | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$   | Bemerkungen |      |
|-----------------|-------|------|----|----|----------|--------------|--|-------------|------|
|                 |       | h    | m  | s  |          |              |  |             |      |
| Mai 23<br>(105) | ez    | 6    | 13 | 14 |          |              |  |             |      |
|                 | F     | 7    | 50 |    |          |              |  |             |      |
| " 23<br>(106)   | e     | 19   | 26 |    |          |              |  |             |      |
|                 | F     | 19   | 30 |    |          |              |  |             |      |
| " 24<br>(107)   | iP    | 16   | 47 | 13 | +        |              | (107) Zerstörendes Beben in Lima (Peru).<br>$\Delta = 10300$ km.<br>USCGS: $11^{\circ}.9S$ $77^{\circ}.4W$ , $H = 16^h33^m40^s$<br>nach Manila.<br>UGGI: $8^{\circ}S$ $83^{\circ}W$ , $H = 16^h34^m0^s$ nach Bombay. |             |      |
|                 | e(PP) | 16   | 51 | 19 |          |              |  |             |      |
|                 | iS    | 16   | 58 | 19 |          |              |  |             |      |
|                 | e(L)  | 17   | 11 |    |          |              |  |             |      |
|                 | MN    | 17   | 16 |    |          |              |  | 55          | 2100 |
|                 | LN    | 17   | 25 |    |          |              |  |             |      |
|                 | MN    | 17   | 28 |    |          |              |  | 18          | 280  |
|                 | LE    | 17   | 21 | 30 |          |              |  |             |      |
|                 | ME    | 17   | 25 |    |          |              |  | 24          | 680  |
|                 | Mz    | 17   | 25 |    |          |              |  | 24          | 560  |
| ME              | 17    | 34   |    | 19 | 270      |              |  |             |      |
| Mz              | 17    | 38   |    | 17 | 145      |              |  |             |      |
| F               | 22    | 0    |    |    |          |              |  |             |      |
| " 24<br>(108)   | iP    | 19   | 10 | 25 |          |              | (108) Im vorigen Beben.<br>Hamburg: Mitteldeutschland, in der Gegend von Halle verspürt.   |             |      |
|                 | F     | 19   | 20 |    |          |              |  |             |      |
| " 24<br>(109)   | iP    | 22   | 11 | 11 | +        |              | (109) Nachbeben von (107), Lima (Peru).<br>USCGS: $12^{\circ}.0S$ $78^{\circ}.0W$ , $H = 21^h57^m40^s$ ,<br>$h = 40$ km.   |             |      |
|                 | ePP   | 22   | 14 | 54 |          |              |  |             |      |
|                 | eS    | 22   | 21 | 46 |          |              |  |             |      |
|                 | eSS   | 22   | 29 | 5  |          |              |  |             |      |
|                 | eL    | 22   | 44 |    |          |              |  |             |      |
|                 | ME    | 22   | 48 | 30 |          |              |  | 25          | 43   |
|                 | ME    | 22   | 52 |    |          |              |  | 19          | 42   |
|                 | Mz    | 22   | 48 | 30 |          |              |  | 25          | 42   |
|                 | Mz    | 22   | 52 |    |          |              |  | 19          | 41   |
|                 | MN    | 22   | 52 |    |          |              |  | 19          | 24   |
| ME              | 22    | 57   | 30 | 18 | 34       |              |  |             |      |
| F               | 24    | 55   |    |    |          |              |  |             |      |
| " 27<br>(110)   | iP    | 4    | 18 | 56 | +        |              | (110) $\Delta = 5300$ km, $h = 200$ km.<br>UGGI: $36^{\circ}.5N$ $70^{\circ}.5E$ , $H = 4^h10^m36^s$ , $h = 200$ km. In Peschwar (Pendschab) gefühlt.  |             |      |
|                 | ipP   | 4    | 19 | 48 |          |              |  |             |      |
|                 | iPP   | 4    | 20 | 11 |          |              |  | +           |      |
|                 | eS    | 4    | 25 | 39 |          |              |  |             |      |
|                 | esS   | 4    | 27 | 3  |          |              |  |             |      |
|                 | e(SS) | 4    | 29 | 21 |          |              |  |             |      |
| F               | 4     | 50   |    |    |          |              |  |             |      |
| " 27<br>(111)   | eL    | 9    | 4  |    |          |              |  |             |      |
|                 | ME    | 9    | 8  |    |          |              |  | 22          | 4    |
|                 | F     | 9    | 30 |    |          |              |  |             |      |
| " 27<br>(112)   | iz    | 11   | 59 | 44 |          |              |  |             |      |
|                 | F     | 12   | 5  |    |          |              |  |             |      |

| Datum<br>1940   | Phase  | Zeit |    |    | Richtung | Periode<br>s | Amplitude<br>$\mu$ | Bemerkungen  |
|-----------------|--------|------|----|----|----------|--------------|--------------------|--|
|                 |        | h    | m  | s  |          |              |                    |  |
| Mai 28<br>(113) | iPP    | 10   | 0  | 47 | +        | 32           | 41                 | (113) $\Delta = 13000$ km, $h = 50$ km.<br>USCGS: $2^{\circ}\text{S } 136^{\circ}\text{E}$ , $H = 9^{\text{h}40^{\text{m}}24^{\text{s}}}$ . Herd-<br>gebiet nordlich von Neu-Guinea.<br>Bombay: $3^{\circ}\text{S } 138^{\circ}\text{E}$ , $H = 9^{\text{h}40^{\text{m}}54^{\text{s}}}$ .  |
|                 | ipPP   | 10   | 1  | 1  |          |              |                    |  |
|                 | i(sPP) | 10   | 1  | 9  |          |              |                    |  |
|                 | ePS    | 10   | 10 | 26 |          |              |                    |  |
|                 | eL     | 10   | 37 |    |          |              |                    |  |
|                 | ME     | 10   | 40 |    |          |              |                    |  |
|                 | F      | 12   | 30 |    |          |              |                    |  |
| " 28<br>(114)   | e      | 15   | 18 |    |          |              |                    |  |
|                 | F      | 15   | 21 |    |          |              |                    |  |
| " 29<br>(115)   | iP     | 2    | 7  | 41 | +        | 24           | 25                 | (115) $\Delta = 6400$ km, Alaskabeben.<br>JSA: $66^{\circ}.6\text{N } 132^{\circ}.7\text{W}$ , (nach Zürich).<br>Manila: $68^{\circ}\text{N } 138^{\circ}\text{W}$ .<br>Pasadena: $68^{\circ}\text{N } 138^{\circ}\text{W}$ .<br>USCGS: $68^{\circ}\text{N } 148^{\circ}\text{W}$ , $H = 1^{\text{h}57^{\text{m}}36^{\text{s}}}$ . |
|                 | ePP    | 2    | 9  | 50 |          |              |                    |  |
|                 | eS     | 2    | 15 | 38 |          |              |                    |  |
|                 | eScS   | 2    | 17 | 25 |          |              |                    |  |
|                 | eLE    | 2    | 23 | 20 |          |              |                    |  |
|                 | eLN    | 2    | 29 |    |          |              |                    |  |
|                 | MN     | 2    | 31 |    |          |              |                    |  |
|                 | Mz     | 2    | 31 |    |          |              |                    |  |
| F               | 3      | 50   |    |    |          |              |                    |  |
| " 29<br>(116)   | eL     | 15   | 38 |    | 20       | 7            |                    |  |
|                 | MN     | 15   | 42 |    |          |              |                    |  |
|                 | F      | 16   | 0  |    |          |              |                    |  |
| " 31<br>(117)   | ez     | 1    | 0  | 40 |          |              |                    |  |
|                 | eL     | 2    | 8  |    |          |              |                    |  |
|                 | F      | 2    | 15 |    |          |              |                    |  |
| Juni 1<br>(118) | eL     | 9    | 54 | 30 | 35       | 3            |                    |  |
|                 | M      | 9    | 57 |    |          |              |                    |  |
|                 | F      | 9    | 58 |    |          |              |                    |  |
| " 2<br>(119)    | iz     | 11   | 49 | 33 | +        | 25           | 3                  |  |
|                 | eL     | 12   | 14 |    |          |              |                    |  |
|                 | MH     | 12   | 25 |    |          |              |                    |  |
|                 | eL     | 13   | 0  |    |          |              |                    |  |
|                 | F      | 13   | 40 |    |          |              |                    |  |
| " 2<br>(120)    | iz     | 19   | 37 | 17 | (+) (-)  |              |                    | (120) UGGI: Neu-Seeland?   |
|                 | iz     | 19   | 40 | 57 |          |              |                    |  |
|                 | ez     | 19   | 43 | 13 |          |              |                    |  |
|                 | F      | 20   | 4  |    |          |              |                    |  |
| " 2<br>(121)    | iz     | 23   | 3  | 46 |          |              |                    |  |
|                 | eL     | 23   | 10 |    |          |              |                    |  |
|                 | F      | 23   | 20 |    |          |              |                    |  |

| Datum<br>1940   | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitude<br>$\mu$ | Bemerkungen   |
|-----------------|-------|------|----|----|----------|--------------|--------------------|---|
|                 |       | h    | m  | s  |          |              |                    |   |
| Juni 2<br>(122) | iP    | 23   | 28 | 15 | -        | 19           | 5                  | (122) $\Delta = 2350$ km. Herdgebiet Anatolien?   |
|                 | eS    | 23   | 32 | 8  |          |              |                    |   |
|                 | eL    | 23   | 34 |    |          |              |                    |   |
|                 | ME    | 23   | 36 |    |          |              |                    |   |
|                 | F     | 23   | 50 |    |          |              |                    |   |
| " 3<br>(123)    | iP    | 18   | 17 | 59 |          | 25           | 15                 | (123) $\Delta = 9400$ km.<br>JSA: $24^{\circ}.4\text{N } 110^{\circ}.4\text{W}$ , Westküste von<br>Mexico, $H = 18^{\text{h}5^{\text{m}}11^{\text{s}}}$ .<br>USCGS: $25^{\circ}\text{N } 110^{\circ}\text{W}$ , $H = 18^{\text{h}5^{\text{m}}24^{\text{s}}}$ .              |
|                 | eS    | 18   | 28 | 16 |          |              |                    |   |
|                 | ePS   | 18   | 29 | 16 |          |              |                    |   |
|                 | eL    | 18   | 44 | 30 |          |              |                    |   |
|                 | MN    | 18   | 48 |    |          |              |                    |   |
|                 | F     | 19   | 54 |    |          |              |                    |   |
| " 5<br>(124)    | eP    | 11   | 11 | 3  | -        | 38           | 31                 | (124) $\Delta = 6350$ km, Herdregion Alaska,<br>vgl. Beben (115).<br>JSA: $67^{\circ}.0\text{N } 138^{\circ}.7\text{W}$ , $H = 11^{\text{h}1^{\text{m}}0^{\text{s}}}$ .<br>USCGS: $68^{\circ}\text{N } 138^{\circ}\text{W}$ , $H = 11^{\text{h}1^{\text{m}}0^{\text{s}}}$ . |
|                 | eS    | 11   | 19 | 3  |          |              |                    |   |
|                 | eL    | 11   | 27 |    |          |              |                    |   |
|                 | MN    | 11   | 29 |    |          |              |                    |   |
|                 | MN    | 11   | 35 |    |          |              |                    |   |
|                 | F     | 14   | 10 |    |          |              |                    |   |
| " 5<br>(125)    | eL    | 15   | 34 |    |          | 25           | 60                 | Keine Registrierung 7 Juni 6.37-13.41.  |
|                 | F     | 16   | 0  |    |          |              |                    |   |
| " 8<br>(126)    | ez    | 4    | 19 | 47 |          | 20           | 2                  |   |
|                 | L     | 5    | 20 |    |          |              |                    |   |
|                 | F     | 5    | 35 |    |          |              |                    |   |
| " 11<br>(127)   | iz    | 9    | 1  | 59 | -        | 33           | 5                  |   |
|                 | eL    | 9    | 44 |    |          |              |                    |   |
|                 | MN    | 9    | 46 |    |          |              |                    |   |
| " 12<br>(128)   | F     | 10   | 11 |    |          | 24           | 12                 | (130) $\Delta$ etwa 9000 km.  |
|                 | eL    | 6    | 21 |    |          |              |                    |   |
| " 12<br>(129)   | F     | 6    | 40 |    |          | 24           | 12                 |   |
|                 | eL    | 13   | 12 |    |          |              |                    |   |
| " 12<br>(130)   | F     | 13   | 44 |    |          | 24           | 12                 |   |
|                 | e(P)  | 14   | 12 | 27 |          |              |                    |   |
|                 | e(PP) | 14   | 15 | 47 |          |              |                    |   |
|                 | e(S)  | 14   | 22 | 45 |          |              |                    |   |
|                 | eL    | 14   | 44 |    |          |              |                    |   |
| " 12<br>(131)   | ME    | 14   | 51 | 30 |          | 24           | 12                 |   |
|                 | F     | 15   | 32 |    |          |              |                    |   |
| " 12<br>(132)   | eL    | 16   | 48 |    |          | 24           | 12                 |   |
|                 | F     | 17   | 5  |    |          |              |                    |   |
| " 12<br>(133)   | L     | 19   | 28 |    |          | 24           | 12                 |   |
|                 | F     | 19   | 45 |    |          |              |                    |   |
| " 13<br>(133)   | eL    | 12   | 7  |    |          | 24           | 12                 |   |
|                 | F     | 12   | 11 |    |          |              |                    |   |

| Datum<br>1940    | Phase   | Zeit  | Richtung | Periode | Amplitudo | Bemerkungen   |
|------------------|---|---|----------|---------|-----------|---|
|                  |   |   |          |         |           |   |
| Juni 15<br>(134) | eL<br>F   | 9 59<br>10 7  |          |         |           |   |
| " 17<br>(135)    | ePP<br>ePS<br>eSS<br>eL<br>MN<br>F                              | 10 45 24<br>10 54 39<br>11 0 27<br>11 16 30<br>11 20<br>13 7  |          | 30      | 185       | (135) $\Delta = 11500$ km.<br>JSA: $21^{\circ}.0N$ $153^{\circ}.6W$ , Hawai Inseln, H = $10^h27^m0s$ .<br>USCGS: $21^{\circ}.0N$ $155^{\circ}.3W$ , H = $10^h26^m48s$ . |
| " 17<br>(136)    | eL<br>F   | 20 55 25<br>21 5  |          |         |           |   |
| " 18<br>(137)    | eP<br>ePP<br>e(PPP)<br>e(S')<br>e(SS')<br>F                     | 14 5 32<br>14 9 55<br>14 12 36<br>14 15 17<br>14 16 31<br>15 18   |          |         |           | (137) Manila: $5^{\circ}.5 N$ $122^{\circ}E$ , nordlich von Neu Guinea, tiefer als normal.  |
| " 18<br>(138)    | iP<br>iS<br>eL<br>MN<br>F                                       | 18 50 48<br>19 0 28<br>19 17<br>19 20<br>20 25  | +        | 24      | 7         | (138) $\Delta = 8300$ km, Aleuten.<br>JSA: $54^{\circ}.0N$ $175^{\circ}.4E$ , H = $18^h39^m17s$ .<br>UGGI: $54^{\circ}N$ $173^{\circ}E$ , H = $18^h39^m0s$ nach USCGS.  |
| " 19<br>(139)    | e<br>F  | 14 17 30<br>14 20   |          |         |           | (139) UGGI: Herdregion Monte Amiata, Umbrien.   |
| " 21<br>(140)    | eL<br>MN<br>F   | 17 37<br>17 40<br>17 54   |          | 23      | 2         |   |
| " 22<br>(141)    | iP<br>ipP<br>ipPP<br>iS'<br>esS'<br>iS<br>esS<br>eSS<br>Me<br>F | 11 50 41<br>11 51 25<br>11 55 9<br>11 55 52<br>12 1 6<br>12 1 54<br>12 2 30<br>12 4 0<br>12 10 0<br>12 5 30<br>14 4 |          | 23      | 16        | (141) $\Delta = 12200$ km h = 200 km.<br>Manila: $11^{\circ}N$ $136^{\circ}E$ , Gegend der Karolinen.<br>Trieste: h = 650 km.<br>Ksara: h = 190 km.                     |
| " 23<br>(142)    | eP<br>eS<br>L<br>MH<br>F  | 7 0 59<br>7 5 31<br>7 11<br>7 12 30<br>7 24   |          | 15      | 3         | (142) $\Delta = 2850$ km.   |

| Datum<br>1940    | Phase                     | Zeit  | Richtung | Periode | Amplitudo | Bemerkungen  |
|------------------|---------------------------|---|----------|---------|-----------|--|
|                  |                           |   |          |         |           |  |
| Juni 23<br>(143) | e<br>F                    | 9 21<br>9 26                                      |          |         |           |  |
| " 23<br>(144)    | eL<br>MN<br>F             | 13 0<br>13 1<br>13 4                              |          | 21      | 3         |  |
| " 23<br>(145)    | eL<br>ME<br>F             | 22 23<br>22 30<br>22 53                           |          | 17      | 3         | (145) JSA: $26^{\circ}N$ $110^{\circ}.5W$ , Westküste von Mexico, H = $21^h41^m34s$ .<br>USCGS: $25^{\circ}.0N$ $111^{\circ}.0W$ , H = $21^h41^m21s$ . |
| " 24<br>(146)    | e<br>F                    | 8 38<br>8 43                                      |          |         |           |  |
| " 24<br>(147)    | iP<br>iS<br>F             | 10 0 56<br>10 4 1<br>10 18                        | —        |         |           | (147) $\Delta = 1750$ km.<br>Bucarest: $45^{\circ}.86N$ $26^{\circ}.55E$ , Herdregion Vrancea (Rumänien), H = $9^h57^m27s$ , h = 115 km.               |
| " 25<br>(148)    | eL<br>MN<br>F             | 3 32 20<br>3 42<br>3 55                           |          | 21      | 3         |  |
| " 25<br>(149)    | e<br>F                    | 5 6<br>5 12                                       |          |         |           |  |
| " 26<br>(150)    | eL<br>F                   | 8 54<br>9 15                                      |          |         |           |  |
| " 27<br>(151)    | eL<br>ez<br>F             | 8 21 30<br>8 23 20<br>8 25                        |          |         |           |  |
| Juli 1<br>(152)  | e                         | 21 24 10  |          |         |           | (152) F im folgenden Beben.  |
| " 1<br>(153)     | iP<br>eS<br>eL<br>MN<br>F | 21 35 2<br>21 39 26<br>21 41 30<br>21 42<br>22 30 | —        | 14      | 8         | (153) $\Delta = 2750$ km, Azorenbaben.<br>UGGI: $41^{\circ}.5N$ $28^{\circ}.5W$ .  |
| " 2<br>(154)     | eL<br>MN<br>F             | 2 27<br>2 30<br>2 50                              |          | 13      | 3         |  |
| " 2<br>(155)     | eL<br>MN<br>F             | 12 0<br>12 4<br>12 24                             |          | 14      | 2         |  |
| " 2<br>(156)     | e(P')<br>eL<br>F          | 19 28 30<br>20 21<br>22 0                         |          |         |           |  |

| Datum<br>1940   | Phase  | Zeit |    |    | Richtung | Periode | Amplitudo  | Bemerkungen |
|-----------------|--------|------|----|----|----------|---------|--|-------------|
|                 |        | h    | m  | s  |          |         |  |             |
| Juli 5<br>(157) | eL     | 21   | 48 | 30 |          |         |  |             |
|                 | MN     | 21   | 52 |    | 20       | 2       |  |             |
|                 | F      | 22   | 0  |    |          |         |  |             |
| " 6<br>(158)    | iP     | 3    | 50 | 48 | —<br>(—) | 19      | 14   |             |
|                 | ipP    | 3    | 51 | 22 |          |         |  |             |
|                 | iS     | 3    | 59 | 22 |          |         |  |             |
|                 | e(SS)  | 4    | 3  | 30 |          |         |  |             |
|                 | e(SSS) | 4    | 7  | 3  |          |         |  |             |
|                 | eL     | 4    | 11 |    |          |         |  |             |
|                 | ME     | 4    | 15 | 30 |          |         |  |             |
| F               | 4      | 50   |    |    |          |         |  |             |
| " 6<br>(159)    | e      | 7    | 43 |    |          |         |  |             |
|                 | F      | 7    | 48 |    |          |         |  |             |
| " 6<br>(160)    | e      | 18   | 7  |    |          |         |  |             |
|                 | F      | 18   | 12 |    |          |         |  |             |
| " 10<br>(161)   | iP     | 6    | 0  | 32 | +<br>(+) | 15      | 3  |             |
|                 | ipP    | 6    | 2  | 31 |          |         |  |             |
|                 | iPP    | 6    | 3  | 25 |          |         |  |             |
|                 | ipPP   | 6    | 5  | 12 |          |         |  |             |
|                 | iS     | 6    | 9  | 11 |          |         |  |             |
|                 | iScS   | 6    | 9  | 51 |          |         |  |             |
|                 | esS    | 6    | 12 | 36 |          |         |  |             |
|                 | esSS   | 6    | 17 |    |          |         |  |             |
| F               | 8      | 30   |    |    |          |         |  |             |
| " 10<br>(162)   | eL     | 13   | 24 |    |          |         |  |             |
|                 | MN     | 13   | 29 |    | 15       | 3       | (162) UGGI: 42°N 42°E, Kaukasus.                       |             |
|                 | F      | 13   | 50 |    |          |         |  |             |
| " 11<br>(163)   | eL     | 4    | 19 |    | 15       | 1       | (163) Trieste: Herdregion Danni a Mostar, Herzegowina. |             |
|                 | MN     | 4    | 21 |    |          |         |  |             |
|                 | F      | 4    | 24 |    |          |         |  |             |
| " 13<br>(164)   | eP     | 16   | 59 | 50 |          | 30      | 16   |             |
|                 | i(pP)  | 17   | 0  | 3  |          |         |  |             |
|                 | iS     | 17   | 10 | 7  |          |         |  |             |
|                 | eSS    | 17   | 15 | 50 |          |         |  |             |
|                 | L      | 17   | 26 |    |          |         |  |             |
|                 | ME     | 17   | 27 |    |          |         |  |             |
|                 | F      | 18   | 45 |    |          |         |  |             |
| " 13<br>(165)   | e      | 20   | 25 | 30 |          |         |  |             |
|                 | F      | 20   | 36 |    |          |         |  |             |

| Datum<br>1940    | Phase   | Zeit |    |    | Richtung | Periode | Amplitudo | Bemerkungen |
|------------------|---------|------|----|----|----------|---------|-----------|-------------|
|                  |         | h    | m  | s  |          |         |           |             |
| Juli 14<br>(166) | iP      | 6    | 4  | 40 | —<br>(+) | 26      | 80        |             |
|                  | ipP     | 6    | 5  | 6  |          |         |           |             |
|                  | i(PPP)  | 6    | 9  | 17 |          |         |           |             |
|                  | i(pPPP) | 6    | 9  | 50 |          |         |           |             |
|                  | iS      | 6    | 14 | 19 |          |         |           |             |
|                  | isS     | 6    | 14 | 50 |          |         |           |             |
|                  | iSS     | 6    | 19 | 22 |          |         |           |             |
|                  | isSS    | 6    | 19 | 57 |          |         |           |             |
|                  | iE      | 6    | 25 | 7  |          |         |           |             |
|                  | iE      | 6    | 26 | 25 |          |         |           |             |
| " 14<br>(167)    | eL      | 6    | 29 |    |          |         |           |             |
|                  | ME      | 6    | 33 |    |          |         |           |             |
| " 14<br>(167)    | F       | 10   | 15 |    |          |         |           |             |
|                  | e       | 16   | 16 |    |          |         |           |             |
| " 15<br>(168)    | F       | 16   | 31 |    |          |         |           |             |
|                  | e       | 9    | 42 |    |          |         |           |             |
| " 15<br>(168)    | F       | 10   | 2  |    |          |         |           |             |
|                  | eL      | 4    | 11 |    |          |         |           |             |
| " 16<br>(169)    | ME      | 4    | 16 |    | 22       | 2       |           |             |
|                  | F       | 4    | 24 |    |          |         |           |             |
| " 16<br>(170)    | eL      | 5    | 42 |    | 20       | 3       |           |             |
|                  | MH      | 5    | 45 |    |          |         |           |             |
| " 16<br>(171)    | F       | 6    | 15 |    |          |         |           |             |
|                  | e       | 20   | 13 |    |          |         |           |             |
| " 16<br>(171)    | ME      | 20   | 26 |    | 21       | 5       |           |             |
|                  | F       | 20   | 43 |    |          |         |           |             |
| " 17<br>(172)    | e       | 0    | 17 |    | 23       | 4       |           |             |
|                  | MH      | 0    | 30 |    |          |         |           |             |
| " 17<br>(173)    | F       | 0    | 50 |    |          |         |           |             |
|                  | eL      | 7    | 1  |    | 27       | 6       |           |             |
| MN               | 7       | 3    | 30 |    |          |         |           |             |
| F                | 7       | 35   |    |    |          |         |           |             |
| " 17<br>(174)    | e       | 12   | 9  | 50 | 25       | 5       |           |             |
|                  | MN      | 12   | 12 | 30 |          |         |           |             |
|                  | F       | 12   | 35 |    |          |         |           |             |
| " 19<br>(175)    | iP      | 4    | 59 | 16 | +<br>(+) | 30      | 4         |             |
|                  | iS      | 5    | 8  | 59 |          |         |           |             |
|                  | eSS     | 5    | 14 | 30 |          |         |           |             |
|                  | eL      | 5    | 25 |    |          |         |           |             |
|                  | MH      | 5    | 26 |    |          |         |           |             |
|                  | F       | 6    | 15 |    |          |         |           |             |

(166) Aleutenbeben,  $\Delta = 8400$  km,  $H = 5^h53^m55^s$ ,  $h = 80$  km.  
JSA: 52°N 177°W,  $H = 5^h53^m18^s$ ,  $h = 80$  km.  
Manila: 52°N 178°E, nach USCGS,  $H = 5^h52^m48^s$ .

(161) Tiefer Herd,  $\Delta = 7900$  km,  $H = 5^h50^m15^s$ ,  $h = 500$  km.  
JSA: 45°N 128°E, Herdregion Manschu-  
kwo,  $H = 5^h49^m50^s$ ,  $h = 500$  km.  
Manila: 45°N 128°E, nach USCGS,  $H = 5^h50^m30^s$ .

(162) UGGI: 42°N 42°E, Kaukasus.

(163) Trieste: Herdregion Danni a Mostar, Herzegowina.

(164)  $\Delta = 9100$  km,  $H = 16^h47^m35^s$ ,  $h = 50$  km.  
JSA: 9°N 82°W, Costa Rica,  $H = 16^h47^m35^s$ .  
Manila: 7°N 83°W, nach USCGS,  $H = 16^h47^m30^s$ .

(175)  $\Delta = 8600$  km,  $H = 4^h47^m30^s$ .  
JSA: 50°N 177°E, Herdregion Aleuten,  
 $H = 4^h47^m39^s$ ,  $h = \text{normal}$ .  
USCGS: 54°N 173°E.

| Datum<br>1940    | Phase  | Zeit  | Richtung        | Periode        | Amplitudo    | Bemerkungen   |
|------------------|--|---|-----------------|----------------|--------------|---|
|                  |  | h m s   |                 | s              | $\mu$        |   |
| Juli 19<br>(176) | e<br>F   | 10 18 30<br>10 22   |                 |                |              | (176) Zürich: Herdregion in den Marken oder in der angrenzenden Zone der Adria.   |
| " 20<br>(177)    | e(P')<br>e(PP)<br>e(PPP)<br>i(SS)<br>eE<br>eL<br>MN<br>MH<br>F       | 2 13 28<br>2 16 42<br>2 17 58<br>2 35 32<br>2 53 50<br>3 5 30<br>3 11<br>3 20<br>4 25                             | —<br>(+)<br>(+) | 23<br>19       | 4<br>9       | (177) $\Delta$ etwa 16000 km.<br>JSA: Herd in der Gegend der Samoa und Tonga Inseln.  |
| " 21<br>(178)    | eP<br>iPP<br>iPPP<br>iPS<br>iS<br>eSS<br>eSSS<br>ME<br>eL<br>MH<br>F | 15 52 30<br>15 56 51<br>15 59 6<br>16 5 50<br>16 4 19<br>16 11 40<br>16 15 30<br>16 17<br>16 28<br>16 45<br>17 50 | +<br>+          | 27<br>40<br>18 | 9<br>9<br>13 | (178) $\Delta = 11800$ km, $H = 15^h38^m25^s$ .<br>Trieste gibt $\Delta = 11100$ km.  |
| " 23<br>(179)    | eL<br>MN<br>F  | 1 3<br>1 5<br>1 21  |                 | 28             | 2            |   |
| " 23<br>(180)    | e<br>F   | 3 43<br>4 17  |                 |                |              |   |
| " 24<br>(181)    | eL<br>MN<br>F  | 13 49 30<br>13 51<br>13 59  |                 | 20             | 2            |   |
| " 24<br>(182)    | e(S)<br>F  | 22 26<br>22 43  |                 |                |              | (182) Trieste: $33^\circ.7N$ $33^\circ.2E$ , Herdregion<br>Cyprus, $H = 22^h15^m29^s$ , $h = 70$ km.  |
| " 25<br>(183)    | e<br>F   | 21 59<br>22 1   |                 |                |              |   |
| " 27<br>(184)    | iP<br>iS<br>eL<br>ME<br>Mz<br>F                                      | 13 44 51<br>13 55 4<br>14 11 30<br>14 14 30<br>14 15 35<br>16 30  | +<br>+          | 30<br>26       | 80<br>75     | (184) $\Delta = 9200$ km, $H = 13^h32^m35^s$ .<br>JSA: $13^\circ.7N$ $91^\circ.3W$ , Guatemala, $H = 13^h32^m30^s$ , $h = 100$ km.<br>USCGS: $13^\circ.6N$ $91^\circ.6W$ , $H = 13^h32^m24^s$ . |

| Datum<br>1940    | Phase  | Zeit   | Richtung | Periode | Amplitudo | Bemerkungen  |
|------------------|--|--|----------|---------|-----------|--|
|                  |  | h m s  |          | s       | $\mu$     |  |
| Juli 30<br>(185) | iP<br>(iPP)<br>iS<br>eL<br>MN<br>F                             | 0 17 25<br>0 18 5<br>0 21 50<br>0 23 20<br>0 25<br>2 6   | (+)      | 35      | 82        | (185) $\Delta = 2750$ km, $H = 0^h12^m5^s$ .<br>UGGI: $39^\circ N$ $34^\circ E$ , Anatolien, $H = 0^h12^m14^s$ .   |
| " 31<br>(186)    | (iP)<br>eS<br>eL<br>MN<br>F                                    | 10 41 55<br>10 46 18<br>10 48<br>10 50<br>11 12  |          | 27      | 4         | (186) $\Delta = 2750$ km, Nachbeben von (185).   |
| " 31<br>(187)    | e<br>F   | 12 45<br>13 4  |          |         |           |  |
| Aug. 1<br>(188)  | iP'<br>epP'<br>iz<br>i(PP)<br>i(PPP)<br>eH<br>eSS<br>esSS<br>F | 12 58 30<br>13 0 30<br>12 58 55<br>13 2 29<br>13 6 5<br>13 8 36<br>13 21 28<br>13 24 39<br>14 10 | —<br>(+) |         |           | (188) $\Delta = 17000$ km.<br>Wellington: $25^\circ S$ $178^\circ E$ , $h = 500$ km, Herd-<br>gebiet Tonga Inseln, verspürt in Hawkes Bay<br>und Gisborne.<br>Manila: $23^\circ S$ $179^\circ E$ , $h = 500$ km. |
| " 1<br>(189)     | iP<br>iPP<br>iPPP<br>iS<br>eSS<br>eL<br>F                      | 15 20 11<br>15 23 20<br>15 24 53<br>15 29 54<br>15 35 30<br>15 44 30<br>19 40                    | +<br>—   |         |           | (189) $\Delta = 8400$ km, Japanbeben.<br>JSA: $44^\circ N$ $140^\circ E$ , auf Hokkaido verspürt,<br>grosse seismische Woge.<br>Trieste: $44^\circ.0N$ $139^\circ.6E$ , nach JSA. $H = 15^h8^m24^s$ .            |
| " 1<br>(190)     | eL<br>MN<br>F  | 20 11<br>20 12 30<br>20 30   |          | 23      | 8         |  |
| " 2<br>(191)     | e<br>F   | 3 41<br>3 50   |          |         |           |  |
| " 2<br>(192)     | e<br>F   | 4 42<br>4 52   |          |         |           |  |
| " 2<br>(193)     | e<br>F   | 6 31<br>6 50   |          |         |           | (193) Papierwechsel 6.40 bis 6.47.   |
| " 2<br>(194)     | e<br>F   | 14 42<br>14 50   |          |         |           |  |

| Datum<br>1940   | Phase   | Zeit   | Richtung           | Periode | Amplitudo | Bemerkungen   |
|-----------------|---|--|--------------------|---------|-----------|---|
|                 |   | h m s  |                    | s       | $\mu$     |   |
| Aug. 5<br>(195) | eE<br>eL<br>ME<br>F   | 8 52 5<br>9 5<br>9 7<br>9 40   |                    | 20      | 4         |   |
| " 5<br>(196)    | eL<br>MH<br>F   | 10 34<br>10 36<br>11 0   |                    | 22      | 8         |   |
| " 5<br>(197)    | eL<br>MH<br>F   | 22 14<br>22 17<br>22 40  |                    | 25      | 6         |   |
| " 7<br>(198)    | eE<br>eE<br>F   | 3 20 0<br>3 23 0<br>4 4  |                    |         |           |   |
| " 7<br>(199)    | e<br>F  | 14 18<br>14 21   |                    |         |           |   |
| " 7<br>(200)    | eL<br>F   | 17 37<br>17 45   |                    |         |           |   |
| " 8<br>(201)    | eL<br>F   | 15 45<br>16 0  |                    | 20      | 2         |   |
| " 11<br>(202)   | iP'<br>iScPcP<br>eL<br>MN<br>F                                | 17 6 25<br>17 9 49<br>17 54<br>18 0<br>19 0  | +                  | 27      | 8         | (202) $\Delta = 16000$ km.<br>Wellington: Herd zwischen Samoa und Tonga<br>Inseln. In Apia verspürt.  |
| " 12<br>(203)   | e<br>F  | 16 23<br>16 32   |                    |         |           | Keine Registrierung: 12 August 7.8 bis 10.16.   |
| " 13<br>(204)   | e<br>F  | 5 49<br>6 5  |                    |         |           |   |
| " 13<br>(205)   | iP<br>ipP<br>iPP<br>iPPP<br>iS<br>iPS<br>eSS<br>eL<br>MH<br>F | 15 49 1<br>15 49 15<br>15 52 7<br>15 54 9<br>15 59 8<br>15 59 48<br>16 5<br>16 15<br>16 19<br>18 5 | +<br>(-)<br>+<br>+ | 28      | 22        | (205) $\Delta = 8900$ km. Japanbeben.<br>Herdangaben: JSA $49^{\circ}.0N$ $132^{\circ}E$ , Japani-<br>sches Meer. BI: $41^{\circ}N$ $133^{\circ}E$ .<br>USCGS: $41^{\circ}N$ $133^{\circ}E$ , $H = 15^h36.8m$ . |
| " 14<br>(206)   | e<br>F  | 9 20<br>9 27   |                    |         |           |   |

| Datum<br>1940    | Phase                                     | Zeit  | Richtung | Periode  | Amplitudo | Bemerkungen   |
|------------------|---|---|----------|----------|-----------|---|
|                  |   | h m s   |          | s        | $\mu$     |   |
| Aug. 15<br>(207) | (ez)<br>(ez)<br>eL<br>F                   | 21 41 54<br>21 51 7<br>22 17<br>22 35                               |          | 25       | 2         |   |
| " 16<br>(208)    | iP<br>eS<br>eLH<br>eLz<br>F               | 16 7 43<br>16 12 0<br>16 14<br>16 16 30<br>16 41                    | +        | 33<br>23 | 9<br>10   | (208) $\Delta = 2600$ km.<br>BI: $36^{\circ}N$ $31^{\circ}E$ .<br>UGGI: $36^{\circ}N$ $31^{\circ}E$ , $H = 16^h2m46s$ . Küste<br>von Klein Asien. |
| " 16<br>(209)    | iP<br>eS<br>eLH<br>MN<br>eLz<br>F         | 18 28 31<br>18 32 45<br>18 36<br>18 37<br>18 38<br>18 50            | +        | 20       | 5         | (209) Nachbeben von (208).  |
| " 17<br>(210)    | e<br>F                                    | 3 43<br>3 45  |          |          |           |   |
| " 17<br>(211)    | e<br>F                                    | 23 9<br>23 11   |          |          |           |   |
| " 18<br>(212)    | eL<br>F                                   | 7 23<br>7 55  |          |          |           |   |
| " 19<br>(213)    | e<br>F                                    | 20 58<br>21 2   |          |          |           |   |
| " 20<br>(214)    | iP'<br>eE<br>eL<br>ME<br>F                | 17 50 45<br>18 0 40<br>18 29<br>18 33<br>19 40                      |          | 30       | 11        | (214) $\Delta$ etwa $122^{\circ}$ .<br>Trieste: Nach UGGI Herdgebiet in der Ge-<br>gend von Neu Guinea (Bismarck Archipel).                       |
| " 22<br>(215)    | iP<br>iPP<br>eS<br>eSS<br>eSSS<br>eL<br>F | 3 39 5<br>3 42 3<br>3 48 48<br>3 54 46<br>3 58 10<br>4 4 30<br>7 30 | (+)      |          |           | (215) $\Delta = 9000$ km. Aleutenbeben.<br>JSA: $52^{\circ}.2N$ $165^{\circ}.8W$ .<br>USCGS: $51^{\circ}.9N$ $164^{\circ}.9W$ , $H = 3^h27m18s$ . |
| " 24<br>(216)    | e<br>F                                    | 14 55<br>15 5   |          |          |           |   |
| " 26<br>(217)    | eE<br>eE<br>eLU<br>ME<br>F                | 5 31 25<br>5 35 0<br>5 44 30<br>5 52<br>6 15                        |          | 30<br>18 | 3<br>7    |   |



| Datum<br>1940    | Phase                            | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen   |
|------------------|----------------------------------|------|----|----|----------|--------------|--------------------|---|
|                  |                                  | h    | m  | s  |          |              |                    |   |
| Aug. 27<br>(218) | e<br>LN<br>F                     | 23   | 35 |    |          | 13           | 2                  |   |
| " 28<br>(219)    | e<br>LH<br>F                     | 16   | 1  |    |          | 24           | 1                  |   |
| " 29<br>(220)    | e<br>eLH<br>eL<br>ME<br>F        | 8    | 35 |    |          | 20           | 5                  | (220) Trieste gibt $\Delta = 6450$ km.                              |
| " 30<br>(221)    | eH<br>F                          | 12   | 56 | 20 |          |              |                    |   |
| " 30<br>(222)    | eZ<br>eL<br>MN<br>MEZ<br>F       | 15   | 21 | 40 |          | 18           | 7                  |   |
| " 30<br>(223)    | e<br>F                           | 17   | 15 |    |          |              |                    |   |
| " 30<br>(224)    | e<br>F                           | 21   | 40 |    |          |              |                    |   |
| " 31<br>(225)    | e<br>F                           | 1    | 18 |    |          |              |                    |   |
| " 31<br>(226)    | e<br>F                           | 15   | 55 |    |          |              |                    |   |
| Sept. 1<br>(227) | eL<br>Lz<br>F                    | 9    | 7  |    |          | 20           | 2                  | (227) Manila: $9^{\circ}45'N$ $126^{\circ}35'E$ , Philippinen Tief. |
| " 1<br>(228)     | eLN<br>LZE<br>F                  | 19   | 13 | 30 |          |              |                    |   |
| " 3<br>(229)     | eZ<br>eZ<br>F                    | 1    | 47 | 39 |          |              |                    |   |
| " 3<br>(230)     | iP<br>eS<br>eSS<br>eL<br>MN<br>F | 14   | 51 | 12 |          | 25           | 11                 | (230) $\Delta = 7000$ km.   |

| Datum<br>1940    | Phase  | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$ | Bemerkungen   |
|------------------|--|------|----|----|----------|--------------|--------------------|---|
|                  |  | h    | m  | s  |          |              |                    |   |
| Sept. 3<br>(231) | eL<br>MN<br>F  | 20   | 30 |    |          | 19           | 5                  |   |
| " 4<br>(232)     | eL<br>MN<br>F  | 19   | 43 |    |          | 19           | 8                  |   |
| " 6<br>(233)     | iz<br>eN<br>LN<br>LH<br>F                                | 3    | 2  | 34 | (+)      |              |                    | (233) $\Delta = 9000$ km?   |
| " 6<br>(234)     | eL<br>F  | 7    | 13 |    |          | 25           | 2                  |   |
| " 7<br>(235)     | eL<br>MH<br>F  | 20   | 17 |    |          | 25           | 4                  | (235) Manila: $9^{\circ}N$ $126^{\circ}50'E$ .  |
| " 8<br>(236)     | eL<br>F  | 10   | 53 |    |          |              |                    |   |
| " 9<br>(237)     | e<br>F   | 21   | 21 |    |          |              |                    | (237) Manila: $iP = 20h25m2s$ , gefühlt in Mindanao.  |
| " 9<br>(238)     | e<br>F   | 22   | 43 |    |          |              |                    |   |
| " 12<br>(239)    | e<br>F   | 1    | 16 | 30 |          |              |                    |   |
| " 12<br>(240)    | eP'<br>eS<br>ePS<br>ePPS<br>eSS<br>eSSS<br>eL<br>MN<br>F | 13   | 38 | 14 | (+)      |              |                    | (240) $\Delta$ etwa 13000 km.<br>Zürich: Nach Riverview stark verspürt in Rabaul, Bismark-Archipel. |
| " 15<br>(241)    | e<br>F   | 12   | 55 |    |          | 40           | 35                 |   |
| " 15<br>(242)    | e<br>F   | 15   | 10 |    |          |              |                    |   |

| Datum<br>1940     | Phase  | Zeit |    |    | Richtung | Periode | Amplitudo | Bemerkungen  |
|-------------------|--------|------|----|----|----------|---------|-----------|--|
|                   |        | h    | m  | s  |          |         |           |  |
| Sept. 19<br>(243) | iz     | 18   | 39 | 26 | —        | 26      | 26        | (243) $\Delta = 16500$ km.<br>Zürich: Nach Wellington 23°S 169°E, Ge-<br>gend von Neu-Kaledonien.<br>USCGS: 23°S 171°E, tiefer Herd.                           |
|                   | iP'    | 18   | 39 | 32 | —        |         |           |  |
|                   | iz     | 18   | 39 | 45 | —        |         |           |  |
|                   | iz     | 18   | 39 | 55 | —        |         |           |  |
|                   | iPP    | 18   | 43 | 28 | (-)      |         |           |  |
|                   | eSS    | 19   | 2  | 20 | —        |         |           |  |
|                   | eSSS   | 19   | 7  | 30 | —        |         |           |  |
|                   | eH     | 19   | 21 | —  | —        |         |           |  |
|                   | Lz     | 19   | 37 | —  | —        |         |           |  |
|                   | F      | 21   | 0  | —  | —        |         |           |  |
| " 20<br>(244)     | eL     | 0    | 59 | —  | —        | 26      | 26        |  |
|                   | F      | 1    | 30 | —  | —        |         |           |  |
| " 20<br>(245)     | e      | 14   | 50 | —  | —        | 26      | 26        |  |
|                   | F      | 14   | 55 | —  | —        |         |           |  |
| " 21<br>(246)     | iP'    | 13   | 57 | 17 | +        | 26      | 26        | (246) $\Delta = 13000$ km. h = 200 km.   |
|                   | ipP'   | 13   | 58 | 10 | (+)      |         |           |  |
|                   | iPP    | 12   | 58 | 32 | (-)      |         |           |  |
|                   | ipPP   | 13   | 59 | 16 | —        |         |           |  |
|                   | i(SPP) | 14   | 0  | 19 | —        |         |           |  |
|                   | iz     | 14   | 1  | 11 | —        |         |           |  |
|                   | iS'    | 14   | 4  | 0  | —        |         |           |  |
|                   | isS'   | 14   | 5  | 20 | —        |         |           |  |
|                   | ePS    | 14   | 8  | 12 | —        |         |           |  |
|                   | eSS    | 14   | 15 | —  | —        |         |           |  |
| F                 | 14     | 40   | —  | —  |          |         |           |  |
| " 22<br>(247)     | eE     | 4    | 1  | 0  | —        | 26      | 26        |  |
|                   | eLH    | 4    | 28 | —  | —        |         |           |  |
|                   | F      | 4    | 40 | —  | —        |         |           |  |
| " 22<br>(248)     | iz     | 23   | 4  | 38 | —        | 26      | 26        | (248) Zürich: $\Delta = 8000$ km, tiefer Herd.<br>Bucarest: $\Delta = 7060$ km.<br>Manila: $\Delta = 930$ km, tiefes Beben, gefühlt<br>in Butuan und Hinatuan. |
|                   | ez     | 23   | 6  | 56 | —        |         |           |  |
|                   | ize    | 23   | 10 | 59 | +        |         |           |  |
|                   | iH     | 23   | 14 | 13 | —        |         |           |  |
|                   | iH     | 23   | 14 | 53 | —        |         |           |  |
|                   | iH     | 23   | 15 | 20 | —        |         |           |  |
|                   | iz     | 23   | 16 | 46 | —        |         |           |  |
|                   | izH    | 23   | 17 | 55 | —        |         |           |  |
|                   | eH     | 23   | 21 | —  | —        |         |           |  |
|                   | F      | 23   | 26 | 20 | —        |         |           |  |
| " 23<br>(249)     | e      | 2    | 6  | —  | —        | 26      | 26        |  |
|                   | F      | 2    | 13 | —  | —        |         |           |  |
| " 23<br>(250)     | e      | 10   | 52 | —  | —        | 14      | 5         |  |
|                   | MEZ    | 10   | 55 | —  | —        |         |           |  |
|                   | eL     | 11   | 1  | —  | —        |         |           |  |
|                   | MH     | 11   | 2  | —  | —        |         |           |  |
| F                 | 11     | 20   | —  | —  | 16       | 8       |           |  |

| Datum<br>1940     | Phase         | Zeit  |    |    | Richtung | Periode | Amplitudo | Bemerkungen   |
|-------------------|---------------|-------|----|----|----------|---------|-----------|---|
|                   |               | h     | m  | s  |          |         |           |   |
| Sept. 23<br>(251) | e             | 19    | 48 | —  | —        | —       | —         |   |
|                   | F             | 19    | 56 | —  |          |         |           |   |
| " 24<br>(252)     | ez            | 1     | 16 | 6  | —        | —       | —         |   |
|                   | eL            | 1     | 45 | —  |          |         |           |   |
|                   | F             | 2     | 15 | —  |          |         |           |   |
| " 25<br>(253)     | eP            | 19    | 38 | 32 | —        | —       | —         | (253) Zürich: 37°N 50°E, Elurbs Kette,<br>Persien.  |
|                   | eS            | 19    | 44 | 10 |          |         |           |   |
|                   | eL            | 19    | 54 | —  |          |         |           |   |
| F                 | 20            | 10    | —  | —  | —        | —       |           |   |
| " 26<br>(254)     | iP'           | 4     | 15 | 44 | —        | —       | —         | (254) $\Delta = 15200$ km. h = 140 km.<br>Zürich: Nach Manila Gebiet der Santa-Cruz<br>und Solomon Inseln, tiefer als normal.<br>Bucarest: $\Delta = 2050$ km(!), h = 150 km. |
|                   | ipP'          | 4     | 16 | 18 | (+)      |         |           |   |
|                   | iPP           | 4     | 18 | 27 | +        |         |           |   |
|                   | ipPP          | 4     | 19 | 2  | —        |         |           |   |
|                   | (iScPcP)      | 4     | 19 | 16 | —        |         |           |   |
| F                 | 6             | 0     | —  | —  | —        | —       |           |   |
| " 29<br>(255)     | e             | 14    | 25 | —  | —        | —       | —         |   |
|                   | F             | 14    | 31 | —  |          |         |           |   |
| " 30<br>(256)     | e(P')         | 11    | 33 | 4  | —        | 19      | 3         | (256) $\Delta = 17500$ km?  |
|                   | e(PP)         | 11    | 37 | 5  | +        |         |           |   |
|                   | ez            | 11    | 46 | —  | —        |         |           |   |
|                   | e(SS')        | 11    | 57 | 0  | —        |         |           |   |
|                   | e(L)          | 12    | 39 | —  | —        |         |           |   |
|                   | eL            | 12    | 43 | —  | —        |         |           |   |
|                   | MH            | 12    | 46 | —  | —        |         |           |   |
|                   | Lz            | 13    | 34 | —  | —        |         |           |   |
|                   | F             | 13    | 40 | —  | —        |         |           |   |
|                   | " 30<br>(257) | e(P') | 14 | 30 | 20       |         |           |   |
| e(PP)             |               | 14    | 34 | 20 |          |         |           |   |
| e(SS)             |               | 14    | 54 | 20 |          |         |           |   |
| eL                |               | 15    | 39 | —  |          |         |           |   |
| MHZ               |               | 15    | 42 | —  |          |         |           |   |
| F                 | 16            | 45    | —  | 18 | 2        |         |           |   |
| Okt. 1<br>(258)   | e(P)          | 10    | 56 | 50 | —        | —       | —         | (258) $\Delta$ etwa 13000 km.   |
|                   | e(P')         | 11    | 0  | 30 |          |         |           |   |
|                   | e(S)          | 11    | 10 | 7  |          |         |           |   |
|                   | eLH           | 11    | 33 | —  |          |         |           |   |
|                   | eLZH          | 11    | 39 | —  |          |         |           |   |
| F                 | 12            | 30    | —  | —  | —        |         |           |   |
| " 1<br>(259)      | e             | 14    | 2  | —  | —        | —       | —         |   |
|                   | F             | 14    | 15 | —  |          |         |           |   |

| Datum<br>1940   | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$  | Bemerkungen |
|-----------------|-------|------|----|----|----------|--------------|---|-------------|
|                 |       | h    | m  | s  |          |              |   |             |
| Okt. 1<br>(260) | eZ    | 21   | 58 | 44 |          |              |   |             |
|                 | eH    | 22   | 23 | 30 |          |              |   |             |
|                 | eLH   | 22   | 45 |    |          |              |   |             |
|                 | eL    | 23   | 2  |    |          |              |   |             |
|                 | F     | 24   | 10 |    |          |              |   |             |
| " 2<br>(261)    | e     | 1    | 50 |    |          |              |   |             |
|                 | F     | 2    | 15 |    |          |              |   |             |
| " 2<br>(262)    | iP    | 3    | 28 | 7  | +        |              | (262) $\Delta$ etwa 9000 km.  |             |
|                 | eS    | 3    | 39 | 30 |          |              |   |             |
|                 | eSS   | 3    | 44 |    |          |              |   |             |
|                 | eSSS  | 3    | 47 |    |          |              |   |             |
|                 | eL    | 3    | 55 |    |          |              |   |             |
|                 | MH    | 4    | 0  |    | 20       | 5            |   |             |
|                 | F     | 4    | 20 |    |          |              |   |             |
| " 2<br>(263)    | eL    | 11   | 54 |    |          |              |   |             |
|                 | F     | 12   | 25 |    |          |              |   |             |
| " 3<br>(264)    | eL    | 1    | 59 |    |          |              |   |             |
|                 | MH    | 2    | 1  |    | 15       | 3            | (264) Manila: iP = 1 <sup>h</sup> 4 <sup>m</sup> 38 <sup>s</sup> , gefühlt in Nord-Luzon. |             |
|                 | F     | 2    | 10 |    |          |              |   |             |
| " 3<br>(265)    | e     | 15   | 29 |    |          |              |   |             |
|                 | F     | 15   | 35 |    |          |              |   |             |
| " 4<br>(266)    | eL    | 5    | 8  |    |          |              |   |             |
|                 | MN    | 5    | 12 |    | 22       | 11           |   |             |
|                 | F     | 5    | 45 |    |          |              |   |             |
| " 4<br>(267)    | iP    | 8    | 8  | 28 | (+)      |              | (267) $\Delta$ = 10000 km.  |             |
|                 | ePP   | 8    | 12 | 5  |          |              | Zürich: Nach JSA 20°.8S 70°.4W, in Inqui-   |             |
|                 | iS    | 8    | 19 | 19 |          |              | que (Chili) stark verspürt, h = 75 km.  |             |
|                 | eSS   | 8    | 25 | 40 |          |              | Manila: USCGS gibt 19°S 67°W, H =   |             |
|                 | eL    | 8    | 36 |    |          |              | 7 <sup>h</sup> 54 <sup>m</sup> 35 <sup>s</sup> .  |             |
|                 | MH    | 8    | 38 | 30 |          | 50           | 160   |             |
|                 | Mz    | 8    | 45 | 30 |          | 30           | 130   |             |
|                 | F     | 11   | 30 |    |          |              |   |             |
| " 5<br>(268)    | iP    | 14   | 51 | 6  |          |              | (268) $\Delta$ = 9100 km.   |             |
|                 | (ipP) | 14   | 51 | 17 |          |              | Manila: nach USCGS 9°N 84°W, H =  |             |
|                 | eSE   | 15   | 1  | 24 |          |              | 14 <sup>h</sup> 38 <sup>m</sup> 40 <sup>s</sup> .   |             |
|                 | eSSE  | 15   | 7  |    |          |              |   |             |
|                 | LN    | 15   | 15 |    |          |              |   |             |
|                 | LEZ   | 15   | 19 |    |          |              |   |             |
|                 | MHZ   | 15   | 23 |    | 20       | 12           |   |             |
|                 | F     | 16   | 0  |    |          |              |   |             |

| Datum<br>1940   | Phase  | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$   | Bemerkungen |
|-----------------|--------|------|----|----|----------|--------------|--|-------------|
|                 |        | h    | m  | s  |          |              |  |             |
| Okt. 6<br>(269) | eL     | 16   | 30 |    |          |              | (269) Starke Mikroseismen.   |             |
|                 | MN     | 16   | 33 |    | 19       | 7            |  |             |
|                 | Mz     | 16   | 33 |    | 19       | 10           |  |             |
|                 | F      | 17   | 5  |    |          |              |  |             |
| " 7<br>(270)    | eL     | 7    | 35 |    |          |              | (270) Manila: iP = 6 <sup>h</sup> 45 <sup>m</sup> 34 <sup>s</sup> , gefühlt in |             |
|                 | MH     | 7    | 40 |    | 20       | 5            | SO. Mindanao.  |             |
|                 | F      | 8    | 0  |    |          |              |  |             |
| " 11<br>(271)   | e      | 1    | 50 |    |          |              |  |             |
|                 | F      | 1    | 55 |    |          |              |  |             |
| " 11<br>(272)   | e      | 8    | 28 |    |          |              |  |             |
|                 | F      | 8    | 37 |    |          |              |  |             |
| " 11<br>(273)   | eP     | 18   | 56 | 9  |          |              | (273) $\Delta$ = 13300 km.   |             |
|                 | ePP    | 19   | 1  | 0  |          |              | Zürich: nach JSA 40°.7S 73°.6W, nach   |             |
|                 | ePPP   | 19   | 3  | 50 |          |              | BI 45°S 73°W.  |             |
|                 | iPS    | 19   | 10 | 56 |          |              |  |             |
|                 | ePPS   | 19   | 12 | 6  |          |              |  |             |
|                 | e(SS)  | 19   | 16 |    |          |              |  |             |
|                 | eL     | 19   | 42 |    |          |              |  |             |
|                 | ME     | 19   | 50 |    | 19       | 90           |  |             |
| Mz              | 19     | 50   |    | 19 | 70       |              |  |             |
| F               | 21     | 40   |    |    |          |              |  |             |
| " 13<br>(274)   | e      | 14   | 56 |    |          |              |  |             |
|                 | F      | 14   | 59 |    |          |              |  |             |
| " 15<br>(275)   | e      | 7    | 20 |    |          |              |  |             |
|                 | F      | 7    | 40 |    |          |              |  |             |
| " 16<br>(276)   | eL     | 13   | 23 |    |          |              | (276) Zürich: In Cittadella Pieve verspürt.                                    |             |
|                 | ME     | 13   | 24 |    |          |              |  |             |
|                 | Mz     | 13   | 25 | 30 | 20       | 14           |  |             |
|                 | F      | 13   | 45 |    | 15       | 10           |  |             |
| " 18<br>(277)   | eP     | 12   | 32 | 30 |          |              | (277) $\Delta$ = 3000 km.  |             |
|                 | eSE    | 12   | 37 | 0  |          |              | Bucarest gibt $\Delta$ = 1800 km?  |             |
|                 | e(ScS) | 12   | 39 | 0  |          |              |  |             |
|                 | eLN    | 12   | 40 |    |          |              |  |             |
|                 | MN     | 12   | 44 |    | 25       | 9            |  |             |
| eLz             | 12     | 47   |    | 16 | 6        |              |  |             |
| F               | 13     | 10   |    |    |          |              |  |             |
| " 20<br>(278)   | eL     | 11   | 46 |    |          |              | (278) Manila: gefühlt in S-Luzon.  |             |
|                 | MH     | 11   | 48 |    | 25       | 3            |  |             |
|                 | F      | 12   | 0  |    |          |              |  |             |

| Datum<br>1940    | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$  | Bemerkungen |
|------------------|-------|------|----|----|----------|--------------|---|-------------|
|                  |       | h    | m  | s  |          |              |   |             |
| Okt. 22<br>(277) | iP    | 6    | 40 | 31 | —        |              | (279) $\Delta = 1800$ km, Balkanbeben. iS nach Wiechert und Bosch.<br>Papierwechsel Galitzin 6.41—6.50.<br>Bucarest: warscheinlich Vrancea-beben, $45^{\circ}.9N$ $26^{\circ}.6E$ . |             |
|                  | iSE   | 6    | 43 | 38 |          |              |   |             |
|                  | F     | 7    | 28 |    |          |              |   |             |
| " 24<br>(280)    | eZ    | 20   | 34 | 52 |          |              | (280) Nach Manila Herdgebiet Chili.   |             |
|                  | eLH   | 21   | 0  |    |          |              |   |             |
|                  | eLE   | 21   | 5  |    |          |              |   |             |
|                  | eLz   | 21   | 7  |    |          |              |   |             |
|                  | F     | 21   | 35 |    |          |              |   |             |
| " 27<br>(281)    | iP    | 5    | 47 | 58 | +        |              | (281) $\Delta = 9000$ km, Mittel-Amerika.<br>USCGS: $10^{\circ}N$ $84^{\circ}W$ .<br>Zürich: Nach JSA $10^{\circ}.0N$ $84^{\circ}.7W$ .   |             |
|                  | iz    | 5    | 48 | 8  |          |              |   |             |
|                  | ePP   | 5    | 51 | 5  |          |              |   |             |
|                  | eE    | 5    | 57 | 40 |          |              |   |             |
|                  | eS    | 5    | 58 | 20 |          |              |   |             |
|                  | i(PS) | 5    | 59 | 10 |          |              |   |             |
|                  | eSS   | 6    | 3  | 50 |          |              |   |             |
|                  | eSSS  | 6    | 7  | 12 |          |              |   |             |
|                  | eL    | 6    | 15 |    |          |              |   |             |
|                  | ME    | 6    | 20 |    |          |              |   |             |
|                  | MN    | 6    | 20 |    |          |              |   |             |
|                  | Mz    | 6    | 20 |    |          |              |   |             |
|                  | F     | 8    | 45 |    |          |              |   |             |
| " 27<br>(282)    | eLH   | 11   | 29 |    | 20       | 2            |   |             |
|                  | F     | 11   | 38 |    |          |              |   |             |
| " 27<br>(283)    | e     | 20   | 52 |    |          |              |   |             |
|                  | F     | 20   | 56 |    |          |              |   |             |
| " 28<br>(284)    | eZ    | 1    | 14 | 45 |          |              |   |             |
|                  | LH    | 2    | 9  |    |          |              |   |             |
|                  | eLz   | 2    | 21 |    |          |              |   |             |
|                  | Mz    | 2    | 24 |    |          |              |   |             |
|                  | F     | 2    | 33 |    |          |              |   |             |
| " 28<br>(285)    | e     | 21   | 56 |    |          |              |   |             |
|                  | F     | 22   | 0  |    |          |              |   |             |
| " 30<br>(286)    | iS    | 3    | 28 | 5  |          |              | (286) Starke Mikroseismen.<br>Collmberg gibt: $\Delta = 6800$ km.   |             |
|                  | eN    | 3    | 32 | 20 |          |              |   |             |
|                  | eLH   | 3    | 34 | 20 |          |              |   |             |
|                  | Lz    | 3    | 43 |    |          |              |   |             |
|                  | F     | 4    | 20 |    |          |              |   |             |
| " 31<br>(287)    | e     | 5    | 50 |    |          |              |   |             |
|                  | F     | 6    | 0  |    |          |              |   |             |
| " 31<br>(288)    | (iP)  | 11   | 12 | 50 |          |              | (288) $\Delta = 4500$ km?<br>Starke Mikroseismen.   |             |
|                  | eSN   | 11   | 19 |    |          |              |   |             |
|                  | eL    | 11   | 24 |    |          |              |   |             |
|                  | F     | 11   | 30 |    |          |              |   |             |
|                  |       |      |    |    |          |              |   |             |

| Datum<br>1940   | Phase | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$                         | Bemerkungen  |
|-----------------|-------|------|----|----|----------|--------------|--|--|
|                 |       | h    | m  | s  |          |              |  |  |
| Nov. 5<br>(289) | eL    | 1    | 57 |    |          |              | Keine Registrierung 5 November 7.40—13.50. |  |
|                 | F     | 2    | 5  |    |          |              |  |  |
| " 6<br>(290)    | eL    | 16   | 49 |    |          | 25           | 4  | (290) Starke Mikroseismen.   |
|                 | MN    | 16   | 51 |    |          |              |  |  |
|                 | eez   | 16   | 56 | 20 |          |              |  |  |
|                 | F     | 17   | 5  |    |          |              |  |  |
| " 7<br>(291)    | i(P)  | 14   | 10 | 1  | —        |              |  | (291) $\Delta = 15000$ km?   |
|                 | i(S') | 14   | 19 | 42 |          |              |  |  |
|                 | e(S)  | 14   | 23 | 17 |          |              |  |  |
|                 | e(PS) | 14   | 26 | 10 |          |              |  |  |
|                 | Lz    | 14   | 55 |    |          |              |  |  |
|                 | F     | 15   | 15 |    |          |              |  |  |
| " 8<br>(292)    | eZ    | 10   | 53 | 50 |          |              |  | (292) Mikroseismen.  |
|                 | eH    | 11   | 15 | 50 |          |              |  |  |
|                 | eLH   | 11   | 41 |    |          |              |  |  |
|                 | eL    | 11   | 50 |    |          |              |  |  |
|                 | F     | 12   | 40 |    |          |              |  |  |
| " 10<br>(293)   | iP    | 1    | 42 | 39 | —        |              |  | (293) $\Delta = 1750$ km, Vrancea-beben.<br>Galitzin unentwirrbar, iS nach Bosch.<br>Bucarest gibt: $45^{\circ}.9N$ $26^{\circ}.6E$ , $H = 1h39m8s$ ,<br>$h = 140$ km. |
|                 | iS    | 1    | 45 | 43 |          |              |  |  |
|                 | F     | 6    | 30 |    |          |              |  |  |
| " 10<br>(294)   | e     | 21   | 22 |    |          |              |  |  |
|                 | F     | 21   | 40 |    |          |              |  |  |
| " 14<br>(295)   | e     | 11   | 17 |    |          |              |  | (295) bis (299): Starke mikroseismische Bewegung.  |
|                 | F     | 11   | 45 |    |          |              |  |  |
| " 17<br>(296)   | e     | 7    | 22 |    |          |              |  |  |
|                 | F     | 7    | 50 |    |          |              |  |  |
| " 17<br>(297)   | e     | 12   | 47 |    |          |              |  |  |
|                 | F     | 13   | 0  |    |          |              |  |  |
| " 17<br>(298)   | e     | 20   | 49 |    |          |              |  |  |
|                 | F     | 21   | 0  |    |          |              |  |  |
| " 18<br>(299)   | e     | 13   | 31 |    |          |              |  |  |
|                 | F     | 13   | 47 |    |          |              |  |  |
| " 19<br>(300)   | iP    | 15   | 13 | 57 | +        |              |  | (300) $\Delta = 9100$ km, Japanbeben.<br>Zürich: nach JSA $40^{\circ}.7N$ $142^{\circ}.3E$ , Küste von Japan.  |
|                 | ePP   | 15   | 17 | 3  |          |              |  |  |
|                 | ePPP  | 15   | 18 | 55 |          |              |  |  |
|                 | ePPPP | 15   | 20 | 55 |          |              |  |  |
|                 | iS    | 15   | 24 | 13 |          |              |  |  |
|                 | eSS   | 15   | 29 | 15 |          |              |  |  |
|                 | eLH   | 15   | 40 |    |          |              |  |  |
|                 | MN    | 15   | 54 |    |          |              |  |  |
|                 | ME    | 15   | 54 |    |          |              |  |  |
|                 | Mz    | 15   | 54 |    |          |              |  |  |
| F               | 17    | 40   |    |    |          |              |  |  |

| Datum<br>1940    | Phase                           | Zeit |    |   | Richtung | Periode<br>s | Amplitudo<br>$\mu$             | Bemerkungen |
|------------------|---------------------------------|------|----|---|----------|--------------|--------------------------------|-------------|
|                  |                                 | h    | m  | s |          |              |                                |             |
| Nov. 23<br>(301) | e<br>LEZ<br>F                   | 4    | 25 |   |          |              | (301) Starke Mikroseismen.     |             |
| " 25<br>(302)    | e<br>F                          | 7    | 33 |   |          |              |                                |             |
| " 26<br>(303)    | eL<br>F                         | 10   | 34 |   |          |              |                                |             |
| " 27<br>(304)    | eH<br>eL<br>ME<br>MH<br>F       | 15   | 19 |   | 40<br>25 | 17<br>13     | (304) Starke Mikroseismen.     |             |
| Dez. 1<br>(305)  | e<br>F                          | 21   | 39 |   |          |              | (305) und (306): Mikroseismen. |             |
| " 2<br>(306)     | e<br>F                          | 15   | 1  |   |          |              |                                |             |
| " 3<br>(307)     | e<br>F                          | 7    | 26 |   |          |              |                                |             |
| " 4<br>(308)     | eE<br>eH<br>eH<br>eL<br>MH<br>F | 13   | 36 |   |          | 33<br>15     | (308) Mikroseismen.            |             |
| " 14<br>(309)    | e<br>F                          | 2    | 29 |   |          |              |                                |             |
| " 17<br>(310)    | eL<br>MH<br>F                   | 15   | 39 |   | 30       | 8            | (310) Starke Mikroseismen.     |             |
| " 18<br>(311)    | eLE<br>Lz<br>F                  | 4    | 12 |   |          |              |                                |             |
| " 18<br>(312)    | eH<br>F                         | 6    | 30 |   |          |              |                                |             |
| " 19<br>(313)    | e<br>LEZ<br>F                   | 16   | 44 |   | 18       | 5            |                                |             |

| Datum<br>1940    | Phase                                      | Zeit |    |    | Richtung | Periode<br>s | Amplitudo<br>$\mu$   | Bemerkungen |
|------------------|--|------|----|----|----------|--------------|--|-------------|
|                  |  | h    | m  | s  |          |              |  |             |
| Dez. 21<br>(314) | e<br>ME<br>F                               | 0    | 23 |    |          | 15<br>6      |  |             |
| " 22<br>(315)    | iP'<br>eSS<br>eL<br>F                      | 12   | 51 | 33 |          |              | (315) Nach Zürich: JSA 13°S 178°W, USC GS 17°S 178°W, h = 220 km, Gegend der Fidschi-Inseln.               |             |
| " 22<br>(316)    | iP<br>ePP<br>iS<br>iz<br>eSS<br>eL<br>F    | 19   | 13 | 38 |          |              | (316) Nach Zürich: JSA 14°S 71°W, h = 250 km.  |             |
| " 24<br>(317)    | e<br>F                                     | 14   | 12 |    |          |              |  |             |
| " 25<br>(318)    | e<br>F                                     | 5    | 30 |    |          |              |  |             |
| " 25<br>(319)    | e<br>F                                     | 23   | 50 |    |          |              |  |             |
| " 27<br>(320)    | e<br>F                                     | 17   | 24 |    |          |              |  |             |
| " 28<br>(321)    | eP<br>iPP<br>e(S')<br>eSS<br>eL<br>ME<br>F | 16   | 51 | 40 |          |              | (321) $\Delta = 11500$ km.<br>Nach Zürich: JSA 18°.3 N 146°.7E, Marianen. USC GS 18°.1N 147°E, h = 100 km. |             |
| " 29<br>(322)    | e<br>F                                     | 18   | 50 |    |          | 32<br>30     |  |             |