# III. Surface Condition of the Ice Sheet in the Mizuho Plateau-West Enderby Land Area, East Antarctica, 1969-1971

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## 1. Introduction

Observations of surface conditions of the ice sheet were made in the Mizuho Plateau-West Enderby Land area along the routes of JARE 10 and 11 traverses in the summers of 1969 - 1970 and 1970 - 1971 as shown in Fig. A attached to the end of this volume. These observations were carried out to study the climatological conditions of this area which were reflected on the structure of the surface snow cover of the ice sheet.

During the traverses the following observations and measurements were carried out:

i ) Observations of the relief of snow surface at intervals of 2 or 5 km along the route.

ii ) Measurements of surface hardness of the snow cover at the same intervals as above.

iii) Measurements of vertical profile of Ram hardness in the snow cover, from the surface down to the depth of 2 m, using a Ram Sonde at intervals of 10 km.

iv) Measurements of directions and inclinations of surface slopes of the ice sheet at intervals of 10 km, when the skyline of the ice sheet was visible.

Measurements iii) and iv) were carried out by JARE 11 only. Discussions on the results of measurement iv) will be published separately in other paper.

## 2. Relief of the Ice Sheet Surface

It was found that the surface of the ice sheet, generally firn, showed complex features formed by successive accumulation of snow by drifting and erosion by wind. Observations on ablation of sastrugi were made in September and November 1969 and January 1970 (Ageta, 1972).

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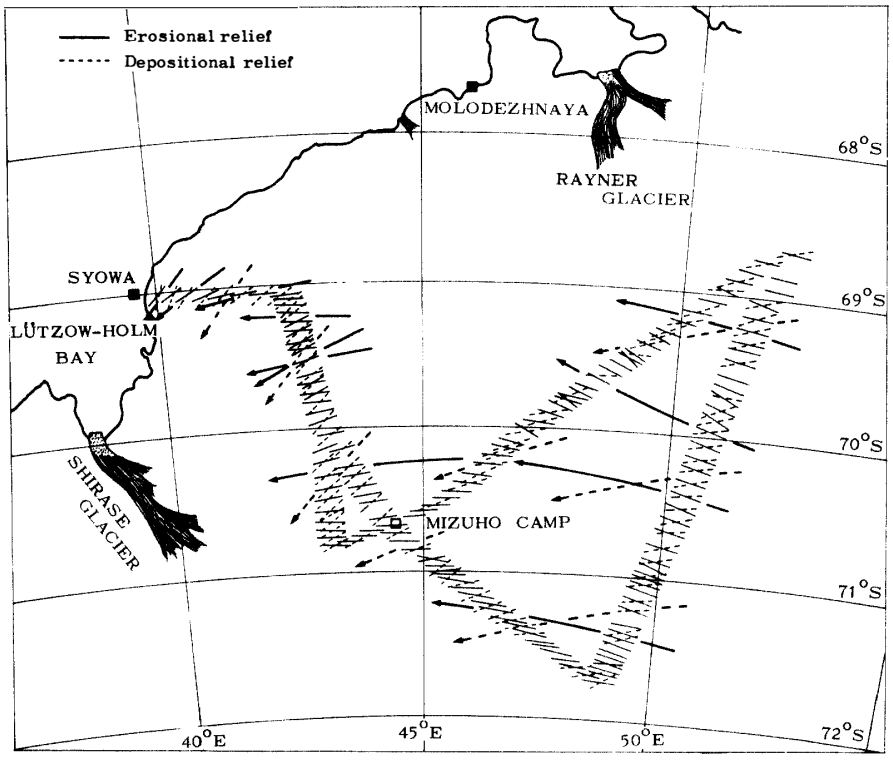



Fig. III-1. Directions of the surface reliefs, erosional and depositional, of the ice sheet, and direction of the prevailing wind in West Enderby Land, 1970 - 1971.

Generally speaking, the surface relief of the ice sheet is developed during the winter season predominantly, and smoothed during the summer season. The sastrugi grew higher than 0.7 m in winter, and became lower than 0.5 m in summer in the same area.

The surface relief of the ice sheet can be assorted into two major types: dunes formed by deposition of drifting snow, and sastrugi by wind erosion. From the results of structural studies of sastrugi it was found that the long axes of both dunes and sastrugi were parallel to the direction of wind which formed the surface relief. The directions of long axes of dunes and sastrugi are shown in Table III-1 (JARE 10) and Table III-2 (JARE 11). In Fig. III-1, observed directions of dunes and sastrugi, and course of prevailing winds inferred from those data, are given. This result shows a good agreement with that of JARE 10 (Ageta, 1971).

## 3. Surface Hardness of the Snow Cover

The surface hardness of the snow cover was measured with a

Kinosita's hardness gauge, and the result is shown in Tables III-1 and 2. The surface hardness of the snow cover was in the range of 2 - 30 kg/cm. In Fig. III-2, the surface hardness is plotted against the surface elevation; any evident correlation should not be found between them.

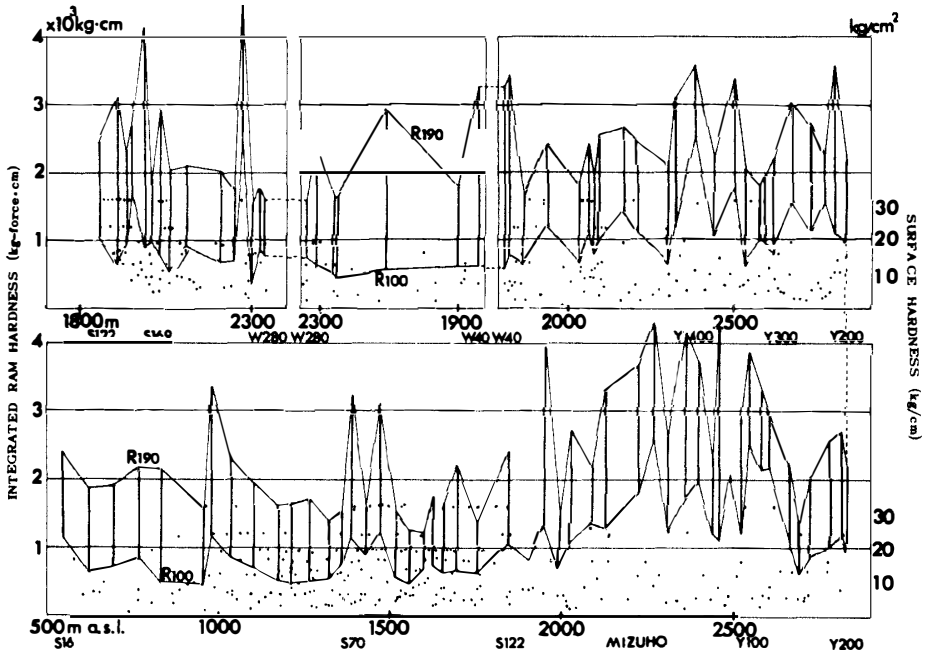



Fig. III-2. Surface hardness and integrated Ram hardness of snow cover vs. surface elevation of the ice sheet in West Enderby Land, 1970 - 1971.
( ● : Surface hardness in kg/cm$^2$ by Kinosita's hardness gauge; R100 & R190: Integrated Ram hardness in kg-force·cm from the surface down to the depths of 100cm and 190cm of the snow cover respectively. )

## 4. Measurements of Vertical Profile of Ram Hardness in the Surface Snow

Vertical profiling of Ram hardness of snow from the surface down to a depth of 2m was made at intervals of 10 km as a complementary datum of precise stratigraphic studies of snow cover which were made at every 20 km by means of a 2m deep snow pit and/or a 2m long snow core. R100

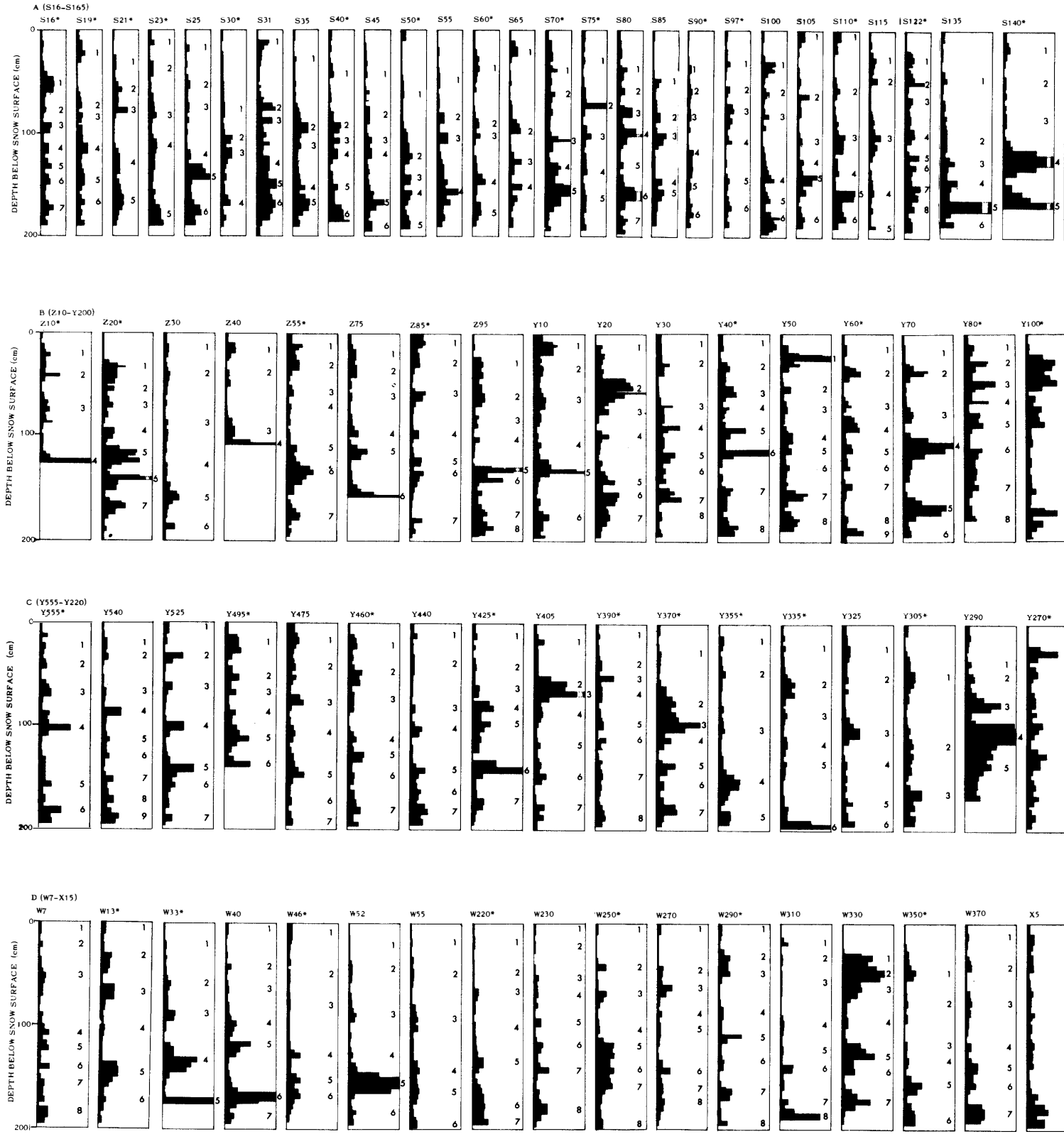
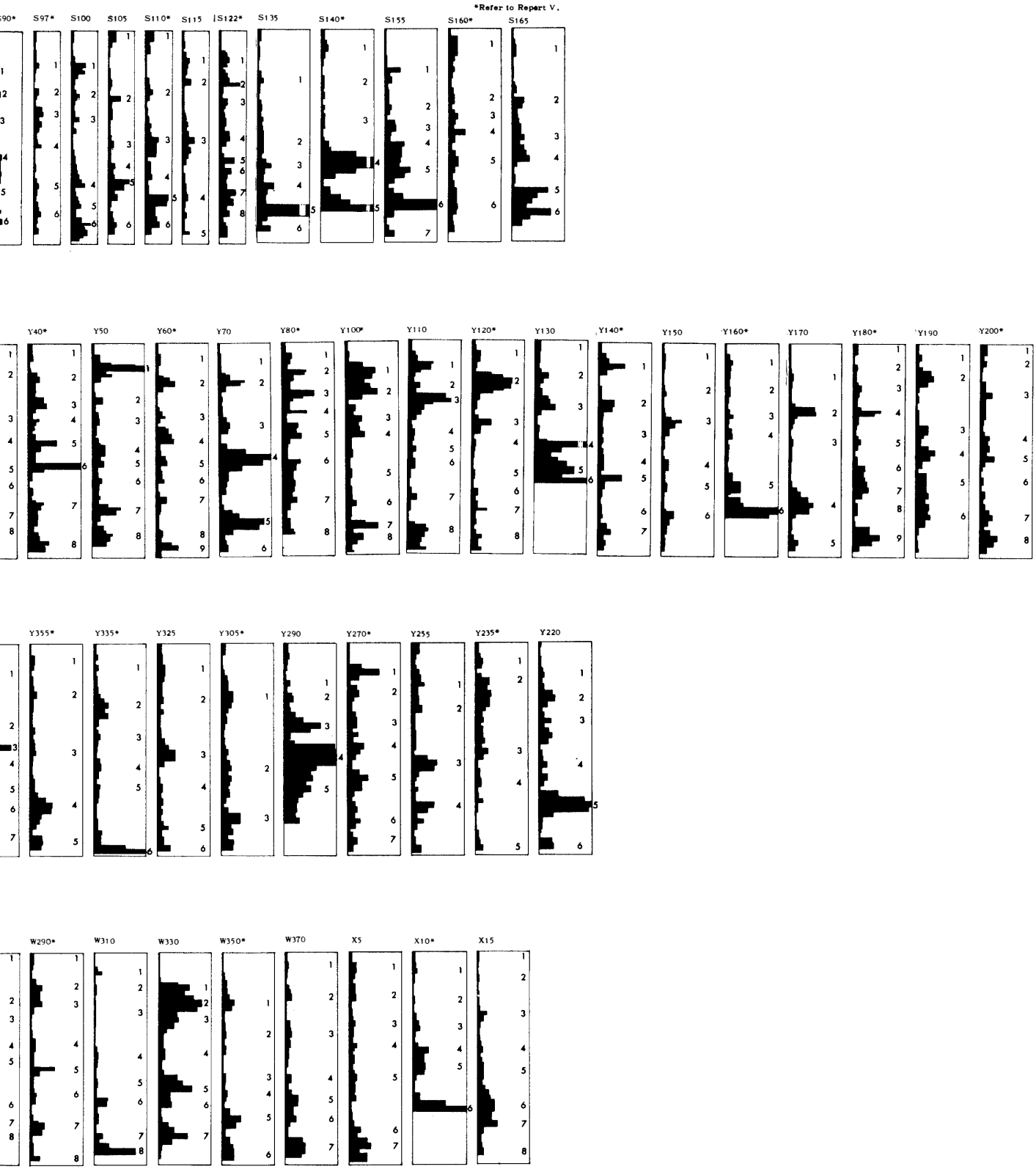



Fig. III-3. Ram hardness profile of snow cover in West Enderby Land, 1970 - 19




er in West Enderby Land, 1970 - 1971.

and R190 which represent the integrated Ram hardness of the snow cover (Benson, 1962; Wagner, 1969) from the surface down to the depths of 100 cm and 190cm respectively are given in Table III-2. R100 and R190 are also plotted against the surface elevation in Fig. III-2. All results of the Ram hardness profile of the snow cover along the route of JARE 11's traverse are given in Figs. III-3, A, B, C and D. Numerals in diagrams of Fig. III-3 indicate the "key beds". The word "key bed" is used as a technical term indicating a unit structure of sedimentation of snow. Generally, a bed is composed of several elementary laminae. An elementary lamina of snow is considered to be formed by a single precipitation or deposition of drifting snow, while a bed is a set of elementary laminae which were accumulated under a similar meteorological condition such as the winter season or a period of predominant polar anticyclone. If a bed shows a characteristic property which gives information on the history of snow sedimentation, it is called a "key bed".

Numbers of the key beds at different stations do not necessarily coincide with those in Fig. III-3.

## 5. Measurements of the Surface Slope of the Ice Sheet

Measurements of surface slopes of the ice sheet as regards directions and inclinations were carried out together with barometric altimetry along the traverse route of JARE 11 for compiling a surface topographic map of the ice sheet in that area. Data of the surface slopes were very useful not only for determining the contour of the ice sheet surface, but also for obtaining preliminary information as to the flowing direction of the ice sheet.

As the first approach to the study of surface shape of the ice sheet, the following measurements were carried out through the oversnow traverse of JARE 11, although there was a problem of observation ranges by this method. The vertical angle of the skyline of the ice sheet was measured by a theodolite with the accuracy of one minute, in the directions of every $45^{\circ}$ from the magnetic north at a station when the skyline of the ice sheet was visible. The results of the measurements are shown in Table III-3.

Orthogonals to the surface contours were shown in Fig. III-4 (thin solid-lines). In view of the result, this area can be divided into three subdivisional areas, I, II and III, by two ridges A and B (thick

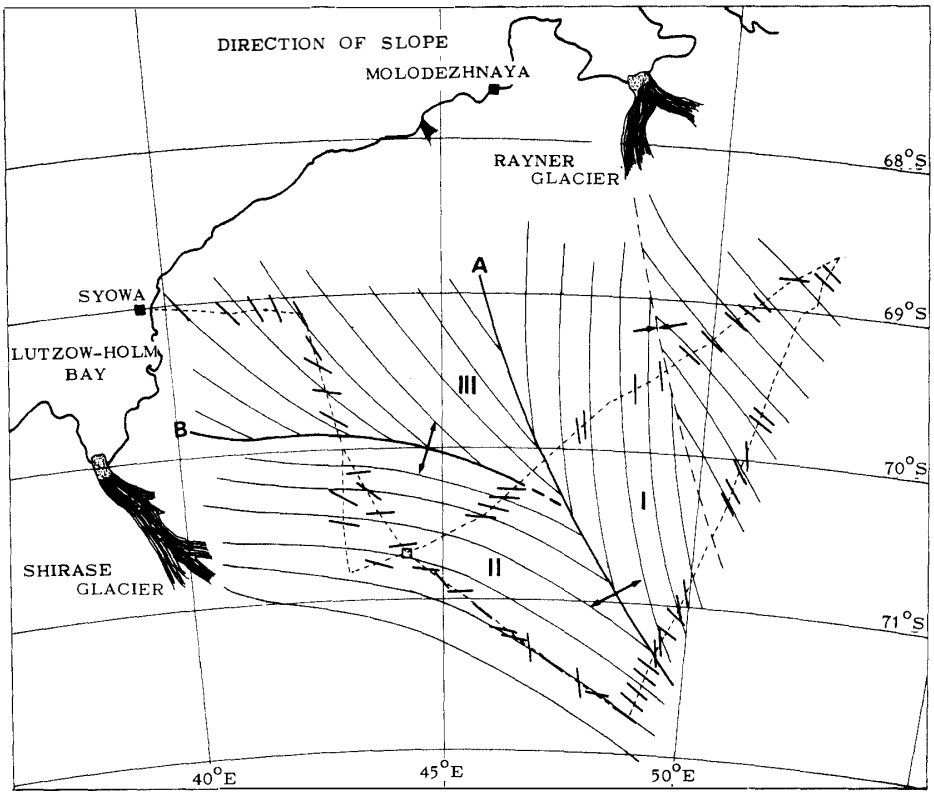



Fig. III-4. Surface slope lines and drainage areas of the ice sheet in West Enderby Land, 1970 - 1971.
(A, B : Ridge of the ice sheet surface; I , II , III : Drainage area.)

solid-lines), the existence of which is presumed from the discontinuity of the surface slope lines. If the direction of ice flow is approximately parallel to that of the surface slope (Giovinetto, 1964), those three subdivisional areas can be considered as drainage areas of the ice sheet.

## References

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Benson, C.S. (1962): Stratigraphic studies in the snow and firn of the Greenland ice sheet. SIPRE Res. Rep., 70, 93 pp.

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Wagner, W.B. (1969): Snow facies and stratigraphy on the Kaskawulsh Glacier. Ice Field Ranges Res. Proj. Sci. Results, 1, 55 - 62.

Table III-1. Direction of erosional relief of the snow surface, sastrugi and others, and surface hardness of the snow cover in Mizuho Plateau, 1969 - 1970.
Elevation (A): Surface elevation of the ice sheet measured by the barometric altimetry by JARE 10 and 11 (see Report I of this volume). Direction of a relief is described in geographical direction. A soft relief was considered to be a fairly new one, its direction is given in parentheses. Surface hardness ($kg/cm^2$) of snow cover was measured with Kinosita's hardness gauge.

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| S 16 | 553 | | 78 | (74) | 16 |
| 17 | 583 | 23 83 | | | |
| 18 | 609 | 63 | | | |
| 20 | 653 | | 78 | 84 | 42 |
| 22 | 743 | 73 | | | 21 |
| 25 | 844 | | 75 | | |
| 27 | 893 | | | | 17 |
| 30 | 961 | 63 | 78 | (81) | 5 |
| 33 | 1014 | | | | 3.8 |
| 35 | 1046 | | 80 | | 8.3 |
| 36 | 1064 | 83 | | | |
| 37 | 1074 | | | | 4.2 |
| 39 | 1099 | | | | 21 |
| 40 | 1112 | | 83 | (76) | 2.2 |
| 42 | 1138 | | | | 6.1 |
| 44 | 1164 | | | | 4.8 |
| 45 | 1179 | | 76 83 | | |
| 46 | 1188 | 73-83 | | | 3.9 |
| 48 | 1200 | | | | 5.2 |
| 50 | 1215 | | 82 92 | (89) 91 | |
| 51 | 1217 | 83 | | | 1.9 |
| 52 | 1227 | 83 | | | |
| 53 | 1233 | | | | 5.1 |
| 55 | 1271 | | 66,80,92 | | 9.7 |
| 56 | 1274 | | | | 4.5 |

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| S 58 | 1287 | | | | 6.8 |
| 59 | 1307 | 83 | | | |
| 60 | 1332 | | 88 100 | (85) 82 | 16 |
| 62 | 1341 | | | | 4.3 |
| 64 | 1356 | | | | 4.2 |
| 65 | 1362 | | 71 107 | | |
| 66 | 1366 | | | | 6.6 |
| 68 | 1380 | 73 | | | 4.7 |
| 70 | 1388 | 63 83 | 86 95 | (82) 82 | 17 |
| 72 | 1409 | | | | 6.1 |
| 74 | 1422 | | | | 17 |
| 75 | 1435 | 73-83 103 | 104 | | |
| 76 | 1444 | | | | 24 |
| 78 | 1459 | | | | 10 |
| 80 | 1473 | 82 | 92 | (69,78) 88 | 15 |
| 82 | 1489 | | | | 16 |
| 84 | 1518 | | | | 35 |
| 85 | 1522 | 82 | 94 | 84 | |
| 86 | 1526 | | | | 7.4 |
| 88 | 1543 | 82-102 | | | 5.7 |
| 90 | 1560 | | 86 | 87 | 7.8 |
| 92 | 1568 | 62-72 | | | 28 |
| 94 | 1579 | | | | 13 |
| 95 | 1588 | | 98 | | |
| 96 | 1594 | | | | 6.6 |
| 98 | 1614 | | | | 13 |
| 100 | 1630 | 62 | 78 89 | (84) 85 | 11 |
| 102 | 1636 | 72-82 | | | 20 |
| 104 | 1651 | | | | 4.6 |
| 105 | 1656 | | 93 100 | | |
| 106 | 1660 | | | | 3.7 |
| 108 | 1684 | | | | 72 |
| 110 | 1696 | 61 91 | 99 | 81 96 | 6.1 |
| 112 | 1736 | | | | 8.1 |
| 114 | 1754 | 71-81 | | | 7.1 |
| 115 | 1758 | | 92 99 | | |
| 116 | 1763 | | | | 14 |

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| S 118 | 1816 | | | | 63 |
| 120 | 1845 | 81 | 80 85 | (81) 76-83 | 15 |
| 122 | 1853 | | | | 3.9 |
| 124 | 1865 | 81 | | | 6.5 |
| 125 | 1876 | | 79-85 | | |
| 126 | 1883 | 81 | | | 3.4 |
| 128 | 1887 | | | | 13 |
| 129 | 1900 | 81 | | | |
| 130 | 1900 | | 79 | (85) 79 | 11 |
| 132 | 1924 | | | | 19 |
| 133 | 1923 | 71 | 70 | 83 | |
| 134 | 1917 | | | | 5.2 |
| 135 | 1909 | 61 81 | 81 91 | | |
| 136 | 1914 | | | | 31 |
| 138 | 1924 | | | | 72 |
| 140 | 1934 | 81 | 81 | (89) 93 | |
| 141 | 1944 | | | | 30 |
| 143 | 1946 | | | 83 | 7.3 |
| 145 | 1944 | | 86 | | 20 |
| 147 | 1954 | 81 | 82 | 91 | 13 |
| 149 | 1953 | | | | 18 |
| 150 | 1971 | 91 | 84 | 93 99 | |
| 151 | 1975 | | | | 32 |
| 153 | 1979 | 81 | 85 91 | 86 92 | 3.3 |
| 155 | 1992 | 91 | 87 95 | 89 | 36 |
| 157 | 2002 | | | | 36 |
| 159 | 2006 | 91 | 80 93 | 87 95 | 25 |
| 160 | 2008 | 91 | 90 101 | 92 | |
| 161 | 2012 | | | | 36 |
| 163 | 2025 | | 97 | 94 | 17 |
| 165 | 2035 | 81-91 | | | 49 |
| 166 | 2027 | | | | |
| 167 | 2027 | | | | 10 |
| 169 | 2035 | | | | 8.5 |
| 170 | 2034 | 101 | 91-99 | | |
| 171 | 2026 | | | | 16 |

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| S 173 | 2034 | | | | 11 |
| 175 | 2036 | | 100 | | 7.8 |
| 177 | 2064 | | | | 23 |
| 179 | 2062 | | | | 5.5 |
| 180 | 2075 | | 100 | | |
| 181 | 2085 | | | | 2.9 |
| 183 | 2133 | | | | 17 |
| 185 | 2114 | | | | 8.2 |
| 186 | 2150 | | 101-106 | | |
| 187 | 2158 | | | | 5.4 |
| 189 | 2173 | | | | 11 |
| 190 | 2180 | | 111 | | |
| 191 | 2183 | | | | 29 |
| 193 | 2207 | | | | 15 |
| 195 | 2208 | | | | 7.5 |
| 196 | 2217 | | 110 | | 31 |
| 197 | 2240 | | | | 16 |
| 199 | 2257 | | | | 32 |
| 200 | 2261 | | 102-105 | | |
| 201 | 2260 | | | | 7 |
| 203 | 2274 | | | | 3.3 |
| 205 | 2303 | | 100 | | 15 |
| 207 | 2312 | | | | 19 |
| 209 | 2317 | | | | 23 |
| 210 | 2332 | | 93,106,111 | | |
| 211 | 2342 | | | | 33 |
| 213 | 2356 | | | | 12 |
| 215 | 2374 | | 109 | | 24 |
| 217 | 2388 | | | | 4.3 |
| 219 | 2403 | | | | 23 |
| 220 | 2410 | | 111-116 | | |
| 221 | 2422 | | | | 12 |
| 223 | 2443 | | | | 31 |
| 225 | 2462 | 103 113 | | | 25 |
| 226 | 2468 | | | | 50 |
| 227 | 2473 | | | | 15 |

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| S 229 | 2494 | | | | 16 |
| 230 | 2506 | 101-111 | | | |
| 231 | 2511 | | | | 9.9 |
| 234 | 2528 | | | | 9.4 |
| 235 | 2534 | 107-111 | | | |
| 236 | 2550 | | | | 4.0 |
| 238 | 2574 | | | | 15 |
| 240 | 2591 | 107,115,121 | | | |
| A 155 | 2572 | 99 115 | | | |
| 148 | 2553 | 111,120,129 | | | |
| 136 | 2508 | 113-117 | | | |
| 130 | 2526 | 115 130 | | | |
| 118 | 2527 | | 110 128 | | |
| 108 | 2491 | | 115 | | |
| 096 | 2461 | | 118 127 | | |
| 084 | 2447 | | 116-129 | | |
| 076 | 2425 | | 117-125 | | |
| 072 | 2429 | | 118 129 | | |
| 060 | 2403 | | 118,125,130 | | |
| 048 | 2413 | | 114,124,130 | | |
| 032 | 2414 | | 96,104,117 | | |
| 019 | 2388 | | 108 114 | | |
| 005 | 2280 | | 100,118,124 | | |
| B 11 | 2122 | | 95 | | |
| 48 | 1800 | | | (90,96),105 | |
| C 2 | 1832 | | | (78,84), 94 | |
| 5 | 1808 | | | 115 | |
| 10 | 1768 | | | (102), 110 | |
| 15 | 1763 | | | 114 | |
| 21 | 1766 | | | 111 | |
| 25 | 1782 | | | 111-115 | |
| 29 | 1787 | | | (100),107,112 | |
| 35 | 1801 | | | 124 | |
| 40 | 1813 | | | (108),118,126 | |
| 45 | 1799 | | | (105), 130 | |
| 50 | 1796 | | | (113),128,137 | |

| Station No. | Elevation (A) (m) | Direction of erosional relief (Degrees true) | | | Surface hardness ($kg/cm^2$) |
|---|---|---|---|---|---|
| | | September | November | January | November |
| C 55 | 1757 | | | (108), 113 | |
| 60 | 1729 | | | (100, 106), 112 | |
| 65 | 1737 | | | (104, 109), 119 | |
| 75 | 1749 | | | (103), 121 | |
| 80 | 1767 | | | (101), 115, 127 | |
| 85 | 1794 | | | (105, 111), 122 | |
| 90 | 1802 | | | (95), 105, 126 | |
| 94 | 1794 | | | (106), 118 | |
| 100 | 1823 | | | (102), 112, 122 | |
| 105 | 1836 | | | (96), 99, 108 | |
| 110 | 1889 | | | (96), 106-110 | |
| 115 | 1930 | | | 108 117 | |
| 120 | 1984 | | | (92), 106, 112 | |
| 125 | 1968 | | | 98 | |
| 130 | 1978 | | | 92 99 | |
| 135 | 1998 | | | (94), 96, 101 | |
| 140 | 2002 | | | (101), 97, 105 | |
| 145 | 2031 | | | (94), 85, 91 | |

Table III-2. Direction of sastrugi and dune, surface hardness and integrated Ram hardness of snow cover in West Enderby Land, 1970 - 1971.

Elevation (A): Surface elevation of the ice sheet measured by the barometric altimetry by JARE 10 and 11 (see Report I of this volume).

Direction of the surface relief is described in geographical direction.

Surface hardness was measured with a Kinosita's hardness gauge in $kg/cm^2$.

(I), (II) and (III) indicate the period of the measurement, as follows:

(I) From November 3 to 13, 1970

(II) From January 18 to 24, 1971

(III) From November 14, 1970 to January 17, 1971

R100 and R190 indicate the integrated Ram hardness of snow cover, in kg-force·cm, from the surface down to the depths of 100 cm and 190 cm respectively.

| Station No. | Elevation (A) (m) | Direction of relief (Degrees true) Sastrugi | | Dune | Surf. hardness ($kg/cm^2$) (I) | (II) | Integrated Ram hardness (kg-force.cm) R100 | R190 |
|---|---|---|---|---|---|---|---|---|
| S 16 | 553 | | | | | | 11380 | 24215 |
| 17 | 583 | | | | | 16 | | |
| 18 | 609 | 23 | 43 | 43 | | 5.4 | | |
| 19 | 634 | | | | | 6.1 | 6880 | 18490 |
| 20 | 653 | 33 | 63 | 33 | | 5.8 | | |
| 21 | 699 | | | | | 9.4 | 7040 | 18980 |
| 22 | 743 | 43 | 73 | 43 | | 1.3 | | |
| 23 | 771 | | | | 4.3 | 7.2 | 8410 | 21620 |
| 24 | 811 | 48 | 78 | 48 | 3.1 | 19 | | |
| 25 | 844 | 48 | 82 | 28 | 11 | 11 | 4830 | 21340 |
| 26 | 870 | | 48 | | 3.3 | 5.4 | | |
| 27 | 893 | | | | 23 | 7.8 | | |
| 28 | 916 | | 48 | 48 | | 8.4 | | |
| 29 | 935 | | | | 9.4 | 9.4 | | |
| 30 | 961 | 43 | 63 | 43 | 32 | 2.5 | 4470 | 15530 |
| 31 | 981 | | | | 24 | 11 | 11760 | 34130 |
| 32 | 994 | | 63 | 33 | 24 | 7.2 | | |
| 33 | 1014 | | | | 19 | 12 | | |
| 34 | 1030 | | 68-73 | 53 | 6.6 | 24 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | | Surf. hardness ($kg/cm^2$) | | Integrated Ram hardness (k-g-force·cm) | |
|---|---|---|---|---|---|---|---|---|
| | (m) | Sastrugi | | Dune | (I) | (II) | R100 | R190 |
| S 35 | 1046 | | | | 5.4 | 5.4 | 8000 | 22980 |
| 36 | 1064 | 43 | 58 | 43 | 32 | 4.3 | | |
| 37 | 1074 | | | | 24 | 16 | | |
| 38 | 1088 | | | | 24 | 11 | | |
| 39 | 1099 | | | | 2.1 | 5.8 | | |
| 40 | 1112 | 53 | 73 | 33 | 11 | 19 | 6830 | 19340 |
| 41 | 1124 | | | | 19 | 3.5 | | |
| 42 | 1138 | 63 | 83 | | 24 | 5.1 | | |
| 43 | 1148 | | | | 19 | 16 | | |
| 44 | 1164 | | 81 | 43 | 6.1 | 6.6 | | |
| 45 | 1179 | | 83 | 38 | 13 | 13 | 4880 | 16070 |
| 46 | 1188 | 68 | 88 | | 11 | 16 | | |
| 47 | 1184 | | | 63 | 2.9 | 5.1 | | |
| 48 | 1200 | 63 | 83 | | 24 | 19 | | |
| 49 | 1208 | | | | | 13 | | |
| 50 | 1215 | 63 | 88 | 63 | | 13 | 4610 | 16300 |
| 51 | 1217 | | | | 7.8 | 16 | | |
| 52 | 1227 | 53 | 93 | 53 | 5.4 | 12 | | |
| 53 | 1233 | | | | 19 | 9.4 | | |
| 54 | 1259 | 53 | 68 | | 5.8 | 16 | | |
| 55 | 1271 | | | | 6.6 | 13 | 4720 | 17030 |
| 56 | 1274 | | 53-63 | | 2.5 | 19 | | |
| 57 | 1276 | | | | 11 | 7.8 | | |
| 58 | 1287 | 63 | 93 | | 2.6 | 13 | | |
| 59 | 1307 | | | | 2.4 | 16 | | |
| 60 | 1332 | 53 | 83 | 58 | 2.5 | 11 | 5240 | 14040 |
| 61 | 1335 | | | | 2.4 | 12 | | |
| 62 | 1341 | 53 | 88 | | 7.2 | 11 | | |
| 63 | 1348 | | | | 19 | 12 | | |
| 64 | 1356 | 63 | 88 | 63 | 24 | 12 | | |
| 65 | 1362 | | 85 | 51 | 5.4 | 19 | 7030 | 15300 |
| 66 | 1366 | 63 | 93 | 63 | 4.8 | 11 | | |
| 67 | 1363 | | | | 2.2 | 19 | | |
| 68 | 1380 | 63 | 73 | 53 | 12 | 6.6 | | |
| 69 | 1381 | | | | 9.4 | 13 | | |
| 70 | 1388 | | | | 3.2 | 16 | 11610 | 32400 |
| 71 | 1403 | | | | 3.8 | 32 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | | Surf. hardness ($kg/cm^2$) | | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|---|---|
| | (m) | Sastrugi | | Dune | (I) | (II) | R100 | R190 |
| S 72 | 1409 | 53 | 93 | 43 | 19 | 16 | | |
| 73 | 1419 | | | | 4.6 | 13 | | |
| 74 | 1422 | 53 | 88 | 53 | 6.1 | 24 | | |
| 75 | 1435 | | | | 5.8 | 19 | 8630 | 15900 |
| 76 | 1444 | | | | 32 | 24 | | |
| 77 | 1451 | | 93 | 53 | 11 | 19 | | |
| 78 | 1459 | | | | 2.6 | 19 | | |
| 79 | 1468 | 53 | 93 | | 32 | 16 | | |
| 80 | 1473 | | | | 32 | 19 | 12320 | 31190 |
| 81 | 1476 | | | | 3.9 | 16 | | |
| 82 | 1489 | 62 | 92 | | 16 | 19 | | |
| 83 | 1499 | | | | 9.4 | 32 | | |
| 84 | 1518 | 67 | 87 | 52 | 4.0 | 16 | | |
| 85 | 1522 | | | | 4.8 | 24 | 5030 | 15590 |
| 86 | 1526 | | 87 | 47 | 4.8 | 19 | | |
| 87 | 1534 | | | | 7.2 | 32 | | |
| 88 | 1543 | 62 | 82 | 47 | 32 | 19 | | |
| 89 | 1551 | | | | 5.8 | 13 | | |
| 90 | 1560 | 72 | 87 | 47 | 5.4 | 13 | 4380 | 12400 |
| 91 | 1569 | | | | 5.4 | 19 | | |
| 92 | 1568 | 62 | 87 | 42 92 | 13 | | | |
| 93 | 1570 | | | | 7.8 | 13 | | |
| 94 | 1579 | 57 | 72 | 42 102 | 19 | 13 | | |
| 95 | 1588 | | | | 8.4 | 13 | | |
| 96 | 1594 | | | | 24 | | | |
| 97 | 1605 | | | | 9.4 | 16 | 6470 | 12050 |
| 98 | 1614 | | 82 | 52 | 11 | 19 | | |
| 99 | 1618 | | | | 11 | 32 | | |
| 100 | 1630 | | 77 | 62 92 | 2.1 | 19 | 7280 | 17610 |
| 101 | 1631 | | | | 32 | 19 | | |
| 102 | 1636 | | | 42 | 6.6 | 32 | | |
| 103 | 1643 | | | | 2.8 | 16 | | |
| 104 | 1651 | 62 | 82 | 47 | 7.8 | 32 | | |
| 105 | 1656 | | | | 4.8 | 24 | 5910 | 16490 |
| 106 | 1660 | 72 | 102 | 52 | 7.8 | 19 | | |
| 107 | 1673 | | | 47 | 16 | 19 | | |
| 108 | 1684 | 67 | 87 | 47 | 3.5 | 19 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf. hardness ($kg/cm^2$) | | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (I) | (II) | R100 | R190 |
| S 109 | 1690 | | | 12 | 32 | | |
| 110 | 1696 | 76 | | 6.1 | 19 | 6320 | 22370 |
| 111 | 1724 | | | 4.3 | 16 | | |
| 112 | 1736 | 86 | 41 | 16 | 32 | | |
| 113 | 1747 | | | 4.6 | 32 | | |
| 114 | 1754 | | | 2.3 | 13 | | |
| 115 | 1758 | 71 81 | | 7.8 | 32 | 6210 | 13380 |
| 116 | 1763 | | | 8.4 | 12 | | |
| 117 | 1774 | | | 4.3 | 19 | | |
| 118 | 1816 | 71 | | 16 | 32 | | |
| 119 | 1833 | | | 19 | 24 | | |
| 120 | 1845 | 71 | 36 | 5.8 | 32 | | |
| 121 | 1850 | | | 3.1 | 24 | | |
| 122 | 1853 | | | 7.2 | | 10540 | 24270 |
| 123 | 1859 | | | 24 | | | |
| 124 | 1865 | 81 | 51 | 32 | | | |
| 125 | 1876 | | | 32 | | | |
| 126 | 1883 | 76 | 91 | 32 | | | |
| 127 | 1886 | | | 24 | | | |
| 128 | 1887 | 71 | | 32 | | | |
| 129 | 1900 | | | 16 | | | |
| 130 | 1900 | 71 | | 32 | | | |
| 131 | 1907 | | | 32 | | | |
| 132 | 1924 | 76 | | 32 | | | |
| 133 | 1923 | | | 13 | | | |
| 134 | 1917 | 71 76 | 51 | 16 | | | |
| 135 | 1909 | 81 | 51 | 32 | | 5820 | 31240 |
| 136 | 1914 | | | 13 | | | |
| 137 | 1923 | | | 13 | | | |
| 138 | 1924 | 81 | 51 | 24 | | | |
| 139 | 1925 | | | 24 | | | |
| 140 | 1934 | 81 | 56 | 16 | | 5350 | |
| 141 | 1944 | | | 32 | | | |
| 142 | 1945 | 71 91 | 71 | 24 | | | |
| 143 | 1946 | | | 8.4 | | | |
| 144 | 1946 | 71 | 51 | 24 | | | |
| 145 | 1944 | | | 32 | | 9200 | 22770 |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf. hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| S 146 | 1950 | 81 | | 32 | | |
| 147 | 1954 | | | 24 | | |
| 148 | 1952 | 81 | 51 | 32 | | |
| 149 | 1953 | | | 13 | 17010 | 26860 |
| 150 | 1971 | 81 | 56 | 9.4 | | |
| 151 | 1975 | | | 19 | | |
| 152 | 1978 | 81 | 66 | 13 | | |
| 153 | 1979 | | | 11 | | |
| 154 | 1986 | | | 16 | | |
| 155 | 1992 | | | 8.4 | 8930 | 41620 |
| 156 | 1997 | 86 | 51 | 7.2 | | |
| 157 | 2002 | | | 13 | | |
| 158 | 2005 | | 51 | 9.4 | | |
| 159 | 2006 | | | 16 | | |
| 160 | 2008 | | 86 | 4.6 | 9840 | 19130 |
| 161 | 2012 | 91 | 61 | 19 | | |
| 162 | 2020 | | | 11 | | |
| 163 | 2025 | 95 | 66 | 32 | | |
| 164 | 2034 | | | 8.4 | | |
| 165 | 2035 | 91 | 61 | 24 | 7370 | 29860 |
| 166 | 2027 | | | 5.1 | | |
| 167 | 2027 | 91 | 71 | 19 | | |
| 168 | 2026 | | | 13 | | |
| 169 | 2035 | 91 | 66 | 24 | | |
| Z 5 | 1894 | | | 7.2 | | |
| 10 | 1911 | 71 | 51 | 7.2 | 8050 | |
| 15 | 1921 | | | 7.8 | | |
| 20 | 1949 | 71 | 41 | 6.1 | 13600 | 39450 |
| 25 | 1971 | 51 | 91 | 16 | | |
| 30 | 1997 | 81 | 51 | 6.1 | 6700 | 16250 |
| 35 | 2012 | | | 5.4 | | |
| 40 | 2020 | 80 | 50 | 4.0 | 8120 | |
| 45 | 2022 | | | 2.9 | | |
| 55 | 2026 | 80 | 50 | 1.9 | 10680 | 27680 |
| 65 | 2050 | | | 2.0 | | |
| 75 | 2074 | 80 | | 8.4 | 9810 | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf.hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| Z 80 | 2091 | | | 32 | | |
| 85 | 2094 | 85 | 50 | 16 | 13380 | 22170 |
| 90 | 2111 | | | 11 | | |
| 95 | 2127 | 85 | 50 | 4.8 | 12820 | 33140 |
| 100 | 2138 | | | 16 | | |
| Mizuho Camp | 2169 | 85 | 70-95 | | | |
| Y 5 | 2202 | 90 | 50-60 | 4.6 | | |
| 10 | 2227 | 90 | 60 | 12 | 18150 | 36980 |
| 15 | 2249 | 80 95 | | 16 | | |
| 20 | 2271 | 89 | | 8.4 | 25460 | 43450 |
| 25 | 2286 | 84 | | 12 | | |
| 30 | 2314 | 84 | 71 | 3.3 | 12060 | 26700 |
| 35 | 2342 | 91 | | 3.8 | | |
| 40 | 2356 | 79 99 | | 2.2 | 17270 | 41910 |
| 45 | 2372 | 89 | 49 | 24 | | |
| 50 | 2395 | 89 | | 4.8 | 19360 | 37860 |
| 55 | 2416 | 84 | 84 | 12 | | |
| 60 | 2438 | 89 | 49 | 4.8 | 12020 | 22410 |
| 65 | 2444 | 94 | 79 | 24 | | |
| 70 | 2453 | 89 99 | | 7.8 | 11150 | 42050 |
| 75 | 2478 | 99 | | 3.2 | | |
| 80 | 2490 | 88 | | 5.1 | 20380 | |
| 85 | 2511 | 93 | | 12 | | |
| 90 | 2523 | 98 | 68 | 16 | 12280 | 28930 |
| 95 | 2523 | 98 | 78 | 32 | | |
| 100 | 2545 | | | | 25050 | 38760 |
| 105 | 2562 | 103 | 63 | 4.8 | | |
| 110 | 2579 | 98 | 88 | 2.4 | 21240 | 33020 |
| 115 | 2589 | 103 | 63 | 6.1 | | |
| 120 | 2603 | 98 | 78 | 5.1 | 21740 | 28740 |
| 125 | 2609 | 88-93 | | 8.4 | | |
| 130 | 2622 | 98 | 78 | 32 | 18230 | |
| 135 | 2644 | 88 103 | | 13 | | |
| 140 | 2655 | 88 107 | 88 | 4.8 | 11050 | 22540 |
| 145 | 2675 | 97 | | 13 | | |
| 150 | 2693 | 97 | 97 | 4.8 | 5950 | 13660 |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf.hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| Y155 | 2702 | (97x117) | | 24 | | |
| 160 | 2707 | 107 | | 4.3 | 8180 | |
| 165 | 2719 | 97 | | 13 | | |
| 170 | 2720 | 97 | | 6.1 | 8560 | 20010 |
| 175 | 2709 | 102 | 82 | 4.8 | | |
| 180 | 2777 | 112 | 87 | 13 | 10100 | 26020 |
| 185 | 2778 | 97 | | 16 | | |
| 190 | 2809 | 107-117 | 87 | 7.8 | 11690 | 27270 |
| 195 | 2815 | 111 | | 24 | | |
| 200 | 2819 | 96 | | 19 | 9730 | 21950 |
| 205 | 2813 | 111 | 57 | 11 | | |
| 210 | 2807 | 116 | | 13 | | |
| 215 | 2794 | 86 101 | | 11 | | |
| 220 | 2792 | (96x116) | | 5.1 | 10970 | 36120 |
| 225 | 2785 | (91x116) | | 9.4 | | |
| 230 | 2774 | (86x111) | | 3.9 | | |
| 235 | 2764 | (96x116) | | 3.9 | 15730 | 22800 |
| 240 | 2759 | 116-126 | 76 | 6.1 | | |
| 245 | 2749 | 116 | 96-130 | 7.8 | | |
| 250 | 2733 | 96 | 96 | 5.4 | | |
| 255 | 2720 | (86x116) | 86 | 2.4 | 11540 | 26880 |
| 260 | 2699 | 116 | 86 | 3.2 | | |
| 265 | 2679 | 106 | 86 116 | 3.3 | | |
| 270 | 2676 | 115 | 85 | 32 | 15650 | 30590 |
| 275 | 2672 | 105 | 65 | 19 | | |
| 280 | 2666 | 115 | | 11 | | |
| 285 | 2648 | 80 115 | 80 115 | 4.8 | | |
| 290 | 2635 | 115 | 85 | 6.6 | 19680 | |
| 295 | 2643 | 115 | 75 | 5.4 | | |
| 300 | 2629 | 90 125 | | 16 | | |
| 305 | 2616 | | | 16 | 8680 | 22250 |
| 310 | 2620 | 115 | 75 | 9.4 | | |
| 315 | 2601 | 115 | 85 | 13 | | |
| 320 | 2604 | 105 | 145 | 5.4 | | |
| 325 | 2591 | 95 110 | | 32 | 9620 | 19770 |
| 330 | 2585 | 115 | 85 | 32 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf.hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| Y 335 | 2577 | 105 | 65 | 11 | 9810 | 18070 |
| 340 | 2568 | 115 | 75 145 | 4.8 | | |
| 345 | 2555 | 115 | 85 | 32 | | |
| 350 | 2541 | 120 | 85 | 8.4 | | |
| 355 | 2532 | 116 | 76 | 7.2 | 6420 | 20490 |
| 360 | 2527 | 116 | 86 | 7.2 | | |
| 365 | 2514 | 111 | 76 | 24 | | |
| 370 | 2503 | 105-115 | 65-75 | 32 | 17490 | 33910 |
| 375 | 2491 | 120 | 85 | 11 | | |
| 380 | 2475 | 115 | 80 | 7.2 | | |
| 385 | 2460 | 120 | 80 | 16 | | |
| 390 | 2433 | 115 | 80 115 | 11 | 10490 | 21840 |
| 395 | 2416 | 115 | 80 | 5.4 | | |
| 400 | 2399 | 110 | 80 | 32 | | |
| 405 | 2388 | 115 | 85 | 12 | 25240 | 35870 |
| 410 | 2366 | 115 | 80 | 5.1 | | |
| 415 | 2356 | 110 | 80 110 | 19 | | |
| 420 | 2344 | 115 | 75 | 16 | | |
| 425 | 2335 | 105 | 85 105 | 8.4 | 12250 | 31230 |
| 430 | 2322 | 106 | 60 106 | 4.0 | | |
| 435 | 2317 | 101 | | 11 | | |
| 440 | 2306 | 116 | 96 | 24 | 6690 | 21480 |
| 445 | 2293 | 106 | 56 | 6.6 | | |
| 450 | 2271 | 106 | 86 | 3.8 | | |
| 455 | 2236 | 101 | 76 | 2.6 | | |
| 460 | 2219 | 101 | | 7.2 | 11030 | 24860 |
| 465 | 2208 | 101 | 76 | 32 | | |
| 470 | 2204 | 96 | | 4.8 | | |
| 475 | 2181 | 96 | 76 | 19 | 14580 | 26850 |
| 480 | 2191 | 96 | 76 | 32 | | |
| 485 | 2168 | 106 | | 2.5 | | |
| 490 | 2118 | 96 | 96 | 24 | | |
| 495 | 2119 | 91 | 91 | 8.4 | 15590 | |
| 500 | 2126 | 66 96 | 66 | 24 | | |
| 505 | 2126 | 81 | | 6.1 | | |
| 510 | 2108 | | | 3.9 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf.hardness (kg/cm2) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| Y 515 | 2091 | 106 | 76 | 9.4 | | |
| 520 | 2092 | 96 | | 11 | | |
| 525 | 2107 | | | 32 | 9520 | 25590 |
| 530 | 2118 | 95 | | 13 | | |
| 535 | 2106 | 95 | 65 | 13 | | |
| 540 | 2097 | 95 | 65-75 | 9.4 | 8030 | 19600 |
| 545 | 2099 | 95 | 75 | 12 | | |
| 550 | 2095 | | | 24 | | |
| 555 | 2086 | | | 32 | 10130 | 24470 |
| 560 | 2074 | 95 | 95 | 32 | | |
| 565 | 2061 | 95 | 75 | 12 | | |
| W 1 | 2061 | 105 | 80 | 11 | | |
| 2 | 2068 | 105 | 75 | 9.4 | | |
| 3 | 2061 | 105 | 75 | 9.4 | | |
| 5 | 2064 | 95 | | 5.1 | | |
| 6 | 2063 | 95 | | 32 | | |
| 7 | 2051 | | | | 6840 | 18480 |
| 9 | 2032 | 85 | 55-65 | 7.8 | | |
| 10 | 2019 | | | | | |
| 11 | 2011 | 91 | | 12 | | |
| 13 | 1962 | 101 | | 24 | 12100 | 24410 |
| 15 | 1949 | 96 | 66 | 32 | | |
| 16 | 1932 | 86 | | 24 | | |
| 18 | 1936 | | | | | |
| 19 | 1943 | 106 | 86 | 3.9 | | |
| 20 | 1907 | 96 | 66 | 32 | | |
| 21 | 1906 | 91 | 51 | 13 | | |
| 23 | 1890 | 86 116 | 86 | 16 | | |
| 24 | 1885 | 96 | | 7.2 | | |
| 25 | 1883 | 96 | | 2.6 | | |
| 26 | 1881 | 96 | 66 | 24 | 6590 | 16310 |
| 28 | 1871 | 91 | 56 | 2.6 | | |
| 30 | 1847 | 91 | 81 | 5.4 | | |
| 31 | 1858 | 101 | 81 | 6.6 | | |
| 32 | 1859 | 101 | 76 | 7.8 | | |
| 33 | 1851 | 107 | 67 | 5.1 | 7730 | 34530 |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | | | Surf.hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|---|---|
| | (m) | Sastrugi | | Dune | | (III) | R100 | R190 |
| W 34 | 1864 | | 107 | | 72 | 7.8 | | |
| 35 | 1873 | | 107 | | 67 | 13 | | |
| 37 | 1868 | | 117 | | 72 | 24 | | |
| 38 | 1864 | | 102 | | 72 | 24 | | |
| 40 | 1840 | | 112 | | 72 | 7.2 | 6240 | 33200 |
| 42 | 1887 | | 122 | | 77 | 7.8 | | |
| 43 | 1885 | | 122 | | 97 | 8.4 | | |
| 44 | 1880 | 117 | 137 | 97 | 137 | 11 | | |
| 45 | 1879 | | 117 | | | 13 | | |
| 46 | 1897 | | | | | | 5980 | 17820 |
| 47 | 1959 | | 112 | | | 2.2 | | |
| 49 | 1967 | | 112 | | | 7.8 | | |
| 50 | 1999 | | 107 | | | 16 | | |
| 51 | 2019 | 108 | 113 | | 108 | 4.8 | | |
| 55 | 2107 | | | | | | 5330 | 29600 |
| 205 | 2128 | | 98 | | 58 | 1.9 | | |
| 210 | 2192 | 108 | 128 | | | 3.6 | | |
| 215 | 2211 | | 108 | | 158 | 11 | | |
| 220 | 2248 | | 112 | | | 3.1 | 4200 | 16710 |
| 225 | 2255 | 103 | 128 | 48 | 78 | 13 | | |
| 230 | 2254 | | 103 | 103 | 128 | 4.8 | 5150 | 16370 |
| 235 | 2277 | | 103 | | 88 | | | |
| 240 | 2285 | | 98 | | 73 | 13 | | |
| 250 | 2312 | | 118 | | 78 | 12 | 6270 | 24860 |
| 255 | 2316 | | 98 | | 78 | 19 | | |
| 260 | 2338 | | 108 | | 68 | 2.0 | | |
| 265 | 2342 | | 98 | | 88 | 8.4 | | |
| 270 | 2339 | | 103 | | 68 | 13 | 7375 | 15825 |
| 275 | 2340 | | 103 | | 78 | 24 | | |
| 280 | 2322 | | 88 | | 68 | 7.2 | | |
| 285 | 2342 | | 88 | | | 5.4 | | |
| 290 | 2337 | | 94 | | 84 | 19 | 8190 | 17505 |
| 295 | 2330 | | 89 | | 69 | 13 | | |
| 300 | 2322 | | 84 | | 64 | 16 | | |
| 305 | 2312 | | 89 | | 69 | 16 | | |
| 310 | 2301 | | 94 | | 69 | 13 | 3570 | 15150 |
| 315 | 2288 | | 84 | | 84 | 7.8 | | |

| Station No. | Elevation (A) | Direction of relief (Degrees true) | | Surf.hardness ($kg/cm^2$) | Integrated Ram hardness (kg-force·cm) | |
|---|---|---|---|---|---|---|
| | (m) | Sastrugi | Dune | (III) | R100 | R190 |
| W 320 | 2291 | 89 | | 16 | | |
| 325 | 2291 | 89 | 64 | 3.1 | | |
| 330 | 2287 | 89 | 69 | 13 | 25825 | 44835 |
| 335 | 2288 | 89 | | 4.0 | | |
| 340 | 2278 | 89 | 89 | 32 | | |
| 345 | 2265 | 89 | 69 | 24 | | |
| 350 | 2252 | 84 | 69 | 16 | 6695 | 17745 |
| 355 | 2246 | 84 | 59 | 7.2 | | |
| 360 | 2223 | 84 | 64 | 6.1 | | |
| 365 | 2221 | 84 | 79 109 | 19 | | |
| 370 | 2209 | 84 | 64 | 13 | 6325 | 20265 |
| 375 | 2199 | 90 | 65 | 19 | | |
| X 1 | 2138 | 85 | 70 | 6.1 | | |
| 5 | | | | 16 | 8860 | 20800 |
| 6 | 2111 | 86 | | 24 | | |
| 8 | 2097 | 82 | 65 | 19 | | |
| 10 | 2094 | 86 | 55 | 19 | 7390 | |
| 12 | 2111 | 85 | | 9.4 | | |
| 14 | 2069 | 90 | | 24 | | |
| 15 | | | | 7.2 | 4970 | 20400 |
| 16 | 2364 | 95 | 70 | 24 | | |
| 18 | 2055 | 90 | 70 | 32 | | |

Table III-3. Surface slope of the ice sheet in West Enderby Land, 1970 - 1971.

Elevation (A): Surface elevation of the ice sheet determined by the barometric altimetry by JARE 10 and 11 (see Report I of this volume).

The maximum and the minimum inclinations of the skyline of the ice sheet and their geographical direction are described in minute and in degree, respectively. A positive/negative sign of inclination indicates an angle of elevation/depression. Multiple max./min. values of inclination, and/or disagreement of the downhill axis with the uphill were obtained when the surface topography was not simple.

The mean direction of the surface slope was determined from the data of the distribution of inclinations of the surface surrounding a station. The "mean direction" of a surface slope indicates the downward direction.

| Station No. | Elevation (A) (m) | Latitude | Longitude | Surface slope | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Downhill | | Uphill | | Mean direction (Degrees true) |
| | | | | Direction (Degrees true) | Inclination (Minutes) | Direction (Degrees true) | Inclination (Minutes) | |
| S 20 | 653 | 69°01.5'S | 40°12.1'E | 314 | | 134 | | 314 |
| 30 | 961 | 69 03.1 | 40 40. | 269 | -36 | 133 | +54 | 313 |
| 40 | 1112 | 69 04.7 | 41 07. | 313 | -33 | 133 | +32 | 313 |
| 50 | 1215 | 69 04.2 | 41 35. | 313 | -22 | 151 | +34 | 331 |
| 60 | 1332 | 69 04.6 | 42 02. | 329 | -28 | 153 | +18 | 338 |
| 70 | 1388 | 69 06.9 | 42 29. | 313 | - 3 | 155 | +34 | 335 |
| 80 | 1473 | 69 17.3 | 42 35. | 312 | -18 | 157 | +20 | 333 |
| 90 | 1560 | 69 27.7 | 42 42. | 267 | -20 | 127 | +25 | 302 |
| 100 | 1630 | 69 38.1 | 42 50. | 312 | -19 | 112 | +30 | 294 |

| Station No. | Elevation (A) (m) | Latitude | Longitude | Surface slope | | | | Mean direction (Degrees true) |
|---|---|---|---|---|---|---|---|---|
| | | | | Downhill | | Uphill | | |
| | | | | Direction (Degrees true) | Inclination (Minutes) | Direction (Degrees true) | Inclination (Minutes) | |
| S 110 | 1696 | 69°48.5'S | 42°56' E | 311 | -19 | 131 | +51 | 311 |
| 130 | 1900 | 70 09.5 | 43 06. | 241 | -14 | 131 | +45 | 241 |
| 140 | 1934 | 70 19.8 | 43 06. | 299 | -18 | 131 | +22 | 299 |
| 150 | 1971 | 70 30.0 | 43 04. | 266 | -11 | 131 | +49 | 283 |
| Z 20 | 1949 | 70 10.5 | 43 22.1' | 266 | -11 | 86, 131 | +18 | 266 |
| 35 | 2012 | 70 17.7 | 43 33.5 | 311 | -13 | 131 | +34 | 311 |
| 60 | 2037 | 70 25.4 | 43 46.4 | 268 | -18 | 86 | +28 | 268 |
| 80 | 2091 | 70 32.2 | 43 58.4 | 310 | -21 | 130 | +11 | 280 |
| 90 | 2111 | 70 36.3 | 44 06.4 | 265 | -22 | 130 | +23 | 287 |
| 95 | 2127 | 70 38.4 | 44 10.3 | 265 | -16 | 85 | + 8 | 265 |
| 100 | 2138 | 70 40.5 | 44 14.1 | 266 | - 9 | 130 | +36 | 266 |
| Y 10 | 2227 | 70 45.6 | 44 30.2 | 310 | - 9 | 85 | +22 | 310 |
| 20 | 2272 | 70 49.2 | 44 43.9 | 309 | -11 | 89 | +16 | 273 |
| 30 | 2314 | 70 52.7 | 44 57.2 | 309 | -13 | 138 | +18 | 318 |
| 35 | 2342 | 70 54.2 | 45 04.6 | 309 | -14 | 129 | +13 | 309 |
| 45 | 2372 | 70 57.7 | 45 17.9 | 264 | -14 | 84 | +18 | 264 |
| 55 | 2416 | 71 01.0 | 45 31.4 | 308 | -16 | 128 | +18 | 308 |
| 65 | 2444 | 71 04.5 | 45 45.3 | 308 | -16 | 121 | +15 | 308 |
| 70 | 2463 | 71 06.0 | 45 51.4 | 308, 353 | -11 | 128 | +13 | 308 |
| 80 | 2490 | 71 09.4 | 46 05.0 | 308 | -25 | 128 | +23 | 308 |
| 90 | 2523 | 71 12.6 | 46 18.6 | 308 | -11 | 103 | +10 | 286 |

| Station No. | Elevation (A) (m) | Latitude | Longitude | Surface slope | | | | Mean direction (Degrees true) |
|---|---|---|---|---|---|---|---|---|
| | | | | Downhill | | Uphill | | |
| | | | | Direction (Degrees true) | Inclination (Minutes) | Direction (Degrees true) | Inclination (Minutes) | |
| Y100 | 2545 | 71°15.9'S | 46°32.1'E | 308 | - 8 | 105 | +16 | 288 |
| 110 | 2579 | 71 19.1 | 46 46.4 | 353 | -12 | 146 | + 7 | 347 |
| 120 | 2603 | 71 21.8 | 47 01.1 | 307 | -12 | 123 | + 7 | 307 |
| 130 | 2622 | 71 25.1 | 47 14.9 | 307 | - 9 | 127 | +25 | 307 |
| 135 | 2644 | 71 26.8 | 47 21.8 | 307 | -14 | 120 | +14 | 303 |
| 145 | 2675 | 71 30.0 | 47 35.8 | 352 | - 8 | 146 | +10 | 352 |
| 155 | 2702 | 71 33.1 | 47 50.1 | 352 | -11 | 127, 172 | + 4 | 352 |
| 165 | 2719 | 71 36.2 | 48 04.2 | 306, 261 | -14 | 121 | +15 | 289 |
| 170 | 2720 | 71 37.4 | 48 12.0 | 306 | -14 | 126 | +44 | 306 |
| 180 | 2770 | 71 40.5 | 48 26.4 | 351 | -10 | 122 | + 7 | 302 |
| 190 | 2809 | 71 43.4 | 48 41.1 | 306 | -13 | 107 | + 1 | 306 |
| 200 | 2819 | 71 46.2 | 48 56.0 | 36 | -20 | 171 | + 6 | 306 |
| 210 | 2807 | 71 41.1 | 49 01.8 | 306 | -12 | 126 | + 8 | 311 |
| 220 | 2792 | 71 36.0 | 49 06.7 | 306 | - 9 | 126 | + 4 | 306 |
| 230 | 2774 | 71 30.7 | 49 11.3 | 306 | - 8 | 126 | +10 | 306 |
| 240 | 2759 | 71 25.5 | 49 17.2 | 350 | -10 | 112 | + 3 | 305 |
| 250 | 2733 | 71 20.4 | 49 23.1 | 305 | -13 | 170 | + 6 | 350 |
| 260 | 2699 | 71 15.1 | 49 28.2 | 305 | -16 | 173 | +21 | 353 |
| 270 | 2676 | 71 10.0 | 49 34.3 | 305 | - 7 | 135 | +11 | 305 |
| 280 | 2666 | 71 05.2 | 49 42.1 | 305 | -16 | 127 | +20 | 307 |
| 290 | 2635 | 71 00.0 | 49 47.6 | 20 | -13 | 170 | +22 | 350 |
| 300 | 2629 | 70 54.9 | 49 52.9 | 18 | -11 | 170 | +16 | 350 |

| Station No. | Elevation (A) (m) | Latitude | Longitude | Surface slope | | | | Mean direction (Degrees true) |
|---|---|---|---|---|---|---|---|---|
| | | | | Downhill | | Uphill | | |
| | | | | Direction (Degrees true) | Inclination (Minutes) | Direction (Degrees true) | Inclination (Minutes) | |
| Y305 | 2616 | 70°52.4'S | 49°56.5'E | 350 | -12 | 152 | +18 | 340 |
| 372 | 2491 | 70 16.0 | 50 34.4 | 16 | -14 | 149 | +10 | 328 |
| 385 | 2460 | 70 10.8 | 50 38.6 | 305 | -31 | 147 | + 8 | 327 |
| 395 | 2416 | 70 05.6 | 50 43.0 | 305 | -17 | 152 | +20 | 332 |
| 405 | 2388 | 70 00.3 | 50 46.3 | 350 | -20 | 185 | +17 | 350 |
| 440 | 2306 | 69 41.9 | 51 00.9 | 216, 279 | -19 | 234 | +22 | 306 |
| 545 | 2099 | 68 50.3 | 51 52.7 | 261, 306 | -12 | 234 | +20 | 306 |
| 555 | 2086 | 68 45.0 | 51 57.0 | 306,326,351 | -15 | 115 | +23 | 326 |
| W 5 | 2064 | 68 42.9 | 51 42.9 | 350 | -29 | 80 | +15 | 262 |
| 10 | 2019 | 68 47.7 | 51 25.5 | 260 | -27 | 80 | +28 | 260 |
| 18 | 1936 | 68 56.8 | 50 56.5 | 306 | -31 | 126 | +33 | 306 |
| 22 | 1909 | 69 01.5 | 50 38.5 | 306 | -47 | 126 | +17 | 306 |
| 26 | 1881 | 69 05.9 | 50 22.4 | 306 | -22 | 126 | +13 | 306 |
| 31 | 1858 | 69 12.7 | 50 04.5 | 307 | -13 | 127 | +34 | 307 |
| 37 | 1868 | 69 20.9 | 49 36.8 | | | 127 | +12 | 307 |
| 44 | 1880 | 69 30.8 | 49 08.7 | 352 | -27 | 172 | +49 | 352 |
| 49 | 1967 | 69 36.3 | 48 39.6 | 308 | - 9 | 173, 263 | +21 | 353 |
| 215 | 2211 | 69 48.1 | 47 51.9 | 84 | -13 | 235 | +19 | 264 |
| 225 | 2255 | 69 51.7 | 47 40.0 | 354 | -11 | 174 | +45 | 346 |
| 230 | 2254 | 69 53.7 | 47 34.4 | 11 | -11 | 136 | +11 | 354 |
| 280 | 2344 | 70 13.3 | 46 34.4 | 39 | -14 | 129 | + 7 | 309 |

| Station No. | Elevation (A) (m) | Latitude | Longitude | Surface slope | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Downhill | | Uphill | | Mean direction (Degrees true) |
| | | | | Direction (Degrees true) | Inclination (Minutes) | Direction (Degrees true) | Inclination (Minutes) | |
| Y290 | 2337 | 70°17.0'S | 46°22.7'E | 264 | -11 | 84 | + 4 | 264 |
| 300 | 2322 | 70 20.6 | 46 10.6 | 265 | -16 | 107 | + 5 | 265 |
| 310 | 2301 | 70 24.3 | 45 59.1 | 310, 322 | -10 | 104 | +13 | 283 |
| 320 | 2291 | 70 28.2 | 45 47.3 | 265 | - 7 | 126 | +11 | 270 |
| X 6 | 2111 | 70 43.4 | 43°56.3 | 265 | -15 | 85 | +14 | 286 |