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SEISMOLOGICAL SERIES OF THE EARTH PHYSICS BRANCH

No. 62

CANADIAN EARTHQUAKES–1966

A. E. Stevens, W. G. Milne,
R. J. Wetmiller and R. B. Horner

Seismological Service of Canada
DEPARTMENT OF ENERGY, MINES AND RESOURCES
Ottawa, Canada 1972

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FOREWORD

For many years earthquakes in Eastern Canada and the Canadian Arctic were studied by W.E.T. Smith at the Dominion Observatory in Ottawa. His interests ranged from an historical study of earthquakes in Eastern Canada prior to 1928 to a detailed analysis of a microearthquake swarm in 1965 near Mould Bay in the Canadian Arctic.

He was responsible for locating earthquakes in Eastern Canada and the Canadian Arctic and had published himself or jointly with W.G. Milne and others numerous catalogues and interpretative studies of earthquakes from 1534 to 1965. He had begun the analysis of the 1966 data at the time of his sudden death in April 1970.

The present catalogue continues his work and although some changes have been introduced, the authors acknowledge the early contribution of Smith to the data analysis and presentation of Canadian seismicity.

Kenneth Whitham
Chief,
Division of Seismology

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CANADIAN EARTHQUAKES - 1966

I. Introduction

This catalogue continues the annual lists of earthquakes in Canada, as prepared by the Earth Physics Branch (formerly the Dominion Observatory). Previous papers in this series are enumerated in the bibliography of the 1964 catalogue (Smith and Milne, 1969) to which should be added the 1965 catalogue (Smith and Milne, 1970).

The text of the 1966 catalogue has been extended to outline the methods used in earlier catalogues by W.G. Milne and the late W.E.T. Smith and to describe modifications introduced by the present authors. The purpose of this series remains unchanged: to catalogue all known earthquakes in Canada and any related seismic activity in adjacent areas.

In this catalogue, earthquakes are listed in chronological order for the four regions of Canada as shown in Figure 4. The Eastern, Arctic, Western and Central Regions are covered in Tables 1, 2, 3 and 4, respectively. Subsections of the first three tables contain the earthquakes located outside Canada. Table 5 summarizes Central Region activity prior to 1966. These tables follow the appendix.

The extension of Canadian regions offshore and into neighbouring countries is made for two reasons. Earthquakes near the international boundaries may be felt and/or do damage in Canada; thus they must be included in any practical study of Canadian seismicity. Secondly, an understanding of the patterns of Canadian seismicity requires a consideration of the tectonics of neighbouring areas. The southern boundary of the Eastern Region includes a larger section of United States territory than does the Western Region since the relation of epicentres to tectonic features is less well defined in the east. The Arctic Region map and table may contain events beyond its boundaries in northern Alaska and Greenland, which have been located with the Canadian network but for which epicentres have not been published by other agencies. The Canadian records are not systematically read for all such events.

The format of the tables has been changed slightly from previous papers in this series. Catalogue numbers are no longer assigned to earthquakes in the Western Region. Numerical estimates of the precision of the latitude and longitude of an epicentre are no longer given explicitly for any event. Instead, the reliability of an epicentre is indicated by a quality factor in the extreme right-hand column of each table. An 'F' quality indicates a more reliable epicentre, generally ±20' arc in latitude and an equivalent linear distance in longitude. An 'O' quality indicates a less reliable epicentre. Reliable epicentres are plotted as filled circles on the maps while less reliable epicentres are plotted as open circles.

Epicentres for earthquakes in the Eastern, Arctic and Western Regions are plotted on three large maps (Figures 1, 2 and 3) found in the back pocket. Epicentres for all earthquakes in Canada during 1966 with magnitude 4 or greater are shown on one small map of Canada (Figure 5), which includes the earthquake epicentres of the Central Region. Note that the symbols in Figure 5 denote only the magnitude range and not the reliability of the epicentre.

A discussion of methods used to locate the earthquakes is presented in an appendix following the main text.

II. Canadian Seismic Network

Figure 6 shows the 26 stations of the Canadian Seismic Network whose records were used in the preparation of this catalogue. Detailed notes regarding instrumentation and changes in instrument constants, calibrations, etc. can be found in the 1966 *Seismological Bulletin*. The following international code letters are used as station abbreviations.

Figure 4. The four regions of Canada.

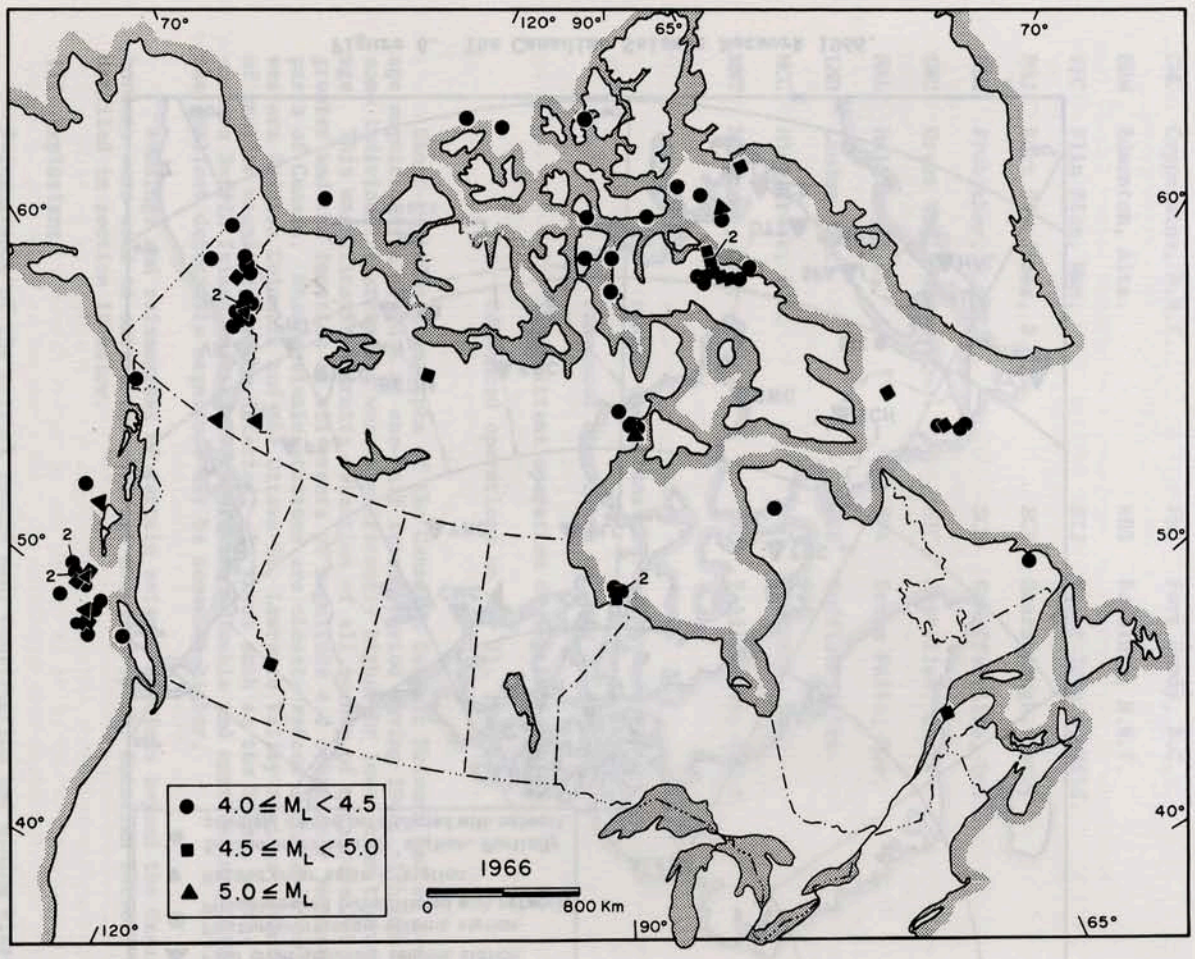

Figure 5. Earthquakes in Canada during 1966 with magnitude 4 or greater.

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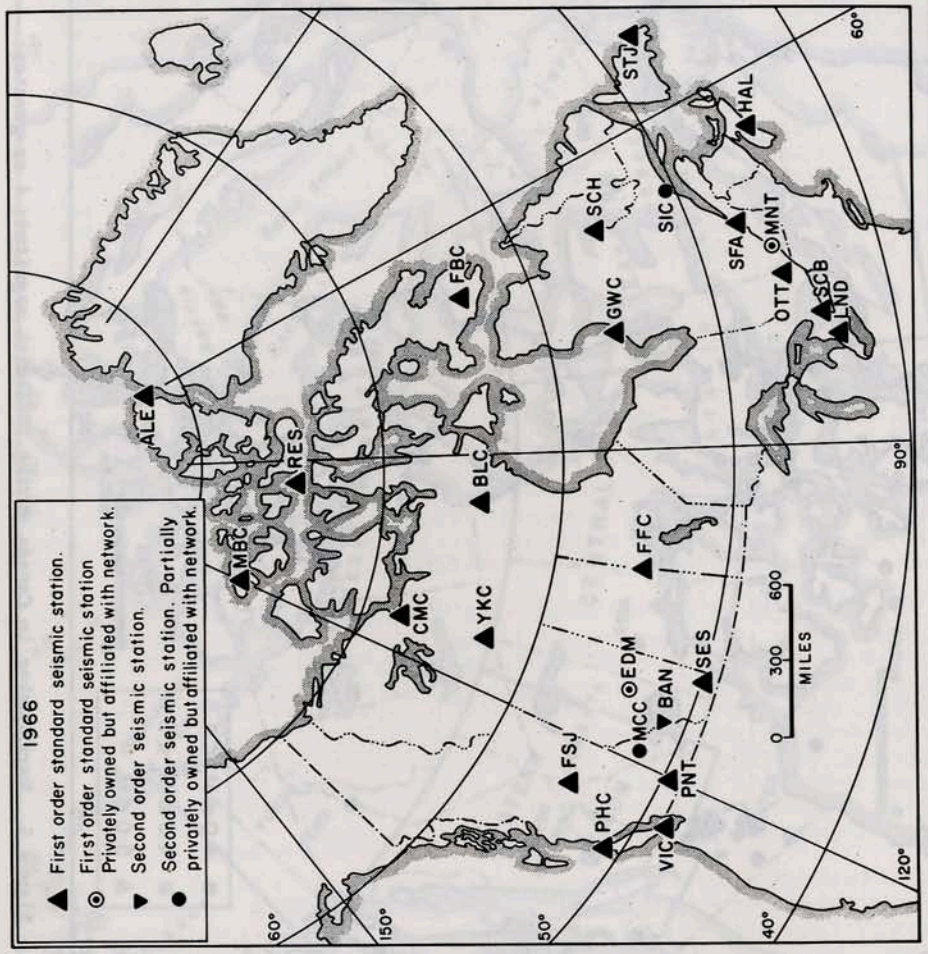

Figure 6. The Canadian Seismic Network 1966.

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ALE	Alert, N.W.T.	MBC	Mould Bay, N.W.T.
BLC	Baker Lake, N.W.T.	OTT	Ottawa, Ont.
BAN[1]	Banff, Alta.	PNT	Penticton, B.C.
CMC	Coppermine, N.W.T.	PHC	Port Hardy, B.C.
EDM	Edmonton, Alta.	RES	Resolute, N.W.T.
FFC	Flin Flon, Man.	STJ	Saint John's, Nfld.
FSJ	Fort St. James, B.C.	SCB[3]	Scarborough, Ont.
FBC	Frobisher, N.W.T.	SCH	Schefferville, Que.
GWC	Great Whale River, Que.	SIC	Sept-Iles, Que.
HAL	Halifax, N.S.	SFA	Seven Falls, Que.
LND	London, Ont.	SES[4]	Suffield, Alta.
MCC[2]	Mica Creek, B.C.	VIC	Victoria, B.C.
MNT	Montreal, Que.	YKC	Yellowknife, N.W.T.

1 ceased operations on September 22, 1966

2 commenced operations on July 5, 1966

3 intermittent operation during 1966

4 commenced operations on May 11, 1966

Short-period seismographs of the Canadian Seismic Network had an average magnification of 95 K at one-half second period during 1966, although some individual instruments were significantly higher or lower than the average. This magnification permits detection of all events of magnitude 3.5 or greater and the location of all events of magnitude 4.0 or greater in most parts of Canada. Where seismic stations are closely spaced such as in southwestern British Columbia and the Ottawa-St. Lawrence Valley regions, events of smaller magnitude can be detected. In areas such as the Yukon, northeastern Baffin Island, northwestern British Columbia and northwestern Ontario the smallest detectable magnitude may be somewhat higher.

Readings and seismograms of certain seismic stations beyond the Canadian borders were used to extend the coverage provided by the Canadian network as detailed in section IV below.

III. Explosions

Seismographs of the network record many construction and mining blasts each year. Some of these blasts may have an equivalent seismic magnitude of 4.0 or more; most are less than 3.0. Such blasts must be separated from natural earthquakes so that an accurate knowledge of the seismic activity in Canada may be obtained. Blasts from regular sources such as mines and quarries and from construction projects of more than several months' duration are generally easily identifiable and not included in the tables. In some cases, the distinction on seismograms between blasts and earthquakes is very difficult. When there is doubt as to the origin of an event, it is included in

the tables with an appropriate comment.

IV. Summary of Seismic Activity for 1966

The seismic activity within each of the four regions during 1966 is discussed below. Five hundred and seventy-eight earthquakes were detected, 296 of these located, and three were reported felt. The Modified Mercalli Intensity Scale (1931) is used to classify reports of felt earthquakes.

There were 81 earthquakes of magnitude 4 or greater within Canada (see Figure 5) - 52 in the Arctic, 22 in the Western, five in the Central and two in the Eastern Region. The eight largest events (5.0 and 5.1) occurred in the Arctic and Western Regions.

For each region earthquakes in Canada are listed chronologically in part A of the respective tables; where applicable, earthquakes in the adjacent United States follow in part B. In the Arctic Region some northern Greenland earthquakes are listed in part C. These tables include all earthquakes from the United States Coast and Geodetic Survey (USCGS, 1966a, 1966b) and International Seismological Centre (ISC, 1966) epicentre lists that occurred within each region, as defined in Figure 4. For events outside Canada epicentres determined by these two agencies were accepted without change. For events within Canada epicentres were usually recomputed using Canadian data and the methods outlined in the appendix.

1. Eastern Region

The Eastern Region lies east of 85°W and includes Canada south of 60°N and the United States north of 40°N. Events in the United States were located by the USCGS or the ISC. Their M_L magnitudes were determined from Canadian seismograms. Data from Canadian stations for some events in Table 1A were augmented by preliminary bulletin readings and phases read from microfilm records of the New England Seismic Network (Linehan, 1969), comprising seismograph stations Berlin, Caribou, East Machias, Milo and Weston.

Table 1 lists 44 earthquakes of the Eastern Region, 40 in Canada (Table 1A) and four in the northeastern United States (Table 1B). Epicentres of 36 events are plotted in Figure 1, which also shows the Canadian seismic stations of the Eastern Region. The eight unlocated events were recorded only at Sept-Iles at epicentral distances between 31 and 78 miles and magnitudes 1.3 to 2.0.

An additional event on 29 July, magnitude 4.3, is included in Table 1 but not plotted in Figures 1 or 5, since it was considered to have been an explosion, although this could not be confirmed. This event occurred near the end of July on a Friday afternoon at 14:30 EDT in Algonquin Park, Ontario, near several large campgrounds. There were no felt reports, even though many vacationers were in the epicentral region. It is unlikely that an earthquake of this magnitude would have gone unnoticed.

The most seismic area of the Eastern Region continues to be the lower St. Lawrence Valley between Quebec City and Sept-Iles with 27 earthquakes, the largest on 14 Jan 15h having magnitude 4.5. A single large event with magnitude (M_L) 4.8 occurred on 1 Jan 13h in northwestern New York State near Buffalo and was felt in southern Ontario (see Table 1B). No other events of Table 1 were reported felt in Canada.

2. Arctic Region

The Arctic Region lies north of 60°N and extends west into Alaska to 145°W and east into Greenland. Three events west of 145°W are included in this catalogue, since they were recorded by the Canadian network, but epicentres

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TABLE 6

Unlocated Events Recorded Only at BLC or CMC or YKC

Δ (miles)	Number	M_L	Remarks
BLC			
270-275	3	3.1 to 3.3	Wager Bay.
CMC			
373	1	3.3	Foreshock, Southeast of Inuvik.
525	1	3.8	Aftershock, Selwyn Mts., Yukon.
YKC			
218	1	2.8	-
572	1	3.7	Southern Yukon.

TABLE 7

Unlocated Events Recorded Only at ALE

Δ (miles)	Number	M_L
47-94	5	1.6 to 2.3
107-211	5	2.0 to 2.5

TABLE 8

Unlocated Events Recorded Only at FBC

Δ (miles)	Number	M_L	Remarks
70-84	7	1.5 to 2.5	Southern Baffin Island. Two groups in early March and mid-April.
94	1	2.2	Southern Baffin Island.
186	1	2.1	
226	1	3.2	Lg recorded.
411	1	3.4	
505-515	3	3.8 to 3.9	Aftershocks. Northeastern Baffin Island near Cape Adair.

TABLE 9

Unlocated Events Recorded Only at MBC

Δ (miles)	Number	M_L	Remarks
11-16	7	0.2 to 1.4	On or near Prince Patrick Island.
21-24	4	0.3 to 1.6	
31	1	0.7	
42	1	1.5	
52-91	3	1.4 to 2.2	-
99	1	2.4	Northwestern Melville Island.
119	1	2.2	East of MBC.
336	1	3.1	Beaufort Sea.

TABLE 10

Unlocated Events Recorded Only at RES

Δ (miles)	Number	M_L	Remarks
5-15	3	0.6 to 1.0	On or near Cornwallis Island.
27-36	4	0.7 to 2.2	
42-47	7	1.4 to 2.2	
54-63	5	1.3 to 2.3	-
97-114	5	1.4 to 2.3	-
122-137	3	1.7 to 2.1	-
140-150	5	1.7 to 2.5	-
170-196	2	2.1 to 2.5	-
306	1	2.8	-

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were not published by the USCGS nor the ISC. Similarly, the five Greenland events in this catalogue were detected by some Canadian stations and located with the addition of phases read from microfilm records of the Greenland stations Nord (standard station) and/or Inge Lehmann (temporary high-gain array). These stations, operated by the Danish Geodetic Institute, are plotted in Figure 2 with the Canadian stations of the Arctic Region.

Table 2 lists 225 earthquakes of the Arctic Region, including 12 in Alaska (Table 2B) and five in Greenland (Table 2C). Epicentres for 140 events are plotted in Figure 2.

The 85 unlocated events are analyzed in Tables 6 to 10 as a function of epicentral distance. The probable epicentral region is indicated, where possible. The relatively large (40 per cent) proportion of unlocated events recorded at Resolute (Table 10) reflects both the level of seismic activity near Resolute and the higher magnification of its short-period seismographs.

Figure 2 shows that three areas - Baffin Island, the Yukon and northern Hudson Bay - contain about one-half of the earthquakes located in the Canadian Arctic Region during 1966. Twenty-three events were located on northeastern Baffin Island, 16 of these occurring south of Cape Macculloch in a 5-day period in late December. The main shock of magnitude 4.9 was associated with four foreshocks and 11 aftershocks. The three events located near Cape Adair occurred in February and March and were each associated with an additional unlocated event recorded at FBC (see Table 8).

Twenty-eight earthquakes were located in northern Canada west of the Mackenzie River. Two clusters of activity occurred in the northeast Yukon. Six events occurred in the Richardson Mountains south of Forth McPherson, maximum magnitude 4.8, and 12 in the Selwyn Mountains northeast of Keno Hill, maximum magnitude 5.0, plus one unlocated event recorded at CMC (see Table 6). Four events occurred north of Fort Liard, NWT, near the southeastern Yukon border, maximum magnitude 5.0.

The Watson Lake earthquake, magnitude 5.0, which occurred in the southern Yukon on 28 Dec 02h, was the only one in the Arctic Region reported felt (see Table 2). The epicentral region is too far from the nearest seismograph stations to permit detection of any aftershocks smaller than about 4.0.

Eleven events were located near Wager Bay in northwestern Hudson Bay, maximum magnitude 5.1. Three unlocated events recorded at BLC probably occurred in this region (see Table 6).

3. Western Region

The Western Region lies west of 113°W and includes Canada and Alaska south of 60°N, Montana, Idaho and Washington north of 48°N, and the Puget Sound area of Washington north of 47°N and between 121°W and 126°W. The boundary extends westward into the Pacific Ocean between 48° and 60°N to include earthquakes that are located along tectonic features from the Juan de Fuca Ridge to Dixon Entrance north of the Queen Charlotte Islands. In the region of the Gulf Islands at the south end of the Strait of Georgia the true epicentres of some earthquakes that are in the Canadian section of Table 3 may be in the United States, and vice versa. All unlocated events are placed in Table 3A, although some of these recorded at VIC or PNT may originate in the United States. Readings from some United States stations, including Longmire and Newport, Washington, and Hungry Horse, Montana, were used as additional data in calculating some epicentres in Table 3A.

Table 3 lists 303 events of the Western Region, including 32 located in the United States (Table 3B) - seven near southeastern Alaska, 24 in Washington and one in Montana. Epicentres of 114 events are plotted in

TABLE 11

Unlocated Events Recorded Only at BAN or MCC or SES

Δ (miles)	Number	M_L	Remarks
BAN			
16-20	2	1.3 to 1.6	Near Alberta - B.C. border.
MCC			
28-65	5	0.8 to 2.1	-
SES			
96-143	2	2.2 to 3.2	Southern Alberta.
255	1	3.8	-

TABLE 12

Unlocated Events Recorded Only at FSJ

Δ (miles)	Number	M_L	Remarks
18-48	7	1.6 to 2.2	-
68-165	6	2.1 to 2.5	-
200-204	2	2.8 to 3.2	One event near Knight Inlet, B.C.
410	1	4.1	Aftershock, Queen Charlotte Islands.

TABLE 13

Unlocated Events Recorded Only at VIC

Δ (miles)	Number	M_L	Remarks
17-19	7	1.0 to 1.8	-
31-45	17	1.4 to 2.6	-
48-63	5	1.8 to 2.7	-
70-73	6	1.8 to 2.9	Fore- and aftershocks, west of Washington.
78	3	2.3 to 3.5	-

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TABLE 14

Unlocated Events Recorded Only at PNT

Δ (miles)	Number	M_L
9-50	13	0.7 to 2.3
59-82	10	2.0 to 3.7
91-120	12	2.4 to 3.4
125-180	10	2.7 to 3.7

TABLE 15

Unlocated Events Recorded Only at PHC

Δ (miles)	Number	M_L
26-50	5	1.5 to 2.6
72-94	13	2.1 to 3.0
99-129	53	1.4 to 3.9
137-227	9	2.6 to 3.8

Figure 3, which also shows the Canadian seismic stations in the Western Region.

The 189 unlocated events are analyzed in Tables 11 to 15. About 40 per cent of the unlocated events were recorded at Port Hardy (Table 15) and most of them occurred west of Vancouver Island. Some of the larger events recorded at PNT (Table 14) may originate in the United States and a few may be mine blasts.

Nearly 90 per cent of the events located north of the 49° parallel occurred in the active area west of the British Columbia mainland. Eighteen events, maximum magnitude 5.0, were located near the Queen Charlotte Islands and 53 events, maximum magnitude 5.1, west of Vancouver Island.

Many events with magnitudes between 2.5 and 3.5 are recorded at PHC (Δ = 125 miles) and FSJ only. The absence of these events on the PNT records strongly suggests that these events are located west of Vancouver Island. Epicentres are given for these earthquakes, but the error in location is probably great.

Three events occurred on Vancouver Island. The event of 13 Jan 07h, magnitude 4.0, near Nootka Sound, was felt by some residents at Zeballos (see Table 3). No damage was reported. No other events were reported felt in Western Canada during 1966.

4. Central Region

The Central Region lies north of 49°N and south of 60°N and between 85°W and 113°W, which includes Saskatchewan, Manitoba and parts of Alberta and Ontario.

Table 4 lists one sequence of six shocks with a maximum magnitude of 4.8. All epicentres were located in western Hudson Bay immediately north of Cape Tatnam and are plotted on Figure 5 in the text. A similar sequence of four shocks occurred in the same area in 1965 and was described in the text of the 1965 catalogue (Smith and Milne, 1970), but not shown in the tables or maps. Prior to 1965 no seismic activity was reported for this area. However, no earthquake with magnitude less than about 4.5 could have been detected because the seismograph stations BLC, FFC and GWC around Hudson Bay began operation only in 1965.

For convenience Table 5 summarizes the six events located in the Central Region prior to 1966, which have been published in the text of previous catalogues.

V. Revisions

This section contains previously unpublished revisions to epicentres of Canadian earthquakes given in earlier catalogues and other publications.

1. Eastern Region

The November 1966 ISC bulletin (vol. 3, no. 12) reported two events in northern Quebec and one in southern Ontario with epicentres determined by the LASA Centre, M.I.T. An inspection of the appropriate Canadian seismograms revealed that these events were definitely not located in Canada. Events no. 692 on 23 Nov 17h and no. 764 on 26 Nov 17h were probably blasts from the mining district north of Duluth, Minnesota. The probable location of the third event, no. 76 on 3 Nov 19h, could not be determined.

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In "Canadian Earthquakes - 1964" (Smith and Milne, 1969) the event in Table I on 1 Nov 17h should be deleted as it is now known to have been a blast in an open-pit iron mine. It is incorrectly plotted in Figure 1 of the 1964 catalogue at 45°38'N, 75°20'W.

In "Earthquakes of Eastern Canada and Adjacent Areas 1928-1959" (Smith, 1966) the co-ordinates of event 371 on 7 Jan 1931 should be corrected to read 45°24'N, 75°43'W. The two references cited by Smith for this event indicate that the event was a "slight local shock" recorded only at Ottawa and not at Seven Falls nor Shawinigan Falls.

2. Arctic Region

In the 1966 ISC bulletins of March (vol. 3, no. 3) and November (vol. 3, no. 12) two events of magnitude about 4 are listed for the Arctic Ocean northwest of Ellesmere Island. These events are no. 788 on 27 Mar 20h and no. 41 on 2 Nov 11h. Neither event was recorded at ALE, MBC or RES. Both epicentres are incorrectly located in Canada.

In "Seismic Activity in the Canadian Arctic 1899-1955" (Meidler, 1962) event 35 on 17 Aug 1945 is located at 60.2N, 148.9W in Alaska and should thus be deleted. Its longitude was incorrectly copied from the International Seismological Summary. It should be noted that three events in the western Northwest Territories - events 9 (13 Apr 1922), 12 (17 Oct 1924) and 14 (10 Mar 1926) - were published in the International Seismological Summary, but were among those events rejected by Gutenberg and Richter (1949) in a review of published ISS data. They felt that available data were inadequate to define the epicentres to better than ±3° in latitude and longitude. These three earthquakes appear also in the catalogue of Milne (1956) as events 86, 104 and 112.

In "Canadian Earthquakes - 1964" (Smith and Milne, 1969) the Yukon earthquakes of 4 May and 7 Aug have the correct co-ordinates but the wrong place names. The former event occurred south of Fort McPherson and the latter northeast of Dawson.

3. Central Region

The USCGS publishes regularly a map of the United States and adjacent areas showing destructive and near-destructive earthquakes through to the year of publication (e.g. USCGS, 1966b). An earthquake of intensity VIII-IX is plotted at 50°N, 105°W just south of Regina, Saskatchewan, which represents an event on 15 May 1909 at 22:20 CST that was felt in the southern Prairie provinces and adjacent American states. The event does not appear on Canadian epicentre maps, is not listed among the shocks of the Central Region in Table 5 and has not been discussed in previous catalogues.

Agarwahl (1962) has carefully reviewed the evidence from which the epicentre was located by United States scientists. He points out that the epicentre represented the locality of highest reported intensity as judged from newspaper accounts and special correspondence. No instrumental data were used, as few were available. He notes that the Ottawa seismogram indicated an epicentral distance that would place the earthquake farther west either in Alberta or Montana. The latter is more probable in view of subsequent seismicity patterns, but no final decision is possible.

A further study of newspaper reports and available seismograms indicates an epicentre in North Dakota or Montana. The magnitude is near $6\frac{1}{2}$ from the Ottawa and Cheltenham seismograms. Milne suggests that event 51 in Milne (1956) may have occurred on 15 May 1909 rather than on 17 May 1909 as published.

Acknowledgments

We gratefully acknowledge the co-operation of Rev. M. Buist, S.J., Collège Jean-de-Brébeuf, in supplying seismograms from the Montreal station on a routine basis. We similarly thank the Physics Department, University of Alberta, for loaning records of the Edmonton Observatory.

The interpretation of many events in the Eastern and northeastern Arctic Regions was greatly facilitated by the addition of data, both phase readings and microfilm records, generously supplied by Rev. D. Linehan, S.J., Weston Observatory and Dr. E. Hjortenberg, Danish Geodetic Institute, respectively.

Donald J. Schieman assisted in scanning and reading records of the Arctic, Central and Eastern Regions, under the supervision of the late W.E.T. Smith.

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APPENDIX

THE LOCATION AND MAGNITUDE OF LOCAL EARTHQUAKES

Introduction

An earthquake is specified by five parameters-latitude and longitude of its epicentre, origin time, focal depth and magnitude. These parameters are estimated from the travel-time curves, arrival times and period and amplitude of the local earthquake phases - P_1, S_1, P_n and S_n. The subscripts 1 and n denote propagation in the crust, and in the crust and along the crust-mantle boundary, respectively. At distances beyond about 10 degrees, S_1 may be replaced by L_g, a short-period Love-type surface wave propagated through continental crust.

The following discussion applies specifically to earthquakes recorded within Canada at epicentral distances up to several thousand kilometres for larger events and several hundred kilometres for smaller ones. The techniques used by Milne for Western Region events differ slightly from those used previously by Smith and currently by the other three authors for the remaining regions, as noted below.

The phases of local earthquakes are normally seen only on standard short-period seismograms unless the magnitude exceeds 4 or 5 when some of them may be recorded on standard long-period seismographs. Their arrival times on short-period records are read to the nearest second, and where possible, to the nearest tenth of a second. The interpretation of the arrival times depends on the model assumed for the crust and upper mantle in the region between the focus and recording stations, as outlined in the following section.

Travel-Time Equations

The arrival times of the local earthquake phases may be calculated from travel-time equations as a function of origin time H, epicentral distance Δ and focal depth h. Smith (1967) has described how to use the observed arrival times of P and S phases at one station to calculate H, Δ and h graphically from travel-time curves. He subsequently wrote a computer program to perform these same calculations on the 1965 data of the Eastern, Arctic and Central Regions (Smith and Milne, 1970). His program was applied to the 1966 data of the same regions, with minor modifications. Milne has continued to use a graphical method for the Western Region.

For the 1966 catalogue the travel-time equations used for the Eastern, Arctic and Central Regions were revised slightly by W.E.T. Smith (personal communication). This was done in light of the large amount of information on crustal structure and travel times in Canada that had been gathered in the past 10 years. An examination of published papers shows that the P_n velocity may vary between values as low as 7.9 km/s under the Western Cordillera and as high as 8.6 km/s in the extreme eastern part of the Canadian Shield, and that large areas of Canada have crustal thicknesses between 30 and 40 km, with Vancouver Island, the Lake Superior Basin and parts of central Quebec being somewhat thicker. No continental area of Canada is known to have a crust thinner than 28 km (M.J. Berry, personal communication).

The revised travel-time equations for S are based on those determined by Barr (1967) using three Canadian seismograph stations (BLC, FBC, and FFC) and chemical explosions in Hudson Bay with epicentral distances between 300 and 1,400 km. The travel-time equations for P are similar to those found by a number of seismologists in refraction surveys in Canada.

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Assuming a focal depth of 18 km the equations are:

$$P_1 - H = \Delta/6.20$$

$$S_1 - H = \Delta/3.57$$

$$P_n - H = 5.60 + \Delta/8.20$$

$$S_n - H = 9.67 + \Delta/4.75$$

where units are km and s (see Figure A1). S_1 and L_g have essentially the same travel-time equation. These equations imply a single-layered crust 36 km thick with a value of Poisson's Ratio very close to 0.25 for the crust and upper mantle. (For a surface focus the P_n and S_n equations become: $P_n - H = 7.50 + \Delta/8.20$ and $S_n - H = 13.0 + \Delta/4.75$.) The S_n intercepts (9.67 and 13.0) were not based on Barr's measured S data but were chosen by Smith so that the crustal thickness associated with the S_n equation would be the same as that of the P_n equation.

For routine determination of epicentres the P_1 and S_1 equations above are used for the entire range of epicentral distances. The focal depth is not included in these P_1 and S_1 equations nor in those below, since its effect on the calculated travel times is less than one second for distances beyond 50 km. P_1 is rarely observed beyond 500 km, but has been seen to nearly 800 km. S_1 is replaced by L_g at longer distances with no noticeable change in travel times. At epicentral distances beyond 1,000 km, P_n and S_n begin to penetrate into the upper mantle and gradually merge into the P and S phases characteristic of teleseisms. The linear travel-time equations for P_n and S_n are used for distances up to 16 degrees or about 1,800 km. Beyond 16 degrees P arrival times are taken from the 1968 Seismological Tables for P phases (Herrin *et al.*, 1968) with a linear interpolation for an 18-km focal depth between the tabulated 15- and 40-km focal depths. Travel-times for S beyond 16° are calculated from the P curve by assuming the S travel-time increment to be $\sqrt{3}$ times the P travel-time increment.

For the Western Region only, the travel-time equations for 1966 were based on the same crustal model as for the years from 1955 to 1965 (Milne and Lucas, 1961). For a focal depth of 16 km the equations are:

$$P_1 - H = \Delta/6.25$$

$$S_1 - H = \Delta/3.61$$

$$P_n - H = 4.97 + \Delta/8.20$$

$$S_n - H = 8.51 + \Delta/4.70$$

(For a surface focus the intercepts in the P_n and S_n equations are 6.63 and 11.4, respectively.)

Observed epicentral distances seldom exceed 1,000 km. The model of the crust implied by these equations is single-layered and 32 km thick. Recent studies suggest that this model is not appropriate throughout the whole Western Region (White and Savage, 1965; White, Bone and Milne, 1968), and numerical experiments are being conducted to see if a different set of travel-time curves will improve the goodness of fit of the data. The crustal structure of the Cordilleran region of Canada is very complex, and it may prove impossible to find an average model that is representative of the whole region.

Prior to the 1966 catalogue, the travel-time equations used in the other Regions for a 16-km focal depth in a single-layered crust were:

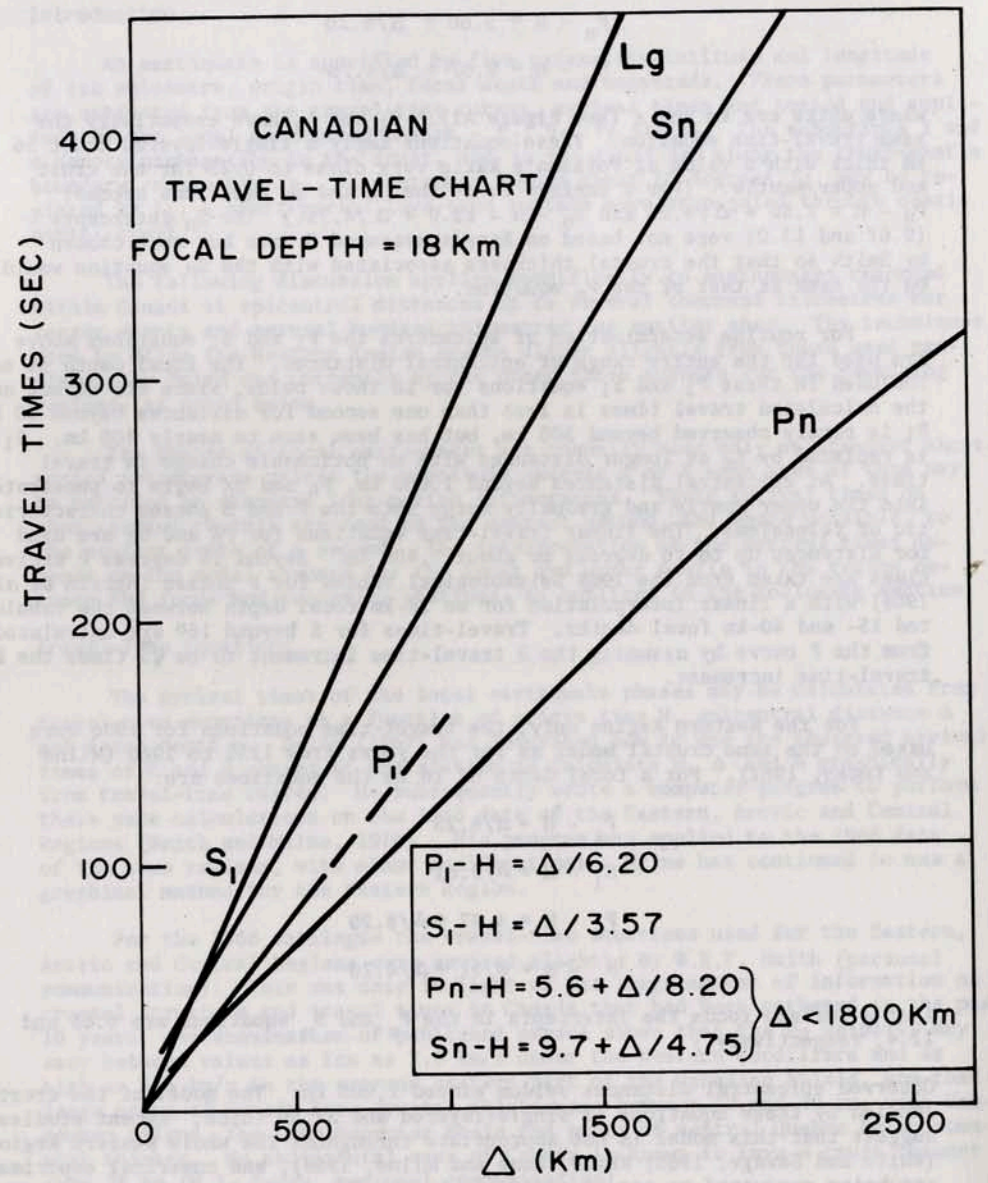

Figure A1. Canadian travel-time chart.

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$P_1 - H = \Delta/6.234$

$S_1 - H = \Delta/3.544$

$P_n - H = 5.839 + \Delta/8.176$

$S_n - H = 9.574 + \Delta/4.565$

The constants are significant only to two figures. The crustal thickness derived from the P equations is 36 km and from S is 35 km. (For a surface focus the intercepts in the P_n and S_n equations are 7.50 and 12.42, respectively.)

The equations for P_1, S_1 and P_n were defined by Hodgson (1953a, 1953b) from blasts and rockbursts in the Kirkland Lake region of Ontario. The S_1 velocity of Hodgson for Δ less than 1,000 km was consistent with the L_g velocity of Press and Ewing (1952) for Δ greater than 1,000 km. The linear P_n surface-focus equation merged into the Jeffreys-Bullen surface-focus P curve at 20 degrees. Smith derived the S_n equation by joining the Jeffreys-Bullen S curve at 20° to Hodgson's S_1 curve at the P_nP_1 crossover distance in order to have a similar crustal thickness from P and S data. The S_n velocity thus defined was 4.565 km/s, which was in much better agreement with observed local earthquake data than Hodgson's value of 4.85 km/s, which was too great (W.E.T. Smith, personal communication).

Epicentre Location

Travel-time equations of the type just discussed are used to locate earthquakes. When two phases are well recorded at one station, the difference in their arrival times may be used to calculate Δ and H. For example, $\Delta(1/3.57 - 1/6.20) = S_1 - P_1$ and $H = P_1 - \Delta/6.20$. When only one phase is well recorded, Δ may be calculated assuming the origin time determined at another station. For example $\Delta/6.20 = P_1 - H$.

The distances from epicentre to recording stations are calculated by a computer program using one or more of the following measured time differences and the associated travel-time equations: S_n-P_n, S_1-P_1, S_1-P_n, S_n-P_1, and S_1-S_n. The program makes no calculations when only one phase, usually S_1 or L_g, has been measured. In this case, the seismologist may calculate the epicentral distance from the origin time determined from data at other stations.

For the Western Region only, the distances from epicentre to recording stations are defined in the following way. A provisional origin time is found from the S-P interval of the nearest station. The travel times (P-H) to each station are obtained from the first arrival phase, and the distances to each are calculated.

Latitude and longitude of an epicentre are determined graphically on maps (Lambert conformal conic projections with scales of 1:1, 2, 3 or 4 x 10^6) by drawing arcs centred on recording stations and with radii scaled to the appropriate epicentral distances. The epicentre lies within the small area enclosed by the arcs. The mid-point of the area is chosen unless the seismologist feels an unequal weighting of the data is justified.

For the Western Region only, the distances are adjusted, if necessary, by revising the provisional origin time to minimize the area defined by the intersection of the arcs. The centre of these intersecting arcs is assumed to be the epicentre.

In general, at least three distance estimates from different stations are needed to locate an event. When an event is recorded at only two stations, the epicentral distance arcs intersect in two points. One point may be

rejected and the event located at the other, if one point is close to a third seismograph station that did not record the event but should have if the event had occurred at the nearer point.

Numerical uncertainties in latitude and longitude of each epicentre are based mainly on the relative size of the area enclosed by the epicentral distance arcs, but consider also the number and quality of the arrival times. These uncertainties are retained in a data file but not published explicitly in the 1966 catalogue. The epicentres are plotted as filled (F) circles when the uncertainties in latitude and longitude are both less than a linear distance equivalent to ±20' in latitude. Otherwise the epicentres are plotted as open (O) circles.

An epicentre of good quality (F) is reliably defined and will not be significantly shifted by the addition of more data. An epicentre is of fair quality (O) when the arrival times are not of sufficient quantity and quality to define the result with confidence. Epicentres of fair quality may be shifted significantly (more than 35 km) by the addition of data, but will not always be so moved.

Origin times are estimated from the arrival times of the first observed phase, either P_n, P_1 or S_n, using the epicentral distances calculated previously. The origin times given in the tables are an unweighted average of all calculations for an event. This average usually has a standard deviation of several seconds.

It should be noted that reliable values of epicentral distances and origin time depend on good measurements of both phases used in the time difference method. If one arrival is measured late and the other early, the calculated distance will be much too large or too small and the origin time will be too early or too late. This applies particularly to phase combinations involving S_n, which often begins with small amplitudes at long distances making its true onset difficult to measure.

This disadvantage of the phase difference method may be reduced when an event is well recorded at other stations. The seismologist may then average the most reliable origin times to get an average origin time for the event. He then calculates the remaining distances from the P and/or S travel times. Generally these distances are more consistent among themselves since the late or early arrivals are not subtracted from each other.

Focal Depth

The determination of focal depth is a difficult problem since the most useful depth information comes from observations at short epicentral distances, a condition which is seldom satisfied. However, earthquakes in Canada are not known to have occurred below the crust. Whenever an estimate of the actual depth cannot be made, the focal depth is assumed to be 18 km, the mid-point of the assumed 36-km thick crust. (Note that in the Western Region the depth is assumed to be 16 km.) Estimates of focal depth may be affected by variations of local velocity structure, and should be regarded only as indicating upper-, middle- or lower-crustal depths. That is, all focal depths given in the tables should be considered uncertain by ±10 km.

Focal depths are calculated from the P_n (or S_n) arrival times using an epicentral distance and origin time calculated from the S_1-P_1 time interval measured at the same station. The depth is proportional to the difference between the observed P_n arrival and the P_n arrival calculated for zero depth. An error of one second in the observed P_n arrival produces a change of 10 km in the calculated depth.

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The travel-time equations given above for P_1 and S_1 phases assume either a surface focus or a focal depth that is small with respect to the epicentral distance. For example, for a focal depth of 18 km and an epicentral distance of 50 km, the epicentral distance calculated from the (S_1-P_1) difference assuming a surface focus is too long by about 3 km. Such an error is not usually important in locating epicentres since other errors may exist in the measured arrivals and in the assumed crustal model. All these errors contribute to the estimated uncertainties in epicentral position, but may not seriously influence the epicentre itself for a well-recorded event.

The error may be more significant for the unlocated events described in the tables by their distance from one seismograph station, usually small. It should be noted that for distances less than about 60 miles (100 km) the tabulated distance always represents the distance from focus to station, not epicentre to station, which would be shorter.

Magnitude (M_L)

Magnitudes are calculated from maximum trace amplitudes and corresponding periods using the local earthquake magnitude scale (M_L) (Gutenberg and Richter, 1942). Where epicentres are ascribed to other organizations, such as the United States Coast and Geodetic Survey or the International Seismological Centre, body-wave magnitudes are given, denoted M in the tables.

The M_L scale was originally defined for crustal focus earthquakes recorded at distances less than about 600 km. Maximum amplitudes were associated with the S_1 phase. At longer distances the maximum trace amplitudes for local earthquakes are almost always associated with the L_g phase. The amplitudes of L_g decrease at a slower rate than assumed in the M_L scale and at distances beyond about 15 degrees tend to give magnitude values that are too high. For this reason, all magnitude calculations published in the 1966 catalogue are based on data recorded within 1,500 km of the epicentre. Many epicentral distances from Canadian earthquakes exceed 600 km. Hence a practical upper limit for magnitude calculations was chosen at 1,500 km.

In addition, earthquakes that occur in oceanic crust or whose paths traverse oceanic crust typically have no L_g phase and the maximum amplitudes are then associated with the S_n phase. The M_L scale is applied to these events as before, but since the amplitudes of S_n are always less than those of the associated L_g phase for continental paths, the magnitude calculated will be too low. That is to say, earthquakes occurring in oceanic areas will have a lower estimated magnitude than earthquakes of equal magnitude occurring in continental areas simply because the larger amplitudes of the L_g phase will not be present for the oceanic events. This condition arises for earthquakes located in parts of Baffin Bay, Davis Strait, the Arctic Ocean and the northeast Pacific Ocean. The difference of magnitude arising from this situation is assumed to be less than one magnitude unit since the ratio of observed amplitudes of S_n to L_g is always greater than 1:10 for continental paths.

The magnitudes given in the tables are an unweighted average of all calculations for the event. This average usually has a standard deviation of about one half unit.

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TABLE 1

EARTHQUAKES IN EASTERN CANADA AND ADJACENT AREAS 1966

(ALL TIMES ARE GMT)
(M OR ML = MAGNITUDE)
(F=FILLED, O=OPEN CIRCLE ON EPICENTRE MAPS)

A. CANADIAN EPICENTRES

JAN 14	15 29 25. 48 54 N, 67 28 W, ML=4.5 ST. LAWRENCE RIVER, NEAR MATANE,QUEBEC.	F
JAN 14	16 14 07. 48 54 N, 67 30 W, ML=3.4 AFTERSHOCK OF EVENT OF 14 JAN 15H.	F
FEB 16	10 55 05. 78 MILES FROM SIC ML=1.8 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
MAR 19	22 51 46. 46 35 N, 74 50 W, ML=2.7 30 MILES EAST OF MONT-LAURIER, QUEBEC.	F
MAR 20	23 45 33. 46 30 N, 76 10 W, ML=3.2 35 MILES WEST OF MONT-LAURIER, QUEBEC.	O
MAR 22	04 48 55. 40 MILES FROM SIC ML=1.3 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
MAR 24	13 03 08. 34 MILES FROM SIC ML=1.7 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
MAR 27	06 31 51. 61 MILES FROM SIC ML=1.9 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
MAY 9	05 16 37. 31 MILES FROM SIC ML=2.0 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
MAY 20	00 05 42. 44 15 N, 66 30 W, ML=3.8 BAY OF FUNDY, 45 MILES SW OF DIGBY, NOVA SCOTIA.	F
MAY 28	22 35 32. 78 MILES FROM SIC ML=1.8 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
JUN 19	07 00 06. 45 MILES FROM SIC ML=1.6 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
JUN 19	10 25 00. 55 MILES FROM SIC ML=1.6 LOWER ST. LAWRENCE VALLEY, QUEBEC.	
JUN 19	19 24 12. 47 00 N, 70 10 W, ML=2.5 SOUTH SHORE ST. LAWRENCE, 20 MILES E OF MONTMAGNY, QUEBEC.	F

JUN 25 00 05 51. 45 10 N, 73 50 W, ML=3.4 F
20 MILES SOUTH OF MONTREAL, QUEBEC, NEAR HOWICK.

JUN 30 22 13 45. 48 00 N, 69 35 W, ML=2.3 F
ST. LAWRENCE RIVER, 15 MILES N OF RIVIERE-DU-LOUP, QUEBEC.

JUL 7 01 10 58. 47 54 N, 65 45 W, ML=2.3 F
BAIE DE CHALEUR, 20 MILES NW OF BATHURST, NEW BRUNSWICK.

JUL 12 01 06 38. 49 30 N, 66 00 W, ML=3.3 F
ST. LAWRENCE RIVER, 55 MILES SE OF SEPT-ILES, QUEBEC.

JUL 17 07 32 19. 49 35 N, 68 25 W, ML=3.6 DEPTH= 1 KM F
30 MILES NW OF BAIE COMEAU, QUEBEC.
FORESHOCK OF EVENT OF 24 JULY 22H.

JUL 20 20 08 29. 47 45 N, 70 00 W, ML=3.2 F
NORTH SHORE ST. LAWRENCE, 10 MILES E OF LA MALBAIE, QUEBEC.

JUL 21 19 29 25. 49 30 N, 68 20 W, ML=2.4 F
FORESHOCK OF EVENT OF 24 JULY 22H.

JUL 24 22 19 46. 49 38 N, 68 33 W, ML=3.7 DEPTH= 1 KM F
MAIN SHOCK. 35 MILES NW OF BAIE COMEAU, QUEBEC.

JUL 24 23 56 00. 47 55 N, 66 10 W, ML=2.9 DEPTH=15 KM F
BAIE DE CHALEUR, 30 MILES NW OF BATHURST, NEW BRUNSWICK.

JUL 27 11 12 43. 49 25 N, 68 25 W, ML=3.4 F
AFTERSHOCK OF EVENT OF 24 JULY 22H.

JUL 29 18 31 16. 45 30 N, 78 40 W, ML=4.3 F
SOUTHWESTERN ALGONQUIN PARK, NEAR HWY 60, ONTARIO. SURFACE EXPLOSION FROM UNKNOWN SOURCE(SEE TEXT). NOT PLOTTED.

AUG 16 01 02 38. 49 30 N, 68 30 W, ML=3.2 F
AFTERSHOCK OF EVENT OF 24 JULY 22H.

AUG 20 13 13 33. 49 35 N, 68 20 W, ML=3.5 F
AFTERSHOCK OF EVENT OF 24 JULY 22H.

SEP 11 04 25 30. 46 30 N, 77 00 W, ML=2.4 DEPTH=16 KM F
NEAR THE COULONGE RIVER, 50 MILES WEST OF MANIWAKI, QUEBEC.

SEP 19 21 33 00. 47 20 N, 70 15 W, ML=2.8 F
ST. LAWRENCE RIVER, 15 MILES SE OF BAIE-ST-PAUL, QUEBEC.

SEP 23 01 20 06. 46 00 N, 75 10 W, ML=2.3 F
IN QUEBEC, 50 MILES NE OF OTTAWA.

SEP 28 08 02 48. 47 25 N, 70 30 W, ML=2.4 F
BAIE-ST-PAUL, QUEBEC.

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SEP 28 20 11 35. 46 55 N, 65 15 W, ML=3.2 DEPTH=15 KM F
14 MILES SE OF CHATHAM, NEW BRUNSWICK.

OCT 1 17 23 55. 47 40 N, 70 20 W, ML=3.0 F
NORTH SHORE ST. LAWRENCE, WEST OF CLERMONT, QUEBEC.

OCT 2 05 19 51. 46 55 N, 70 25 W, ML=2.0 F
SOUTH SHORE ST. LAWRENCE, EAST OF MONTMAGNY, QUEBEC.

OCT 5 16 56 21. 53 00 N, 80 00 W, ML=2.9 O
JAMES BAY.

OCT 15 20 34 08. 53 25 N, 57 10 W, ML=4.4 F
SOUTHEASTERN LABRADOR NEAR SANDWICH BAY.

OCT 22 06 02 33. 47 20 N, 75 00 W, ML=2.5 F
NEAR MITCHINAMECUS RESERVOIR, 60 MILES NE OF MONT-LAURIER.

OCT 22 22 14 22. 48 00 N, 69 30 W, ML=2.3 F
SOUTH SHORE ST. LAWRENCE, 10 MILES N OF RIVIERE-DU-LOUP,QUE

NOV 13 15 43 29. 47 00 N, 76 15 W, ML=3.6 F
SOUTHEAST OF CABONGA RESERVOIR, QUEBEC.

NOV 28 09 12 38. 47 18 N, 70 05 W, ML=2.2 F
SOUTH SHORE ST. LAWRENCE, 32 MILES NE OF MONTMAGNY, QUEBEC.

DEC 12 21 04 12. 49 00 N, 68 10 W, ML=3.4 O
ST. LAWRENCE RIVER, 15 MILES SOUTH OF BAIE COMEAU, QUEBEC.

B. UNITED STATES EPICENTRES

JAN 1 11 29 20. 42 51 N, 78 17 W, M=3.0 DEPTH= 5 KM (ISC) O
FORESHOCK OF EVENT OF 01 JAN 13H FELT NEAR EPICENTRE ML=3.5

JAN 1 13 23 38. 42 54 N, 78 12 W, M=4.7 DEPTH=10 KM (USCGS) F
NEW YORK STATE NEAR BUFFALO. FELT IN WESTERN NEW YORK, NORTHWESTERN PENNSYLVANIA AND SOUTHERN ONTARIO.
INTENSITY VI NEAR EPICENTRE. INTENSITY IV IN NIAGARA PENINSULA AND NEAR NORTHWEST SHORE OF LAKE ONTARIO. ML=4.8
SEE REFERENCE-UNITED STATES EARTHQUAKES 1966, PAGES 9 + 12.

JUL 24 01 59 58. 44 30 N, 67 36 W (USCGS) O
FELT AT JONESPORT MAINE WITH INTENSITY V. ML=3.6

OCT 23 23 05 34. 43 00 N, 71 48 W (USCGS) O
FELT OVER SMALL PORTION OF SOUTHERN NEW HAMPSHIRE.
MAXIMUM REPORTED INTENSITY V. ML=3.1

TABLE 2

EARTHQUAKES IN ARCTIC CANADA AND ADJACENT AREAS
1966

(ALL TIMES ARE GMT)
(M OR ML = MAGNITUDE)
(F=FILLED, O=OPEN CIRCLE ON EPICENTRE MAPS)

A. CANADIAN EPICENTRES

JAN 2 11 51 46. 74 10 N, 71 00 W, ML=5.1 O
BAFFIN BAY

JAN 6 21 32 13. 79 35 N, 92 40 W, ML=3.6 O
AXEL HEIBERG ISLAND NWT

JAN 8 11 11 10. 42 MILES FROM MBC ML=1.5
NEAR PRINCE PATRICK ISLAND NWT

JAN 10 04 28 20. 66 15 N, 111 50 W, ML=4.6 F
NORTHWEST OF CONTWOYTO LAKE NWT

JAN 11 02 56 29. 60 47 N, 58 00 W, ML=4.3 F
NORTHERN LABRADOR SEA

JAN 11 04 17 48. 306 MILES FROM RES ML=2.8

JAN 18 14 03 33. 34 MILES FROM RES ML=1.5
ON OR NEAR CORNWALLIS ISLAND NWT

JAN 19 07 10 20. 67 50 N, 107 40 W, ML=3.7 DEPTH= 5 KM F
BATHURST INLET NWT

JAN 20 06 15 00. 42 MILES FROM RES ML=2.2
ON OR NEAR CORNWALLIS ISLAND NWT

JAN 21 01 25 01. 94 MILES FROM FBC ML=2.2
SOUTHERN BAFFIN ISLAND

JAN 29 12 47 15. 75 20 N, 108 40 W, ML=2.7 F
EASTERN MELVILLE ISLAND NWT

FEB 5 14 36 43. 70 55 N, 71 40 W, ML=4.3 F
BAFFIN ISLAND NEAR CAPE ADAIR

FEB 5 14 48 44. 502 MILES FROM FBC ML=3.9
AFTERSHOCK OF EVENT OF 05 FEB 14H. BAFFIN ISLAND

FEB 5 17 16 31. 99 MILES FROM MBC ML=2.4
NORTHWESTERN MELVILLE ISLAND NWT. (SEE 07 FEB 08H)

FEB 7 00 14 01. 75 25 N, 77 00 W, ML=4.2 O
BAFFIN BAY NEAR EASTERN END OF DEVON ISLAND

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FEB 7 07 15 16. 411 MILES FROM FBC ML=3.4

FEB 7 08 39 25. 76 00 N, 113 30 W, ML=2.3 O
NORTHWESTERN MELVILLE ISLAND NWT

FEB 8 19 50 05. 60 18 N, 140 42 W, M=3.9 DEPTH=33 KM (USCGS) O
YUKON-ALASKA BORDER

FEB 9 21 41 23. 61 00 N, 124 00 W, ML=3.6 O
NORTHWEST OF FORT LIARD NWT

FEB 9 22 33 49. 134 MILES FROM RES ML=1.9

FEB 10 22 26 18. 65 00 N, 87 30 W, ML=3.3 O
WAGER BAY NWT

FEB 11 13 42 16. 60 MILES FROM ALE ML=1.9

FEB 12 04 09 13. 74 20 N, 93 00 W, ML=3.4 F
BARROW STRAIT NWT, SOUTHEAST OF RESOLUTE

FEB 13 13 47 11. 67 35 N, 140 20 W, ML=4.3 O
NORTHERN YUKON-ALASKA BORDER

FEB 15 20 53 47. 54 MILES FROM RES ML=2.3
EITHER 74 15N, 97 30W, OR 75 30N, 95 30W. (NOT PLOTTED)

FEB 16 08 27 47. 64 10 N, 133 30 W, ML=4.0 O
50 MILES EAST OF KENO HILL, YUKON TERRITORY

FEB 16 23 34 54. 71 10 N, 70 00 W, ML=4.1 O
CAPE ADAIR, BAFFIN ISLAND

FEB 17 19 44 47. 515 MILES FROM FBC ML=3.8
AFTERSHOCK OF EVENT OF 16 FEB 23H. BAFFIN ISLAND

FEB 24 03 12 10. 74 15 N, 96 40 W, ML=3.4 F
BARROW STRAIT NWT, SOUTHWEST OF RESOLUTE

FEB 24 18 47 40. 71 15 N, 90 00 W, ML=4.0 F
BERNIER BAY, GULF OF BOOTHIA NWT

FEB 27 19 51 27. 65 45 N, 89 40 W, ML=4.1 F
WAGER BAY NWT

MAR 2 14 52 04. 71 MILES FROM FBC ML=2.2
SOUTHERN BAFFIN ISLAND

MAR 2 15 12 03. 69 25 N, 130 00 W, ML=3.6 O
NEAR ESKIMO LAKES, SOUTHEAST OF TUKTOYAKTUK NWT

MAR 2 15 57 27. 73 MILES FROM FBC ML=2.5
SOUTHERN BAFFIN ISLAND

MAR 2 16 03 42. 77 MILES FROM FBC ML=1.9
SOUTHERN BAFFIN ISLAND

MAR 4 09 19 36. 75 MILES FROM FBC ML=1.5
SOUTHERN BAFFIN ISLAND

MAR 4 13 20 28. 69 50 N, 92 50 W, ML=3.8 F
LORD MAYOR BAY, BOOTHIA PENINSULA NWT

MAR 5 01 04 46. 64 40 N, 134 10 W, ML=4.2 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

MAR 5 11 57 43. 150 MILES FROM RES ML=1.7

MAR 7 02 58 29. 65 50 N, 140 00 W, ML=4.1 0
NORTHERN YUKON-ALASKA BORDER

MAR 8 07 28 38. 80 55 N, 119 20 W, ML=3.3 0
ARCTIC OCEAN, 325 MILES NORTH OF MOULD BAY

MAR 8 12 23 50. 82 MILES FROM ALE ML=1.6

MAR 9 19 17 34. 137 MILES FROM RES ML=2.1

MAR 11 19 23 48. 78 55 N, 95 00 W, ML=4.3 0
SVERDRUP CHANNEL NEAR AXEL HEIBERG ISLAND NWT

MAR 14 02 42 06. 67 00 N, 137 20 W, ML=4.0 0
RICHARDSON MTS, YUKON TERRITORY, SW OF FORT MCPHERSON

MAR 14 05 27 36. 99 MILES FROM RES ML=1.9

MAR 14 23 29 00. 64 40 N, 131 00 W, ML=3.7 0
YUKON-NWT BORDER, EAST OF KENO HILL

MAR 15 12 22 59. 78 30 N, 95 00 W, ML=3.1 0
SVERDRUP CHANNEL NWT

MAR 15 13 53 31. 68 55 N, 126 20 W, ML=3.3 F
40 MILES SOUTH OF FRANKLIN BAY NWT

MAR 16 17 21 26. 78 30 N, 97 00 W, ML=3.4 0
AMUND RINGES ISLAND NWT

MAR 17 15 49 59. 11 MILES FROM MBC ML=1.4
ON OR NEAR PRINCE PATRICK ISLAND NWT

MAR 18 02 05 31. 24 MILES FROM MBC ML=1.3
ON OR NEAR PRINCE PATRICK ISLAND NWT

MAR 20 18 48 17. 70 50 N, 72 00 W, ML=3.7 0
BAFFIN ISLAND, SOUTH OF CAPE ADAIR

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MAR 22 07 44 53. 75 50 N, 95 00 W, ML=3.0 0
NORTH OF CORNWALLIS ISLAND NWT

MAR 22 16 22 21. 81 MILES FROM ALE ML=2.0

MAR 22 22 10 03. 64 45 N, 88 00 W, ML=5.1 0
SOUTH OF WAGER BAY NWT

MAR 23 08 06 60. 65 05 N, 87 40 W, ML=4.0 0
WAGER BAY NWT. AFTERSHOCK OF EVENT OF 22 MAR 22H

MAR 26 02 32 31. 65 00 N, 133 30 W, ML=5.0 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

MAR 26 12 18 22. 65 20 N, 90 00 W, ML=3.6 0
WAGER BAY NWT

MAR 26 16 53 30. 525 MILES FROM CMC ML=3.8
AFTERSHOCK OF EVENT OF 26 MAR 02H. YUKON TERRITORY

MAR 26 21 08 32. 504 MILES FROM FBC ML=3.8
PROBABLY ON BAFFIN ISLAND NEAR CAPE ADAIR

MAR 27 00 33 37. 71 50 N, 75 00 W, ML=4.6 0
BAFFIN ISLAND, SOUTH OF CAPE MACCULLOCH

MAR 31 04 02 45. 61 MILES FROM MBC ML=1.5

APR 1 12 33 18. 65 30 N, 133 50 W, ML=4.2 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

APR 2 03 09 52. 163 MILES FROM ALE ML=2.2

APR 5 14 32 25. 61 10 N, 126 00 W, ML=5.0 0
SOUTHERN YUKON-NWT BORDER
USCGS 61.8N, 126.8W AT 14 32 26 M=4.1

APR 5 23 30 52. 77 40 N, 114 20 W, ML=2.9 F
NORTHEAST OF PRINCE PATRICK ISLAND NWT

APR 11 07 08 59. 65 55 N, 86 20 W, ML=3.7 0
ROES WELCOME SOUND NWT, NORTHEAST OF WAGER BAY

APR 12 01 08 55. 66 25 N, 133 30 W, ML=3.6 0
PEEL RIVER, YUKON-NWT BORDER

APR 12 04 57 26. 65 00 N, 134 20 W, ML=3.9 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

APR 14 22 14 44. 70 MILES FROM FBC ML=2.1
SOUTHERN BAFFIN ISLAND

APR 15 03 32 19. 67 00 N, 136 20 W, ML=3.9 0
RICHARDSON MTS, YUKON TERRITORY, SW OF FORT MCPHERSON

APR 15 09 13 06. 75 25 N, 102 00 W, ML=2.0 0
AUSTIN CHANNEL NEAR BATHURST ISLAND NWT.

APR 16 08 30 32. 78 00 N, 113 00 W, ML=4.3 0
MACKENZIE KING ISLAND NWT

APR 16 17 11 30. 271 MILES FROM BLC ML=3.1
PROBABLY NEAR WAGER BAY NWT

APR 17 13 18 42. 71 10 N, 133 40 W, ML=4.4 F
BEAUFORT SEA, 100 MILES NORTH OF TUKTOYAKTUK NWT

APR 18 22 55 55. 70 MILES FROM FBC ML=1.7
SOUTHERN BAFFIN ISLAND

APR 19 05 20 59. 66 45 N, 111 00 W, ML=2.5 0
NORTH OF CONTWOYTO LAKE NWT

APR 20 00 53 59. 149 MILES FROM RES ML=2.1
PROBABLY SOUTHWEST OF RESOLUTE NWT

APR 20 09 44 13. 84 MILES FROM FBC ML=1.9
SOUTHERN BAFFIN ISLAND

APR 24 09 59 24. 73 10 N, 95 50 W, ML=2.8 F
WEST OF SOMERSET ISLAND NWT

APR 24 20 35 27. 73 10 N, 96 20 W, ML=2.6 F
WEST OF SOMERSET ISLAND NWT

APR 24 21 29 36. 66 00 N, 136 30 W, ML=4.8 0
PEEL RIVER, NORTH CENTRAL YUKON TERRITORY

APR 25 04 01 14. 61 35 N, 123 00 W, ML=3.5 0
60 MILES WEST OF FORT SIMPSON NWT

APR 27 04 17 15. 119 MILES FROM MBC ML=2.2
PROBABLY EAST OF MOULD BAY NWT

APR 27 16 08 57. 22 MILES FROM MBC ML=1.1
ON OR NEAR PRINCE PATRICK ISLAND NWT

APR 28 23 28 59. 60 40 N, 57 50 W, ML=4.8 0
NORTHERN LABRADOR SEA

APR 29 07 54 14. 72 20 N, 75 30 W, ML=4.5 0
CAPE MACCULLOCH, BAFFIN ISLAND

APR 29 16 35 26. 63 40 N, 122 30 W, ML=2.7 0
ABOUT 40 MILES NORTHEAST OF WRIGLEY NWT

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MAY 1 12 23 25. 64 50 N, 87 30 W, ML=3.5 0
SOUTH OF WAGER BAY NWT

MAY 1 13 15 06. 63 20 N, 60 50 W, ML=4.8 F
DAVIS STRAIT, SOUTHEAST OF CUMBERLAND SOUND

MAY 3 08 48 54. 373 MILES FROM CMC ML=3.3
PROBABLE FORESHOCK OF EVENT OF 07 MAY 01H. SE OF INUVIK NWT

MAY 3 22 25 51. 5 MILES FROM RES ML=1.0
ON OR NEAR CORNWALLIS ISLAND NWT

MAY 4 00 43 51. 64 30 N, 133 30 W, ML=4.2 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

MAY 5 03 21 21. 22 MILES FROM MBC ML=1.6
ON OR NEAR PRINCE PATRICK ISLAND NWT

MAY 7 01 24 06. 67 30 N, 129 30 W, ML=3.6 0
125 MILES SOUTHEAST OF INUVIK NWT

MAY 7 23 09 04. 74 00 N, 143 00 W, ML=3.3 0
BEAUFORT SEA

MAY 8 04 57 05. 77 45 N, 91 00 W, ML=3.1 0
SOUTH OF AXEL HEIBERG ISLAND NWT

MAY 10 05 45 04. 65 10 N, 88 00 W, ML=4.0 F
WAGER BAY NWT

MAY 10 06 58 23. 62 MILES FROM RES ML=1.5

MAY 11 01 41 22. 71 50 N, 74 50 W, ML=4.6 F
BAFFIN ISLAND, SOUTH OF CAPE MACCULLOCH

MAY 13 11 07 47. 60 40 N, 123 50 W, ML=3.0 0
NORTHWEST OF FORT LIARD NWT

MAY 13 13 19 07. 196 MILES FROM RES ML=2.5

MAY 16 01 18 54. 64 40 N, 86 10 W, ML=3.4 0
SOUTHAMPTON ISLAND, NORTHERN HUDSON BAY

MAY 18 06 31 21. 65 00 N, 134 10 W, ML=3.7 0
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

MAY 18 17 51 01. 72 35 N, 138 30 W, ML=3.4 0
BEAUFORT SEA

MAY 20 10 41 43. 60 MILES FROM RES ML=1.3

MAY 20 14 12 09. 31 MILES FROM MBC ML=0.7
ON OR NEAR PRINCE PATRICK ISLAND NWT

MAY 21 05 48 29. 72 50 N, 94 20 W, ML=4.2 F
SOMERSET ISLAND NWT

MAY 25 10 42 21. 66 50 N, 135 50 W, ML=3.9 O
RICHARDSON MTS, YUKON TERRITORY, SW OF FORT MCPHERSON

MAY 25 11 50 03. 122 MILES FROM RES ML=1.7

MAY 28 10 53 25. 52 MILES FROM MBC ML=1.4

MAY 30 18 39 22. 91 MILES FROM MBC ML=2.2

JUN 2 22 49 23. 63 MILES FROM RES ML=1.7

JUN 3 09 42 30. 226 MILES FROM FBC ML=3.2

JUN 3 10 42 40. 62 30 N, 79 20 W, ML=3.8 F
NORTHERN HUDSON BAY NEAR MANSEL ISLAND

JUN 6 21 40 48. 67 20 N, 95 00 W, ML=3.5 O
CHANTREY INLET NWT.

JUN 7 16 01 50. 21 MILES FROM MBC ML=0.3
ON OR NEAR PRINCE PATRICK ISLAND NWT

JUN 11 01 11 53. 65 10 N, 133 50 W, ML=4.0 O
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

JUN 12 09 50 40. 68 45 N, 118 30 W, ML=2.6 O
110 MILES NORTHWEST OF COPPERMINE NWT

JUN 18 10 33 56. 42 MILES FROM RES ML=2.0
ON OR NEAR CORNWALLIS ISLAND NWT

JUN 19 13 45 22. 74 40 N, 93 30 W, ML=4.0 F
BARROW STRAIT SOUTH OF CORNWALLIS ISLAND NWT

JUN 19 21 36 13. 71 50 N, 98 00 W, ML=2.8 F
PRINCE OF WALES ISLAND NWT

JUN 25 21 39 49. 150 MILES FROM RES ML=2.5 DEPTH=19 KM

JUN 26 17 50 51. 34 MILES FROM RES ML=2.2
ON OR NEAR CORNWALLIS ISLAND NWT

JUL 1 04 25 56. 146 MILES FROM RES ML=1.8

JUL 14 22 53 22. 16 MILES FROM MBC ML=0.3
FORESHOCK OF EVENT OF 15 JUL 00H 11M

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JUL 15 00 11 10. 16 MILES FROM MBC ML=1.1
MAIN SHOCK. LOCATED ON OR NEAR PRINCE PATRICK ISLAND NWT

THE FOLLOWING 4 EVENTS ARE AFTERSHOCKS
OF THE EVENT OF 15 JUL 00H 11M

JUL 15 00 29 37. 16 MILES FROM MBC ML=0.4

JUL 15 00 42 23. 16 MILES FROM MBC ML=0.3

JUL 15 04 03 07. 16 MILES FROM MBC ML=0.2

JUL 15 15 35 09. 16 MILES FROM MBC ML=0.2

JUL 17 14 51 57. 64 20 N, 129 30 W, ML=3.7 O
WEST CENTRAL NWT NEAR YUKON-NWT BORDER

JUL 28 03 08 50. 65 30 N, 133 30 W, ML=4.1 O
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

JUL 28 11 44 24. 65 30 N, 88 00 W, ML=3.9 DEPTH=12 KM O
WAGER BAY NWT.

JUL 29 13 26 18. 78 00 N, 111 55 W, ML=3.5 F
MACKENZIE KING ISLAND NWT

AUG 5 15 25 40. 140 MILES FROM RES ML=1.9

AUG 10 00 19 56. 77 40 N, 120 00 W, ML=4.2 O
NORTH OF PRINCE PATRICK ISLAND NWT.

AUG 10 23 17 50. 75 00 N, 73 40 W, ML=4.3 O
BAFFIN BAY

AUG 17 10 26 30. 71 15 N, 126 30 W, ML=3.4 O
AMUNDSEN GULF BETWEEN CAPE BATHURST AND SACHS HARBOUR NWT

AUG 17 11 06 55. 73 40 N, 71 20 W, ML=4.4 O
BAFFIN BAY

AUG 17 11 19 35. 65 40 N, 134 30 W, ML=3.5 O
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

AUG 18 01 04 21. 107 MILES FROM ALE ML=2.2

AUG 19 14 35 55. 66 30 N, 135 20 W, ML=4.4 O
RICHARDSON MTS, YUKON TERRITORY, SW OF FORT MCPHERSON

AUG 25 07 41 43. 148 MILES FROM ALE ML=2.5

AUG 25 15 54 31. 60 10 N, 75 20 W, ML=4.3 O
LAKE COUTURE IN NORTHERN QUEBEC

AUG 27 07 26 30. 186 MILES FROM FBC ML=2.1

SEP 1 05 50 59. 270 MILES FROM BLC ML=3.3
PROBABLY NEAR WAGER BAY NWT

SEP 1 19 55 02. 75 40 N, 105 00 W, ML=3.4 DEPTH= 9 KM O
MAIN SHOCK. NEAR EASTERN END OF MELVILLE ISLAND NWT

SEP 1 22 01 41. 75 40 N, 105 00 W, ML=2.9 DEPTH=12 KM O
AFTERSHOCK OF EVENT OF 01 SEP 19H. MELVILLE ISLAND NWT

SEP 2 02 11 28. 75 40 N, 105 00 W, ML=3.0 DEPTH=11 KM O
AFTERSHOCK OF EVENT OF 01 SEP 19H. MELVILLE ISLAND NWT

SEP 2 12 19 33. 42 MILES FROM RES ML=2.0
ON OR NEAR CORNWALLIS ISLAND NWT

SEP 7 18 02 44. 75 30 N, 65 00 W, ML=4.7 O
NORTHEASTERN BAFFIN BAY. 100 MILES SE OF THULE, GREENLAND

SEP 8 20 45 53. 211 MILES FROM ALE ML=2.5

SEP 18 16 49 10. 275 MILES FROM BLC ML=3.1
PROBABLY NEAR WAGER BAY NWT

SEP 27 19 58 40. 94 MILES FROM ALE ML=2.3

OCT 14 13 36 26. 81 00 N, 126 30 W, ML=3.6 F
ARCTIC OCEAN, 340 MILES NNW OF MOULD BAY

OCT 19 02 13 37. 65 10 N, 88 10 W, ML=3.7 F
WAGER BAY NWT

OCT 20 02 25 58. 44 MILES FROM RES ML=1.9
ON OR NEAR CORNWALLIS ISLAND NWT

OCT 20 23 44 35. 69 45 N, 124 45 W, ML=3.6 F
SOUTH OF CAPE PARRY NWT

OCT 22 02 38 37. 170 MILES FROM RES ML=2.1

OCT 30 06 39 11. 67 45 N, 92 15 W, ML=3.7 O
80 MILES SW OF PELLY BAY NWT

NOV 2 03 17 60. 6 MILES FROM RES ML=0.6
ON OR NEAR CORNWALLIS ISLAND NWT

NOV 7 11 39 05. 74 35 N, 83 25 W, ML=4.4 F
CROKER BAY, DEVON ISLAND NWT

NOV 8 05 33 37. 15 MILES FROM RES ML=0.9
ON OR NEAR CORNWALLIS ISLAND NWT

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NOV 8 11 32 50. 42 MILES FROM RES ML=1.9
ON OR NEAR CORNWALLIS ISLAND NWT

NOV 18 05 13 28. 81 00 N, 92 00 W, ML=3.3 O
NORTHERN AXEL HEIBERG ISLAND NWT

NOV 21 00 36 55. 102 MILES FROM RES ML=2.3

NOV 24 14 38 18. 47 MILES FROM RES ML=1.4
ON OR NEAR CORNWALLIS ISLAND NWT

NOV 30 00 58 01. 60 10 N, 56 10 W, ML=4.0 O
NORTHERN LABRADOR SEA

NOV 30 11 45 13. 60 12 N, 55 56 W, ML=4.1 O
NORTHERN LABRADOR SEA

DEC 1 18 15 40. 71 20 N, 73 20 W, ML=4.5 F
BAFFIN ISLAND, SOUTHEAST OF CAPE MACCULLOCH

DEC 2 01 12 19. 63 MILES FROM RES ML=1.4

DEC 2 09 56 45. 72 50 N, 90 00 W, ML=4.3 F
PRINCE REGENT INLET NWT

DEC 3 15 11 16. 336 MILES FROM MBC ML=3.1
BEAUFORT SEA

DEC 6 23 32 17. 71 30 N, 132 30 W, ML=3.5 O
BEAUFORT SEA

DEC 11 04 38 02. 36 MILES FROM RES ML=1.6
ON OR NEAR CORNWALLIS ISLAND NWT

DEC 11 16 04 19. 65 10 N, 134 00 W, ML=4.2 O
SELWYN MTS. NORTHEAST OF KENO HILL, YUKON TERRITORY

DEC 11 18 09 27. 64 50 N, 133 20 W, ML=4.2 F
AFTERSHOCK OF EVENT OF 11 DEC 16H. YUKON TERRITORY

DEC 11 21 24 28. 68 00 N, 93 00 W, ML=3.2 O
ABOUT 70 MILES EAST OF CHANTREY INLET NWT

DEC 15 12 23 31. 218 MILES FROM YKC ML=2.8

DEC 16 07 01 18. 572 MILES FROM YKC ML=3.7
PROBABLY SOUTHERN YUKON, WEST OF YELLOWKNIFE

DEC 19 22 06 22. 27 MILES FROM RES ML=0.7
ON OR NEAR CORNWALLIS ISLAND NWT

DEC 22 01 46 13. 106 MILES FROM RES ML=2.2

DEC 22 16 19 53. 42 MILES FROM RES ML=1.9
ON OR NEAR CORNWALLIS ISLAND NWT

THE FOLLOWING 4 EVENTS ARE FORESHOCKS OF THE BAFFIN ISLAND EVENT OF 26 DEC 04H

DEC 24 12 14 35. 71 40 N, 75 00 W, ML=4.6 F

DEC 24 22 43 26. 71 40 N, 75 20 W, ML=4.6 F

DEC 24 22 57 02. 71 30 N, 76 00 W, ML=3.7 0

DEC 25 03 44 49. 71 30 N, 76 00 W, ML=4.0 0

DEC 26 04 12 58. 71 30 N, 74 40 W, ML=4.9 F
MAIN SHOCK. BAFFIN ISLAND, SOUTH OF CAPE MACCULLOCH

DEC 26 07 54 03. 77 45 N, 101 30 W, ML=2.9 0
KING CHRISTIAN ISLAND NWT

DEC 27 08 19 56. 138 MILES FROM ALE ML=2.0

DEC 28 00 38 46. 66 30 N, 136 20 W, ML=4.1 0
RICHARDSON MTS, YUKON TERRITORY, SW OF FORT MCPHERSON

DEC 28 02 30 51. 114 MILES FROM RES ML=1.4

DEC 28 02 36 27. 60 10 N, 129 30 W, ML=5.0 0
25 MILES WEST OF WATSON LAKE, YUKON. INTENSITY IV AT WATSON LAKE, INTENSITY IV-V AT UPPER LIARD 8 MILES WEST OF WATSON LAKE AND IV-V AT FIRESIDE INN, B.C. 80 MILES SE OF WATSON LAKE. NO INJURIES AND ONLY VERY SLIGHT DAMAGE. REPORTED NOT FELT AT TUNGSTEN NWT, 120 MILES NORTH OF WATSON LAKE.
USCGS 60.5N, 126.5W AT 02 36 39.4 M=3.6
ISC 60.6N, 126.9W AT 02 36 39. M=3.7

THE FOLLOWING 11 EVENTS ARE AFTERSHOCKS OF THE BAFFIN ISLAND EVENT OF 26 DEC 04H, SOUTH OF CAPE MACCULLOCH

DEC 28 07 54 10. 71 30 N, 76 00 W, ML=3.9 0

DEC 28 09 11 56. 71 50 N, 76 20 W, ML=3.8 F

DEC 28 11 52 37. 71 40 N, 76 40 W, ML=3.9 F

DEC 28 13 23 17. 71 40 N, 76 30 W, ML=4.2 F

DEC 28 13 52 57. 71 30 N, 76 00 W, ML=3.8 0

DEC 28 13 56 12. 71 30 N, 76 00 W, ML=3.3 0

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DEC 28 14 15 59. 71 40 N, 75 50 W, ML=3.9 F

DEC 28 14 40 26. 71 30 N, 76 00 W, ML=3.3 0

DEC 28 15 07 29. 71 30 N, 76 50 W, ML=3.7 0

DEC 28 16 25 18. 71 30 N, 76 00 W, ML=3.0 0

DEC 28 16 29 41. 71 30 N, 76 00 W, ML=3.5 0

DEC 28 21 22 45. 97 MILES FROM RES ML=2.3

DEC 29 18 49 26. 47 MILES FROM ALE ML=1.8

B. UNITED STATES EPICENTRES

JAN 22 22 07 35. 62 09 N, 141 06 W, M=4.6 DEPTH=33 KM (ISC) 0
ALASKA-YUKON BORDER

FEB 8 19 50 06. 60 25 N, 140 42 W, M=3.8 DEPTH=33 KM (ISC) 0
ALASKA-YUKON BORDER

FEB 19 02 01 54. 69 35 N, 149 00 W, ML=4.7 0
NORTH SLOPE, ALASKA

FEB 24 05 37 14. 66 05 N, 157 30 W, ML=4.5 F
WEST CENTRAL ALASKA

MAR 15 03 26 40. 66 10 N, 149 10 W, ML=4.3 0
YUKON RIVER VALLEY, CENTRAL ALASKA

MAY 20 01 50 38. 66 20 N, 142 10 W, ML=4.6 F
CENTRAL ALASKA NEAR YUKON BORDER

MAY 29 06 46 36. 60 54 N, 144 36 W, M=3.9 DEPTH=22 KM (USCGS) 0
SOUTHERN ALASKA

OCT 12 03 19 24. 60 19 N, 144 54 W, M=4.5 DEPTH=33 KM (ISC) 0
SOUTHERN ALASKA

OCT 12 16 40 44. 60 18 N, 144 30 W, M=4.1 DEPTH=33 KM (ISC) 0
SOUTHERN ALASKA

DEC 8 16 22 26. 69 10 N, 144 50 W, ML=4.1 F
NORTHEASTERN ALASKA

DEC 8 16 24 52. 69 10 N, 144 20 W, ML=4.0 F
NORTHEASTERN ALASKA

DEC 8 17 13 32. 69 10 N, 144 40 W, ML=4.3 F
NORTHEASTERN ALASKA

C. GREENLAND EPICENTRES

AUG 1 17 59 33. 74 05 N, 52 30 W, ML=4.0 O
WEST COAST OF GREENLAND

AUG 9 02 31 20. 79 35 N, 19 10 W, ML=3.6 O
NORTHEAST COAST OF GREENLAND

AUG 18 04 18 06. 79 35 N, 19 10 W, ML=3.6 O
NORTHEAST COAST OF GREENLAND

NOV 9 12 37 04. 74 35 N, 59 40 W, ML=4.0 O
WEST COAST OF GREENLAND

NOV 13 10 09 28. 77 00 N, 55 00 W, ML=3.4 O
NORTHWEST GREENLAND

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TABLE 3

EARTHQUAKES IN WESTERN CANADA AND ADJACENT AREAS
1966

(ALL TIMES ARE GMT)
(M OR ML = MAGNITUDE)
(F=FILLED, O=OPEN CIRCLE ON EPICENTRE MAPS)

A. CANADIAN EPICENTRES

JAN 1 07 40 06. 49 54 N, 129 36 W, ML=3.2 O
WEST OF VANCOUVER ISLAND.

JAN 1 07 54 26. 50 00 N, 129 42 W, ML=2.9 O
WEST OF VANCOUVER ISLAND.

JAN 1 21 28 31. 105 MILES FROM PHC ML=3.6
WEST OF VANCOUVER ISLAND.

JAN 2 10 10 51. 51 30 N, 116 30 W, ML=4.5 F
NORTHWEST OF BANFF, ALBERTA-B.C. BORDER.

JAN 5 23 42 14. 72 MILES FROM PNT ML=2.7

JAN 6 04 22 47. 18 MILES FROM FSJ ML=1.8

JAN 6 09 13 05. 26 MILES FROM FSJ ML=2.2

JAN 7 23 10 39. 43 MILES FROM FSJ ML=1.9

JAN 8 18 20 02. 30 MILES FROM FSJ ML=2.2

JAN 12 19 53 59. 125 MILES FROM PNT ML=3.1

JAN 13 07 49 06. 49 40 N, 126 49 W, ML=4.0 F
NEAR NOOTKA ISLAND. FELT ABOUT 20 MILES NORTH AT
ZEBALLOS, VANCOUVER ISLAND, WITH INTENSITY LESS THAN III.

JAN 14 09 48 59. 137 MILES FROM PHC ML=3.4

JAN 14 21 46 08. 139 MILES FROM PNT ML=3.0

JAN 14 21 46 51. 154 MILES FROM PNT ML=3.1

JAN 20 19 51 14. 51 18 N, 131 12 W, ML=4.7 F
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 20 19 56 15. 51 06 N, 132 36 W, ML=4.1 O
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 20 19 59 42. 51 18 N, 132 06 W, ML=3.8 O
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 20 21 21 08. 410 MILES FROM FSJ ML=4.1
AFTERSHOCK, SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 20 21 44 51. 50 54 N, 132 06 W, ML=4.1 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 21 10 49 32. 68 MILES FROM FSJ ML=2.1

JAN 21 11 27 52. 51 18 N, 131 30 W, ML=3.8 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 22 00 00 31. 119 MILES FROM PNT ML=3.2

JAN 22 05 26 05. 51 06 N, 131 54 W, ML=3.5 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

JAN 22 12 43 06. 51 23 N, 125 54 W, ML=3.3 F
HEAD OF KNIGHT INLET, B.C.

JAN 23 14 04 59. 176 MILES FROM PNT ML=2.8

JAN 23 23 09 00. 109 MILES FROM FSJ ML=2.4

JAN 25 13 47 03. 77 MILES FROM PNT ML=2.0

JAN 27 21 48 22. 32 MILES FROM FSJ ML=1.6

JAN 27 22 08 42. 116 MILES FROM PNT ML=2.9

FEB 2 23 26 10. 116 MILES FROM PNT ML=3.0

FEB 7 08 49 23. 50 54 N, 131 12 W, ML=5.0 0
WEST OF VANCOUVER ISLAND.

FEB 7 09 08 35. 50 42 N, 131 00 W, ML=4.1 0
WEST OF VANCOUVER ISLAND.

FEB 7 10 14 14. 51 18 N, 131 00 W, ML=3.2 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

FEB 7 13 45 42. 50 36 N, 131 30 W, ML=3.8 0
WEST OF VANCOUVER ISLAND.

FEB 7 13 50 24. 50 36 N, 131 24 W, ML=3.4 0
WEST OF VANCOUVER ISLAND.

FEB 7 13 52 37. 169 MILES FROM PHC ML=3.1

FEB 7 14 00 13. 50 48 N, 131 06 W, ML=3.2 0
WEST OF VANCOUVER ISLAND.

FEB 7 14 02 43. 50 36 N, 131 24 W, ML=4.8 0
WEST OF VANCOUVER ISLAND.

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FEB 7 14 12 26. 50 54 N, 131 12 W, ML=4.0 0
WEST OF VANCOUVER ISLAND.

FEB 7 14 15 44. 49 42 N, 132 00 W, ML=4.2 0
WEST OF VANCOUVER ISLAND.

FEB 7 14 23 09. 50 48 N, 131 54 W, ML=4.1 0
WEST OF VANCOUVER ISLAND.

FEB 7 14 32 21. 51 18 N, 130 42 W, ML=3.8 0
NORTHWEST OF VANCOUVER ISLAND.

FEB 7 15 00 25. 51 12 N, 131 24 W, ML=3.4 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

FEB 7 15 01 56. 176 MILES FROM PHC ML=3.0

FEB 7 15 10 30. 51 24 N, 130 24 W, ML=3.1 0
NORTHWEST OF VANCOUVER ISLAND.

FEB 7 15 40 45. 50 54 N, 130 54 W, ML=3.9 0
NORTHWEST OF VANCOUVER ISLAND.

FEB 7 21 30 13. 52 06 N, 130 24 W, ML=3.0 0
EAST OF QUEEN CHARLOTTE ISLANDS.

FEB 8 00 48 13. 50 36 N, 131 48 W, ML=3.6 0
WEST OF VANCOUVER ISLAND.

FEB 8 03 26 27. 50 54 N, 130 48 W, ML=3.3 0
WEST OF VANCOUVER ISLAND.

FEB 8 07 58 20. 50 54 N, 130 18 W, ML=3.9 0
WEST OF VANCOUVER ISLAND.

FEB 9 21 43 33. 120 MILES FROM PNT ML=2.8

FEB 13 00 32 08. 150 MILES FROM PNT ML=3.0

FEB 21 12 56 58. 27 MILES FROM PNT ML=1.7

FEB 23 21 31 21. 50 MILES FROM PNT ML=2.0

MAR 2 17 49 59. 29 MILES FROM PNT ML=1.7

MAR 2 21 09 53. 200 MILES FROM FSJ ML=2.8
PROBABLY AT HEAD OF KNIGHT INLET, B.C.

MAR 3 05 44 17. 51 18 N, 131 42 W, ML=3.6 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

MAR 3 06 16 31. 204 MILES FROM PHC ML=2.6

MAR 3 06 59 22. 227 MILES FROM PHC ML=2.7

MAR 3 07 11 55. 51 36 N, 131 30 W, ML=3.8 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

MAR 9 11 23 47. 50 42 N, 129 30 W, ML=2.8 0
WEST OF VANCOUVER ISLAND.

MAR 14 06 02 55. 63 MILES FROM VIC ML=1.8

MAR 14 16 55 12. 180 MILES FROM PNT ML=3.7

MAR 16 04 40 20. 50 48 N, 131 12 W, ML=3.9 0
WEST OF VANCOUVER ISLAND.

MAR 18 05 36 18. 102 MILES FROM PHC ML=2.8

MAR 18 18 45 55. 20 MILES FROM BAN ML=1.6
NEAR ALBERTA-B.C. BORDER.

MAR 30 05 47 06. 49 18 N, 129 00 W, ML=2.8 0
WEST OF VANCOUVER ISLAND.

MAR 30 05 52 06. 128 MILES FROM PHC ML=2.7

MAR 30 07 50 26. 110 MILES FROM PHC ML=2.8

MAR 30 08 26 40. 49 42 N, 129 36 W, ML=3.0 0
WEST OF VANCOUVER ISLAND.

MAR 30 11 04 20. 49 36 N, 129 06 W, ML=2.8 0
WEST OF VANCOUVER ISLAND.

MAR 30 12 39 56. 49 48 N, 129 54 W, ML=5.1 F
WEST OF VANCOUVER ISLAND.

MAR 30 12 57 34. 49 18 N, 129 00 W, ML=2.5 0
WEST OF VANCOUVER ISLAND.

MAR 30 12 59 49. 117 MILES FROM PHC ML=2.6

MAR 30 13 11 48. 106 MILES FROM PHC ML=2.8

MAR 30 13 56 38. 49 36 N, 129 00 W, ML=2.5 0
WEST OF VANCOUVER ISLAND.

MAR 30 14 04 50. 49 42 N, 129 12 W, ML=2.6 0
WEST OF VANCOUVER ISLAND.

MAR 30 16 36 11. 49 36 N, 128 54 W, ML=3.6 0
WEST OF VANCOUVER ISLAND.

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MAR 31 15 38 32. 104 MILES FROM PHC ML=2.8

APR 1 17 11 12. 48 MILES FROM VIC ML=2.3

APR 6 13 46 37. 49 30 N, 129 06 W, ML=2.8 0
WEST OF VANCOUVER ISLAND.

APR 6 17 59 22. 40 MILES FROM PHC ML=2.5

APR 7 03 00 54. 104 MILES FROM PNT ML=2.4

APR 7 08 59 11. 165 MILES FROM PNT ML=2.7

APR 8 00 31 51. 17 MILES FROM VIC ML=1.8

APR 10 05 08 02. 24 MILES FROM PNT ML=2.1

APR 11 04 16 16. 17 MILES FROM VIC ML=1.1

APR 13 00 15 30. 19 MILES FROM VIC ML=1.0

APR 13 08 57 22. 19 MILES FROM VIC ML=1.0

APR 14 21 36 18. 16 MILES FROM BAN ML=1.3
NEAR ALBERTA-B.C. BORDER.

APR 14 22 40 40. 204 MILES FROM FSJ ML=3.2

APR 17 16 46 47. 54 06 N, 133 36 W, ML=5.0 0
WEST OF THE QUEEN CHARLOTTE ISLANDS.

APR 25 05 11 47. 55 MILES FROM VIC ML=2.5

APR 29 09 26 40. 71 MILES FROM PNT ML=2.2

APR 30 20 03 47. 19 MILES FROM VIC ML=1.1

MAY 7 12 05 40. 103 MILES FROM PHC ML=2.8

MAY 7 23 49 22. 45 MILES FROM PHC ML=1.7

MAY 13 17 48 04. 106 MILES FROM PHC ML=1.4

MAY 16 06 12 26. 49 36 N, 129 00 W, ML=3.1 0
WEST OF VANCOUVER ISLAND.

MAY 16 06 35 38. 103 MILES FROM PHC ML=2.5

MAY 16 06 37 07. 104 MILES FROM PHC ML=2.8

MAY 16 06 49 15. 50 18 N, 129 36 W, ML=3.0 0
WEST OF VANCOUVER ISLAND.

MAY 16 07 20 57. 103 MILES FROM PHC ML=2.5

MAY 16 07 25 27. 49 48 N, 129 24 W, ML=3.1 0
WEST OF VANCOUVER ISLAND.

MAY 16 07 34 58. 102 MILES FROM PHC ML=2.6

MAY 16 10 36 05. 94 MILES FROM PHC ML=2.3

MAY 17 08 16 39. 92 MILES FROM PHC ML=2.3

MAY 18 04 04 46. 114 MILES FROM PHC ML=2.7

MAY 19 03 03 05. 51 00 N, 130 06 W, ML=3.2 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

MAY 20 14 44 46. 55 30 N, 122 20 W, ML=3.7 F
NEAR PINE PASS, SW OF CHETWYND, B.C.

MAY 20 19 24 33. 42 MILES FROM PNT ML=2.3

MAY 20 19 57 41. 50 24 N, 129 54 W, M=3.6 DEPTH=33 KM (USCGS) 0
OFF COAST OF NORTHWESTERN VANCOUVER ISLAND.

MAY 20 23 57 44. 49 54 N, 129 42 W, ML=3.6 0
WEST OF VANCOUVER ISLAND.

MAY 20 23 58 49. 50 00 N, 129 36 W, ML=4.2 0
WEST OF VANCOUVER ISLAND.

MAY 21 00 06 32. 101 MILES FROM PHC ML=3.2

MAY 21 00 21 45. 101 MILES FROM PHC ML=2.8

MAY 21 01 37 58. 49 36 N, 129 24 W, ML=3.5 0
WEST OF VANCOUVER ISLAND.

MAY 21 02 44 33. 49 00 N, 129 30 W, ML=3.1 0
WEST OF VANCOUVER ISLAND.

MAY 21 02 58 21. 102 MILES FROM PHC ML=3.0

MAY 21 03 09 26. 104 MILES FROM PHC ML=2.8

MAY 21 09 14 09. 49 36 N, 129 30 W, ML=2.9 0
WEST OF VANCOUVER ISLAND.

MAY 21 17 25 27. 107 MILES FROM PHC ML=2.8

MAY 21 23 22 34. 111 MILES FROM PHC ML=2.8

MAY 22 11 12 36. 112 MILES FROM PHC ML=2.8

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MAY 26 21 00 30. 78 MILES FROM VIC ML=2.4

MAY 27 06 06 39. 12 MILES FROM PNT ML=1.3

MAY 27 06 40 00. 106 MILES FROM PHC ML=2.8

MAY 27 23 37 27. 105 MILES FROM PHC ML=3.9
WEST OF VANCOUVER ISLAND.

MAY 29 02 24 39. 158 MILES FROM PNT ML=3.3

MAY 29 13 47 27. 49 24 N, 114 54 W, ML=3.5 0
EAST OF FERNIE, B.C.

JUN 1 19 59 16. 42 MILES FROM PHC ML=2.6

JUN 6 14 34 51. 111 MILES FROM PHC ML=2.5

JUN 9 01 05 51. 50 12 N, 129 42 W, ML=3.1 0
WEST OF VANCOUVER ISLAND.

JUN 10 05 00 10. 9 MILES FROM PNT ML=0.7

JUN 10 05 47 50. 51 00 N, 125 12 W, ML=3.4 0
EAST OF KNIGHT INLET, B.C.

JUN 10 07 43 45. 102 MILES FROM PNT ML=3.4

JUN 14 03 05 22. 52 06 N, 130 54 W, ML=3.3 0
EAST OF QUEEN CHARLOTTE ISLANDS.

JUN 19 00 07 57. 59 24 N, 137 36 W, M=4.4 DEPTH=14 KM (USCGS) 0
NORTHWESTERN BRITISH COLUMBIA.

JUN 22 07 05 35. 104 MILES FROM PHC ML=2.6

JUN 22 16 55 24. 52 24 N, 130 06 W, ML=3.9 0
EAST OF QUEEN CHARLOTTE ISLANDS.

JUL 1 00 51 04. 179 MILES FROM PNT ML=3.1

JUL 2 06 19 49. 108 MILES FROM PNT ML=2.6

JUL 5 03 16 29. 50 20 N, 114 00 W, ML=2.9 0
50 MILES SOUTH OF CALGARY, ALBERTA.

JUL 6 04 56 21. 48 MILES FROM FSJ ML=1.7

JUL 8 19 49 15. 255 MILES FROM SES ML=3.8

JUL 9 05 05 06. 59 MILES FROM PNT ML=2.3

JUL 9 19 17 25. 151 MILES FROM PHC ML=2.8

JUL 11 13 24 50. 77 MILES FROM PHC ML=2.3

JUL 13 08 37 34. 51 MILES FROM VIC ML=1.8

JUL 16 06 22 43. 52 12 N, 133 36 W, ML=3.8 0
WEST OF QUEEN CHARLOTTE ISLANDS.

JUL 18 04 42 28. 39 MILES FROM VIC ML=1.7

JUL 18 06 01 05. 96 MILES FROM SES ML=2.2
SOUTHERN ALBERTA.

JUL 23 19 34 58. 54 12 N, 135 12 W, ML=4.3 0
WEST OF QUEEN CHARLOTTE ISLANDS.

JUL 24 15 28 43. 45 MILES FROM MCC ML=1.9

JUL 25 03 39 23. 65 MILES FROM MCC ML=2.1

JUL 26 13 53 46. 19 MILES FROM VIC ML=1.2

JUL 29 14 27 52. 10 MILES FROM PNT ML=1.8

JUL 29 14 32 14. 10 MILES FROM PNT ML=1.2

JUL 29 15 42 01. 10 MILES FROM PNT ML=1.6

AUG 3 10 53 09. 73 MILES FROM VIC ML=2.1
PROBABLE FORESHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

AUG 3 11 54 23. 73 MILES FROM VIC ML=1.8
PROBABLE FORESHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

AUG 5 09 51 39. 108 MILES FROM PHC ML=1.8

AUG 6 04 31 57. 108 MILES FROM PHC ML=1.8

AUG 6 20 40 22. 48 30 N, 124 00 W, ML=3.1 F
SOUTHERN VANCOUVER ISLAND, WEST OF VICTORIA.

AUG 9 21 34 47. 34 MILES FROM VIC ML=1.4

AUG 11 11 32 16. 36 MILES FROM VIC ML=1.7

AUG 12 17 20 57. 36 MILES FROM VIC ML=1.4

AUG 13 12 51 51. 36 MILES FROM VIC ML=1.8

AUG 13 23 00 10. 73 MILES FROM VIC ML=2.2
PROBABLE FORESHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

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AUG 14 15 58 36. 36 MILES FROM VIC ML=1.8

AUG 16 03 01 01. 129 MILES FROM PHC ML=2.5

AUG 17 15 26 44. 31 MILES FROM VIC ML=2.6

AUG 17 23 51 57. 70 MILES FROM VIC ML=2.2
PROBABLE AFTERSHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

AUG 18 10 49 57. 45 MILES FROM VIC ML=2.1

AUG 19 07 03 14. 104 MILES FROM PHC ML=2.1

AUG 19 07 05 18. 112 MILES FROM PHC ML=2.5

AUG 19 09 13 09. 50 54 N, 129 54 W, ML=2.5 0
WEST OF VANCOUVER ISLAND.

AUG 19 09 48 21. 50 48 N, 130 00 W, ML=2.7 0
WEST OF VANCOUVER ISLAND.

AUG 19 10 17 53. 24 MILES FROM PNT ML=1.8

AUG 19 13 35 11. 115 MILES FROM PHC ML=2.5

AUG 19 17 54 16. 49 42 N, 126 54 W, ML=3.2 0
NEAR NOOTKA ISLAND, OFF WEST COAST OF VANCOUVER ISLAND.

AUG 19 23 44 06. 36 MILES FROM VIC ML=2.3

AUG 20 22 24 36. 140 MILES FROM PHC ML=3.0

AUG 21 13 01 21. 99 MILES FROM PHC ML=2.5

AUG 23 00 24 30. 37 MILES FROM VIC ML=1.7

AUG 23 06 48 42. 49 12 N, 128 30 W, ML=3.3 F
WEST OF VANCOUVER ISLAND.

AUG 23 23 11 54. 72 MILES FROM PHC ML=2.6

AUG 23 23 21 40. 90 MILES FROM PHC ML=2.5

AUG 23 23 35 56. 82 MILES FROM PHC ML=2.6

AUG 24 00 24 53. 36 MILES FROM VIC ML=1.6

AUG 24 02 54 01. 50 30 N, 130 12 W, ML=2.8 0
WEST OF VANCOUVER ISLAND.

AUG 25 07 15 30. 120 MILES FROM PHC ML=2.5

AUG 26 16 25 31. 118 MILES FROM PHC ML=2.7

AUG 26 19 44 48. 115 MILES FROM PHC ML=2.5

AUG 26 21 38 25. 35 MILES FROM VIC ML=1.8

AUG 27 19 45 05. 35 MILES FROM VIC ML=1.8

AUG 28 04 31 43. 92 MILES FROM PHC ML=3.0

AUG 29 16 27 15. 112 MILES FROM PHC ML=2.3

AUG 30 13 27 04. 40 MILES FROM VIC ML=1.8

AUG 30 15 03 34. 50 MILES FROM PHC ML=2.6

AUG 31 09 12 21. 39 MILES FROM VIC ML=1.7

SEP 1 03 28 50. 40 MILES FROM PNT ML=2.2

SEP 1 12 56 58. 104 MILES FROM PHC ML=2.5

SEP 1 14 11 21. 49 18 N, 129 18 W, ML=4.6 F
WEST OF VANCOUVER ISLAND.

SEP 1 14 44 32. 106 MILES FROM PHC ML=3.1

SEP 1 14 46 44. 104 MILES FROM PHC ML=2.6

SEP 1 15 59 01. 36 MILES FROM VIC ML=1.8

SEP 1 17 45 52. 102 MILES FROM PHC ML=2.6

SEP 2 03 58 15. 47 MILES FROM FSJ ML=1.8

SEP 2 08 50 47. 49 00 N, 130 12 W, ML=3.3 0
WEST OF VANCOUVER ISLAND.

SEP 7 01 02 46. 50 12 N, 129 42 W, ML=3.5 0
WEST OF VANCOUVER ISLAND.

SEP 7 14 44 58. 49 06 N, 129 42 W, ML=4.3 F
WEST OF VANCOUVER ISLAND.

SEP 7 15 17 59. 83 MILES FROM PHC ML=2.6

SEP 8 05 05 24. 39 MILES FROM VIC ML=1.9

SEP 9 16 04 42. 139 MILES FROM PHC ML=3.2

SEP 9 18 33 52. 49 12 N, 129 24 W, ML=4.8 F
WEST OF VANCOUVER ISLAND.

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SEP 10 10 48 28. 78 MILES FROM VIC ML=2.3

SEP 14 19 52 51. 117 MILES FROM PHC ML=2.8

SEP 17 02 07 24. 47 MILES FROM PNT ML=2.0

SEP 18 23 37 05. 118 MILES FROM PHC ML=2.8

SEP 20 21 23 32. 49 54 N, 128 48 W, M=3.7 DEPTH=33 KM (USCGS) 0
WEST OF VANCOUVER ISLAND.

SEP 20 22 35 57. 26 MILES FROM PHC ML=1.5

SEP 21 23 45 45. 95 MILES FROM PNT ML=2.6

SEP 22 20 32 25. 72 MILES FROM VIC ML=2.8
PROBABLE AFTERSHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

SEP 23 02 26 35. 91 MILES FROM PNT ML=2.8

SEP 23 06 37 33. 120 MILES FROM PNT ML=2.9

SEP 30 08 17 00. 28 MILES FROM MCC ML=0.8

OCT 5 18 32 12. 108 MILES FROM PHC ML=2.6

OCT 5 23 17 56. 17 MILES FROM VIC ML=1.6

OCT 6 18 34 47. 100 MILES FROM PHC ML=2.4

OCT 7 23 07 49. 37 MILES FROM MCC ML=1.5

OCT 11 12 12 28. 50 18 N, 129 48 W, ML=3.4 0
WEST OF VANCOUVER ISLAND.

OCT 11 12 22 05. 105 MILES FROM PHC ML=2.4

OCT 11 12 23 11. 106 MILES FROM PHC ML=2.8

OCT 11 12 33 01. 104 MILES FROM PHC ML=2.9

OCT 11 13 39 51. 124 MILES FROM PHC ML=2.5

OCT 13 15 57 02. 50 24 N, 118 00 W, ML=3.1 0
ARROW LAKES AREA, SOUTHERN B.C.

OCT 14 18 02 04. 49 06 N, 128 12 W, ML=3.2 F
WEST OF VANCOUVER ISLAND.

OCT 17 17 45 06. 81 MILES FROM PHC ML=2.4

OCT 17 20 18 45. 121 MILES FROM PHC ML=3.0

OCT 26 11 32 26. 94 MILES FROM PHC ML=2.4

OCT 26 13 29 34. 107 MILES FROM PHC ML=3.1

OCT 26 13 36 32. 50 24 N, 129 18 W, M=4.3 DEPTH=41 KM (USCGS) F
WEST OF VANCOUVER ISLAND. MAY BE 2 EVENTS.

OCT 26 16 39 49. 111 MILES FROM PHC ML=3.1

OCT 30 00 58 44. 88 MILES FROM FSJ ML=2.4

NOV 2 12 41 02. 75 MILES FROM PNT ML=2.7

NOV 4 14 55 22. 82 MILES FROM PNT ML=2.8

NOV 4 19 16 46. 82 MILES FROM PHC ML=2.5

NOV 4 20 30 09. 48 54 N, 128 54 W, ML=4.2 F
WEST OF VANCOUVER ISLAND.

NOV 5 02 48 22. 167 MILES FROM PNT ML=3.5

NOV 10 12 35 20. 94 MILES FROM PHC ML=2.6

NOV 10 14 13 04. 73 MILES FROM PHC ML=2.1

NOV 11 09 01 47. 113 MILES FROM PNT ML=2.6

NOV 15 00 44 05. 77 MILES FROM PNT ML=3.7

NOV 18 00 29 43. 95 MILES FROM FSJ ML=2.2

NOV 18 08 09 09. 111 MILES FROM PNT ML=3.0

NOV 21 05 59 18. 49 00 N, 130 24 W, ML=3.7 0
WEST OF VANCOUVER ISLAND.

NOV 23 22 30 11. 36 MILES FROM MCC ML=1.8

NOV 23 22 44 53. 95 MILES FROM FSJ ML=2.2

NOV 29 22 51 12. 128 MILES FROM PHC ML=2.6

NOV 30 22 49 37. 70 MILES FROM VIC ML=2.9
PROBABLE AFTERSHOCK OF 17 AUG 14H. WEST OF WASHINGTON.

DEC 2 08 15 54. 143 MILES FROM SES ML=3.2
SOUTHWESTERN ALBERTA.

DEC 6 14 12 23. 81 MILES FROM PNT ML=2.5

DEC 7 16 53 22. 78 MILES FROM PNT ML=3.4

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DEC 8 09 33 48. 51 18 N, 130 36 W, ML=3.9 0
SOUTH OF QUEEN CHARLOTTE ISLANDS.

DEC 12 08 45 39. 81 MILES FROM PNT ML=2.8

DEC 13 15 06 53. 57 MILES FROM VIC ML=2.7

DEC 31 04 51 47. 163 MILES FROM PHC ML=3.8

DEC 31 05 14 38. 103 MILES FROM PHC ML=3.0
BELLA COOLA AREA, B.C.

DEC 31 06 13 55. 165 MILES FROM FSJ ML=2.5

DEC 31 15 46 19. 78 MILES FROM VIC ML=3.5

B. UNITED STATES EPICENTRES

JAN 13 09 03 07. 47 58 N, 124 52 W, ML=2.1 0
WEST OF WASHINGTON, U.S.A.

FEB 5 09 02 17. 57 18 N, 139 06 W, M=3.8 DEPTH=33 KM (USCGS) 0
OFF COAST OF SOUTHEASTERN ALASKA

MAR 2 20 34 19. 48 24 N, 121 42 W, ML=2.5 0
NORTHWESTERN WASHINGTON, U.S.A.

MAR 2 20 51 10. 48 24 N, 121 36 W, ML=3.1 F
NORTHWESTERN WASHINGTON, U.S.A.

MAR 3 09 06 08. 48 24 N, 121 48 W, ML=2.4 0
NORTHWESTERN WASHINGTON, U.S.A.

MAR 13 17 36 11. 48 24 N, 122 30 W, ML=3.0 0
NORTHWESTERN WASHINGTON, U.S.A.

MAR 25 21 59 26. 56 36 N, 135 24 W, M=4.7 DEPTH=21 KM (USCGS) 0
SOUTHEASTERN ALASKA, FELT AT SITKA.

MAR 29 20 26 59. 57 24 N, 139 42 W, M=4.1 DEPTH=33 KM (USCGS) 0
WEST OF SITKA, ALASKA.

APR 16 22 49 39. 56 42 N, 136 12 W, M=4.1 DEPTH= 5 KM (USCGS) 0
SOUTHWEST OF SITKA, ALASKA.

APR 22 04 16 25. 48 00 N, 122 00 W, ML=3.5 0
ENTRANCE TO PUGET SOUND, U.S.A.

APR 30 06 27 38. 48 00 N, 113 48 W, M=3.9 DEPTH=33 KM (USCGS) 0
FELT IN FLATHEAD LAKE AREA, NW MONTANA, U.S.A.

APR 30 07 02 19. 48 12 N, 122 42 W, ML=2.8 O
ENTRANCE TO PUGET SOUND, U.S.A.

JUN 11 17 34 30. 47 50 N, 122 33 W, M=3.7 (USCGS) O
4 MILES SE OF PORT GAMBLE, WASHINGTON, U.S.A.

JUL 30 18 02 39. 47 12 N, 122 00 W, M=3.4 DEPTH=16 KM (USCGS) O
WESTERN WASHINGTON, U.S.A.

AUG 10 11 32 31. 48 06 N, 124 48 W, ML=3.3 F
WEST OF WASHINGTON, U.S.A. FORESHOCK OF 17 AUG 14H.

AUG 10 11 46 02. 48 06 N, 124 42 W, ML=3.4 F
WEST OF WASHINGTON, U.S.A. FORESHOCK OF 17 AUG 14H.

AUG 17 14 39 50. 48 12 N, 125 00 W, ML=3.8 F
WEST OF WASHINGTON, U.S.A.

OCT 7 22 41 03. 59 12 N, 136 00 W, M=4.0 DEPTH=53 KM (USCGS) O
WEST OF HAINES, ALASKA.

OCT 9 07 46 37. 48 00 N, 123 06 W, ML=2.6 O
PUGET SOUND, U.S.A.

OCT 10 21 17 35. 57 24 N, 136 06 W, M=4.8 DEPTH=33 KM (USCGS) F
NORTHWEST OF SITKA, ALASKA.

OCT 29 01 57 59. 48 48 N, 122 42 W, ML=3.2 F
WASHINGTON, U.S.A.

NOV 1 07 22 52. 48 48 N, 122 48 W, ML=3.5 F
WASHINGTON, U.S.A.

NOV 1 11 22 54. 47 36 N, 122 18 W, M=3.0 (USCGS) O
NORTHWESTERN WASHINGTON, U.S.A.

NOV 6 10 50 54. 48 18 N, 119 30 W, ML=3.8 O
WASHINGTON, U.S.A.

NOV 11 04 44 10. 58 45 N, 137 50 W, ML=4.3 O
NEAR LITUYA BAY, SOUTHEAST ALASKA.

NOV 13 23 28 20. 48 30 N, 119 00 W, ML=3.2 O
WASHINGTON, U.S.A.

NOV 16 20 20 44. 48 18 N, 120 24 W, ML=3.6 F
WASHINGTON, U.S.A.

NOV 21 08 51 38. 48 12 N, 121 24 W, ML=3.3 O
WASHINGTON, U.S.A.

NOV 22 22 44 48. 48 12 N, 122 18 W, ML=2.5 O
WASHINGTON, U.S.A.

DEC 8 12 44 26. 48 18 N, 120 00 W, ML=3.8 O
WASHINGTON, U.S.A.

DEC 22 20 13 18. 48 18 N, 120 00 W, ML=3.2 O
WASHINGTON, U.S.A.

DEC 25 05 02 10. 49 00 N, 122 06 W, ML=3.5 F
WASHINGTON, U.S.A.

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TABLE 4

EARTHQUAKES IN CENTRAL CANADA AND ADJACENT AREAS 1966

(ALL TIMES ARE GMT)
(M OR ML = MAGNITUDE)
(F=FILLED, O=OPEN CIRCLE ON EPICENTRE MAPS)

CANADIAN EPICENTRES

MAY 20	06 13 52. 57 30 N, 90 30 W, ML=4.6 HUDSON BAY NEAR CAPE TATNAM. FORESHOCK.	O
MAY 20	06 24 24. 57 20 N, 90 30 W, ML=4.8 HUDSON BAY NEAR CAPE TATNAM.	F
MAY 20	06 45 28. 57 30 N, 90 30 W, ML=4.2 HUDSON BAY NEAR CAPE TATNAM. AFTERSHOCK.	O
MAY 21	04 08 13. 57 20 N, 91 00 W, ML=3.6 HUDSON BAY NEAR CAPE TATNAM. AFTERSHOCK.	O
MAY 21	11 28 31. 57 40 N, 90 40 W, ML=4.1 HUDSON BAY NEAR CAPE TATNAM. AFTERSHOCK.	O
MAY 23	15 29 00. 57 30 N, 90 20 W, ML=4.3 HUDSON BAY NEAR CAPE TATNAM. AFTERSHOCK.	O

TABLE 5

EARTHQUAKES IN CENTRAL CANADA PRIOR TO 1966

(ALL TIMES ARE GMT)
(M OR ML = MAGNITUDE)
(F=FILLED, O=OPEN CIRCLE ON EPICENTRE MAPS)

NO EARTHQUAKES KNOWN PRIOR TO 1964

1964

DEC 13	13 48 28. 59 00 N, 112 15 W, ML=3.7 50 MILES WEST OF FORT CHIPEWYAN, ALBERTA.	O

1965

JUN 5	08 00 20. 19 MILES FROM FFC ML=1.7	
NOV 12	06 30 17. 57 15 N, 90 50 W, ML=4.4 FORESHOCK OF THE EARTHQUAKE OF 12 NOV 10H.	O
NOV 12	10 40 24. 57 15 N, 90 50 W, ML=4.5 NEAR CAPE TATNAM ON THE SHORE OF HUDSON BAY.	O
NOV 12	20 12 44. 57 15 N, 90 50 W, ML=4.2 AFTERSHOCK OF THE EARTHQUAKE OF 12 NOV 10H.	O
DEC 16	10 39 00. 440 MILES FROM FFC ML=3.6 PROBABLY AN AFTERSHOCK OF THE EARTHQUAKE OF 12 NOV 10H.	

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