On Mapping of Seismic Activity in Greece

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Summary. — For mapping the seismic activity the earthquake energy released per square degree per hundred years was determined, and the values obtained were used for drawing isoenergetical lines. Two maps constructed in this way for the periods 1710-1959 and 1841-1959 show clearly that the earthquake activity in the Greek area is concentrated, for the most part, along the large fault zone bordering the western and southern coasts of Greece. It is believed that this fault zone marks the trend of a marginal geosyncline, which is now in the course of development in the Eastern Mediterranean. The map of earthquake efficiency in Greece shows clearly that the main part of the earthquake energy released in the Greek area comes from two well developed centres of higher seismic activity, located along the above-mentioned large fault zone.

Résumé. — Pour la cartographie de l'activité séismique fut calculée l'énergie delivrée par degrés carrés tous les cents ans et les valeurs qu'en resultèrent furent employées pour tracer les lignes de même energie. Les deux cartes ainsi tracées, pour les périodes 1710-1959 et 1841-1959, montrent que l'activité séismique dans l'aire hellénique se trouve concentrée, pour sa plus grande partie, le long d'une large zone de fracture, qui embrasse les côtes occidentales et meridionales de la Grèce. On peut supposer que cette zone montre la direction d'un géosynclinal peripherique, qui actuellement se trouve en évolution dans la Mediterrannée orientale. Les deux cartes de l'éfficacité séismique de Grece montrent que la plus grande partie de l'énergie séismique delivrée dans l'aire hellénique derive de deux centres situés le long de la susdite large zone de fracture.

Riassunto. — Per la cartografia dell'attività sismica è stata calcolata l'energia che viene liberata da ciascun grado quadrato per cento anni, ed i valori risultati sono stati impiegati per tracciare le linee di ugual energia. Le due carte tracciate in questo modo per i periodi 1710-1959 e 1841-1959, dimostrano che l'attività sismica nell'area ellenica trovasi concentrata, per lo più,

lungo la larga zona di frattura, che abbraccia le coste occidentali e meridionali della Grecia. È da supporre che questa zona indica la direzione di una geosinclinale periferica, che attualmente si trova in evoluzione nel Mediterraneo orientale. Le due carte dell'attività sismica della Grecia indicano, che la maggior parte dell'energia sismica liberata nell'area ellenica, proviene da due centri situati lungo la suddetta larga zona di frattura.

Introduction.

The first really constructive contributions toward the solution of the problem for a quantitative determination of seismicity were made after the use of the concept of magnitude, which allowed the calculation of the seismic energy of eartquakes. The drawbacks of the methods applied in drawing seismic maps prior to the year 1953, were strongly emphasized by M. Båth (1953), M. Toperczer (1953) and others; (Sponheuer, 1953; Ritsema, 1953; Trapp, 1954). Consequently, there is no need to re-state them.

It is rather generally accepted that the quantitative representation of seismicity should be based, directly or indirectly, on the summarized seismic energy of earthquakes or on the roots of the energy values (Ritsema, 1954; Amand, 1956; Båth, 1956). Since these values must be determined mainly from strong earthquakes, comprising the overwhelming part of the total seismic energy of earthquakes, it was early recognized that this method could not afford a reliable measure of seismicity; this due to lack of instrumental data covering at least two seismic active periods (Galanopoulos, 1956). As known, the time interval between two seismic active periods may fluctuate between a few decennaries and two hundred years or more, while the instrumental data cover a period of approximately sixty years only. The suggested determination of the strain release quantity by the " frequency-of-occurrence " law, based primarily on weaker earthquakes (Riznichenco, 1959), has the drawbacks of the extrapolation and presupposes the existence of a dense network of high-sensitive stations. Since such a net is available in only a very few countries, an attempt was made to remove the obstacles presented in the quantitative determination of seismicity — being based on a direct summation of seismic energy released within at least two seismic active periods. This was done by developing a method for determining, from macroseismic data, earthquake magnitudes accurate enough to be compared with those determined from instrumental data. Believing the method developed for determining earthquake mag-

nitudes from macroseismic data to be successful (Galanopoulos, 1961a), the next step had been made for mapping of seismic activity in Greece.

METHOD APPLIED.

Firstly, a complete list of all earthquakes with $M \geqslant 4.8$ having occurred in the area limited by 34 and 42 latitudes and 19 and 29 longitudes for the 250- year interval 1710-1959 was made. In using the magnitude limit 4.8, all earthquakes strong enough to cause damages were included in the list. It is believed that very few damaging shocks remained unlisted. No use of earlier observations could be made, as they are too scanty to be considered in any way homogeneous. All the instrumental magnitudes were used. Where instrumental magnitudes were not available, the formula

$$M = 1.38 \log I_o r^2 - 1.63$$

was applied. When radius of perceptibility was unknown, the magnitude was determined from the maximum intensity through the following table.

Table I – VALUES M FOR VARIOUS I.

I	VI	VII	VIII	IX	X	XI
M	$4^3/_4$	$5^1/_2$	$6^1/_4$	$6^3/_4$	$7^1/_2$	8

The values given in this table are approximately the values determined from the mean formula

$$M = 0.67 I_o + 1.71 \log h - 1.4$$

derived by V. Karnik (1960), on the supposition that $h = 18$ km. In view of the unreliability of every magnitude-intensity relation (Galanopoulos, 1961b), a closer approximation should be meaningless. It is believed that the possible exaggeration in the magnitudes derived by the above-mentioned formulae, especially by the latter, is fairly compensated by the unlisted shocks and by the following method of averaging which was applied in the drawing of the « isoenergetical » lines.

The earthquake energy was calculated from the formula

$$\log E = 11.8 + 1.5 M .$$

For mapping the seismic activity the earthquake energy released in each area, limited by latitudes and longitudes (1° lat. × 1° long.), was now summarized. Where the epicentre was situated on the borderline between two adjacent areas or at the middle point of four areas forming a square, the energy released was divided equally among them. The energy was expressed in 10^{22} units, corresponding to the seismic energy of one earthquake of magnitude 6.8; this magnitude being almost equal to that of the " unified magnitude " scale and approximately in the middle of the range of earthquake magnitudes used. Under the assumption that the frequency of shocks at any given magnitude level is roughly 8 to 10 times that about one magnitude higher (Richter, 1958), the total energy released at lower magnitude levels is about one-third to one-half of the seismic energy of one erarthquake of magnitude 6.8.

The energy of each group of four adjacent areas forming a square was further summarized and divided by four. The resulting quantity, considered as the average value for the middle of the corresponding group, was reduced to the time interval of one hundred years. The values obtained in this way — being the values of the total energy released per square degree per 100 years — were used for drawing the lines of equal earthquake efficiency; hereafter called " isoenergetical " lines. The drawing of isoenergetical lines under this procedure is hardly subject to any personal views. It is nearly impossible to draw other contours which are not in contradiction to the values assigned to the boundaries of the square degrees of the grid system used. It is intuitively evident that, after this smoothing process, any errors in the course of the isoenergetical lines, produced from the small differences in the size of the square degrees and/or from uncertainties in the location of earthquakes, should be negligible. It seems, therefore, rather certain that no other map of earthquake efficiency could be constructed at present showing, in a clearer way, the seismic conditions prevailing in the region under consideration as a whole.

Additional mapping.

However, for a more detailed description of the seismicity of any region a supplementary map, showing the distribution of earthquake epicentres, is absolutely necessary. Of course, maps of this kind

are not easy to read. One has to study them closely before obtaining an idea of the real distribution of earthquake foci in depth, as well as in magnitude. To facilitate this reading as much as possible the earthquake magnitudes were divided into four classes and the epicentres

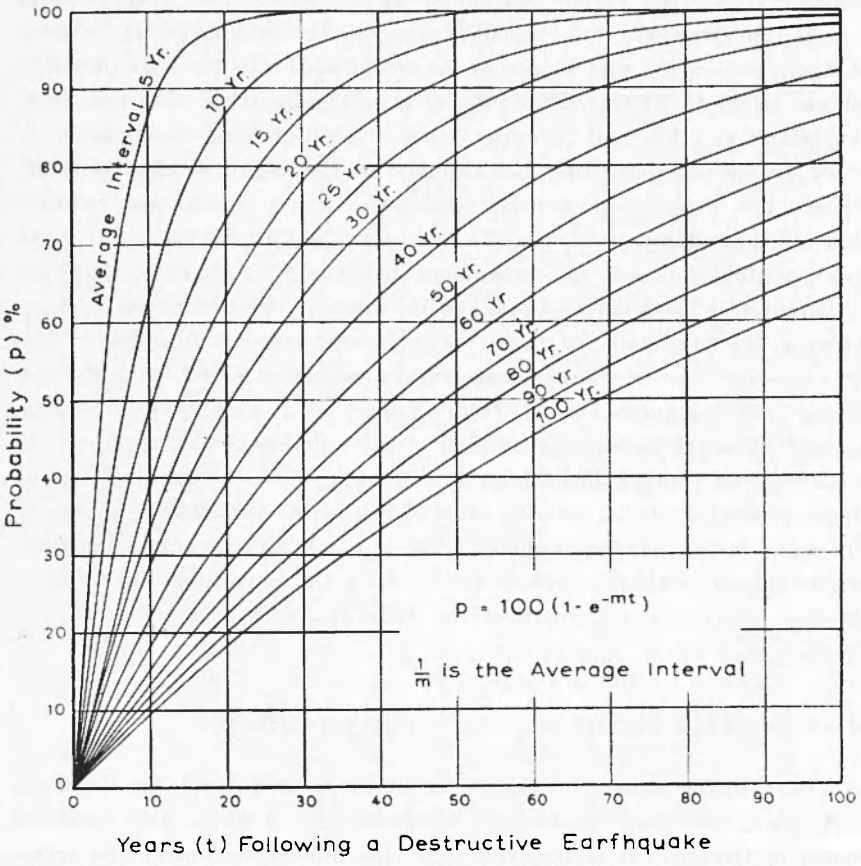

Fig. I – The probability of the next earthquake occurring within a certain time, given the average interval between earthquakes, after R. Dibble (1956).

were marked by appropriate symbols showing the class of the highest earthquake magnitude and the conventional class of the greatest focal depth reported for each earthquake location considered. Further, to get a clear insight into the interrelationship of the seismic conditions of the region, the contour lines of equal depth were also mapped. To present the distribution of earthquake epicenters in a manner easy for

the eye to grasp and to avoid any crowding of additional, necessary data, the surface geology, the boundaries of crystalline masses, the fault lines and the gravity anomalies were drafted in a separate map.

Finally, a graph of cumulative strain rebound against time was constructed for the region considered as a whole. The graph covers a period of 250 years, long enough to permit the calculation of the rate of strain generation and to reveal the irregularities in the rate of strain release (Benioff, 1951). The rate of strain generation obtained from this graph can be used for calculating the number of earthquakes of every magnitude occurring per century in the region under consideration. The calculation is based upon the above mentioned relation that one unit decrease in magnitude is accompanied by an eight or, at most, tenfold increase in earthquake frequency. Assuming that the actual intervals between earthquakes are random, relative to the average interval, the probabilty of an earthquake occurring within a given time after the last one of the same magnitude can be inferred from the following graph, suggested by R. Dibble (1956). The same procedure may be applied in calculating the number of earthquakes of every magnitude occurring per century in each square degree; the corresponding rate of strain generation being inferred from the map of earthquake efficiency. The same is true for the probability of an earthquake occurring in each square degree within a certain time, given the corresponding average interval between earthquakes of the same magnitude (see Fig. I).

Main features of earthquake activity in Greece.

Earthquake activity in the Greek area is concentrated, for the most part, along the large fault zone bordering the western and southern coasts of Greece. It is believed that this fault zone marks the trend of a marginal geosyncline, which is now in the course of development in the Eastern Mediterranean. The map of earthquake efficiency in Greece shows clearly that the main part of the earthquake energy released in the Greek area comes from two well developed centres of higher seismic activity, located along the above-mentioned large fault zone (see Fig. 1 and 3).

The surface of the centres, limited by the isoenergetical line of 4 shocks of magnitude 6.8 per square degree per 100 years, is approximately the same. In the centre situated along the western coast of Greece, the earthquake activity rises rapidly towards the middle region

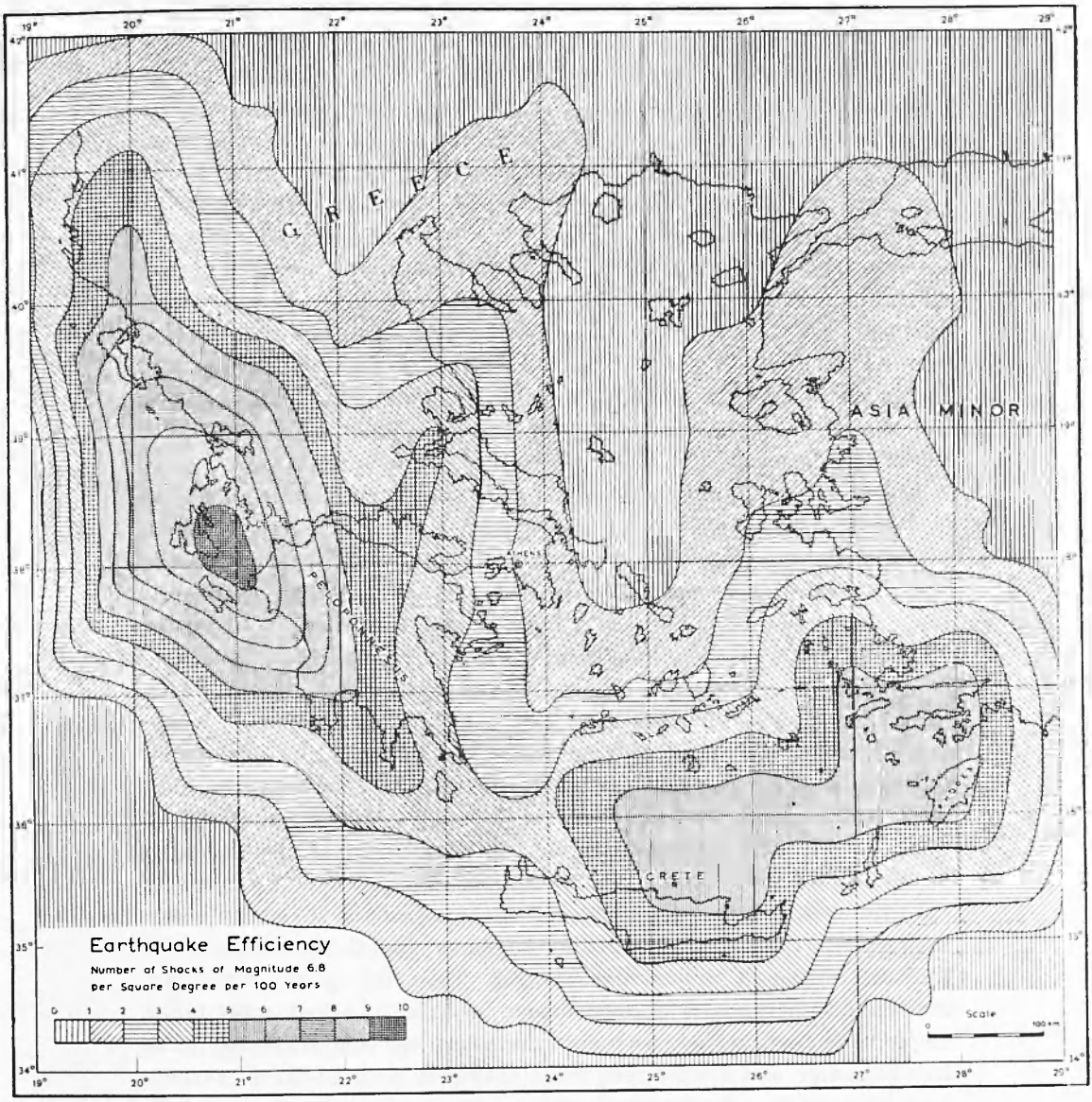

Fig. 1 – Earthquake efficiency in Greece derived from earthquake data over the period 1710-1959.

of the centre, and culminates between the islands of Cephalonia and Zante and the entrance to the Gulf of Patras, with 10 shocks of magnitude 6.8 per square degree per hundred years. In the centre situated in the south-eastern Aegean Sea, the earthquake activity rises from 4 to 5 and culminates in the area between Crete and Rhodes with six shocks of magnitude 6.8 per square degree per hundred years. However, the middle region of the Crete-Rhodes centre, limited by the isoenergetical line of five shocks per square degree per century, has approximately the same area as the region limited by the same isoenergetical line of the Cephalonia-Zante centre.

The middle region of the Cephalonia-Zante centre covers a very small area. The rate of strain release in this region is about one and one-half (1 ½) times the maximum rate presented in the Crete-Rhodes centre, which is confined between the crystalline masses of the central Peloponnesus-Crete system and the Attica-Cyclades and Lydian-Carian massifs. The Cephalonia-Zante centre, being developed westwards of the Pelagonian massif, shows a maximum of earthquake efficiency in an area extending along the Ionian furrow of the Alpine geosyncline.

The higher rate of strain generation in the area of the Ionian furrow indicates that the present-day continuation of the Alpine folding is much more active in this area than in the area of the neighbouring furrow of Pindus. This is well understood in view of the fact that the folding of the masses, having been deposited in the furrow of Pindus, is much older (Lower Oligocene) than the folding which occurred in the neighbouring area of the Ionian furrow (Middle Miocene). This being the case, the masses of the Ionian zone are subject to much more folding than those of the Pindus zone. It is understood that a part of the stiffness of the Pindus zone may be ascribed to the presence of ophiolites which are lacking from the Ionian zone (Aubouin, 1958).

However, the centering of earthquake efficiency in a small area between the islands of Cephalonia and Zante and the entrance to the Gulf of Patras still remains unexplained. The great extent of faulting, combined with the lack of any effusive material by which some faults might have been healed, may partly account for this centering. The lack of compensation below sea level, indicated by a Bouguer anomaly near zero over the island of Cephalonia, and a negative Bouguer anomaly (— 76 mgals) over the shelplateau between Cephalonia and the entrance to the Gulf of Patras, may also account for a part of the high rate of strain release presented in this area. The operating agent for the lack

of compensation occurring in this region, is, presumably, the alluvial deposit of great masses of the Acheloos River which flows into the Gulf of Patras.

The two centres mentioned above are connected by a bridge of minor earthquake activity, determined by the relatively greater stiffness of the central Peloponnesian-Cretan massif (Renz, 1940). In general, the earthquake activity occurring in the intermediate masses *(Zwischengebirge)* is confined to their outer margins; these margins having been more strongly affected by post-Pleocene faulting. Although the mean rate of strain generation in these margins is relatively low, and severe earthquakes are rather rare, the range of earthquake magnitudes is quite the same as the range in the areas of higher seismic activity. Severe shocks at any magnitude level do occur in these margins, but only at great time intervals.

The earthquake activity occurring in the main body of the Pelagonian, Attica-Cyclades and Lydian-Carian crystalline masses is almost the same, but markedly less than that in the central Peloponnesian-Cretan massif. Earthquake activity is relatively much poorer in the Rhodopian massif; this being the oldest crystalline mass occurring in the Greek area. The central Peloponnesian-Cretan massif is, presumably, the youngest crystalline mass encountered in the region under consideration.

Minor features of earthquake activity in Greece.

The map of earthquake epicentres, which have been active in the Greek area since the beginning of the eighteenth century, shows a rather normal distribution. In spite of the great number of epicentres having been mapped, there is no marked trend of delineation of tectonical lines. A Milky-Way-like swarming of epicentres extending from Thessaly to the Cephalonia-Zante region marks, roughly, a zone of disturbance trending southwest-northeast, which was particularly active during the period 1953-1958. The large fault zone extending along the western coast of Greece is hardly delineated on the map showing the distribution of earthquake epicentres (see Fig. 2 and 3).

Very interesting is the abrupt lack of epicentres on the northwest side of the fault-line which is marked by an alignment of very active earthquake foci and by the steep slope running along the western coasts of the islands of Cephalonia and Leukas. This probably indicates that the system of faults of the east side of the gulf-trough of Taranto does

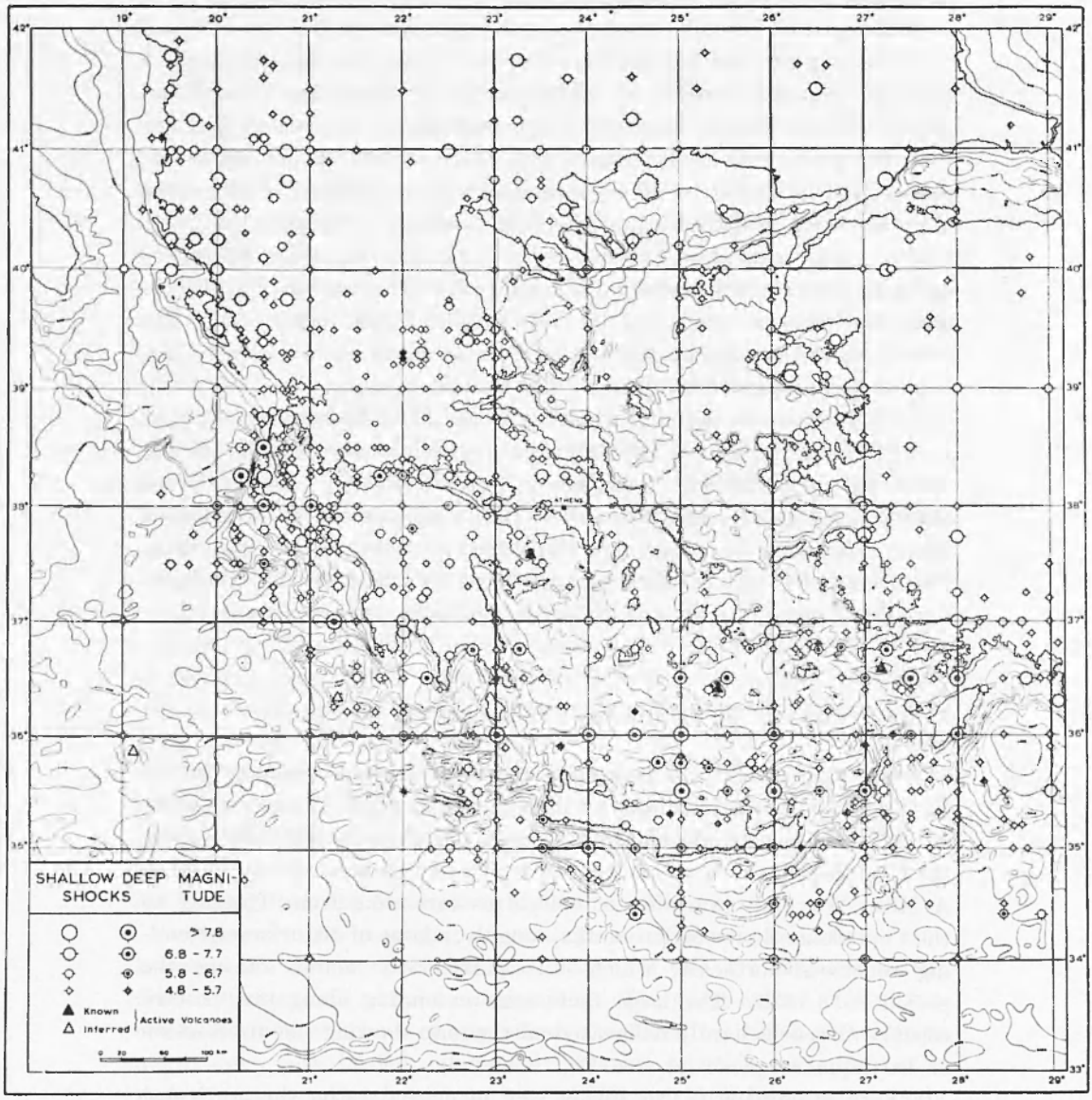

Fig. 2 – Shallow and intermediate shocks with $M \geqslant 4\,^3/_4$ occurred in the Greek area during the period 1700-1960. The depth contours after M. Pfannenstiel (1960).

not extend very far to the southeast, and does not form a second fracture zone parallel to the vast Ionian fracture as claimed by A. Sieberg (1932) and M. Pfannenstiel (1960). A fracture zone which is well-delineated by the epicentre distribution and the steep slope encountered westwards of Zante, beginning southwest of Cephalonia and running in a southeasterly direction, can hardly be considered a southeastern continuation of the tectonic trough of Taranto.

The " Peloponnesian Trench " is rather poorly marked by a series of epicentres aligned in a southeasterly direction east of the high plateau of Strophades. The focus of the great, probably deep shock of August 27, 1886, is located close to the eastern fault of this rift valley. In the words of M. Pfannenstiel (1960), " the eastern fault of the Peloponnesian Trench is one of the steepest displacement-planes of the entire Mediterranean. In a six-kilometer horizontal distance the ocean floor falls nearly three kilometers into the deep ". One of the two great earthquakes having occurred in the Greek area in the twentieth century, the deep shock of August 11, 1903, (M — 8.3) is located close to the highly-faulted region which lies further to the south. The deepest point of the Mediterranean (— 5015 m) is also encountered in this « high fracture zone with the enormous tectonic collapse-structures » (Pfannenstiel, 1960).

It is interesting to note the rather abrupt diminuation of earthquake activity in the Ionian deep-sea basin and particularly in the region of sixteen sea-mountains, which are purported by M. Pfannenstiel (1960) to be submarine volcanoes. That two of these (35°51′ N, 19°05′ E; 36°20′ N, 21°17′ E) " were still volcanically active in 1886 " is very questionable. The " flame " and the " thick, black smoke " observed in 1886 on August 17 and 27, respectively, in the neighbourhood of the sea-mountains mentioned above may have arisen from the inflamation of an anthracite cargo, which occurred at that time about two hundred nautical miles from Malta aboard a coal-carrier bound from that island for Piraeus (Galanopoulos, 1941). A submarine eruption off the southwestern coast of the Peloponnesus should have triggered tsunamis, similar to those observed in 1650 during the eruption of the submarine volcano of Coloumbo (Galanopoulos, 1960). Since volcanic rocks have not yet been picked up from the tops of these sea-mountains, this very important problem of the existence of submarine volcanoes in the region of the Ionian Sea is open to question.

In the area of Crete and the Dodecanese Islands the earthquake epicentre distribution is rather uniform. However, the mean rate of earthquake occurrence is relatively higher in the complex of rift valleys

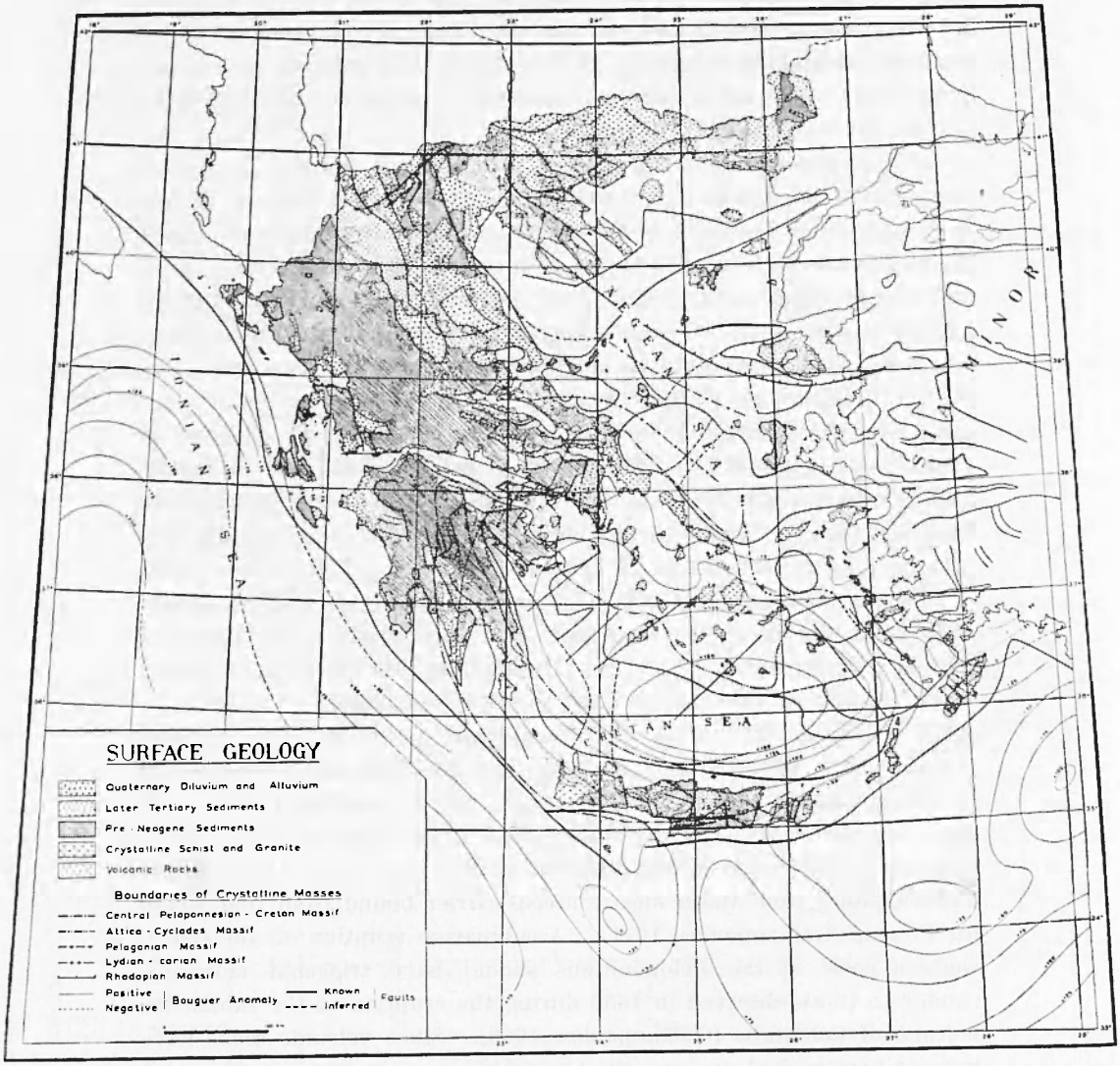

Fig. 3 – Geotectonic map of Greece. Fault lines after A. Philippson (1898), K. Osswald (1938), A. Sieberg (1932) and H. Reck (1936). Boundaries of crystalline masses after C. Renz (1940). Gravity contours after M. Pfannenstiel (1960).

and heaved blocks encountered between Eastern Crete, the Cyclades and Dodecanese Islands; this area having been more strongly affected by early, Pleistocene breaking-down of the "Aegean continent", which extended between continental Greece and Asia Minor. The first great, probably deep earthquake which occurred in the Greek area during the nineteenth century, the renowned shock of October 12, 1856, was located off the north coast of Eastern Crete. The second great, deep earthquake ($M = 8.2$) in this area during the twentieth century occurred near the northeastern coast of Tilos Island on 26 June, 1926. The earthquake activity in the area of southern Crete tends to be concentrated on the rough relief along the coastline of the island. In general, the earthquake epicentres have a trend to be situated on the flanks of sea troughs and small sea basins encountered in the Aegean Sea. A similar trend is noted in the regions bordering on the Ionian and Lybian deep-sea basins. This reminds of the earthquake events occurring on a much larger scale round the main basin of the Pacific Ocean.

Earthquake activity is fairly poor in the shelf which bears the Cyclades. This is especially true for the islands situated north of the 37th parallel, and particularly for the easternmost of these. Ikaria seems to belong to the latter group (Galanopoulos, 1956 *a*).

The floor of the northern Aegean Sea, although comparatively younger (Sieberg, 1932; Seidlitz, 1931), is much more stable than that of the southern Aegean Sea. Earthquake activity in the northern Aegean Sea is confined to the Eastern Sporades (Chios, Lesbos), tectonically cut off from Asia Minor, and to a minor extent to the Thracian Sporades (Lemnos, Tenedos, Samothrace), situated on both sides of the "Xeros-Graben". The rate of earthquake occurrence is comparatively higher in the region of the Northern Sporades (Skiathos, Skopelos), but the shocks coming from this region have never been strong enough to cause severe destruction. Earthquake activity is almost negligible in southern Thrace, as well as in the region of the Western Macedonian basins: the latter situation being rather unexpected in view of the great extent of early Pleistocene dislocations encountered in this area.

Earthquake occurrence in the Canal of Atalanti is most interesting because the severe earthquakes occurring in this region are often associated with visible faulting. The first known earthquake faulting in this region associated with a severe tsunami occurred in 426 B. C. This was probably the first earthquake associated with faulting and tsunamis recorded in the earthquake history of the world. Severe earthquakes associated with faulting and tsunamis occurred also in 551 A. D. The

destructive earthquakes of April 20 and 27, 1894, near the coast of Locris were also associated with considerable development of faulting. The fault trace was nearly straight for a distance of 55 kilometers.

Two earthquakes of magnitude 6 $^3/_4$, which originated in southern Bulgaria on April 14 and 18, 1928, were associated with two faults, nearly parallel, thirteen to sixteen kilometers apart. The over-all length of the southern group of traces formed in the two earthquakes was 105 kilometers (Richter, 1958).

A rejuvenation of fault scraps trending east-southeast-west-northwest for a distance of about twelve kilometers was observed in the eastern Chalcidike on 26 September, 1932. The earthquake was of magnitude 6.9 (Georgalas-Galanopoulos, 1953).

The most recent earthquake associated with a clear and well-authenticated faulting is the earthquake of magnitude 7.2 which originated in northeastern Anatolia on March 18, 1953. There was a large fault trace about fifty kilometers in length.

The earthquake region of the gulf-trough of Corinth is rather famous as an area of large earth slumps and cable breaks produced by severe earthquakes. The destruction of Helice in 373 B.C. is well-ascribed to such a large slump. The effects of the earthquake of December 26, 1861, appear to have been merely a smaller repetition of those events which occurred in 373 B. C. Cable breaks, produced by severe earthquakes, were reported from this region on September 9, 1888, and on August 25th, 1889.

The city of Corinth does not deserve it's reputation as the most earthquake-prone region of Greece. The time interval of severe earthquakes, of magnitudes below 6 ½, amounts to about seventy years. On the other hand, Athens is far from being immune from earthquakes. The existence of a seismic active focus about twenty kilometers from the Athens Observatory, and the extension of the city on dilluvial and alluvial grounds, combined with the experiences of the past (Galanopoulos, 1956 *b*), points out that Athens, or at least the newer quarters of the city, cannot be considered earthquake-safe.

The greater majority of earthquakes originating in the Greek area are certainly of a tectonic origin. However, a local shock in Elata, on Chios Island, on 22 August, 1949 (Galanopoulos, 1954), the Grecochori shock in Epirus, on 4 February, 1958, and two local shocks in Kato Korakiana, on Corfou Island, on 19 April, 1960, had the features of collapse earthquakes. Damage produced by these shocks was

confined to a very small region. Volcanic shocks originating in the area of the active volcano of Santorin are of a harmless nature. The Methana volcano has ceased to be active since 282 B. C. An eruption of the Nisyros volcano in 1422 A. D. has been reported. No other volcano in the Greek area has been recorded active in historical times.

Deep earthquakes of intermediate depth do occur in almost every region of the Greek area, but they show a clear trend to be concentrated in the southern Aegean Sea. The deepest shock in the area under consideration ($h = 200$ km), reported up to the present, had it's focus in this region (January 16, 1938).

Tsunamis observed on the coasts of Greece from ancient times up to the present have already been reported in detail (Galanoponlos, 1960).

STATISTICS.

The number of earthquake foci which were active in the Greek area during the 250-year interval, 1710-1959, total 642. During the interval considered, 389 foci were active only once, 203 foci were active 2 to 5 times, 29 foci 6 to 10 times and 21 foci were active more than 10 times. Among the active foci, 578 had a normal depth, 25 foci had an intermediate depth and 39 foci were mixed; i. e., the same locations occasionally released surface and intermediate shocks. Of the 642 active foci in the Greek area, 441 foci released shocks with $M \leqslant 5.7$, 112 foci released shocks with $M < 6.7$, 74 foci released shocks with $M \leqslant 7.7$ and 15 foci released shocks with $M \leqslant 8.7$. During the 250-year interval under consideration there were released: 1,308 shocks with $M = 4.8$-5.7, 242 shocks with $M = 5.8$-6.7, 111 with $M = 6.8$-7.7, and 15 shocks with $M \geqslant 7.8$. The data given above may be summarized as follows:

	M			
	4.8	5.8	6.8	7.8
N	6.70	1.47	0.50	0.06
$\log N$	0.83	0.16	— 0.30	— 1.22

where N is the number of shocks of magnitude M or greater per one year. These values fit rather closely to $\log N = 4.03 - 0.66\ M$.

For the world at large the frequency of shocks at any given magnitude level is closely represented by the equation: $\log N = 8.2 - 1.0\ M$

(Richter, 1958). Thus, the logarithm of the ratio of the number of smaller shocks in the world to those in the Greek area is approximately 4.17; this makes the ratio of numbers about 15,000 to 1. However, shocks of magnitude 6.8 and over should occur in the Greek area on the average of 35 per century, or one every 3 years. The logarithm of the ratio of the number of shocks of magnitude 6.8 and over in the world to those in the Greek area is approximately 1.86; this makes the ratio of numbers about 70: 1. That is, the Greek area under consideration accounts for roughly one percent of the seismicity of the earth.

The graph of the accumulated sum of the increments $E^{1/2}$ against time reveals that, either the rate of strain release has changed abruptly since circa 1840, or the data available are uniform only since that time. The graph consists of two branches. The slope of the first branch is about 0.93 and that of the second about 3.27. Since both branches are nearly linear, it is reasonable to assume that the change of the graph is due to an improvement of data collecting procedure. As a matter of fact the change of the graph coincides with the first reliable list of shocks in Greece, published by Julius Schmidt, a former director of Athens Observatory (Schmidt, 1879).

Discarding the data available prior to 1840, there remain: 1,292 shocks with $M = 4.8$-5.7, 228 shocks with $M = 5.8$-6.7, 81 with $M = 6.8$-7.7 and 12 shocks with $M \geqslant 7.8$. Thus, for the remaining 119-year interval, 1841-1959, we have:

	M			
	4.8	5.8	6.8	7.8
N	13.55	2.70	0.78	0.10
log N	1.13	0.43	— 0.11	— 1.00

These values correspond very well to $\log N = 4.48 - 0.69\,M$. This makes the ratio of the number of smaller shocks in the world to those in the Greek area about 5,300 : 1. Shocks of magnitude 6.8 and over should occur in the Greek area on the average of 62 per century, or 2 every 3 years. Shocks of magnitude 7.2 and over should occur on the average of 31 per century or one every 3 years. The logarithm of the ratio of the number of shocks of magnitude 6.8 and over in the world to those in the Greek area is approximately 1.63; this makes the ratio of numbers about 43 : 1. That is, the Greek area under consideration accounts for roughly 2% of the seismicity of the earth. This rather high percentage is due to the fact that, in the Greek area, the frequency of shocks at any given magnitude level, according to the above formula, is rougly 5 times that about one magnitude higher.

The slope of the graph N versus E in the double log-coordinate system equates to 0.410 for the entire time interval, 1710-1959, and to 0.436 for the 119-year interval, 1841-1959. Here N denotes the number of earthquakes of a given energy class, log E, having been observed in the Greek area under consideration within the corresponding time intervals. The values found are quite compatible to the average value 0.43 found for a number of regions by J. Riznichenco (1959). This is additional evidence that the magnitude determination from macroseismic data, by means of the lately developed formula (Galanopoulos, 1961a), is fairly reliable.

Additional remarks.

In view of the fact revealed by the graph of cumulative strain rebound against time, a new map of earthquake efficiency in Greece was constructed. The new map covers the 119-year interval 1841-1959, for which period the data available were proved to be thoroughly homogeneous (see Fig. 4).

The new map reveals some details in the distribution of earthquake activity in the area considered, which were not evident in the first map, but the general trend of the isoenergetical contours is almost the same in both maps (see Fig. I and 5).

The two centres of higher earthquake activity appear again, but the earthquake activity rises towards their middle regions to the same rate of 12 shocks of magnitude 6.8 per square degree per hundred years in both centres. The middle region of the centre situated in the southeastern Aegean Sea was confined to the area between Rhodes, Karpathos and Kos. In this area the Bouguer anomaly gradient is steeper, and almost identical with the gradient occurring in the middle region of the Cephalonia-Zante centre. The contour of the Bouguer anomaly, near zero, runs over the islands of Rhodes and Kos just the same as that over the island of Cephalonia (see Fig. 3).

Two secondary centres of higher activity appeared within the two tongues of Cephalonia-Zante centre. The centre revealed in the northeastern tongue is well related with the area where the channel of Trikkeri crosses the channel of Atalanti. Both these channels are bounded by faults. The second centre in the northwestern tongue is associated with the occurrence of the Vutrinto lake in the St. Saranta-Delvinon region.

The bridge of minor activity connecting the two main centres in the Ionian and southern Aegean Seas is better expressed in the new map. The same is true for the gulf of low earthquake activity located

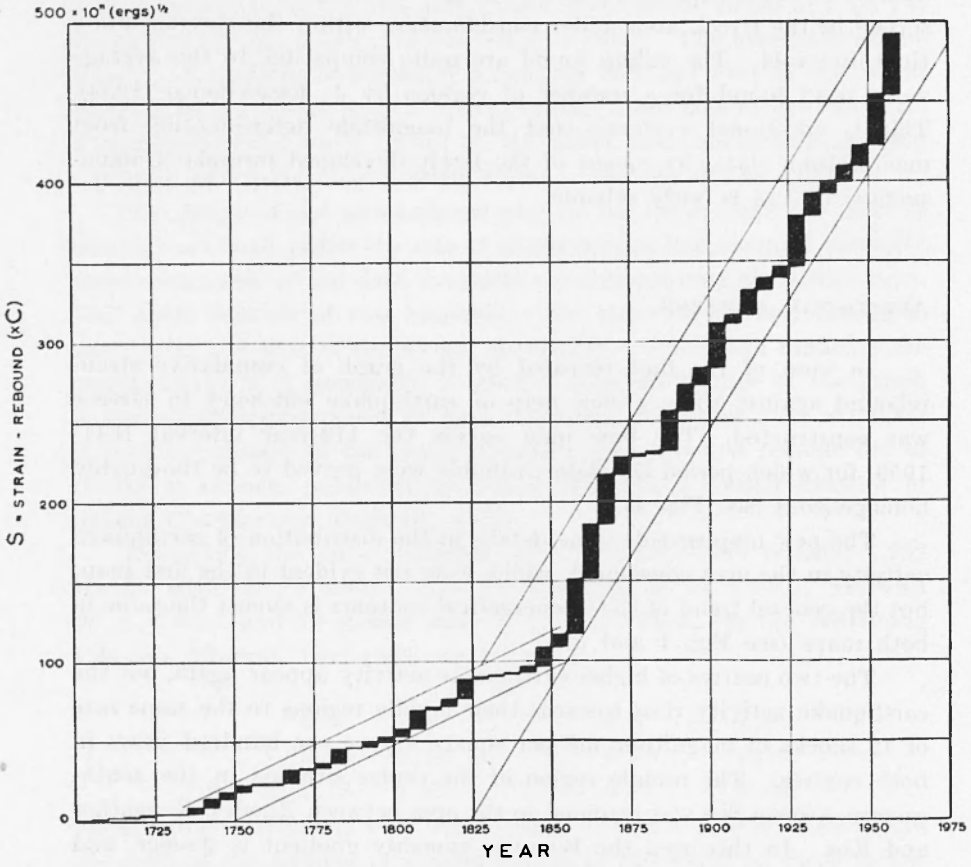

Fig. 4 – Rate of strain release for all earthquakes of magnitude $\geqslant 4\ ^3/_4$ occurred in the Greek area bounded by the parallels of 34° N and 42° N and the meridians of 19° E and 29° E during the period 1700-1960.

in the northern Aegean Sea, which separates the two parallel tongues of the above-mentioned main centres. A long, narrow island of very low activity in the middle of this gulf makes the separation of the tongues more distinct.

For reasons of comparison we intend to construct in the near future another map of earthquake efficiency in Greece based on values derived from the relation (15) found by M. Båth (1960). It would be very in-

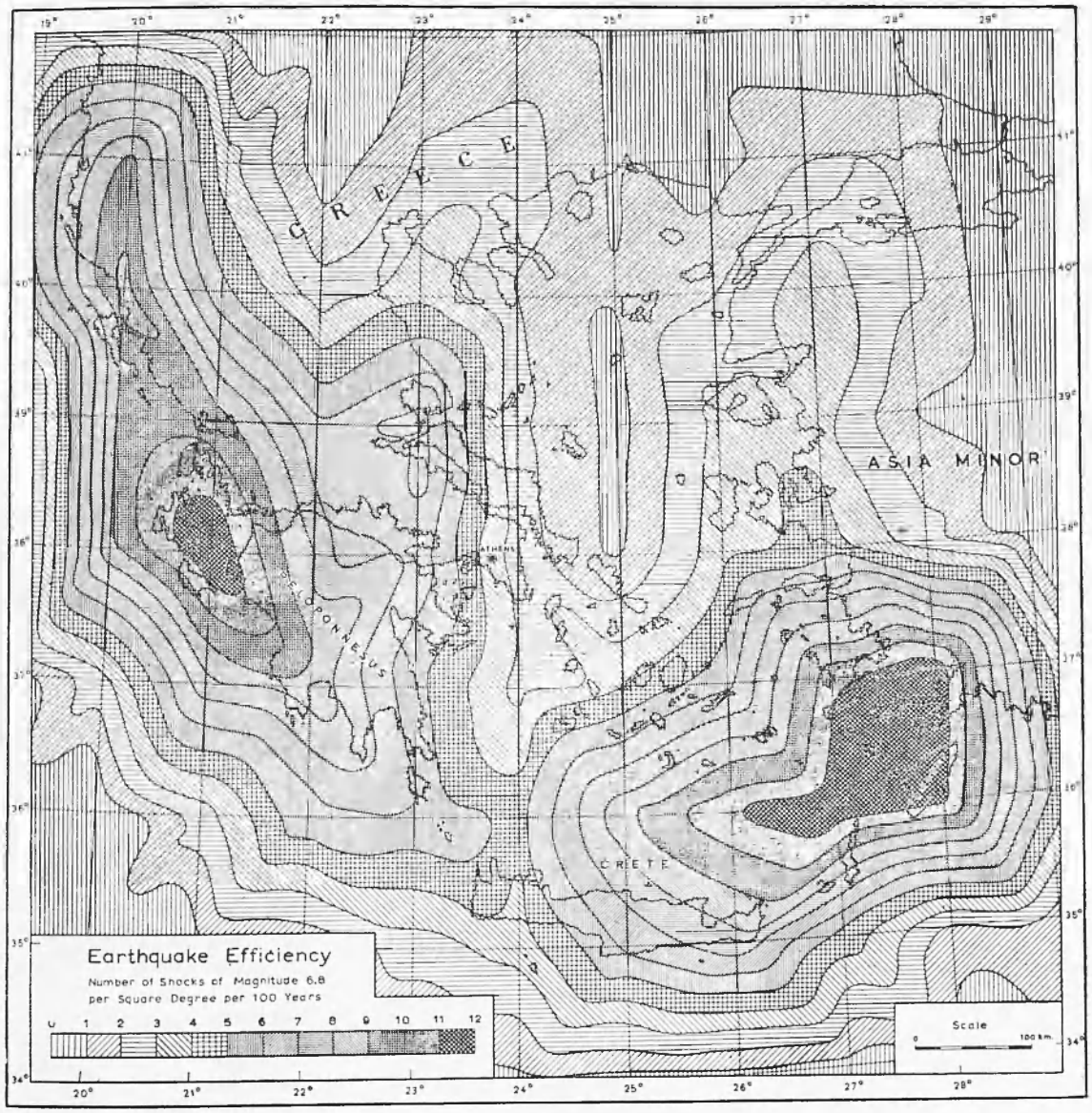

Fig. 5 – Earthquake efficiency in Greece derived from earthquake data over the period 1841-1959.

teresting to learn if there are any differences in working with the total seismic energy derived from the relation (15) instead of using the directly-given data.

ACKNOWLEDGMENT.

The author is much-indebted to the student Miss M. Tsonou for the plotting of the accumulated sum of the elastic strain-rebound increments against time and for her help in making the list of the shocks and in checking the values of the total seismic energy released in each square degree.

Table I – EARTHQUAKES OF MAGNITUDE $\geqslant 4\,^3/_4$ OCCURRED IN THE GREEK AREA BOUNDED BY THE PARALLELS OF 34° N AND 42° N AND THE MERIDIANS OF 19° E AND 29° E DURING THE PERIOD 1700-1960

(The first column gives the year, month, and date of the shock. The second column gives the coordinates of the epicenter. The accuracy of the determination is indicated by giving the coordinates to full degrees, to half or quarter degrees, or to tenths of a degree. Shocks assigned to the same epicenter are listed together. Column 3 gives the focal depth in km. If no determination is available, the range of depth is indicated: n = normal, i = intermediate, d = deep. Column 4 gives the magnitude in the Richter scale to quarter units, or to tenths of a unit. Magnitudes assigned by Gutenberg and Richter, by Båth and by Karnik are indicated by GR, B and K, respectively. All the instrumental magnitudes assigned by Athens are followed by A. The macroseismic magnitudes determined from the radius of perceptibility and the maximum intensity are followed by an asterisk. If none of the above symbols appears, it means that the magnitude was estimated either from the maximum intensity or from the maximum epicentral distance up to which the shock was recorded).

Date	Location		Depth	Magnitude
1935, Aug. 3	36° N,	19° E	n	$5\,^1/_4$ A
1925, Febr. 7	37° N,	19° E	n	$5\,^1/_2$ GR
1939, Aug. 9	40°.0N,	19°.0E	n	6.1*
1948, May 7			n	5.2*
May 26			n	5.5*
1922, Apr. 11	40°.5N,	19°.2E	n	$4\,^3/_4$
1934, Febr. 4	41° $^1/_2$N,	19° $^1/_4$E	n	$5\,^1/_2$ GR
1958, Jun. 10			n	5 A
1920, Oct. 13	34°.7N,	19°.3E	n	$4\,^3/_4$ A
1947, Dec. 9	41°.1N,	19°.3E	n	5.5 K
1953, March23	38°.1N,	19°.4E	n	5 A
1912, Apr. 21	37° $^1/_2$N,	19° $^1/_2$E	n	$5\,^3/_4$ GR
1930, Dec. 2	40°.0N,	19°.5E	n	$6\,^3/_4$
1932, Aug. 3			n	5 A
1866, Jan. 2	40° $^1/_4$N,	19° $^1/_2$E	n	$6\,^3/_4$
Febr. 28			n	$6\,^1/_4$
March 1			n	$4\,^3/_4$
March 6			n	$6\,^1/_4$
March13			n	$5\,^1/_2$
1869, Aug. 14			n	$6\,^3/_4$
1893, Jun. 14			n	$7\,^1/_2$
1895, May 13			n	$6\,^3/_4$
1930, Dec. 4			n	$4\,^3/_4$
Dec. 6			n	$4\,^3/_4$
1931, Apr. 4			n	$5\,^1/_2$

Table 1 (cont.)

Date	Location		Depth	Magnitude
1833, Jan. 19	40° 1/2N,	19° 1/2E	n	6.8*
1851, Oct. 12			n	7.1*
1859, March13			n	6 1/4
1862, Oct. 4			n	6 3/4
1866, March 2			n	6 1/4
March 2			n	6 3/4
March 2			n	5 1/2
1869, March18			n	5 1/2
1897, March 5			n	4 3/4
1927, Jul. 23			n	4 3/4
1930, Nov. 21			n	6.0 GR
1931, Sept. 13			n	6.0*
1923, Dec. 27	41° N,	19° 1/2E	n	5 1/2
1939, May 20			n	5 1/2 GR
1959, Aug. 17			n	5.8 B
Aug. 17			n	5 A
Aug. 18			n	4 3/4 A
Oct. 5			n	5.5* B
1926, Dec. 17	41°. ON,	19°. 5E	n	5 1/4 A
Dec. 17			n	6.2*
Dec. 17			n	6.5*
1816 —	41° 1/4N,	19° 1/2E	n	5 1/2
1869, Sept. 1			n	6 1/4
1870, Sept. 28			n	6.2*
1860, May 16	41° 1/2N,	19° 1/2E	n	6 1/4
1896, Febr. 9			n	4 3/4
Febr. 10			n	6 1/4
1907, May 4			n	4 3/4
1923, Oct. 9			n	4 3/4
1948, Aug. 27	41°. 7N,	19°. 5E	n	5.4 K
Aug. 27			n	4 3/4
1852, March—	41° 3/4N,	19° 1/2E	n	4 3/4
Aug. 26			n	6 1/4
1895, Aug. 6			n	6 3/4
1940, Febr. 23	40°. 5N,	19°. 6E	n	5 1/2 A
1959, Sept. 1	41°. ON,	19°. 6E	n	5.9 B
1917, Nov. 28	37°. 5N,	19°. 7E	n	5.0*
1925, Nov. 9			n	5 A
1926, Febr. 8			n	5 A
1957, Nov. 14	39°. 8N,	19°. 7E	n	5 A
1941, Sept. 15	40°. 2N,	19°. 7E	n	5 A
1959, Dec. 10	37° 1/2N,	19° 3/4E	n	4 1/2
1960, May 19	37° 3/4N,	19° 3/4E	n	4 3/4

Table 1 (cont.)

Date	Location		Depth	Magnitude
1858, Oct. 10	40° 1/4N,	19° 3/4E	n	6.8*
1859, Sept. 12			n	6 1/4
1871, Febr. 26	40° 1/2N,	19° 3/4E	n	4 3/4
1957, Sept. 6			n	5 1/4 A
1959, Oct. 7	41° N,	19° 3/4E	n	5.9*
1937, March 6	39°. 6N,	19°. 8E	n	5 A
1945, Apr. 19			n	4 3/4 A
1955, Oct. 2	39°. 8N,	19°. 8E	n	4 3/4 A
1954, Sept. 2	42°. 1N,	19°. 8E	n	5 1/4 A
1946, Apr. 16	41°. 2N,	19°. 9E	n	5.5 K
Aug. 20			n	5 1/4 A
1928, Sept. 13	35°. ON,	20°. OE	n	5 A
1929, March27			n	5 1/4 A
1947, Aug. 17	37°. 4N,	20°. OE	n	5 A
Sept. 13			n	5.2 K
Sept. 19			n	4 3/4 A
1951, Apr. 5			n	6.1 K
1959, Dec. 24	37°. 5N,	20°. OE	n	4 1/2
1960, May 21	37°. 8N,	20°. OE	n	5
1960, Oct. 29	37°. 9N,	20°. OE	39	4 3/4
1943, Febr. 14	38° N,	20° E	50	6 GR
1956, Jul. 17			n	5 A
1960, May 26			n	4 3/4
May. 28			n	4 3/4
1933 Jul. 27	38°. 3N,	20°. OE	n	5.1*
1915, Aug. 19	39°. ON,	20°. OE	n	5.7*
1938, Jan. 30	39° N,	20° E	n	5.9*
1951, Febr. 12	39°. 2N,	20°. OE	n	5.3*
1952, Jul. 16			n	4 3/4 A
1743, Febr. 20	39° 1/2N,	20° E	n	7.5*
1745, Jun. —			n	5 1/2
1773, May 12			n	6 3/4
1786, Febr. 5			n	6 3/4
1871, Apr. 8			n	6 1/4
1883, Jun. 27			n	4 3/4
Aug. —			n	4 3/4

Table 1 (cont.)

Date	Location		Depth	Magnitude
1918, Nov. 20	39° 3/4N,	20° E	n	5 1/2
1926, Jun. 10			n	5.2*
1956, Jan. 4			n	5
1858, Sept. 20	40° N,	20° E	n	6.9*
1859, Aug. 13			n	5 1/2
1866, Dec. 4			n	6 3/4
1896, March 18			n	6 1/4
1897, Febr. 12			n	6.1*
1917, March 14			n	6 1/4
March 26			n	5 1/2
1920, Oct. 18			n	6 1/4
1925, Jan. 1			n	4 3/4
Aug. 16			n	4 3/4
1926, March 21			n	4 3/4
1931, Nov. 15			n	5 1/2
1936, Apr. 15			n	5.7*
Apr. 16			n	5.4*
1940, Jun. 27			n	4 3/4
1917, Jun. 25	40°. 0N,	20°. 0E	n	5 A
Jun. 29			n	5 A
1919, Jan. 5			n	4 3/4 A
1920, Oct. 21			n	5.9*
1922, Dec. 7			n	5 A
1926, Oct. 23			n	5 1/4 A
1928, May 26			n	5 1/4 A
1945, Sept. 12			n	5 1/4 A
1860, Apr. 10	40° 1/4N,	20° E	n	7 1/2
1922, Jul. 2			n	4 3/4
Jul. 3			n	4 3/4
1923, Jan. 21			n	4 3/4
1925, May 20			n	4 3/4
1930, Nov. 21			n	6 1/4
1957, Febr. 23			n	5 1/4 A
1959, March 8			n	5 A
1920, Nov. 14	40° 1/2N,	20° E	n	4 3/4
Nov. 21			n	4 3/4
Nov. 25			n	5 1/2
Nov. 26			n	6.4*
Nov. 28			n	5 1/2
Nov. 29			n	6.2*
Dec. 8			n	4 3/4
Dec. 18			n	6 3/4
Dec. 23			n	6 1/4
1925, Oct. 6			n	4 3/4
1953, March 31	40°. 7N,	20°. 0E	n	5 1/4 A
Apr. 5			n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1848, —	40° 3/4N,	20° E	n	6 1/4
1851, Oct. 17			n	6 3/4
Dec. 29			n	6 1/4
Dec. 29			n	4 3/4
Dec. 29			n	6 1/4
1865, Oct. 10			n	6 1/4
1895, May 14			n	6 1/4
1843, Sept. 5	41° N,	20° E	n	6 1/4
1851, Jan. 20			n	6 1/4
1864, Aug. 21			n	5 1/2
1870, Apr. 14			n	4 3/4
1896, Febr. 10			n	6 1/4
Febr. 11			n	5 1/2
1906, March 3			n	6 1/4
1907, Aug. 16			n	6 1/4
1912, Febr. 15			n	6 1/4
1921, Oct. 21			n	6 1/4
1923, Jan. 7			n	6 1/4
1925, Apr. 12			n	4 3/4
1926, Jan. 31			n	4 3/4
1938, Aug. 15			n	5 1/4
1958, Apr. 3			n	5.7 B
Apr. 4			n	5 A
Apr. 4			n	5 A
1927, Aug. 7	41°. 5N,	20°. 0E	n	5 A
1928, March 17			n	5 A
1953, Jan. 7			n	5.4 K
Jan. 7			n	5.5 K
1959, Nov. 27	37°. 8N,	20°. 1E	n	5.2*
Nov. 27			n	5 1/2
Nov. 27			n	4 3/4
1959, Dec. 1	38°. 0N,	20°. 1E	n	5.9*
Dec. 1			n	5
1958, Jun. 5	37°. 5N,	20°. 2E	100 +	5.4*
1955, Oct. 5	37°. 8N,	20°. 2E	n	5 A
1960, Jun. 9	40°. 5N,	20°. 2E	n	5
1953, Jun. 19	37° 1/2N,	20° 1/4E	n	4 3/4 A
1953, Nov. 28	37° 3/4N,	20° 1/4E	n	5 1/4 B
1953, Jun. 23	38° N,	20° 1/4E	n	4 3/4 A
1767, Jul. 2	38° 1/4N,	20° 1/4E	n	7 1/2
1867, Febr. 4			i	7.9*
1948, Apr. 22	38° 1/2N,	20° 1/4E	n	6.4 GR
1935, Sept. 3	39° 1/2N,	20° 1/4E	n	5 1/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1872, Febr. 11	39° 3/4N,	20° 1/4E	n	7 1/2
1952, Oct. 19	38°. 5N,	20°. 3E	n	5 A
1959, Jul. 14	39°. 3N,	20°. 3E	n	4 3/4 A
1958, Febr. 4	39°. 4N,	20°. 3E	n	4.6*
1954, May 8	40°. 3N,	20°. 3E	n	5 A
May 8			n	5 1/4 A
May 8			n	5 A
1954, March19	40°. 5N,	20°. 3E	n	4 3/4 A
1949, March10	38°. 1N,	20°. 4E	n	4 3/4 A
1954, March 8	38°. 2N,	20°. 4E	n	5 1/4 B
1959, March12	38°. 6N,	20°. 4E	n	5 A
1957, Apr. 4	38°. 8N,	20°. 4E	n	5 A
1935, March30	41°. 1N,	20°. 4E	n	6.0 K
1922, Nov. 4	37°. 0N,	20°. 5E	n	5 A
1923, Jan. 21			n	5 A
1933, Jul. 9			n	5 1/4 A
1953, Apr. 17	37°. 1N,	20°. 5E	n	4 3/4 A
1959, Apr. 19	37°. 4N,	20°. 5E	n	5 1/4 A
1897, May 28	37° 1/2N,	20° 1/2E	i	7.6*
1942, May 21			150	5 1/2 GR
1958, Oct. 10			n	4 3/4 A
1953, Jun. 1	37°. 6N,	20°. 5E	n	5 A
1954, Jan. 24	37°. 8N,	20°. 5E	n	5 1/4 A
1958, Aug. 27			n	6.5 B
Aug. 27			n	4 3/4 A
1959, Nov. 15			n	5.4*
Nov. 15			n	4.9*
Nov. 19			n	6.9 B
1714, Aug. 28	38° N,	20° 1/2E	n	6 3/4
1736, —			n	6 1/4
1759, Jun. 2			n	6 1/4
1766, Jul. 2			n	6 3/4
1912, Jan. 24			60	6 3/4 GR
1923, Jul. 3			n	4 3/4
1932, March 9			n	5 1/2 GR
1939, Sept. 20			80	6 1/2 GR
1947, Jul. 7			100	5 1/2 GR

Table 1 (cont.)

Date	Location		Depth	Magnitude
1923, Apr. 3	38°. ON.	20°. 5E	n	4 3/4 A
1933, March 22			n	5 1/4 A
1953, Sept. 5			n	5 A
1862, March 14	38° 1/4N,	20° 1/2E	n	7 1/2
1902, Nov. 5			n	4 3/4
Nov. 5			n	5 1/2
1905, Jun. 3			n	6.0*
1912, Apr. 19			n	5 1/2
1919, Aug. 3			n	4 3/4
1929, Aug. 20			n	4 3/4
1954, Jan. 30			n	5 A
1957, Aug. 15			n	5 A
1722, May 22	38° 1/2N,	20° 1/2E	n	6 1/4
1723, Febr. 11			n	6 3/4
1741, Jun. 23			n	6 3/4
1783, March 23			n	8
1915, Jan. 27			n	6.0*
Aug. 7			n	6.3*
Aug. 10			n	6.1*
Aug. 10			n	6.1*
Aug. 11			n	6.4*
Aug. 11			n	5.5*
1923, May 20			n	4 3/4
1943, Jan. 7			100	5 1/2 GR
1948, Jun. 30			n	6.4 GR
1953, Sept. 1	38°. 5N,	20°. 5E	n	5 A
1954, Jul. 17	38°. 7N,	20°. 5E	n	5 A
1815, —	38° 3/4N,	20° 1/2E	n	6 1/4
1820, March 17			n	6 3/4
1885, Dec. 14			n	5 1/2
1914, Nov. 27			n	6.1*
1826, Jan. 26	39° N,	20° 1/2E	n	5 1/2
1921, Oct. 25			n	4 3/4 A
1935, May 2	39° 1/4N,	20° 1/2E	n	5 1/2
1957, May 12			n	5 1/4 A
1960, Nov. 4	39°. 4N,	20°. 5E	49	5.8 A
1809, May 3	39° 1/2N,	20° 1/2E	n	6 1/4
1854, Jul. 30			n	6.6*
1889, Apr. —			n	5 1/2
1890, May 21			n	5 1/2
1895, May 14			n	7 1/2
1918, Jul. 5			n	4 3/4 A
1917, Apr. 26	39°. 8N,	20°. 5E	n	5 A
1895, May 15	40° N,	20° 1/2E	n	6.4*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1935, Nov. 7	40°. 1N,	20°. 5E	n	6.0*
1941, Jun. 24	41° N,	20° 1/2E	n	5 1/2 GR
1942, Aug. 27	41°. 6N,	20°. 5E	n	5 1/2 GR
1921, March30	41° 3/4N,	20° 1/2E	n	5.5*
Jul. 6			n	5.5
1952, Aug. 24	37°. 2N,	20°. 6E	n	4 3/4 A
1938, Dec. 26	37°. 3N,	20°. 6E	n	5 1/4 A
1939, Apr. 1			n	5 A
1943, Jan. 7			i	5 A
1952, Sept. 12			n	5 A
1938, March11	38°. 8N,	20°. 6E	n	5.8 K
March13			n	5.7 K
1943, Jul. 23			n	5 3/4 A
1945, Jan. 8			n	5 1/4 A
1949, Jun. 26			n	5 1/4 A
1951, Jan. 9			n	5 A
Jan. 16			n	5 A
1957, March23			n	5 A
1953, Jan. 29	39°. 4N,	20°. 6E	n	4 3/4 A
1954, Nov. 4	39°. 7N,	20°. 6E	n	5 A
1953, Apr. 8	39°. 9N,	20°. 6E	n	5 A
1960, May 26	40°. 6N,	20°. 6E	n	5*
May 26			n	6.5 GR
May 26			n	4 3/4
1953, May 19	41°. 3N,	20°. 6E	n	4 3/4 A
1936, Jan. 29	41°. 7N,	20°. 6E	n	4 3/4 A
1959, Febr. 7	37°. 7N,	20°. 7E	n	5 A
1959, Jun. 11	37°. 9N,	20°. 7E	n	5.2*
1957, March21	38°. 2N,	20°. 7E	n	4 3/4 A
1951, Dec. 27	38°. 3N,	20°. 7E	n	4 3/4 A
1953, Sept. 15	38°. 5N,	20°. 7E	n	5 A
Sept. 15			n	5.4*
1953, Sept. 16	38°. 6N,	20°. 7E	n	5 A
1924, Nov. 13	39°. 3N,	20°. 7E	n	5.1*
1945, Sept. 26	40°. 2N,	20°. 7E	n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1953, Aug. 12	38° 1/4N,	20° 3/4E	n	5 A
Aug. 12			n	5 A
Aug. 17			n	5 A
Aug. 17			n	5 A
Aug. 17			n	4 3/4 A
Aug. 19			n	5 A
Aug. 19			n	4 3/4 A
Aug. 20			n	4 3/4 A
Aug. 20			n	5 1/4 A
Sept. 7			n	5 A
Sept. 20			n	4 3/4 A
Oct. 16			n	5 B
1954, March 9			n	5 A
1914, Nov. 23	38° 1/2N,	20° 3/4E	n	5 1/2
1926, Aug. 18			n	5.4*
1946, Nov. 21			n	5 1/4 A
1957, Jun. 17			n	4 3/4 A
1769, Oct. 1	39° N,	20° 3/4E	n	7 1/2
1783, Jun. 7			n	6 1/4
1825, Jan. 19			n	8
1869, Dec. 28			n	6.9*
1904, May 10			n	4 3/4
1911, May 24	38° 3/4N,	20° 3/4E	n	5.4*
1921, May 10			n	4 3/4 A
1931, March 24			n	4 3/4
1954, Jan. 23			n	4 3/4 A
1958, May 19			n	4 3/4 A
1891, Jun. 27	39° N,	20° 3/4E	n	5 1/2
1957, Oct. 8			n	5 1/4 A
1960, Febr. 23			n	5.1*
1957, May 19	39° 1/4N,	20° 3/4E	n	5 A
1823, Jun. 19	39° 3/4N,	20° 3/4E	n	6 3/4
1858, Apr. 5			n	6 1/4
1867, Jan. 27			n	6 3/4
1895, Sept. 5			n	6 1/4
1896, Nov. 13			n	5 1/2
1898, Jul. 31			n	6.2*
1860, Apr. 15	40° 1/4N,	20° 3/4E	n	5 1/2
Apr. 16			n	6 1/4
1919, Dec. 22			n	5.3*
1896, Febr. 10	40° 3/4N,	20° 3/4E	n	5 1/2
Febr. 10			n	4 3/4
Febr. 11			n	4 3/4
Febr. 14			n	4 3/4
1912, Apr. 1			n	5 1/2
1930, Jan. 28			n	6 3/4

Table 1 (cont.)

Date	Location		Depth	Magnitude
1896, Febr. 11	41° N,	20° 3/4E	n	6 1/4
1898, Febr. 11			n	5 1/2
1906, Sept. 28			n	6 1/4
1911, Febr. 18			n	7.1*
March 5			n	4 3/4
March 9			n	5 1/2
1912, Febr. 13			n	7.0*
1952, Oct. 5	37°. 5N,	20°. 8E	n	4.8 K
Oct. 5			n	4 3/4 A
Oct. 5			n	5.6 K
Oct. 7			n	4 3/4 A
Oct. 10			n	5 A
Oct. 12			n	4 3/4 B
Oct. 12			n	4 3/4 A
1953, Jun. 21			n	4.9 K
1958, Aug. 30	37°. 6N,	20°. 8E	n	5 1/4 A
1953, Aug. 12	37°. 8N,	20°. 8E	n	4 3/4 A
1953, Jan. 16	37°. 9N,	20°. 8E	n	5.0*
Nov. 3			n	5 1/4 A
1956, May 15	38°. 0N,	20°. 8E	n	6 B
Jul. 19			n	4 3/4 A
1923, Sept. 19	38°. 2N,	20°. 8E	n	4 3/4
1951, May 26	38°. 3N.	20°. 8E	n	5 A
Dec. 20			n	5.0 K
1953, Aug. 9			n	6 3/4 GR
Aug. 11			n	6 3/4 GR
Aug. 11			n	5 A
Aug. 11			n	5 A
Aug. 11			n	5 A
Aug. 11			n	5 A
Aug. 11			n	4 3/4 A
Aug. 11			n	4 3/4 A
Aug. 11			n	5 1/2 K
Aug. 11			n	5 1/4 A
Aug. 11			n	5 A
Aug. 11			n	4 3/4 A
Aug. 11			n	4 3/4 A
Aug. 12			n	5 1/2 A
Aug. 12			n	7 1/4 GR
Aug. 12			n	5 1/2 B
Aug. 12			n	6 GR
Aug. 12			n	4 3/4 A
Aug. 12			n	5 A
Aug. 13			n	4 3/4 A
Aug. 13			n	4 3/4 A
Aug. 13			n	5 1/2 A
Aug. 13			n	5 A
Aug. 13			n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1953, Aug. 13	38°. 3N,	20°. 8E	n	4 3/4 A
Aug. 13			n	5 1/4 B
Aug. 13			n	4 3/4 A
Aug. 13			n	4 3/4 A
Aug. 13			n	4 3/4 A
Aug. 13			n	5 1/4 A
Aug. 13			n	4 3/4 A
Aug. 14			n	5 A
Aug. 14			n	4 3/4 A
Aug. 14			n	4 3/4 A
Aug. 14			n	4 3/4 A
Aug. 14			n	4 3/4 A
Aug. 15			n	4 3/4 A
Aug. 15			n	4 3/4 A
Aug. 16			n	4 3/4 A
Aug. 16			n	4 3/4 A
Aug. 16			n	4 3/4 A
Aug. 16			n	4 3/4 A
Aug. 18			n	4 3/4 A
Aug. 18			n	5 1/4 A
Aug. 19			n	5 A
Aug. 22			n	4 3/4 A
Aug. 22			n	4 3/4 A
Aug. 23			n	4 3/4 A
Aug. 23			n	4 3/4 A
Aug. 23			n	4 3/4 A
Aug. 24			n	5 A
Aug. 25			n	4 3/4 A
Aug. 27			n	5 A
Aug. 28			n	5 1/4 A
Sept. 5			n	4 3/4 A
Sept. 8			n	5 A
Sept. 14			n	5.6 B
Sept. 14			n	5 A
Sept. 25			n	5 A
Oct. 21			n	5.3 K
Oct. 21			n	4 3/4 A
Oct. 21			n	5 A
Oct. 21			n	6 1/2 GR
Oct. 21			n	4 3/4 A
Oct. 21			n	5.0 K
Oct. 26			n	4 3/4 A
1953, Nov. 20	38°. 4N,	20°. 8E	n	4.8 K
1956, Jun. 25			n	4 3/4 A
1954, Dec. 4	38°. 5N,	20°. 8E	n	5 A
1960, Febr. 22	39°. 0N,	20°. 8E	n	5 K
Febr. 23			n	5 K
Febr. 23			n	5 1/2 K
Febr. 23			n	5*
1960, Nov. 11	39°. 3N,	20°. 8E	43	5.7 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1958, Sept. 2	37°. 2N,	20°. 9E	n	5.3 B
Sept. 2			n	5
1893, Jan. 31	37°. 7N,	20°. 9E	n	6.4*
Febr. 1			n	6 3/4
Apr. 17			n	6.4*
Oct. 13			n	5 1/2
1956, May 15			n	5.8 B
1920, May 19	34°. ON,	21°. OE	n	4 3/4 A
1925, March21			n	5 A
1918, Aug. 14	36°. ON,	21°. OE	n	4 3/4 A
1933, Aug. 24			n	5 A
1919, Febr. 24	36°. 7N,	21°. OE	n	5.7*
March 6			n	4 3/4 A
1958, Sept. 4	36° 3/4N,	21° E	n	5 A
1952, Dec. 31	37° 1/4N,	21° E	n	4 3/4 A
1959, Oct. 6			n	5.0*
1953, Dec. 2	37° 1/2N,	21° E	n	4 3/4 A
Dec. 5			n	5 A
1954, March 3	37°. 7N,	21°. OE	n	5 1/4 A
1710, May 17	37° 3/4N,	21° E	n	6 1/4
1729, Jun. 28			n	6 1/4
1742, Febr. 14			n	6 3/4
1752, Jun. —			n	6 3/4
1791, Oct. 23			n	7 1/2
1867, Oct. 23			n	4 3/4
1882, Oct. 13			n	4 3/4
1896, Jul. 27			n	4 3/4
1898, Dec. 3			n	5.0*
1900, Sept. 30			n	4 3/4
1953, Nov. 18	37°. 8N,	21°. OE	n	5 A
1834, Jul. 5	38° N,	21° E	n	5 1/2
1839, May 24			n	4 3/4
1840, Oct. 30			n	6 3/4
1955, Oct. 25			n	5 A
Nov. 1			n	5 A
1960, May 7			n	4 3/4
1943, March 25	38°. ON,	21°. OE	n	5 A
May 22			n	5 A
Jun. 14			n	5 A
Jul. 21			n	5 A
1948, Dec. 18			n	4 3/4 A
1949, Febr. 4			n	4 3/4 A
1950, Jul. 31			n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1952, March 9	38°. ON,	21°. OE	n	5.5*
March28			n	4 3/4 A
Apr. 3			n	4.8*
1953, Aug. 12			n	6 GR
Aug. 12			n	5 1/2 B,K
Aug. 12			n	5 1/2 A
Aug. 17			n	5 1/4 A
1959, May 27			n	4 3/4 A
1954, Febr. 16	38° 1/4N,	21° E	n	5 A
1953, Oct. 9	38°. 3N,	21°. OE	n	4 3/4 A
Oct. 10			n	5.3 K
Oct. 11			n	5 A
Oct. 12			n	4 3/4 A
Nov. 8			n	5 A
1953, Oct. 6	38° 1/2N,	21° E	n	4 3/4 A
Dec. 21			n	5 A
Dec. 21			n	4 3/4 A
Dec. 28			n	5.1 K
1955, March25			n	5 A
1927, Jun. 30	38° 3/4N,	21° E	n	5.5*
1917, May 23	39°. 3N,	21°. OE	n	5.1*
1921, Jun. 26			n	5 A
1923, Oct. 9			n	5 A
1927, Jul. 28			n	5 1/4 A
1897, Jun. 30	39° 1/2N,	21° E	n	5 1/2
1920, Aug. 16	39° 3/4N,	21° E	n	4 3/4
1955, Jul. 6	40° N,	21° E	n	5 A
1895, Jun. 21	41° N,	21° E	n	6 1/4
1960, Jul. 9			n	5
1960, Nov. 1	41°. 1N,	21°. OE	33	5
1948, March26	41°. 3N,	21°. OE	n	4.8 K
1905, Jun. 1	41° 1/2N,	21° E	n	5 1/2
1958, May 1			n	5 A
1960, March12	42°. ON,	21°. OE	n	5 1/2 K
1955, March28	37°. 6N,	21°. 1E	n	5 3/4 B
1953, Apr. 2	37°. 7N,	21°. 1E	n	5 A
1926, Febr. 26	37°. 8N,	21°. 1E	n	5.3*
Febr. 26			n	5.3*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1954, Dec. 23	37°. 9N,	21°. 1E	n	6 B
1954, Dec. 15	38°. ON,	21°. 1E	n	5.0*
1956, Dec. 30	38°. 3N,	21°. 1E	n	5 1/4 A
1955, Oct. 24	38°. 5N,	21°. 1E	n	5.5*
1954, Jul. 18	37°. 6N,	21°. 2E	n	5 1/4 A
Jul. 18			n	5 1/2 A
Jul. 19			n	5 A
1953, Febr. 22	37°. 7N,	21°. 2E	n	4 3/4 A
1954, Jan. 18			n	5.2*
1910, Dec. 27	37°. 9N,	21°. 2E	n	6 1/4
1955, Aug. 14	38°. ON,	21°. 2E	n	5 A
1958, Aug. 4	39°. 2N,	21°. 2E	n	4 3/4 A
1958, March15	40°. 9N,	21°. 2E	n	5.3 B
1957, Aug. 31	36° N,	21° 1/4E	n	5 1/4 A
1959, Dec. 19	36° 1/4N,	21° 1/4E	n	4 1/2
1886, Aug. 27	37° N,	21° 1/4E	i	8.4*
1820, Dec. 29	37° 3/4N,	21° 1/4E	n	6 3/4
1821, Jan. 6			n	7 1/2
1897, Nov. 25			n	4 3/4
1899, Apr. 15			n	5.1*
1903, March15			n	4 3/4
1909, March 8			n	5 1/2
1915, Jun. 4			n	4 3/4
1916, Aug. 6			n	4 3/4
1926, Jun. 18			n	5 A
1873, Oct. 25	38° N,	21° 1/4E	n	6.1*
1955, May 25	38° 1/4N,	21° 1/4E	n	5 A
1907, Nov. 7	38° 3/4N,	21° 1/4E	n	4 3/4
1921, Sept. 13			n	5.5*
Sept. 14			n	5.1*
1956, March13	39° 1/2N,	21° 1/4E	n	4 3/4 A
1951, Aug. 24	37°. 3N,	21°. 3E	n	5.9 K
1952, Apr. 9	37°. 4N,	21°. 3E	n	4.9*
1953, March30	37°. 6N,	21°. 3E	n	5.4*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1958, Dec. 2	38°. 1N,	21°. 3E	n	4 3/4 A
Dec. 3			n	4 3/4 A
1957, Jan. 3	38°. 2N,	21°. 3E	n	5.3*
1918, Jan. 27	36°. 2N,	21°. 4E	n	4 3/4 A
1959, Dec. 23	36°. 8N,	21°. 4E	n	5.0*
1955, Dec. 21	38°. 6N,	21°. 4E	n	5.1*
1960, Dec. 1	39°. 8N,	21°. 4E	n	4.9*
1923, Jul. 31	36°. ON,	21°. 5E	n	5 1/4
1954, May 3			n	5 B
May 3			n	5 1/2 B
May 5			n	4 3/4 A
May 5			n	5 A
1959, Jan. 9	36° 1/4N,	21° 1/2E	n	5 1/4 A
Dec. 5			n	4 3/4
1931, Nov. 23	36°. 5N,	21°. 5E	n	6.4*
1947, Jun. 1	36°. 6N,	21°. 5E	n	5 1/2 A
1948, Sept. 21			n	5 1/4 A
1954, Nov. 25	37° N,	21° 1/2E	n	5 A
1957, Jan. 23			n	5 K
1922, Jul. 12	37° 1/2N,	21° 1/2E	n	4 3/4
1957, Aug. 23	37°. 6N	21°. 5E	n	4 3/4 A
1909, Jul. 15	37°. 9N,	21°. 5E	n	5.8*
1918, Jul. 11	38°. ON,	21°. 5E	n	5.2*
1927, Oct. 7			n	5 A
Oct. 7			n	4 3/4 A
1948, Jan. 17	38°. 2N,	21°. 5E	n	5.0 K
1954, Jun. 14	38° 1/4N,	21° 1/2E	n	5.1*
1882, Aug. 31	38° 1/2N,	21° 1/2E	n	4 3/4
1960, May 5			n	5*
1918, Sept. 6	39° N,	21° 1/2E	n	5 A
1953, Nov. 30			n	5.2 K
1903, Apr. 22	39° 1/4N,	21° 1/2E	n	4 3/4
1956, May 5	39°. 3N,	21°. 5E	n	4 3/4 A
1951, May 8	39°. 5N,	21°. 5E	n	5.3*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1920, Sept. 14	41°. ON,	21°. 5E	n	4 3/4 A
1921, Aug. 10			n	5 A
1926, Oct. 12			n	4 3/4 A
1952, Sept. 2	37°. 2N,	21°. 6E	n	5 A
1915, Jun. 4	39°. 1N,	21°. 6E	n	5.7*
1954, Dec. 30	36°. 1N,	21°. 7E	n	5 1/4 B
1954, May 15	36°. 2N,	21°. 7E	n	5 K
1955, Jan. 22	38°. 7N,	21°. 7E	n	5 A
1955, May 21	40°. ON,	21°. 7E	n	5 A
1956, Aug. 15	36° N,	21° 3/4E	n	5 1/4 A
Aug. 16			n	5.4 B
1957. Febr. 19	36° 1/2N,	21° 3/4E	n	6 1/4 B
1954, March30	36° 3/4N,	21° 3/4E	n	5 1/4 A
1957, Aug. 20			n	4 3/4 A
1952, Jul. 14	37° N,	21° 3/4E	n	4 3/4 A
1875, Apr. 24	37° 1/4N,	21° 3/4E	n	5 1/2
1898, Nov. 9			n	6.0*
1899, Jan. 22			n	6.7*
1894, Jul. 26	37° 3/4N,	21° 3/4E	n	6 1/4
1714, Jul. 27	38° 1/4N,	21° 3/4E	n	5 1/2
1785, Jan. 30			n	6 1/4
1804, Jan. 8			n	6 3/4
1876, Aug. 6			n	4 3/4
1883, Nov. 14			n	4 3/4
1885, Jul. 14			n	4 3/4
1902, Aug. 2			n	4 3/4
1903, Jul. 21			n	4 3/4
1911, Nov. 30			n	4 3/4
1925, Jun. 6			n	4 3/4
1926, Sept. 17			n	5.2*
1928, Apr. 22			n	4 3/4
1947, Apr. 16			n	4 3/4 A
1885, Febr. 18	38° 1/2N,	21° 3/4E	n	5 1/2
1903, Apr. 11			n	4 3/4
1913, May 25			n	5 1/2
1915, Nov. 21			n	4 3/4
1925, May 14			n	4 3/4
1939, Jun. 23			n	5 1/2
1957, Oct. 18			n	5.4*
Oct. 18			n	4.9*
1958, Jul. 1			n	4.9*
1959, Jun. 28			n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1958, May 3	36°. 5N,	21°. 8E	n	5 A
1914, Jan. 20	38°. 3N,	21°. 8E	n	5.2*
Jan. 31			n	4 3/4
1917, Dec. 23	38°. 5N,	21°. 8E	n	4 3/4 A
Dec. 24			n	5.2*
Dec. 27			n	5.2*
1949, Oct. 4			n	5.1 K
Oct. 5			n	5 A
1953, March 4			n	5.3*
1954, Oct. 6			n	4 3/4 A
1958, Febr. 16			n	5.2*
1960, Jul. 20	39°. 8N,	21°. 8E	n	4 3/4
1952, Jul. 8	36°. 2N,	21°. 9E	n	4 3/4 A
1959, Oct. 1	37°. 3N,	21°. 9E	n	4.9*
1954, May 4	37°. 7N,	21°. 9E	n	5.1*
1954, May 12			n	5.1*
1955, March15	38°. 3N,	21°. 9E	n	4.8*
1956, March26	39°. 2N,	21°. 9E	n	5 A
March28			n	5 A
1926, Sept. 19	35°. 5N,	22°. OE	i	5 A
1926, Sept. 19	36° N,	22° E	80	6 1/4 GR
1960, May 6	36°. 2N,	22°. OE	n	4 3/4
1957, Aug. 10	36° 1/4N,	22° E	n	5 A
1930, Sept. 23	36°. 7N,	22°. OE	n	5 1/4 A
1947, Oct. 6	36°. 9N,	22°. OE	28	7 GR
1948, Jul. 22			n	4 3/4 A
1846, Jun. 10	37° N,	22° E	n	7.2*
1959, Aug. 16	37° 1/4N,	22° E	n	5.5 B
1783, Febr. 26	37° 1/2N,	22° E	n	5 1/2
1958, Nov. 15	37°. 7N,	22°. 0E	i	6.2*
1837, Aug. 15	38° N,	22° E	n	5 1/2
1900, May 16			n	4 3/4
1949, Febr. 5			n	5.0*
1958, Oct. 23			n	4.8*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1889, Aug. 25	38° 1/4N,	22° E	n	6.3*
1899, May 1	39° N,	22° E	n	4 3/4
1917, Jan. 13	39°. 0N,	22°. 0E	n	5.1*
1959, Apr. 25	39°. 2N,	22°. 0E	n	4 3/4 A
1932, Aug. 15	39° 1/4N,	22° E	100	5 1/2 GR
1929, Jul. 3	41°. 5N,	22°. 0E	n	4 3/4
1957, Aug. 17	36°. 0N,	22°. 1E	n	5 A
1925, Jul. 6	37°. 8N,	22°. 1E	120	6 1/2 GR
1939, May 31			n	5.3*
Jul. 2			n	4.9*
1942, March 11			n	4 3/4
Apr. 20			n	4 3/4 A
1948, Jun. 17			n	4.9*
1888, Sept. 9	38°. 2N,	22°. 1E	n	5.8*
1954, Aug. 30			n	5 A
1959, May 26	38°. 3N,	22°. 1E	n	4 3/4 A
1957, Nov. 9	38°. 4N,	22°. 1E	n	5.4 K
1955, Jan. 3	39°. 2N,	22°. 1E	n	5.6*
1955, Jan. 8	39°. 5N,	22°. 1E	n	5 K
1955, Jul. 9	40°. 9N,	22°. 1E	n	5 1/4 B
Jul. 10			n	5 A
1885, March 28	37°. 2N,	22°. 2E	n	6.0*
1960, Jul. 20	38°. 4N,	22°. 2E	n	4 3/4
1956, Apr. 25	39°. 2N,	22°. 2E	n	4 3/4 A
1954, Apr. 25	39°. 3N,	22°. 2E	n	4 3/4 A
Apr. 30			n	7 GR
Apr. 30			n	5 1/4 A
May 1			n	5 A
May 1			n	5 A
May 2			n	4 3/4 A
May 3			n	5 A
May 4			n	5.4*
May 4			n	5 1/2 K
May 4			n	5 1/4 A
May 7			n	4 3/4 A
May 8			n	4 3/4 A
May 3			n	4 3/4 A
May 9			n	5 1/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1954, May 9	39°. 3N,	22°. 2E	n	5 A
May 16			n	5 A
May 17			n	4 3/4 A
May 25			n	5 1/2 B
May 28			n	5 A
May 28			n	5 A
Jun. 5			n	5.3*
Jun. 12			n	4 3/4 A
Jun. 16			n	5 A
Jun. 25			n	4 3/4 A
Jul. 9			n	5 A
1954, Jun. 4	39°. 5N,	22°. 2E	n	5 A
Aug. 5			n	5 1/4 A
1956, Jun. 26			n	5 A
1842, Apr. 18	36° 1/2N,	22° 1/4E	i	6 3/4
1867, Sept. 20			i	7.6*
1896, Dec. 28	37° N,	22° 1/4E	n	4 3/4
1901, Oct. 25			n	4 3/4
1934, Jan. 9			n	4 3/4
1955, Apr. 13	37° 1/4N,	22° 1/4E	n	6 1/4 B
1887, Apr. 9	37° 1/2N,	22° 1/4E	n	4 3/4
1748, May 14	38° 1/4N,	22° 1/4E	n	6 3/4
1817, Aug. 23			n	7 1/2
1861, Dec. 26			n	8
1901, May 4			n	4 3/4
1902, Sept. 5			n	4 3/4
1927, Febr. 6			n	4 3/4
1934, March 22			n	4 3/4
1909, May 30	38° 1/2N,	22° 1/4E	n	5.9*
1958, May 15	38° 3/4N,	22° 1/4E	n	5 A
May 17			n	4 3/4 A
1957, March 13	39° N,	22° 1/4E	n	4 3/4 A
1909, Jun. 15	39° 1/4N,	22° 1/4E	n	5.2*
1921, May 20			n	4 3/4
1957, Apr. 1			n	4 3/4 A
1956, Jan. 21	39° 1/2N,	22° 1/4E	n	5 A
1952, Jun. 13	37°34′N,	22°16′E	n	5.1*
1960, Dec. 28	35°. 0N,	22°. 3E	25	5 3/4
1933, Febr. 25	34°. 2N,	22°. 4E	n	5 1/4 A
1958, Jan. 2	36°. 0N,	22°. 4E	n	5.7 B

Table 1 (cont.)

Date	Location		Depth	Magnitude
1956, Sept. 3	36°. 4N,	22°. 4E	n	5 A
1952, Aug. 24	39°. 1N,	22°. 4E	n	4 3/4 A
1942, Jun. 1	39°. 3N,	22°. 4E	n	5.2 K
Jun. 1			n	5 1/4 A
Jun. 1			n	4 3/4 A
1952, Jul. 13			n	4.6*
1954, Nov. 22			n	4 3/4 A
1934, Febr. 21	34° 1/2N,	22° 1/2E	n	5 1/4 GR
Febr. 21			n	5 1/2 A
1922, Jun. 5	35°. ON,	22°. 5E	n	5 A
Jul. 22			n	5 A
1923, May 6			n	6.3*
1944, Jul. 30	36°. 7N,	22°. 5E	n	5.6 K
1947, Jul. 21			n	5.5*
1898, Jun. 2	37° 1/2N,	22° 1/2E	n	6.4*
1915, Dec. 31			n	4 3/4
1938, Sept. 18	38° N,	22° 1/2E	100	6 1/2 GR
1938, Jun. 20	38° 1/4N,	22° 1/2E	n	5.7*
1958, March29	38°. 4N,	22°. 5E	n	5 A
March29			n	5 A
1870, Aug. 1	38° 1/2N,	22° 1/2E	n	7 1/2
1930, Apr. 26			n	4 3/4
1958, March29			n	4 3/4 A
1928, Jan. 22	38°. 5N,	22°. 5E	n	4.8*
1952, Apr. 13	38°. 7N,	22°. 5E	n	4.8*
1956, May 18	39° 1/4N,	22° 1/2E	n	6.1 B
1941, March 1	39°. 5N,	22°. 5E	n	5 A
1941, March 1	39°. 7N,	22°. 5E	n	6 1/4 GR
1892, Jan. 9	39° 3/4N,	22° 1/2E	n	5.5*
1931, March 7	41° N,	22° 1/2E	n	6 GR
March 8			n	6 3/4 GR
March 8			n	4 3/4 A
1924, May 16	42°. 0N,	22°. 5E	n	4 3/4 A
1925, Jan. 7			n	4 3/4 A
1926, Oct. 22			n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1960, Dec. 29	35°. 5N,	22°. 6E	54	5 1/4
1879, Jul. 3	38°. 2N,	22°. 6E	n	5.1*
1953, Apr. 13	39°. 0N,	22°. 6E	n	5.7*
1954, Dec. 2	39°. 4N,	22°. 6E	n	5 A
1957, May 13			n	5 A
1953, Febr. 5	35°. 7N,	22°. 7E	n	5 1/2 B
1936, Oct. 24	36°. 0N,	22°. 7E	n	5 1/4 A
1950, March22	37°. 3N,	22°. 7E	n	4.8*
1953, Jun. 13	38°. 2N,	22°. 7E	n	5.6*
1957, March 8	39°. 4N,	22°. 7E	n	7 B
Jun. 27			n	4 3/4 A
1957, May 12	39°. 5N,	22°. 7E	n	5 A
1932, Sept. 30	36° N,	22° 3/4E	n	5 1/2 GR
1927, Jul. 1	36° 3/4N,	22° 3/4E	120	6.9 GR
1949, Sept. 17	37° N,	22° 3/4E	n	4.9 K
1876, Jun. 26	37° 3/4N,	22° 3/4E	n	6 1/4
1929, March 3			n	5.3*
1877, Jul. 2	38° N,	22° 3/4E	n	5 1/2
1954, Apr. 17	38°07′N,	22° 45′E	n	5.4*
1887, Oct. 3	38° 1/4N,	22° 3/4E	n	6.3*
1894, March26			n	4 3/4
1926, Jul. 2			n	4.8*
1955, Oct. 9	39° N,	22° 3/4E	n	5.0*
1957, Febr. 17	39° 1/2N,	22° 3/4E	n	4 3/4
March28			n	5.8 B
1940, Febr. 1	40° 1/2N,	22° 3/4E	n	4.7*
1960, March21	34°. 9N,	22°. 8E	n	4 3/4
1960, Febr. 1	35°. 0N,	22°. 8E	n	5 1/4
1951, May 30	35°. 5N,	22°. 8E	n	5 A
Aug. 31			n	5 3/4 A
Aug. 31			n	5 1/2 A
1957, May 11	39°. 4N,	22°. 8E	n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1957, March 8	39°. 5N,	22°. 8E	n	6.8 B
March 8			n	5 1/4 A
March 8			n	4 3/4 A
March 8			n	4 3/4 A
March 8			n	5.8 B
March 8			n	6.2 B
March 9			n	4 3/4
March 9			n	5.2 K
March 9			n	4 3/4 A
March 9			n	4 3/4 A
March 11			n	4 3/4 A
March 11			n	5 A
March 11			n	4 3/4 A
March 11			n	5 A
Nov. 26			n	6.2 B
Nov. 26			n	5.8 B
Nov. 27			n	6.3 B
1957, May 21	39°. 4N,	22°. 9E	n	5.7*
1957, March 24	39°. 6N,	22°. 9E	n	5 A
1952, March 22	35° N,	23° E	n	5 1/4 A
1958, Sept. 2	35° 1/4N,	23° E	n	5 A
1750, May 12	36° N,	23° E	n	7 1/2
1798, Jun. —			n	7 1/2
1866, Febr. 6			n	6 1/4
1903, Aug. 11			100–150	8.3 G
1927, Febr. 14	36°. 5N,	23°. 0E	n	5.3*
1957, Jul. 10			n	5 A
Jul. 15			n	4 3/4 A
1931, Jun. 30	36° 1/2N,	23° E	100±	5 1/2 GR
1958, March 6	36°. 6N,	23°. 0E	n	5 A
1948, Sept. 11	37° N,	23° E	100–110	6.5 K
1922, Aug. 15	37°. 5N,	23°. 0E	n	5 A
Nov. 11			i	5.7*
1924, Febr. 16			n	5 1/4 A
1888, Apr. 1	37° 1/2N,	23° E	n	4 3/4
1898, Aug. 5			n	5*
1928, Apr. 22	38°. 0N,	23°. 0E	n	5.2*
Apr. 22			n	6.8*
Apr. 24			n	5 A
Apr. 25			n	5.3*
Jun. 7			n	5.0*
1953, Sept. 5			n	5.7 B

Table 1 (cont.)

Date	Location	Depth	Magnitude
1850, Jan. 13	38° N, 23° E	n	4 3/4
1858, Febr. 21		n	7 1/2
1899, Jan. 29		n	4 3/4
1906, Jul. 9		n	4 3/4
1915, Jul. 10		n	4 3/4
1931, Jan. 4		n	5.6*
1941, Jul. 29	38° 1/4N, 23° E	n	5 A
1916, Sept. 27	38° 3/4N, 23° E	n	5.5*
1951, Jan. 21	39°.1N, 23°.0E	n	5 A
1880, Jan. —	39° 1/4N, 23° E	n	4 3/4
1886, Oct. 22		n	4 3/4
1891, Sept. 18		n	5 1/2
1933, Jan. 5		n	5 1/2
1955, May 13		n	5 A
1937, Jul. 12	39°.5N, 23°.0E	n	5 A
1956, Nov. 2		n	5 3/4 B
1957, Sept. 17		n	4 3/4 A
1905, Jan. 20	39° 1/2N, 23° E	n	5.1*
Febr. 9		n	4 3/4
1911, Oct. 22		n	5 1/2
1930, Febr. 23		n	5.7*
March31		n	6.1 K
1941, May 14		n	5 1/2 GR
May 16		n	5 1/2 GR
1957, March26		n	5 A
Sept. 20		n	5 A
Sept. 21		n	4 3/4 A
1959, May 14	40° N, 23° E	n	5 1/4 A
1954, Dec. 30	40°.5N, 23°.0E	n	5.0*
1759, Jun. 26	40° 3/4N, 23° E	n	6 1/4
1921, March30	41°.0N, 23°.0E	n	5 A
1959, Aug. 11	41° 1/4N, 23° E	n	5 A
1933, Jan. 2	41°.5N, 23°.0E	n	5 A
1959, Apr. 18	35°.9N, 23°.1E	n	4 3/4 A
1936, Jan. 14	36°.6N, 23°.1E	n	5 A
1894, Apr. 27	38°.7N, 23°.1E	n	6.9*
1955, Apr. 19	39°.3N, 23°.1E	n	6 1/4 B
Apr. 21		n	6 B
Apr. 21		n	5 A
May 2		n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1955, Febr. 21	39°. 4N,	23°. 1E	n	5.0*
Febr. 22			n	5 A
1957, Oct. 25			n	5 A
1936, Febr. 12	34°. 6N,	23°. 2E	n	5.3 K
1941, Febr. 28	35°. 7N,	23°. 2E	n	5 A
Jul. 19			n	5 A
1942, Jun. 16			n	5 A
1928, Apr. 29	38°. 0N,	23°. 2E	n	5.3*
1894, Apr. 20	38°. 6N,	23°. 2E	n	6.7*
1947, Apr. 19	38°. 8N,	23°. 2E	n	5.3 K
1952, Oct. 13			n	5 1/4 B
1923, Dec. 5	39°. 9N,	23°. 2E	n	5.7*
1958, Apr. 25	35° 1/4N,	23° 1/4E	n	4 3/4 A
1926, Aug. 30	36° 3/4N,	23° 1/4E	100	7 GR
1954, Aug. 6			100	5.2*
1956, Jan. 27			n	5 1/4 A
1922, Aug. 8	37° 1/2N,	23° 1/4E	n	5.2*
1873, Jul. 25	37° 3/4N,	23° 1/4E	n	6 1/4
1930, Apr. 17			n	5.8*
Sept. 12			n	5 1/4 A
Sept. 12			n	5 1/4 A
Sept. 12			n	5 A
Sept. 13			n	5 1/4 A
1758, May —	39° N,	23° 1/4E	n	5 1/2
1916, Jun. 3			n	4 3/4
1959, May 12	40° 1/4N,	23° 1/4E	n	4 3/4
1902, Jul. 5	40° 3/4N,	23° 1/4E	n	6.6*
1958, Jul. 17			n	5 1/2 K
1905, Oct. 8	41° 1/4N,	23° 1/4E	n	6.4
1904, Apr. 4	41° 3/4N,	23° 1/4E	n	7 1/2 GR
1959, May 14	40°. 0N,	23°. 3E	n	4 3/4 A
1944, Sept. 3	35°. 1N,	23°. 4E	n	5 A
1946, May 18			i	5 A
1947, March21			n	5 1/2 A
Aug. 30			n	6.3 K
Oct. 10			n	5 A
1948, March29			n	5.9 K
Oct. 10			n	5.8 K
1949, Jul. 1			n	5 1/4 A
1951, Sept. 1			n	4 3/4 A
1952, March25			n	5 3/4 B

Table 1 (cont.)

Date	Location		Depth	Magnitude
1952, Sept. 12	38°. 4N,	23°. 4E	n	4 3/4 A
1960, Jul. 13	40°. 6N,	23°. 4E	n	5.9*
1932, Apr. 27	34° N,	23° 1/2E	n	5 1/2 GR
1937, Dec. 16	35° N,	23° 1/2E	100	6 1/2 GR
1946, Apr. 5	35° 1/4N,	23° 1/2E	100	6 GR
1955, Jan. 11			n	5 A
1837, March20	37° 1/2N,	23° 1/2E	n	6*
1893, Nov. 14	38° N,	23° 1/2E	n	4.8*
1926, Oct. 30			n	4 3/4
1853, Aug. 18	38° 1/4N,	23° 1/2E	n	7.2*
1893, May 23			n	6.1*
1914, Oct. 17			n	6 GR
Oct. 17			n	5.9*
Dec. 2			n	5 1/2
1917, Sept. 23			n	5 1/2
1864, Jul. 17	38° 1/2N,	23° 1/2E	n	5 1/2
1867, Jan. 2			n	5.2*
1868, Dec. 28			n	4 3/4
1874, March18			n	5 1/2
1902, Apr. 11			n	4 3/4
May 1			n	4 3/4
1885, Aug. 22	38° 3/4N,	23° 1/2E	n	5.2*
1931, Sept. 11			n	5.2*
Sept. 11			n	5.3*
Sept. 13			n	5.1*
1916, Febr. 6	39° N,	23° 1/2E	n	5.2*
1951, Jul. 28			n	4 3/4 A
1953, Jul. 3	39°. 2N,	23°. 5E	n	4 3/4 A
1867, Oct. 22	39° 1/4N,	23° 1/2E	n	5.9*
1868, Oct. 3			n	5.6*
1873, March 9			n	4 3/4
1903, March 6			n	5.4*
1935, May 1			n	4 3/4
1952, Jun. 27	40°. 7N,	23°. 5E	n	5.6*
1931, Aug. 18	40° 3/4N,	23° 1/2E	n	5.1*
1932, Apr. 23			n	5 A
1936, Apr. 8	41° N,	23° 1/2E	n	6*
1958, Jul. 15	35°. 4N,	23°. 6E	n	5 K
1960, Jul. 13	40°. 4N,	23°. 6E	n	5.3*

Table 1 (cont.)

Date	Location		Depth	Magnitude
1957, Jul. 20	39°. 2N,	23°. 7E	n	4 3/4 A
1930, Jun. 25	35° 1/4N,	23° 3/4E	n	5 1/2
1959, Nov. 29	36° N,	23° 3/4E	n	5.3*
1956, Aug. 25	36° 1/4N,	23° 3/4E	n	5 A
1959, March29	37° 1/4N,	23° 3/4E	n	5.7*
March29			n	5.6*
1874, Jan. 17	38° 1/4N,	23° 3/4E	n	5 1/2
1889, Jan. 22			n	4 3/4
1934, Jan. 2			n	4 3/4
1938, Jul. 20			n	5 3/4 GR
Jul. 27			n	5.1*
1957, Dec. 13			n	4.7*
1957, Apr. 2	38° 3/4N,	23° 3/4E	n	4.7*
1925, Apr. 12	39° 1/4N,	23° 3/4E	n	5 A
1947, Nov. 29			n	5 1/2 A
1929, Dec. 20	40° 1/4N,	23° 3/4E	n	5.0*
1932, Sept. 26	40° 1/2N,	23° 3/4E	n	6.9 GR
Sept. 26			n	6.1*
Sept. 28			n	5.4 K
Sept. 29			n	6 1/4 GR
Sept. 29			n	4 3/4 A
Sept. 30			n	4 3/4 A
Oct. 1			n	5 A
Oct. 1			n	4 3/4 A
Oct. 9			n	5 A
Oct. 12			n	5 A
Nov. 1			n	5 1/2 GR
1933, May 8			n	6.1*
May 11			n	6 1/4 GR
May 31			n	5 A
Jun. 1			n	5 A
Jul. 2			n	5 1/4 A
1935, Febr. 18			n	5.5*
1955, Apr. 22	34°. 8N,	23°. 8E	n	5 1/4 A
1959, March 13	37°. 3N,	23° .8E	n	5.2*
1941, Nov. 21	39°. 7N,	23°. 8E	n	4.6 K
1937, Sept. 8	41°. 6N,	23°. 8E	n	4.8*
1944, March 14			n	5.9 K
1919, Oct. 13	38°. 4N,	23°. 9E	n	5.0*
1959, Febr. 26	34° 3/4N,	24° E	n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1908, May 17	35° N,	24° E	100	6 3/4 GR
1913, Sept. 30			60	5 3/4 GR
1915, Jun. 24	35°. 0N,	24°. 0E	n	5 1/4 A
Jun. 24			n	5 1/4 A
1959, Dec. 27			n	4 3/4
1959, Dec. 4	35° 3/4N,	24° E	n	4.6*
1805, Jul. 3	36° N,	24° E	i	7.6*
1861, Nov. 30			n	4 3/4
1871, Jan. 22	37° N,	24° E	n	6 1/4
1957, May 29	37°. 4N,	24°. 0E	n	5.0*
1956, Jan. 13	37°. 6N,	24°. 0E	n	5.5 K
1805, Nov. 16/17	38° N,	24° E	n	5 1/2
1900, Jan. 12	38° 3/4N,	24° E	n	4 3/4
1953, Nov. 8	39°. 0N,	24°. 0E	n	5.1*
1872, Jan. 24	39° N,	24° E	n	5.2*
1923, Aug. 14	39°. 5N,	24°. 0E	n	5 A
1947, Jun. 4	40° N,	24° E	80	6 GR
1867, March30	41° N,	24° E	n	6 1/4
1949, Dec. 7	34°. 7N,	24°. 1E	n	4.7 K
1950, Febr. 12			n	5 1/4 A
1951, Aug. 20			n	4.7 K
1918, Sept. 11	36°. 7N,	24°. 1E	n	5 1/2
Sept. 30			n	4 3/4
1959, Jun. 16	42°. 3N,	24°. 1E	n	5.9*
1959, Febr. 2	35°. 8N,	24°. 2E	n	5 A
1952, Jun. 4	39°. 1N,	24°. 2E	n	4.8*
1733, Dec. 7	37° N,	24° 1/4E	n	5 1/2
1891, May 11	37° 1/2N,	24° 1/4E	n	6.1*
1956, Jan. 18	37° 3/4N,	24° 1/4E	n	5.2*
1759, March 9	40° 1/4N,	24° 1/4E	n	4 3/4
1948, Jul. 24	35°. 2N,	24°. 4E	100	6 1/2 GR

Table 1 (cont.)

Date	Location		Depth	Magnitude
1954, May 26	35°. 4N,	24°. 4E	n	5 A
1952, Dec. 17	34°. 4N,	24°. 5E	i	6 3/4 GR
1953, Apr. 25	34° 1/2N,	24° 1/2E	n	5 A
1810-1815 —	35° N,	24° 1/2E	n	6 1/4
1930, March 6			100	6 GR
1953, Febr. 7			n	5 3/4 B
1954, Aug. 11			n	5 A
1958, Jan. 28	35°. 4N,	24°. 5E	n	5 A
Jun. 16			n	4 3/4 A
1910, Febr. 18	36° N,	24° 1/2E	150	7 GR
1948, May 27	36°. 2N,	24°. 5E	n	5 A
1954, Jul. 25			100	5 A
1738, Jul. 20	36° 3/4N,	24° 1/2E	n	6 1/4
1918, March20			n	4 3/4
Jun. 7			n	4 3/4
1918, Jan. 17	37° 1/4N,	24° 1/2E	n	5 1/2
1883, Aug. 5	37° 1/2N,	24° 1/2E	n	4 3/4
1932, Jul. 8	39° N,	24° 1/2E	n	5 A
1954, Aug. 3	40°. 1N,	24°. 5E	n	6 B
Aug. 3			n	5 A
1947, Nov. 6	40°. 2N,	24°. 5E	n	4 3/4 A
1905, Nov. 8	40° 1/4N,	24° 1/2E	n	7 ± GR
1829, May 5	41° 1/4N,	24° 1/2E	n	6.9*
1941, Sept. 1	41°. 6N,	24°. 5E	n	5 1/2
1919, Aug. 22	41°. 0N,	24°. 6E	n	4 3/4 A
Oct. 9			n	4 3/4 A
1924, Dec. 23			n	5 A
1954, Sept. 20	40°. 3N,	24°. 7E	n	5 A
1959, May 14	35° 1/4N,	24° 3/4E	n	5 1/4 A
May 14			n	6 1/2 GR
May 14			n	4 3/4 A
May 16			n	4 3/4 A
1930, Febr. 14	35° 3/4N,	24° 3/4E	130	6 3/4 GR
1928, Apr. 18	42° N,	24° 3/4E	n	6 3/4 GR

Table 1 (cont.)

Date	Location		Depth	Magnitude
1938, Jan. 2	34°. 1N,	24°. 9E	n	5 1/4 A
1940, Jul. 13			n	5 A
1929, Jan. 23	34°. 8N,	24°. 9E	n	5 1/4 A
1960, Sept. 23	35°. 3N,	24°. 9E	n	4 3/4
1950, Dec. 25	36°. 7N,	24°. 9E	n	4 3/4 A
1953, March15	34° N,	25° E	i	5 1/2 A
1939, Jul. 28	34°. 3N,	25°. 0E	n	5 1/4
Jul. 28			n	5 A
1920, Nov. 15	34°. 5N,	25°. 0E	n	6.1*
1921, Oct. 4			n	4 3/4
1922, March 8			n	5 A
Sept. 22			n	5 A
1923, Dec. 31			n	5 1/4 A
1925, Jan. 19			n	5 A
1927, Nov. 18			n	5 1/4 A
1928, Sept. 25			n	5 1/4 A
1954, March21	34° 1/2N,	25° E	n	5 A
1958, Aug. 18	34°. 6N,	25°. 0E	n	5 A
1953, Oct. 17	34° 3/4N,	25° E	n	5 A
1955, May 8	34°. 8N,	25°. 0E	n	5 A
1717 —	35° N,	25° E	n	6 1/4
1923, Aug. 1			150	6.7 GR
Aug. 3			150	5 A
1937, Jan. 2			n	5 1/2 GR
1928, Dec. 10	35° 1/4N,	25° E	n	5.6*
1810, Febr. 16	35° 1/2N,	25° E	i	8.2*
1931, Jul. 10	35°. 5N,	25°. 0E	n	5 A
1933, Sept. 7			n	5.2*
1935, Febr. 25	35° 3/4N,	25° E	80	6 3/4 GR
1929, Apr. 17	35°. 8N,	25°. 0E	i	5 A
1846, March28	36° N,	25° E	i	8.1*
1862, Jul. 21	36° 1/2N,	25° E	i	6.8*
1932, Nov. 30	37°. 8N,	25°. 0E	n	4 3/4 A
1954, Aug. 6	39° 3/4N,	25° E	n	5 1/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1954, Aug. 5	40°. 2N,	25°. 0E	n	5 1/4 A
Aug. 5			n	4.9*
1864, Jun. 14	41° N,	25° E	n	5 1/2
1928, Apr. 14	42° N,	25° E	n	6 3/4 GR
1953, March31	35°. 0N,	25°. 2E	n	5 A
1951, Dec. 31	35°. 3N,	25°. 2E	n	4 3/4 A
1956, Jul. 9	36°. 8N,	25°. 2E	n	7.2 B
1960, Apr. 25	38°. 5N,	25°. 2E	n	5.2*
1939, Aug. 2	41°. 5N,	25°. 2E	n	5 A
Aug. 9			n	5 A
1960, May 28	34° 1/4N,	25° 1/4E	n	4 3/4
1956, Sept. 6	35° 3/4N,	25° 1/4E	n	5 1/4 A
Sept. 11			n	5 A
1925, March17	37° 1/4N,	25° 1/4E	n	5 A
1958, Jan. 16	39° 1/2N,	25° 1/4E	n	5.6 B
1947, Apr. 12	39° 3/4N,	25° 1/4E	n	5.7 K
1955, Jun. 2	40° N,	25° 1/4E	n	5 1/4 K
1952, Aug. 21	35°. 7N,	25°. 3E	n	5 1/4 A
Dec. 22			n	4 3/4 A
Dec. 22			n	5.6*
1953, Jun. 23			100	6.3*
1866, Jan. 31	36°. 4N,	25°. 3E	n	6.1*
1933, March14	38°. 4N,	25°. 3E	n	5.6*
1949, Jan. 4	38°. 8N,	25°. 3E	n	5.7 K
1954, Jun. 7	41°. 8N,	25°. 3E	n	5 A
1953, Apr. 3	38°. 6N,	25°. 4E	n	5 A
1958, March23	34° 1/2N,	25° 1/2E	n	4 3/4 A
1922, May 9	35° 1/4N,	25° 1/2E	n	4 3/4
1918, Jul. 16	35° 1/2N,	25° 1/2E	150	6 1/2 GR
1940, Febr. 29			n	6 GR
1923, Jun. 4	35°. 5N,	25°. 5E	n	5 1/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1956, Sept. 6	35° 3/4N,	25° 1/2E	n	5.7*
1956, Jul. 28	36° N,	25° 1/2E	n	5 A
1911, Apr. 4	36° 1/2N,	25° 1/2E	140	7 GR
1928, Jan. 23			n	5.5*
1890, May 26	38° 1/2N,	25° 1/2E	n	6.6*
1891, Sept. 28			n	4 3/4
1930, Jan. 23			n	5.7*
1956, Oct. 15	39° N,	25° 1/2E	n	4 3/4 A
1887, May 14	40° N,	25° 1/2E	n	6.5*
1860, Aug. 6	40° 1/2N,	25° 1/2E	n	5 1/2
1893, Febr. 9			n	5.9*
1942, Sept. 30	34°.8N,	25°.6E	n	5 1/4 A
1948, March 6			n	5 1/4
1950, Sept. 23			n	5 3/4 A
1958, Oct. 9	35°.0N,	25°.6E	n	5 A
1953, Jan. 10	37°.9N,	25°.6E	n	5 A
1951, Dec. 13	40°.2N,	25°.6E	n	4 3/4 A
1952, Febr. 3			n	5.3*
1953, March23	35°.4N,	25°.7E	n	4 3/4 A
1952, Dec. 31	35°.5N,	25°.7E	n	5 1/4 B
Dec. 31			n	5 1/4 B
Dec. 31			n	4 3/4 A
1956, Dec. 2	36°.8N,	25°.7E	n	5 1/4 B
1958, May 30	34° 3/4N,	25° 3/4E	n	5 A
1780, Oct. 28	35° N,	25° 3/4E	n	7 1/2
1815, Dec. —	35° N,	25° 3/4E	n	6 3/4
1919, Oct. 9			n	4 3/4
1956, Jul. 30	35° 3/4N,	25° 3/4E	n	5.6*
Jul. 30			n	5 A
Jul. 30			n	6.1 B
Jul. 30			n	5.5*
Jul. 30			n	5.4 B
Jul. 30			n	5 A
Jul. 31			n	5 A
Aug. 9			n	5 A
1934, Nov. 9	36° 3/4N,	25° 3/4E	140	6 1/4 GR
1954, May 17	39° 1/4N,	25° 3/4E	n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1953, Jan. 1	35°. 7N,	25°. 8E	n	5 A
1959, Jul. 12	35°. 8N,	25°. 8E	n	4 3/4 A
1950, Jul. 8	39°. 3N,	25°. 8E	n	5 A
1940, Jan. 6	35°. 7N,	25°. 9E	n	5.6 K
1934, Nov. 21	34° N,	26° E	n	5 3/4 GR
1936, Aug. 8			60	5 3/4 GR
1930, March 6	34° 1/2N,	26° E	130	5 3/4 GR
1955, March14	34°. 5N,	26°. 0E	n	5 A
1927, March24	35°. 0N,	26°. 0E	n	5 1/2 A
March29			n	5 A
Sept. 12			n	5 A
1928, Jun. 14			n	5 A
Aug. 15			n	5 A
1943, Jul. 27	35° N,	26° E	100	5 3/4 GR
1959, Sept. 16	35°. 3N,	26°. 0E	n	5 1/4 A
1856, Oct. 12	35° 1/2N,	26° E	i	8.6*
1942, May 9			100	5 3/4 GR
1956, Oct. 29			n	5 1/4 A
1955, Jul. 10	35°. 5N,	26°. 0E	n	5 1/4 A
1945, Aug. 27	35°. 9N,	26°. 0E	n	5 A
1887, Jul. 17	36° N,	26° E	i	7.7*
1955, May 31			n	5 A
1958, Jan. 30	36° 1/4N,	26° E	n	5 1/4 A
1959, Nov. 15	36° 3/4N,	26° E	n	5.6*
1956, Jul. 8	36°. 9N,	26°. 0E	n	5 1/4 A
Jul. 9			n	7.8 GR
Jul. 9			n	5 A
Jul. 9			n	5 1/4 A
Jul. 9			n	5 A
Jul. 9			n	5.7 B
Jul. 9			n	5.6 B
Jul. 9			n	5 1/2 A
Jul. 9			n	5.2 B
Jul. 9			n	5 A
Jul. 9			n	5 A
Jul. 9			n	5.2 B
Jul. 10			n	5 A
Jul. 10			n	5 1/4 A
Jul. 12			n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1917, Jun. 4	37°. 0N,	26°. 0E	n	5 A
Aug. 27			n	5 A
1919, Oct. 25			n	6.0*
Oct. 25			n	5 A
1956, Jul. 10	37° N,	26° E	n	5.7 B
1871, Oct. 8	38° N,	26° E	n	6.9*
1953, Apr. 2	38° 1/2N,	26° E	n	5 A
1889, Oct. 25	39° 1/4N,	26° E	n	6.9*
1931, Jul. 12	39°. 5N,	26°. 0E	n	5.8*
1934, Jul. 14			n	5.1*
1937, Jul. 6			n	6.0*
1956, Nov. 20	39° 3/4N,	26° E	n	5 1/2 B
1859, Aug. 21	40° N,	26° E	n	6.4*
1924, Jun. 18	40°. 0N,	26°. 0E	n	4 3/4 A
1917, Aug. 20	40°. 5N,	26°. 0E	n	5 1/4 A
1927, Apr. 10	37°. 4N,	26°. 1E	n	5 A
1960, Aug. 27	34°. 2N,	26°. 2E	33	5 1/4
1960, Jun. 18	34°. 4N,	26°. 2E	n	5
1938, Febr. 10	34°. 8N,	26°. 2E	n	5 3/4 A
1938, May 12			n	5 1/2 A
1950, Oct. 22			n	5 1/4 A
1952, Jun. 12			n	5 1/4 A
1960, Oct. 1	35°. 4N,	26°. 2E	36	5 1/2
1845, Oct. 11	39°. 1N,	26°. 2E	n	6.8*
1865, Jul. 23	39°. 4N,	26°. 2E	n	6.6*
1956, Sept. 16	36° 1/4N,	26° 1/4E	n	5 1/4 A
1957, Febr. 9	36° 3/4N,	26° 1/4E	n	5 1/4 A
1941, Jul. 23	38° N,	26° 1/4E	n	5 1/2 GR
1820, March17	38° 1/4N,	26° 1/4E	n	5 1/2
1856, Nov. 13			n	6 3/4
1863, Aug. ---			n	6 1/4
1865, Nov. 11			n	6 1/4
1866, Febr. 2			n	6 1/4
1881, Apr. 3			n	6.3*
1886, Nov. 27			n	5 1/2
1916, Aug. 17			n	4 3/4

Table 1 (cont.)

Date	Location		Depth	Magnitude
1930, Sept. 7	38° 1/2N,	26° 1/4E	n	5 A
1931, Apr. 26			n	5 A
1956, Jan. 6	40° 1/2N,	26° 1/4E	n	5.5*
1920, Aug. 10	36°. 3N,	26°. 3E	n	5 A
1956, Jul. 9	36°. 7N,	26°. 3E	n	5 A
1959, May 20	36°. 9N,	26°. 3E	n	5 1/4 A
1956, Jul. 22	37°. 0N,	26°. 3E	n	5.6 B
1949, May 21	38°. 6N,	26°. 3E	n	4 3/4 A
Jul. 23			n	6.8 GR
Jul. 30			n	5 A
Nov. 23			n	5.1 K
1953, May 1			n	5.6*
May 2			n	5 A
May 2			n	5 A
May 2			n	5 3/4 B
1928, Apr. 14	41°. 7N,	26°. 3E	n	5 A
Apr. 17			n	5 A
Apr. 18			n	5 1/2 A
Apr. 19			n	4 3/4 A
Apr. 19			n	5 A
Apr. 19			n	4 3/4 A
Apr. 19			n	4 3/4 A
Apr. 19			n	4 3/4 A
Apr. 19			n	5 A
Apr. 20			n	5 A
Apr. 25			n	5 1/2 A
Apr. 26			n	4 3/4 A
Apr. 28			n	5 1/2 A
1960, Sept. 10	34°. 4N,	26°. 4E	n	5 1/4
1932, Jun. 12	34°. 5N,	26°. 4E	n	5 A
1958, Sept. 4	36°. 8N,	26°. 4E	n	5.4 B
Sept. 4			n	5 A
1956, Jul. 9	36°. 9N,	26°. 4E	n	5.4 B
1959, March 13	34° 1/4N,	26° 1/2E	n	5 1/4 A
1938, Jul. 3	34° 1/2N,	26° 1/2E	120	5 3/4 GR
1951, Oct. 1			n	4.8 K
1952, Jul. 20			n	4 3/4 A
1956, Jun. 11			n	5.4 B
1949, Febr. 23	34°. 5N,	26°. 5E	n	5 A
1960, Aug. 30	34°. 6N,	26°. 5E	15	4 3/4

Table 1 (cont.)

Date	Location		Depth	Magnitude
1958, Dec. 22	35° N,	26° 1/2E	n	4 3/4 A
1944, Jul. 20	35°. 5N,	26°. 5E	n	5.4 K
Augl. 17			i	5 A
1946, Apr. 12			n	5 1/2 A
1948, Jul. 28			n	5 A
1953, Febr. 14	35° 1/2N,	26° 1/2E	100	5 1/2 B
1960, Apr. 13	35°. 7N,	26°. 5E	n	4 3/4
1929, March27	36° 3/4N,	26° 1/2E	120	5 3/4 GR
1958, May 27			150	6.0*
1929, Nov. 11	36°. 8N,	26°. 5E	i	5.7*
1718, Febr. 13	37° 1/2N,	26° 1/2E	n	5 1/2
1958, March31	38°. 4N,	26°. 5E	n	4 3/4 A
1883, Oct. 15	38° 1/2N,	26° 1/2E	n	6.4*
1953, May 14	38°. 7N,	26°. 5E	n	5.2*
1954, Nov. 4	38° 3/4N,	26° 1/2E	n	5 A
1959, Nov. 19	38°. 8N,	26°. 5E	n	5.4 B
1870, Jul. 11	39° 1/4N,	26° 1/2E	n	5.1*
1916, Apr. 26			n	4 3/4
1920, Nov. 27			n	4 3/4
1886, Sept. 4	39° 1/2N,	26° 1/2E	n	5 1/2
1766, Aug. 5	41° 1/2N,	26° 1/2E	n	6.8*
1926, Sept. 3	41°. 5N,	26°. 5E	n	5 A
1933, May 15	36°. 2N,	26°. 6E	n	5 1/4 A
1867, March 7	39°. 1N,	26°. 6E	n	6.7*
1953, Jun. 18	41°. 7N,	26°. 6E	n	5 1/4 B
1957, Oct. 5	34°. 4N,	26°. 7E	n	5 3/4 A
Oct. 5			n	5 1/4 A
1954, Sept. 4	36°. 7N,	26°. 7E	130	5 A
1944, Oct. 6	39°. 4N,	26°. 7E	n	7.2 K
Oct. 6			n	5 A
Oct. 7			n	5 1/2 A
1953, Dec. 5	36° 1/2N,	26° 3/4E	n	5 A
Dec. 20			n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1936, Apr. 28	36° 3/4N,	26° 3/4E	170	5 3/4 GR
1958, Apr. 24			n	4 3/4 A
1955, Nov. 10	37° 1/4N,	26° 3/4E	n	5 A
1944, March25	37° 3/4N,	26° 3/4E	n	4 3/4
1890, Dec. 14	38° 3/4N,	26° 3/4E	n	6.5*
1960, Aug. 29	35°. 3N,	26°. 8E	71	5
1960, May 2	36°. 9N,	26°. 8E	n	4.8*
1935, Aug. 20	34°. 6N,	26°. 9E	n	5 A
1953, May 16	35°. 1N,	26°. 9E	n	5 A
1954, Dec. 16	35°. 4N,	26°. 9E	n	5 A
1953, Jun. 7	36°. 0N,	26°. 9E	n	5 A
1910, Aug. 21	34° N,	27° E	170	6 1/2 GR
1930, Aug. 5	34°. 0N,	27°. 0E	n	5 1/4 A
1931, Apr. 20			n	5 A
1932, Jul. 15			n	5 A
1920, Jul. 21	34°. 4N,	27°. 0E	n	5 A
1948, Sept. 20	34°. 9N,	27°. 0E	n	5.0 K
1949, Jan. 4			n	5 1/4 A
1957, March 6	35° N,	27° E	n	5 1/4 A
1958, Aug. 20			n	4 3/4 A
1960, Apr. 28			n	5 1/4
1933, Apr. 28	35° 1/4N,	27° E	n	5 1/4 GR
1959, March 9			n	4 3/4 A
1935, March18	35° 1/2N,	27° E	130	6 1/4 GR
1948, Febr. 9			40	7.1 GR
1953, Febr. 24	35°. 9N,	27°. 0E	n	4 3/4 A
1958, March 4	36°. 4N,	27°. 0E	n	5 A
1926, Jul. 5	36° 1/2N,	27° E	150	5 1/2 GR
1942, Jun. 21			130	6 1/4
1958, Jun. 30			60	6.4 R
1955, Aug. 28	37° N,	27° E	n	5 1/4 B
1954, Aug. 20	37° 1/2N,	27° E	n	5 A
1954, May 1	37°. 7N,	27°. 0E	n	5 A
May 1			n	5 1/4 A
May 1			n	5 1/4 B

Table 1 (cont.)

Date	Location		Depth	Magnitude
1751, Jun. 7	37° 3/4N.	27° E	n	7 1/2
1817, Oct. 20			n	4 3/4
1831, Apr. 3			n	5 1/2
1846, Jun. 13			n	6 1/4
1865, Oct. 11			n	5 1/2
1868, May 3			n	5 1/2
1873, Jan. 31			n	6.6*
1875, Jul. 7			n	6 3/4
1877, Oct. 13			n	6 1/4
1892, Dec. 27			n	5 1/2
1893, March12			n	5 1/2
1904, Aug. 11			n	8.0*
1914, Febr. 8			n	4 3/4
1954, May 1			n	5 A
1928, March31	38° N,	27° E,	n	6 1/4 GR
March31			n	5 A
1739, March24	38° 1/2N,	27° E	n	7 1/2
1880, Jul. 29			n	6.6*
1950, May 3	38°. 6N,	27°. 0E	n	5 A
1917, Aug. 8	39°. 0N,	27°. 0E	n	5 A
1921, Jul. 24			n	4 3/4
1939, Sept. 22	39° N,	27° E	n	6 1/2 GR
1957, Oct. 11	40° N,	27° E	n	4 3/4 A
1956, Jun. 27	37°. 8N,	27°. 1E	n	5 A
1955, Jul. 16	37°. 9N,	27°. 1E	n	6 3/4 GR
Jul. 18			n	4 3/4 A
1957, Oct. 30	35°. 3N,	27°. 2E	n	5.7 B
Oct. 30			n	4 3/4 A
1948, Febr. 10	35°. 5N,	27°. 2E	n	5 1/4 A
Febr. 11			n	5 1/4 A
Febr. 11			n	5 A
Febr. 12			n	5.1 K
Febr. 15			n	5 1/4 A
March29			n	5 1/2 A
Jul. 26			n	5 1/4 A
Oct. 18			n	5.5 K
Oct. 19			n	5 A
1949, Jan. 2			n	5 A
Jul. 7			n	5 A
Jul. 7			n	4 3/4 A
1950, May 30			n	5 A
Dec. 28			n	4 3/4 K
1952, Aug. 24			n	5 1/4 A
1953, Apr. 23	35°. 8N,	27°. 2E	n	4 3/4 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1932, Oct. 23	35° 1/4N,	27° 1/4E	n	5 1/2 GR
Oct. 23			n	5 A
1958, Apr. 3			n	5.4 B
1959, Aug. 10			n	5 A
1954, Nov. 23	35° 3/4N,	27° 1/4E	n	5 A
1926, Febr. 8	36° 3/4N,	27° 1/4E	n	5.1*
1933, Apr. 23			50	6 3/4 GR
1954, Jun. 17			n	5 A
1960, Apr. 15	37° 1/4N,	27° 1/4E	n	4 3/4
1955, Nov. 11	37° 1/2N,	27° 1/4E	n	5 A
Nov. 11			n	4 3/4 A
1953, Apr. 13	38° 1/4N,	27° 1/4E	n	5.2*
1953, March18	40° N,	27° 1/4E	n	7.2 GR
1912, Aug. 9	40° 3/4N,	27° 1/4E	n	7 3/4 GR
1928, Jul. 15	38°. 0N,	27°. 3E	n	5 1/4 A
1953, March18	40°. 0N,	27°. 3E	n	5 A
March18			n	5 1/2 A
March18			n	4 3/4 A
March19			n	4 3/4 A
March19			n	5 1/4 A
March19			n	5 1/2 A
March22			n	5 A
March23			n	5.5*
March26			n	5.8*
March31			n	5.5*
Apr. 1			n	5.7*
1942, Sept. 1	36°. 4N,	27°. 4E	n	5.8 K
1944, Jan. 5			i	5 A
Jan. 5			i	5.7 K
1952, Jun. 9			n	4.6 K
1923, March10	34°. 5N,	27°. 5E	n	5 1/4 A
1928, Apr. 27			n	5 A
1932, Aug. 9			n	5 1/4 A
1929, Apr. 17	35°. 0N,	27°. 5E	n	5 A
1930, Jan. 15			n	5 1/4 A
Jan. 23			n	5 1/4 A
Aug. 22			n	5 A
1932, Jul. 3			n	5 A
1954, Febr. 22	35° N,	27° 1/2E	n	4 3/4 A
1954, May 3	35°. 3N,	27°. 5E	n	5 1/2 A
1932, Jun. 29	35° 1/2N,	27° 1/2E	n	5 1/2 GR

Table 1 (cont.)

Date	Location		Depth	Magnitude
1954, Aug. 5	35°. 8N,	27°. 5E	n	5 1/2 A
1944, May 27	36° N,	27° 1/2E	100	6 1/4 GR
1843, Oct. 18	36° 1/4N,	27° 1/2E	n	6 3/4
1918, Nov. 25	36°. 4N,	27°. 5E	n	5 A
1869, Apr. 18	36° 1/2N,	27° 1/2E	i	6.9*
1926, Jun. 26			100	8.3 GR
1943, Oct. 16			110	6 1/4 GR
1944, Aug. 9			100	5 1/2 GR
1954, Jan. 2			n	5 1/2 A
1932, Dec. 7	36°. 8N,	27°. 5E	n	5 1/4 A
1918, Nov. 13	37°. 5N,	27°. 5E	n	4 3/4 A
1920, Apr. 2			n	5 A
1925, Jul. 29			n	5 A
1937, May 23	38°. 0N,	27°. 5E	n	5.7 K
1941, Jan. 9			n	5 1/4 A
1952, Apr. 9			n	4.7*
Sept. 15			n	5 A
1845, Jun. 23	38° 1/2N,	27° 1/2E	n	6 1/4
1942, Oct. 28	39°. 0N,	27°. 5E	n	6 K
Oct. 28			n	6 K
Oct. 28			n	5.4 K
1935, Jan. 4	40° 1/4N,	27° 1/2E	n	6 1/4 GR
Jan. 4			n	5.8*
Jan. 4			n	6 GR
1877, Oct. 13	40° 1/2N,	27° 1/2E	n	5 1/2
1954, March23			n	5 A
1948, Nov. 13	40°. 5N,	27°. 5E	n	5.3 K
1952, March13	41° N,	27° 1/2E	n	5 A
1959, Jul. 26			n	5.1 B
1932, Jun. 29	35°. 5N,	27°. 6E	n	4 3/4 A
Jun. 29			n	4 3/4 A
Jun. 29			n	5 A
Jun. 29			n	5 A
1933, Sept. 24			n	5 A
1960, Apr. 10	37°. 8N,	27°. 6E	n	5 1/4
Apr. 12			n	5
1959, March12	34°. 5N,	27°. 7E	n	4 3/4 A
1960, Aug. 8	35°. 6N,	27°. 7E	30	5

Table 1 (cont.)

Date	Location		Depth	Magnitude
1919, Nov. 18	39°. 6N,	27°. 7E	n	5 3/4 A
1924, Dec. 22			n	4 3/4 A
1925, Apr. 29			n	4 3/4 A
1957, Aug. 18	35° N,	27° 3/4E	n	4 3/4 A
1956, Dec. 27	35° 3/4N,	27° 3/4E	n	5 1/4 A
1958, May 9	36° 1/2N,	27° 3/4E	n	5.4 B
1957, Oct. 30	35°. 3N,	27°. 8E	n	5.7 B
1957, Dec. 5	35°. 6N,	27°. 9E	n	5 1/4 A
1952, Oct. 22	36°. 7N,	27°. 9E	n	5 B
1950, Nov. 28	39°. 9N,	27°. 9E	n	5 A
1943, Apr. 9	34°. 0N,	28°. 0E	n	5 1/4 A
1953, Sept. 5	35°. 3N,	28°. 0E	n	5 A
1957, Nov. 17	35° 1/4N,	28° E	n	5 A
1955, Jan. 16	35° 1/2N,	28° E	n	5 A
1957, Aug. 14			n	5 1/4 A
1959, Sept. 8			n	4 3/4 A
1866, Jan. 13	36° N,	28° E	n	6.8*
March25			n	5.7*
1868, Apr. 20			n	6.3*
1874, Nov. 16			n	7.3*
1953, Jan. 12			n	4 3/4 A
1917, Jun. 13	36°. 0N,	28°. 0E	n	5 A
1918, March17			n	5 A
1919, Jul. 18			n	5 A
1919, Aug. 24			n	5 A
1921, Jan. 27			n	4 3/4 A
1922, Aug. 11			n	5 3/4 A
Aug. 13			40	6 3/4 GR
Aug. 13			n	5 A
Aug. 17			n	4 3/4 A
1926, Jun. 26			n	4 3/4 A
Jun. 27			i	5 A
1863, Apr. 22	36° 1/2N,	28° E	i	8.5*
1871, Jun. 7			n	6 1/4
1896, Oct. 27			n	6.2*
1938, Jan. 16			200	5 1/2 GR
1869, Dec. 1	37° N,	28° E	n	7 1/2
1941, Dec. 13			n	6 GR

Table 1 (cont.)

Date	Location		Depth	Magnitude
1941, May 23	37° 1/4N,	28° E	n	6 GR
May 23			n	4 3/4 A
May 23			n	5 A
May 28			n	5 1/2 GR
Jun. 23			n	5 A
Sept. 21			n	5 A
1895, Aug. 19	37° 3/4N,	28° E	n	6 1/4
1899, Sept. 20			n	6 3/4
1958, Sept. 3	38° N,	28° E	n	5 A
1918, Febr. 9	39°. 0N,	28°. 0E	n	4 3/4 A
1938, Jul. 2			n	5.8*
1942, Febr. 5			n	5.1*
Aug. 12			n	5 A
Aug. 12			n	4 3/4 A
1953, Jun. 9	39°. 5N,	28°. 0E	n	5 1/2 A
1942, Jun. 16	40°. 4N,	28°. 0E	n	5.6 K
1951, Sept. 15			n	5.0 K
1954, Oct. 24	40°. 5N,	28°. 0E	n	5 1/4 A
Oct. 26			n	5 1/4 A
1919, Oct. 13	41°. 5N,	28°. 0E	n	4 3/4 A
1953, Sept. 4	35° N,	28° 1/4E	n	5 A
1953, Jun. 19	35° 3/4N,	28° 1/4E	n	4 3/4 A
1956, May 5	37° N,	28° 1/4E	n	5 A
May 5			n	5 A
1939, Jul. 24	37°. 2N,	28°. 3E	n	5 A
1943, Jan. 11			n	5 A
1949, Jun. 17	34°. 4N,	28°. 5E	n	6.7*
1957, Febr. 7	34° 1/2N,	28° 1/2E	n	5 A
1959, Jan. 4	35° 1/4N,	28° 1/2E	n	5 A
1959, Jan. 17	35° 1/2N,	28° 1/2E	n	4 3/4 A
1932, May 14	36° N,	28° 1/2E	n	5 1/2 GR
1960, Jan. 26	36° 1/2N,	28° 1/2E	n	4 3/4
Jan. 26			n	5 1/4
1959, Apr. 25	37°. 0N,	28°. 5E	n	6.3. B
Apr. 25			n	5.6 B
1953, Jul. 22	39°. 1N,	28°. 5E	n	5 B

Table 1 (cont.)

Date	Location		Depth	Magnitude
1960, Nov. 18	35°. 2N,	28°. 6E	24	5
1929, Oct. 10	41°. 2N,	28°. 6E	n	4 3/4 A
1958, Dec. 9	35°. 2N,	28°. 7E	n	5 A
1959, Jun. 9	36°. 5N,	28°. 7E	n	4 3/4 A
1920, May 1	37°. 0N,	28°. 7E	n	5 A
1921, May 22			n	4 3/4 A
1927, Febr. 19			n	5 A
1933, Aug. 17			n	6.3*
1936, Aug. 12			n	5 A
1952, March19	39°. 8N,	28°. 7E	n	5 1/2 B
1959, Jan. 1	35° 0N,	28° 3/4 E	n	4 3/4 A
1851, Febr. 28	36° 1/2N,	28° 3/4E	n	6 3/4
1957, Apr. 25			n	7.1 GR
1960, Jan. 26	36° 3/4N,	28° 3/4E	n	4 3/4
1959, Dec. 8	37° 1/4N,	28° 3/4E	n	5
1960, Jan. 19	36°. 7N,	28°. 8E	n	5
1943, Nov. 15	36°. 9N,	28°. 8E	n	5 A
Nov. 20			n	5 1/4 A
1948, Aug. 10			n	4.7 K
1950, Jun. 4			n	5 A
1953, Jun. 3	40°. 1N,	28°. 8E	n	5 1/2 B
1945, Sept. 2	34°. 4N,	28°. 9E	n	6 1/2 GR
1957, Apr. 25	36°. 5N,	28°. 9E	n	5 1/4 A
1959, Jan. 1	35° N,	29° E	n	5 A
Jan. 2			n	4 3/4 A
1925, Apr. 4	35°. 5N,	29°. 0E	n	4 3/4 A
Apr. 5			n	5 A
Apr. 5			n	5 A
Apr. 12			n	5 A
Apr. 15			n	5 A
Apr. 15			n	5 A
Apr. 15			n	5 A
1926, March18			n	5 1/2 A
March18			n	6.9 GR
March19			n	5 1/2 A
March21			n	5 A
March23			n	5 A
March24			n	5 A
March31			n	5 A
Apr. 1			n	4 3/4 A
Apr. 22			n	5 A

Table 1 (cont.)

Date	Location		Depth	Magnitude
1958, Dec. 24	35° $^1/_2$N,	29° E	n	5 A
1957, Jul. 14	35°. 9N,	29°. 0E	n	4 $^3/_4$ A
1939, March 13	36°. 0N,	29°. 0E	n	4 $^3/_4$ A
1951, Nov. 5	36° N,	29° E	n	4 $^3/_4$ A
1957, Febr. 5	36°. 5N,	29°. 0E	n	5 $^1/_2$ A
1959, Jan. 7	36° $^1/_2$N,	29° E	n	5 $^1/_4$ A
1959, March 1	37°. 0N,	29°. 0E	n	4 $^3/_4$ A
1960, Jan. 9	37°. 2N,	29°. 0E	n	4.8 K
Jan. 15			n	5
1920, Jul. 4	37°. 5N,	29°. 0E	n	5 A
Jul. 4			n	5 A
1922, Nov. 20			n	5 A
1944, Jun. 25	39° N,	29° E	n	6.0 K
1957, Apr. 24	36°. 3N,	29°. 1E	n	6.9 GR
Apr. 25			n	6.4*
Apr. 26			n	5.9*
1959, Jan. 26	36°. 8N,	29°. 1E	n	5 A
Jun. 10			n	4 $^3/_4$ A

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