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Gravity and Isostasy in Canada

BY

A. H. MILLER AND W. G. HUGHSON

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ABSTRACT

About one-third of Canada has been covered by 128 gravity stations established in the southern part of Canada and in the basin of Mackenzie river. Reductions by the Free Air, Bouguer, Hayford, and Airy methods show that the area as a whole is in practically complete isostatic equilibrium. This also applies to British Columbia and to the mountainous part of Alberta. The results agree somewhat better with the Airy than with the Hayford reduction. The most probable depths for both methods have been computed separately for 22 stations in the mountains as well as for 126 stations, the total number reduced isostatically. All the important results are tabulated and are in part shown graphically in two curves and on a gravity map which shows the anomalies for both United States and Canadian stations.

INTRODUCTION

This report deals with the results of all gravity work performed in Canada since 1914. Although gravity determinations were begun by the Dominion Observatory as early as 1902 it was not until 1914 that important field work was undertaken. Numerous reports¹ on the subject have appeared from time to time in official publications and also in other journals. Altogether 128 stations have been established. They cover a belt on the average 350 miles wide along the international boundary from Halifax to Victoria and also the basin of Mackenzie river. There is approximately one station to every hundred-mile square, the total area covered being about one-third that of the whole country. The more important results for all stations are given in tables 1, 2, and 3. Tables 4 and 5 give the results for only those stations for which this information has not previously been published. Volume VIII, Nos. 6 and 9, should be consulted for information corresponding to that given in table 5. In order to reduce the size of the publication the rather lengthy table, "Pendulum Observations and Reductions", has been omitted from this report.

Among the 128 stations are 29 not previously reported upon, established in 1927 and 1930 after the publication of the last report. With the single exception of Brockton Point, which is only about one mile from the other gravity station in Vancouver at the C.P.R. depot, the reductions for topography and compensation have been made for all these 29 new stations. As was previously done in the case of Ottawa and 11 stations in Western Canada, the corrections for topography and compensation for 29 stations (Nos. 2 to 30 inclusive), observed in Eastern Canada in 1914 and 1915, have been recomputed. In the original computations no record can be found of the individual corrections for separate zones. New maps have also become available in the meantime. Altogether 126 of the 128 stations have been reduced isostatically and the corresponding corrections for separate zones are either published in this report or have been published previously in the two reports mentioned above. There have been omitted in the isostatic reductions only two stations, North Bend, B.C., due to lack of topographic maps, and Brockton Point on account of its proximity to the other station in Vancouver. It is apparent from the results that the isostatic anomalies for the two Vancouver stations are approximately the same.

GRAVITY ANOMALIES AND REDUCTION METHODS

The anomalies (table 1) have been computed by four methods of reduction, using the international formula for gravity at sea-level adopted at Stockholm in 1930 by the Section of Geodesy of the International Union of Geodesy and Geophysics. The observed values for all the stations have also been completely revised, using the value 980.622 for Ottawa adopted since the international determinations at Ottawa, Greenwich, Potsdam, and Washington in 1928. The anomaly for a station is the observed value minus the computed value. The Free Air, Bouguer, and Hayford isostatic reductions have been explained in some detail in Vol. VIII, No. 6. In the Free Air method of obtaining the computed value at the station only one correction to gravity at sea-level is made, namely that due to elevation of the station (table 1). In the Bouguer method this negative correction is also made, together with a further positive correction for topography, which is regarded as an infinite plane or slab of thickness equal to the elevation of the station. In the isostatic methods the complete topographical effects for the entire earth are estimated by the use of tables² in combination with readings of contour or relief maps for each station. For distant zones, in reductions recently made, use has been made by the writers of a 30-inch terrestrial globe, designed specially for the purpose, showing land elevations and sea depths. In addition to corrections for elevation and topography, with the isostatic methods a further correction is made for topographical compensation. In both the Airy and Hayford methods the compensation amounts, for land zones, to a deficiency in mass equal to the topography to be compensated or the material in the crust above sea-level. For zones at or very near sea-level there is no topography to be compensated and the compensation is therefore zero for such zones. For ocean zones the compensation is positive, being equivalent to an excess of mass to make up for the lower density of water. In the Hayford method the compensation is considered to be distributed uniformly down to the depth of compensation. On this view variations in the height of the solid crust of the earth are caused by variations in density of the outer crust. In contrast to the Hayford hypothesis of uniform depth and varying density the Airy hypothesis supposes a crust of variable thickness but of uniform density. Compensation is brought about by change in thickness of the crust, which, being lighter than the more or less plastic (to long-continued forces) substratum, floats in it very much as an iceberg in the sea. On the Airy hypothesis variation in elevation is related to varying thickness of the crust and the compensation is confined within comparatively narrow vertical limits at the bottom of the crust, the lighter crust displacing heavier substratum or *vice versa* according to whether the zone is land or ocean. In contrast to its meaning on the Hayford hypothesis, the term *depth of compensation* on the Airy hypothesis denotes a variable quantity differing considerably for mountainous regions and oceanic areas. In comparisons in this report, between Hayford and Airy solutions, depth of compensation on the Airy hypothesis indicates the thickness of crust at sea-level which, on the hypothesis, would be deduced from the particular Airy solution concerned in the reduction. At sea-level the thickness of crust and the depth of compensation are the same. Although not an exact average depth for any particular Airy solution it is nevertheless approximately so and is intermediate between oceanic and mountain depths. In both reductions 2.67 has been taken for the density of topography

and for all the Airy reductions included in this report a density difference of 0.6 between crust and substratum has been assumed. For crustal thicknesses not covered by Heiskanen's tables special tables were computed by Hughson.

LOCAL AND REGIONAL ANOMALIES

The results are an indication that, on the whole, the area covered by the observations is in isostatic equilibrium. There are, notwithstanding, areas of definite anomaly. Some are local in character and in certain cases are apparently related to the geology. It is likely that these are due to masses of anomalous density near the surface and may well be completely, or very nearly completely, compensated. It is less certain that the areas of more regional anomaly, if regarded independently, are in equilibrium. From a purely mathematical viewpoint these anomalies are obviously capable of explanation by any of the following assumptions: (1) partial lack of compensation, (2) abnormal density (10 per cent or more) covering areas up to 200 miles or more in diameter and extending to depths of 20,000 feet or even farther, (3) partial lack of compensation coupled with abnormal density. The answer as to which is most likely depends upon the load, having regard to areal extent, that the rigidity of the crust can bear, and upon the existence or non-existence of the assumed abnormal densities. There is an area of regional positive anomaly in Western Canada covered entirely by sedimentary formations. The part of it of largest anomaly is in Saskatchewan and has been interpreted by geologists³ as being due to a buried highland of heavy Paleozoic rock. There are extensive negative areas in Ontario. Part in southern Ontario is covered by sedimentary and presumably lighter rock several thousand feet thick. There is a large area of negative anomaly within the Precambrian shield where the anomalies are in some cases larger than any within the sedimentary formations of southern Ontario.

PROBABLE DEPTH AND MANNER OF ISOSTATIC COMPENSATION. GRAVITY FORMULAE

The results (tables 1 and 2 and the curves) are plainly in better agreement with the isostatic methods than with either of the other two. Also, of the two isostatic methods the results are in somewhat better agreement with the Airy reduction. For the whole country the Airy method reduces the sum of the squares of the residual anomalies, for the best solutions in each case, by nearly 3 per cent. For 22 Cordilleran stations the corresponding reduction is 11 per cent.

In the mountains the most probable Airy depth of compensation is about 40 kilometres and the corresponding Hayford depth about 115 kilometres. A previous solution for 20 stations in the mountains, but not perhaps quite so well suited for the purpose, gave approximately 100 kilometres for the Hayford depth (Vol. VIII, No. 9, p. 249). For the part of the country covered by all the observations the most probable Airy depth is approximately 35 kilometres and the Hayford depth 85 kilometres. On the Airy hypothesis these figures correspond to an average crustal thickness, over the entire area covered by all the observations, of approximately 37 kilometres and to an average thickness in the mountains of about 50 kilometres. The results (table 2) also show that, with proper correction in each case to gravity at the equator, the three gravity formulæ fit the observa-

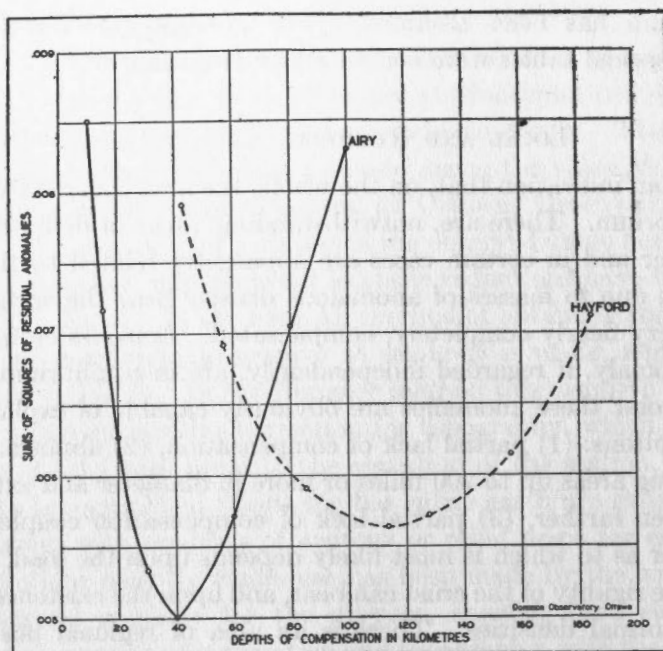


FIGURE 1.—Graphical determination of depths of compensation from 22 stations in the Canadian Cordillera.

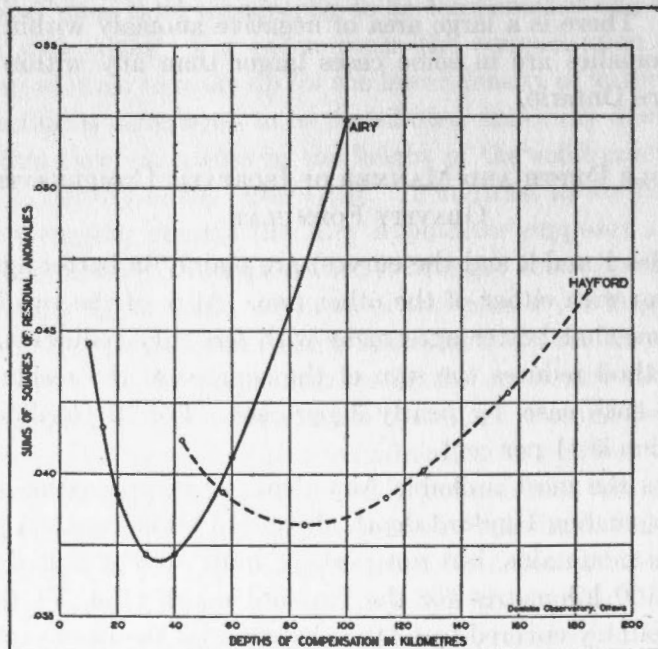


FIGURE 2.—Graphical determination of depths of compensation from 126 stations in Canada.

tions almost equally well, although Helmert's formula actually gives the smallest residuals by a very small margin. At 85.3 kilometres, the most probable Hayford depth of compensation, no correction is required to the international formula, $+0.012$ to Helmert's formula, and $+0.008$ to Bowie's formula.

PERIODS OF PENDULUMS

During the seasons of 1927 and 1930 the apparatus gave less satisfaction than usual in so far as constancy of pendulum periods is concerned. At the first field station of 1927 (Chelmsford) a sudden decrease of period of about 100×10^{-7} second took place in the periods of all pendulums on knife edge I but not upon knife edge II, which was not used until the second station (Sudbury) was reached. Apparently some physical change took place in knife edge I but what it was or what caused it is uncertain. The change may have resulted from an oversight on the part of the observer. At the conclusion of the swings with one pendulum it was found necessary to repack the stuffing box of the pendulum lifting device. In replacing this part it was not noticed that the operating rod passing through the stuffing box was screwed out to the limit. So when the next pendulum was lowered (carefully as usual) instead of being arrested in the usual manner by the two prongs and then being let down by the gradual slow motion it was by mistake set directly on the knife edge without going through the usual intermediate step. It was immediately following this that the changes in periods on this knife edge occurred. At this station the apparatus during swings was subject to an unusual amount of vibration due to passing trains, which were more effective in this respect due to the fact that the town is underlain by quicksand. Observations were made several times for the purpose but it could not be demonstrated that the passing of the trains produced any effect on the periods or swings of the pendulums. It is more likely that the direct lowering of the pendulum on the knife edge was the cause of the change. Although no change in the appearance of the knife edge was discernible it is possible that scraping that might have occurred may have modified the surface sufficiently to cause the change. Schmerwitz⁴ has shown that changes in period of the amount observed in this case can be caused by variation in curvature of the edge due to wear. Following Chelmsford, observations were taken at one more station (Sudbury), this time on both knife edges, and then return was made to Ottawa for re-standardization. For the rest of the season the periods remained constant on knife edge I but gradually decreased by over 60×10^{-7} second on knife edge II. In 1930 little change took place in the periods on knife edge I but considerable decrease (average 68×10^{-7} second) took place with knife edge II.

GRAVITY MAP AND ILLUSTRATIONS

The illustrations accompanying this report were prepared by Mr. F. C. Weskett under the supervision of Mr. F. D. Henderson, both of the observatory staff. Mr. Henderson also assisted with the computation and checking of the isostatic reductions. Mr. G. P. Hatton also gave considerable assistance in the checking of certain computations. The anomalies for Canada on the gravity anomaly map are those given in table 1 for a depth of compensation of 113.7 kilometres. The positions of the contours in the United States are taken from Fig. 11, Special Publication No. 40, U.S.C. and G.S.

CHANGE IN OBSERVATION ROUTINE

In order to eliminate a considerable amount of computation and observation the gaining (1 second in 50 seconds) chronometer used for time comparison with the wireless signals has in recent work been compared directly with the pendulums without the interposition of sidereal chronometers. With the gaining chronometer the coincidence interval is only about 50 seconds (up to up, or down to down). In order to compute the number of coincidences in the usual 12 hours' swing greater accuracy is in this case necessary in the preliminary determination of length of coincidence interval. For this purpose, in addition to the usual observations at the beginning and end of swing, observations were also taken at the tenth (double) and fiftieth (double) coincidence following the initial and preceding the final coincidence. Special tables were constructed to facilitate the computation of the results in the field. Using mean time signals it would be more direct to determine the period of the pendulum in mean time. As it is the usual custom to express the periods in fractions of a sidereal second, and as this has always been the practice in previous observatory work, it was considered desirable for the present at least to conform to the usual custom.

VARIATION OF PERIOD OF PENDULUM WITH ARC

In connection with the astronomical work of the observatory at Brockton Point, Vancouver, in 1926, where pendulum No. 3 was used as a clock to check the rate of the Howard clock between time observations, a special set of observations was subsequently taken at Ottawa to determine for different arcs the accuracy of the usual arc correction. The results together with the usual corrections are given in table 6. It is evident from the figures in rows 3 and 5 (more particularly row 3) that after all the corrections are applied there is still a correction required for arc. Assuming this correction to be proportional to arc the most probable value, 2.17×10^{-7} sec. per mm., is obtained from the periods in row 3. The periods in row 4 resulting from this last correction differ from the mean by little more than the probable error of determination in any particular case and on the average by an amount which is less than the average probable error. The values in row 5 are averages obtained from the figures in row 3 and not the values that might be computed directly from the observed coincidences.

The arc correction formula (Borda) is based on the assumption that the sine of the semi-arc (for these small angles also the semi-arc) decreases exponentially. The figures in row 2, table 6, show that this is not precisely the case for most of the intermediate swings. The average probable error of the observed arcs in row 1 is .02 mm. The divergence from the exponential law (see table 7 for the magnitude of the arc correction) would seem to be insufficient to account for the observed discrepancies in the period. Compared with a vacuum the indicated total pressure correction is only 13×10^{-7} second for the pressure at which the swings were taken. It does not seem likely that the larger observed differences are due to an effect of pressure varying with arc. The displacement of the knife edge due to flexure varies directly with the arc but there is probably little variation of the effective length of the pendulum for the different observed arcs. It is likely that the cause of the residual variation in period with arc is due to change in curvature of the knife edge. The knife edge has been used in all work carried on by the observatory since

the purchase of the apparatus in 1902. It is somewhat worn in the centre (parallel to the edge), that is to say its radius of curvature is greater for smaller arcs of swing. For larger swings the average radius of curvature will be smaller. It is sufficient that the effective radius should vary by only one micron to produce a change in period of 10×10^{-7} second.

Similar experiments were made by Putnam⁵ who observed somewhat similar effects on a less-used knife edge. After experiments with knife edges of various widths and angles he attributed effects similar to those observed with knife edge I to the fact that "different portions of the knife edge are brought into use" as the arc is varied. The results emphasize the importance in field work (also pointed out by Putnam) of maintaining the same arcs of swing in the field as at the base standardization. With this precaution no error is introduced in the determinations. Otherwise a correction such as that indicated in the table will be required.

FLEXURE OR SWAY CORRECTION

In connection with the corrections that are applied to the observed pendulum periods, it is of interest to note that the experimentally determined value of the flexure coefficient obtained by Burger⁶ leads to a flexure correction in almost exact agreement with the theoretical value from the formula

$$\Delta T \text{ (Flexure correction)} = T \frac{\Delta l}{2l} = \frac{\Delta l}{100}$$

Where Δl is the increase in effective length of the pendulum and l is the length of the simple equivalent pendulum = 25 cm. for observatory pendulums. The displacement of the knife edge for a swing of 5 millimetres (total arc) when the apparatus is erected on a good support is generally found to be of the order of magnitude measured by Burger, namely .058 fringe width of sodium light, corresponding to an actual displacement of $.029 \times 5893 \times 10^{-8}$ cm. = 170.9×10^{-8} cm. The distance between the knife edge and the arc scale is 287.5 mm. For the displacement and arc observed in the above case

$$\frac{\Delta l}{170.9 \times 10^{-8}} = \frac{287.5}{5} \text{ or } \Delta l = 9827 \times 10^{-8} \text{ cm., and therefore } \Delta T = \frac{\Delta l}{100} = 9.83 \times 10^{-7}$$

second, in close agreement with the value $5.8 \times 1.73 \times 10^{-7} = 10.03 \times 10^{-7}$ second from Burger's empirical formula.

It follows from the above that

$$\begin{aligned} \Delta T &= \frac{D_{om}}{A} \times 2.875 \\ &= \frac{D_r}{A} \times \frac{\lambda}{2} \times 2.875 \\ &= \frac{D_r}{A} \times 2947 \times 2.875 \times 10^{-8} \text{ (when sodium light is used)} \\ &= 847.3 \times \frac{D_r}{A} \times 10^{-7} \text{ second} \end{aligned}$$

a convenient formula for flexure determinations, where D_{em} = displacement in cms. and D_r = displacement in fringe widths of the knife edge resulting from a swing of arc A , where A is the total or twice the semi-arc and is expressed in millimetres.

DESCRIPTIONS OF STATIONS (EXPLANATION)

The list, accompanying this report, includes all gravity stations established since those listed in Vol. VIII, No. 9. Descriptions of stations previously occupied appear in earlier reports. Port Arthur, No. 14, is included in the present list. It was re-occupied in 1930 and its elevation redetermined from a bench mark of the Geodetic Survey of Canada.

DOMINION OBSERVATORY,

OTTAWA, March, 1934

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DESCRIPTIONS OF STATIONS

- No. 14, Port Arthur, Ont. (1930).—The apparatus was set up in the southwest corner of the basement of the Masonic Temple, Arthur street. It was 3.5 feet below the elevation of G.S.C.B.M. No. 95-E. This station was also occupied by F. A. McDiarmid in 1914.
- No. 100, Vancouver (Brockton Point), B.C. (1926).—In connection with the world longitude determinations the apparatus was set up on a concrete pier about 3 feet above the level of the ground and about 2 feet 4 inches above the level of the floor of the clock room built on to the south side of Brockton Point Observatory. It is approximately 12 feet south and 6 feet west of the astronomical pier. According to information supplied by the Vancouver Sewage Board the top of the pier is 36.5 feet above mean sea-level.
- No. 101, Chelmsford, Ont. (1927).—The apparatus was set up on the concrete floor in the northeast section of the basement of the Algoma hotel. It was 6 feet 10 inches below the level of the rail at the station and 4 feet below the surrounding level.
- No. 102, Sudbury, Ont. (1927).—The apparatus was set up on the concrete floor in the northeast corner of the assay room at the southwest corner of Sudbury Mining and Technical School. It was about 1700 feet west and 3300 feet north of the C.P.R. station. It was 1 foot 8 inches above the elevation of G.S.C.M.B. 454-A in the west end of Sudbury Court House.
- No. 103, Hearst, Ont. (1927).—The apparatus was set up on the concrete floor in the west end of Mr. K. M. Sharp's poultry house. It was 1680 feet north and 2320 feet west of the astronomical station. It was 5 feet 6 inches below the level of the rail at the station.
- No. 104, Nakina, Ont. (1927).—The apparatus was set up on the concrete floor of a small room used as a kitchen in the northeasterly part of the basement of Nakina school. It was 8 feet 4 inches below the level of the rail at the station and 5 feet below the surrounding level.
- No. 105, Armstrong, Ont. (1927).—The apparatus was set up on a concrete pier, flush with the floor, in the centre of the main room on the west side of Wm. Randall's cottage. It was about 1000 feet east of the station and was 10 feet above the level of the rail at the station.
- No. 106, Sioux Lookout, Ont. (1927).—The apparatus was set up on the concrete floor in the room in the west end of the basement of the Masonic hall. It was 870 feet north and 50 feet east of the C.N. station, and was 10 feet above the level of the rail at the station. It was 6 feet below the surrounding level.
- No. 107, Berens River, Man. (1927).—The apparatus was set up on a concrete pier, flush with the floor, in the most northerly of the buildings forming the Hudson's Bay Company trading post at Berens river. This building was used partly as a storehouse and partly as an Indian dwelling. It was about 100 feet north of the office building and about 7 feet above the level of lake Winnipeg.

DESCRIPTIONS OF STATIONS—*Continued*

- No. 108, Grand Rapids, Man. (1927).—The apparatus was set up on a concrete pier flush with the floor in the second from the river front of the group of log buildings forming J. G. Campbell's trading post. This building was used partly as a dwelling and partly as a storehouse. The pier was 21 feet above the level of Saskatchewan river in front of Campbell's post on August 13, 1927.
- No. 109, Norway House, Man. (1927).—The apparatus was set up on the outcrop of rock in the east end of the old detention house at the Hudson's Bay Company post. This stone building is on the south side of the quadrangle and about 200 feet westerly from the building that was then used for the sale of merchandise. On August 5, 1927, it was about 7 feet above the water level in front of the Hudson's Bay Company wharf at the post.
- No. 110, Nokomis, Sask. (1927).—The apparatus was set up on the concrete floor in the basement of the more easterly of the two overflow (cottage) buildings of Nokomis school. These buildings are on the south side of the street and directly opposite the school. The apparatus was six inches below the level of the rail at the station and about four feet below the surrounding level.
- No. 111, North Battleford, Sask. (1927).—The apparatus was set up on the concrete floor of the basement of the post office at King and First streets about 6 feet below the surrounding level. The elevation of the station was estimated from the description in Publication No. 27 of the Geodetic Survey of Canada of G.S.C.B.M. No. 829-C established in the wall of the post office in 1928 one year after the occupation of the station. It is possible the adopted elevation may be one or two feet in error.
- No. 112, Kindersley, Sask. (1927).—The apparatus was set up on the concrete floor in the northwesterly room of the basement of Kindersley school. It was 35 feet 4 inches above the level of the rail at the station and about 4 feet below the surrounding level.
- No. 113, Prince George, B.C. (1927).—The apparatus was set up on the concrete floor in the basement of a store building owned by R. MacLeod. This building was on the main street about 1000 feet west of the station and a few hundred feet south of the track. The pier was 3 feet 7 inches above the level of the rail at the station.
- No. 114, Endako, B.C. (1927).—The apparatus was set up on a concrete pier, flush with the floor, erected in a house owned by Mrs. P. Cousins, across the street from the Anglican church about 400 yards north of the station. It was 13 feet above the level of the rail at the station.
- No. 115, Smithers, B.C. (1927).—The apparatus was set up on the concrete floor in the westerly room of the garage of the B.C. roads department. It was 17 feet above the level of the rail at the station. The building is on the north side of the highway about one-half mile along the main street and highway in an easterly direction from the station.

DESCRIPTIONS OF STATIONS—*Continued*

- No. 116, Montreal, Que. (1928).—The apparatus was set up on the concrete floor of the room in the northeasterly corner of the basement of Macdonald Physics Building of McGill University. The elevation of the station was obtained from G.S.C.B.M. No. 548-A in the wall of the Macdonald Engineering Building by Professor James Weir.
- No. 117, Pembroke, Ont. (1930).—The apparatus was set up on the concrete floor in the furnace room of the Collegiate Institute, Pembroke street West. It was 13.9 feet below the level of G.S.C.B.M. No. 1826.
- No. 118, Haliburton, Ont. (1930).—The apparatus was set up on the concrete floor in the southeast corner of the basement of the Grand Central hotel, east half of Lot 3, Block L, of the town plot of Haliburton. It was 20.6 feet above the level of the rail in front of the C.N.R. station.
- No. 119, Kincardine, Ont. (1930).—The apparatus was set up on the concrete floor in the southeast corner of the basement of the public school, lots 17 and 18, Princess street. It was 3.5 feet above the level of G.S.C.B.M. No. 52-R.
- No. 120, Biscotasing, Ont. (1930).—The apparatus was set up on a concrete pier erected in the southwest corner of the basement of the Hudson's Bay Company house, Lot 65, Block B, Lake street. It was 20.3 feet above the level of the rail in front of the C.P.R. station.
- No. 121, White River, Ont. (1930).—The apparatus was set up on the concrete floor in the northwest corner of the basement of the public school, Lot 2, Block "B", as shown on the C.P.R. map of White River. It was 3 feet below the elevation of G.S.C.B.M. No. 723-A.
- No. 122, Schreiber, Ont. (1930).—The apparatus was set up on the concrete floor on the western side of the basement of the public and continuation school, Winnipeg street. It was 12.7 feet above the elevation of G.S.C.B.M. No. 764.
- No. 123, Federal Mine, Que. (1930).—The apparatus was set up on a concrete pier erected in the southeast corner of the boiler house at number one shaft of the Federal Lead and Zinc Mine, Lemieux township, Gaspé county. The elevation of the station was estimated from the topographical map, Publication No. 1934 of the Geological Survey of Canada. It is possible that the adopted elevation, 1736 feet, may be considerably in error.
- No. 124, Cascapedia, Que. (1930).—The apparatus was set up on a concrete pier erected in the northeast corner of Mr. C. Campbell's residence, No. 316a, on part of Lot 19, Grande Cascapedia range, township of New Richmond. It was 6.4 feet below the level of the rail in front of the C.N.R. station.
- No. 125, Lac au Saumon, Que. (1930).—The apparatus was set up on the floor in the eastern corner of the basement of Mr. Henry Lane's residence, Church street, part of Lot 32, first range of Humqui. It was 4.2 feet above the level of the rail in front of the C.N.R. station.

DESCRIPTIONS OF STATIONS—*Concluded*

- No. 126, La Tuque, Que. (1930).—The apparatus was set up on the concrete floor in the eastern corner of the basement of the Roman Catholic presbytery, Lots 24-A-58 and 24-A-59, Range 1, Canton Malhiot, Champlain county. It was 7.8 feet below the elevation of G.S.C.B.M. No. 1428.
- No. 127, Parent, Que. (1930).—The apparatus was set up on the concrete floor in the southwest corner of the basement of the residence of Mr. O'Neill (C.N.R. agent), Lot 161, Block K, Canton Lamy, Champlain county. It was 1.3 feet above the elevation of G.S.C.B.M. No. 1372.
- No. 128, Taschereau, Que. (1930).—The apparatus was set up on the concrete floor in the basement of an unused storehouse located in the yards of the Canadian National Railway. The building is about 300 feet west of G.S.C.B.M. No. 1275. The pier was 9 feet below the elevation of this bench mark.

TABLE I—PRINCIPAL FACTS FOR GRAVITY STATIONS

(a) In Nova Scotia

Number and Station	Longitude	Latitude	Altitude		Computed Gravity at Sea Level	Corrections for		Computed Gravity	Observed Gravity	Gravity Anomalies			
			Ft.	M.		Altitude	Topography and Isostatic Compensation			Hayford 113.7 km.	Airy 40 km.	Free Air	Bouguer
22 Sydney.....	60 11.8	46 08.4	39	12	980.732	-.004	+.018	980.746	980.735	-.011	-.001	+.007	+.006
23 Truro.....	63 16.5	45 21.7	59	18	980.662	-.006	+.013	980.669	980.666	-.003	+.004	+.010	+.008
24 Halifax.....	63 33.8	44 40.8	30	9	980.601	-.003	+.019	980.617	980.578	-.039	-.032	-.020	-.021
25 Yarmouth.....	66 07.2	43 50.1	30	9	980.524	-.003	+.022	980.543	980.547	+.004	+.011	+.026	+.025
Mean anomaly with regard to sign (Nova Scotia Stations).....										-.012	-.005	+.006	+.005
Mean anomaly without regard to sign (Nova Scotia Stations).....										.014	.012	.016	.015

(b) In Prince Edward Island

21 Charlottetown.....	63 07.5	46 13.9	26	8	980.741	-.002	+.012	980.751	980.737	-.014	-.010	-.002	-.003
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(c) In New Brunswick

20 Moncton.....	64 47.2	46 05.1	46	14	980.727	-.004	+.007	980.730	980.732	+.002	+.006	+.009	+.008
28 Bathurst.....	65 39.0	47 37.2	16	5	980.866	-.002	-.004	980.860	980.840	-.020	-.017	-.024	-.025
19 St. John.....	66 05.0	45 16.1	108	33	980.654	-.010	+.008	980.652	980.667	+.015	+.018	+.023	+.019
26 Woodstock.....	67 34.5	46 09.0	184	56	980.733	-.017	-.001	980.715	980.703	-.012	-.008	-.013	-.019
27 Edmundston.....	68 19.5	47 22.2	486	148	980.843	-.046	-.005	980.792	980.778	-.014	-.010	-.019	-.036
Mean anomaly with regard to sign (New Brunswick Stations).....										-.006	-.002	-.005	-.011
Mean anomaly without regard to sign (New Brunswick Stations).....										.013	.012	.018	.021

TABLE I—PRINCIPAL FACTS FOR GRAVITY STATIONS—*Continued*

(d) In Quebec

Number and Station	Longitude	Latitude	Altitude		Computed Gravity at Sea Level	Corrections for		Computed Gravity	Observed Gravity	Gravity Anomalies			
			Altitude	Topography and Isostatic Compensation		Hayford 113.7 km.	Airy 40 km.			Free Air	Bouguer		
												Ft.	M.
29 Percé.....	64 12.8	48 31.6	20	6	980.947	-.002	+ .004	980.949	980.954	+ .005	+ .005	+ .009	+ .008
124 Cascapedia.....	65 52.5	48 15.2	37	11	980.923	-.003	- .011	980.909	980.910	+ .001	+ .006	- .010	- .011
123 Federal Mine.....	66 08.4	48 46.4	1,736	529	980.969	-.163	+ .033	980.839	980.857	+ .018	+ .022	+ .051	- .008
125 Lac au Saumon.....	67 21.0	48 25.0	507	155	980.937	-.048	- .001	980.888	980.865	- .023	- .018	- .024	- .041
5 Tadoussac.....	69 43.0	48 08.4	39	12	980.912	-.004	- .020	980.888	980.908	+ .020	+ .023	.000	- .001
6 Portneuf.....	71 53.8	46 42.5	194	59	980.784	-.018	- .011	980.755	980.767	+ .012	+ .015	+ .001	- .006
4 Roberval.....	72 13.5	48 30.9	351	107	980.946	-.033	- .016	980.897	980.872	- .025	- .021	- .041	- .053
126 La Tuque.....	72 47.3	47 26.0	555	169	980.849	-.052	- .007	980.790	980.783	- .007	- .004	- .014	- .033
116 Montreal.....	73 34.0	45 30.0	137	42	980.675	-.013	- .009	980.653	980.652	- .001	.000	- .010	- .014
8 Ste. Anne-de-Bellevue..	73 56.5	45 24.5	112	34	980.666	-.010	- .010	980.646	980.667	+ .021	+ .022	+ .011	+ .007
7 St. Jerome.....	74 00.0	45 46.6	351	107	980.700	-.033	- .006	980.661	980.685	+ .024	+ .026	+ .018	+ .006
127 Parent.....	74 36.5	47 55.2	1,401	427	980.893	- .132	+ .012	980.773	980.775	+ .002	+ .005	+ .014	- .034
2 Maniwaki.....	75 58.8	46 22.5	554	169	980.753	-.052	- .009	980.692	980.692	.000	+ .005	- .009	- .028
128 Taschereau.....	78 40.9	48 39.7	1,008	307	980.959	- .095	+ .007	980.871	980.825	- .046	- .042	- .039	- .073
Mean anomaly with regard to sign (Quebec Stations).....										.000	+ .003	- .003	- .020
Mean anomaly without regard to sign (Quebec Stations).....										.015	.015	.018	.023

(e) In Ontario

1 Ottawa.....	75 43.0	45 23.6	271	83	980.665	-.026	-.008	980.631	980.622	-.009	-.008	-.017	-.026
3 Kingston.....	76 28.8	44 13.6	259	79	980.560	-.024	-.004	980.532	980.534	+.002	+.004	-.002	-.011
117 Pembroke.....	77 06.7	45 49.7	399	122	980.704	-.038	-.006	980.660	980.634	-.026	-.023	-.032	-.046
118 Haliburton.....	78 30.7	45 02.7	1,071	326	980.633	-.101	+.012	980.544	980.524	-.020	-.016	-.008	-.045
9 Mattawa.....	78 42.3	46 18.7	558	170	980.748	-.052	-.010	980.686	980.654	-.032	-.028	-.042	-.061
16 Whitby.....	78 56.5	43 52.7	276	84	980.528	-.026	-.005	980.497	980.465	-.032	-.030	-.037	-.046

10	New Liskeard.....	79 40.3	47 30.6	636	194	980.856	-.060	-.006	980.790	980.792	+.002	+.005	-.004	-.026
15	Rose Point.....	80 02.5	45 19.0	600	183	980.658	-.056	-.002	980.600	980.610	+.010	+.012	+.008	-.012
17	Woodstock.....	80 47.0	43 08.6	981	299	980.462	-.093	+.004	980.373	980.356	-.017	-.012	-.013	-.047
102	Sudbury.....	81 00.0	46 29.8	885	270	980.764	-.083	+.002	980.683	980.684	+.001	+.004	+.003	-.027
11	Cochrane.....	81 01.3	49 03.7	909	277	980.995	-.085	+.005	980.915	980.887	-.028	-.027	-.023	-.054
101	Chelmsford.....	81 11.8	46 35.0	882	269	980.772	-.083	.000	980.689	980.695	+.006	+.007	+.006	-.024
119	Kincardine.....	81 38.5	44 10.5	659	201	980.555	-.062	+.005	980.498	980.476	-.022	-.021	-.017	-.040
120	Biscotasing.....	82 06.3	47 17.9	1,354	413	980.837	-.127	+.014	980.724	980.706	-.018	-.016	-.004	-.050
18	Windsor.....	83 02.5	42 19.1	584	178	980.388	-.055	-.001	980.332	980.345	+.013	+.015	+.012	-.008
13	Chapleau.....	83 24.3	47 50.4	1,411	430	980.885	-.133	+.009	980.761	980.770	+.009	+.012	+.018	-.030
103	Hearst.....	83 40.3	49 41.6	798	243	981.051	-.075	+.002	980.978	980.972	-.006	-.004	-.004	-.031
12	Sault Ste. Marie.....	84 19.5	46 30.4	610	186	980.765	-.057	-.003	980.705	980.684	-.021	-.019	-.024	-.045
121	White River.....	85 16.9	48 35.2	1,219	372	980.952	-.115	+.012	980.849	980.820	-.029	-.026	-.017	-.059
104	Nakina.....	86 41.6	50 11.0	1,013	309	981.095	-.095	+.003	981.003	980.987	-.016	-.013	-.013	-.047
122	Schreiber.....	87 15.7	48 49.0	993	303	980.973	-.094	+.013	980.892	980.879	-.013	-.013	.000	-.034
105	Armstrong.....	89 02.7	50 17.0	1,130	344	981.104	-.106	.000	980.998	981.013	+.015	+.017	+.015	-.023
14	Port Arthur.....	89 13.3	48 26.1	653	199	980.939	-.061	-.005	980.873	980.827	-.046	-.045	-.051	-.073
106	Sioux Lookout.....	91 54.8	50 05.3	1,208	368	981.087	-.114	+.002	980.975	980.982	+.007	+.009	+.009	-.032
30	Kenora.....	94 30.0	49 46.0	1,083	330	981.058	-.102	-.004	980.952	980.978	+.026	+.029	+.022	-.015
Mean anomaly with regard to sign (Ontario Stations).....											-.010	-.007	-.009	-.036
Mean anomaly without regard to sign (Ontario Stations).....											.017	.017	.016	.036

(f) In Manitoba

72	Riverton.....	96 59.8	50 59.5	724	221	981.167	-.068	-.006	981.093	981.085	-.008	-.008	-.014	-.039
107	Berens River.....	97 00.9	52 21.4	720	219	981.287	-.068	-.002	981.217	981.203	-.014	-.013	-.016	-.041
31	Winnipeg.....	97 08.0	49 54.4	754	230	981.070	-.071	-.008	980.991	980.993	+.002	+.001	-.006	-.032
109	Norway House.....	97 50.0	53 58.8	720	219	981.427	-.068	-.003	981.356	981.349	-.007	-.007	-.010	-.035
74	Manitou.....	98 32.3	49 14.3	1,607	490	981.011	-.151	+.008	980.868	980.899	+.031	+.030	+.039	-.016
73	Gypsumville.....	98 37.9	51 46.1	857	261	981.235	-.081	-.004	981.150	981.133	-.017	-.017	-.021	-.050
108	Grand Rapids.....	99 16.0	53 10.4	736	224	981.358	-.069	-.004	981.285	981.302	+.017	+.018	+.013	-.012
32	Brandon.....	99 56.8	49 50.9	1,216	371	981.065	-.114	-.009	980.942	980.958	+.016	+.016	+.007	-.035
52	Dauphin.....	100 03.0	51 08.7	963	294	981.180	-.091	-.012	981.077	981.066	-.011	-.009	-.023	-.056
75	Melita.....	100 59.2	49 16.3	1,452	443	981.014	-.137	-.005	980.872	980.886	+.014	+.014	+.009	-.041
54	The Pas.....	101 14.7	53 49.7	872	266	981.414	-.082	-.004	981.328	981.341	+.013	+.014	+.009	-.021
53	Swan River.....	101 15.7	52 06.4	1,107	337	981.265	-.104	-.009	981.152	981.170	+.018	+.021	+.009	-.029
Mean anomaly with regard to sign (Manitoba Stations).....											+.005	+.005	.000	-.034
Mean anomaly without regard to sign (Manitoba Stations).....											.014	.014	.015	.034

TABLE I—PRINCIPAL FACTS FOR GRAVITY STATIONS—*Continued*

(g) In Saskatchewan

Number and Station	Longitude	Latitude	Altitude		Computed Gravity at Sea Level	Corrections for		Computed Gravity	Observed Gravity	Gravity Anomalies			
			Ft.	M.		Altitude	Topography and Isostatic Compensation			Hay-ford 113.7 km.	Airy 40 km.	Free Air	Bouguer
78 Moosomin.....	101 40.3	50 08.7	1,892	577	981.092	-.178	+.006	980.920	980.932	+.012	+.011	+.018	-.047
79 Yorkton.....	102 27.3	51 12.8	1,650	503	981.186	-.155	+.001	981.032	981.052	+.020	+.020	+.021	-.035
76 Estevan.....	102 59.4	49 08.4	1,860	567	981.002	-.175	-.002	980.825	980.860	+.035	+.035	+.033	-.031
77 Indian Head.....	103 40.0	50 31.9	1,919	585	981.126	-.181	+.001	980.946	980.973	+.027	+.027	+.028	-.038
110 Nokomis.....	105 00.1	51 30.7	1,716	523	981.212	-.161	.000	981.051	981.064	+.013	+.015	+.013	-.045
33 Moosejaw.....	105 31.8	50 23.7	1,774	541	981.114	-.167	-.007	980.940	980.945	+.005	+.005	-.002	-.063
55 Prince Albert.....	105 45.3	53 12.3	1,398	426	981.360	-.131	-.004	981.225	981.236	+.011	+.011	+.007	-.041
80 Elbow.....	106 35.5	51 07.2	1,929	588	981.178	-.181	.000	980.997	980.993	-.004	-.005	-.004	-.070
56 Saskatoon.....	106 38.1	52 07.8	1,629	497	981.267	-.153	-.003	981.111	981.138	+.027	+.028	+.024	-.032
81 Swift Current.....	107 48.1	50 17.4	2,498	761	981.104	-.235	+.004	980.873	980.882	+.009	+.009	+.013	-.072
111 North Battleford.....	108 18.0	52 46.7	1,700	518	981.323	-.160	-.007	981.156	981.183	+.027	+.030	+.020	-.038
112 Kindersley.....	109 09.0	51 28.3	2,268	691	981.209	-.213	+.004	981.000	980.999	-.001	+.001	+.003	-.074
Mean anomaly with regard to sign (Saskatchewan Stations).....										+.015	+.016	+.015	-.049
Mean anomaly without regard to sign (Saskatchewan Stations).....										.016	.016	.016	.049

(h) In Alberta

34 Medicine Hat.....	110 40.0	50 02.4	2,178	664	981.082	-.205	-.014	980.863	980.870	+.007	+.009	-.007	-.081
57 Vermilion.....	110 50.8	53 21.4	2,016	614	981.374	-.189	-.001	981.184	981.185	+.001	+.003	.000	-.069
51 Chipewyan.....	111 08.8	58 42.7	750	229	981.822	-.071	-.012	981.739	981.727	-.012	-.013	-.024	-.050
62 Waterways.....	111 15.3	56 40.5	820	250	981.655	-.077	-.024	981.554	981.555	+.001	+.003	-.023	-.051
84 Coronation.....	111 26.6	52 05.8	2,593	790	981.264	-.244	+.004	981.024	981.102	-.012	-.011	-.008	-.097
61 Lac la Biche.....	111 58.3	54 46.5	1,801	549	981.495	-.169	-.004	981.322	981.322	.000	+.003	-.004	-.065
82 Bassano.....	112 28.2	50 47.5	2,601	793	981.149	-.245	-.008	980.896	980.900	+.004	+.005	-.004	-.093
71 Lethbridge.....	112 50.3	49 41.7	2,971	906	981.051	-.280	-.012	980.759	980.760	+.001	+.005	-.011	-.113

58	Edmonton.....	113 31.0	53 31.6	2,197	670	981.388	-.207	-.005	981.176	981.173	-.003	-.001	-.008	-.083
83	Red Deer.....	113 47.7	52 16.3	2,810	856	981.279	-.264	-.005	981.010	980.995	-.015	-.012	-.020	-.116
35	Calgary.....	114 03.8	51 02.7	3,433	1,046	981.171	-.323	-.006	980.842	980.825	-.017	-.015	-.023	-.140
70	Blairmore.....	114 26.2	49 36.5	4,222	1,287	981.044	-.397	-.021	980.626	980.638	+.012	+.015	-.009	-.153
60	Kinuso.....	115 25.9	55 19.9	1,922	586	981.543	-.181	-.010	981.352	981.353	+.001	+.003	-.009	-.075
36	Banff.....	115 34.5	51 10.9	4,527	1,380	981.183	-.426	-.033	980.724	980.755	+.031	+.036	-.002	-.157
63	Edson.....	116 25.8	53 35.3	3,038	926	981.394	-.286	-.010	981.098	981.106	+.008	+.012	-.002	-.106
43	Peace River.....	117 17.3	56 14.1	1,063	324	981.619	-.100	-.038	981.481	981.486	+.005	+.006	-.033	-.069
64	Jasper.....	118 04.7	52 52.6	3,476	1,059	981.332	-.327	-.057	980.948	980.932	-.016	-.008	-.073	-.192
59	Grande Prairie.....	118 47.5	55 10.3	2,154	657	981.529	-.203	-.013	981.313	981.321	+.008	+.009	-.005	-.079
Mean anomaly with regard to sign (Alberta Stations).....											-.000	+.003	-.015	-.099
Mean anomaly without regard to sign (Alberta Stations).....											-.009	-.009	-.015	-.099

(i) In British Columbia

69	Cranbrook.....	115 45.3	49 30.6	3,004	916	981.035	-.283	-.053	980.699	980.716	+.017	+.029	-.036	-.139
86	Invermere.....	116 03.4	50 30.2	2,715	828	981.123	-.256	-.086	980.781	980.767	-.014	-.003	-.100	-.193
85	Paradise Mine.....	116 19.8	50 28.4	7,470	2,277	981.121	-.703	+.066	980.484	980.472	-.012	-.011	+.054	-.201
37	Field.....	116 29.8	51 23.7	4,081	1,244	981.202	-.384	-.066	980.752	980.750	-.002	+.005	-.068	-.207
68	Nelson.....	117 17.2	49 29.5	1,823	556	981.033	-.172	-.094	980.767	980.755	-.012	-.004	-.106	-.168
38	Glacier.....	117 29.5	51 15.7	4,094	1,248	981.190	-.385	-.056	980.749	980.744	-.005	.000	-.061	-.201
39	Revelstoke.....	118 11.8	50 59.8	1,486	453	981.167	-.140	-.112	980.915	980.905	-.010	+.001	-.122	-.173
67	Phoenix.....	118 36.3	49 05.8	4,529	1,380	980.998	-.426	+.028	980.600	980.624	+.024	+.027	+.052	-.103
87	Vernon.....	119 16.4	50 15.9	1,236	377	981.102	-.116	-.073	980.913	980.906	-.007	+.001	-.080	-.122
65	Mt. Olie.....	120 12.2	51 24.7	1,269	387	981.204	-.119	-.073	981.012	981.008	-.004	.000	-.077	-.120
40	Kamloops.....	120 19.5	50 40.7	1,155	352	981.139	-.109	-.072	980.958	980.949	-.009	-.002	-.081	-.121
66	Princeton.....	120 30.4	49 27.1	2,086	636	981.030	-.196	-.042	980.792	980.778	-.014	-.006	-.056	-.127
41	North Bend.....	121 27.0	49 52.3	497	151	981.067	-.047	.....	.....	980.891	.....	.....	-.129	-.146
88	Barkerville.....	121 29.8	53 03.8	4,227	1,288	981.348	-.397	+.007	980.958	980.950	-.008	-.006	-.001	-.145
89	Tyaughton Creek.....	122 42.0	50 56.9	2,084	635	981.163	-.196	-.090	980.877	980.849	-.028	-.021	-.118	-.189
113	Prince George.....	122 43.0	53 56.0	1,872	571	981.423	-.176	-.026	981.221	981.211	-.010	-.005	-.036	-.100
91	Cloverdale.....	122 44.0	49 06.5	10	3	980.999	-.001	-.045	980.953	980.939	-.014	-.013	-.059	-.059
42	Vancouver (C.P.R. Stn.)	123 06.8	49 16.8	31	9	981.014	-.003	-.054	980.957	980.952	-.005	-.001	-.059	-.060
100	Vancouver (Brockton Point).....	123 07.1	49 17.8	37	11	981.016	-.003	.....	.....	980.951	.....	.....	-.062	-.063
92	Victoria.....	123 19.5	48 24.8	219	67	980.937	-.021	-.014	980.902	980.952	+.050	+.052	+.036	+.028
48	Liard River.....	123 47.5	59 58.7	525	160	981.922	-.049	-.059	981.814	981.794	-.020	-.016	-.079	-.097
90	Union Bay.....	124 53.0	49 34.9	10	3	981.041	-.001	-.044	980.996	981.033	+.037	+.046	-.007	-.007
114	Endako.....	124 57.0	54 04.0	2,259	689	981.435	-.213	-.013	981.209	981.175	-.034	-.028	-.047	-.124
93	Banfield.....	125 08.7	48 49.9	30	9	980.974	-.003	-.007	980.964	980.981	+.017	+.019	+.010	+.009
94	Nootka.....	126 37.6	49 35.5	75	23	981.042	-.007	-.002	981.033	981.029	-.004	.000	-.006	-.009

TABLE I—PRINCIPAL FACTS FOR GRAVITY STATIONS—*Continued*(i) In British Columbia—*Concluded*

Number and Station	Longitude	Latitude	Altitude		Computed Gravity at Sea Level	Corrections for		Computed Gravity	Observed Gravity	Gravity Anomalies			
			Ft.	M.		Altitude	Topography and Isostatic Compensation			Hayford 113.7 km.	Airy 40 km.	Free Air	Bouguer
115 Smithers.....	127 11.0	54 47.0	1,642	500	981.496	-.154	-.021	981.321	981.289	-.032	-.023	-.053	-.109
95 Quatsino.....	127 37.4	50 32.0	41	12	981.126	-.004	-.004	981.118	981.125	+.007	+.011	+.003	+.002
99 Ocean Falls.....	127 42.9	52 21.3	60	18	981.286	-.006	-.057	981.223	981.232	+.009	+.014	-.048	-.050
97 Stewart.....	129 58.3	55 57.2	44	13	981.595	-.004	-.120	981.471	981.452	-.019	-.007	-.139	-.140
96 Prince Rupert.....	130 19.8	54 18.7	79	24	981.456	-.007	-.026	981.423	981.436	+.013	+.017	-.013	-.016
98 Masset.....	132 08.8	54 00.7	30	9	981.430	-.003	+.024	981.451	981.435	-.016	-.012	+.008	+.007
Mean anomaly with regard to sign (British Columbia Stations).....										-.004	+.002	-.048	-.101
Mean anomaly without regard to sign (British Columbia Stations).....										.016	.013	.058	.104

(j) In Northwest Territories

47 Resolution.....	113 40.5	61 10.1	500	152	982.014	-.047	-.009	981.958	981.946	-.012	-.013	-.021	-.038
44 Providence.....	117 39.3	61 21.2	512	156	982.028	-.048	-.018	981.962	981.959	-.003	-.003	-.021	-.038
45 Simpson.....	121 20.8	61 51.7	433	132	982.067	-.041	-.023	982.003	982.008	+.005	+.004	-.018	-.033
46 Norman.....	125 34.3	64 54.0	285	87	982.287	-.027	-.036	982.224	982.218	-.006	-.004	-.042	-.052
49 Good Hope.....	128 38.3	66 15.3	195	59	982.380	-.018	-.029	982.333	982.344	+.011	+.011	-.018	-.025
50 Arctic Red River.....	133 44.3	67 26.6	135	41	982.457	-.013	-.026	982.418	982.438	+.020	+.019	-.006	-.011
Mean anomaly with regard to sign (Northwest Territories Stations).....										+.003	+.002	-.021	-.033
Mean anomaly without regard to sign (Northwest Territories Stations).....										.010	.009	.021	.033
Mean anomaly with regard to sign (All Stations).....										-.002	+.002	-.015	-.057
Mean anomaly without regard to sign (All Stations).....										.014	.014	.026	.060

TABLE II.—MEAN ANOMALIES AND SUMS OF SQUARES OF RESIDUAL ANOMALIES FROM INTERNATIONAL* GRAVITY FORMULA FOR 126 STATIONS IN CANADA FOR VARIOUS REDUCTIONS

	Airy								Hayford							Free Air	Bouguer
	10 km.	15 km.	20 km.	30 km.	40 km.	60 km.	80 km.	100 km.	42.6 km.	56.9 km.	85.3 km.	113.7 km.	127.9 km.	156.25 km.	184.6 km.		
Mean anomaly with regard to sign.....	+ .004	+ .004	+ .004	+ .003	+ .002	.000	— .003	— .006	+ .001	+ .001	.000	— .002	— .002	— .003	— .006	— .014	— .057
Mean anomaly without regard to sign...	.015	.015	.015	.014	.014	.014	.015	.017	.014	.014	.014	.014	.014	.015	.016	.025	.059
Sums of squares of residual anomalies in units of 10 ⁻⁶	44,533	41,617	39,273	37,177	37,191	40,570	45,727	52,377	41,185	39,364	38,224	39,191	40,149	42,850	46,397	146,360	353,981

$$*\gamma_0 = 978.049 (1 + .0052884 \sin^2\phi - .0000059 \sin^2 2\phi)$$

TABLE III.—MEAN ANOMALIES AND SUMS OF SQUARES OF RESIDUAL ANOMALIES FOR 126 STATIONS IN CANADA FOR VARIOUS DEPTHS OF HAYFORD COMPENSATION FROM HELMERT* AND BOWIE** GRAVITY FORMULAE

	Helmert							Bowie						
	42.6 km.	56.9 km.	85.3 km.	113.7 km.	127.9 km.	156.25 km.	184.6 km.	42.6 km.	56.9 km.	85.3 km.	113.7 km.	127.9 km.	156.25 km.	184.6 km.
Mean anomaly with regard to sign.....	+ .013	+ .013	+ .012	+ .011	+ .010	+ .008	+ .006	+ .008	+ .008	+ .008	+ .006	+ .006	+ .004	+ .002
Mean anomaly without regard to sign.....	.018	.017	.017	.016	.016	.016	.016	.016	.016	.015	.015	.015	.015	.016
Sums of squares of residual anomalies in units of 10 ⁻⁶	41,442	39,535	38,066	38,910	39,677	42,316	45,747	41,674	39,687	38,183	39,333	40,203	42,790	46,166

$$*\gamma_0 = 978.030 (1 + .005302 \sin^2\phi - .000007 \sin^2 2\phi)$$

$$**\gamma_0 = 978.039 (1 + .005294 \sin^2\phi - .000007 \sin^2 2\phi)$$

TABLE IV
PERIODS OF PENDULUMS AT ALL STATIONS ESTABLISHED IN CANADA SINCE
JANUARY, 1927

Number and Station	Knife Edge	Periods of Pendulums in Seconds			Value of g in Dynes			Weighted Mean	Observer
		1	2	3	1	2	3		
1 Ottawa (May, 1927).....	1	.5013490	.5014621	.5014371				980.622	A. H. Miller
	2	.5013435	.5014536	.5014321					"
101 Chelmsford.....	1	.5013231	.5014336	.5014103	980.698	980.697	980.690	980.695	"
102 Sudbury.....	1		.5014366	.5014108		980.685	970.688	980.684	"
	2		.5014386	.5014174		980.682	980.681		"
1 Ottawa (June-July, 1927).....	1	.5013424	.5014528	.5014276				980.622	"
	2	.5013458	.5014544	.5014326					"
103 Hearst.....	2		.5013645	.5013418		980.970	980.974	980.972	"
104 Nakina.....	2		.5013598	.5013381		980.987	980.987	980.987	"
105 Armstrong.....	2		.5013525	.5013313		981.014	981.011	981.013	"
106 Sioux Lookout.....	1		.5013611			980.983		980.982	"
	2		.5013609	.5013379		980.979	980.984		"
107 Berens River.....	2		.5013033	.5012814		981.203	981.202	981.203	"
108 Grand Rapids.....	2		.5012785	.5012545		981.298	981.306	981.302	"
109 Norway House.....	1		.5012674			981.349		981.349	"
	2		.5012655	.5012429		981.348	981.350		"
110 Nokomis.....	1		.5013413	.5013152		981.060	981.064	981.064	A. H. Miller
	2		.5013380	.5013139		981.063	981.070		"
111 North Battleford.....	1		.5013109	.5012848		981.179	981.182	981.183	"
	2		.5013063	.5012837		981.185	981.187		"
112 Kindersley.....	1		.5013572	.5013320		980.998	980.998	980.999	"
	2		.5013538	.5013306		980.998	981.001		"
113 Prince George.....	1		.5013032	.5012773		981.209	981.212	981.211	"
	2		.5012984	.5012764		981.212	981.211		"
114 Endako.....	1		.5013119	.5012870		981.175	981.174	981.175	"
	2		.5013069	.5012860		981.177	981.172		"
115 Smithers.....	2		.5012775	.5012559		981.291	981.287	981.289	"
1 Ottawa (Nov., 1927).....	1	.5013431	.5014538	.5014285				980.622	"
	2		.5014482	.5014256					"
1 Ottawa (Jan., 1928).....	1		.5014531	.5014280				980.622	"
	2		.5014481	.5014258					"
116 Montreal.....	1		.5014444	.5014202		980.654	980.651	980.652	"
	2		.5014399	.5014170		980.652	980.652		"
1 Ottawa (Feb., 1928).....	1		.5014521	.5014271				980.622	"
	2		.5014469	.5014237					"
1 Ottawa (May-June, 1928).....	1	.5013433	.5014541	.5014283				980.622	"
	2	.5013399	.5014489	.5014266					"
1 Ottawa (Jan., 1929).....	1	.5013415	.5014531	.5014273				980.622	"
	2	.5013402	.5014484	.5014261					"
1 Ottawa (Mar., 1929).....	1	.5013424	.5014528	.5014278				980.622	"
	2	.5013399	.5014484	.5014264					"
1 Ottawa (June, 1930).....	1	.5013412	.5014537	.5014282				980.622	W. G. Hughson
	2	.5013467	.5014538	.5014334					"

TABLE IV—*Concluded*

Number and Station	Knife Edge	Periods of Pendulums in Seconds			Value of g in Dynes			Weighted Mean	Observer
		1	2	3	1	2	3		
117 Pembroke.....	1	.....	·5014502	·5014244	.....	980·632	980·636	980·634	W G. Hughson
	2	.....	·5014486	·5014262	.....	980·632	980·635		
118 Haliburton.....	1	.....	·5014772	·5014538	.....	980·519	980·521	980·524	"
	2	.....	·5014754	·5014536	.....	980·527	980·527		
119 Kincardine.....	1	.....	·5014906	·5014664	.....	980·474	980·472	980·476	"
	2	.....	·5014885	·5014657	.....	980·476	980·480		
120 Biscotasing.....	1	.....	·5014286	·5014046	.....	980·717	980·713	980·706	"
	2	.....	·5014314	·5014104	.....	980·699	980·696		
121 White River.....	1	.....	·5014029	·5013774	.....	980·817	980·820	980·820	"
	2	.....	·5014004	·5013774	.....	980·820	980·826		
122 Schreiber.....	1	.....	·5013856	·5013618	.....	980·885	980·881	980·879	"
	2	.....	·5013862	·5013646	.....	980·876	980·876		
14 Port Arthur.....	1	.....	·5014000	·5013755	.....	980·829	980·827	980·830	"
	2	.....	·5013963	·5013764	.....	980·836	980·829		
123 Federal Mine.....	1	.....	·5012826	·5013938	980·851	980·853	980·849	980·857	"
	2	.....	·5012821	·5013899	980·861	980·861	980·868		
124 Cascapedia.....	1	.....	·5013802	·5013542	.....	980·906	980·910	980·910	"
	2	.....	·5013773	·5013544	.....	980·910	980·915		
125 Lac au Saumon.....	1	.....	·5013895	·5013635	.....	980·870	980·874	980·865	"
	2	.....	·5013910	·5013688	.....	980·857	980·859		
126 La Tuque.....	1	.....	·5014096	·5013901	.....	980·791	980·770	980·783	"
	2	.....	·5014103	·5013866	.....	980·781	980·789		
	1	.....	·5014107	·5013886	.....	980·787	980·776		
127 Parent.....	1	.....	·5014148	·5013905	.....	980·771	980·768		
	2	.....	·5014110	·5013888	.....	980·779	980·781	980·775	"
128 Taschereau.....	1	.....	·5013998	·5013744	.....	980·829	980·831		
	2	.....	·5014002	·5013790	.....	980·821	980·819	980·825	"
1 Ottawa (Oct., 1930).....	1	.....	·5013412	·5014520	.....	.....	.....
	2	.....	·5013397	·5014483	.....	.....	.....	980·622	"

TABLE V

AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Maniwaki, Que., No. 2				Kingston, Ont., No. 3			
A.....	566	+ 2	0	+ 2	259	+ 2	0	+ 2
B.....	570	+ 56	0	+ 56	260	+ 44	0	+ 44
C.....	575	+ 69	0	+ 69	256	+ 24	0	+ 24
D.....	585	+ 40	0	+ 40	256	+ 10	0	+ 10
E.....	610	+ 16	0	+ 16	283	+ 5	0	+ 5
F.....	630	+ 6	0	+ 6	273	0	0	0
G.....	670	0	0	0	281	0	0	0
H.....	720	0	0	0	278	0	0	0
I.....	800	0	0	0	296	0	0	0
J.....	930	0	- 15	- 15	300	0	- 5	- 5
K.....	1,256	0	- 20	- 20	318	0	- 6	- 6
L.....	1,300	0	- 31	- 31	337	0	- 8	- 8
M.....	1,245	0	- 69	- 69	331	0	- 19	- 19
N.....	1,181	0	- 62	- 62	505	0	- 28	- 28
O.....	1,028	0	- 57	- 57	799	0	- 45	- 45
18.....				- 11				- 10
17.....				- 10				- 11
16.....				- 10				- 11
15.....				- 9				- 11
14.....				- 9				- 12
13.....				- 17				- 14
12.....				- 10				- 7
11.....				- 5				- 5
10.....				+ 4				+ 6
9.....				+ 7				+ 8
8.....				+ 13				+ 13
7.....				+ 6				+ 7
6.....				+ 6*				+ 7*
5.....				+ 7*				+ 7*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				- 88	Total..... - 44			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—Continued

AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Roberval, Que., No. 4				Tadoussac, Que., No. 5			
A.....	350	+ 2	0	+ 2	40	+ 2	0	+ 2
B.....	350	+ 52	0	+ 52	40	+ 12	0	+ 12
C.....	350	+ 40	0	+ 40	45	0	0	0
D.....	360	+ 18	0	+ 18	28	+ 1	0	+ 1
E.....	370	+ 8	0	+ 8	38	+ 1	0	+ 1
F.....	385	0	0	0	120	0	0	0
G.....	405	0	0	0	145	0	0	0
H.....	435	0	0	0	180	0	0	0
I.....	480	0	0	0	264	0	0	0
J.....	557	0	- 9	- 9	325	0	- 5	- 5
K.....	592	0	- 12	- 12	572	0	- 11	- 11
L.....	829	0	- 20	- 20	748	0	- 18	- 18
M.....	1,052	0	- 59	- 59	821	0	- 46	- 46
N.....	1,339	0	- 70	- 70	1,105	0	- 57	- 57
O.....	1,391	0	- 78	- 78	1,103	0	- 62	- 62
18.....				- 14				- 10
17.....				- 11				- 11
16.....				- 12				- 11
15.....				- 12				- 11
14.....				- 12				- 10
13.....				- 16				- 15
12.....				- 9				- 9
11.....				- 5				- 3
10.....				+ 2				+ 4
9.....				+ 7				+ 13
8.....				+ 16				+ 17
7.....				+ 6				+ 6
6.....				+ 5*				+ 5*
5.....				+ 7*				+ 6*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				-161	Total..... -197			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Portneuf, Que., No. 6				St. Jerome, Que., No. 7			
A.....	194	+ 2	0	+ 2	300	+ 2	0	+ 2
B.....	164	+ 35	0	+ 35	300	+ 48	0	+ 48
C.....	166	+ 14	0	+ 14	300	+ 32	0	+ 32
D.....	179	+ 7	0	+ 7	298	+ 12	0	+ 12
E.....	186	+ 4	0	+ 4	283	+ 6	0	+ 6
F.....	225	0	0	0	279	0	0	0
G.....	217	0	0	0	278	0	0	0
H.....	212	0	0	0	288	0	0	0
I.....	205	0	0	0	326	0	0	0
J.....	214	0	- 4	- 4	353	0	- 6	- 6
K.....	262	0	- 5	- 5	410	0	- 8	- 8
L.....	410	0	- 10	- 10	370	0	- 9	- 9
M.....	618	0	- 35	- 35	491	0	- 27	- 27
N.....	817	0	- 44	- 44	628	0	- 35	- 35
O.....	1,147	0	- 63	- 63	839	0	- 47	- 47
18.....				- 12				- 11
17.....				- 11				- 10
16.....				- 11				- 12
15.....				- 11				- 14
14.....				- 12				- 12
13.....				- 15				- 15
12.....				- 7				- 7
11.....				+ 2				- 3
10.....				+ 7				+ 3
9.....				+ 9				+ 8
8.....				+ 16				+ 13
7.....				+ 6				+ 5
6.....				+ 5*				+ 6*
5.....				+ 6*				+ 7*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				-112	Total..... - 59			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Ste. Anne-de-Bellevue, Que., No. 8				Mattawa, Ont., No. 9			
A.....	112	+ 2	0	+ 2	552	+ 2	0	+ 2
B.....	115	+ 26	0	+ 26	562	+ 56	0	+ 56
C.....	108	+ 5	0	+ 5	565	+ 66	0	+ 66
D.....	98	+ 4	0	+ 4	565	+ 38	0	+ 38
E.....	93	+ 2	0	+ 2	565	+ 15	0	+ 15
F.....	94	0	0	0	580	+ 4	0	+ 4
G.....	100	0	0	0	590	0	0	0
H.....	97	0	0	0	600	0	0	0
I.....	85	0	0	0	700	0	0	0
J.....	112	0	- 2	- 2	900	0	- 14	- 14
K.....	138	0	- 3	- 3	975	0	- 19	- 19
L.....	175	0	- 4	- 4	1,069	0	- 26	- 26
M.....	295	0	- 17	- 17	1,142	0	- 64	- 64
N.....	567	0	- 31	- 31	1,172	0	- 62	- 62
O.....	948	0	- 53	- 53	1,099	0	- 62	- 62
18.....				- 10				- 10
17.....				- 11				- 9
16.....				- 12				- 9
15.....				- 13				- 9
14.....				- 13				- 9
13.....				- 16				- 16
12.....				- 7				- 10
11.....				- 3				- 6
10.....				+ 5				- 4
9.....				+ 8				+ 3
8.....				+ 13				+ 10
7.....				+ 5				+ 5
6.....				+ 6*				+ 6*
5.....				+ 7*				+ 8*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 3*
1.....				+ 1*				+ 1*
Total.....				- 97	Total..... -102			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	New Liskeard, Ont., No. 10				Cochrane, Ont., No. 11			
A.....	630	+ 2	0	+ 2	909	+ 2	0	+ 2
B.....	635	+ 58	0	+ 58	915	+ 63	0	+ 63
C.....	635	+ 75	0	+ 75	910	+ 97	0	+ 97
D.....	635	+ 46	0	+ 46	900	+ 72	0	+ 72
E.....	635	+ 18	0	+ 18	900	+ 32	0	+ 32
F.....	710	+ 8	0	+ 8	900	+ 12	0	+ 12
G.....	720	0	0	0	900	0	0	0
H.....	730	0	0	0	900	0	0	0
I.....	750	0	0	0	900	0	0	0
J.....	750	0	- 12	- 12	900	0	- 14	- 14
K.....	859	0	- 17	- 17	900	0	- 18	- 18
L.....	850	0	- 20	- 20	900	0	- 22	- 22
M.....	983	0	- 55	- 55	691	0	- 39	- 39
N.....	1,148	0	- 60	- 60	773	0	- 39	- 39
O.....	1,041	0	- 58	- 58	930	0	- 52	- 52
18.....				- 11				- 8
17.....				- 11				- 8
16.....				- 11				- 8
15.....				- 10				- 8
14.....				- 10				- 8
13.....				- 14				- 12
12.....				- 9				- 9
11.....				- 8				- 8
10.....				- 4				- 6
9.....				+ 3				- 2
8.....				+ 10				+ 4
7.....				+ 4				+ 5
6.....				+ 5*				+ 4
5.....				+ 8*				+ 9
4.....				+ 5*				+ 5
3.....				+ 5*				+ 5
2.....				+ 3*				+ 3
1.....				+ 1*				+ 1
Total.....				- 59	Total..... + 53			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compens- ation	Topo- graphy and Compens- ation	Elevation in Feet	Topo- graphy	Compens- ation	Topo- graphy and Compens- ation			
	Sault Ste. Marie, Ont., No. 12				Chapleau, Ont., No. 13						
A.....	612	+ 2	0	+ 2	1,406	+ 2	0	+ 2			
B.....	625	+ 57	0	+ 57	1,412	+ 64	0	+ 64			
C.....	625	+ 74	0	+ 74	1,415	+121	0	+121			
D.....	625	+ 45	0	+ 45	1,415	+132	0	+132			
E.....	625	+ 17	0	+ 17	1,420	+ 72	0	+ 72			
F.....	625	+ 6	0	+ 6	1,430	+ 29	0	+ 29			
G.....	650	0	0	0	1,440	+ 11	0	+ 11			
H.....	700	0	0	0	1,450	+ 16	- 16	0			
I.....	750	0	0	0	1,465	+ 20	- 20	0			
J.....	750	0	- 12	- 12	1,475	0	- 16	- 16			
K.....	750	0	- 15	- 15	1,500	0	- 20	- 20			
L.....	750	0	- 18	- 18	1,500	0	- 36	- 36			
M.....	839	0	- 47	- 47	1,500	0	- 84	- 84			
N.....	833	0	- 49	- 49	1,500	0	- 80	- 80			
O.....	849	0	- 48	- 48	1,227	0	- 69	- 69			
18.....				- 9				- 10			
17.....				- 9				- 9			
16.....				- 9				- 7			
15.....				- 9				- 6			
14.....				- 8				- 7			
13.....				- 14				- 13			
12.....				- 9				- 9			
11.....				- 8				- 9			
10.....				- 7				- 6			
9.....				- 2				- 3			
8.....				+ 4				+ 6			
7.....				+ 5				+ 5			
6.....				+ 6*				+ 5*			
5.....				+ 9*				+ 9*			
4.....				+ 6*				+ 5*			
3.....				+ 5*				+ 5*			
2.....				+ 3*				+ 3*			
1.....				+ 1*				+ 1*			
Total.....					- 33	Total.....					+ 86

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Port Arthur, Ont., No. 14				Rose Point, Ont., No. 15			
A.....	654	+ 2	0	+ 2	598	+ 2	0	+ 2
B.....	643	+ 56	0	+ 56	600	+ 57	0	+ 57
C.....	630	+ 74	0	+ 74	600	+ 72	0	+ 72
D.....	630	+ 46	0	+ 46	600	+ 42	0	+ 42
E.....	630	+ 16	0	+ 16	600	+ 16	0	+ 16
F.....	630	+ 6	0	+ 6	600	+ 5	0	+ 5
G.....	640	0	0	0	610	0	0	0
H.....	640	0	0	0	620	0	0	0
I.....	650	0	0	0	625	0	0	0
J.....	690	0	- 11	- 11	675	0	- 11	- 11
K.....	660	0	- 13	- 13	675	0	- 14	- 14
L.....	790	0	- 20	- 20	669	0	- 16	- 16
M.....	990	0	- 55	- 55	733	0	- 41	- 41
N.....	880	0	- 46	- 46	818	0	- 44	- 44
O.....	740	0	- 42	- 42	932	0	- 52	- 52
18.....				- 9				- 10
17.....				- 10				- 9
16.....				- 10				- 7
15.....				- 12				- 9
14.....				- 12				- 9
13.....				- 17				- 16
12.....				- 9				- 9
11.....				- 8				- 7
10.....				- 6				- 4
9.....				- 6				+ 4
8.....				0				+ 7
7.....				+ 6				+ 6
6.....				+ 7*				+ 6*
5.....				+ 9*				+ 8*
4.....				+ 6*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				- 49	Total..... - 19			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*
 AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
 FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Whitby, Ont., No. 16				Woodstock, Ont., No. 17			
A.....	284	+ 2	0	+ 2	981	+ 2	0	+ 2
B.....	290	+ 47	0	+ 47	1,000	+ 62	0	+ 62
C.....	290	+ 30	0	+ 30	999	+104	0	+104
D.....	290	+ 11	0	+ 11	978	+ 81	0	+ 81
E.....	293	+ 6	0	+ 6	991	+ 38	0	+ 38
F.....	300	0	0	0	992	+ 15	0	+ 15
G.....	316	0	0	0	1,021	+ 1	0	+ 1
H.....	325	0	0	0	1,044	0	0	0
I.....	337	0	0	0	1,022	0	0	0
J.....	360	0	- 6	- 6	1,028	0	- 16	- 16
K.....	431	0	- 9	- 9	1,238	0	- 20	- 20
L.....	491	0	- 12	- 12	1,088	0	- 26	- 26
M.....	433	0	- 24	- 24	1,446	0	- 81	- 81
N.....	592	0	- 32	- 32	872	0	- 47	- 47
O.....	931	0	- 52	- 52	740	0	- 41	- 41
18.....				- 10				- 8
17.....				- 8				- 8
16.....				- 8				- 9
15.....				- 9				- 10
14.....				- 10				- 10
13.....				- 13				- 16
12.....				- 7				- 8
11.....				- 1				- 5
10.....				+ 5				- 3
9.....				+ 6				+ 3
8.....				+ 10				+ 7
7.....				+ 5				+ 5
6.....				+ 7*				+ 7*
5.....				+ 8*				+ 8*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 3*
1.....				+ 1*				+ 1*
Total.....				- 49	Total..... + 39			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Windsor, Ont., No. 18				St. John, N.B., No. 19			
A.....	584	+ 2	0	+ 2	108	+ 2	0	+ 2
B.....	590	+ 57	0	+ 57	75	+ 18	0	+ 18
C.....	587	+ 72	0	+ 72	64	+ 3	0	+ 3
D.....	583	+ 40	0	+ 40	42	+ 2	0	+ 2
E.....	586	+ 15	0	+ 15	24	0	0	0
F.....	592	+ 5	0	+ 5	91	0	0	0
G.....	600	0	0	0	60	0	0	0
H.....	602	0	0	0	48	0	0	0
I.....	604	0	0	0	56	0	0	0
J.....	603	0	- 10	- 10	90	0	- 2	- 2
K.....	616	0	- 12	- 12	91	0	- 2	- 2
L.....	616	0	- 15	- 15	97	0	- 3	- 3
M.....	695	0	- 39	- 39	75	0	- 5	- 5
N.....	743	0	- 40	- 40	167	0	- 11	- 11
O.....	740	0	- 41	- 41	318	0	- 18	- 18
18.....				- 10				- 2
17.....				- 10				- 2
16.....				- 12				- 2
15.....				- 10				- 3
14.....				- 9				- 3
13.....				- 15				+ 4
12.....				- 11				+ 10
11.....				- 9				+ 18
10.....				- 2				+ 16
9.....				+ 3				+ 14
8.....				+ 5				+ 18
7.....				+ 4				+ 6
6.....				+ 7				+ 6*
5.....				+ 8				+ 5*
4.....				+ 6				+ 5*
3.....				+ 5				+ 5*
2.....				+ 3				+ 4*
1.....				+ 1				+ 1*
Total.....				- 12	Total..... + 84			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compensation	Topo- graphy and Compensation	Elevation in Feet	Topo- graphy	Compensation	Topo- graphy and Compensation
	Moncton, N.B., No. 20				Charlottetown, P.E.I., No. 21			
A.....	46	+ 2	0	+ 2	26	+ 2	0	+ 2
B.....	52	+ 13	0	+ 13	25	+ 6	0	+ 6
C.....	52	0	0	0	7	0	0	0
D.....	51	+ 2	0	+ 2	22	+ 1	0	+ 1
E.....	53	+ 1	0	+ 1	13	0	0	0
F.....	66	0	0	0	8	0	0	0
G.....	75	0	0	0	22	0	0	0
H.....	95	0	0	0	24	0	0	0
I.....	135	0	0	0	32	0	0	0
J.....	230	0	- 4	- 4	28	0	- 1	- 1
X.....	256	0	- 5	- 5	65	0	- 1	- 1
L.....	286	0	- 7	- 7	11	0	0	0
M.....	272	0	- 16	- 16	0	0	0	0
N.....	195	0	- 12	- 12	54	0	- 4	- 4
O.....	205	0	- 12	- 12	166	0	- 10	- 10
18.....				- 3				- 2
17.....				- 2				- 2
16.....				- 2				0
15.....				- 3				0
14.....				- 4				- 1
13.....				+ 5				+ 9
12.....				+ 10				+ 14
11.....				+ 18				+ 18
10.....				+ 18				+ 19
9.....				+ 17				+ 18
8.....				+ 19				+ 19
7.....				+ 7				+ 7
6.....				+ 6*				+ 6*
5.....				+ 5*				+ 4*
4.....				+ 5*				+ 5*
3.....				+ 6*				+ 6*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				+ 69	Total..... +118			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Sydney, N.S., No. 22				Truro, N.S., No. 23			
A.....	39	+ 2	0	+ 2	59	+ 2	0	+ 2
B.....	40	+ 12	0	+ 12	60	+ 16	0	+ 16
C.....	27	+ 1	0	+ 1	60	+ 2	0	+ 2
D.....	26	0	0	0	60	+ 2	0	+ 2
E.....	6	0	0	0	65	+ 1	0	+ 1
F.....	58	0	0	0	75	0	0	0
G.....	110	0	0	0	85	0	0	0
H.....	138	0	0	0	100	0	0	0
I.....	136	0	0	0	140	0	0	0
J.....	265	0	- 4	- 4	275	0	- 4	- 4
K.....	321	0	- 6	- 6	246	0	- 5	- 5
L.....	212	0	- 6	- 6	415	0	- 10	- 10
M.....	228	0	- 15	- 15	381	0	- 21	- 21
N.....	24	0	- 2	- 2	211	0	- 14	- 14
O.....	-313	0	+ 14	+ 14	30	0	- 3	- 3
18.....				+ 3				- 1
17.....				+ 2				0
16.....				+ 2				0
15.....				+ 1				0
14.....				+ 6				+ 5
13.....				+ 27				+ 25
12.....				+ 21				+ 25
11.....				+ 21				+ 22
10.....				+ 23				+ 20
9.....				+ 21				+ 18
8.....				+ 20				+ 19
7.....				+ 8				+ 7
6.....				+ 6*				+ 6*
5.....				+ 4*				+ 4*
4.....				+ 5*				+ 5*
3.....				+ 6*				+ 6*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				+177	Total..... +132			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Halifax, N.S., No. 24				Yarmouth, N.S., No. 25			
A.....	30	+ 2	0	+ 2	30	+ 2	0	+ 2
B.....	38	+ 7	0	+ 7	30	+ 8	0	+ 8
C.....	41	0	0	0	30	0	0	0
D.....	49	- 2	0	- 2	30	+ 1	0	+ 1
E.....	24	0	0	0	13	0	0	0
F.....	34	0	0	0	25	0	0	0
G.....	78	0	0	0	25	0	0	0
H.....	105	0	0	0	28	0	0	0
I.....	156	0	0	0	26	0	0	0
J.....	154	0	- 3	- 3	- 6	0	0	0
K.....	125	0	- 3	- 3	- 14	0	0	0
L.....	87	0	- 3	- 3	- 29	0	+ 1	+ 1
M.....	58	0	- 7	- 7	- 19	0	- 3	- 3
N.....	- 4	0	- 5	- 5	-198	0	+ 4	+ 4
O.....	- 81	0	- 1	- 1	-305	0	+ 8	+ 8
18.....				0				+ 1
17.....				0				+ 2
16.....				+ 6				+ 6
15.....				+ 14				+ 9
14.....				+ 18				+ 12
13.....				+ 35				+ 27
12.....				+ 29				+ 26
11.....				+ 23				+ 26
10.....				+ 18				+ 20
9.....				+ 15				+ 14
8.....				+ 18				+ 20
7.....				+ 7				+ 8
6.....				+ 6				+ 6*
5.....				+ 4				+ 5*
4.....				+ 5				+ 5*
3.....				+ 6				+ 5*
2.....				+ 4				+ 4*
1.....				+ 1				+ 1*
Total.....				+194	Total..... +218			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Woodstock, N.B., No. 26				Edmundston, N.B., No. 27			
A.....	184	+ 2	0	+ 2	486	+ 2	0	+ 2
B.....	185	+ 38	0	+ 38	500	+ 55	0	+ 55
C.....	175	+ 14	0	+ 14	500	+ 59	0	+ 59
D.....	175	+ 7	0	+ 7	510	+ 30	0	+ 30
E.....	175	+ 4	0	+ 4	520	+ 13	0	+ 13
F.....	250	0	0	0	530	+ 3	0	+ 3
G.....	300	0	0	0	540	0	0	0
H.....	300	0	0	0	590	0	0	0
I.....	300	0	0	0	650	0	0	0
J.....	300	0	- 5	- 5	750	0	- 12	- 12
K.....	334	0	- 7	- 7	760	0	- 15	- 15
L.....	369	0	- 9	- 9	975	0	- 23	- 23
M.....	589	0	- 33	- 33	1,105	0	- 62	- 62
N.....	536	0	- 31	- 31	1,118	0	- 56	- 56
O.....	710	0	- 40	- 40	795	0	- 45	- 45
18.....				- 5				- 10
17.....				- 6				- 11
16.....				- 6				- 9
15.....				- 4				- 9
14.....				+ 1				- 7
13.....				- 6				- 11
12.....				+ 2				- 7
11.....				+ 1				- 1
10.....				+ 13				+ 10
9.....				+ 12				+ 11
8.....				+ 17				+ 15
7.....				+ 7				+ 7
6.....				+ 6*				+ 5*
5.....				+ 5*				+ 5*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				- 8	Total..... - 48			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compensation	Topo- graphy and Compensation	Elevation in Feet	Topo- graphy	Compensation	Topo- graphy and Compensation
	Bathurst, N.B., No. 28				Percé, Que., No. 29			
A.....	15	+ 2	0	+ 2	20	+ 2	0	+ 2
B.....	15	+ 2	0	+ 2	20	+ 4	0	+ 4
C.....	15	0	0	0	25	0	0	0
D.....	- 11	0	0	0	20	+ 1	0	+ 1
E.....	- 7	0	0	0	25	0	0	0
F.....	27	0	0	0	94	+ 2	0	+ 2
G.....	56	0	0	0	4	0	0	0
H.....	84	0	0	0	- 47	0	0	0
I.....	114	0	0	0	- 54	0	0	0
J.....	144	0	- 2	- 2	- 1	0	- 1	- 1
K.....	311	0	- 6	- 6	59	0	- 3	- 3
L.....	348	0	- 8	- 8	32	0	- 2	- 2
M.....	334	0	- 19	- 19	18	0	- 6	- 6
N.....	433	0	- 25	- 25	- 50	0	- 4	- 4
O.....	749	0	- 42	- 42	47	0	- 9	- 9
18.....				- 5				- 1
17.....				- 2				- 1
16.....				- 1				- 3
15.....				- 2				- 5
14.....				- 5				- 6
13.....				- 11				0
12.....				- 4				- 8
11.....				+ 6				0
10.....				+ 16				+ 15
9.....				+ 14				+ 11
8.....				+ 17				+ 19
7.....				+ 7				+ 8
6.....				+ 6*				+ 6*
5.....				+ 5*				+ 5*
4.....				+ 5*				+ 5*
3.....				+ 6*				+ 6*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				- 41	Total..... + 40			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Kenora, Ont., No. 30				Chelmsford, Ont., No. 101			
A.....	1,083	+ 2	0	+ 2	882	+ 2	0	+ 2
B.....	1,090	+ 64	0	+ 64	882	+ 62	0	+ 62
C.....	1,100	+108	0	+108	882	+ 95	0	+ 95
D.....	1,100	+ 96	0	+ 96	882	+ 70	0	+ 70
E.....	1,100	+ 48	0	+ 48	882	+ 31	0	+ 31
F.....	1,100	+ 18	0	+ 18	882	+ 12	0	+ 12
G.....	1,100	+ 2	0	+ 2	879	0	0	0
H.....	1,100	+ 3	- 3	0	891	0	0	0
I.....	1,100	+ 4	- 4	0	902	0	0	0
J.....	1,100	0	- 16	- 16	939	0	- 15	- 15
K.....	1,100	0	- 20	- 20	965	0	- 19	- 19
L.....	1,100	0	- 26	- 26	981	0	- 24	- 24
M.....	1,400	0	- 78	- 78	949	0	- 53	- 53
N.....	1,362	0	- 71	- 71	1,022	0	- 54	- 54
O.....	1,323	0	- 74	- 74	962	0	- 56	- 56
18.....				- 13				- 11
17.....				- 12				- 10
16.....				- 12				- 10
15.....				- 12				- 10
14.....				- 13				- 10
13.....				- 18				- 12
12.....				- 13				- 10
11.....				- 11				- 9
10.....				- 9				- 6
9.....				- 9				0
8.....				- 11				+ 6
7.....				+ 4				+ 5
6.....				+ 8*				+ 5*
5.....				+ 10*				+ 9*
4.....				+ 6*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				- 43	Total..... + 2			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Sudbury, Ont., No. 102				Hearst, Ont., No. 103			
A.....	886	+ 2	0	+ 2	797	+ 2	0	+ 2
B.....	886	+ 62	0	+ 62	797	+ 61	0	+ 61
C.....	886	+ 95	0	+ 95	797	+ 88	0	+ 88
D.....	886	+ 70	0	+ 70	797	+ 60	0	+ 60
E.....	871	+ 30	0	+ 30	797	+ 24	0	+ 24
F.....	864	+ 12	0	+ 12	795	+ 10	0	+ 10
G.....	854	0	0	0	795	0	0	0
H.....	858	0	0	0	798	0	0	0
I.....	856	0	0	0	798	0	0	0
J.....	830	0	- 13	- 13	806	0	- 13	- 13
K.....	838	0	- 17	- 17	812	0	- 16	- 16
L.....	833	0	- 20	- 20	811	0	- 19	- 19
M.....	881	0	- 49	- 49	767	0	- 43	- 43
N.....	988	0	- 52	- 52	762	0	- 42	- 42
O.....	968	0	- 54	- 54	882	0	- 49	- 49
18.....				- 10				- 9
17.....				- 11				- 9
16.....				- 11				- 9
15.....				- 10				- 8
14.....				- 10				- 7
13.....				- 12				- 11
12.....				- 10				- 9
11.....				- 9				- 8
10.....				- 6				- 6
9.....				0				- 3
8.....				+ 6				+ 2
7.....				+ 5				+ 4
6.....				+ 5*				+ 5*
5.....				+ 8*				+ 9*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				+ 15	Total..... + 18			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Nakina, Ont., No. 104				Armstrong, Ont., No. 105			
A.....	1,010	+ 2	0	+ 2	1,129	+ 2	0	+ 2
B.....	1,010	+ 64	0	+ 64	1,129	+ 65	0	+ 65
C.....	1,010	+104	0	+104	1,129	+109	0	+109
D.....	1,010	+ 85	0	+ 85	1,129	+ 99	0	+ 99
E.....	1,010	+ 41	0	+ 41	1,129	+ 50	0	+ 50
F.....	996	+ 15	0	+ 15	1,129	+ 18	0	+ 18
G.....	991	0	0	0	1,137	+ 3	0	+ 3
H.....	995	0	0	0	1,146	+ 5	- 5	0
I.....	995	0	0	0	1,130	+ 5	- 5	0
J.....	1,012	0	- 16	- 16	1,132	0	- 16	- 16
K.....	1,036	0	- 21	- 21	1,136	0	- 20	- 20
L.....	1,020	0	- 24	- 24	1,104	0	- 26	- 26
M.....	1,014	0	- 57	- 57	1,101	0	- 62	- 62
N.....	1,097	0	- 58	- 58	1,379	0	- 72	- 72
O.....	957	0	- 54	- 54	1,352	0	- 76	- 76
18.....				- 9				- 13
17.....				- 9				- 13
16.....				- 9				- 11
15.....				- 9				- 12
14.....				- 9				- 10
13.....				- 14				- 13
12.....				- 8				- 8
11.....				- 6				- 7
10.....				- 6				- 6
9.....				- 5				- 6
8.....				- 1				- 5
7.....				+ 3				+ 3
6.....				+ 6*				+ 6*
5.....				+ 9*				+ 10*
4.....				+ 6*				+ 6*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				+ 29	Total..... + 4			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Sioux Lookout, Ont., No. 106				Berens River, Man., No. 107			
A.....	1,207	+ 2	0	+ 2	718	+ 2	0	+ 2
B.....	1,207	+ 65	0	+ 65	718	+ 59	0	+ 59
C.....	1,207	+112	0	+112	718	+ 81	0	+ 81
D.....	1,207	+109	0	+109	718	+ 50	0	+ 50
E.....	1,207	+ 56	0	+ 56	718	+ 21	0	+ 21
F.....	1,202	+ 20	0	+ 20	719	+ 8	0	+ 8
G.....	1,202	+ 5	0	+ 5	719	0	0	0
H.....	1,205	+ 6	- 6	0	717	0	0	0
I.....	1,211	+ 8	- 8	0	717	0	0	0
J.....	1,208	0	- 16	- 16	723	0	- 12	- 12
K.....	1,196	0	- 20	- 20	741	0	- 15	- 15
L.....	1,217	0	- 29	- 29	738	0	- 18	- 18
M.....	1,246	0	- 70	- 70	753	0	- 42	- 42
N.....	1,250	0	- 64	- 64	734	0	- 39	- 39
O.....	1,250	0	- 70	- 70	773	0	- 42	- 42
18.....				- 13				- 8
17.....				- 13				- 8
16.....				- 13				- 8
15.....				- 13				- 9
14.....				- 10				- 10
13.....				- 15				- 17
12.....				- 9				- 12
11.....				- 7				- 10
10.....				- 6				- 9
9.....				- 6				- 9
8.....				- 7				- 12
7.....				+ 4				+ 3
6.....				+ 7*				+ 8*
5.....				+ 10*				+ 10*
4.....				+ 6*				+ 6*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				+ 24	Total..... - 23			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Grand Rapids, Man., No. 108				Norway House, Man., No. 109			
A.....	735	+ 2	0	+ 2	718	+ 2	0	+ 2
B.....	735	+ 60	0	+ 60	718	+ 59	0	+ 59
C.....	735	+ 83	0	+ 83	718	+ 81	0	+ 81
D.....	735	+ 52	0	+ 52	718	+ 50	0	+ 50
E.....	735	+ 21	0	+ 21	718	+ 21	0	+ 21
F.....	734	+ 8	0	+ 8	717	+ 9	0	+ 9
G.....	735	0	0	0	718	0	0	0
H.....	768	0	0	0	718	0	0	0
I.....	769	0	0	0	723	0	0	0
J.....	778	0	- 12	- 12	730	0	- 12	- 12
K.....	781	0	- 16	- 16	733	0	- 15	- 15
L.....	790	0	- 19	- 19	738	0	- 18	- 18
M.....	815	0	- 46	- 46	742	0	- 42	- 42
N.....	804	0	- 41	- 41	748	0	- 40	- 40
O.....	881	0	- 49	- 49	761	0	- 43	- 43
18.....				- 10				- 8
17.....				- 10				- 8
16.....				- 11				- 8
15.....				- 11				- 8
14.....				- 11				- 10
13.....				- 19				- 17
12.....				- 13				- 12
11.....				- 11				- 14
10.....				- 10				- 16
9.....				- 10				- 11
8.....				- 8				- 6
7.....				+ 4				+ 3
6.....				+ 8*				+ 7*
5.....				+ 10*				+ 10*
4.....				+ 6*				+ 6*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 4*
1.....				+ 1*				+ 1*
Total.....				- 44	Total..... - 30			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Nokomis, Sask., No. 110				North Battleford, Sask., No. 111			
A.....	1,716	+ 2	0	+ 2	1,700	+ 2	.....	+ 2
B.....	1,716	+ 67	0	+ 67	1,700	+ 67	.....	+ 67
C.....	1,716	+133	0	+133	1,700	+132	.....	+132
D.....	1,716	+158	0	+158	1,700	+156	.....	+156
E.....	1,720	+102	0	+102	1,700	+100	.....	+100
F.....	1,725	+ 49	- 3	+ 46	1,676	+ 46	- 2	+ 44
G.....	1,722	+ 23	- 5	+ 18	1,680	+ 21	- 4	+ 17
H.....	1,718	+ 16	- 16	0	1,708	+ 16	- 16	0
I.....	1,712	+ 20	- 20	0	1,689	+ 20	- 20	0
J.....	1,712	0	- 16	- 16	1,742	0	- 16	- 16
K.....	1,697	0	- 20	- 20	1,762	0	- 20	- 20
L.....	1,742	0	- 42	- 42	1,928	0	- 46	- 46
M.....	1,889	0	-106	-106	2,086	0	-117	-117
N.....	1,756	0	- 90	- 90	2,275	0	-114	-114
O.....	1,725	0	- 97	- 97	1,986	0	-111	-111
18.....				- 19				- 20
17.....				- 19				- 19
16.....				- 20				- 19
15.....				- 20				- 19
14.....				- 19				- 20
13.....				- 31				- 33
12.....				- 19				- 23
11.....				- 20				- 20
10.....				- 16				- 14
9.....				- 9				- 8
8.....				- 2				0
7.....				+ 4				+ 2
6.....				+ 8*				+ 7*
5.....				+ 10*				+ 10*
4.....				+ 7*				+ 7*
3.....				+ 4*				+ 4*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				- 2	Total..... - 67			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Kindersley, Sask., No. 112				Prince George, B.C., No. 113			
A.....	2,267	+ 2	0	+ 2	1,873	+ 2	0	+ 2
B.....	2,267	+ 68	0	+ 68	1,873	+ 67	0	+ 67
C.....	2,267	+144	0	+144	1,873	+137	0	+137
D.....	2,267	+196	0	+196	1,873	+172	0	+172
E.....	2,270	+166	- 8	+158	2,000	+136	- 8	+128
F.....	2,265	+ 83	- 10	+ 73	2,000	+ 70	- 10	+ 60
G.....	2,275	+ 43	- 12	+ 31	2,000	+ 36	- 12	+ 24
H.....	2,269	+ 25	- 16	+ 9	2,200	+ 22	- 16	+ 6
I.....	2,266	+ 20	- 20	0	2,200	+ 20	- 20	0
J.....	2,275	+ 4	- 20	- 16	2,200	+ 3	- 19	- 16
K.....	2,288	0	- 26	- 26	2,200	0	- 24	- 24
L.....	2,275	0	- 55	- 55	2,312	0	- 55	- 55
M.....	2,236	+ 3	-126	-123	2,614	+ 9	-155	-146
N.....	2,406	0	-122	-122	3,125	0	-163	-163
O.....	2,232	0	-107	-107	4,196	0	-202	-202
18.....				- 22				- 40
17.....				- 23				- 38
16.....				- 23				- 41
15.....				- 23				- 40
14.....				- 23				- 40
13.....				- 40				- 71
12.....				- 30				- 30
11.....				- 23				0
10.....				- 17				+ 2
9.....				- 7				+ 3
8.....				+ 2				+ 6
7.....				+ 3				+ 7
6.....				+ 8*				+ 7*
5.....				+ 10*				+ 9*
4.....				+ 7*				+ 7*
3.....				+ 4*				+ 4*
2.....				+ 3*				+ 4*
1.....				+ 1*				+ 1*
Total.....				+ 39	Total..... -260			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Endako, B.C., No. 114				Smithers, B.C., No. 115			
A.....	2,257	+ 2	0	+ 2	1,640	+ 2	0	+ 2
B.....	2,260	+ 68	0	+ 68	1,640	+ 67	0	+ 67
C.....	2,260	+144	0	+144	1,650	+130	0	+130
D.....	2,260	+196	0	+196	1,700	+156	0	+156
E.....	2,260	+165	- 8	+157	2,000	+136	- 8	+128
F.....	2,260	+ 83	- 10	+ 73	2,100	+ 75	- 10	+ 65
G.....	2,260	+ 42	- 12	+ 30	2,300	+ 43	- 12	+ 31
H.....	2,260	+ 24	- 16	+ 8	2,500	+ 32	- 16	+ 16
I.....	2,260	+ 20	- 20	0	2,750	+ 20	- 20	0
J.....	2,260	+ 4	- 20	- 16	3,000	+ 16	- 32	- 16
K.....	2,260	0	- 25	- 25	3,400	+ 8	- 48	- 40
L.....	3,054	+ 1	- 73	- 72	3,625	+ 13	- 87	- 74
M.....	3,007	+ 14	-182	-168	3,714	+ 16	-222	-206
N.....	3,206	0	-166	-166	3,406	+ 2	-177	-175
O.....	3,657	0	-177	-177	3,375	0	-161	-161
18.....				- 36				- 37
17.....				- 36				- 36
16.....				- 38				- 35
15.....				- 36				- 24
14.....				- 34				- 22
13.....				- 48				- 31
12.....				- 13				- 4
11.....				+ 4				+ 4
10.....				+ 5				+ 6
9.....				+ 4				+ 5
8.....				+ 7				+ 8
7.....				+ 8				+ 8
6.....				+ 7*				+ 7*
5.....				+ 9*				+ 8*
4.....				+ 7*				+ 7*
3.....				+ 4*				+ 4*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total				-128	Total..... -205			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONESThe units for the corrections in this table is $\cdot 0001$ dyne.

Zone	Elevation in Feet	Topo- graphy	Compens- ation	Topo- graphy and Compens- ation	Elevation in Feet	Topo- graphy	Compens- ation	Topo- graphy and Compens- ation
	Montreal, Que., No. 116				Pembroke, Ont., No. 117			
A.....	128	+ 2	0	+ 2	399	+ 2	0	+ 2
B.....	128	+ 28	0	+ 28	408	+ 56	0	+ 56
C.....	128	+ 6	0	+ 6	410	+ 49	0	+ 49
D.....	155	+ 6	0	+ 6	392	+ 18	0	+ 18
E.....	191	+ 4	0	+ 4	389	+ 8	0	+ 8
F.....	208	0	0	0	393	0	0	0
G.....	167	0	0	0	409	0	0	0
H.....	129	0	0	0	409	0	0	0
I.....	105	0	0	0	427	0	0	0
J.....	87	0	- 1	- 1	439	0	- 7	- 7
K.....	87	0	- 2	- 2	452	0	- 9	- 9
L.....	118	0	- 3	- 3	476	0	- 11	- 11
M.....	329	0	- 18	- 18	779	0	- 44	- 44
N.....	556	0	- 31	- 31	1,025	0	- 49	- 49
O.....	941	0	- 53	- 53	936	0	- 52	- 52
18.....				- 12				- 8
17.....				- 13				- 8
16.....				- 12				- 8
15.....				- 11				- 7
14.....				- 10				- 9
13.....				- 14				- 16
12.....				- 7				- 10
11.....				- 3				- 4
10.....				+ 5				+ 3
9.....				+ 7				+ 6
8.....				+ 13				+ 11
7.....				+ 5				+ 6
6.....				+ 6*				+ 6*
5.....				+ 7*				+ 7*
4.....				+ 5*				+ 5*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				- 86	Total..... - 55			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—Continued

AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Haliburton, Ont., No. 118				Kincardine, Ont., No. 119			
A.....	1,071	+ 2	.....	+ 2	659	+ 2	0	+ 2
B.....	1,070	+ 64	.....	+ 64	665	+ 59	0	+ 59
C.....	1,062	+106	.....	+106	652	+ 76	0	+ 76
D.....	1,077	+ 89	.....	+ 89	650	+ 48	0	+ 48
E.....	1,175	+ 59	.....	+ 59	624	+ 17	0	+ 17
F.....	1,170	+ 22	.....	+ 22	606	+ 5	0	+ 5
G.....	1,217	+ 5	.....	+ 5	602	0	0	0
H.....	1,169	+ 5	- 5	0	602	0	0	0
I.....	1,230	+ 9	- 9	0	600	0	0	0
J.....	1,188	0	- 16	- 16	595	0	- 10	- 10
K.....	1,175	0	- 20	- 20	606	0	- 12	- 12
L.....	1,162	0	- 28	- 28	583	0	- 14	- 14
M.....	1,136	0	- 64	- 64	546	0	- 31	- 31
N.....	994	0	- 51	- 51	597	0	- 33	- 33
O.....	675	0	- 39	- 39	589	0	- 33	- 33
18.....				- 5				- 6
17.....				- 6				- 6
16.....				- 7				- 6
15.....				- 8				- 8
14.....				- 10				- 9
13.....				- 17				- 16
12.....				- 8				- 11
11.....				- 5				- 6
10.....				+ 2				- 3
9.....				+ 6				+ 5
8.....				+ 10				+ 8
7.....				+ 6*				+ 5*
6.....				+ 6*				+ 7*
5.....				+ 8*				+ 8*
4.....				+ 5*				+ 6*
3.....				+ 5*				+ 5*
2.....				+ 4*				+ 3*
1.....				+ 1*				+ 1*
Total.....				+116	Total..... + 51			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The units for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Biscotasing, Ont., No. 120				White River, Ont., No. 121			
A.....	1,354	+ 2	0	+ 2	1,219	+ 2	0	+ 2
B.....	1,358	+ 65	0	+ 65	1,220	+ 65	0	+ 65
C.....	1,345	+121	0	+121	1,225	+114	0	+114
D.....	1,338	+125	0	+125	1,218	+111	0	+111
E.....	1,330	+ 66	0	+ 66	1,218	+ 57	0	+ 57
F.....	1,340	+ 27	0	+ 27	1,215	+ 21	0	+ 21
G.....	1,340	+ 8	0	+ 8	1,225	+ 5	0	+ 5
H.....	1,341	+ 11	- 11	0	1,252	+ 8	- 8	0
I.....	1,334	+ 20	- 20	0	1,241	+ 10	- 10	0
J.....	1,339	0	- 16	- 16	1,275	0	- 16	- 16
K.....	1,340	0	- 20	- 20	1,240	0	- 20	- 20
L.....	1,295	0	- 31	- 31	1,267	0	- 30	- 30
M.....	1,186	0	- 66	- 66	1,179	0	- 66	- 66
N.....	1,194	0	- 57	- 57	869	0	- 45	- 45
O.....	982	0	- 54	- 54	741	0	- 45	- 45
18.....				- 8				- 6
17.....				- 7				- 7
16.....				- 6				- 7
15.....				- 7				- 8
14.....				- 8				- 9
13.....				- 12				- 13
12.....				- 6				- 8
11.....				- 9				- 7
10.....				- 7				- 8
9.....				0				- 5
8.....				+ 7				+ 5
7.....				+ 5*				+ 5*
6.....				+ 5*				+ 6*
5.....				+ 9*				+ 9*
4.....				+ 5*				+ 6*
3.....				+ 5*				+ 5*
2.....				+ 3*				+ 3*
1.....				+ 1*				+ 1*
Total.....				+140	Total..... +115			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—Continued

AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
Schreiber, Ont., No. 122					Federal Mine, Gaspé County, Que., No. 123			
A.....	993	+ 2	0	+ 2	1,736	+ 2	0	+ 2
B.....	1,000	+ 64	0	+ 64	1,725	+ 67	0	+ 67
C.....	1,000	+104	0	+104	1,658	+121	0	+121
D.....	1,000	+ 84	0	+ 84	1,565	+156	0	+156
E.....	1,038	+ 43	0	+ 43	1,651	+ 92	0	+ 92
F.....	1,040	+ 16	0	+ 16	1,764	+ 52	- 4	+ 48
G.....	1,025	+ 3	0	+ 3	1,677	+ 22	- 5	+ 17
H.....	975	+ 3	- 3	0	1,755	+ 11	- 13	- 2
I.....	875	+ 4	- 4	0	1,785	+ 18	- 20	- 2
J.....	750	0	- 11	- 11	2,094	+ 1	- 17	- 16
K.....	725	0	- 13	- 13	2,000	- 5	- 24	- 29
L.....	692	0	- 17	- 17	2,383	+ 3	- 57	- 54
M.....	500	0	- 28	- 28	1,171	0	- 66	- 66
N.....	538	0	- 25	- 25	425	0	- 23	- 23
O.....	702	0	- 40	- 40	318	0	- 19	- 19
18.....				- 8				- 2
17.....				- 8				- 5
16.....				- 8				- 4
15.....				- 9				- 6
14.....				- 10				- 6
13.....				- 14				- 12
12.....				- 8				- 7
11.....				- 6				- 1
10.....				- 7				+ 11
9.....				- 7				+ 15
8.....				- 1				+ 18*
7.....				+ 4				+ 7*
6.....				+ 6*				+ 6*
5.....				+ 9*				+ 5*
4.....				+ 6*				+ 5*
3.....				+ 5*				+ 6*
2.....				+ 3*				+ 4*
1.....				+ 1*				+ 1*
Total.....				+130	Total..... +327			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
	Cascapedia, Que., No. 124				Lac au Saumon, Que., No. 125			
A.....	37	+ 2	0	+ 2	507	+ 2	0	+ 2
B.....	42	+ 12	0	+ 12	510	+ 56	0	+ 56
C.....	40	0	0	0	519	+ 61	0	+ 61
D.....	40	+ 2	0	+ 2	518	+ 32	0	+ 32
E.....	62	+ 1	0	+ 1	540	+ 13	0	+ 13
F.....	78	0	0	0	555	+ 4	0	+ 4
G.....	283	0	0	0	652	0	0	0
H.....	350	0	0	0	831	0	0	0
I.....	565	0	0	0	985	+ 6	- 6	0
J.....	588	0	- 9	- 9	869	0	- 14	- 14
K.....	655	0	- 12	- 12	1,070	0	- 20	- 20
L.....	862	0	- 23	- 23	1,162	0	- 28	- 28
M.....	864	0	- 48	- 48	1,071	0	- 61	- 61
N.....	1,088	0	- 55	- 55	900	0	- 47	- 47
O.....	329	0	- 20	- 20	654	0	- 36	- 36
18.....				- 2				- 5
17.....				- 2				- 5
16.....				- 4				- 5
15.....				- 5				- 5
14.....				- 5				- 7
13.....				- 13				- 11
12.....				- 7				- 7
11.....				+ 4				+ 1
10.....				+ 10				+ 6
9.....				+ 13				+ 15
8.....				+ 18*				+ 17*
7.....				+ 7*				+ 7*
6.....				+ 6*				+ 6*
5.....				+ 5*				+ 5*
4.....				+ 5*				+ 5*
3.....				+ 6*				+ 5*
2.....				+ 4*				+ 4*
1.....				+ 1*				+ 1*
Total.....				-109	Total..... - 11			

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Continued*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is .0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation	
	La Tuque, Que., No. 126				Parent, Que., No. 127				
A.....	555	+ 2	0	+ 2	1,401	+ 2	0	+ 2	
B.....	560	+ 57	0	+ 57	1,405	+ 65	0	+ 65	
C.....	545	+ 64	0	+ 64	1,389	+123	0	+123	
D.....	537	+ 34	0	+ 34	1,380	+130	0	+130	
E.....	511	+ 12	0	+ 12	1,390	+ 71	0	+ 71	
F.....	465	+ 2	0	+ 2	1,394	+ 30	0	+ 30	
G.....	475	0	0	0	1,458	+ 12	0	+ 12	
H.....	597	0	0	0	1,512	+ 16	- 16	0	
I.....	675	0	0	0	1,625	+ 20	- 20	0	
J.....	828	0	- 13	- 13	1,600	0	- 16	- 16	
K.....	985	0	- 20	- 20	1,620	0	- 20	- 20	
L.....	996	0	- 24	- 24	1,483	0	- 36	- 36	
M.....	943	0	- 53	- 53	1,386	0	- 78	- 78	
N.....	1,125	0	- 64	- 64	1,369	0	- 72	- 72	
O.....	1,014	0	- 57	- 57	1,189	0	- 67	- 67	
18.....				- 8				- 10	
17.....				- 9				- 9	
16.....				- 10				- 8	
15.....				- 10				- 9	
14.....				- 10				- 9	
13.....				- 15				- 16	
12.....				- 7				- 7	
11.....				- 5				- 4	
10.....				+ 5				0	
9.....				+ 7				+ 6	
8.....				+ 17				+ 13	
7.....				+ 6*				+ 6*	
6.....				+ 5*				+ 5*	
5.....				+ 7*				+ 7*	
4.....				+ 5*				+ 5*	
3.....				+ 5*				+ 5*	
2.....				+ 4*				+ 4*	
1.....				+ 1*				+ 1*	
Total.....				- 72	Total.....				+124

*These values have been interpolated from those obtained for neighbouring stations.

TABLE V—*Concluded*AVERAGE ELEVATIONS AND CORRECTIONS FOR TOPOGRAPHY AND COMPENSATION
FOR SEPARATE ZONES

The unit for the corrections in this table is -0001 dyne.

Zone	Elevation in Feet	Topo- graphy	Compen- sation	Topo- graphy and Compen- sation
Taschereau, Que., No. 128				
A.....	1,008	+ 2	0	+ 2
B.....	1,013	+ 64	0	+ 64
C.....	1,013	+105	0	+105
D.....	1,015	+ 86	0	+ 86
E.....	1,012	+ 41	0	+ 41
F.....	1,016	+ 15	0	+ 15
G.....	1,019	0	0	0
H.....	1,058	+ 2	- 2	0
I.....	1,088	+ 4	- 4	0
J.....	1,138	0	- 16	- 16
K.....	1,115	0	- 20	- 20
L.....	1,117	0	- 27	- 27
M.....	1,064	0	- 59	- 59
N.....	856	0	- 43	- 43
O.....	864	0	- 48	- 48
18.....				- 8
17.....				- 9
16.....				- 9
15.....				- 9
14.....				- 9
13.....				- 13
12.....				- 6
11.....				- 7
10.....				- 4
9.....				+ 1
8.....				+ 9
7.....				+ 5*
6.....				+ 5*
5.....				+ 8*
4.....				+ 5*
3.....				+ 5*
2.....				+ 3*
1.....				+ 1*
Total.....				+ 68

*These values have been interpolated from those obtained for neighbouring stations.

TABLE VI

PERIODS IN SECONDS $\times 10^7$ OF PENDULUM NO. 3 FOR DECREASING ARCS ON KNIFE
EDGE I FROM 6 CONTINUOUS SWINGS OF 24 HOURS EACH AT AN AVERAGE
PRESSURE OF 12.8 MILLIMETRES OF MERCURY FROM OBSERVA-
TIONS BY A. H. MILLER AND J. P. HENDERSON

									Mean
Observed initial and final amplitude in millimetres (1 mm. = 11' 33").....	8.0—6.4	6.4—5.0	5.0—4.0	4.0—3.1	3.1—2.4	2.4—1.9	1.9—1.3	1.3—1.0	
Corresponding computed am- plitudes assuming the sine of the semi arc to decrease exponentially.....	8.0—6.2	6.2—4.8	4.8—3.7	3.7—2.8	2.8—2.2	2.2—1.7	1.7—1.3	1.3—1.0	
Observed periods corrected for arc*, temperature**, pressure† and flexure††....	5014291 ± 2.1	5014285 ± 1.0	5014284 ± 1.7	5014284 ± 1.6	5014280 ± 1.9	5014282 ± 1.4	5014276 ± 2.1	5014277 ± 1.3	5014282
Periods corrected as above with an additional arc cor- rection of 2.17×10^{-7} s. per mm. of arc.....	5014275	5014273	5014274	5014276	5014274	5014277	5014273	5014275	5014275
Corrected periods for swings with final arc of 1 mm. and initial arcs of 8.0, 6.4, 5.0, 4.0, 3.1, 2.4, 1.9, 1.3 mm. respectively.....	5014282.4 ± 0.6	5014281.1 ± 0.6	5014280.5 ± 0.7	5014279.8 ± 0.8	5014278.8 ± 0.9	5014278.3 ± 0.9	5014276.5 ± 1.2	5014277.0 ± 1.3	5014279.3
Periods corrected by an addi- tional arc correction of 2.17×10^{-7} s.....	5014272.6	5014273.1	5014274.0	5014274.4	5014274.4	5014274.6	5014273.4	5014274.5	5014273.9

$$* \text{Arc Correction} = \frac{T_0(\sin^2 \alpha_1 - \sin^2 \alpha_2)}{32(\log_e \sin \alpha_1 - \log_e \sin \alpha_2)}$$

$$\dagger \text{Pressure Correction} = +1.01 \times 10^{-7}(60 - \frac{P}{1 + \alpha t}) \text{sec.}$$

$$** \text{Temperature Correction} = -41.55 \times 10^{-7} \text{s. per degree centigrade.}$$

$$\dagger\dagger \text{Flexure Correction} = 1.73 \times 10^{-7} \text{ sec. per } .01 \text{ fringe displacement of sodium light for 5 mm. arc} = \text{also theoretically}$$

$$T \frac{\Delta l}{2l} = 847.3 \frac{D_r}{A} \times 10^{-7}$$

$$\text{Rate Correction} = \text{Uncorrected Period} \times \frac{86400}{86400 - \text{Rate}}$$

TABLE VII—ARC CORRECTIONS IN UNITS OF 10^{-7} SEC. FROM FORMULA

$$\Delta T = T_0 \frac{(\sin^2 \alpha_1 - \sin^2 \alpha_2)}{32(\log_e \sin \alpha_1 - \log_e \sin \alpha_2)}$$

Initial total arc in millimetres	Final total arc in millimetres								
	9	8	7	6	5	4	3	2	1
10.....	79.8	71.4	63.8	55.5	47.9	40.6	33.5	26.4	19.0
9.....	63.8	56.4	49.1	42.1	35.5	29.0	22.6	16.1
8.....	49.8	43.1	36.7	30.7	24.8	19.1	13.4
7.....	37.3	31.5	26.1	20.9	15.9	10.9
6.....	26.7	21.8	17.2	12.9	8.6
5.....	17.9	13.9	10.1	6.6
4.....	10.8	7.7	4.8
3.....	5.5	3.2
2.....	1.9

Reqn. 7185