FLUCTUATIONS OF GLACIERS 1985 – 1990

(Vol. VI)

A contribution to the
Global Environment Monitoring System (GEMS)

and the
International Hydrological Programme (IHP)

Prepared by the
World Glacier Monitoring Service (WGMS)

IAHS (ICSI) – UNEP – UNESCO
1993

FLUCTUATIONS OF GLACIERS 1985 - 1990

with addenda from earlier years

This volume continues the earlier works published under the titles

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Paris, IAHS - UNESCO, 1977

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Compiled for the
World Glacier Monitoring Service
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Zurich

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PREFACE

In line with decisions taken in 1986 at the creation of the World Glacier Monitoring Service in Zurich, the Service has now prepared a further volume of FLUCTUATIONS OF GLACIERS which covers the period 1985 to 1990. This, together with the information contained in the WORLD GLACIER INVENTORY: STATUS 1988, published in 1989, and in the GLACIER MASS BALANCE BULLETIN (No. 1 published in 1991) brings up to date the publication of information and data on the world's glaciers and their behaviour. The production of FLUCTUATIONS OF GLACIERS 1985-1990 is a clear indication of the success of the World Glacier Monitoring Service in fulfilling one of its main tasks - to inform regularly both the scientific community and national planners about data available for understanding glacier behaviour. This knowledge is important to everyone because glaciers are found on every continent and together cover ten percent of the Earth's surface (some fifteen million square kilometers) while holding an estimated seventy five percent of the planet's fresh water. At the same time glaciers also provide a history of past and present climatic changes which might help us in planning how to cope with climatic changes to come.

On behalf of the international organizations involved with the World Glacier Monitoring Service, I wish to express our sincere thanks to the Swiss Federal Institute of Technology for its continuous support of glacier monitoring activities. I also wish to express our particular gratitude to the Manager of the World Glacier Monitoring Service, Dr. Wilfried Haeberli, for his untiring efforts and excellent achievements in attaining the goals of the Service.

Nairobi, August 1992

M.D. Gwynne
Assistant Executive Director
United Nations Environment Programme
and
Director
Global Environment Monitoring Service

FOREWORD

This publication is the sixth in a very successful series of reports that was initiated by ICSI in the framework of the International Hydrological Decade. As M. Meier and J. Nye point out in their foreword to Vol. II, a major impetus for starting this series was provided by the late Professor Herfried H. Hoinkes of the University of Innsbruck, president of ICSI 1964-67. With this sixth report the series has proven its importance and success in a number of ways, three of which are worth mentioning explicitly:

- covering a period of thirty years this data set has reached maturity and significance by the standards of classical climatology;

- it represents a complete record of an episode of glacier advance that took place in the Alps from about 1965 to about 1983, thereby furnishing a valuable, sensitive and integral indicator in the present climate debate;

- it has survived its founding agencies PSFG and TTS but flourishes under continued sponsorship of worldwide scientific organizations.

In these thirty years techniques of measurements, observations and data processing as well as basic understanding of glaciology have advanced at a fast pace. Even though the IGY or IHD plans for two zonal and one meridional mass balance transects have not entirely materialized to this day, our understanding of glacier-climate relations in various latitudes has greatly improved since those plans were first discussed.

We now know that it is humidity vs. aridity, continental vs. maritime conditions, windward vs. lee positions and the seasonal pattern of temperature and precipitation that determine the present health and future fate of our glaciers. We know that there is little damage man can do to a glacier in a direct way but that man's activities may in complicated, indirect ways threaten the existence of many midlatitude glaciers. Together with thermal expansion of sea water the losses of glacier ice by melting in a warmer climate would have a noticeable influence on worldwide sea level change.

However, the key role of glaciers in climate system research is but one example of the application of this outstanding data set. The fluctuations of glaciers are fluctuations in a valuable natural resource. Glaciers are assets in economic domains such as hydro-power generation, irrigation schemes, tourism, traffic in extreme places, and, perhaps most importantly, they are a freshwater reserve that cannot easily be reached by surface contamination.

The continuing efforts of the World Glacier Monitoring Service under the direction of Dr. Wilfried Haeberli thus serve both the scientific community and the public interest.

The data presented in this volume are public domain. Like this one, all previous volumes have been compiled at the Swiss Federal Institute of Technology (ETH) in Zurich. The efforts and the merits of those who compiled these volumes remain undisputed. The authorship of and responsibility for individual data, however, rests with those who originally planned the field work, raised the funds, went on the ice, installed the stakes, dug the pits, did the stratigraphy, safely brought home (wo)men and records, scrutinized and digitized the latter, and when they had separated the chaff from the wheat made the data available to the WGMS. There again they have been weighed, homogenized, rearranged and finally published.

Admiration and sincere thanks are due to all who helped in collecting and publishing these precious data and best wishes accompany those who are going to use them.

V.M. Kotlyakov
President ICSI, 1987-1991

M. Kuhn
President ICSI, 1991-1995

Moscow and Innsbruck, 1992

PROLOGUE AND THANKS

The present Volume VI of the "Fluctuations of Glaciers" mainly concerns the time period from 1985 to 1990. It was prepared by the World Glacier Monitoring Service (WGMS) and continues the corresponding series of publications which contain internationally collected, standardized data on current changes in glaciers throughout the world, i.e.:

Vol. I: Fluctuations of Glaciers 1959-1965 (P. Kasser)
Vol. II: Fluctuations of Glaciers 1965-1970 (P. Kasser)
Vol. III: Fluctuations of Glaciers 1970-1975 (F. Müller)
Vol. IV: Fluctuations of Glaciers 1975-1980 (W. Haeberli)
Vol. V: Fluctuations of Glaciers 1980-1985 (W. Haeberli and P. Müller)

The World Glacier Monitoring Service formed in 1986, combining the then existing Permanent Service on the Fluctuations of Glaciers (PSFG) with the Temporary Technical Secretariat for the World Glacier Inventory (TTS/WGI). It is one of the permanent services of the Federation of Astronomical and Geophysical Services of the International Council of Scientific Unions (FAGS/ICSU), operating at ETH Zürich under the auspices of the International Commission on Snow and Ice of the International Association of Hydrological Sciences (ICSI/IAHS). It is primarily funded by the Global Environment Monitoring System of the United Nations Environment Programme (GEMS/UNEP), the Division of Water Sciences within UNESCO, and from FAGS/ICSU. The objective of the publication of the "Fluctuations of Glaciers" at 5-yearly intervals is to reproduce a global set of data which

- affords a general view of the changes,
- encourages more extensive measurements,
- invites further processing of the results,
- facilitates consultation of the further sources, and
- serves as a basis for research.

In fact, this standardized data set should be regarded as a working tool for the scientific community, especially concerning the fields of glaciology, climatology, hydrology, and quaternary geology. The following guides and instructions are most relevant for the present volume (Volume VI) of the "Fluctuations of Glaciers":

1. Variations of Existing Glaciers. A Guide to International Practices for their Measurement. Technical Papers in Hydrology No. 3, UNESCO 1969, which has in part been superseded and made more specific by: Instructions for Submission of Data for "Fluctuations of Glaciers 1985-1990", issued by the WGMS in January 1991 (cf. also the Appendix in the present volume).

2. Perennial Ice and Snow Masses. A Guide for Compilation and Assemblage of Data for the World Glacier Inventory. Technical Papers in Hydrology No. 1, UNESCO 1970, which has in part been superseded by: Müller, F., Caflisch, T. and Müller, G. (1977): Instructions for Compilation and Assemblage of Data for a World Glacier Inventory, and by: TTS/WGI (1983): Guidelines for Preliminary Glacier Inventories, both issued by the former Temporary Technical Secretariat for the World Glacier Inventory, now WGMS, VAW/ETH Zürich.

3. Combined Heat, Ice and Water Balances at Selected Glacier Basins.

   Part I: A Guide for Compilation and Assemblage of Data for Glacier Mass Balance Measurements.

   Part II: Specifications, Standards and Data Exchange. Technical Papers in Hydrology No. 5, UNESCO 1970 and 1973.

The present volume could be completed thanks to the cooperation and quick response from the national correspondents and their collaborators. Besides this work of glaciologists all over the world, the main burden of the operation had again to be borne by the Swiss Federal Institute of Technology (ETH), Zürich. The help and assistance of a number of colleagues at the Laboratory of Hydraulics, Hydrology and Glaciology (VAW) is most gratefully acknowledged. Silvia à Marca (administration, text editing), Karin Schram (finances), Werner Nobs (data processing) and Willy Schmid (maps) especially contributed to the achievement and always helped to overcome major and minor problems. C.C. Wallèn (Geneva), consultant to UNEP, C. Boelcke from GEMS/UNEP as well as the presidents of ICSI, V.M. Kotlyakov (Moscow) and M. Kuhn (Innsbruck), assisted in ensuring proper international administration and funding. M. Kuhn (Innsbruck), M.F. Meier (Boulder), G. Østrem (Oslo), L. Reynaud (Grenoble) and R.S. Williams (Reston) are acting as scientific consultants to the WGMS, covering the important fields of energy balance at the glacier surface, glacier dynamics, glacier inventories, statistical analysis of glacier fluctuations and remote sensing of perennial surface ice. Special thanks are due to D. Vischer, Director of VAW/ETH Zurich, for his constant support and encouragement. S. Braun-Clarke refined the English of the texts.

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LIST OF ANNEXED MAPS

CHAPTER 1 - INTRODUCTION

1.1 Preparation of Volume VI of "Fluctuations of Glaciers"

Immediately after the termination of the last year to be reported, preparation of the present volume started in 1991 with the distribution of data sheets and instructions to the national correspondents (cf. the Appendix in the present volume). In order to ensure a maximum of continuity and comparability within the published data series, only minor changes were introduced concerning the format and content of Volume VI. The main difference with respect to previous volumes concerns the alphabetical order in which glaciers appear in the tables. This change is due to data bank requirements of the new data processing system but could also facilitate the use of the information. The designation U.S.S.R. is still being used for the present volume as the observation period falls in the time before the recent changes. Relevant differentiations are planned, however, for the next volume. Information relating to special events such as glacier surges, drastic retreat of calving glaciers, glacier floods, ice avalanches and eruptions of glacierized volcanoes was again collected. Such compilations are important with respect to exchange of experience with natural hazards in cold regions and may be considered as a contribution to the International Decade for Natural Hazard Reduction.

Information is most complete on the original data sheets where, for example, specific remarks pertinent to the measurements of individual glaciers can sometimes be found. Other information such as the dates of individual measurements was stored in the WGMS data base - containing the Tables A, B, BB, C, CC in data bank format - but is not printed in this volume. This means that information more complete than that printed in the tables is available. Computer work was again done using facilities at the Swiss Federal Institute of Technology, Zurich. Proofs of the tables and the text were sent to the national correspondents in summer 1992. No proof reading could be carried out for the glaciers in the former U.S.S.R. and for most glaciers in Austria. Corresponding corrections will be given with the next volume.

The present Volume VI of the "Fluctuations of Glaciers" contains information on 711 glaciers from 28 countries (including Antarctica). Data on

"Variations in the Positions of Glacier Fronts" during the period 1985 - 1990 were received for 615 glaciers in 23 countries, with "Addenda from Earlier Years" for 78 glaciers in 11 countries. "Mass Balance Study Results - Summary Data" concerning the period 1985 - 1990 were submitted for a total of 94 glaciers in 14 countries with "Addenda from Earlier Years" for 9 glaciers in 4 countries and reference to the availability of hydrometeorological data for 45 glaciers in 14 countries. Detailed information on "Mass Balance versus Altitude" was made available for 38 glaciers in 8 countries and data relating to "Changes in Area, Volume and Thickness" is presented for 28 glaciers in 7 countries. Finally, index measurements or special events were reported from 41 glaciers in 15 countries. Interesting observations have newly become available for Chile, Pakistan and India, and a mass balance programme was recently initiated in Bolivia. No data were obtained from Mexico, Ecuador, Turkey, Iran, Afghanistan and Bhutan.

A section was again included to represent important information which does not fit into the standardized format of the tables. It contains index measurements on remote glaciers and the already mentionned special events. Most of the public attention concerned the 1986 damming of Russel Fjord by the advancing Hubbard Glacier in Alaska or the exceptional floods which affected the Alpine countries in summer 1987 and which involved numerous debris flows from recently exposed morainic material.

Following a well established tradition, 14 special glacier maps are included in the back pocket of this volume. The World Glacier Monitoring Service is again grateful for the fact that most of these maps were donated. Brief comments on them can be found in a special text section of the present volume. With Vernagtferner 1889, another high-precision map is now available as a reprint, depicting an Alpine glacier towards the end of the 19th century. These old maps represent the world standard concerning the secular shrinkage of mountain glaciers. This remarkable and worldwide phenomenon remains among the key indicators for the fact that the energy balance at the earth's surface has been significantly changing on a global scale and at a high rate during the past 100 years. With the orthophoto map of Vernagtferner 1990, more than a century of precision mapping is now documented in the present volume.

All references mentioned within the present volume are listed at the end of the text. The Appendix immediately before Table A contains a set of the data sheets which were used for the preparation of this volume, together with the corresponding explanations.

1.2 Organization of the present volume

The following types of data are presented in this volume:

Table A:	General Information on the Observed Glaciers
Table B:	Variations in the Position of Glacier Fronts, 1985-1990
Table BB:	Variations in the Position of Glacier Fronts - Addenda from Earlier Years
Table C:	Mass Balance Summary Data, 1985-1990
Table CC:	Mass Balance Summary Data - Addenda from Earlier Years
Table CCC:	Mass Balance versus Altitude for Selected Glaciers
Table D:	Changes in Area, Volume and Thickness
Table E:	Availability of Hydrometeorological Data
Table F:	Index Measurements and Special Events presented in Chapter 7

Sources of data and comments can be found in Chapters 2 to 7. Within each data type, the glaciers are organized according to the country where they occur. Table A provides the user not only with general information on the glaciers of a particular country or region, but also lists which data are available for these glaciers in other tables. An alphabetic index of glaciers is given at the end of this volume to allow easy location of the data for any one glacier within the various tables.

The identification system for glaciers consists of:

(1) a name of up to 15 alphabetical and numerical characters,
(2) a PSFG number of five digits with an alphabetical prefix denoting the country,
(3) a WGI number.

Although in some cases it was necessary to abbreviate the names of glaciers, it should always be possible to compare data for any particular glacier in the present volume with data in previous volumes. The PSFG number helps to identify glaciers with the same, unknown or changing names; the number has to remain the same for every glacier through all the volumes of the "Fluctuations of Glaciers". The numbers were in most cases given to glaciers in some historically developed sequence and may therefore appear to be somewhat non-systematic. The WGI number follows the code of the World Glacier Inventory (TTS/WGI 1978, Haeberli et al., 1989). It is given in order to facilitate the work with both data sets. WGI numbers are subject to changes when new inventories are included, when preliminary inventories are upgraded or when the data archive system changes. Glaciers which are not yet included in detailed inventories have received a provisional WGI number in combination with the appropriate country prefix and the letters XXX.

The order in which data from the different countries are presented, together with the corresponding prefixes, is shown in the following table:

Country:	**Prefix:**	**Country:**	**Prefix:**
Canada	CD	Austria	A
U.S.A.	US	Italy	I
Mexico	MX	Spain	E
Venezuela	VZ	Poland	PL
Colombia	CO	Uganda	UG
Peru	PE	Kenya	KN
Bolivia	RB	U.S.S.R	SU
Chile	RC	China	CN
Argentina	RA	India	IN
Greenland	G	Pakistan	PK
Iceland	IS	Nepal	NP
Norway	N	Japan	J
Sweden	S	Indonesia	RI
Germany	D	New Zealand	NZ
France	F	Antarctica	AN
Switzerland	CH		

It is strongly recommended that all data tabulated in Tables A to E be used in consultation with the relevant sections in the text; in the case of Table F, the data are given within the text of Chapter 7. Furthermore, when citing data from this volume, references to the original sources of the data - given in the the relevant chapters of the text - should be quoted wherever possible.

CHAPTER 2 - **GENERAL INFORMATION ON THE OBSERVED GLACIERS**

2.1 The Parameters

The parameters published constitute a useful minimum of information about each observed glacier. Emphasis is placed upon basic information available from a national glacier inventory carried out according to internationally agreed specifications. A list of the parameters given in Table A, together with their abbreviations as used in the table can be found on the cover page of Table A. The 3-digit classification of each glacier (CODE) is based on the following scheme (UNESCO/IAHS 1970):

Digit 1: **Primary Classification**

0	Miscellaneous
1	Continental Ice Sheet
2	Ice field
3	Ice Cap
4	Outlet glacier
5	Valley glacier
6	Mountain glacier
7	Glacieret or snowfield
8	Ice shelf
9	Rock glacier

Digit 2: **Form**

0	Miscellaneous
1	Compound basins - two or more glaciers coalescing
2	Compound basin - two or more accumulation basins
3	Simple basin
4	Cirque
5	Niche
6	Crater
7	Ice apron
8	Group
9	Remnant

Digit 3: **Frontal Characteristics**

0	Miscellaneous
1	Piedmont
2	Expanded foot
3	Lobed
4	Calving
5	Coalescing, non contributing
6	Irregular, mainly clean ice
7	Irregular, mainly debris-covered
8	Single lobed, mainly clean ice
9	Single lobed, mainly debris-covered

2.2 Sources of Data and Comments for the Various Countries

The names of the individual investigators and their sponsoring agencies are given for each country in Chapters 3 and 4. The addresses of the sponsoring agencies and organizations holding original data are given in Chapter 6.

Canada (CD)

The entire data with comments and an extensive bibliography are contained in a special report by Ommanney (1991). Data on glaciers in this section are mostly derived from the Canadian National Topographic Map Series (NTS) at a scale of 1:50,000, in conjunction with air photos.

All of Canada has been flown with low level aerial photography suitable for mapping at a scale of 1:50,000. In several cases special air-photo missions have been organized for the mapping of glaciers at a scale of 1:10,000 or better. Flight-line information and the individual prints are available from the:

National Air Photo Library
Surveys, Mapping and Remote Sensing Sector
Energy, Mines and Resources Canada
615 Booth Street
CD - Ottawa, Ontario, K1A 0E9

The Surveys and Mapping Branch has virtually completed its mapping of Canada at a scale of 1:50,000 and the updating of the 1:250,000 scale NTS sheets. Many of the new maps are available in digital form. Although revisions to reflect changes in human occupancy may use satellite imagery, no policy yet exists for updating the outline of changing physical features, such as glaciers. Maps at the various metric scales and indices are available from the:

Canada Map Office,
Surveys, Mapping and Remote Sensing Sector,
Energy, Mines and Resources Canada,
130 Bentley Avenue,
CD - Ottawa, Ontario, K1A 0E9

In most cases, the individual who compiled the data sheet is the one in charge of glacier data and the person from whom it should be requested.

The glacier number (PSFG number) allocation for Canadian glaciers has been based on an initial alphabetic division with the first two digits corresponding to a particular letter of the alphabet, i.e. A = 01.. to Z = 26.. and with unnamed features starting at 50... The last two digits have been assigned on a scale of 1-99 based on the relative position of the glacier name within its particular alphabetic block, as determined from the latest listing of named glaciological features in Canada.

U.S.A. (US)

Data for 27 glaciers were submitted by A.G. Fountain of the U.S. Geological Survey (USGSD). As in previous volumes, the first digit of the Glacier Number (PSFG number) denotes the state where the glacier is located; the second digit denotes the range, the mountains or the specific mountain where the glacier lies. The last two digits are the number assigned to an individual glacier within a particular state and mountain range (or mountain):

Digit 1: 0,1 Alaska

0001-0199	Brooks Range
0200-0399	Alaska Range, Aleutian Range

0400-0599	Kenai Mountains
0600-1099	Chugach Mountains
1100-1299	Wrangell Mountains
1300-1799	St. Elais Mountains
1800-1999	Coast Mountains

Digit 2 : Washington

2000-2099	North Cascade Range
2100-2199	Olympic Range

Digit 4: California

4000-4100	Mount Shasta, Mount Lassen

Venezuela (VZ)

Information on Timoncito Glacier was submitted by C. Schubert from the Instituto Venezolano de Investigaçiones Cientificas (IVIC).

Colombia (CO)

Revised information on the glacier covering the Nevado del Ruiz was submitted by L. Guarnizo from INGEOMINAS at the Vulcanological Observatory of Colombia (OVC).

Peru (PE)

Data for 7 Peruvian glaciers were received from M. Zamora and A. Ames from the Department of Glaciology and Hydrology, Hidrandina S.A. (HID) in Huaraz.

Chile (RC)

Information on 29 glaciers was sent by G. Casassa from Byrd Polar Research Center, Ohio State University (BPRC). The Northern Patagonian Icefield data are from Aniya (1988, 1992); they replace earlier inventory information (Valdivia 1979).

Argentina (RA)

Information on Plomo glacier is from the glacier inventory (Corte and Espizua 1981). Data for Glaciar Horcones inferior were taken from information submitted by H. Happoldt and L. Schrott from the University of Heidelberg, Germany (UHG) in connection with recent studies and the surge reported in Chapter 7. Some of the values (length, area) as extracted from the new map of the area (enclosed in the present volume) slightly differ from those given in the glacier inventory of the region. Information on Upsala and Moreno Glaciers is from G. Casassa, BPRC (cf. Chile).

Greenland (G)

Data for 3 glaciers in Greenland were submitted by R.J. Braithwaite of the Geological Survey of Greenland in Copenhagen (GGU).

Iceland (IS)

Data on 42 glaciers were submitted by O. Sigurdsson of the Hydrological Survey, National Energy Authority (OS).

Norway (N)

Data on Norwegian glaciers were received from B. Wold, Resources and Energy Administration (NVE) in Oslo. The PSFG numbers given in Volume V to the glaciers Tretten-null-to and Storglombreen were wrong and correctly read 67315 (Tretten-null-to) and 67313 (Storglombreen).

J. Jania of the University of Silesia in Sosnowiec, Poland (SUP) submitted data for Spitsbergen. Hansbreen is a tidewater glacier with minimum elevation at sea level - the fjord bottom at the calving front is at 50 m depth.

Sweden (S)

Data for 19 Swedish glaciers were received from P. Holmlund of the Department of Physical Geography, Stockholm University (NGSU).

The Glacier Number (PSFG number) for the Swedish glaciers are the last four digits of the IHD index numbers. The correct PSFG numbers for Unna Räita glaciären, Hyllglaciären and Riukojietna are 783, 780, 790 and not 283, 280, 290 as given in the last volume.

France (F)

Data for 7 French glaciers were received from L. Reynaud of the Laboratory of Glaciology and Environmental Geophysics in Grenoble (CNRS).

Germany (D)

Data for Blaueis, Höllentalferner and Nördlicher Schneeferner were taken from the glacier inventory.

Switzerland (CH)

Data on 117 Swiss glaciers were compiled by M. Aellen of the Laboratory of Hydraulics, Hydrology and Glaciology (VAW) at the Swiss Federal Institute of Technology (ETH) in Zürich. (PSFG-) Nos. 108, 110, 112, 113, 115, and 116 are not included this time. As with Vol.IV and V, the main source of general information was the Swiss Glacier Inventory by Müller et al. (1976), with an exception made for minimum altitude values which are updated to the most recent survey (1990 in most cases).

Austria (A)

Data for a total of 129 Austrian glaciers were sent to the WGMS by G. Patzelt of the Institute for High Mountain Research in Innsbruck (IHMR).

Italy (I)

Data for 72 Italian glaciers were received from G. Zanon of the Department of Geography, University of Padua (DGUP).

Spain (E)

Information concerning 31 small glaciers and glacierets on the southern slope of the Pyrenees were submitted by E. Martinez de Pison, Departamento de Geografia Fisica, Universidad Autonoma de Madrid (UAM). The research programme is sponsored by the General Direction of Hydraulic Works of the Ministry of Public Works and Transports (DGOH/MOPT) within a project on the quantification of water resources generated by snow and ice melting on Spanish mountains. The group of investigators mainly consists of A.P. Gonzalez (DGOH/ MOPT), E. Martinez de Pison (UAM), M.A. Parra (Universidad Politecnica de Madrid), R. Martinez Costa and J. Navarro Caraballo (Universidad Politecnica de Valencia). The first 2 digits of the newly assigned PSFG numbers refer to the mountain massif:

01	Balaitus	06	La Munia
02	Infierno	07	Posets
03	Vinemale	08	Perdiguero
04	Taillon	09	Aneto - Maladeta
05	Perdido		

The 3rd and 4th digits correspond to the numbering within each massif and the 5th space is either 0 or filled with a letter (A, B, C) identifying recently separated parts of the same glacier.

Poland (PL)

Data on glacierets in the Tatra Mountains were received from J. Jania and A. Wislinski from the University of Silesia (SUP) and M. Curie-Sklodowska University (UMCS) Lublin.

Kenya (KN)

Data for 11 glaciers on Mount Kenya were received from S. Hastenrath of the Department of Meteorology, University of Wisconsin, U.S.A. (UWDM). The reported values are updated from the glacier inventory by Hastenrath (1984, cf. Hastenrath et al. 1989) and represent the situation in 1987.

U.S.S.R. (SU)

Data for 101 glaciers were collected, prepared and submitted by the Soviet Glacier Monitoring Working Group chaired by D.G. Tsvetkov and consisting of G.B. Osipova, V.V. Popovnin and A.P. Voloshina. For the first time, geographical coordinates are given to all observed glaciers. With respect to previous volumes, the names of the investigated glaciers have now been brought to conformity with the glacier inventory (Glacier Catalogue). In some cases, glacier names which are not recognized officially had to be substituted by catalogue numbers. In other cases, the Latin spelling had to be corrected. The most remarkable changes concern the following glaciers:

former name	PSFG number	new name
Vavilov	SU01001	No. 104
Kulak Nizhniy	SU03005	No. 462V
Chaukhi	SU03041	No. 191
Tsanner	SU03014	Tsaneri
Korul'dash	SU03015	Koreldash
Lazg-Tsiti	SU03016	No. 396
RGO	SU04039	Geographichesko (go Obshchestva)
Dikhadang	SU04045	No. 314
Tro	SU04046	Turo
GGP	SU04064	No. 675
Karabatkak	SU05080	Kara-Batkak
Mametovoy	SU05091	Manshuk Mametov(a)
Kosmodemyanskoy	SU05092	Zoya Kosmodemya(nskaya)
Sari-Tor	SU05106	No. 356
Aksu-West	SU05115	Aksu Zapadniy
Chong-Tur	SU05119	Chong-Tur Pravi(y)
Aksu-East	SU05116	Aksu Vostochniy
Maashey	SU07104	Bolshoy Maashey
Vodopadniy	SU07105	No. 125
Tuyuksu	SU05075	Ts(entralniy) Tuyuksuyskiy

No. 314 (SU04045) was presented as Dikhadang in Volumes II to IV and as No. 314 with PSFG No. SU04102 in Volume V, but is one and the same glacier.

Some names appear in abbreviated form because of their length; the missing parts are given here in brackets. The WGI number corresponds to the USSR Glacier Catalogue: digit 1, 2 - number of Catalogue volume; digit 3 - dash; digit 4 - number of Catalogue issue; digit 5 - dash; digits 6, 7

- number of Catalogue part; digit 8 - dash; digits 9, 10, 11 - glacier number. A ~~list of~~ recent publications (in Russian) about glacier monitoring was submitted together with the data. Reviews of collected data can be found in the publication series Data of Glaciological Studies, Moscow (No. 62, p. 224 - 240, for the 1958-1985 period and No. 71, p.211 - 222 for the 1985-1987 period).

Nepal (NP)

Data on 6 glaciers from the Dudh Kosi basin and on Yala Glacier in the Langtang Valley were submitted by Y. Ageta of the Water Research Institute at Nagoya University, Japan (WRINU).

Pakistan (PK)

Information on 13 glaciers were received from W. Kick, Regensburg/Germany, and K. Hewitt, Wilfried Laurier University, Waterloo/Canada (WLU). Writing of the glacier names can be variable. Chungpar/Tashing is also known as Chongra.

India (IN)

Information about 5 glaciers in the northern and north-eastern part of the country was received from K.V. Krishnamurthy, Geological Survey of India (GSI).

China (CN)

Data on 10 Chinese glaciers were sent to the WGMS by Yang Huian of the Lanzhou Institute of Glaciology and Geocryology, Chinese Academy of Sciences (LIGG).

Japan (J)

Information on Hamaguri Yuki - a glacieret in Japan - was sent by Y. Ageta of the Water Research Institute at Nagoya University (WRINU).

Indonesia (RI)

Information on Carstensz and Meren glaciers was taken from Volume III, Fluctuations of Glaciers 1970-1975.

New Zealand (NZ)

Data for 3 New Zealand glaciers were received from T.J. Chinn of the Ministry of Works and Development in Christchurch (MWD).

Antarctica (AN)

Data for 13 Antarctic glaciers were submitted by T.J. Chinn of the New Zealand Department of Scientific and Industrial Research (DSIR).

* * *

CHAPTER 3 - VARIATIONS IN THE POSITION OF GLACIER FRONTS 1985-1990 AND ADDENDA FROM EARLIER YEARS (TABLES B AND BB)

3.1 The Data

Data relating to the position of glacier fronts are given in Table B for the period 1985-1990. The data for periods preceding 1985 which were not included in earlier volumes of the series are given in Table BB; in some cases Table BB also gives data which were reported in earlier volumes but which have now been corrected or updated.

A list of the type of data given in each of the Tables B and BB, together with an explanation of the abbreviations and symbols used can be found on the cover sheet of each table. Quantitative data represent the variation in the position of the glacier front in meters. Qualitative data are also given for cases where no measurements were made although there was some frontal activity observed in the reported period:

ST = glacier appears to be stationary;
+X = glacier appears to be in advance;
-X = glacier appears to be in retreat;
SN = glacier tongue is covered with snow so as to make the survey impossible.

In all cases, the qualitative data should refer to the preceding year for which either quantitative or qualitative data are available. On the other hand, quantitative data following a series of qualitative observations should be understood as referring to the whole period since the last quantitative measurement.

The data given in Table B are not homogeneous with respect to the method of observation used. In some cases, the measurements are made by regular annual or biennial surveys following methods similar to those recommended by the Glacier Commission of the Swiss Academy of Sciences (Kasser (1967, p. 20-26). In other cases, the measurements are more sporadic or casual and are often based upon photogrammetric methods rather than on theodolite survey. The accuracy of the data will rarely be better than about ± 0.5 m and may be much worse, depending on the method used.

Dates of survey are omitted from Table B simply because of shortage of space. In almost all cases it can be assumed that the surveys are made at or near the end of the balance year, i.e., in the Boreal or Austral Autumn seasons. Deviation from a time interval of 365 days between annual surveys will cause errors in the calculation of annual rates of changes, but they will usually lie within the limit of errors caused by other factors.

3.2 Sources of Data and Comments for the Various Countries

Canada (CD)

Of the three glaciers reported here, two, Overlord and Wedgemount, are a continuation of work undertaken in a voluntary collaboration between K. Ricker and B. Tupper. The report on Andrei Glacier is the first of this kind of data from the studies done for B.C. Hydro. It is hoped that similar data will be forthcoming in the future from the other glaciers being studied for this power company.

There is a programme to resurvey and map many of the long-term glacier mass balance glaciers, involving Wilfried Laurier University and the National Hydrology Research Institute. Although the data are not yet reduced, the results should be available for the next volume.

U.S.A. (US)

Terminus variation data for 15 glaciers are given in Table B. The majority of the terminus variations were determined from ground measurements and a few from photographs.

Sources of data and sponsoring agencies for the U.S. glaciers in the order in which they appear are:
Blue - R. Armstrong, R. Spicer and C. Raymond (UW); Carbon, Cowlitz, Nisqually, North and South Tahoma - C. Driedger (USGSV); Columbia (627) and South Cascade - R. Krimmel (USGST); Columbia (2057), Daniels, Lower, Curtis, Rainbow - M- Pelto (NC); Eklutna - T. Brabets (USGSA); Exit - B. Rice (KFNP).

A compilation of long-term changes in glacier length within the Wrangell and Chugach Mountains is given by Sturm et al. (1991).

Peru (PE)

Individual investigators for the 6 Peruvian glaciers listed in Table B together with their sponsoring agencies are:
Broggi - A. Ames, M. Zamora (HID), A. Valverde (EP); Yanamerey, Uruashraju, Huarapasca, Gajap and Pastoruri - A. Ames and A. Valverde (EP).

Chile (RC)

The data on the glaciers of the Northern Patagonian Icefield contained in the Tables B and BB are based on the work of Aniya (1988, 1992). Length variation data concerning four glaciers of the Southern Patagonian Icefield cf. also Argentina) were taken from Aniya and Skvarca (1992) and Aniya et al. (1992). The values for Brüggen Glacier relate to the south tongue. The north tongue advanced by 4,100 meters from 1945 to 1976 and by 1,200 meters from 1976 to 1986. All data were submitted by G. Casassa (BPRC).

Argentina (RA)

Observations on glacier fluctuations were greatly hampered by a fire in the Base of Puerto Bandera. It is hoped that the site will operate again in 1992. Between 47° and 51° southern latitude, glaciers of the Patagonian Icefield seem to have retreated notably during 1985 and 1990. Data for Upsala and Moreno Glaciers of the Southern Patagonian Icefield were submitted by G. Casassa (BPRC, cf. Chile).

Greenland (G)

Results of investigations concerning length variations of 72 West Greenland outlet glaciers between 1942 and 1985 are summarized in Chapter F.

Iceland (IS)

Frontal variation for 40 Icelandic glacier tongues are given in Table B. Method C was employed for all glaciers.

The individual investigators are:
Hagafellsjökull - Theodor Theodorsson; Sidujökull - Björn Indridason; Gigjökull - Aksel Piihl and Theodor Theodorsson; Hyrningsjökull and Jökulhals - Hallsteinn Haraldsson; Kaldalonsjökull - Adalsteinn Johannsson and Indridi Adalsteinsson; Gljufurarjökull - Ingvi Eiriksson; Solheimajökull - Valur Johannesson; Oeldufellsjökull - Gissur Johannesson; Skeidararjökull - Eyjolfur Hannesson; Skeidararjökull E and Morsarjökull - Bragi Thorarinsson; Leirufjardarjökull - Solberg Jonsson; Nauthagajökull - Stefan Bjarnason and Leifur Jonsson; Reykjafjardarjökull - Gudfinnur Jakobsson; Mulajökull - Stefan Bjarnason; Skaftafellsjökull, Svinafellsjökull and Virkisjökull - Gudlaugur Gunnarsson; Kviarjökull, Hrutarjökull, Falljökull, Fjallsjökull and Breidamerkurjökull W - Flosi Björnsson; Breidamerkurjökull E - Sveinn Thorhallsson; Hoffelsjökull - Thrudmar Sigurdsson; Tungnaarjökull - Hördur Haflidason and Gunnar Gudmundsson; Bruarjökull and Kverkjökull - Gunnsteinn Stefansson. Breidamerkurjökull W.B. is still under observation. However, the existence of a proglacial lake makes quantitative measurements difficult.

Norway (N)

Frontal variation data for 13 glaciers are given in Tables B and BB.

The individual investigators are:
Engabreen, Hellstugubreen, Nigardsbreen - unspecified members of NVE; Austerdalsbreen, Brigsdalsbreen, Faabergstølsbreen, Stegholtbreen, Leirbreen, Storbreen, Styggedalsbreen - NPI.

Werenskioldbreen, Hansbreen and Austre Torell - J. Jania and L. Kolondra (SUP).

Sweden (S)

Frontal variation data for 19 Swedish glaciers are given in Table B. All investigations were carried out under the responsibility of the NGSU and sponsored by NFR, NGSU and SSAG; the ground survey method was used exclusively.

The years 1989 and 1990 had extremely high accumulation rates and many glacier fronts remained snow-covered throughout the ablation season.

This has caused some complications in areas where glaciers cannot be visited every year. The four glaciers Suottasjekna, Vartasjekna, Hyllglaciären and Stour Raeitaglaciären were surveyed in 1984-1985 but not during 1986-1988. The quantitative changes in their front position is thus unknown for the past 5-year period.

The individual investigators are:
Riukojietna - G. Rosquist; Karsojietna - A. Bodin and P. Holmlund; Tarfalaglaciären and S.E. Kaskasatjakkaglaciären - H. Grudd; all other glaciers - P. Holmlund.

France (F)

Frontal variation data are given in Table B for 6 French glaciers. The work was carried out by the "Alpine Glaciers" group at the Laboratory of Glaciology and Environmental Geophysics in Grenoble, under the sponsorship of the CNRS.

Switzerland (CH)

Frontal variation data for 114 Swiss glaciers are given in Table B (cf. Aellen 1987, 1988, 1989, 1990, 1991; PSFG Nos. 108, 110, 112, 113, 115, 116 are not included). The programme of observations, largely supported by the Swiss Glacier Commission, is supervised by the VAW; many of the measurements are carried out in cooperation with various Cantonal Forestry Services, hydro-electric power companies or private persons.

Individual observers involved in this programme are as follows:
VAW - M. Aellen (Bis, Fiescher, Grosser Aletsch, Oberaletsch, Martinets, Mittelaletsch, Pierredar, Trift, Rosenlaui), W. Schmid (Tälliboden, Ofental, Schwarzberg, Allalin, Kessjen, Ried), M. Funk and H. Bösch (Gries, Silvretta); GIETH - U. Steinegger (Limmern, Plattalva; Forces Motrices de Mauvoisin - H. Leupin (Giètro), Ch. Wuilloud (Corbassière); Forestry Service of Canton Valais - A. Bodenmann (Fee, Gorner), M. Borter (Kaltwasser, Rossboden, Lang), V. Bregy (Zinal, Moming, Moiry), M. May (Valsorey, Tseudet, Boveyre, Saleina), M. Pitteloud (Cheillon, En Darrey, Grand Dèsert, Mt. Fort, Tsanfleuron), M. Torrent (Ferpècle, Mt. Miné, Arolla, Tsidjiore Nouve), A. Tscherrig (Turtmann, Brunegg, Bella Tola); Forestry Service of Canton Vaud - J.-P. Besençon (Sex Rouge, Pra-

pio), J.-P. Marlètaz (Paneyrosse, Grand Plan Névé); Forestry Service of Canton Bern - Ch. von Grünigen (Rätzli), R. Straub (Gauli, Stein, Steinlimmi), U. Vogt (Gamchi, Blümlisalp, Alpetli, Schwarz, Lämmern), R. Zumstein (Eiger, Tschingel); Forestry Service of Canton Glarus - Th. Rageth and B. Zweifel (Sulz); Forestry Service of Canton Obwalden - R. Imfeld (Firnalpeli, Griessen); Forestry Service of Canton St. Gallen - A. Hartmann (Pizol, Sardona); Forestry Service of Canton Graubünden - Chr. Barandun, F. Juvalta (Porchabella), A. Colombo, P. Berchier (Palü), R. Danuser (Vorab), O. Hugentobler (Paradies, Suretta), H. Klöti (Punteglias), J. Könz (Tiatscha), C. Mengelt, G. Bott (Calderas, Forno, Roseg, Tschierva, Morteratsch), B. Parolini (Lenta), L. Rauch (Sesvenna, Lischana), A. Sialm (Lavaz), J. Stahel (Verstankla); Forestry Service of Canton Ticino - C. Valeggia (Basodino, Val Torta, Cavagnoli, Corno), F. Viviani (Bresciana); Forestry Service of Canton Uri - J. Aschwanden (Kehlen, Rotfirn), E. Gisler (Griess), M. Gisler (Wallenbur, Brunni), J. Marx (Tiefen, St. Anna), K. Oechslin (Damma), W. Tresch (Hüfi); Oberhasli hydro-electric power plant - A. Flotron (Oberaar, Unteraar); private investigators - Y. Biner (Gorner), J.-L. Blanc (Otemma, Mt. Durand, Breney), H. and H. Boss (Ober Grindelwald, Unter Grindelwald), A. Godenzi (Cambrena, Paradisino), E. Hodel (Ammerten), P. Mercier (Rhone, Mutt, Zmutt, Trient), W. Wild (Biferten, Glärnisch), M. Zimmermann (Findelen).

Austria (A)

Frontal variation data for Austrian glaciers are given in Table B. The sponsoring agency for all these investigations is the Austrian Alpine Club (OEAV).

Italy (I)

Frontal variation data for 71 Italian glaciers are given in Table B. The sponsoring agency for these observations is the "Comitato Glaciologico Italiano" (CGI, Italian Glaciological Committee) in Turin, with financial support from the Consiglio Nazionale delle Ricerche (CNR, National Research Council) and the Ministero dell'Università della Ricerca Scientifica e Tecnologica (MURST, Ministry of Universities and Scientific and Technological Research) in Rome.

The individual investigators for the glaciers listed in Table B are as follows:

Agnello - E. Armando (1986), M. Rolfo (1990); Alta, Cevedale, Forcola, La Mare, Lunga, Rosim, Serana, Solda, Ultima - F. Secchieri; Amola, Mandrone, Nardis, Niscli, Presanella - V. Marchetti; Andolla Nord, Aurona, Belvedere, Camosci, Hohsand Sett. - A. Mazza; Antelao Inf., Antelao Sup., Cristallo - G. Perini; Barbadorso D., Fontana Occ., Giogo Alto, Vallelunga - G. Zanon; Basei - L. Mercalli, F. Fornengo (1986-89), L. Mercalli, A. Fiorentini (1990); Brenva, Lex Blanche, Miage, Prè de Bar - A.V. Cerutti; Cardonnè Occ. - A. Galluccio (1986-90),C. Lugaresi (1990); Caspoggio, Fellaria Occ. - G. Catasta; Collalto, Gigante Centr., Gigante Occ., M. Nevoso Occ., Sassolungo Occ. - G. Cibin; Croda Rossa, Fossa Or., Tessa - M. Meneghel; Dosdè Or. - A. Galluccio (1986, 1987, 1989, 1990), M. Lojacono (1988); Dosegù, Tresero - A. Pollini; Forni - A. Pollini (1986, 1988-90), C. Smiraglia (1987); Goletta - F. Pompignan (1986, 1987, 1989), F. Pollicini (1988, 1990); Gr. Murailles - M.T. Miolli (1986, 1990), L. Motta (1990); Gran Pilastro, Neves Or. - U. Mattana; Lana, Rosso Destro, Valle del Vento - R. Serandrei Barbero; Lys - W. Monterin (1986-90), L. Mercalli (1990); Malavalle, Pendente - G. Franchi; Marmolada - U. Mattana; Piode - W. Monterin; Pisgana Occ. - G. Stella; Platigliole, Vitelli - A. Pollini; Rossa (Vedr.), Venezia - C. Voltolini; Rutor - E. Armando (1986, 1987), R. Garino (1988-90); Sforzellina - A. Pollini (1986, 1988-90), C. Smiraglia (1987); Toules - A.V. Cerutti (1986), A. Fusinaz (1988-90); Tza de Tzan - M.T. Miolli (1986-88, 1990), L. Motta (1990); Valtournanche - A. Giorcelli; Venerocolo - A. Schiavi (1986-90), P. Battaglia (1990); Ventina - C. Smiraglia.

Spain (E)

Quantitative and qualitative data on length variations of 31 glaciers or glacierets on the southern slope of the Pyrenees was reported by E. Martinez de Pison (UAM). Earlier measurements (before 1985) had been done by the Spanish Glaciology Institute (INEGLA) and may become available in forthcoming volumes of the Fluctuations of Glaciers. The names of individual investigators are mentioned in Chapter 2.

Poland (PL)

There exist about 50 perennial snow patches or glacierets with various dimensions in the Polish Tatra Mountains. These patches were studied by M. Klapa and collaborators of IMGW. Since 1979, A. Wislinski and coworkers of UMCS have been involved with systematic observations of the glacierets in the region of Morskie Oko Lake (Rybi Potok Valley). Terrestrial photogrammetry is being applied by J. Jania and L. Kolondra (SUP) since 1989 to survey two of these glacierets: Mieguszowiecki and Plat Nad Mokiem. Length changes of these two small ice bodies are given in Table B (cf. also Chapter 5).

Kenya (KN)

Ice front variations for the period 1985-90 as measured by tape are reported for 5 glaciers on Mount Kenya, that is two more than in the previous volume. In addition, changes in glacier length are presented over the 1963-87 period from photogrammetric surveys for 6 other glaciers. The corresponding length change over the 1963-87 time interval for the 5 glaciers now measured by tape is ±0 m for Darwin, -55 m for Gregory, -200 m for Joseph, -150 m for Lewis and - 50 m for Tyndall.

U.S.S.R. (SU)

Frontal variation data for 82 Soviet glaciers are presented in Table B with 31 Addenda from earlier year in Table BB. Observations were made by terrestrial surveying (theodolite and photo-theodolite) as aerial photogrammetry (Ye.A. Zolotariov).

Individual investigators and their sponsoring agencies are as follows:

Caucasus (39 glaciers):
Ulluchiran, Bityuktyube, Ullumalienderku, Maliy Azau, Irik, Irikchat, Terskol, Chungurchatchiran, Birdzhalychiran, Mikelchiran, Kyukyurtlyu, Karachaul, Ullukol, Garabashi - Ye.A. Zolotariov (MGU); Boshoy Azau - Ye.A. Zolotariov (MGU) and V.D. Panov (SKGM); Djankuat - V.V. Popovnin and Ye.A. Zolotariov (MGU); Marukhskiy, No. 462V, Alibekskiy, Skazka, Bezengi, Tseya, Kakel - V.D. Panov (SKGM); Kibisha, Tsaneri, No. 191, No. 396, Chachi, Ushba, Mna, Devdoraki - S.N. Dokhnadze and V.G. Skhirtladze (GGM); Murkar, Yuzhniy, Yugo-Vostochniy - Sh.M. Agayev (AGM) and V.Sh. Tsomaya (GGM); Suatisi Sredniy, Koreldash, Abano - O.T. Nikolaishvili and V.G. Skhirtladze (GGM); Gergeti - O.T. Nikolaishvili and V.Sh.

Tsomaya (GGM); Tikhitsar - B.M. Magerramov and V.Sh. Tsomaya (GGM).

Tien Shan (21 glaciers):
Kara-Batkak - A.N. Dikikh (TSHFGS); Dzhuukuchak, Aksu Zapadniy, Aksu Vostochniy, Golubin, Chong-Tur Praviy, Dolonata, Keng-Tur - A.A. Ermolov (KGM); Talgar Yuzhniy, Shokalskiy, Molodyozhniy, Tsentralniy Tuyuksuyskiy - R.N. Iskhakov (IGKAN); Pakhtakor, Turpakbel Nizhniy, Kalesnik, Tokmaksoldy-1, Akbulakulkun, Ayutor-2, Tekeshsay-1, Barkrak Sredniy - V. Bugakov (UGM); No. 356 - S.N. Ushnurtsev (IGAN).

Pamirs and Gissaro-Alai (20 glaciers):
Mazarskiy, Geographicheskogo Obshchestva, No. 517, Skogach, Khadyrsha, Mushketov, No. 503, Turo, Rama, No. 675, Zeravshanskiy, No. 314 - V.I. Kvachov (TGM); Raygorodskiy, Tutek, Klyuyev, Kokbeles, Turamuz-1, Kyrchin, Severtsov, Batyrbay - V. Bugakov (UGM).

Dzhungarian Alatau (2 glaciers):
Shumskiy, Muravlyov - P.A. Cherkasov (IGKAN).

Altai (5 glaciers):
Leviy Aktru, Maliy Aktru, Korumdu, Bolshoy Maashey, No. 125 - Yu.K. Narozhniy (TGU).

Kamchatka (1 glacier):
Kozelskiy - Ya.D. Muravyov (IVAN).

Arctica (1 glacier):
No. 104 - D.Yu. Bolshiyanov (AANII).

Chungurchatchiran and Birdzhalychiran in Caucasus are two adjacent snouts of a glacier with a common accumulation area on the slope of Mt. Elbrus volcanic cone. The same is valid for Ullukol and Ullumalienderku.

Nepal (NP)

Results of observations on 6 glaciers from the Dudh Kosi basin and on Yala Glacier in the Langtang Valley were reported by Y. Ageta of the Water Research Institute at Nagoya University, Japan (WRINU).

Pakistan (PK)

Data on 6 glaciers were submitted by W. Kick, Regensburg/Germany and by R. Finsterwalder, Institute of Cartography and Reproduction Technology, Technical Universiity of Munich, Germany (cf. Finsterwalder 1989).

India (IN)

Information about length variation of 4 glaciers and addenda from earlier years about 2 glaciers in the northern and north-eastern part of the country was reported by K.V. Krishnamurthy, Geological Survey of India (GIS).

China (CN)

Frontal variation data for 10 Chinese glaciers are given in Tables B and BB. The individual investigators are as follows:

Qiyi - Song Guoping; Urumqihe S. No. 1 - Sun Zuozhe and Chen Yaowu; Dagongba, Xiaogongba, Yianzigou and Hailuogou - Su Zhen; Gozha, Guliya, Colliery and Xidatan - Jiao Keqin. Their sponsoring agency was the Lanzhou Institute of Glaciology and Geocryology, Chinese Academy of Sciences (LIGG).

Indonesia (RI)

Data for Carstensz and Meren glaciers was submitted by J. Peterson, Department of Geography and Environmental Science, Monash University, Melbourne (DGMU), and is based on field work in January 1991. Sometime before 1988, the Meren Glacier was cut off from the accumulation area (the Northwall Firn).

New Zealand (NZ)

Frontal variation data for 3 glaciers in New Zealand are given in Table B and addenda for 1 glacier in Table BB.

Antarctica (AN)

Frontal variation data for 12 glaciers in the Dry Valleys area, Victoria Island were submitted by T.J. Chinn, New Zealand Department of Scientific and Industrial Research (DSIR). Many of the measurements were made by generous cooperation of other field parties. The records show some interesting behavior of the glaciers that have persistently been described as stationary. Values measured in January were given as from the previous year for format reasons (Bartley, Goodspeed, Hart, Meserve, Clark). New survey points were installed at Meserve, Clark and Wright Upper glaciers. The values given in the tables continue the observational series at the survey points used so far (CP II at Clark, MP II at Meserve, B at Wright Upper).

* * *

CHAPTER 4 - MASS BALANCE STUDY RESULTS 1985-1990 AND ADDENDA FROM EARLIER YEARS (TABLES C, CC, AND CCC)

4.1 The Data

Mass balance study results are presented in the following tables: in Table C summary data are given for the years 1985-1990, Table CC contains data from years prior to 1985, which have not been published in a "Fluctuations" volume or corrected/updated values of previously published data. More detailed data for mass balance versus altitude are given in Table CCC. Data in Tables C and CC were extracted from the completed "Mass Balance Study Results - Summary Data" standardized WGMS data sheets, while the data in Table CCC were sent to the WGMS in various formats as no specific WGMS data form was prepared for this purpose.

A list of the type of data given in each of the Tables C, CC and CCC, together with an explanation of the abbreviations and symbols used can be found on the cover sheet of each table. Balance quantities relating to BW and BS concern the area of the entire glacier; hence, BN is the difference between BW and BS. AC and AA are given as related to the area of the accumulation and ablation areas; hence, BA is not necessarily the difference between AC and AA. In cases where SYS is given as OTH (other) or *** (unspecified) the situation is admittedly ambiguous. For practical reasons (data format) and in order to avoid rounding-off errors in cumulative balance calculations, balance values are being reported in millimeters. The accuracy of the given data, however is in most cases closer to the centimeter or even decimeter range.

4.2 Sources of Data and Comments for the Various Countries

Canada (CD)

The situation with the Canadian mass balance observations fortunately improved since the last report. The National Hydrology Research Institute (NHR) has reactivated its programme in the Rockies and Coast Mountains and established it on a much firmer foundation. B.C. Hydro (BCH) has re-entered the Homathko and Iskut basins.

The solid programme in the High Arctic continues under the auspices of the Terrain Sciences Division of the Geological Survey of Canada (GSC). The data from Meighen Island should be used with extreme caution. Weather conditions have prohibited visits to the lower elevations of the ice cap. However, the mass balance calculation program used extrapolates results to the lower stakes. It is possible that the margin of the ice cap has retreated and the lowest points are now on land. Once the status of the margin is established the data will be adjusted. The studies of White and Baby Glaciers on Axel Heiberg Island are now being continued by the Geography Department of Trent University (GDTU).

A mass balance study has been initiated on Tats Glacier in connection with a major mining development at Windy Craggy. In addition, plans are underway to remap many of the mass balance glaciers. The results may well necessitate a reappraisal of previously published data and possible adjustments to them.

Data on mass balance versus altitude are presented for the Devon Ice Cap from R.M. Koerner (GSC). A more complete record on mass balance versus altitude is available for White Glacier on Axel Heiberg Island (W.P. Adams, M. Ecclestone, P. Glenday, J. Weiss, GDTU). This record extends the one published previously but reflects the hiatus caused by the death of Fritz Müller and intermittent studies prior to the reactivation of the programme by Trent University (GDTU).

For the mainland, reports on mass balance versus altitude are included on the three IHP glaciers still under study - Peyto (G. Holdsworth, M.M. Brugman, T. Carter and A. Dalton, NHR), Sentinel and Place as well as for Helm Glacier (M.M. Brugman, T. Carter, O. Mokievsky-Zubok, NHR; J. Schmok, UBC). Processing of the most recent data has been delayed pending an analysis of topographic changes of the glaciers in question and a readjustment to the ice surface base.

U.S.A. (US)

Mass balance data for 15 glaciers in the U.S. are given in Tables C and CC. The addenda for Blue and Wolverine glaciers contain updated values. Mass balance measurements on Blue Glacier have been discontinued but the changing position of the equilibrium line is being observed using an automatic camera.

The investigators and their sponsoring agencies are:
Blue - R. Armstrong, R. Marriot and C. Raymond (UW); South Cascade - R.M. Krimmel (USGST); Wolverine and Gulkana - L.R. Mayo, R.S. March and D. Trabant (USGSF); Columbia, Daniels, Foss, Ice Worm to Rainbow, Watson and Yawning - M. Pelto (NC); Eklutna - T. Brabets (USGSA); West Gulkana - M. Marcus and F. Chambers (ASU).

Bolivia (RB)

A programme of mass balance measurements is being initiated on the glaciers Zongo and Chacaltaya in a Bolivian/French cooperative project (ORSTOM-COBEE 1992). First results are expected to become available for the Fluctuations of Glaciers 1990-95. Mass balance measurements are also being carried out in the Tres Cruces area by E. Jordan (ISPA).

Argentina (RA)

Mass balance measurements had to be discontinued in 1988, 1989 and 1990 due to lack of funds.

Greenland (G)

Index measurements on Qamanarssup Sermia are reported in Chapter 7.

Iceland (IS)

Glacier mass balance measurements have started on Hofsjökull N. Results from the second and third measurement year are assumed to be more reliable than those from the first year. The investigator is O. Sigurdsson (OS).

Norway (N)

Mass balance results are given for 17 glaciers in Table C. The individual investigators and sponsoring agencies are as follows: Aalfotbreen, Aalfotbreen E, Nigardsbreen, Austdalsbreen, Spoerteggbreen, Hardangerjoekulen, Hellstugubreen, Graasubreen, Svartisheibreen, Engabreen, Tretten-null-tobreen, Trollbergdalsbreen, Langfjordjoekulen - NVE; Storbreen - NPI; A. Okstindbreen - University of Aarhus, Denmark, in collaboration with NVE. Mass balance versus altitude data were submitted for Aalfotbreen, Nigardsbreen, Hardangerjoekulen, Hellstugubreen, Graasubreen, Engabreen, Storbreen and Storglombreen. J. Jania and coworkers (SUP) provided data on Hansbreen.

Results of glacier mass balance investigations in Svalbard are reviewed by Hagen and Liestøl (1990). Lefauconnier and Hagen (1990) give a statistical reconstruction of the Brøggerbreen mass balance for the past 77 years.

Sweden (S)

Data for five Swedish glaciers are given in Table C. The mass balance programme is organized by W. Karlén and P. Holmlund (both NGSU) and carried out by the Tarfala Research Group (NGSU). Tarfalaglaciären was investigated by Hakan Grudd, Rabots glaciär by Arjen Stroeven, Riukojietna by Gunhild Rosquist and Karsojietna by Axel Bodin. Tarfalaglaciären and Riukojietna are to a large extent built up by superimposed ice; special stake reading procedures and interpolation schemes are being applied. The balance years indicated may therefore differ from the actual measurement date. The same is true for the steep Karsojietna.

From 1990 on, the programme will be expanded by photogrammetrical and ground survey studies to cover 10 to 15 glaciers. During the period 1985-1990, mass balance studies were also carried out on SE Kaskasatjakkaglaciären (1985/86 - 1986/87) and on Björlings glaciär (1985/86). Data are available from NGSU but are not presented in this volume as there will be no continuation of these surveys.

France (F)

Information is given on the mass balance of Sarennes glacier which is being investigated by F. Valla (CEMAGREF).

Switzerland (CH)

Mass balance data for 3 Swiss glaciers are presented in Table C and mass balance versus altitude data for 2 of these in Table CCC. The investigators and their sponsoring agencies are as follows: Grosser Aletsch - M. Aellen (VAW); Gries, Silvretta - M. Funk (VAW).

For the Aletsch glaciers (PSFG Nos. 5, 6 and 106), whose measurements relate to a whole complex of about 3 dozen glaciers, mass changes are derived from hydrological balances for calendar months and hydrological years, using the equations and model described in earlier volumes. For Gries and Silvretta, the glaciological method is still being applied but on a stake network with the number of stakes reduced from several dozen to ten. A numerical model has been adopted for calculating the balance values (Aellen and Funk 1988). The same model applied to all former years of the respective series gave the revised values presented in Table CCC. For Gries and Limmern, mass changes will also be determined by the geodetic method based on aerial photographs which have been taken every year since 1985. Annual mass changes have been reconstructed for Rhone with respect to the period 1883 - 1987 by means of a climatological model (Chen and Funk 1990).

Austria (A)

Mass balance data for 5 Austrian glaciers are given in Table C and mass balance versus altitude for 3 of these in Table CCC. Summer balance at Vernagtferner is calculated as the difference between measured winter and annual balances. The investigators and sponsoring agencies are as follows: Hintereis- and Kesselwandferner - G. Markl, M. Kuhn of IMGUI, sponsored by Austrian Academy of Sciences; Vernagtferner - O. Reinwarth (CGBAS); Sonnblick Kees - H. Slupetzky (GIUS). Extensive reviews and discussions of the mass balance series measured at Sonnblick and Filleck Kees are given by Slupetzky (1989a, 1989b).

Italy (I)

Mass balance data for Caresèr are given in Table C and mass balance versus altitude data for the same glacier in Table CCC. The investigator was G. Zanon (DGUP). Data for Sforzellina Glacier (1986-90) are also given in Table C; the investigator was C. Smiraglia (CGI).

Kenya (KN)

Monitoring on Lewis glacier was initiated in 1978 (Hastenrath 1984) and is now into its 14th consecutive budget year: mass balance information was submitted by S. Hastenrath (UWDM) and is presented in Tables C and CCC. For the budget years 1985/86, 1987/88 and 1989/90, the ELA entries of 5,000 m a.s.l. indicate that the net balance was negative for all 50 m elevation bands (Table C). In the budget year 1986/87, only a small part of the glacier remained covered by snow.

U.S.S.R. (SU)

Mass balance data for 23 Soviet glaciers are given in Table C, and addenda for 2 glaciers in Table CC. Mass balance versus altitude data are given for 13 glaciers in Table CCC. The individual investigators are as follows: Djankuat - V.V. Popovnin (MGU); Garabashi - A.B. Bazhev, S.N. Kotlyarskiy and O.V. Rototayeva (IGAN); Tsentralniy Tuyuksuyskiy, Igly Tuyuksu, Molodezhniy, Mayakovskiy, Manshuk Mametova, Ordzhonikidze, Partizan, Zoya Kosmodemyanskaya, Visyachie 1-2 - K.G. Makarevich (IGKAN); No. 131, Suyok Zapadniy - A.N. Dikikh and Ye.K. Bakov (TSHFGS); Kara-Batkak - A.N. Dikikh(TSHFGS); Golubin - A.A. Ermolov (KGM); No. 356 - S.N. Ushnurtsev (IGAN); Shumskiy - P.A. Cherkasov (IGKAN); Maliy Aktru, Leviy Aktru, Praviy Aktru, No. 125 - Yu. K. Narozhniy (TGU); Kozelskiy - Ya.D. Muraviov (IVAN); No. 104 - D.Yu. Bolsiyanov (AANII).

Accumulation and ablation processes often take place simultaneously on Garabashi, Tsentralniy Tuyuksuyskiy, No. 131, Suyok Zapadniy, Kara-Batkak, Golubin, Maliy Aktru, Leviy Aktru, Praviy Aktru and No. 125. In these cases, accumulation/ablation data are total accumulation/ablation throughout the entire balance year rather than winter/summer balances. Refreezing of meltwater in cold firn below the seasonal snow layer is taken into account by subtracting its value from the measured ablation.

The balances of Igly Tuyuksu, Molodezhniy, Mayakovskiy, Manshuk Mametova, Ordzhonikidze, Partizan, Zoya Kosmodemyanskaya, Visyachie 1-2 were determined indirectly for the period 1985-90 using statistical correlations with data series measured on Tsentralniy Tuyuksuyskiy in the same valley. Data on Kara-Batkak are obtained by the direct glaciological as well as the hydrological method. Garabshi is part of a star-shaped glacier complex on Mt. Elbrus volcanic cone without clear upper and lateral boundaries.

India (IN)

Results of mass balance measurements are reported by K.V. Krishnamurthy, Geological Survey of India (GIS), for 4 glaciers. Addenda from earlier years are presented for 2 glaciers.

China (CN)

Mass balance data for Urumqihe S. No.1 are given in Table C. The main investigators are Wang Chunzu, Liu Chaohai and Yang Huian (LIGG).

Japan (J)

Mass balance data of Hamaguri Yuki - a glacieret in Japan - were sent by Y. Ageta of the Water Research Institute at Nagoya University (WRINU).

CHAPTER 5 - CHANGES IN AREA, VOLUME AND THICKNESS OF GLACIERS

5.1 The Data

Data relating to changes in area, volume and thickness of 28 glaciers are given in Table D for periods up to 1990. The limited amount of newly available information is explained by the short time period which has elapsed since the delayed publication of the "Fluctuations of Glaciers 1975 - 1980" in 1985. A list of the type of data tabulated and the units used can be found on the cover sheet of this table.

5.2 Sources of Data and Comments for the Various Countries

Canada (CD)

No further reductions of glacier volumetric data have been completed during the reporting period. However, the acquisition of total survey stations by the Cold Regions Research Centre at Wilfried Laurier University (WLU) and the National Hydrology Research Institute has resulted, or will result, in the resurveying of all original IHD glaciers in the southern transect across the Canadian Cordillera. Data on volumetric change of Ram River, Peyto, Woolsey, Sentinel and Place Glaciers should be available for the next volume.

U.S.A. (US)

Results from resurveying Wolverine Glacier in 1985 as reported by L.R. Mayo and D.C. Trabant of USGSF were used to recalculate past yearly mass balances (cf. Mayo et al., 1985, and Table CC).

Germany (D)

Data on the Blaueis, Höllentalferner, Nördl. and Südl. Schneeferner and Watzmann were submitted by H. Rentsch and O. Reinwarth (CGBAS).

Switzerland (CH)

The data presented for Gries (1979-1986) have been determined by means of a digital terrain model.

Austria (A)

Data on the Fernerstube, Vernagtferner, Gepatschferner, Grünauferner, Schlegeiskees, Sulzenauferner, Waxeggkees, Hornkees and Schwarzensteinkees were submitted by H. Rentsch and O. Reinwarth (CGBAS). Fernerstube is part of Sulzenauferner; general information for this glacier can, therefore, be found under the name Sulzenauferner.

Italy (I)

Data for Caresèr (1980-1990) were derived using digital models of the glacier surface obtained by analytical photogrammetry for the 1980 situation and directly by restitution for 1990. Calculations of volume changes are based on the area in 1980. Comparison with direct glaciological mass balance measurements gave a difference of less than 6% (cf. the thematic map presented by Giada and Zanon, in press).

Kenya (KN)

The following data on overall changes in area, volume and thickness were reported by S. Hastenrath (UWDM) for 11 glaciers with respect to the 1963-87 period. Melhuish glacier disappeared after February 1978, having lost since 1963 $9 \cdot 10^3$ m^2 in area, $81 \cdot 10^3$ m^3 in volume and 16 m in thickness over its entire surface. New maps of the region are included in the present volume and the corresponding text gives further data on changes in area, volume and thickness of Gregory and Lewis glaciers.

name	PSFG Nr.	area change	volume change	thickness change
Krapf	KN00001	26	625	18'000
Gregory	KN00009	40	627	9'000
Lewis	KN00008	109	3'554	12'000
Darwin	KN00006	19	432	13'000
Diamond	KN00010	10	126	18'000
Forel	KN00011	10	380	19'000
Heim	KN00012	1	277	16'000
Tyndall	KN00005	31	1'829	20'000
Cesar	KN00004	16	602	19'000
Joseph	KN00003	16	371	21'000
Northey	KN00013	18	500	25'000

Poland (PL)

Thickness and volume changes of two glacierets in the Tatra Mountains for the year 1989-1990 were determined by J. Jania and L. Kolondra from the Department of Geomorphology/Faculty of Earth Sciences at the Silesian University (SUP). Mieguszowiecki lost 14,100 m^3 in volume and 2.2 m in thickness; Plat Nat Mokiem lost 7,400 m^3 in volume and 4.4 m in thickness.

U.S.S.R. (SU)

Data for Djankuat (1968-1974 and 1974-1984) were submitted by V.V. Popovnin and Ye. A. Zolotaryov (MGU). They are derived from a digital terrain model based on 3 maps with a scale of 1:10,000, which were produced in 1968, 1974 and 1984 by terrestrial photogrammetry. The large deviations in area at altitudes above 3400 m a.s.l. for the 1974-1984 period are due to the migration of the ice divide on the flat firn plateau which redistributes ice flux to both slopes of the main ridge.

Data for Shumskiy Glacier as submitted by P.A. Cherkasov (IGKAN) represent changes observed on the main part of the glacier excluding the highest and steepest altitudinal belt between 3740 and 3442 m a.s.l.

Area losses in 1957-1980 are reported by V.G. Konovalov (UGM) to total 15.8% (344.4 km^2) for 23 glaciers within the Gissaro-Alai and 10.3% (761.4 km^2) for 16 glaciers in the Pamirs.

Pakistan (PK)

Data for 7 glaciers were received from W.Kick, Regensburg/Germany. These data mostly relate to the periods 1934 - 1958 - 1987.

CHAPTER 6 - SPONSORING AGENCIES AND NATIONAL CORRESPONDENTS FOR THE GLACIER FLUCTUATION STUDIES

6.1 General Remarks

The data in the present volume were supplied by national correspondents of the WGMS and individual glaciological workers. For administrative reasons, the number of correspondents per country must be limited to one. In each country, the national correspondent is responsible for co-ordinating the collection and submission of data with individual investigators. Individual glaciologists are therefore asked to use this "channel" for submitting their data. Only in extraordinary cases can the WGMS accept data which did not arrive via the national correspondent.

The tabulations in Tables A to F are intended to be useful to the glaciological community. However, these data should not be used uncritically; it would be advisable for users to consult the WGMS about the existence of extra, unpublished, archival material and to consult with individual investigators and sponsoring agencies. In order to facilitate contacts with the various bodies involved, a key to abbreviations used in the text for sponsoring agencies, together with their addresses and those of the national correspondents is given in the following section. In almost all cases it can be assumed that the data are held by the sponsoring agencies.

6.2 Sponsoring Agencies and Sources of Data for the Various Countries

Canada (CD)

- BCH
  B.C. Hydro
  Hydrology Department
  970 Burrard Street
  CD - Vancouver, B.C., V6Z 1Y3

- GDTU
  Geography Department
  Trent University
  P.O. Box 4800
  CD - Peterborough, Ontario, K9J 7B8

- GSC	Geological Survey of Canada Terrain Sciences Division 601 Booth Street CD - Ottawa, Ontario, K1A 017
- NHR	National Hydrology Research Institute Environment Canada 11 Innovation Boulevard CD - Saskatoon, Saskatchewan S7N 3H5
- RICKER	Karl E. Ricker Ltd. 868 West 11th Street CD - West Vancouver, B.C. V7T 2M2
- SRC	Snowline Research and Consulting #2304, 8805 Hudson Street, CD - Vancouver, B.C. V6P 4M9.
- UBC	Department of Geophysics and Astronomy University of British Columbia 1984 West Mall CD - Vancouver, B.C., V6T 1W5
- US	CARTEL Université de Sherbrooke 2500 boulevard Université CD - Sherbrooke, Québec, J1K 2RI
- WLU	C.C.R.C. Department of Geography Wilfried Laurier University 75 University Avenue West CD - Waterloo, Ontario, N2L 3C5

U.S.A. (US)

- ASU	Climatology Arizona State University US - Tempe, AZ 85281

- BPO	Byrd Polar Research Center Ohio State University 103 Mendenhall Laboratory 125 South Oval Mall US - Columbus, OH 43210-1308
- KFNP	Kenai Fjords National Park P.O. Box 1727 US - Seward, AK 99664
- NC	Nichols College US - Daedly, MA 01570
- UAF	Geophysical Institute University of Alaska US - Fairbanks, AK 99701
- USGSA	U.S. Geological Survey 4230 University Drive, Suite 201 US - Anchorage, AK 99508-4664
- USGSD	U.S. Geological Survey Denver Federal Center P.O. Box 25046, MS-412 US - Denver, CO 80225
- USGSF	U.S. Geological Survey Cold Regions Hydrology Project Office Federal Building P.O. Box 11 101 12th Avenue US - Fairbanks, AK 99701
- USGST	U.S. Geological Survey 1201 Pacific Ave Suite 450 US - Tacoma, WA 98402

- USGSV

U.S. Geological Survey
5400 MacArthur Blvd.
US - Vancouver, WA 98661

- UW

Geophysics Department
University of Washington
US - Seattle, WA 98195

- UWDM

Department of Meteorology
University of Wisconsin
1225 West Dayton Street
US - Madison, Wisconsin 53706

- WOF

W.O. Field
P.O. Box 583
US - Great Barrington, MA 01230

Venezuela (VZ)

- IVIC

Instituto Venezolano
de Investigationes Cientificas
Centro de Ecologia, Ap. 21827
VZ - Caracas 1020A

Colombia (CO)

- OVC

INGEOMINAS
Observatorio Vulcanologico de Colombia
Deformation and Glaciology Group
Av. 12 de Octubre No. 15-47
CO - Manizales

Peru (PE)

- EP

Electroperu S.A.
Sim Norte
Unidad de Glaciologia
Av. Confraternidad Internacional s/n
PE - Huaraz, Region Chavin

- HID	Hidrandina S.A. Av. Confraternidad Internacional s/n PE - Huaraz, Region Chavin

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Bolivia (RB)

- ISPA	ISPA University of Osnabrück/Vechta Immentun 31 D - 2848 Vechta 1

Chile (RC)

- BPRC	see BPRC - U.S.A

Argentina (RA)

- CADIC	Centro Austral de Investigaciones Cientificas Casilla de Correo 92 RA - 9410 Ushuaia, Tierra del Fuego
- CIIN	Centro de Investigationes Interdisciplinarias de Neuquen Rivadiria 153, 6B RA - 8300 Neuquen
- IANIGLA	Instituto Argentino Nivologia y Glaciologia CONICET Casilla de Correo RA - 5500 Mendoza
- UHG	see UHG - Germany

Greenland (G)

- GGU	Groenlands Geologiske Undersoegelser Geological Survey of Greenland Oster Volgade 10 DK - 1350 Copenhagen K

Iceland (IS)

- OS	National Energy Authority Hydrólogical Survey Orkustofnun Grensasvegi 9 IS - 108 Reykjavik

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Norway (N)

- NVE	Norwegian Water Resources and Energy Administration Glacier Division P.O. Box 5091, Mj. N - 0301 Oslo
- NPI	Norwegian Polar Research Institute P.O. Box 158 N - 1330 Oslo Lufthavn
- SUP	See SUP - Poland

Sweden (S)

- NGSU	Department of Physical Geography Glaciology Section University of Stockholm S - 106 91 Stockholm
- NFR	Swedish Natural Science Research Council Wenner-Gren Center P.O. Box 6711 S - 113 85 Stockholm

- SSAG	The Swedish Society of Anthropology and Geography c/o Department of Physical Geography University of Stockholm S - 106 91 Stockholm
- KVA	The Axel Hamberg Foundation The Royal Swedish Academy of Sciences P.O. Box 50005 S - 104 05 Stockholm
- CM	The Carl M:son Mannerfelts Foundation Skandinaviska Enskilda Banken S - 106 40 Stockholm

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Germany (C)

- CGBAS	Commission for Glaciology Bavarian Academy of Sciences Marstallplatz 8 D - 8000 Munich 22
- PK	Polytechnic Karlsruhe Moltkestrasse 4 D - 7500 Karlsruhe
- UHG	University of Heidelberg Geographical Institute Neuenheimer Feld D - 6900 Heidelberg

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France (F)

- CEMAGREF	Snow Division Ministry of Agriculture Domaine Universitaire, BP 76 F - 38402 Saint Martin d'Hères, Cedex

- CNRS	Laboratory of Glaciology and Environmental Geophysics (L.G.G.E.) Domaine Universitaire, BP 96 F - 38402 Saint Martin d'Hères, Cedex

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Switzerland (CH)

- GIETH	Institute of Geography ETH Zürich-Irchel Winterthurerstrasse 190 CH - 8057 Zurich
- VAW	Laboratory of Hydraulics, Hydrology and Glaciology ETH Zürich ETH-Zentrum CH - 8092 Zurich.

Austria (A)

- CGBAS	See CGBAS - Germany
- GIUS	Geographical Institute University of Salzburg Hellbrunnerstrasse 34 A - 5020 Salzburg
- IHMR	Institute for High Mountain Research University of Innsbruck Innrain 52 A - 6020 Innsbruck
- IMGUI	Institute for Meteorology and Geophysics University of Innsbruck Innrain 52 A - 6020 Innsbruck

	- OEAV	Oesterreichischer Alpenverein (Austrian Alpine Club) Wilhelm Greil Strasse 15 A - 6020 Innsbruck

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Italy (I)

	- CNR	Consiglio Nazionale delle Ricerche Istituto die Ricercha per la Protezione Idrogeologica nel Bacino Padano Strada delle Cacce, 73 I - 10135 Torino
	- CGI	Comitato Glaciologico Italiano Via Accademia delle Scienze 5 I - 10123 Torino
	- DGUP	Department of Geography University of Padua Via del Santo 26 I - 35100 Padova

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Spain (E)

	- DGOH/MOPT	General Direction of Hydraulic Works Ministry of Public Works and Transports E - Madrid
	- UAM	Departamento de Geografia Fisica Universidad Autonoma Canto Blanco E - Madrid

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Poland (PL)

- SUP	Department of Geomorphology University of Silesia ul. Bedzinska 60 PL - 41-200 Sosnowiec
- UMCS	Institute of Earth Sciences M. Curie-Sklodowska University ul. Akademicka 19 PL - 20-033 Lublin
- IMGW	Institute of Meteorology and Water Management Department of Hydrology and Meteorology of the Tatra Mountains ul. Sienkewicza 26c PL - 34 500 Zakopane

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Kenya (KN)

- UWDM	see UWDM - U.S.A.

U.S.S.R. (SU)

- AANII	Arctic and Antarctic Research Institute Bering Str. 38 USSR - 199266 Leningrad
- AGM	Azebeiijan Republic Hydrometeorology Dept. (Azergidromet) Rasul Rza Str. 3 USSR - 370601 Baku
- GGM	Georgian Republic Hydrometeorology Dept. (Gruzgidromet) David Agmashenebeli 150 USSR - 380012 Tbilisi

- IGAN	Institute of Geography Academy of Sciences of the USSR Staromonetny 29 USSR - 109017 Moscow
- IGKAN	Institute of Geography Academy of Sciences of Kazakh Republic Pushkin Str. 99 USSR - 480100 Alma Ata
- IVAN	Institute of Volcanology Academy of Sciences of the USSR Piyp Boulevard 9 USSR - 683006 Petropavlovsk Kamchatskiy
- KGM	Kyrghyz Republic Hydrometeorology Dept. (Kirghizgidromet) Karasuyskaya 1 USSR - 720403 Bishkek
- MGU	Moscow State University Geographical Faculty Leninskiye Gory USSR - 119899 Moscow
- SKGM	North Caucasian Regional Hydrometeorology Department Yerevanskaya 1/7 USSR - 344025 Rostov/Don
- TGM	Tadjik Republic Hydrometeorology Dept. (Tadjikgidromet) Shevchenko Str. 47 USSR - 734625 Dushanbe
- TGU	Tomsk State University Laboratory of Glacioclimatology Lenin Str. 36 USSR - 634010 Tomsk

- TFHFGS — Tien-Shan Physical Geography
Research Station
Academy of Sciences of Kyrghyz Republic
Pionerskaya 19
USSR - 722400 Pokrovka, Issyk Kul Region

- UGM — Uzbek Republic Hydrometeorology Dept.
(Uzbekgidromet)
Observatorskay Str. 72
USSR - 700052 Tashkent

- ZAKNII — Transcaucasus Hydrometeorological
Research Institute
David Agmashenebeli 150
USSR - 380012 Tbilisi

Remark: Names of sponsoring agencies are given as dictated officially by the state in 1991

Nepal (NP)

- WRINU — See WRINU - Japan

Pakistan (PK)

- WLU — See WLU - Canada

India (IN)

- GSI — Geological Survey of India
27, Jawaharlal Nehru Road
IN - Calcutta

China (CN)

- LIGG — Lanzhou Institute
Glaciology and Geocryology
Chinese Academy of Sciences
CN - Lanzhou

Japan (J)

- WRINU	Water Research Institute Nagoya University Chikusa-Ku J - Nagoya 464-01

Indonesia (RI)

- DGMU	Department of Geography and Environmental Science Monash University, Clayton AUS - Melbourne, Victoria 3168

New Zealand (NZ)

- DSIR	New Zealand Department of Scientific and Industrial Research 27 Creyke Road NZ - Christchurch

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Antarctica (AN)

- DSIR	See DSIR - New Zealand

6.3 National Correspondents of WGMS for Glacier Fluctuations

In the following list, full addresses are given only if they do not appear in Section 6.2; abbreviations therefore refer to those presented above:

Argentina (RA): L. Espizua, Instituto Argentino de Nivologia y Glaciologia, CONICET (IANIGLA)

Australia (AUS): I. Allison, Antarctic Division - Glaciology Section, Earth Sciences Building, University of Melbourne, Parkville, Vic. 3052. (for Antarctica)

Austria (A): G. Patzelt, Institute for High Mountain Research, University of Innsbruck (IHMR)

Canada (CD): C.S. Ommanney, Hydrological Sciences Division, Climate and Glaciers Project, Environment Canada, Saskatoon, Saskatchewan (NHR)

Chile (RC): G. Casassa, Byrd Polar Research Center, Ohio State University, Columbus, Ohio, U.S.A. (BPRC)

China (CN): Yang Huian, Lanzhou Institute of Glaciology and Geocryology, Chinese Academy of Sciences, Lanzhou (LIGG).

Colombia (CO): L. Guarnizo, Vulcanological Observatory of Colombia/INGEOMINAS, Glaciology Group, Manizales (OVC)

France (F): L. Reynaud, Laboratory of Glaciology and Environmental Geophysics, St. Martin d'Hères (CNRS)

Germany (D): O. Reinwarth, Commission for Glaciology, Munich (CGBAS)

Greenland (G): A. Weidick, the Geological Survey of Greenland, Copenhagen (GGU)

Iceland (IS): O. Sigurdsson, National Energy Authority, Reykjavik (OS)

India (IN): K.V. Krishnamurthy, Geological Survey of India (GSI)

Italy (I): G. Zanon, Department of Geography, University of Padua (DGUP)

Japan (J): Y. Ageta, Water Research Institute, Nagoya University, Chiku-sa-Ku, Nagoya 464-01

Kenya (KN): S. Hastenrath, University of Wisconsin, Madison, Wisconsin (UWDM)

Mexico (MX): H. Delgado-Granados, Instituto de Geofisica, Universidad Nacional Autonoma de Mexico, Circuito Cientifico, Ciudad Universitaria, Coyoacan 04510, Mexico, D.F

Nepal (NP): see Japan (J)

New Zealand (NZ): T.J. Chinn, Department of Scientific and Industrial Research, Christchurch (DSIR)

Norway (N): B. Wold, Norwegian Water Resources and Energy Administration, Oslo (NVE)

Pakistan (PK): W. Kick, Macheinerweg 35, D 84 Regensburg/Germany

Peru (PE): C. Portocarrero Rodriguez, Department of Glaciology, Electroperu (EP)

Poland (PL): M. Klapa, Department of Hydrology and Meteorology of the Tatra Mountains, ul. Sienkewicza 26c, 34500 Zakopane; now: ul. Jagiellonska 4d/5, 34500 Zakopane

Spain (E): E. Martinez de Pison, Department of Physical Geography, Universidad Autonoma, Canto Blanco, Madrid 34

Sweden (S): P. Holmlund, Department of Physical Geography, University of Stockholm (NGSU)

Switzerland (CH): M. Aellen, Laboratory of Hydraulics, Hydrology and Glaciology, Federal Institute of Technology, Zürich (VAW)

United Kingdom (GB): D. Collins, Department of Geography, University of Manchester, Manchester M13 9PL

U.S.A. (US): A.G. Fountain, U.S. Geological Survey, Denver (USGSD)

U.S.S.R. (SU): D.G. Tsvetkov, Institute of Geography, USSR Academy of Sciences (IGAN)

Venezuela (VZ): C. Schubert, Instituto Venezolano de Investigaçiones Cientificas (IVIC).

CHAPTER 7 AND TABLE F - **INDEX MEASUREMENTS AND SPECIAL EVENTS**

This chapter includes important information which does not fit into the standard format. The intention is to document:

- index measurements on glacier fluctuations in cases where more complex observations are not possible, especially in relation to remote glaciers (polar ice sheets) and glaciers which are systematically studied using reduced stake networks in combination with statistical considerations or flow calculations.

- information on special events which may concern hazards to human activities, such as glacier surges, outbursts of ice-dammed lakes, ice avalanches, drastic retreat of tidal glaciers due to calving instabilities or eruptions of ice-clad volcanoes.

Where no reference is made to the person who submitted the data sheet, the information was compiled by WGMS staff members. The PSFG number is given together with the name of each individual glacier.

7.1 Index Measurements

U.S.A. (US)

Black Rapids Glacier (US00222)

T.A. Heinrichs USGSF/UAF

Black Rapids Glacier is a surge-type glacier in the Alaska Range. It most recently surged in 1937. The U.S. Geological Survey and the University of Alaska have measured mass balance, ice velocity and thickness change at as many as ten index sites from 1973 to the present. The velocity has displayed unexpected fluctuations for a surge-type glacier. Below are data from two index sites (BN in mm water equivalent per year, annual flow velocities in m per year). The average equilibrium line altitude is 1850 m a.s.l.

site year	1510 m a.s.l. BN	1720 m a.s.l. BN	1720 m a.s.l. annual velocity
1973/74	-3630	-1950	--
1974/75	-2400	- 550	60
1975/76	-3010	-1090	52
1976/77	-2090	- 510	50
1977/78	-3170	-1380	47
1978/79	--	-1980	46
1979/80	-1980	- 110	52
1980/81	-2240	- 200	51
1981/82	-2740	- 970	55
1982/83	-2360	- 850	60
1983/84	-2320	- 600	61
1984/85	-2140	+ 160	66
1985/86	-2650	- 520	71
1986/87	-2770	- 720	72
1987/88	--	- 750	66
1988/89	--	-1400	60
1989/90	-3250	-1670	57

The complete data set will be available in 1992 in the U.S. Geological Survey Open File Report.

COLOMBIA (CO)

Ruiz (CO0001)

L.F. Guarnizo and J.Ramirez, OVC

Following the eruption and mudflow catastrophe of November 13th, 1985 (cf. Volume V, p. 57), observations started in 1987 on the southern part of the glacier Diablos Rojos and on the Nereidas glacier which is flowing down from the crater area of Nevado del Ruiz (cf. the enclosed map of the volcano and the explanatory text by R. Finsterwalder in Chapter 8 of the present volume). Pronounced surface lowering and ablation values up to 8.8 m per year were measured in 1987 and 1990. The ice margin of Diablos Rojos appears to be strongly retreating. The total area of glaciers covering the volcano is estimated at about 14.1 km^2 and seems to undergo a reduction of roughly 1% per year. Aerial photogrammetry indicates that individual glacier tongues descending from the summit area strongly retreated since 1945.

Reference/most important data source: Guarnizo and Ramirez (1991), E. Jordan and W. Linder (ISPA), unpublished data.

VENEZUELA (VZ)

Timoncito (VZ00001)

C. Schubert, IVIC

Accelerated melting and even complete vanishing of Timoncito Glacier (Pico Bolivar), Nuestra Senora (Humboldt-Bonpland Massif) and the glaciers of the Pico La Concha Massif in the Sierra Nevada de Mérida has been observed (Schubert 1992). More detailed information will be reported in the next volume of the Fluctuations of Glaciers.

Reference/most important data source: Schubert (1984, 1992).

PAKISTAN (PK)

Biafo Gyang (PK00001)

Index methods are used to roughly assess mass balance and mass flux. The glacierized part of the drainage basin with an area of 853 km^2 is 628 km^2. Annual accumulation rates at 4600 - 5450 m a.s.l. are estimated from snowpits to be 0.9 - 1.9 m water equivalent giving a total accumulation of about $0.6 \cdot 10^9 m^3$ per year. Total ablation as inferred from selected stake profiles amounts to about $0.7 \cdot 10^9 m^3$ per year and ice flux at the equilibrium line is calculated as $0.6 \cdot 10^9 m^3$ per year from surface velocity measurement (300 m/year) and radar data (cross sectional area ≈ 2 km^2).

Reference/most important data source: Hewitt 1990, Hewitt et al. (1989), Wake (1989).

GREENLAND (G)

Based on information from aerial photographs taken around 1950, major parts of the south-western Inland ice margin between 59°30' and 70°00' were estimated to be stagnant or receding, with the exception of ice connected to upland areas. An increasing number of reports and a new series of aerial photographs from 1985 reveal that areas of ice advance now have spread to wide parts of the lowland (Weidick 1991). Higgins (1991) determined flow velocities and calf ice production for a large number of North Greenland glaciers; large tabular icebergs are formed from the Inland Ice outlet glaciers in the North Greenland fjords (Higgins 1989). Recent fluctuations (1942 to 1985) of 72 West Greenland outlet glaciers were studied by Warren (1991) and Warren and Glasser (1992). During the investigated period, 84% of the land-terminating glaciers have been retreating or stable, whereas more than half of the tidewater and lake-terminating glaciers have been advancing. The observed patterns of change suggest that the land-terminating glaciers are predominantly controlled by variations in summer temperature and that calving dynamics have caused the other glaciers to respond to climatic change in a more complex way (cf. also Weidick 1991).

Qamanarssup Sermia (G 00003)

R.J. Braithwaite, GGU

Annual net balances (mainly ablation) are being measured as a function of altitude for balance years between 1 September to 31 August. Interpretation is based on a simplified version of the linear balance model (Llliboutry 1974).

Reference/most important data source: written communication R.J. Braithwaite.

Stake	Elevation m a.s.l.	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
1	110	-5.2	-5.3	-4.9	-4.7	-4.6	*	*	*
2	190	-4.4	-4.5	-4.9	-4.3	-4.3	-5.7	-5.8	*
3	320	-5.4	-5.9	-5.4	-4.9	-4.5	-5.7	-5.4	*
4	370	*	-6.3	-5.3	-4.7	-4.6	-6.0	-5.4	*
6	580	*	-3.9	-3.7	-3.4	-3.7	-5.0	-3.8	-4.7
7	680	*	*	-3.6	-2.7	-3.2	*	-3.5	-4.7
75	760	-3.5	-4.1	-4.6	-3.3	-3.1	-5.6	*	-4.9
751	790	-4.1	-4.7	-4.7	-3.7	-4.3	-5.9	-4.5	*
8	790	-3.1	-4.2	-5.1	-2.5	-3.2	*	*	*
9	910	-2.3	-2.5	-2.2	-2.2	-2.0	-3.0	-2.6	-2.8
91	880	-2.8	-3.9	-3.4	-2.7	*	-4.4	-3.7	*
93	940	-2.5	-2.0	-1.8	-0.8	-1.9	-2.7	-2.1	*
10	930	-2.5	-1.9	-2.1	-0.7	-0.8	-2.4	-2.3	-2.9
11	1000	-2.0	-1.4	-1.6	-0.6	-0.9	-2.3	*	*
12	1090	*	-2.0	-1.6	-0.9	-1.3	-2.5	-2.2	*
13	1200	*	-0.4	-0.3	0.8	0.4	-1.0	-1.0	-0.6
15	1410	*	-0.5	-0.3	0.4	0.3	-0.4	-0.6	-0.4
Index		-0.14	0.10	0.02	-0.83	-0.70	0.68	0.27	0.61
ELA		1470m	1490m	1510m	1250m	1250m	1600m	1580m	1600m

* = missing data

UGANDA (UG)

New investigations on the Ruwenzori glaciers and their secular shrinkage have been carried out by Kaser and Noggler (1991). It is hoped that data can be incorporated into the next volume of the Fluctuations of Glaciers.

7.2 Special Events

For the second time, a data sheet was used to compile information on extraordinary events, especially for cases concerning glacier hazards and dramatic changes of glaciers. The name indicated below the glacier refers to the person who compiled the data sheet and who should be able to furnish more information or appropriate contacts. If no author's name is given, the compilation of the data sheet was done by staff members of WGMS.

CANADA (CD)

Fyles (CD00689) glacier flood/mudflow

K. Ricker, RICKER

Ape Lake, which is dammed by Fyles Glacier, again drained by outburst flooding through a subglacial tunnel on 2 August, 1986. There have been several published studies of both the 1984 and 1986 events (cf. also the last Fluctuations volume). The second event occurred exactly one year after Ape Lake re-attained full pool level following drainage on 20 October, 1984. Because there were fewer obstacles to drainage, including a breached underwater moraine, the discharge of the 1986 event was greater than in 1984, producing higher down-valley water levels and washouts of more roadways and a second bridge, 35 km downstream. A logging camp and airstrip at oceanside, some 50 km distant, were temporarily flooded. Forest loss was slight compared to the 1984 event. The fjord of South Bentinck Arm received less surface debris which was pushed to the fjord head by NW winds. The sediment plume was confined to the fjord head by wind-driven currents; it is suspected that salinity decreases only occurred here as well. Further lake outbursts have not occurred because excessive recession of the glacier snout now allows lake drainage at a much lower level (around instead of underneath the snout).

References/most important data sources: Bornhold and Prior (1990), Desloges and Church (in press), Desloges et al. (1989), Desloges and Ryder (1990), Gilbert and Desloges (1987), Jones et al. (1985), Ricker (1985), Ricker and Ricker (1986).

Rockfall (CD01877) tectonic impact

J. Schmok, SRC

A large rockfall travelled over the surface of a decoupled tributary of Frobisher Glacier (St. Elias Mountains), informally called "Rockfall Glacier", in early July 1989. The rockfall mass with an estimated volume of some $2 \cdot 10^6 m^3$ travelled over horizontal and vertical distances of 3.6 and 1.2 km respectively, giving an average slope of 33% or 18^o. The source area is composed of vertically jointed gabbro recently exposed to deglaciation. The rockfall started dry but entrained snow and ice during travel to finish wet-based. A magnitude 5.6 earthquake, epicentred nearby on 11 July may have triggered this rockfall. The event was examined as part of an investigation of the impacts of rockfall loading on glaciers.

Reference/most important data source: J. Schmok (SRC: unpublished material).

Tim Williams (CD02055) tectonic impact

C.S.L. Ommanney, NHR

In early 1955 or 1956 a large rock mass (approx. $3 \cdot 10^6 m^3$) became detached between 2175 and 1850 m on a high slope which forms the east valley wall above the East Tim Williams Glacier in the Coast Mountains, B.C. The mass disintegrated as it moved down a steep colluvial slope to the glacier surface at an altitude of 1475-1525 m a.s.l. The blocky debris swept across the glacier on a NW bearing and collided with the west valley wall. The leading edge of the glacier ran up the slope about 100 m above the glacier surface and was deflected to the NE back onto the glacier. The debris front travelled a further 2.1 km and was partially deflected by a lateral moraine before coming to a halt. Horizontal and vertical distances from the top of the detachment zone to the northern extremity of the debris mass are 3.7 km and 935 m respectively, giving an average slope of 25% or 14^o. Field observations in 1989 indicate that the debris sheet is relatively thin (crevasses expose glacier ice at 1-3 m depth). The maximum thickness of debris is probably about 5-10 m. The debris sheet had been transported 1 km northward by the glacier since 1956. This movement, in combination with ablation of ice beneath the debris, has altered the surface morphology of the deposit.

Reference/most important data source: Evans and Clague (1990).

Unnamed 5155 (CD05155) tectonic impact

S. Ommanney NHR

North Creek is a tributary of Lillooet River, 20 km east of Mount Meager and 160 km north of Vancouver. No large-scale topographic maps exist for the site but comparison of pre- and post-failure airphotos indicates that approximately 1 to 2 $\cdot 10^6 m^3$ of fractured granodiorite or quartz diorite became detached from a steep slope at 1980 m a.s.l. and descended onto an unnamed glacier in 1986. The debris then travelled about 1 km before being deflected by a large Neoglacial lateral moraine, whereupon it followed a stream bed through a gap in a Neoglacial end moraine for a further 1.8 km before coming to rest at 1235 m a.s.l. The overall slope of the trajectory is calculated at 27% or 15°.

Reference/most important data source: Evans and Clague (1988).

Unnamed 5160 (CD05160) tectonic impact

S. Ommanney NHR

In March or April 1986, 0.5 to 1 $\cdot 10^6 m^3$ of Pleistocene rhyodacite fell away from the north peak of Mount Meager in the Mount Meager volcanic complex. The rock mass failed at 2130 - 2400 m a.s.l., and rapidly fragmented as it fell onto an unnamed glacier and flowed downslope. Much of the debris was stranded on the steep, highly crevassed surface of the glacier, between 2130 and 1780 m a.s.l. Some debris, however, flowed beyond the snout of the glacier, reaching an altitude of 1060 m a.s.l. With a total trajectory length of 3680 m, the overall slope is calculated at 36% or 20°.

Reference/most important data source: Evans and Clague (1988).

White (CD02340) glacier flood/mudflow

Y. Moisan, US

An outburst flood was observed at the snout of the White and Thompson glacier complex, Axel Heiberg Island, N.W.T. The flood began on 28 June 1990 and lasted for a few days. Discharge was estimated to be in the order of 40 m^3/s (high stage). Floating ice blocks were noted on several occasions (at a few days' interval) and were associated with a sudden increase in discharge. This event was an annual one in the early 1960s (cf. Maag 1967 and other Axel Heiberg Island Research Reports). However, this was the first time that the draining event had been observed so early in the melt season. More details are contained in Moisan (in preparation).

Reference/most important data source: Maag (1967), Moisan (in preparation).

U.S.A. (US)

Columbia 627 (US00627) calving instability

R.M. Krimmel, USGST

Following its onset in about 1983, drastic retreat of the terminus amounted to 5 km between 1983 and 1990. Average ice flow velocity near the terminus is now about 10 m per day and water depth at the calving front amounted to roughly 400 meters in 1990. The annual depression of the ice surface on the lower part of the glacier is close to 20 m per year and calving flux is approximately 5 km^3 per year.

Reference/most important data source: Krimmel (1992).

Hubbard (US01290) glacier flood/mudflow

L.R. Mayo, USGSF

A weak surge or pulse of the Valerie Glacier (tributary of Hubbard

Glacier) and a pulse of the Hubbard Glacier caused a rapid advance of the calving terminus in the spring of 1986. This advance, superimposed on a more gradual advance underway since at least 1895, dammed Russell Fjord and converted it temporarily into a large glacier-dammed lake. From June through September, this lake stored 5.7 km^3 of water. An outburst occurred on 8 October 1986, producing a peak discharge of 105,000 m^3/s into Disentchantment Bay, though causing no damage. Hubbard Glacier is expected to continue advancing and to dam Russell Fjord again. If the water level rises by 40 m, it will flood 60 km^2 of forest and then overflow into Situk River, as it did prior to 1860. The rich fishery production of Situk River is being studied by the Alaska Department of Fish and Game.

Reference/most important data source: Mayo (1986, 1987, 1989).

Muir (US01340) calving instability

W.O. Field, WOF

Observations on the fast retreat of the tidal glacier continued. In 1941, the calving front had receded about 22 km since 1892 and by 1982 further recession totalled 17 km. By the early 1980s the rapid recession up the deep water of Muir Inlet had ceased and the terminus appeared to have reached the head of the fjord in relatively shallow water. Its length was then about 20 km. Since then, there has been no appreciable retreat and some minor readvances. The most obvious change has been an increase in the formation of bars in front of the terminus and a consequent decrease in the rate of calving. This development, as occurred in some other inlets, may result in the terminus becoming non-tidal within a few years. Although the length of Muir Glacier has been reduced by more than half in the last century, the greatest change is its loss of volume. A rough estimate from Reid's U.S.Geological Survey topographic map of 1890-92 shows the height of the ice surface at the present position of the terminus as roughly 900 meters. The last picture of the now rather stationary terminus was taken from the air in June 1987.

Reference/most important data source: W.O. Field, written communication.

Peters (US00310) glacier surge

K. Echelmeyer, UAF

A surge of Peters Glacier, Mount McKinley, started in mid-winter 1986/87. The rate of advance of the surge front had a maximum value of about 110 m per day and the front travelled some 19 km from the Tluna icefall into the stagnant, debris-covered terminal lobe. Interestingly, the surge ended sometime in the late winter of 1987 and not in the ablation season as is often the case with other surging glaciers. The 1986/87-surge was probably less strong than previous surges as indicated by its final position relative to moraines from other surges. Drawdown in the upper reservoir region was 50 to 70 m. Sediment content of the river emanating from the glacier was 35 to 50 g/l during and 1.7 g/l after the surge. A large flood appears to have occurred near the time that the surge ended.

Reference/most important data source: Echelmeyer et al. (1987).

Tahoma South-L. (US02029) glacier flood/mudflow

C.L. Driedger, USGSV

Between 1986 and 1990, at least 12 debris flows travelled down the valley of Tahoma Creek from the terminus region of South Tahoma Glacier on the southwest flank of Mount Rainier. The debris flows range in discharge from a few m^3 per second to perhaps $10^6 m^3$ per second and travel as far as 7 kilometers downvalley destroying trails, a roadway and a picnic area. Water in these debris flows originates from high summer ablation rates as well as from prolonged and intense precipitation events. Some debris flow events may be initiated or enhanced by glacial outburst floods. Solids are derived from the collapse of oversteepened canyon walls in the proglacial area that are in part ice-cored. Single events occurred at Mount Rainier from the Kautz, Nisqually and Winthrop Glaciers during 1986 and 1988 although they were smaller in volume and less destructive to human facilities.

Reference/most important data source: Driedger and Fountain (1989), Driedger and Walder (1991).

West Fork (US00205) glacier surge

K. Echelmeyer, UAF

West Fork Glacier in the Central Alaska Range began a major surge in the late fall or early winter 1987. The surge continued until early July 1988 when it ended with a large flood of very turbid water in the terminal stream. Ice velocity was measured at two locations near the middle of the glacier using time-lapse photography. Speeds of up to about 14 m per day were recorded well after the surge front had passed the targets. Drawdown of the upper glacier was about 100 m with a somewhat greater inflation of the lower reaches. The surge front travelled downglacier to the stagnant, debris-covered terminal lobe, stopping near moraines from previous surges. During much of the surge, the river emanating from the glacier was free of turbidity; only near the later stages was it turbid. The pulse of turbidity which accompanied the termination of the surge had a strong signature in the Susitna River for at least 250 km downstream of the glacier.

Reference/most important data source: Echelmeyer and Harrison (1989), Harrison et al. (1992); several reports are being prepared by B. Benedict, E. Chacho, K. Echelmeyer, W. Harrison and C. Raymond.

PERU (PE)

Peck-Huascaran (PE00002) ice avalanche

A. Ames, HID

On 16 December 1987 at about 5 PM, a massive ice avalanche started from the west face of the north peak of Mount Huascaran. The origin is located on an ice cliff at an altitude of 6,400 m a.s.l. immediately above a roughly 700 m high rock wall - the same place as the starting point of the destructive 1962 and 1970 events. The volume released is estimated at $3.5 \cdot 10^6 m^3$ and the runout distance at 5.2 km. The debris was deposited at 3,600 m a.s.l., damming a small stream and causing a small flood 12 hours later. The average slope of the avalanche path is 54% or 28°. The flood caused some damage on the road from Huaraz to Caraz.

Another ice avalanche from the same place on 20 January 1989 at about 2 AM overran the deposits of the 1987 event and rushed down over a horizontal distance of roughly 15 km to the Santa River at an altitude of 2500 m a.s.l., giving an average slope of 26% or 14° to 15°. The volume could not be reasonably assessed and the damage on the road from Huaraz to Caraz was severe. No casualties were reported.

Reference/most important data source: A. Ames (internal report to Hidrandina HID).

CHILE (RC)

Information on three large floods at Dickson Glacier (eastern margin of the Southern Patagonian Icefield) in 1982/83 is given by Pena and Escobar (1983).

Soler (RC00024) glacier flood/mudflow

G. Casassa, BPRC

On 16 March 1989, a catastrophic flood occurred on Rio Soler, a river draining the eastern side of the Northern Patagonian Icefield. Chilean Government engineers flew over the area shortly after the event and reported that the flood was caused by the outburst of Laguna del Cerro Largo, a moraine-dammed lake at the head of Rio Soler between Nef and Soler Glaciers. Laguna del Cerro Largo receives meltwater and iceblocks from a small glacier lobe protruding from the Northern Patagonian Icefield. No casualties or damage were reported.

Reference/most important data source: Pena, H. (internal report, Direccion General de Aguas, Ministerio de Obras Publicas, Santiago, Chile).

Tronquitos (RC00029) glacier flood/mudflow

G. Casassa, BPRC

A large debris flow occurred on Rio Manflas on 14 May 1985. It originated at Tronquitos Glacier (officially "Rio Seco de los Tronquitos") and travelled downstream for 105 km to the Lautaro dam in northern Chile. According to field surveys, the phenomenon was caused by the sudden drainage of a subglacial lake due to or accompanied by the collapse of the glacier. Peak discharge at the glacier front was estimated at some 11,000 m^3/s. No damage was reported.

Reference/most important data source: Pena, H. and Escobar, F. (Aluvion del Rio Manflas, internal report, Direccion General de Aguas, Ministerio de Obras Publicas, Santiago, Chile).

ARGENTINA (RA)

Horcones Inferior (RA05006) glacier surge

H. Happoldt and L. Schrott, UHG

The flat tongue of Horcones Glacier is about 9 km long, 500 m to 700 m wide and about 4° steep. The extremely low activity of the glacier during the decades before 1985 had led to the development of a continuous debris cover averaging about 1 m thickness and exhibiting striking thermokarst features. During the early months of 1985, the surge started with a wave which rapidly moved downglacier and thereby reached a height of about 50 m. The extraordinary activity of the glacier caused a terminus advance by 600 m in one year (1986/87). In the course of this advance, the front of the surging glacier overrode the terminus of a debris-covered tributary glacier and incorporated part of it. During the surge, the glacier surface became intensely crevassed, rapid movement of the ice caused spectacular shear movements at the lateral moraines, and a terminal moraine was pushed ahead in one part of the tongue. After a total advance amounting to 700 m, the surge stopped in 1989. Since then, the relatively homogenous debris layer has reformed at the glacier surface.

Reference/most important data source: H. Happoldt and L. Schrott (written communication), cf. also the map of the glacier in the present volume.

Plomo (RA05007) glacier surge

L. Espizua, IANIGLA

The surge of the glacier as reported in the last volume was documented through analysis of Landsat imagery for 22 different dates between 1976 and 1986. The surge started sometime between 16 February 1984 and 4 April 1984. Between 4 April and 26 August, the advance amounted to 2 km. At the latter date, the surge front was already within 150 m of Roca Pulida. The frontal lobe of the glacier mainly broadened during the following months before reaching Roca Pulida in November 1984 and damming the Rio Plomo after a total advance of about 2.7 km. The existence of the dangerous ice-dammed lake came to a definite end in March 1985.

Reference/most important data source: Espizua and Bengochea (1990).

GREENLAND (G)

The outburst of an ice-dammed lake in 1984 between Steensby and Ryder glaciers (North Greenland) is described by Henriksen (1986) and the (probably) northernmost surging glacier (Brikkerne Gletscher) was located during geological mapping of North Greenland (Higgins and Weidick 1988). Field work in 1990 drew attention to a surge-like advance by more than 10 km of Storstrommen, northeast Greenland, during the years from 1978 to 1984, making this the largest observed front advance in Greenland (Bøggild et al., in press)

Unnamed 12 (G00012) glacier flood/mudflow

A. Weidick, GGU

The large ice-dammed lake Ilulialik (61°07'N/46°14'W) at the Inland Ice margin emptied in 1987/88. The lake level had been 465 m a.s.l and the lake surface about 7 km^2 before the event. The Inland Ice margin in this region had been thinning constantly since about 1870. The outburst began in December 1987 but seems to have continued in a stepwise manner until March 1988, when the lake was almost empty. The dropping of the lake level by 50 to 100 m caused an estimated total water loss of 0.25 to 0.5

km^3. The lake appeared to be in a process of filling up again in 1989. Large ice-dammed lakes with periodical outbursts are known from other areas in Greenland as well. The case of Ilulialik, however, seems to be the first reported case of a sudden and practically complete change in drainage conditions within such a large lake.

Reference/most important data source: Vejlemand (1990).

Unnamed 13 (G00013) glacier flood/mudflow

A. Weidick, GGU

Extraordinary meltwater discharge from the Inland Ice took place at the Søndre Strømfjord air field in late January 1990. The flow continued for three weeks despite air temperatures remaining consistently below $-30^{\circ}C$. The event must be connected to the release of sub- or englacial water reservoirs previously stored at high pressure near the ice margin.

Reference/most important data source: Russell (1990).

ICELAND (IS)

Breidamerkurjökull E.A. (IS01126) glacier flood/mudflow

O. Sigurdsson, OS

An outburst flood (Jökulhlaup) from Vedurardalur occurred in July 1987. The total volume is estimated at $10^8 m^3$ and peak discharge/sediment load are unknown.

Reference/most important data source: Sigurdsson (in press).

Bruarjökull (IS02400) glacier flood/mudflow

O. Sigurdsson, OS

Glacier floods (Jökulhlaups) took place in August 1986 and in July 1987. In 1986 total volume was $38 \cdot 10^6 m^3$, causing a peak discharge of about

680 m^3/s and in 1987 total volume was 20 $\cdot 10^6 m^3$, causing a peak discharge of about 380 m^3/s. Sediment loads are unknown in both cases.

Reference/most important data source: Sigurdsson (in press).

Eyjabakkajökull (IS02300) glacier flood/mudflow

O. Sigurdsson, OS

Outbursts of the glacier-dammed lake Haoldulon caused flooding in 1986 and 1988. In 1986, total volume was 19 $\cdot 10^6 m^3$ causing a peak discharge of about 280 m^3/s and in 1988, total volume was 15 $\cdot 10^6 m^3$ causing a peak discharge of about 275 m^3/s. Sediment loads are unknown in both cases.

Reference/most important data source: Sigurdsson (in press).

Mulajökull S. (IS00311) glacier surge

O. Sigurdsson, OS

The glacier surged in 1985-1987 and was especially active in May 1986. The total advance amounted to 335 m at the measured site but the advance speed was not recorded and the dates of onset and termination are unknown. Previous surges had taken place in 1954, 1966 and 1972.

Reference/most important data source: Rist (1987).

Skeidararjökull E.3 (IS00117) glacier flood/mudflow

O. Sigurdsson, OS

An outburst flood (Jökullhlaup) from Lake Grimsvötn in an active subglacial caldera of Vatnajökull Ice Cap started on 22 August and ended on 17 September 1986. The total outburst volume was 1.2 $\cdot 10^9 m^3$, causing a peak discharge of 2,000 m^3/s and carrying a total sediment load of about 9 $\cdot 10^6$ tons.

Reference/most important data source: Kristinson et al. (1986).

Skeidararjökull (IS00116) glacier surge/floods

O. Sigurdsson, OS

The glacier surged in 1985-1986 after a previous surge in 1929. The total advance amounted to 450 m but the advance speed was not recorded and the dates of onset and termination are unknown. Only the westernmost part of the 20 km wide glacier front was active.

Annual outburst floods (Jökullhlaups) from the glacier-dammed lake Graenalon usually take place in August. Total outburst volume is around 500 $\cdot 10^6 m^3$ causing peak discharge values of about 2,000 m^3/s.

Reference/most important data source: Rist (1987), Björnsson and Palsson (1989).

NORWAY (N)

A map giving the location of surge-type glaciers in Svalbard is presented by Dowdeswell et al. (1991); the same authors also discuss the long surge durations observed in this region.

Baklibreen (N 31013) ice avalanche

H. Elvehøy, NVE

Baklibreen is a small outlet glacier on the eastern side of the Jostedalsbreen Ice Cap. In August 1986, a regenerated glacier with an area of approximately 4,000 m^2 produced an ice avalanche into the Krundalen Valley, thereby killing three people. The avalanche with an estimated volume of 100,000 m^3 started on a slope of about 30^o, descended a vertical distance of 500 to 600 m with a runout distance of some 800 m and an overall trajectory slope of approx. 70% or 35^o. Eye witness observations seem to indicate that the entire ice mass broke off at once. Measurements of mass balance and flow velocity were initiated in 1987. From a comparison of mass balance and emergence velocity, it was concluded that the ice volume was growing again.

Reference/most important data source: T. Laumann (internal NVE report), Ellvehøy and Haakensen (1992).

SWITZERLAND (CH)

An extensive study was carried out on debris flows which occurred during the 1987 flood catastrophes in the Swiss Alps (Haeberli et al. 1990a, 1991). A great number of and especially the most voluminous debris flows had taken place in the periglacial belt and affected morainic terrain which had become glacier-free since the past century. A state-of-the-art report on ice avalanches and debris flows in the Alps was prepared for a national research programme on climatic changes and natural catastrophes (Haeberli 1992a).

Eiger (West) (CH00353) ice avalanche

Ice avalanches repeatedly occur at a steep hanging glacier in the west face of Eiger. On behalf of the Jungfraujoch railroad company, a large event was monitored in spring 1990 by continued electronic distance measurements to a set of stakes/reflectors installed near the vertical cliff at the front of the glacier. As in other comparable cases, a hyperbola-like function of flow acceleration was observed and helped predict the main event: the prediction was made for 9 August and the avalanche happened on 20 August. Analysis of stress distribution within the glacier using the finite element method gave maximum break-off volumes smaller than $10^6 m^3$ as long as the geometry and thermal properties of the glacier do not change dramatically. A concept of long-term observations is being developed in view of possible effects of warming trends.

Reference/most important data source: Internal VAW report.

Gruben (CH00352) glacier flood/mudflow

Observation and photogrammetrical analysis of glacier fluctuations and the evolution of periglacial lakes continue in connection with protection work against outburst floods of ice-dammed lake 3. The period of mass gain and advance of the glaciers came to an end in the mid-1980s and a strong tendency of glacier shrinkage can now be observed; the number and geometry of the investigated lakes change accordingly. The stability of the proglacial lake 1 with its retention capacity has been of some concern, because the permeability of its morainic dam seems to increase. Melting of dead ice and/or permafrost could be the reason for this development.

Reference/most important data source: Internal VAW reports.

Minstiger (CH00164) glacier flood/mudflow

At around noon on 24 August 1987, a debris flow passed through the village of Münster (Valais). About 20,000 m^3 of morainic material had been removed from a steep couloir which had been set free by Minstigergletscher - the main glacier of the valley - during the last few decades only. Comparable debris flow events are not known from historical sources at this locality. The deposits filled the channel of the river Minstigerbach within the village. The precipitation-induced discharge peak which occurred during the following night spread sediments and debris across parts of the village. The total costs of repair exceed SFr. 20 million. A sediment-retention structure is now installed immediately above the village in order to protect it against similar occurrences in the future.

Reference/most important data source: internal VAW report, cf. also Haeberli et al. (1990a, 1991).

Tschierva (CH00093) tectonic impact

J. Schweizer, VAW

On October 1988, shortly before midnight, a rockfall occurred at Piz Morteratsch (Bernina Group, Eastern Swiss Alps). About 300,000 m^3 of rock material broke off at about 3250 m a.s.l. from a steep and probably permafrost-containing rock wall exposed to the west. The rock mass may have incorporated some scree from the slope below the starting zone and came to rest on Tschiervagletscher at about 2700 m a.s.l. The deposits were estimated to be 1 to 3 m thick and showed clear margins; the largest individual blocks had volumes up to 200 m^3. The average slope of the 1 km long runout path is 29°. A sensitivity study using the finite element method was performed to investigate possible effects of the slide on the dynamic behavior of the glacier. The additional load (about 5%) will probably have a minor influence only for the length variation of the glacier tongue. Periodic aerophotogrammetrical monitoring is planned for observing the future development.

Reference/most important data source: Schweizer (written communication), Haeberli et al. (1990b).

ITALY (I)

Belvedere (I 00325) glacier flood/mudflow

A new outlet structure for Lago delle Locce was completed. The advance of the calving front at the old outlet structure seem to have come to an end. On the lower reaches of Ghiacciaio del Belvedere, the maximum of glacier surface rising also seems to have been reached. However, the orographic right tongue of the glacier continues to override the historical lateral moraine, to destroy trees and to deposit debris and large rocks on the ski run.

Reference/most important data source: W. Haeberli, G. Mortara; unpublished material.

Coolidge (I 01420) ice avalanche

G. Mortara, CNR

An ice avalanche involving about 200,000 m^3, i.e., a considerable part of the small niche glacier, occured on 6 July 1989 from Coolidge Glacier on the northern side of Monviso. Detachment of the ice mass took place along a crevasse which was roughly parallell to the bergschrund and which had already been visible in the years before the event. The glacier bed underneath the detached ice mass remained covered by thin ice and the average inclination of the shearing plane is close to an astonishingly low 30% or 15^{o}- considerably lower than slopes observed with other ice avalanches from Alpine glaciers (cf. Alean 1985). The descending ice mass, having plunged over a vertical distance of 935 m, swept up a considerable amount of morainic debris. A surface area of more than 250,000 m^2 was covered with a layer of ice, snow and debris, in places 8 to 10 m thick. The avalanche travelled uphill on the opposite side of the valley reaching a height of 50 m above the valley floor. A small lake was partially filled and a seismograph located at a distance of 20 km from the site clearly recorded the avalanche shock. With a runout distance close to 1 km, the overall slope of the avalanche trajectory was about 90% or 40°.

Reference/most important data source: Dutto et al. (1991).

U.S.S.R. (SU)

Bogatyr (SU05111) glacier surge

I.Ja. Fedulov, IGKAN

During 1965-1983, the glacier retreated at an average rate of 40 m per year and its surface lowered by 3 to 3.5 m per year. Surface rising, flow acceleration and crevasse formation started in 1983-1985 but the glacier front still remained immobile. Thereafter, the surging glacier advanced by 400 m in 1985-1986, by 300 m in 1986-1987 and by 200 m in 1987-1990. This advance of the median branch dammed the left branch of the glacier, which now showed surface rising by 30 to 50 m and started surging as well.

Reference/most important data source: Kazanskiy and Fedulov (1990).

Medvezhiy (SU04040) glacier surge

G.B. Osipova and D.G. Tsvetkov, IGAN

The glacier in the West Pamirs surged again in 1988-1989. Observations included eight airphoto flights and terrestrial measurements of front movements from January to July at two-day intervals. Between August 1987 and 21 June 1988, the surface of the upper 5.5 kilometers within the surging part lowered significantly and numerous crevasses appeared. Through the summer months, the glacier rather slowly advanced 20 m to

25 m; its tongue increased in thickness by an average of about 20 m with a simultaneous lowering of the surface by 6 m in the upper reaches. By spring 1989 (March/April), the entire glacier tongue had become heavily crevassed and the now 30 to 40 m high glacier front started to advance at a rate of 1 to 2 m per day. The advance velocity accelerated to 15 m per day at the end of May and on 20 June reached its maximum with about 50 m per day. The surge ended suddenly in June 1989 after a total advance of 1,100 m. Drawdown in the upper reservoir region was about 50 m and the corresponding surface rise in the lower part of the glacier about 180 m. During the surge, Abdukagov River was dammed to form a lake with a volume of about $5 \cdot 10^6 m^3$. Outburst of the lake caused a peak discharge of (only) 100 m^3/second. The surge and lake outburst were thus less dramatic than in 1963 and 1973, and this time had no catastrophic consequences.

Reference/most important data source: Osipova et al. (1990).

PAKISTAN (PK)

Bualtar (PK00004) tectonic impact glacier surge

K. Hewitt, WLU

Catastrophic landslides (rock avalanches) descended onto the ablation zone, 2960 - 3250 m a.s.l., some 8 km above the terminus of the glacier (sometimes known as Hopar), between 29 and 31 July 1986. An area of about 4.1 km^2 was covered with about $20 \cdot 10^6 m^3$ of rock debris. A surge was first noticed by villagers in January 1987 in the region of the rockslide debris. This rockslide debris had been carried downglacier by mid-August. Measured rates of movement had increased from 0.6 to 0.8 m/day in summer 1986 to around 7 m/day in July 1987 (maximum rates may have been missed). Most stakes were lost in the breakup and severe crevassing of the surface ice. The ice had thinned as much as 20 m in and several km above the area of rockslide deposits. At the head of this zone, high ice cliffs developed along transverse crevasses near the base of the major icefall. By late summer these cliffs had practically disappeared. The glacier below the rockslide area thickened everywhere as compared to 1986. Sheared-off pieces of ice were left clinging to the valley sides many meters above the ice surface for up to one kilometer as well as within and above the rockslide area, indicating temporary thickening: a wave of maximum thickening probably propagated downglacier representing the passage of the main surge. Vertical ice cliffs 5-10 m high developed at the glacier margins and the ice was grooved by margin boulders and rock outcrops. Several marginal lakes formed and drained suddenly. Reports from villagers suggest that the terminus advanced by several hundreds of meters. Moreover, the glacier appears to have made another surge with acceleration of flow and breakup of the glacier surface much like in 1987. The exact relation between the rockslide and the surge-type behavior of the glaciers remains uncertain.

Reference/most important data source: Hewitt 1986, Gardner and Hewitt 1990.

Hispar (PK00011)

K. Hewitt, WLU glacier surge

Pumarikish, a right-bank/north-flank tributar entering the Hispar at 3,800 m a.s.l. seems to have surged. This tributary had been observed in 1985 to be strongly wasted in its lower reaches remaining below the level of the main glacier which was bulging into the upper part of the junction. In 1990 Pumarikish had thickened above its old lateral moraines and pushed well across the Hispar valley, squeezing the main glacier against its southern flank and forming a third to half the width of the glacier in this section. No measurements are available.

Reference/most important data source: K. Hewitt (based on personal communications).

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CHAPTER 8 - **THE ANNEXED MAPS**

The following 14 maps can be found in the pocket at the back of this volume. A brief description of each map with information regarding the purpose of the particular map, its accuracy, and details of the surveying, cartography and reproduction, is added in this chapter. The maps and glaciers concerned are:

1. Nevado del Ruiz, Colombia
2. Cordillera Real North, Bolivia
3. Horcones Inferior glacier, Argentina
4. Rabots glaciär, Sweden
5. Tarfala, Sweden
6. Oedenwinkelkees, Austria
7. Schmiedingerkees, Austria
8. Vernagtferner 1889, Austria
9. Vernagtferner 1979-1982, Austria
10. Vernagt- and Guslarferner 1990, Austria
11. Mount Kenya
12. Lewis and Gregory glaciers
13. Langtang Himal East
14. Langtang Himal West

Explanatory texts were unfortunately not received for the two Langtang Himal maps provided by G. Patzelt of the Institute for High Mountain Research in Innsbruck (IHMR). The references cited in the texts can be found in the general reference list at the end of Chapter 9.

With regard to the Cathedral Massif Glacier map included in Volume V, it should be noted that absolute elevations must be reduced by 220 m ± 10 m in order to adapt the map to the official Canadian geodetic net. Relative altitudes remain correct.

* * *

NEVADO DEL RUIZ, COLOMBIA, 1:12,500

(Colour orthophoto map)

R. Finsterwalder, Institute of Cartography and Reproduction Technology,
Technical University of Munich

The glacierized volcano Nevado del Ruiz reaches an altitude of 5311 m a.s.l. and is situated in the Cordillera Central in Colombia. On 13 November 1987, the volcano erupted causing a flood in which over 20,000 people lost their lives (cf. Volume V). Since then the glaciers in the Ruiz region have been the subject of intense scientific research.

Part of this research programme entails the creation of a large-scale map of the region, in order to document the state of the volcano since the eruption and to show the changes the eruption has brought about. In addition, the map will also serve as the basis for future investigations, for example, as a reference system for measurements of ice thickness. The map was produced as a colour orthophoto map in order to offer optimum potential for interpretation.

Aerial photographs taken on 19 January 1987 with a wide-angle lens camera (15/ 23) using standard Agfa slide film provided the basis for cartographic representation. The photographs were taken at a height of 4000 m above ground (photo scale about 1:27,000). Six photos from the flight were chosen to represent the area to be mapped, totalling 7.5 x 10 km^2. The state-of-the-art method of digital image processing was used to produce the orthophoto. The six photographs were scanned to a pixel size of 0.025 mm and colour separation runs for black, red, blue and yellow carried out. Geometric rectification and radiometric matching were conducted out digitally on a mainframe computer using a program developed at the Institute of Photogrammetry at the Technical University at Munich.

Cartographic editing included the drawing of contour lines at 25 m intervals (blue in the glacial area and black elsewhere), positioning of relative elevations, addition of text and design of the map frame. The map, which is probably the first ever colour orthophoto map of a glacier, was printed on glossy paper in black, red, blue and yellow.

CORDILLERA REAL NORTH, BOLIVIA, 1:550,000

(Aerial photogrammetric map)

R. Finsterwalder, Institute of Cartography and Reproduction Technology, Technical University of Munich

This map sheet covers the most intensely glacierized part of the Cordillera Oriental (Cordillera Real) in Bolivia around the two mountain peaks Illampu (6368 m a.s.l.) and Jankhouma (6427 m a.s.l.). C. Troll and E. Hein had already surveyed this area in 1928 by means of terrestrial photogrammetry during a climbing expedition of the German and Austrian Alpine Club. Aerial photography has now been used to repeat the exercise and the area's glacial features have been comprehensively mapped. On this basis, the extent of glacial retreat in the region since 1928 can be quantified. In addition to furnishing such glaciological information, this map can also be used by mountain climbers and was thus included in the so-called "Alpine Club Map" series.

The geodetic basis for the mapping was produced by means of aerial triangulation which was based on the trigonometric points used for the triangulation of Bolivia as a whole. In order to achieve a standard level of elevation, trigonometrically and photogrammetrically determined points from the 1928 project were also included. Photogrammetric interpretation was performed primarily by using aerial photographs taken in 1963 (photo scale 1:35,000) at the Institute of Cartography and Reproduction Technology of the Technical University of Munich. Cartographic editing was done at the same institute. The map was produced in the Alpine Club map style which entailed the retention of contour lines in rocky areas.

Glaciological analysis:

A comparison of the map compiled in 1928 with the new map showing the situation in 1963 makes it possible to determine changes in the elevation of glacier tongues as well as in glacier length and surface area. In addition, the elevations of the snow lines for five large glaciers in the region have also been identified (Finsterwalder 1987). The same parameters can be compared for the period 1963 to 1975 from additional cartography of these glaciers using photographs taken during a flight in 1975 (Jordan 1991). The interpretation of aerial photographs taken in 1983 gave the same parameters for a further five glaciers in the Cordillera Real near Illimani (6438 m a.s.l., Finsterwalder 1990), so that glacier retreat in the Cordillera Real is well documented for the years 1928 to 1983. Average values are as follows:

Time period	1928-1963	1063-1975	1975-1983
Change in length	- 197m	- 39m	- 32m
Change in tongue elevation	+ 60m	+ 12m	+ 15m
Change in area (percentage)	- 7.5%	- 0.6%	- 0.4%
Change in snow line elevation	+ 72m	+ 6m	+ 3m

In comparison with glaciers of the Eastern Alps in Europe, these figures reveal that

- changes of glaciers in the Bolivian Andes may have been less pronounced, and

- the general glacier advance observed in the European Alps during the 1970s did not occur in the Bolivian Andes where there has only been a deceleration in the rate of retreat.

* * *

ACONGAGÚA SE-WALL AND HORCONES-INFERIOR-GLACIER 1:25,000

(Aerial photogrammetric map)

G. Hell and S. Lamprecht, Department of Cartography,
Karlsruhe Polytechnic

The map was prepared within the framework of a geomorphological and glaciological research project sponsored by the "Deutsche Forschungsgemeinschaft". The basic information available consisted of:

- aerial photographs of the "Instituto Foto-Topographico Argentino" from 1974 at a scale of about 1:50,000:

- eight control points surveyed in 1988 during the field campaign.

Stereocompilation and cartographic work were carried out as a final project at the Institute for Photogrammetry and Cartography at the Karlsruhe Polytechnic. For this sheet, 10 models from 2 strips were needed altogether. Compilation was done with an analytical plotter Planicomp C 100 at the scale of 1:12,500. The accuracy achieved for marked points is better than ± 10 m. The reason for the fact that results are not optimal lies in the small scale of the pictures and the unfavourable distribution of the control points.

Special attention was paid to the presentation of geomorphological forms. The design work was done at the scale of 1:12,500, so that the sketch was also a basic map for the geomorphological fieldwork. Representation of the rocks was carried out in the manner established by Brandstetter. Thus, the contour lines contain the most important information and the presentation of the rocks is only an additional supporting element.

Printing was done at the Department of Cartography of the Karlsruhe Polytechnic.

* * *

RABOTS GLACIAER, KEBNEKAISE MASSIF (NORTHERN SWEDEN), 1:10,000 AND TARFALA 1990, NORTHERN SWEDEN, 1:10,000

(Aerial photogrammetric maps)

P. Holmlund, Department of Physical Geography,
University of Stockholm

In a programme combining touristic and scientific interests, a map at a scale of 1:10,000 was prepared. The datum level was surveyed in August 1979 and aerial photographs of the glacier were taken on August 18, 1980, from an altitude of 4,600 m a.s.l. Field controls were carried out in 1985 and 1986. A tourist map covering the entire massif was prepared at a scale of 1:20,000. This tourist map is named "Högfjällskartan, Kebnekaise" and is commercially available. In addition, another map at a scale of 1:10,000 covering the Tarfala basin was also constructed. The Tarfala map was published in Geografiska Annaler 1987, (67A (3-4)). In 1992, a new map was constructed for the Tarfala basin. Simultaneously, another map was prepared based on aerial photographs taken in 1959. Both these new maps are based on the 1979-1980 geodetic survey. The scientific purpose of the project is to monitor changes of the glaciers and to interpret them from a climatic point of view. The area was covered by aerial photography in 1949, 1959, 1969, 1980 and 1990. However, Rabots glaciär is not on the 1969 images.

* * *

OEDENWINKELKEES - GLACIER FOREFIELD, AUSTRIA 1:10,000

(Colour orthophoto map)

J. Aschenbrenner and H. Slupetzky, Institute of Geography,
University of Salzburg

The forefield of the Oedenwinkelkees in the High Tauern Range of the Austrian Alps was mapped in 1988 by S. Uhlirz, Vienna, at a scale of 1:10,000 (cf. Slupetzky et al. 1989). The present orthophoto map was prepared on the basis of aerial photographs from 1982, field investigations by H. Slupetzky and L. Mauelshagen as well as terrestrial surveys of the glacier margin in 1987. In order to reproduce the effect of natural illumination, the map is oriented towards the south (cf. Aschenbrenner 1992). Users of the map commonly approach the glacier from the south (Rudolfshütte) as well.

The main cartographic elements are depicted using the following colours:

black:	map frame with Gauss-Krüger coordinates (Austrian UTM system), survey points, rock edges, contour lines in bedrock with altitudes, writings
gray:	orthophoto
red:	buildings, trails of the Alpine Club with numbers
sepia:	debris (especially morainic ridges), contour lines with altitudes, pines
green:	vegetation
ice-green:	glaciers with contour lines and altitudes
blue-green:	glacier trail with information stops, moraine dates, ice margin in 1987
cyan:	hydrography

The topography of the glacier forefield and of the valley trough is composed of various elements depicted at a lower density than on conventional maps. The contour-line intervals are 20 m with some intermittent 10 m-intervals in the forefield. Bedrock representation is limited to edges and only the most essential debris structures are marked with special signatures.

Within the moraine from the 1850 maximum extent of the Little Ice Age, two moraine ridges exist in the glacier forefield, dating from about 1900 and 1925, respectively. Between 1850 and 1987, the glacierized area was reduced from 3.7 to 2.1 km^2 and the glacier lost 1.6 km in length. Glacier length reduction was 300 m between 1960 and 1990. Since 1986, the mean rate of tongue retreat slowed down to a few meters per year.

* * *

SCHMIEDINGERKEES - KITZSTEINHORN, AUSTRIA 1:5,000

(Aerial photogrammetric map)

H. Slupetzky, Institute of Geography, University of Salzburg

The map depicts the glaciers around the Kitzsteinhorn (3202 m a.s.l.) in the northern Glockner group within the High Tauern Range of the Austrian Alps. The largest glacier on the map is Schmiedingerkees (1.63 km^2) on the northern slope of Kitzsteinhorn, followed by (Stubacher) Maurerkees (0.52 km^2) in the southwest, Kammerkees (0.17 km^2) in the east and by the small Winterkartl (0.03 km^2) near Maurerkogl (2995 m a.s.l.). Schmiedingerkees is the northernmost glacier in the central Alps.

Production of the map aimed at (1) enabling comparison with earlier large-scale maps of Schmiedingerkees from 1953, 1962, 1967 and 1969 (Austrian glacier inventory); (2) furnishing a topographic basis for the Tauern Power Company and the Kaprun Glacier Transportation System; (3) presentation of the intensely-used glacier area; and (4) documentation of Schmiedingerkees and the glaciers mentionned elsewhere for analysing future changes. The maps of 1967 and 1982 cover a general growth period of Alpine glaciers.

Aerial photography was taken in September 1982 with little snow remaining on the glaciers: the accumulation area ratio of the glaciers was between 0.1 and 0.2, indicating a strongly negative mass balance. Photogrammetrical analysis was done by Ch. Hoberg and R. Puruckherr at the Bochum Polytechnic using a Zeiss-Planimat (Slupetzky and Puruckherr 1989). Contour-line interval is 5 meters and the glacierized area is depicted in a blue-green colour. The extremely reduced snow cover made it possible to distinguish between old snow, firn and ice. The distribution patterns of old snow remains follows in a remarkable way the patterns of topographic convexities/concavities.

The main cartographic elements are depicted using the following colours:

black:	map frame with Gauss-Krüger coordinates (Austrian UTM System), morainic ridges and fluted moraines, debris, cable car installations, buildings, trails, writings, altitudes, contour lines in bedrock
brown:	vegetation- and soil-covered areas
gray:	contour lines in debris-covered areas
blue:	contour lines in ice and firn areas, crevasses; lakes, rivers.
green:	subalpine forest
blue-green:	old snow-firn-ice (increasingly dark)

As a special feature, a cave system (Zeferethöhle) is depicted with its entrance at an altitude of 2447 m a.s.l. and total length of 541 m.

* * *

VERNAGTFERNER 1889, AUSTRIA

(Reprinted historical map)

K. Brunner, University of the Federal Armed Forces, Munich

In 1897 a comprehensive map edition was published on the survey of the Vernagtferner in the years 1888 and 1889 (Finsterwalder 1897, cf. also Blümcke and Hess 1897). The map "Der Vernagt Ferner im Jahre 1889" was annexed to that publication. Sebastian Finsterwalder - being the author - had already succeeded in making maps of glacier tongues of both the Gliederferner and the Gepatschferner (Austria) by tacheometric survey for the purpose of glacier research (see Fluctuations of Glaciers, Volume V, p. 77-78). However, only mapping of glacier tongues could be obtained by this procedure.

From these experiences of glacier mapping, Sebastian Finsterwalder and his collaborators realized the survey of the Vernagtferner by means of plane-table photogrammetry (intersection photogrammetry). At the end of the 19th century the plane-table photogrammetry was the best method for mapping mountain regions: large glacier areas with difficult access could be surveyed by photogrammetric procedures only.

In 1888 and 1889, two photogrammetric campaigns had to be carried out and very difficult conditions with regard to travel and fieldwork mastered (Finsterwalder, 1889). Great efforts had also to be spent on photogrammetric plotting, spanning a period of several years.

The result was the previously mentioned map "Der Vernagt Ferner im Jahre 1889", which was printed in four colours. This is the first precise map of an entire glacier at a large scale of 1:10,000.

This map gives a complete relief representation by contour lines (rock drawing included) with an interval of 10 m. It is a very impressive presentation of glacier surface topography and its ice-free periphery.

Careful investigations have proven the high accuracy of the map (Brunner 1988), i.e., an accuracy of ± 0,4 m in position of ± 1,2 m in altitude for a photogrammetrically determined map point. Pillewizer (1989) gives evidence of the high contour accuracy by a visual comparison with the modern contour line map of 1969.

Because of the accuracy of the map "Der Vernagt Ferner im Jahre 1889" the requirements have been met - in comparison with later mappings of the Vernagtferner by stereophotogrammetric methods - for determining changes in thickness, area and volume (Brunner and Rentsch 1972, cf. also Fluctuations of Glaciers, Volume II, p. 233 and annexed maps).

The remarkable original map "Der Vernagt Ferner im Jahre 1889" is extremely difficult to obtain. For this reason, a facsimile reprint was produced which is included in the present volume.

* * *

VERNAGTFERNER 1979-1982, AUSTRIA, 1:10,000

(Thematic map)

O. Reinwarth, Commission for Glaciology,
Bavarian Academy of Sciences, Munich

The map series of the Vernagtferner/Oetztal Alps, starting in 1889 with the famous map by Sebastian Finsterwalder (K. Brunner, this volume), was continued in 1912 and 1938 with repeated terrestrial photogrammetric surveys as well as in 1954, 1969, 1979, 1982 and 1990 on the basis of aerial photography. This ongoing effort is not only aimed at documenting the changing state of the glacier but also at contributing to the development of methods for preparing glacier maps.

Until 1969, all maps represented conventional topographic maps (1889, 1969) or thematic maps combining the contour line system of two successive mappings (1889/1912, 1912/38, 1938/69) to demonstrate growth or shrinkage of the glacier. Later maps were produced as orthophoto maps (1979, 1982, cf. Rentsch 1985, 1990, Heipke and Rentsch, this volume). The progress in preparing these maps mainly concerns the methods of evaluating the aerial photographs, proceeding from online-plotted contours to data acquisition by applying the progressive sampling method (PROSA) allowing for the generation of contour lines with arbitrary intervals, digital terrain models (DTM) or other derived representations. For these computations, the HIFI software (Height Interpolation by Finite Elements, Ebner and Reinhardt 1984) is being used.

With the DTMs of the glacier surface as a most valuable tool, it became possible to substitute the so-called "Finsterwalder method" of computing mean volume or elevation changes by computerized numerical subtraction of the DTMs from successive glacier topographies (Reinhardt & Rentsch 1986). This method not only provides the amount of volume or elevation changes for the entire glacier as well as for distinct altitude intervals with a rather high accuracy and in particular with a reasonable and economic amount of computational work, but also allows mapping of the areal distribution of elevation changes by constructing lines of equal elevation change using plotted values of the difference in altitude for each grid point of the DTM.

The map "VERNAGTFERNER/Höhenänderung (elevation change) 1979-1982" at a scale of 1:10,000, issued by the Commission of Glaciology Munich is a first example of such a cartographic representation of elevation changes. The elevation changes are divided into 5 classes for each sign with 4 intervals of 2 meters up to ± 8 m and a further interval for changes greater than ± 8 m. Yellow to brown colours indicate lowering of the surface, and blue to violet colours are used for rising parts of the surface. The different shadings of the scaling colours and the line signatures were made possible by printing the map in four colours.

The construction of isolines is based on the grid point values of a regular DTM of 40 m grid width. The isolines were drawn manually because variation of the values was demanding a certain smoothing to derive a reasonable pattern. Nevertheless, some details of the analysis still cause problems for interpretation, for instance, the nearly regular (wave-like) intersection of shrinking and rising areas downslope from "Hinterer Brochkogel". The block diagramm, which helps to illustrate the areal distribution of elevation changes with respect to sign only (rising surface indicated in blue, lowering surface in red), represents the 40 m grid of the DTM, transformed into a view of central perspective.

The behaviour of Vernagtferner since the beginning of direct (glaciological) mass balance measurements in 1965 is characterized by an overall mass increase between 1965 and 1980 interrupted by some negative mass balances between 1969 and 1973. The summer of 1982 marks the beginning of continuous mass loss, starting with the most negative mass balance value in 1981/82 for the period 1965-1990, in particular with the highest amount of summer runoff measured so far. The short time-interval of 1979-1982 was especially chosen for cartographic demonstration of elevation changes because of the unusual, nearly "surge-like" behaviour of the glacier during this period.

A quantitative comparison of mean annual mass and elevation changes for 50 m altitude intervals for the three-year period clearly reveals the inverse distribution of elevation changes and net mass balance with altitude:

Area (1979), mean annual elevation changes (ΔEL) and mean annual specific net balance values (BN/BA) of Vernagtferner for the period 1979-1982 for 50 m altitude intervals and for the entire glacier.

Altitude from to	Area $10^3 m^2$	ΔEL mm/a	BN/BA mm WE/a
3600 - 3650	4.7	- 500	6
3550 - 3600	8.2	- 642	- 33
3500 - 3550	40.9	- 382	103
3450 - 3500	159.5	- 89	579
3400 - 3450	261.1	- 174	287
3350 - 3400	311.3	- 783	78
3300 - 3350	581.3	- 454	157
3250 - 3300	1086.9	- 681	326
3200 - 3250	1126.5	- 611	78
3150 - 3200	1332.8	- 567	38
3100 - 3150	1274.2	- 314	- 96
3050 - 3100	1162.2	- 289	- 327
3000 - 3050	875.7	- 89	- 594
2950 - 3000	626.2	314	- 1189
2900 - 2950	390.2	591	- 1656
2850 - 2900	208.0	627	- 1838
2800 - 2850	77.3	861	- 1002
2750 - 2800	23.0	1473	- 2338
Sum/Mean	9550.0	- 291	- 249

The total amounts accord quite well, in particular regarding the rather high firn ablation in this period, which demands an excess of volume change as compared with mass change. Thus, with the comparison of mass and volume changes in mind, the map representing the areal distribution of elevation changes also indicates, to a certain extent, the dynamic processes causing these alterations.

* * *

VERNAGT- AND GUSLARFERNER, AUSTRIA, 1:10,000

(Colour orthophoto map)

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The development from analytical to digital photogrammetry involves the integration of many conventional photogrammetric and cartographic tasks into digital photogrammetric systems. A good example is the orthoimage (digital orthophoto, cf. Kreiling 1975). Today, orthoimages are becoming standard products of digital photogrammetry and can be computed rapidly and inexpensively. They form the basis of orthophoto maps and are also increasingly introduced into the data bases of geo-information systems. In comparison to line maps, orthophoto maps contain a large variety of topographic information, and details are perceived much more realistically. The example presented is intended to serve mountaineers and scientist as an easy-to-use guide.

The input for the orthoprojection consists of a digital image, the parameters of interior and exterior orientation of this image and a digital terrain model (DTM) of the area. For the presented example, a strip of analogue colour images at a scale of 1:32,000 was acquired in August 1990. The aerotriangulation was carried out on the analytical plotter Zeiss Planicomp P1. Subsequently, one image was scanned in three colour bands at a resolution of 30 μm each using the Zeiss Photo Scan PS1. Approximately 12,000 breakline points and 37,000 grid points were measured interactively on the Planicomp using the data acquisition program PROSA. From these data, a DTM with a 20 m - grid was produced, including an exact representation of the geomorphological information (breaklines) as generated using the DTM program package HIFI (Ebner et al. 1988).

The area for which the orthoimage has to be computed (6.1 x 4.9 km^2) is divided into square orthoimage pixels of constant predefined size. The so called pixel-by-pixel method (Mayr and Heipke 1988), which can preserve the high DTM accuracy including the representation of the geomorphological information, was chosen for this project. As a next step, the printing master copies were produced using the Hell Scanner C1 X 330 of the Bayerische Landesvermessungsamt, Munich. Finally the colour orthophoto was superimposed with contour lines being digitally derived from the DTM and combined with common cartographic information in a conventional photomechanical process.

One general problem of photogrammetry is present by occlusions. In orthoprojection these lead to wrong image contents, a problem which can be overcome in the digital domain if occluded areas are determined beforehand from the DTM and the orientation parameters. These areas can then be filled with image information from a different image, which is generally available. In the present example, however, this was not carried out. Another problem encountered was the fact that the high dynamic range of the analogue image was not reflected in the scanned version. Brightness and contrast adjustment partly compensated for this deficiency.

* * *

GLACIERS OF MOUNT KENYA 1987, 1:5,000, KENYA

(Aerial photogrammetric maps)

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This account is based on Hastenrath et al. (1989a) to which reference is made for the full documentation. Further background information is contained in Hastenrath (1984, 1991).

Basic to the aero-photogrammetric mapping is a sound set of control points surveyed and marked in the terrain. Control points established by the IGY Mount Kenya Expedition (Charnley, 1959) are useful to this end, but it was found necessary to establish numerous other points using electromagnetic distance measuring (EDMS) equipment, and with a closure around the mountain. Fourteen of these points were used in the mapping.

The aerial photography was flown on 3 September 1987 by Photomap (K) Ltd., at an average height of 1500 m above the average terrain level of 4800 m. The photographs were taken by a Wild 152 mm RC 10 camera, and are at an approximate average scale of 1:10,000 with 80% forelap and 60% sidelap, to cope with the extreme local relief.

In addition to the 14 terrain control points a further 14 photogrammetric control points were identified in locations suitable for the stereographic compilation. Aerial triangulation and stereophotogrammetric plotting were performed using the Wild Autograph A8 plotter at the University of Nairobi. Refer to Hastenrath et al. (1989b) for a discussion of coordinate systems and the basis of Schneider's map from terrestrial photogrammetry in 1963 (Forschungsunternehmen Nepal-Himalaya, 1967).

A new glacier inventory was compiled from the map dated September 1987, and the glacier changes during 1963-87 were evaluated with reference to Forschungsunternehmen Nepal-Himalaya (1967).

* * *

LEWIS AND GREGORY GLACIERS, 1:2,500, KENYA

(Aerial photogrammetric maps)

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The construction and evaluation of this map is fully documented in Hastenrath and Rostom (1990), while a brief summary must suffice here.

Surveys were flown by the Kenya Air Force on 13 February 1978 at a flight level of 18,400 feet, by Geosurveys. Ltd., Nairobi, on March 1986 at approximately 22,00 feet, and by Photomap International (Kenya), Nairobi, on 1 March 1990, likewise at 22,000 feet. Stereoplotting was performed at the University of Nairobi by the same photogrammetrist, on the Thompson-Watts First Order Plotter for the Lewis in 1978, and the Wild A8 First Order Plotter for the Gregory in 1978, and the Lewis-Gregory glaciers in 1986 and 1990. The 1990 map was compiled from two frames.

The mappings of the Lewis Glacier for 1974, 1978, 1982 and 1986 (Caukwell and Hastenrath 1977, 1983; Hastenrath and Caukwell 1979, 1987) had been based on a network of ground control points established by the IGY Mount Kenya Expedition (Charnley 1959). Although these aerial photographs also covered the Gregory Glacier, it could not be mapped at that time for lack of a suitable ground control point below the glacier. However, a mark established previously just below the Gregory Glacier for the purposes of tape measurements of terminus variations was surveyed on 30 December 1986 (Hastenrath et al. 1989a). This was used for the present 1990 mapping of the Lewis-Gregory glaciers. Moreover, using this additional Gregory control point, it proved possible to map the topography and extent of the Gregory Glacier from the 1978 and the 1986 photographs, but not from the 1974 and 1982 flights. On 1 March 1990, the Lewis and Gregory Glaciers were covered by fresh snow, which obliterated many of the smaller crevasses, although the overall photo quality was adequate for mapping purposes.

Over the 1978-86 and 1986-90 intervals the Lewis and Gregory Glaciers experienced changes in length ΔL (m), thickness Δh (m), and volume ΔV ($10^3 m^3$), as indicated below:

LEWIS	1978/86	1986/90
ΔL	- 32.0	- 48.0
Δh	- 8.2	- 3.1
ΔV	-2260.0	- 770.0

GREGORY	1978/86	1986/90
ΔL	- 25.0	- 25.0
Δh	- 10.1	- 5.3
ΔV	- 811.0	- 367.0

* * *

CHAPTER 9 - **COMMENTS AND PERSPECTIVES FOR THE FUTURE**

Cryosphere signals of 20th-century warming are strong and receive increasing attention in public discussions, international assessments and environmental data reports (IPCC 1990, 1992, UNEP 1987, 1989, 1991). Taken as complex and integrated climatic evidence which is independent of instrumental meteorological measurements, they are indeed coherent: warming of polar firn and permafrost is pronounced and mass loss/retreat of mountain glaciers striking all over the world (Haeberli 1990). Glacier fluctuations and permafrost temperatures therefore belong to the key parameters for climate system monitoring (Wood 1988, 1990). So far, length reduction of mountain glaciers still remains the most easily detectable, unequivocal proof from cold regions that fast and worldwide climatic change is taking place (Haeberli et al. 1989[b]).

In the chain of processes linking climate and glacier fluctuations, mass balance is the direct/undelayed reaction whereas glacier length variation is the indirect/delayed response. Analysis and modelling of the relations involved made important progress during the past years and considerably improved our understanding of the recorded glacier changes. Regression equations with meteorological records were calibrated at various glaciers for reconstructing mass balance series and, thus, extending the information back into the first half of the 20th century (Chen and Funk 1990, Lefauconnier and Hagen 1990, Letréguilly 1988). Statistical analysis of such mass balance records confirmed that the same type of spatio-temporal distribution pattern can be found for glaciers within individual mountain ranges, that the principal classifying factor is the distance from the main humidity source ("continentality") and that secular trends are comparable beyond the scale of the mountain range (Letréguilly and Reynaud 1989, 1990). This result emphasizes the global significance of geodetic/photogrammetric mass balance measurements in the Alps, where annual loss in ice thickness since the turn of the century averages a few decimeters (Haeberli 1990). Such a value represents an energy flux which is broadly consistent with the assumed anthropogenic greenhouse forcing (Haeberli 1992b, cf. IPCC 1992). Though attempts to model the surface energy balance and the dynamic response of glaciers must concentrate on the small number of well-documented glaciers, they nevertheless lead to results of general applicability (cf. Oerlemans

1988, Oerlemans and Fortuin 1992). Mass balance versus altitude is the function which represents the climatic or regional sensitivity of glaciers with respect to changing energy balance parameters and shifting of the equilibrium line altitude. Numerical simulations show that the albedo has a strong effect on the often observed gradient change near the equilibrium line and leads to marked feed-back mechanisms when atmospheric conditions are changing (Oerlemans and Hoogendorn 1989). Area distribution with altitude, on the other hand, constitutes the local topographic part of the glacier's sensitivity to climatic change and can result in great differences in glacier response over short scales of time and space (Tangborn et al. 1990). Taken together, the mass balance gradient and the area distribution with altitude relate atmospheric conditions to ice flux via the glacier surface, and thus determine the activity and the dynamic response of glaciers with respect to past and potential future climatic forcing. Model experiments on such response characteristics demonstrate that uncertainties with respect to flow mechanisms hardly affect the model results for time scales corresponding to the response time of glaciers (Greuell 1992, cf. also Hastenrath 1992, Oerlemans 1992). Johannesson et al. (1989) analytically and numerically studied the length of such response times and showed that they can be estimated independently of complex terminus dynamics from the ratio between maximum ice thickness and ablation at the glacier snout. Typical values for mountain glaciers are several decades and not centuries or even millennia, as had been theoretically assumed in earlier studies.

This important finding now provides the possibility to use simple continuity considerations combined with estimates of mass balance gradients for quantitatively assessing decadal to secular glacier mass losses from glacier length measurements (Haeberli 1990). Worldwide intercomparison of glacier mass changes due to 20th-century warming is thus possible in a quantitative way, and the measurement of recent length changes in areas of difficult access by means of remote sensing techniques is clearly a task of high priority. An example of such an investigation is the study of glacier changes in the Southern Patagonian Icefield (Aniya et al. 1992) which is one of the important meltwater sources with respect to ongoing sea level rise. Long-term melt rates derived from glacier length changes can be compared with present-day mass losses as observed using direct mass balance measurements. In such a way, the measured data can be analysed for possible acceleration tendencies.

In order to speed up and improve access to the collected mass balance data, the World Glacier Monitoring Service started to publish a biennial Glacier Mass Balance Bulletin. The first two issues of this new publication series cover the years 1988 - 1991. During the four reported years, average mass balance was negative by a few decimeters per year. Together with the mass balance data published in the present volume of the FLUCTUATIONS OF GLACIERS, the information now available points towards continued if not accelerating glacier melt. In view of this development, the International Association of Hydrological Sciences at the Vienna Symposium in 1991 adopted the following resolution prepared by the International Commission on Snow and Ice:

> considering that the melting of mountain glaciers has contributed to global sea level rise and that their reaction to climatic changes will influence water resources and may pose severe restrictions on water management in semi-arid mountain areas;
>
> considering further that long-term trends of climatic change are integrated by mountain glaciers and are reinforced by feedback mechanisms related to albedo changes and mass balance / altitude variations; fluctuations of mountain glaciers therefore clearly reflect changes in the energy balance of the earth's surface and belong to the key phenomena for monitoring climatic change;
>
> noting that during the past century mountain glaciers all over the world have been shrinking and that in the Alps roughly half of the total mass has been lost due to a rise in air temperature of about 0.5 $^{\circ}$C and an upward displacement of the equilibrium line of about 100 m;
>
> and recognizing that glacier mass studies form an essential part of the continuous monitoring of the global environment,

[it is] recommend[ed] that, in order to document such glacier signals of present warming and in order to understand the sensitivity and representativity of glacier reactions in various parts of the world, the existing network of glacier mass balance measurements not only be kept intact despite increased economic difficulties in some countries involved, but also be expanded to cover key areas, especially at polar latitudes and in the southern hemisphere.

Glacierized areas would be among the most heavily affected parts of the world in the event of accelerated future warming. The recently published WORLD GLACIER INVENTORY - STATUS 1988 is a guide to the statistical basis presently available for estimating consequences of such scenarios, especially in view of hydrological processes (streamflow, sea level). Such aspects involving the water cycle are also the reason why the FLUCTUATIONS OF GLACIERS is published as a contribution to the International Hydrological Programme. Finally, as glacier response can take dramatic and sometimes even disastrous forms, the systematic collection of specific and - as far as possible - quantitative information on glacier instabilities and catastrophes aims at improving early recognition and appropriate assessment of glacier hazards (cf. Haeberli et al. 1989 [a]) which undergo changes as glaciers are changing. This applied perspective of the present WGMS publication can be seen as a modest contribution to the International Decade for Natural Disaster Reduction (IDNDR). In order to build up a broader knowledge about and awareness of such glacier-related environmental issues, a popular brochure was compiled on "Glaciers and the Environment" (UNEP 1993). It is hoped that such broadened awareness will help existing glacier observation programmes to continue into the future and new projects in areas as yet unexplored to be started.

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APPENDIX - **DATA SHEET AND NOTES ON THEIR COMPLETION**

This appendix includes the data sheets which were used for the collection of data for this volume, together with explanatory notes on their completion:

- Data Sheet "General Information on the Observed Glaciers"
- Notes on the completion of the General Information data sheet
- Data Sheet "Variations in the Position of Glacier Fronts 1985-1990"
- Data Sheet "Variations in the Position of Glacier Fronts - Addenda from Earlier Years"
- Notes on the completion of the Variations data sheet
- Data Sheet "Mass Balance Study Results - Summary Data 1985-1990"
- Data Sheet "Mass Balance Study Results - Addenda from Earlier Years"
- Data Sheet "Hydrometeorological Data"
- Notes on the completion of the Mass Balance data sheet
- Data Sheet "Special Events"
- Notes on the completion of the Special Events data sheet

* * *

WORLD GLACIER MONITORING SERVICE

GENERAL INFORMATION ON THE OBSERVED GLACIERS 1985-90

Leave blank

1. Country or territory (abbrev.)

2. Glacier number (former PSFG number)

3. Glacier number (in already published inventories)

4. Glacier name

5.* Geographical location (general)

6.* Geographical location (more specific)

7.* Geographical coordinates — Latitude ° ' ; Longitude ° '

8.* Orientation — Accumulation area; Ablation area

9.* Highest elevation — m a.s.l.; measurement year 19

10.* Median elevation — m a.s.l.; measurement year 19

11.* Lowest elevation — m a.s.l.; measurement year 19

12.* Area — km^2 . ; measurement year 19

13.* Length — km . ; measurement year 19

14.* Rough classification

15. Number of data sheets submitted

Variations in the position of glacier fronts	☐	Mass balance versus altitude	☐
Variations addenda from earlier years	☐	Changes in area, volume and thickness	☐
Mass balance summary data	☐	Hydrometeorological data	☐
Mass balance addenda from earlier years	☐	Special events	☐

16. Remarks

17. Data sheet compiled by:

* Do not complete if the information in Volume V (Table A) is still valid

Leave blank

WORLD GLACIER MONITORING SERVICE

GENERAL INFORMATION ON THE OBSERVED GLACIERS 1985-90

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed for all glaciers on which data are submitted for inclusion in "Fluctuations of Glaciers 1985 - 1990"; however, questions 5 to 14 should be answered **only** for glaciers **not** included in Volumes IV and V, or for cases where **new** or **improved** information is now available.

1. Country or Territory

   Name of country or territory where the glacier is located (for abbreviation, see Volume V, p. 5).

2. Glacier Number (former PSFG number)

   Numbering allows better identification of the glaciers and has proven to be especially helpful when dealing with glaciers having the same name, no name or names changing with time. National correspondents are therefore asked to give numbers to glaciers on which data are submitted for Volume VI. Once a Glacier Number has been assigned to a glacier it will not be changed again. Please, therefore, refer to earlier volumes of the "Fluctuations of Glaciers" when assigning the Glacier Number (=former PSFG number).

   For glaciers without a (PSFG) number, the following guidelines are given for assigning the number:

   Glacier Number = number with max. 4 numerical digits or, as an exception, 5 digits.

   In assigning the number to glaciers of present interest, it should be remembered that the need to number neighbouring glaciers may arise in the future. Accordingly, the numbering system which is adopted should leave "spare numbers". This could be done by using the left-hand digit(s) to denote geographical subdivisions, and the right-hand digit(s) to number single glaciers within each subdivision. The total number of digits used, 2 - 4, will depend on the size of the country and the degree of sophistication in identifying the geographical subdivisions. A glacier may advance or retreat enough to make it necessary in future to identify individual parts, e.g., a single front may become several distinct fronts, or else part of the glacier may become separated from the main glacier. In these exceptional cases, the fifth digit (alphabetic or numeric) should be used.

   Format: right justified on column position 4, empty spaces should be filled with the digit 0.

3. Glacier Number in already published inventories

Only where a glacier number has been assigned in connection with an previously published National Glacier Inventory should this number be given.

Format: max. 16 digits, left justified.

4. Glacier Name

The name of the glacier should be written in CAPITAL letters.

Format: max. 15 column positions, left justified.
If necessary, the name can be abbreviated; in this case, please give the full name under "16. Remarks".

5. Geographical Location (general)

By "general geographical location" we mean the reference to a very large geographical entity (e.g., a large mountain range or a large political subdivision) which gives a rough idea of the location of the glacier without requiring the use of an atlas or map. Examples: Western Alps, Southern Norway, Polar Ural, Tien Shan, Himalayas.

Format: similar to 4 (Glacier Name)

6. Geographical Location (more specific)

A more specific geographical location should be given here (mountain group, drainage basin, etc.) which can be found easily on a small-scale map of the country concerned. Examples:

Format: similar to 4 (Glacier Name)

7. Geographical Coordinates

The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may possibly lie outside the glacier.

As a general rule, the latitude and longitude should be indicated in sexagesimal degrees and minutes (no fraction of minutes) and be followed by the corresponding cardinal point.

Only where a small glacier is unnamed may it be necessary to give the coordinates more accurately for the sake of clear identification. In such cases decimals of minutes - and not seconds - should be used.

8. <u>Orientation</u>

The main orientation of the accumulation area and of the ablation area should be given using the 8-point compass.

9. <u>Highest Elevation</u>

Altitude of the highest point of the glacier and the year of survey.

10. <u>Median Elevation</u>

Altitude of the contour line which halves the area of the glacier, and the year of survey.

11. <u>Lowest Elevation</u>

Altitude of the lowest point of the glacier and the year of survey.

12. <u>Area</u>

Total area of the glacier (in horizontal projection) and the year of survey.

13. <u>Length</u>

Maximum length of the glacier measured along the most important flowline (in horizontal projection) and the year of survey.

14. <u>Rough Classification</u>

This classification should be given in coded form according to "Perennial Ice and Snow Masses" (Technical Papers in Hydrology, UNESCO/IAHS, 1970). The following information should be given:

- "Primary classification" (Digit 1)
- "Form" (Digit 2)
- "Frontal characteristics" (Digit 3)

Format: The coded information should be given in the corresponding boxes (digit 1 in first box, digit 2 in second box, digit 3 in third box).

Code: (from "Perennial Ice and Snow Masses", slightly revised)

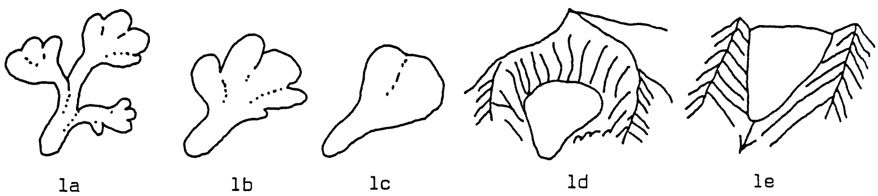
- Digit 1: Primary classification

0	Miscellaneous	Any type not listed below (explain)
1	Continental ice sheet	Inundates areas of continental size
2	Ice field	Ice masses of sheet or blanket type of a thickness not sufficient to obscure the subsurface topography
3	Ice cap	Dome-shaped ice mass with radial flow
4	Outlet glacier	Drains an ice sheet, ice field or ice cap, usually of valley glacier form; the catchment area may not be clearly delineated
5	Valley glacier	Flows down a valley; the catchment area is well defined
6	Mountain glacier	Cirque, niche or crater type, hanging glacier; includes ice aprons and groups of small units
7	Glacieret and snowfield	Small ice masses of indefinite shape in hollows, river beds and on protected slopes, which has developed from snow drifting, avalanching and/or especially heavy accumulation in certain years; usually no marked flow pattern is visible; exists for at least two consecutive summers
8	Ice shelf	Floating ice sheet of considerable thickness attached to a coast nourished by glacier(s); snow accumulation on its surface or bottom freezing
9	Rock glacier	Lava-stream like debris mass containing ice in several possible forms and moving slowly downslope

- Digit 2: Form

0	Miscellaneous	Any type not listed below (explain)
1	Compound basins	Two or more individual valley glaciers issuing from tributary valleys and coalescing (Fig. 1a)
2	Compound basin	Two or more individual accumulation basins feeding one glacier system (Fig. 1b)

3	Simple basin	Single accumulation area (Fig. 1c)
4	Cirque	Occupies a separate, rounded, steep-walled recess which it has formed on a mountain side (Fig. 1d)
5	Niche	Small glacier in V-shaped gully or depression on a mountain slope (Fig. 1e); generally more common than the genetically further developed cirque glacier
6	Crater	Occurring in extinct or dormant volcanic craters
7	Ice apron	Irregular, usually thin ice mass plastered along a mountain slope or ridge
8	Group	A number of similar small ice masses occurring in close proximity and too small to be assessed individually
9	Remnant	An inactive, usually small ice mass left by a receding glacier



- Digit 3: Frontal characteristics

0	Miscellaneous	Any type not listed below (explain)
1	Piedmont	Ice field formed on a lowland by lateral expansion of one or coalescence of several glaciers (Fig. 2a, 2b)
2	Expanded foot	Lobe or fan formed where the lower portion of the glacier leaves the confining wall of a valley and extends on to a less restricted and more level surface (Fig. 2c)
3	Lobed	Part of an ice sheet or ice cap, disqualified as an outlet or valley glacier (Fig. 2d)

4 Calving — Terminus of a glacier sufficiently extending into sea or lake water to produce icebergs; includes - for this inventory - dry land calving which would be recognisable from the "lowest glacier elevation"

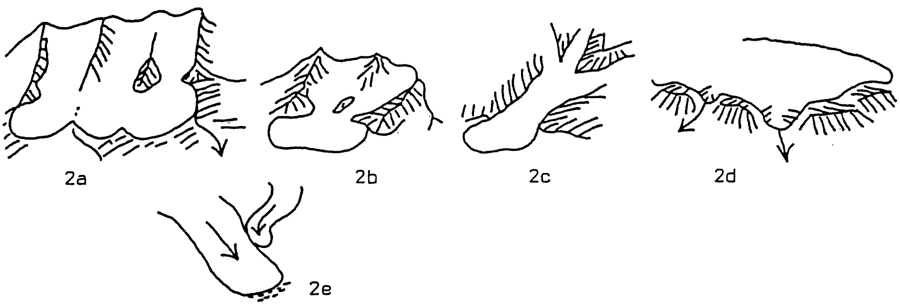
5 Coalescing, non-contributing (Fig. 2e)

6 Irregular, mainly clean ice (mountain or valley glaciers)

7 Irregular, debris-covered (mountain or valley glaciers)

8 Single lobe, mainly clean ice (mountain or valley glaciers)

9 Single lobe, debris-covered (mountain or valley glaciers)



15. Number of Data Sheets Submitted

Number of data sheets submitted for this glacier concerning information on Variations in the Position of Glacier Fronts, Mass Balance Study Results - Summary Data etc.

16. Remarks

Any important information or comments not included above may be given here. Comments about the accuracy of the various numerical data may be made here. No fields for quantitative accuracy ratings of the various data have been given on the data sheet; especially poor data should be marked with an asterisk on the right-hand side of the appropriate field. Only significant decimals should be given for area and length.

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS 1985-90

Leave blank

1. Country or territory
2. Glacier number (former PSFG number)
3. Glacier name

---

4. Observed since — year
5. Date of initial survey for reported period — day/mth/yr — . . 19

6.	Variation (Previous survey to 1986 survey)	m	± .
7.	Altitude of snout/lowest point *	m a.s.ℓ.	
8.	Date of survey	day/mth/yr	. . 86
9.	Variation (Previous survey to 1987 survey)	m	± .
10.	Altitude of snout/lowest point *	m a.s.ℓ.	
11.	Date of survey	day/mth/yr	. . 87
12.	Variation (Previous survey to 1988 survey)	m	± .
13.	Altitude of snout/lowest point *	m a.s.ℓ.	
14.	Date of survey	day/mth/yr	. . 88
15.	Variation (Previous survey to 1989 survey)	m	± .
16.	Altitude of snout/lowest point *	m a.s.ℓ.	
17.	Date of survey	day/mth/yr	. . 89
18.	Variation (Previous survey to 1990 survey)	m	± .
19.	Altitude of snout/lowest point *	m a.s.ℓ.	
20.	Date of survey	day/mth/yr	. . 90

** delete inappropriate term*

21. Error — in variations — m — ± .
    in altitudes — m — ± .
22. Method
23. Investigator(s)
24. Sponsoring agency
25. Remarks
26. Data sheet compiled by

Leave blank

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS

A Leave blank

ADDENDA FROM EARLIER YEARS

1. Country or territory
2. Glacier number (former PSFG number)
3. Glacier name

---

4. Observed since — year
5. Date of initial survey for reported period — day/mth/yr

6. Variation (Previous survey to survey) — m ± .
7. Altitude of snout/lowest point * — m a.s.ℓ.
8. Date of survey — day/mth/yr

9. Variation (Previous survey to survey) — m ± .
10. Altitude of snout/lowest point * — m a.s.ℓ.
11. Date of survey — day/mth/yr

12. Variation (Previous survey to survey) — m ± .
13. Altitude of snout/lowest point * — m a.s.ℓ.
14. Date of survey — day/mth/yr

15. Variation (Previous survey to survey) — m ± .
16. Altitude of snout/lowest point * — m a.s.ℓ.
17. Date of survey — day/mth/yr

18. Variation (Previous survey to survey) — m ± .
19. Altitude of snout/lowest point * — m a.s.ℓ.
20. Date of survey — day/mth/yr

** delete inappropriate term*

21. Error in variations — m ± .
    in altitudes — m ± .
22. Method
23. Investigator(s)
24. Sponsoring agency
25. Remarks — from
26. Data sheet compiled by

Leave blank

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS 1985-90

NOTES ON THE COMPLETION OF THE DATA SHEET

1. Country or Territory

Name of country or territory where the glacier is located (for abbreviation, see Volume V, p. 5).

2. Glacier Number (former PSFG number)

See "Notes on the completion of the data sheet: GENERAL INFORMATION ON THE OBSERVED GLACIERS".

3. Glacier Name

The name of the glacier should be written in CAPITAL letters.

4. Observed Since

Year of the first known quantitative survey.

5. Date of Initial Survey for Reported Period

"Initial survey" is defined here as the last survey performed before 1986, whereby the position or the variation in the position of the glacier front was determined quantitatively.

The "initial survey" will normally be the 1985 survey. If no survey was carried out in 1985, or if only qualitative data are available for 1985, the "initial survey" will, of course, be an earlier quantitative one.

6. Variation (Previous Survey to 19.. Survey)

(refers also to 9, 12, 15 and 18)
Variation in horizontal projection between previous survey and present survey.

Units: metres
Sign: + advance
- retreat

Missing Data:

If no data are available for a particular year, the corresponding data field should be deleted.

Qualitative Data:

If no quantitative data are available for a particular year, but qualitative data are available, then variations should be denoted by using the following symbols placed in the positions on the far left of the corresponding data field:
ST : no apparent variation (stationary)
+X : apparent advance (numerical value unknown)
-X : apparent retreat (numerical value unknown)
SN : glacier tongue is covered with snow making survey impossible.

In the case of qualitative data, the variations will be understood with reference to the previous survey, whether quantitative or qualitative.

7. Altitude of Snout/Lowest Point

(refers also to 10, 13, 16 and 19)
If the altitude of the snout or the lowest point of the glacier has also been measured, it should be indicated in the corresponding data field and the inappropriate term (i.e., snout or lowest point) should be deleted.

Missing Data: delete the corresponding field.

8. Date of Survey

(refers also to 11, 14, 17 and 20)
For each survey performed, please indicate the complete date (day, month, year).

Missing Data:

No survey: delete corresponding field
Day unknown or day and month unknown: put question mark(s) in corresponding field(s).

21. Error

Estimated maximum error

22. Method

The following indications should be given here:
a = aerial photogrammetry

b = terrestrial photogrammetry
c = geodetic ground survey (theodolite, tape, etc.)
d = combination of a, b or c (please explain under "25. Remarks")
e = other methods (please explain under 25.) or no information

23. Investigator(s)

Name(s) of the person(s) or agency doing the field work and/or the name(s) of the person(s) or agency processing the data.

24. Sponsoring Agency

Full name, abbreviation and address of the agency where the data are held.

25. Remarks

Any important information or comments not included above may be given here. If a regular survey has been discontinued for some reason, this should be indicated here.

WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS
SUMMARY DATA 1985-90

1. Country or territory

2. Glacier number (former PSFG number)

3. Glacier name

---

4. Start of continuous mass balance measurements 19

5. Time system (enter code)

6. Number of measurement points /

			1985/86	1986/87
7.	Begin of balance/measurement*yr	day.mth	.	.
8.	End of winter season	day.mth	.	.
9.	End of balance/measurement*yr	day.mth	.	.
10.	Winter balance specific	mm w.e.	+	+
11.	Summer balance specific	mm w.e.	−	−
12.	Net accumulation specific	mm w.e.	+	+
13.	Net ablation specific	mm w.e.	−	−
14.	Net / annual balance specific	mm w.e.	±	±
15.	Accumulation area	km²	.	.
16.	Ablation area	km²	.	.
17.	Total area	km²	.	.
18.	AAR	%	.	.
19.	Equilibrium line / annual equilibrium line	m a.s.l.		

20. Investigator(s)

21. Sponsoring Agency

22. Remarks

23. Data sheet compiled by

* delete inappropriate term

Leave blank

Leave blank

1987/88	1988/89	1989/90
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WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS
SUMMARY DATA

1. Country or territory ______________

2. Glacier number (former PSFG number) ______

3. Glacier name ___________________

---

4. Start of continuous mass balance measurements 19__

5. Time system (enter code) _

6. Number of measurement points _______ / _______

			19__ / __	19__ / __
7.	Begin. of balance/measurement* yr	day.mth	__ . __	__ . __
8.	End of winter season	day.mth	__ . __	__ . __
9.	End of balance/measurement* yr	day.mth	__ . __	__ . __
10.	Winter balance specific	mm w.e.	+ ____	+ ____
11.	Summer balance specific	mm w.e.	− ____	− ____
12.	Net accumulation specific	mm w.e.	+ ____	+ ____
13.	Net ablation specific	mm w.e.	− ____	− ____
14.	Net / annual balance specific	mm w.e.	± _ ____	± _ ____
15.	Accumulation area	km^2	___ . __	___ . __
16.	Ablation area	km^2	___ . __	___ . __
17.	Total area	km^2	____ . __	____ . __
18.	AAR	%	__ . _	__ . _
19.	Equilibrium line / annual equilibrium line	m a.s.l.	____	____

20. Investigator(s) ______________________

21. Sponsoring agency ______________________

22. Remarks ______________________

23. Data sheet compiled by ______________________

* delete inappropriate term

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ADDENDA FROM EARLIER YEARS

19 ☐☐ / ☐☐	19 ☐☐ / ☐☐	19 ☐☐ / ☐☐
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☐☐☐☐	☐☐☐☐	☐☐☐☐

☐ from ☐

WORLD GLACIER MONITORING SERVICE
HYDROMETEOROLOGICAL DATA 1985 - 90

Leave blank

1. Country or territory
2. Glacier number
3. Glacier name
4. Streamflow gaging station(s)

Name

Geogr. location

Geogr. co-ordinates

Altitude (m a.s.l.)

Drainage area (km^2)

Full address where data available

5. Meteorological station(s)

Name

Geogr. location

Geogr. co-ordinates

Altitude (m a.s.l.)

Full address where data available

6. Remarks

7. Data sheet compiled by

Leave blank

WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS
SUMMARY DATA 1985-90

NOTES ON THE COMPLETION OF THE DATA SHEET

The present data sheet tries to accommodate inherent ambiguities in mass balance data by providing several data fields. It is not expected that all fields on the data sheet can be completed fully.

The terminology used here mainly follows that given in the UNESCO/IAHS publication "Combined heat, ice and water balances at selected basins" (Technical Papers in Hydrology No. 5, 1970, Appendix 2). To avoid confusion and to assure continuity of the reported data, the same terms are used as in Volumes III, IV and V. It remains the task of national correspondents to define the exact meaning of the given information as carefully as possible.

1. Country or Territory

Name of country or territory where the glacier is located (for abbreviation, see Volume V, p. 5).

2. Glacier Number (former PSFG number)

See "Notes on the completion of the data sheet: GENERAL INFORMATION ON THE OBSERVED GLACIERS".

3. Glacier Name

The name of the glacier should be written in CAPITAL letters.

4. Start of Continuous Mass Balance Measurements

Year when continuous measurement of mass balance started.

5. Time System

The appropriate code number should be entered here:
1 = stratigraphic system
2 = fixed date system
3 = combined system
4 = other (please explain under "22. Remarks".

Where it is not clear whether the method of measurement corresponds to the "stratigraphic" or to the "fixed date" system, the box for "other" should be marked and an appropriate comment made under "22. Remarks". Note that observations with the "combined system" (Mayo et al. 1972) contain more information than can be given in the data sheet.

6. Number of Measurement Points

Number of measurement sites in the accumulation (left) and ablation (right) areas. Repeated measurements may be made at a single site for the purpose of obtaining an average value for the site, but each site may be counted only once.

When the number of measurement points is not constant over the reported period, the range should be given.

Format: left justified

7. Beginning of Balance/Measurement Year

Day and month of the beginning of the balance year (stratigraphic system), if known, or day and month of the beginning of the measurement year (fixed date system).

8. End of Winter Season

Day and month of the end of the winter season (if known).

9. End of Balance/Measurement Year

Day and month of the end of the balance year (stratigraphic system), if known, or day and month of the end of the measurement year (fixed date system).

10. Winter Balance (specific)

("specific" means "total" value divided by the total area of the glacier).

11. Summer Balance (specific)

Similar to 10.

12. Net Accumulation (specific)

Definition: "net accumulation (specific)" = "net accumulation (total)" divided by the area of the accumulation area.

13. Net Ablation (specific)

Similar to 12.

14. Net/Annual Balance (specific)

Similar to 10.
Sign: put the correct sign in the sign box
+ : mass increase
- : mass decrease

15. Accumulation Area

16. Ablation Area

17. Total Area

18. Accumulation Area Ratio

Accumulation area (15.) divided by the total area (17.) multiplied by 100.

19. Equilibrium Line/Annual Equilibrium Line

Mean altitude (averaged over the glacier) of the equilibrium line/annual equilibrium line.

20. Investigator(s)

Name(s) of the person(s) or agency doing the field work and/or the name(s) of the person(s) or agency processing the data.

21. Sponsoring Agency

Full name, abbreviation and address of the agency where the data are held.

22. Remarks

Any important information or comments not included above may be given here. If a regular survey has been discontinued for some reason, it should be indicated here.

WORLD GLACIER MONITORING SERVICE

SPECIAL EVENTS 1985-90

Leave blank

1. Country or territory
2. Glacier number
3. Glacier name
4. Type of event
5. Short description

6. Reference or most important data source

7. Remarks

8. Data sheet compiled by

Leave blank

WORLD GLACIER MONITORING SERVICE

SPECIAL EVENTS 1985-90

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in cases of extraordinary events, especially those concerning glacier hazards and dramatic changes of glaciers (cf. Point 4.).

1. Country or Territory

   Name of country or territory where the glacier is located (for abbreviation, see Volume V, p. 5).

2. Glacier Number (former PSFG number)

   See "Notes on the completion of the data sheet: GENERAL INFORMATION ON THE OBSERVED GLACIERS".

3. Glacier Name

   The name of the glacier should be written in CAPITAL letters.

4. Type of Event

   Fill in one (or more) of the following numbers:
   1 = glacier surge
   2 = calving instability
   3 = glacier flood, debris flow, mudflow
   4 = large ice avalanche
   5 = tectonic impact (earthquake, volcanic eruption)
   6 = other

5. Short Description

   Please give quantitative information wherever possible, for example:

   - surge: date and location of onset, duration, flow or advance velocities, discharge anomalies, periodicity;

   - calving instability: rate of retreat, iceberg discharge, ice flow velocity and water depth at calving front;

- glacier flood, debris flow, mudflow: outburst volume, outburst mechanism, peak discharge, sediment load, reach and propagation velocity of flood wave or front of debris flow/mudflow;

- ice avalanche: volume released, runout distance, overall slope of avalanche path;

- tectonic impact: volumes, runout distances and overall slopes of rock slides on glacier surfaces, amount of geothermal melting in craters, etc.

6. Reference or Most Important Data Source

Please indicate at least one or two references or sources which could help the reader to locate more detailed information, or give the name(s) of contact person(s) who would be able to supply additional information.

7. Remarks

Amount or kind of possible destruction, particular technical measures taken against glacier hazards, or special studies carried out in connection with this event could be mentioned.

WORLD GLACIER MONITORING SERVICE
GENERAL INFORMATION ON THE OBSERVED GLACIERS 1985-90

TABLE A

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
LAT:	Latitude in degrees and minutes north or south
LONG:	Longitude in degrees and minutes east or west
CODE:	3 digits giving "primary classification", "form" and "frontal characteristics" respectively
EXP AC:	Exposition of accumulation area (cardinal points)
EXP AB:	Exposition of ablation area (cardinal points)
ELEVATION MAX:	Maximum elevation of glacier (meters)
ELEVATION MED:	Median elevation of glacier (meters)
ELEVATION MIN:	Minimum elevation of glacier (meters)
AREA:	Total area of glacier (square kilometers)
LEN:	Length of glacier along a flowline from maximum to minimum elevation (kilometers)
TYPE OF DATA:	B = Variations in the position of glacier fronts 1985-90 or Variations in the position of glacier fronts: addenda from earlier years
	C = Mass balance summary data 1985-90 or Mass balance summary data: addenda from earlier years or Mass balance versus altitude
	D = Changes in area, volume and thickness
	E = Hydrometeorological data
	F = Index measurements and special events - see Chapter 7

Key to Symbols: * = No data available

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
	CANADA												
1	ALEXANDER	CD00133	57.06 N	130.49 W	538	NE	NE	1820	1670	1190	5.740	5.000	C E
2	ANDREI	CD00148	56.56 N	130.58 W	428	SE	E	2190	1280	660	91.900	22.000	BC E
3	BENCH	CD00234	51.26 N	124.55 W	638	SW	NW	2740	2000	1460	10.350	8.000	C
4	DEVON ICE CAP	CD00431	75.25 N	83.15 W	303	NW	NW	1890	1200	****	1696.100	50.000	C
5	FYLES	CD00698	52.06 N	126.14 W	224	NW	NE	2680	1860	1320	20.000	9.200	F
6	HELM	CD00855	49.58 N	123.00 W	626	NW	NW	2150	1900	1770	2.500	2.400	C E
7	MEIGHEN ICE CAP	CD01335	79.57 N	99.08 W	303	**	**	1267	600	70	85.000	56.000	C
8	OVERLORD	CD01590	50.01 N	122.50 W	538	NW	NW	2630	2190	1636	2.600	2.900	B
9	PEYTO	CD01640	51.40 N	116.32 W	538	NE	NE	3185	2635	2125	13.350	5.300	C E
10	PLACE	CD01660	50.26 N	122.36 W	538	NE	NW	2610	2089	1860	3.700	4.200	C E
11	ROCKFALL	CD01877	59.47 N	137.48 W	527	S	S	1910	1500	770	4.820	5.300	F
12	SENTINEL	CD01915	49.54 N	122.59 W	530	N	NW	2105	1990	1660	1.770	2.000	C E
13	SMALL RIVER	CD01940	53.10 N	119.29 W	638	N	NE	2900	****	1950	5.800	3.000	E
14	TATS	CD02007	59.41 N	137.46 W	519	NW	SE	1980	1450	670	25.500	16.100	C
15	TIEDEMANN	CD02040	51.20 N	125.03 W	529	SE	SE	3800	1950	700	62.690	24.000	C
16	TIM WILLIAMS	CD02055	56.33 N	130.00 W	519	N	NW	2010	1500	1005	13.000	8.000	F
17	UNNAMED (5155)	CD05155	50.38 N	123.30 W	649	E	E	2440	2135	1905	0.890	1.250	F
18	UNNAMED (5160)	CD05160	50.40 N	123.14 W	619	S	SE	2545	2012	1631	4.555	2.800	F
19	WEDGEMOUNT	CD02333	50.09 N	122.47 W	518	N	NW	2680	2220	1859	2.600	2.700	B
20	WHITE	CD02340	79.27 N	90.40 W	515	SE	SE	1780	1160	80	38.900	15.400	C F
21	YURI	CD02530	56.58 N	130.41 W	638	NW	NW	2010	1645	1390	3.580	3.000	C E
	U.S.A.												
22	BLACK RAPIDS	US00222	63.29 N	146.30 W	517	N	E	3200	1750	800	224.940	43.000	F
23	BLUE GLACIER	US02126	47.49 N	123.41 W	528	NE	N	2380	1815	1235	5.500	4.300	BC
24	CARBON	US02020	46.56 N	121.47 W	538	N	N	3197	****	1080	7.920	2.100	B
25	COLUMBIA (2057)	US02057	47.58 N	121.21 W	648	S	S	1730	1650	1438	0.900	1.500	BC
26	COLUMBIA (627)	US00627	61.00 N	147.06 W	514	SE	S	3000	800	0	1100.000	61.000	B F
27	COWLITZ	US02025	46.49 N	121.42 W	529	SE	SE	3390	****	1585	3.420	1.800	B
28	DANIELS	US02052	47.34 N	121.10 W	636	NE	NE	2385	2200	1970	0.500	0.800	BC
29	EKLUTNA	US00391	61.15 N	148.58 W	538	N	N	1769	1373	732	31.600	12.900	BC E
30	EXIT GLACIER	US00390	60.11 N	149.39 W	428	E	E	1000	600	157	*********	3.000	B
31	FOSS	US02053	47.33 N	121.12 W	638	NE	NE	****	****	****	*********	*******	C
32	GULKANA	US00200	63.15 N	145.25 W	529	S	SW	2460	1840	1160	19.300	8.500	C E
33	HUBBARD	US01290	60.05 N	139.20 W	514	SE	SE	5800	1500	0	3400.000	122.000	F

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
34	ICE WORM	US02054	47.33 N	121.10 W	648	E	E	2120	2030	1900	0.200	0.550	C
35	LOWER CURTIS	US02055	48.50 N	121.37 W	648	W	W	1730	1625	1500	0.800	0.800	BC
36	LYNCH	US02056	47.34 N	121.11 W	654	N	N	2390	2140	1780	0.800	1.100	C
37	MUIR	US01340	59.06 N	136.23 W	524	SE	SE	1890	****	****	*********	20.000	F
38	NISQUALLY	US02027	46.48 N	121.44 W	529	S	S	4330	****	1400	4.600	2.900	B
39	PETERS	US00310	63.07 N	151.05 W	529	NE	N	5935	1829	915	123.000	27.000	F
40	RAINBOW	US02003	48.48 N	121.46 W	638	E	E	2200	1760	1240	1.550	2.400	BC
41	SOUTH CASCADE	US02013	48.22 N	121.03 W	538	N	N	2140	1920	1630	2.500	3.100	BC E
42	TAHOMA NORTH-L.	US02030	46.50 N	121.49 W	639	SW	SW	4360	****	1548	8.630	2.800	B
43	TAHOMA SOUTH-L.	US02029	46.49 N	121.49 W	539	SW	SW	3290	****	1520	2.820	1.800	B F
44	WATSON	US02051	48.39 N	121.34 W	636	N	N	1790	1620	1475	0.200	0.700	C
45	WEST FORK	US00205	63.31 N	147.23 W	529	SW	S	3591	1433	845	311.000	41.000	F
46	WEST GULKANA	US00195	68.16 N	145.28 W	538	S	SE	2100	****	1325	2.230	4.200	B E
47	WOLVERINE	US00411	60.24 N	148.55 W	538	S	S	1700	1310	400	17.700	8.000	CD
48	YAWNING	US02050	48.27 N	121.02 W	658	NE	NE	2080	1950	1840	0.200	0.700	C

COLOMBIA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
49	RUIZ	CO00001	4.40 N	75.25 W	060	**	**	5750	****	4800	21.400	*******	F

VENEZUELA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
50	TIMONCITO	VZ00001	8.33 N	71.02 W	***	SE	SE	4900	4800	4670	0.000	0.000	F

PERU

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
51	BROGGI	PE00003	8.59 S	77.35 W	630	NW	NW	5100	4880	4582	0.550	1.000	B
52	GAJAP-YANACARCO	PE00009	9.50 S	77.10 W	634	SE	SE	5250	4935	4740	1.200	0.900	B
53	HUARAPASCA	PE00007	9.51 S	77.11 W	630	S	S	5360	4935	4675	0.870	1.200	B
54	PASTORURI	PE00008	9.54 S	77.10 W	630	NW	NW	5191	5040	4898	1.250	1.400	B
55	PECK-HUASCARAN	PE00002	9.07 S	77.38 W	***	SW	SW	5900	****	4225	4.240	3.700	F
56	URUASHRAJU	PE00005	9.35 S	77.19 W	530	SW	SW	5700	5200	4576	2.140	2.400	B E
57	YANAMAREY	PE00004	9.39 S	77.16 W	520	SW	SW	5100	4900	4590	1.290	1.500	B E

CHILE

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
58	ARCO	RC00019	47.17 S	73.17 W	428	E	E	3005	****	246	41.300	13.000	B
59	BENITO	RC00007	47.02 S	73.54 W	428	W	W	2300	****	30	210.800	32.800	B
60	BRUEGGEN	RC00032	49.10 S	74.00 W	424	W	NW	****	****	****	*******	53.000	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
61	CACHET	RC00021	47.06 S	73.12 W	428	E	E	2600	****	455	41.500	9.600	B
62	COLONIA	RC00020	47.15 S	73.14 W	428	SE	SE	3365	****	140	437.100	42.400	B
63	EXPLORADORES	RC00028	46.30 S	73.10 W	429	NE	N	3910	****	250	121.100	20.400	B
64	FIERO	RC00026	46.42 S	73.12 W	424	E	SE	3725	****	340	46.000	13.600	B
65	GROSSE	RC00001	46.27 S	73.18 W	429	N	NE	3910	****	230	80.000	18.000	B
66	GUALAS N-TONGUE	RC000A4	46.33 S	73.40 W	429	NW	W	3910	****	10	166.900	28.000	B
67	GUALAS S-TONGUE	RC000B4	46.33 S	73.40 W	429	NW	W	3910	****	10	166.900	28.000	B
68	HPN 1	RC00008	47.11 S	73.52 W	428	W	W	3365	****	50	291.000	35.000	B
69	HPN 2	RC00009	47.14 S	73.54 W	428	NW	NW	1750	****	30	175.200	33.000	B
70	HPN 3	RC00010	47.19 S	73.55 W	428	NW	W	1750	****	170	175.200	29.400	B
71	JORGE MONTT	RC00030	48.20 S	73.30 W	428	N	N	****	****	****	*******	57.000	B
72	LEONES	RC00025	46.46 S	73.13 W	424	NE	NE	3078	****	303	62.000	11.400	B
73	NEF	RC00023	47.06 S	73.11 W	428	SE	SE	2798	****	420	164.000	32.600	B
74	O'HIGGINS	RC00031	48.55 S	73.10 W	424	E	NE	****	****	****	*******	29.000	B
75	PARED NORTE	RC00017	47.28 S	73.15 W	428	E	SE	3005	****	140	78.500	25.000	B
76	PARED SUR	RC00016	47.27 S	73.20 W	429	SE	SE	2300	****	200	30.600	13.600	B
77	PISCIS	RC00015	47.27 S	73.25 W	428	SE	SE	2548	****	306	12.800	8.800	B
78	REICHER NE	RC000A3	46.29 S	73.35 W	426	NW	W	3500	****	80	91.500	28.600	B
79	REICHER SW	RC000B3	46.29 S	73.35 W	426	NW	W	3500	****	80	91.500	28.600	B
80	SAN QUINTIN	RC00006	46.52 S	74.05 W	428	W	W	2798	****	30	765.000	60.000	B
81	SAN RAFAEL	RC00005	46.41 S	73.51 W	424	W	NW	3910	****	0	760.000	46.400	B
82	SOLER	RC00024	46.54 S	73.11 W	428	E	SE	3050	****	350	51.000	16.600	B F
83	STEFFEN	RC00011	47.32 S	73.42 W	428	S	S	3365	****	25	454.000	46.000	B
84	TRONQUITOS	RC00029	28.33 S	69.43 W	648	SW	SW	5600	****	5100	1.700	2.400	F
85	TYNDALL	RC00035	51.10 S	73.20 W	428	E	SE	****	****	****	*******	39.000	B
86	UNNAMED 1	RC00002	46.28 S	73.23 W	428	NE	NE	1800	****	280	8.500	7.200	B

ARGENTINA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
87	HORCONES INF.	RA05006	32.40 S	70.00 W	529	SE	SE	6947	4350	3700	10.500	10.500	F
88	MORENO	RA00034	50.30 S	73.07 W	424	E	NE	****	****	****	257.000	30.000	B
89	PLOMO	RA05007	32.57 S	70.01 W	515	S	S	6110	****	3100	60.120	16.300	F
90	UPSALA	RA00033	50.00 S	73.17 W	424	SE	S	****	****	****	870.000	60.000	B

GREENLAND

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
91	QAMANARSSUP S.	G 00003	64.29 N	49.32 W	163	**	SW	****	****	80	*********	*******	EF
92	UNNAMED (12)	G 00012	61.07 N	46.14 W	***	**	**	****	****	****	*********	*******	F
93	UNNAMED (13)	G 00013	67.00 N	50.00 W	***	**	**	****	****	****	*********	*******	F

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
	ICELAND												
94	BREIDAMJOK.E.A	IS01126	64.13 N	16.20 W	***	S	SE	****	****	****	*********	*******	B F
95	BREIDAMJOK.E.B	IS01126	64.13 N	16.20 W	***	S	SE	****	****	****	*********	*******	B
96	BREIDAMJOK.W.A	IS01125	64.10 N	16.28 W	420	S	S	1600	1200	10	1300.000	50.000	B
97	BREIDAMJOK.W.B	IS01125	64.10 N	16.28 W	420	S	S	1600	1200	10	1300.000	50.000	B
98	BREIDAMJOK.W.C	IS01125	64.10 N	16.28 W	420	S	S	1600	1200	10	1300.000	50.000	B
99	BRUARJOKULL	IS02400	64.41 N	16.06 W	433	N	N	1600	1200	700	1500.000	50.000	B F
100	EYJABAKKAJ.	IS02300	64.40 N	15.36 W	433	N	NE	1570	1100	600	120.000	16.000	F
101	FALLJOKULL	IS01021	63.59 N	16.45 W	430	W	W	2119	1300	200	8.000	8.000	B
102	FJALLS.FITJAR	IS01024	64.02 N	16.31 W	432	SE	E	2040	1200	20	45.000	15.000	B
103	FJALLSJ. BRMFJ	IS01024	64.02 N	16.31 W	432	SE	E	2040	1200	20	45.000	15.000	B
104	FJALLSJ. G-SEL	IS01024	64.02 N	16.31 W	432	SE	E	2040	1200	20	45.000	15.000	B
105	GIGJOKULL	IS00112	63.39 N	19.37 W	430	N	N	1666	1300	300	6.000	6.000	B
106	GLJUFURARJOKUL	IS00103	65.43 N	18.40 W	530	N	N	1350	1000	580	3.500	2.500	B
107	HAGAFELLSJOK.E	IS00306	64.34 N	20.13 W	433	S	S	1340	1100	500	110.000	17.000	B
108	HAGAFELLSJOKUL	IS00204	64.34 N	20.24 W	433	S	S	1340	950	500	100.000	17.000	B
109	HOFFELLSJ.E	IS02132	64.29 N	15.34 W	***	SE	SE	****	****	****	*********	*******	B
110	HOFFELLSJ.W	IS02031	64.29 N	15.34 W	432	SE	SE	1500	1100	80	280.000	30.000	B
111	HOFSJOKULL N	IS00510	64.55 N	18.50 W	303	N	N	1800	****	860	90.600	19.900	BC
112	HRUTARJOKULL	IS00923	64.01 N	16.32 W	430	E	E	2000	1100	200	10.000	7.000	B
113	HYRNINGSJOKULL	IS00100	64.48 N	23.46 W	433	E	E	1445	1050	750	1.000	2.000	B
114	JOKULHALS	IS00201	64.49 N	23.45 W	433	E	E	1445	850	650	2.000	3.000	B
115	KALDALONSJOKUL	IS00102	66.08 N	22.16 W	433	SW	SW	925	650	100	35.000	6.000	B
116	KVERKJOKULL	IS02500	64.41 N	16.38 W	430	N	N	1850	1500	900	35.000	10.000	B
117	KVIARJOKULL	IS00822	63.58 N	16.34 W	430	SE	SE	1800	1100	50	20.000	10.000	B
118	LEIRUFJ.JOKULL	IS00200	66.11 N	22.23 W	433	NW	NW	925	700	100	30.000	6.000	B
119	MORSARJOKULL	IS00318	64.07 N	16.53 W	430	SW	SW	1400	1250	180	30.000	10.000	B
120	MULAJOKULL S.	IS00311	64.40 N	18.43 W	431	S	SE	1800	1300	600	100.000	19.000	B F
121	MULAJOKULL W	IS00311	64.40 N	18.43 W	431	S	SE	1800	1300	600	100.000	19.000	B
122	NAUTHAGAJOKULL	IS00210	64.40 N	18.46 W	***	S	S	****	****	****	*********	*******	B
123	OELDUFELLSJ.	IS00114	63.44 N	18.55 W	432	NE	E	1400	1000	350	220.000	16.000	B
124	REYKJAFJARDARJ.	IS00300	66.11 N	22.12 W	433	NE	NE	925	650	150	25.000	6.000	B
125	SIDUJOK.E M175	IS00015	64.11 N	17.53 W	432	SW	S	1700	1050	650	350.000	40.000	B
126	SIDUJOK.E M177	IS00015	64.11 N	17.53 W	432	SW	S	1700	1050	650	350.000	40.000	B
127	SKAFTAFELLSJ.	IS00419	64.05 N	16.48 W	430	SW	S	1900	1300	100	80.000	20.000	B
128	SKEIDARARJ. E1	IS00117	64.13 N	17.13 W	***	S	S	****	****	****	*********	*******	B
129	SKEIDARARJ. E2	IS00117	64.13 N	17.13 W	***	S	S	****	****	****	*********	*******	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
130	SKEIDARARJ. E3	IS00117	64.13 N	17.13 W	***	S	S	****	****	****	*********	*******	B F
131	SKEIDARARJOKUL	IS00116	64.13 N	17.13 W	432	S	S	1700	1100	110	1300.000	50.000	B F
132	SOLHEIMAJOK.W	IS00113	63.35 N	19.17 W	432	SW	SW	1500	1100	80	60.000	15.000	B
133	SVINAFELLSJ.	IS00520	64.02 N	16.45 W	420	W	SW	2119	1450	120	30.000	12.000	B
134	TUNGNAARJOKULL	IS02214	64.19 N	18.04 W	433	SW	W	1450	1100	690	120.000	25.000	B
135	VIRKISJOKULL	IS00721	64.00 N	16.45 W	430	W	W	2119	1300	200	18.000	8.000	B

NORWAY

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
136	AALFOTBRE OEST	N 36206	61.45 N	5.41 E	***	N	N	1320	1160	940	3.320	2.800	C
137	AALFOTBREEN	N 36204	61.45 N	5.39 E	436	NE	NE	1380	1230	890	4.820	2.900	C E
138	AUST OKSTINDBRE	N 64902	66.14 N	14.22 E	438	N	NE	1750	1340	730	14.000	7.250	C
139	AUSTDALSBREEN	N 37323	61.48 N	7.21 E	424	SE	SE	1630	1480	1160	11.950	5.700	C
140	AUSTERDALSBREEN	N 31220	61.37 N	6.56 E	438	SE	SE	1920	****	390	26.840	8.500	B
141	BAKLIBREEN	N 31013	61.39 N	7.05 E	434	SE	SE	1960	****	1190	3.190	3.500	F
142	BRIGSDALSBREEN	N 37110	61.39 N	6.55 E	438	W	W	1910	****	350	11.940	6.000	B
143	ENGABREEN	N 67011	66.39 N	13.51 E	438	N	NW	1594	1220	40	32.020	11.500	BC E
144	FAABERGSTOELSB.	N 31015	61.43 N	7.14 E	438	E	E	1810	****	760	15.000	7.000	B
145	GRAASUBREEN	N 00547	61.39 N	8.36 E	676	NE	E	2300	2060	1850	3.030	2.300	C
146	HARDANGERJOEKUL	N 22303	60.32 N	7.22 E	438	W	W	1850	1740	1050	18.520	8.100	C
147	HELLSTUGUBREEN	N 00511	61.34 N	8.26 E	518	N	N	2130	1900	1470	3.130	3.400	BC
148	LANGFJORDJOEKUL	N 85008	70.07 N	21.46 E	438	SE	E	1062	850	300	4.800	4.000	C
149	LEIRBREEN	N 00548	61.34 N	8.06 E	***	NW	NW	2070	****	1530	4.870	3.800	B
150	NIGARDSBREEN	N 31014	61.43 N	7.08 E	438	SE	SE	1950	1618	355	48.200	9.600	BC E
151	SPOERTEGGBREEN	N 31027	63.36 N	7.27 E	303	**	**	1770	1575	1260	27.940	6.800	C
152	STEGHOLTBREEN	N 31021	61.48 N	7.19 E	438	S	S	1900	****	880	15.340	7.700	B
153	STORBREEN	N 00541	61.34 N	8.08 E	526	NE	NE	1970	1770	1380	5.260	3.000	BC
154	STORGLOMBREEN	N 67313	66.40 N	14.00 E	***	NE	NE	1580	****	520	59.160	10.500	C
155	STYGGEDALSBREEN	N 30720	61.29 N	7.53 E	526	N	N	2240	****	1270	1.810	3.200	B
156	SVARTISHEIBREEN	N 65509	66.33 N	13.46 E	***	SE	W	1420	1040	770	5.480	4.000	C
157	TRETTEN-NULL-TO	N 67315	66.43 N	14.01 E	538	E	E	1260	****	580	4.920	3.400	C
158	TROLLBERGDALSBR	N 68507	66.43 N	14.27 E	538	SE	SE	1300	1050	900	1.820	2.100	C
159	AU.BROEGGERBR.	N 15504	78.53 N	11.50 E	529	NW	N	600	260	60	6.100	6.000	C
160	AUSTRE TORELL	N 12503	77.11 N	15.20 E	424	SW	SW	700	****	0	*********	21.000	B
161	HANS	N 12419	77.05 N	15.40 E	424	S	S	600	350	0	57.000	16.500	BC E
162	M.LOVENBREEN	N 15506	78.53 N	12.04 E	529	NE	N	650	330	50	5.800	4.800	C
163	WERENSKIOLD	N 12501	77.05 N	15.24 E	528	SW	W	810	400	27	28.000	7.000	B E

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
	SWEDEN												
164	HYLLGLACIAEREN	S 00780	67.35 N	17.28 E	538	N	N	1820	****	1320	1.400	2.100	B
165	ISFALLSGLAC.	S 00787	67.55 N	18.34 E	536	E	E	1700	****	1190	1.400	2.100	B E
166	KARSOJIETNA	S 00798	68.21 N	18.19 E	538	NE	E	1500	1100	940	1.210	1.700	BC
167	MIKKAJEKNA	S 00766	67.24 N	17.42 E	518	S	S	1825	****	980	7.100	4.300	B
168	PARTEJEKNA	S 00763	67.10 N	17.40 E	528	E	E	1760	****	1090	11.100	5.300	B
169	PASSUSJIETNA E.	S 00797	68.03 N	18.26 E	538	NE	NW	1630	****	1270	1.700	1.800	B
170	PASSUSJIETNA W	S 00796	68.03 N	18.23 E	538	E	NE	1750	****	1250	1.600	2.400	B
171	RABOTS GLACIAER	S 00785	67.54 N	18.33 E	528	NW	W	1700	****	1071	3.900	4.100	BC
172	RIUKOJIETNA	S 00790	68.05 N	18.05 E	303	E	E	1456	****	1125	4.600	3.000	BC
173	RUOPSOKJEKNA	S 00764	67.20 N	17.59 E	536	NE	N	1760	****	1070	3.500	3.700	B
174	RUOTESJEKNA	S 00767	67.25 N	17.28 E	538	NE	N	1600	****	1000	5.200	4.300	B
175	SALAJEKNA	S 00759	67.07 N	16.23 E	528	SE	S	1580	****	880	24.500	9.200	B
176	SE KASKASATJ GL	S 00789	67.56 N	18.36 E	536	SE	S	1890	1560	1440	0.600	1.400	B
177	STORGLACIAEREN	S 00788	67.54 N	18.34 E	528	E	E	1720	****	1135	3.100	3.700	BC E
178	STOUR RAEITAGL.	S 00784	67.58 N	18.23 E	539	N	E	1580	****	1270	1.800	2.200	B
179	SUOTTASJEKNA	S 00768	67.28 N	17.35 E	528	NE	N	1840	****	1100	7.900	4.200	B
180	TARFALAGL	S 00791	67.56 N	18.39 E	670	E	E	1710	****	1390	0.860	1.000	BC
181	UNNA RAEITA GL.	S 00783	67.58 N	18.26 E	538	N	NE	1680	****	1300	1.700	1.900	B
182	VARTASJEKNA	S 00765	67.27 N	17.40 E	538	NE	NE	1800	****	1260	3.600	3.000	B
	GERMANY												
183	BLAUEIS	D 00004	47.34 N	12.51 E	549	E	E	2380	2126	1910	0.144	0.800	D
184	HOELLENTAL	D 00003	47.43 N	11.00 E	548	NE	NE	2580	2386	2192	0.294	0.900	D
185	SCHNEEFERNER N	D 00001	47.25 N	10.59 E	648	E	E	2820	2688	2556	0.368	0.900	D
186	SCHNEEFERNER S	D 00002	47.24 N	10.58 E	648	NE	NE	2680	2598	2515	0.165	0.700	D
187	WATZMANNGL.	D 00005	47.33 N	12.56 E	548	NE	NE	2205	2090	1975	0.210	0.500	D
	FRANCE												
188	ARGENTIERE	F 00002	45.58 N	6.56 E	519	NW	NW	3100	2600	1550	15.600	9.400	B
189	BLANC	F 00031	44.57 N	6.13 E	538	E	S	4100	3000	2300	7.700	6.000	B
190	BOSSONS	F 00004	45.52 N	6.47 E	528	N	N	4800	3200	1190	10.530	7.200	B
191	GEBROULAZ	F 00009	45.17 N	6.38 E	539	N	N	3580	****	2600	2.760	4.000	B
192	MER DE GLACE	F 00003	45.53 N	6.56 E	519	N	N	3600	3000	1480	33.000	12.000	B
193	SAINT SORLIN	F 00015	45.11 N	6.10 E	529	N	N	3463	****	2650	3.000	2.900	B
194	SARENNES	F 00029	45.07 N	6.10 E	***	S	S	3190	3000	2830	0.800	1.500	C

SWITZERLAND

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
195	ALLALIN	CH00011	46.03 N	7.56 E	626	N	E	4190	3320	2236	9.940	6.500	B
196	ALPETLI(KANDER)	CH00109	46.29 N	7.48 E	536	NW	SW	3270	2800	2250	14.020	6.800	B
197	AMMERTEN	CH00111	46.25 N	7.32 E	607	NW	NW	3243	2720	2345	1.890	2.800	B
198	AROLLA (BAS)	CH00027	45.59 N	7.30 E	519	N	N	3716	3080	2135	6.020	5.000	B
199	BASODINO	CH00104	46.25 N	8.29 E	636	NE	NE	3225	2880	2520	2.300	1.600	B
200	BELLA TOLA	CH00021	46.15 N	7.39 E	646	N	N	3000	2840	2655	0.310	0.600	B
201	BIFERTEN	CH00077	46.49 N	8.57 E	538	E	NE	3614	2840	1901	2.860	4.200	B
202	BIS	CH00107	46.07 N	7.44 E	624	E	E	4505	3440	2060	4.790	3.800	B
203	BLUEMLISALP	CH00064	46.30 N	7.46 E	616	NW	NW	3663	2960	2200	2.980	2.900	B
204	BOVEYRE	CH00041	45.58 N	7.16 E	529	NW	NW	3663	3220	2595	1.990	2.500	B
205	BRENEY	CH00036	45.58 N	7.25 E	517	S	SW	3827	3240	2575	9.800	6.300	B
206	BRESCIANA	CH00103	46.30 N	9.02 E	636	W	W	3402	3080	2720	0.940	1.600	B
207	BRUNEGG	CH00020	46.09 N	7.42 E	530	NW	NW	4134	3160	2450	6.120	4.900	B
208	BRUNNI	CH00072	46.44 N	8.47 E	624	E	N	3295	2760	2335	2.990	2.900	B
209	CALDERAS	CH00095	46.32 N	9.43 E	617	N	NE	3360	3070	2730	1.290	2.000	B
210	CAMBRENA	CH00099	46.24 N	10.00 E	614	NE	NE	3500	2960	2520	1.720	2.500	B
211	CAVAGNOLI	CH00119	46.27 N	8.29 E	628	NE	E	2880	2720	2580	1.320	2.300	B
212	CHEILLON	CH00029	46.00 N	7.25 E	517	N	N	3827	2960	2630	4.730	4.000	B
213	CORBASSIERE	CH00038	45.59 N	7.18 E	519	N	N	4314	3200	2169	17.440	9.800	B
214	CORNO	CH00120	46.27 N	8.23 E	656	N	N	2875	2720	2570	0.270	0.700	B
215	DAMMA	CH00070	46.38 N	8.27 E	616	E	NE	3520	2820	2040	6.320	3.300	B
216	EIGER	CH00059	46.34 N	7.59 E	616	W	NW	4099	3100	2115	2.270	2.600	B
217	EIGER (WEST)	CH00353	46.34 N	7.59 E	637	W	W	3940	****	2560	0.350	*******	F
218	EN DARREY	CH00030	46.01 N	7.23 E	639	NE	NE	3703	3120	2490	1.860	2.400	B
219	FEE NORTH	CH00013	46.05 N	7.53 E	606	NE	NE	4360	3260	1932	16.660	5.100	B
220	FERPECLE	CH00025	46.01 N	7.35 E	538	NW	N	3680	3300	2095	9.790	6.000	B
221	FIESCHER	CH00004	46.30 N	8.09 E	519	SE	S	4180	3140	1667	33.060	16.000	B
222	FINDELEN	CH00016	46.00 N	7.52 E	516	NW	W	4190	3300	2484	19.090	9.300	B
223	FIRNALPELI	CH00075	46.47 N	8.28 E	606	NW	N	2920	2680	2160	1.180	1.100	B
224	FORNO	CH00102	46.18 N	9.42 E	519	N	N	3360	2740	2225	8.770	6.800	B
225	GAMCHI	CH00061	46.31 N	7.48 E	619	N	N	2837	2260	1990	1.730	2.700	B
226	GAULI	CH00052	46.37 N	8.11 E	516	E	E	3628	2880	2150	13.700	6.800	B
227	GIETRO	CH00037	46.00 N	7.23 E	634	NW	W	3827	3240	2480	5.940	5.400	B
228	GLAERNISCH	CH00080	47.00 N	8.59 E	626	W	W	2914	2600	2295	2.090	2.300	B
229	GORNER	CH00014	45.58 N	7.48 E	519	N	NW	4609	3220	2083	68.860	14.100	B
230	GRAND DESERT	CH00031	46.05 N	7.21 E	636	NW	N	3336	2960	2755	1.850	2.300	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
231	GRAND PLAN NEVE	CH00045	46.15 N	7.09 E	647	N	N	2560	2460	2350	0.200	0.400	B
232	GRIES (AEGINA)	CH00003	46.26 N	8.20 E	534	NE	NE	3373	2920	2370	6.280	6.200	BCD
233	GRIESS(KLAUSEN)	CH00074	46.50 N	8.50 E	617	N	NW	3080	2420	2218	2.480	1.300	B
234	GRIESSEN(OBWA.)	CH00076	46.51 N	8.30 E	626	W	NW	2887	2600	2550	1.270	1.300	B
235	GROSSER ALETSCH	CH00005	46.30 N	8.02 E	519	SE	S	4158	3140	1555	86.760	24.700	BC E
236	GRUBEN	CH00352	46.10 N	7.59 E	639	W	NW	3993	3360	2780	1.320	2.800	F
237	HUEFI	CH00073	46.49 N	8.51 E	518	S	SW	3240	2780	1640	13.730	7.000	B
238	KALTWASSER	CH00007	46.15 N	8.05 E	606	NW	W	3370	2940	2660	1.850	1.600	B
239	KEHLEN	CH00068	46.41 N	8.25 E	518	SE	SE	3418	2800	2078	3.150	3.300	B
240	KESSJEN	CH00012	46.04 N	7.56 E	656	NE	NE	3240	2980	2869	0.610	0.900	B
241	LAEMMERN	CH00063	46.24 N	7.33 E	616	E	E	3243	2900	2520	3.350	2.500	B
242	LANG	CH00018	46.28 N	7.56 E	519	SW	SW	3897	2960	2023	10.030	7.700	B
243	LAVAZ	CH00082	46.38 N	8.56 E	618	NE	N	3020	2580	2285	1.760	2.600	B
244	LENTA	CH00084	46.31 N	9.03 E	527	N	N	3402	2820	2310	1.400	2.600	B
245	LIMMERN	CH00078	46.49 N	8.59 E	627	NE	NE	3421	2760	2260	2.390	2.900	B
246	LISCHANA	CH00098	46.46 N	10.21 E	659	NW	NW	3025	2880	2745	0.210	0.600	B
247	MARTINETS	CH00046	46.13 N	7.06 E	647	NE	NE	2740	2420	2105	0.590	0.800	B
248	MINSTIGER	CH00164	46.31 N	8.12 E	628	E	E	3466	2980	2500	3.090	3.400	F
249	MITTELALETSCH	CH00106	46.27 N	8.02 E	527	SE	SE	4195	3100	2280	8.500	5.900	B
250	MOIRY	CH00024	46.05 N	7.36 E	518	N	N	3845	3120	2390	6.110	5.600	B
251	MOMING	CH00023	46.05 N	7.40 E	609	N	NW	4065	3160	2380	5.770	3.800	B
252	MONT DURAND	CH00035	45.55 N	7.20 E	519	E	NE	4280	3060	2360	7.590	6.000	B
253	MONT FORT	CH00032	46.05 N	7.19 E	636	NW	N	3328	2900	2695	1.100	2.000	B
254	MONT MINE	CH00026	46.01 N	7.33 E	519	NW	N	3724	3220	1963	10.890	8.100	B
255	MORTERATSCH	CH00094	46.24 N	9.56 E	519	N	N	4020	3000	2000	17.150	7.500	B
256	MUTT	CH00002	46.33 N	8.25 E	656	NW	NW	3000	2780	2580	0.570	1.100	B
257	OB.GRINDELWALD	CH00057	46.37 N	8.06 E	518	NW	NW	3741	3000	1230	10.070	5.500	B
258	OBERAAR	CH00050	46.32 N	8.13 E	524	NE	NE	3462	2860	2300	5.230	5.200	B
259	OBERALETSCH	CH00006	46.25 N	7.58 E	519	SE	SE	3890	2920	2144	21.710	9.100	B
260	OFENTAL	CH00009	46.01 N	8.00 E	659	N	N	3025	2820	2689	0.400	0.900	B
261	OTEMMA	CH00034	45.57 N	7.27 E	517	SW	SW	3796	3020	2460	16.550	8.500	B
262	PALUE	CH00100	46.22 N	9.59 E	629	E	E	3865	3180	2330	6.620	4.000	B
263	PANEYROSSE	CH00044	46.16 N	7.10 E	646	N	N	2760	2560	2380	0.450	0.700	B
264	PARADIES	CH00086	46.30 N	9.04 E	606	N	NE	3402	2880	2401	4.600	3.600	B
265	PARADISINO	CH00101	46.25 N	10.07 E	639	NW	W	3245	2980	2825	0.550	1.000	B
266	PIERREDAR	CH00049	46.19 N	7.11 E	644	N	N	3020	2760	2400	0.670	0.700	B
267	PIZOL	CH00081	46.58 N	9.24 E	656	N	N	2785	2600	2600	0.320	0.600	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
268	PLATTALVA	CH00114	46.50 N	8.59 E	656	E	E	2980	2740	2550	0.730	1.100	B	
269	PORCHABELLA	CH00088	46.38 N	9.53 E	616	N	N	3390	2880	2639	2.590	2.500	B	
270	PRAPIO	CH00048	46.19 N	7.12 E	657	NW	NW	3016	2780	2400	0.360	0.900	B	
271	PUNTEGLIAS	CH00083	46.47 N	8.57 E	617	SE	S	3005	2520	2355	0.930	2.000	B	
272	RAETZLI	CH00065	46.23 N	7.31 E	626	N	NW	2968	2760	2430	9.800	4.000	B	
273	RHONE	CH00001	46.37 N	8.24 E	514	S	S	3620	2940	2125	17.380	10.200	B	
274	RIED	CH00017	46.08 N	7.51 E	539	NW	NW	4280	3460	2058	8.260	6.300	B	
275	ROSEG	CH00092	46.23 N	9.50 E	517	N	N	3650	3060	2159	8.720	5.200	B	
276	ROSENLAUI	CH00056	46.39 N	8.09 E	526	NE	N	3704	3000	1875	6.200	5.200	B	
277	ROSSBODEN	CH00105	46.11 N	8.01 E	539	N	NE	3993	3080	1950	1.890	3.900	B	
278	ROTFIRN NORD	CH00069	46.40 N	8.26 E	619	E	NE	3525	2680	2031	1.210	2.300	B	
279	SALEINA	CH00042	45.59 N	7.04 E	518	E	NE	3900	2940	1696	5.030	6.400	B	
280	SANKT ANNA	CH00067	46.36 N	8.36 E	636	N	N	2905	2720	2570	0.440	0.900	B	
281	SARDONA	CH00091	46.55 N	9.16 E	646	E	E	2790	2580	2500	0.380	0.700	B	
282	SCHWARZ	CH00062	46.25 N	7.40 E	519	SW	NW	3669	2800	2210	1.600	3.900	B	
283	SCHWARZBERG	CH00010	46.01 N	7.56 E	626	NE	NE	3650	3080	2648	6.200	4.300	B	
284	SESVENNA	CH00097	46.43 N	10.25 E	656	NE	N	3150	2940	2750	0.670	1.200	B	
285	SEX ROUGE	CH00047	46.20 N	7.13 E	656	N	NW	2890	2820	2650	0.720	1.200	B	
286	SILVRETTA	CH00090	46.51 N	10.05 E	626	NW	W	3160	2780	2439	3.250	3.500	BC	
287	STEIN	CH00053	46.42 N	8.26 E	528	N	N	3492	2880	1934	6.520	4.700	B	
288	STEINLIMMI	CH00054	46.42 N	8.24 E	517	N	N	3295	2640	2092	2.210	2.700	B	
289	SULZ	CH00079	46.53 N	9.03 E	658	N	N	2480	2000	1790	0.200	0.500	B	
290	SURETTA	CH00087	46.31 N	9.23 E	617	NE	NE	3005	2720	2216	1.170	1.600	B	
291	TAELLIBODEN	CH00008	46.00 N	7.59 E	656	NW	NW	2935	2760	2631	0.260	0.800	B	
292	TIATSCHA	CH00096	46.50 N	10.06 E	634	S	S	3125	2900	2500	2.110	2.200	B	
293	TIEFEN	CH00066	46.37 N	8.26 E	519	SE	SE	3530	2960	2500	3.170	3.400	B	
294	TRIENT	CH00043	46.00 N	7.02 E	538	N	N	3490	3140	1753	6.580	5.000	B	
295	TRIFT (GADMEN)	CH00055	46.40 N	8.22 E	518	N	N	3505	2900	1670	17.190	7.100	B	
296	TSANFLEURON	CH00033	46.19 N	7.14 E	606	NE	E	3016	2760	2417	3.780	3.600	B	
297	TSCHIERVA	CH00093	46.24 N	9.53 E	518	NW	NW	3995	3060	2141	6.830	5.000	B	F
298	TSCHINGEL	CH00060	46.30 N	7.51 E	627	N	E	3505	2680	2265	6.180	3.800	B	
299	TSEUDET	CH00040	45.54 N	7.15 E	617	N	N	3731	2900	2423	1.730	3.000	B	
300	TSIDJIORE NOUVE	CH00028	46.00 N	7.27 E	528	N	NE	3796	3260	2205	3.120	5.000	B	
301	TURTMANN (WEST)	CH00019	46.08 N	7.41 E	528	NW	N	4190	3380	2261	6.980	5.800	B	
302	UNT.GRINDELWALD	CH00058	46.35 N	8.04 E	519	N	N	4099	2780	1235	21.710	9.000	B	
303	UNTERAAR	CH00051	46.34 N	8.13 E	517	E	E	4088	2660	1915	28.410	13.500	B	
304	VAL TORTA	CH00118	46.28 N	8.32 E	649	N	N	2740	2580	2530	0.170	0.600	B	

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
305	VALLEGGIA	CH00117	46.28 N	8.31 E	648	NE	NE	2820	2560	2420	0.590	1.200	B
306	VALSOREY	CH00039	45.54 N	7.16 E	518	NE	NW	3731	3100	2395	2.340	4.100	B
307	VERSTANKLA	CH00089	46.51 N	10.04 E	617	NW	NW	3100	2680	2390	1.060	2.000	B
308	VORAB	CH00085	46.53 N	9.10 E	606	E	SE	2975	2720	2560	2.510	2.000	B
309	WALLENBUR	CH00071	46.43 N	8.28 E	619	E	SE	3280	2580	2236	1.700	2.200	B
310	ZINAL	CH00022	46.04 N	7.38 E	519	N	N	4260	3060	2030	16.240	8.000	B
311	ZMUTT	CH00015	46.00 N	7.38 E	517	NE	E	4100	2980	2234	17.220	8.500	B

AUSTRIA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
312	AEU.PIRCHLKAR	A 00229	47.00 N	10.55 E	606	SE	NE	3260	3030	2720	0.940	1.900	B
313	ALP.KRAEUL F.	A 00321	47.03 N	11.09 E	648	NW	NW	3410	2960	2650	0.520	1.500	B
314	ALPEINER F.	A 00307	47.03 N	11.08 E	528	N	NE	3330	3040	2540	3.770	3.800	B
315	BACHFALLEN F.	A 00304	47.05 N	11.05 E	608	N	N	3150	2870	2650	2.350	2.500	B
316	BAERENKOPF K.	A 00702	47.08 N	12.43 E	624	N	N	3400	3040	2270	2.570	3.100	B
317	BERGLAS F.	A 00308	47.04 N	11.07 E	608	E	NE	3280	3110	2620	0.900	1.900	B
318	BIELTAL F.	A 00105	46.53 N	10.08 E	606	NW	NW	3000	2740	2544	0.730	1.100	B
319	BILDSTOECKL F.	A 0B310	47.00 N	11.06 E	608	NE	NE	3260	2920	2640	2.200	2.400	B
320	BOCKKOGEL F.	A 00302	47.02 N	11.07 E	644	NW	NW	3270	3050	2690	0.690	1.400	B
321	BRENNKOGL K.	A 00727	47.06 N	12.48 E	646	N	N	2960	2670	2430	0.590	1.200	B
322	DAUNKOGEL F.	A 0A310	47.00 N	11.06 E	608	NE	NE	3260	2920	2640	2.200	2.400	B
323	DIEM F.	A 00220	46.49 N	10.57 E	608	NW	NW	3520	3120	2710	2.890	3.400	B
324	DORFER K.	A 00509	47.06 N	12.20 E	628	SE	SE	3560	2920	2458	4.590	2.800	B
325	E.GRUEBL F.	A 00317	46.59 N	11.14 E	609	NW	NW	3230	2700	2420	1.130	2.300	B
326	EISER K.	A 00708	47.09 N	12.41 E	646	SE	E	2860	2720	2570	0.610	0.800	B
327	FERNAU F.	A 00312	46.59 N	11.08 E	648	NW	N	3290	2910	2590	1.890	2.200	B
328	FREIGER F.	A 00320	46.58 N	11.12 E	606	NE	NE	3370	3090	2720	0.590	1.500	B
329	FREIWAND K.	A 00706	47.06 N	12.45 E	648	SE	SE	3130	2890	2690	0.350	1.100	B
330	FROSNITZ K.	A 00507	47.05 N	12.24 E	636	E	E	3270	2900	2560	2.940	2.700	B
331	FRUSCHNITZ K.	A 00722	47.05 N	12.40 E	100	SW	W	3510	3170	2550	2.870	3.200	B
332	FURTSCHAGL K.	A 00406	47.00 N	11.46 E	608	NW	NW	3480	2890	2542	1.000	1.600	B
333	GAISKAR F.	A 00325	46.58 N	11.07 E	648	SE	SE	3190	3070	2890	0.750	1.100	B
334	GAISSBERG F.	A 00225	46.50 N	11.04 E	528	NW	NW	3390	2850	2440	1.350	2.900	B
335	GEPATSCH F.	A 00202	46.51 N	10.46 E	528	NE	N	3518	2791	2064	18.160	8.700	B D
336	GOESSNITZ K.	A 01201	46.58 N	12.45 E	647	NW	NW	3060	2690	2520	0.860	1.500	B
337	GR.GOSAU G.	A 01101	47.29 N	13.36 E	646	NW	NW	2850	2520	2250	1.480	2.200	B
338	GRIESKOGL K.	A 00709	47.10 N	12.41 E	646	E	SE	2960	2770	2640	0.360	0.600	B
339	GROSSELEND K.	A 01001	47.02 N	13.19 E	636	NW	NW	3160	2810	2380	2.760	1.400	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
340	GRUENAU F.	A 00315	46.59 N	11.12 E	648	N	N	3420	2771	2342	1.930	2.300	B D
341	GURGLER F.	A 00222	46.48 N	10.59 E	528	NW	N	3420	2990	2270	11.140	8.100	B
342	GUSLAR F.	A 00210	46.51 N	10.48 E	648	E	SE	3500	3142	2785	3.010	2.500	B D
343	HALLSTAETTER G.	A 01102	47.29 N	13.37 E	608	NE	NE	2910	2560	2080	3.300	2.300	B
344	HINTEREIS F.	A 00209	46.48 N	10.46 E	518	E	NE	3710	3054	2398	9.700	7.700	BCD
345	HOCHALM K.	A 01005	47.01 N	13.20 E	636	E	E	3340	2900	2510	3.160	2.600	B
346	HOCHJOCH F.	A 00208	46.47 N	10.49 E	526	N	NW	3500	3030	2580	7.150	3.800	B
347	HOCHMOOS F.	A 00309	47.03 N	11.09 E	609	E	NE	3470	3030	2570	1.450	2.300	B
348	HOFMANNS K.	A 00724	47.04 N	12.43 E	608	E	NE	3700	3140	2510	1.130	2.100	B
349	HORN K.(SCHOB.)	A 01202	46.58 N	12.46 E	648	N	NW	3010	2780	2600	0.460	1.100	B
350	HORN K.(ZILLER)	A 00402	47.00 N	11.49 E	538	N	N	3210	2655	2100	4.190	3.100	B D
351	HT.OELGRUBEN F.	A 00203	46.54 N	10.46 E	648	N	NW	3270	2980	2790	0.240	0.800	B
352	INN.PIRCHLKAR	A 00228	47.00 N	10.55 E	656	E	NE	3340	2990	2720	0.620	1.800	B
353	JAMTAL F.	A 00106	46.52 N	10.10 E	526	N	N	3160	2810	2408	4.130	2.800	BC
354	KA.TAUERN K.S	A 0B602	47.07 N	12.36 E	646	E	NE	2960	2810	2640	0.220	0.600	B
355	KAELBERSPITZ K.	A 01003	47.02 N	13.17 E	608	N	N	2840	2670	2480	0.820	1.500	B
356	KARLES F.	A 00207	46.56 N	10.55 E	646	N	NW	3350	2940	2620	1.610	2.000	B
357	KARLINGER K.	A 00701	47.08 N	12.42 E	624	NE	N	3340	2800	2220	4.000	3.500	B
358	KESSELWAND F.	A 00226	46.50 N	10.48 E	638	SE	E	3490	3180	2720	4.240	4.200	BC
359	KL.FLEISS K.	A 00801	47.03 N	12.57 E	606	W	W	3080	2850	2547	1.230	1.800	B
360	KLEINEISER K.	A 00717	47.09 N	12.40 E	646	NW	NW	2880	2730	2620	0.250	0.600	B
361	KLEINELEND K.	A 01002	47.04 N	13.15 E	634	NE	NE	3200	2850	2180	3.040	2.400	B
362	KLOSTERTALER M.	A 0102B	46.52 N	10.04 E	608	W	W	3160	2930	2660	0.500	1.500	B
363	KLOSTERTALER N.	A 0102A	46.52 N	10.04 E	608	NW	NW	3220	2880	2510	0.610	1.700	B
364	KLOSTERTALER S.	A 0102C	46.52 N	10.04 E	608	N	N	2800	2650	2485	0.330	0.700	B
365	KRIMMLER K.	A 00501	47.05 N	12.15 E	626	NW	NW	3480	2760	2000	5.330	2.800	B
366	KRUML K.	A 00806	47.04 N	12.56 E	606	NW	NW	3252	2800	2460	1.030	1.400	B
367	LAENGENTALER F.	A 00305	47.05 N	11.06 E	647	NE	N	3210	2860	2600	0.750	1.700	B
368	LANDECK K.	A 00604	47.08 N	12.35 E	646	N	N	2940	2600	2430	0.410	0.900	B
369	LANGTALER F.	A 00223	46.48 N	11.01 E	538	N	NW	3420	2910	2450	3.520	5.100	B
370	LAPERWITZ K.	A 00721	47.06 N	12.39 E	636	SW	SW	3470	3050	2620	2.050	1.700	B
371	LARAIN F.	A 00107	46.54 N	10.13 E	637	N	N	3200	2750	2429	1.680	2.200	B
372	LIESENSER F.	A 00306	47.05 N	11.08 E	626	NE	NE	3280	2990	2580	3.570	4.100	B
373	LITZNERGL.	A 00101	46.53 N	10.02 E	647	N	N	3000	2630	2441	0.700	1.200	B
374	MARZELL F.	A 00218	46.47 N	10.53 E	528	NW	N	3620	3160	2450	5.140	4.500	B
375	MAURER K.(GLO.)	A 00714	47.11 N	12.41 E	646	W	W	2890	2730	2610	0.490	1.000	B
376	MAURER K.(VEN.)	A 00510	47.05 N	12.18 E	608	S	S	3300	2980	2455	2.030	1.900	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
377	MITTELBERG F.	A 00206	46.55 N	10.54 E	518	NE	N	3530	3050	2250	10.970	6.300	B
378	MITTERKAR F.	A 00214	46.53 N	10.52 E	646	SE	SE	3580	3230	2960	1.100	1.700	B
379	MUTMAL F.	A 00227	46.47 N	10.55 E	648	N	NW	3522	3080	2720	0.790	1.400	B
380	NIEDERJOCH F.	A 00217	46.47 N	10.52 E	528	N	N	3599	3100	2690	2.900	3.000	B
381	OBERSULZBACH K.	A 00502	47.07 N	12.18 E	518	NW	NW	3570	2790	2063	11.570	5.600	B
382	OCHSENTALERGL.	A 00103	46.51 N	10.06 E	538	N	N	3160	2910	2331	2.560	2.600	B
383	OEDENWINKEL K.	A 00712	47.07 N	12.39 E	539	NW	NW	3180	2590	2130	2.220	3.400	B
384	PASTERZEN K.	A 00704	47.06 N	12.42 E	528	SE	SE	3700	2980	2070	19.780	9.200	B
385	PFAFFEN F.	A 00324	46.57 N	11.08 E	648	W	W	3470	3060	2770	1.210	1.800	B
386	PFANDLSCHARTEN	A 00707	47.05 N	12.47 E	646	NW	W	2940	2660	2530	0.550	1.100	B
387	PRAEGRAT K.	A 00603	47.07 N	12.35 E	606	W	W	3010	2850	2640	0.950	0.900	B
388	RETTENBACH F.	A 00212	46.56 N	10.56 E	646	N	N	3350	2920	2610	1.790	2.300	B
389	RIFFL K. N	A 00718	47.08 N	12.40 E	646	W	SW	3070	2880	2710	0.260	0.600	B
390	RIFFLKAR KEES	A 0A713	47.08 N	12.40 E	649	N	NW	2910	2530	2290	1.010	1.900	B
391	ROFENKAR F.	A 00215	46.53 N	10.53 E	644	SE	SE	3750	3290	2820	1.290	2.200	B
392	ROTMOOS F.	A 00224	46.49 N	11.03 E	628	N	N	3410	2960	2370	3.170	3.000	B
393	SCHALF F.	A 00219	46.47 N	10.56 E	528	NW	NW	3500	3120	2480	8.620	5.700	B
394	SCHATTENSPITZ	A 00108	46.53 N	10.05 E	649	N	NE	3060	2820	2571	0.580	1.000	B
395	SCHAUFEL F.	A 00311	46.59 N	11.07 E	608	NE	NE	3200	2950	2700	0.920	1.600	B
396	SCHLADMINGER G.	A 01103	47.28 N	13.38 E	646	NE	NE	2700	2590	2420	0.810	0.900	B
397	SCHLAPPEREBEN K	A 00805	47.01 N	13.01 E	648	N	NE	3000	2780	2554	0.740	1.300	B
398	SCHLATEN K.	A 00506	47.07 N	12.23 E	518	NE	NE	3660	3060	2114	9.360	5.800	B
399	SCHLEGEIS K.	A 00405	46.59 N	11.46 E	604	NW	NW	3500	2915	2331	5.630	2.100	B D
400	SCHMIEDINGER K.	A 00726	47.11 N	12.41 E	606	NE	NE	3160	2760	2410	1.810	1.800	B
401	SCHNEEGLOCKEN	A 00109	46.52 N	10.06 E	646	NE	NE	3060	2780	2596	0.680	1.100	B
402	SCHNEELOCH G.	A 01104	47.30 N	13.36 E	648	NW	NW	2530	2310	2190	0.230	0.800	B
403	SCHOENACH K.	A 00407	47.08 N	12.04 E	606	N	N	3030	2760	2476	1.090	0.900	B
404	SCHWARZENBERG F	A 00303	47.03 N	11.07 E	638	SE	SW	3497	3090	2720	1.590	2.300	B
405	SCHWARZENSTEIN	A 00403	47.01 N	11.51 E	508	NW	NW	3320	2776	2231	4.930	2.100	B D
406	SCHWARZKARL K.	A 00716	47.10 N	12.40 E	646	NW	NW	2970	2750	2560	0.470	1.000	B
407	SCHWARZKOEPFL K	A 00710	47.09 N	12.43 E	648	N	NW	2860	2580	2340	0.540	1.100	B
408	SEXEGERTEN F.	A 00204	46.54 N	10.48 E	628	N	NE	3490	2980	2540	2.520	2.500	B
409	SIMMING F.	A 00318	46.59 N	11.15 E	608	N	N	3160	2760	2430	0.880	1.600	B
410	SIMONY K.	A 00511	47.04 N	12.16 E	609	SE	SE	3480	2910	2370	2.780	2.500	B
411	SONNBLICK K.	A 00601	47.08 N	12.36 E	606	NE	E	3030	2790	2500	1.770	1.500	BC
412	SPIEGEL F.	A 00221	46.50 N	10.57 E	648	NW	NW	3424	3080	2780	1.110	1.700	B
413	SULZENAU F.	A 00314	46.59 N	11.09 E	518	N	N	3510	2950	2389	4.770	3.700	B D

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
414	SULZTAL F.	A 00301	47.00 N	11.05 E	528	N	N	3280	2960	2400	4.140	3.200	B
415	TASCHACH F.	A 00205	46.54 N	10.52 E	528	N	NW	3767	3180	2250	6.670	6.100	B
416	TAUERN K.	A 0A602	47.07 N	12.36 E	646	E	SE	2970	2830	2620	0.270	0.700	B
417	TAUFKAR F.	A 00216	46.53 N	10.54 E	646	SE	SE	3340	3120	2980	0.440	0.800	B
418	TEISCHNITZ K.	A 00723	47.04 N	12.41 E	634	SW	SW	3660	3190	2760	2.070	2.500	B
419	TOTENFELD	A 00110	46.53 N	10.09 E	648	NE	NE	3040	2790	2550	0.720	1.500	B
420	TRIEBENKARLAS F	A 00323	46.57 N	11.09 E	648	W	W	3460	3040	2760	1.790	2.000	B
421	UEBERGOSS.ALM	A 00901	47.26 N	13.04 E	706	N	NE	2845	2770	2630	0.420	1.100	B
422	UMBAL K.	A 00512	47.03 N	12.15 E	538	SW	SW	3440	2980	2380	5.140	4.300	B
423	UNT. RIFFL KEE	A 0B713	47.08 N	12.40 E	649	N	NW	2910	2530	2290	1.010	1.900	B
424	UNTERSULZBACH K	A 00503	47.08 N	12.21 E	528	N	NW	3660	2850	2147	4.270	5.900	B
425	VERBORGENBERG F	A 00322	47.04 N	11.07 E	646	E	E	3260	3000	2780	0.890	1.300	B
426	VERMUNTGL.	A 00104	46.51 N	10.08 E	628	NW	NW	3140	2810	2460	2.250	2.500	B
427	VERNAGT F.	A 00211	46.53 N	10.49 E	626	S	SE	3627	3187	2748	9.550	3.300	BCDE
428	VILTRAGEN K.	A 00505	47.08 N	12.22 E	528	NE	E	3480	2740	2229	3.050	3.800	B
429	VOG.OCHSENKAR K	A 00802	47.03 N	12.58 E	608	NE	NE	2820	2640	2349	1.270	1.700	B
430	W.GRUEBL F.	A 00316	46.59 N	11.13 E	608	NW	N	2960	2650	2490	0.370	1.000	B
431	W.TRIPP K.	A 01004	47.01 N	13.19 E	646	SE	S	3220	3000	2790	0.600	1.000	B
432	WASSERFALLWINKL	A 00705	47.07 N	12.43 E	638	SE	S	3150	2870	2610	1.930	2.400	B
433	WAXEGG K.	A 00401	47.00 N	11.48 E	636	NE	N	3310	2762	2214	4.120	2.400	B D
434	WEISSEE F.	A 00201	46.51 N	10.43 E	608	N	N	3518	2950	2560	2.860	2.700	B
435	WIELINGER K.	A 00725	47.09 N	12.45 E	604	N	NW	3560	2940	2180	0.980	2.400	B
436	WILDGERLOS	A 00404	47.09 N	12.07 E	608	N	N	3210	2760	2316	2.240	2.100	B
437	WINKL K.	A 01006	47.01 N	13.19 E	648	W	W	3220	2810	2520	0.660	1.300	B
438	WURFER K.	A 00715	47.10 N	12.41 E	646	NW	NW	2820	2690	2580	0.350	0.600	B
439	WURTEN K.	A 00804	47.02 N	13.00 E	628	SW	S	3120	2690	2385	2.030	2.700	B
440	ZETTALUNITZ K.	A 00508	47.05 N	12.23 E	638	SW	SW	3440	3090	2558	3.460	3.700	B

ITALY

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
441	AGNELLO	I 00029	45.09 N	6.54 E	640	NE	NE	3200	3010	2790	0.500	1.450	B
442	ALTA (VEDRETTA)	I 00730	46.27 N	10.41 E	538	NE	N	3350	3059	2670	1.750	2.000	B
443	AMOLA	I 00644	46.13 N	10.40 E	630	E	E	3120	2785	2460	0.860	1.800	B
444	ANDOLLA NORD	I 00336	46.05 N	8.02 E	640	SE	SE	3010	2860	2680	0.200	0.700	B
445	ANTELAO INF.	I 00967	46.27 N	12.16 E	640	N	N	2800	2472	2325	0.200	0.850	B
446	ANTELAO SUP.	I 00966	46.27 N	12.16 E	630	N	NE	3130	2465	2520	0.370	1.300	B
447	AURONA	I 00338	46.15 N	8.05 E	520	NW	NE	3385	2940	2360	1.170	2.300	B
448	BARBADORSO D.	I 00778	46.48 N	10.42 E	538	N	N	3550	2798	2580	1.840	2.100	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
449	BASEI	I 00064	45.28 N	7.07 E	600	NE	NE	3320	****	2980	0.370	0.800	B
450	BELVEDERE	I 00325	45.56 N	7.54 E	525	NE	NE	4520	****	1760	5.580	6.050	B F
451	BRENVA	I 00219	45.50 N	6.54 E	528	SE	E	4810	3100	1415	8.060	7.640	B
452	CAMOSCI	I 00361	46.25 N	8.20 E	650	NE	NE	3100	2880	2590	0.340	1.450	B
453	CARDONNE OCC.	I 00469	46.25 N	10.15 E	648	N	NW	3440	2900	2440	0.750	2.100	B
454	CARESER	I 00701	46.27 N	10.42 E	638	S	S	3350	3092	2857	4.830	2.200	CD
455	CASPOGGIO	I 00435	46.20 N	9.53 E	648	NW	NW	2985	2800	2630	0.840	1.100	B
456	CEVEDALE	I 00732	46.27 N	10.38 E	538	E	E	3700	3078	2635	3.200	3.700	B
457	COLLALTO	I 00927	46.55 N	12.08 E	638	NW	NW	3380	2955	2513	2.570	2.100	B
458	COOLIDGE	I 01420	44.40 N	7.06 E	***	N	N	3800	****	2490	0.150	1.300	F
459	CRISTALLO	I 00937	46.35 N	12.12 E	600	N	N	3000	2510	2330	0.320	1.050	B
460	CRODA ROSSA	I 00828	46.44 N	10.59 E	638	N	N	3205	3002	2750	0.210	1.000	B
461	DOSDE OR.	I 00473	46.23 N	10.12 E	646	N	N	3200	2850	2529	0.850	1.700	B
462	DOSEGU	I 00512	46.22 N	10.32 E	526	SW	SW	3670	3260	2760	3.300	2.800	B
463	FORNI	I 00507	46.24 N	10.34 E	529	N	NW	3678	3150	2350	13.200	5.500	B
464	FELLARIA OCC.	I 00439	46.21 N	9.55 E	528	SE	SE	3700	3090	2510	5.090	3.000	B
465	FONTANA OCC.	I 00780	46.48 N	10.10 E	636	N	N	3360	3022	2585	1.100	1.100	B
466	FORCOLA	I 00731	46.27 N	10.39 E	538	E	NE	3750	3105	2625	2.520	3.500	B
467	FOSSA OR.	I 00823	46.45 N	11.01 E	636	NW	NW	3070	2815	2740	0.300	0.600	B
468	GIGANTE CENTR.	I 00929	46.54 N	12.07 E	649	NW	N	3265	2816	2530	2.570	2.100	B
469	GIGANTE OCC.	I 00930	46.54 N	12.06 E	636	N	N	3300	2955	2554	2.570	2.100	B
470	GIOGO ALTO	I 00813	46.47 N	10.48 E	628	NE	SW	3205	2980	2750	1.630	2.100	B
471	GOLETTA	I 00148	45.30 N	7.03 E	520	N	N	3290	3055	2698	3.020	2.300	B
472	GR. MURAILLES	I 00260	45.57 N	7.35 E	520	W	W	4000	3308	2322	7.570	4.200	B
473	GRAN PILASTRO	I 00893	46.58 N	11.44 E	538	SW	W	3370	2935	2460	2.620	3.700	B
474	HOSAND SETT.	I 00357	46.24 N	8.18 E	620	NE	E	3180	2860	2570	1.980	2.870	B
475	LA MARE	I 00699	46.26 N	10.36 E	525	E	E	3769	3260	2555	4.750	3.500	B
476	LANA	I 00913	47.04 N	12.13 E	529	NW	NW	3480	2720	2250	1.690	2.900	B
477	LEX BLANCHE	I 00209	45.47 N	6.49 E	510	SE	SE	3910	3120	2065	4.090	3.600	B
478	LUNGA(VEDRETTA)	I 00733	46.28 N	10.37 E	529	NE	E	3450	3100	2640	2.620	3.600	B
479	LYS	I 00304	45.54 N	7.50 E	515	SW	SW	4530	3732	2350	11.830	5.600	B
480	M.NEVOSO OCC.	I 00931	46.55 N	12.05 E	630	NW	NW	3310	2915	2620	0.540	1.300	B
481	MALAVALLE	I 00875	46.57 N	11.12 E	515	E	E	3470	2950	2516	9.420	4.400	B
482	MANDRONE	I 00639	46.10 N	10.32 E	520	NE	NE	3436	3022	2450	12.380	5.380	B
483	MARMOLADA	I 00941	46.26 N	11.52 E	606	N	N	3340	2825	2475	2.600	1.500	B
484	MIAGE	I 00213	45.48 N	6.51 E	510	SE	SE	4810	3035	1720	13.020	10.350	B
485	NARDIS OCC.	I 00640	46.12 N	10.39 E	530	SE	SE	3500	3160	2700	1.670	2.550	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
486	NEVES OR.	I 00902	46.59 N	11.48 E	638	S	S	3300	2990	2545	2.270	2.200	B
487	NISCLI	I 00633	46.07 N	10.36 E	630	E	E	3200	2783	2590	0.660	1.500	B
488	PENDENTE	I 00876	46.58 N	11.14 E	520	S	S	3125	2818	2603	1.380	1.100	B
489	PIODE	I 00312	45.54 N	7.52 E	520	SE	SE	4436	3120	2470	2.550	2.650	B
490	PISGANA OCC.	I 00577	46.10 N	10.30 E	537	N	NE	3320	3000	2515	3.360	2.800	B
491	PLATIGLIOLE	I 00481	46.31 N	10.26 E	646	NW	NW	3150	3045	2885	0.310	0.600	B
492	PRE DE BAR	I 00235	45.54 N	7.03 E	520	SE	SE	3750	3095	2075	3.530	3.930	B
493	PRESANELLA	I 00678	46.13 N	10.39 E	520	N	N	3525	2860	2440	3.920	3.200	B
494	ROSIM	I 00754	46.31 N	10.38 E	630	NW	W	3405	3215	2905	0.780	1.500	B
495	ROSSA (VEDR.)	I 00697	46.24 N	10.38 E	630	NE	NE	3640	3195	2680	1.240	1.700	B
496	ROSSO DESTRO	I 00920	47.02 N	12.12 E	536	W	W	3285	2838	2450	0.880	1.700	B
497	RUTOR	I 00189	45.30 N	7.00 E	520	N	NW	3460	2998	2504	9.540	4.800	B
498	SASSOLUNGO OCC.	I 00926	46.55 N	12.08 E	530	N	N	3210	2813	2530	1.920	2.100	B
499	SERANA(VEDR.)	I 00728	46.28 N	10.42 E	646	N	N	3335	3085	2784	1.180	1.600	B
500	SFORZELLINA	I 00516	46.20 N	10.30 E	648	NW	NW	3120	2925	2760	0.390	0.700	BC
501	SOLDA	I 00762	46.29 N	10.35 E	527	NE	NE	3900	2908	2410	6.480	4.200	B
502	TESSA	I 00829	46.44 N	10.59 E	632	N	NW	3300	****	2720	0.790	1.800	B
503	TOULES	I 00221	45.50 N	6.56 E	640	SE	SE	3500	3050	2615	0.930	1.650	B
504	TRESERO	I 00511	46.23 N	10.32 E	646	NW	W	3470	3170	2970	0.770	1.100	B
505	TZA DE TZAN	I 00259	45.59 N	7.34 E	520	SE	S	3810	3285	2551	3.950	3.700	B
506	ULTIMA(VEDR.)	I 00729	46.27 N	10.42 E	648	N	N	3370	3115	2775	0.460	1.200	B
507	VALLE DEL VENTO	I 00919	47.02 N	12.13 E	538	NW	NW	3050	2710	2460	0.360	1.200	B
508	VALLELUNGA	I 00777	46.48 N	10.33 E	518	NW	NW	3730	3138	2410	8.550	3.900	B
509	VALTOURNENCHE	I 00289	45.55 N	7.42 E	422	W	W	3695	3315	2980	1.680	2.000	B
510	VENEROCOLO	I 00581	46.10 N	10.30 E	539	NW	N	3280	2810	2530	1.500	2.200	B
511	VENEZIA (VEDR.)	I 00698	46.25 N	10.38 E	630	E	E	3705	3200	2760	1.710	2.500	B
512	VENTINA	I 00416	46.16 N	9.46 E	536	NE	N	3500	2790	2190	2.370	3.700	B
513	VITELLI	I 00483	46.30 N	10.26 E	537	W	NW	3467	3135	2535	1.820	2.900	B

SPAIN

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
514	ALBA	E 09010	42.39 N	0.37 E	648	NE	NE	3025	2990	2950	0.010	0.110	B
515	ANETO	E 09030	42.38 N	0.39 E	648	NE	NE	3280	3050	2805	1.300	1.200	B
516	BALAITUS SE	E 01030	42.50 N	0.17 W	748	SE	SE	2860	2800	2735	0.020	0.120	B
517	BARRANCS	E 09040	42.38 N	0.40 E	648	NE	NE	3240	3050	2900	0.180	0.750	B
518	BRECHA LATOUR	E 01020	42.50 N	0.17 W	648	E	E	2935	2875	2750	0.060	0.200	B
519	CLOT DE HOUNT	E 03010	42.47 N	0.09 W	749	NW	NW	3150	2975	2950	0.060	0.300	B
520	CORONAS	E 09080	42.38 N	0.38 E	648	SW	SW	3240	3000	2890	0.120	0.490	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
521	CREGUENA N	E 0907A	42.38 N	0.38 E	798	W	W	3020	2970	2920	0.060	0.200	B
522	CREGUENA S	E 0907B	42.38 N	0.38 E	798	W	W	3025	2950	2880	0.040	0.200	B
523	INFIERNO E	E 02020	42.47 N	0.15 W	648	N	N	2950	2850	2750	0.100	0.500	B
524	INFIERNO W	E 0201A	42.47 N	0.15 W	649	N	N	2940	2800	2640	0.140	0.520	B
525	INFIERNO WW	E 0201B	42.47 N	0.15 W	748	N	N	2940	2820	2700	0.040	0.340	B
526	LA PAUL	E 07020	42.39 N	0.26 E	648	NE	NE	3100	3020	2940	0.120	0.290	B
527	LAS FRONDELLAS	E 01010	42.50 N	0.17 W	749	W	W	2900	2800	2775	0.070	0.330	B
528	LITEROLA	E 08010	42.42 N	0.32 E	648	S	S	2950	2900	2880	0.080	0.350	B
529	LLARDANA	E 07010	42.39 N	0.26 E	649	NW	NW	3100	2970	2780	0.220	0.670	B
530	LLOSAS	E 09090	42.38 N	0.39 E	746	SW	SW	3110	3060	3050	0.050	0.120	B
531	MALADETA	E 09020	42.39 N	0.38 E	648	NE	NE	3180	3000	2790	7.500	1.100	B
532	MARBORECILINDRO	E 05010	42.41 N	0.01 E	676	NE	NE	2975	2760	2680	0.250	0.250	B
533	MONFERRAT	E 0302B	42.46 N	0.08 W	758	SE	SE	2950	2890	2780	0.060	0.240	B
534	PERDIDO INF	E 0502B	42.40 N	0.03 E	648	NE	NE	2950	2825	2700	0.400	0.400	B
535	PERDIDO SUP	E 0502A	42.40 N	0.03 E	648	NE	NE	3175	3060	2950	0.100	0.220	B
536	POSETS	E 07030	42.39 N	0.26 E	648	NE	NE	3130	3100	3030	0.100	0.400	B
537	PUNTA ZARRA	E 02040	42.50 N	0.14 W	748	NW	NW	2950	2860	2775	0.020	0.240	B
538	ROBINERA	E 06010	42.42 N	0.08 E	748	NE	NE	2790	2650	2565	0.100	0.480	B
539	SALENCAS	E 09060	42.37 N	0.41 E	648	E	E	3140	3000	2820	0.100	0.350	B
540	SOUM RAMOND SE	E 05030	42.40 N	0.03 E	748	SE	SE	3220	3000	2890	0.050	0.300	B
541	SOUM RAMOND SW	E 05040	42.40 N	0.02 E	748	SW	SW	3210	3100	2950	0.100	0.300	B
542	TAILLON	E 04010	42.42 N	0.03 W	798	SE	SE	2960	2850	2800	0.020	0.200	B
543	TAPOU	E 0302A	42.46 N	0.08 W	748	W	W	3010	2880	2780	0.060	0.200	B
544	TEMPESTADES	E 09050	42.38 N	0.41 E	648	NE	NE	3200	2950	2860	0.300	0.500	B

KENYA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
545	CESAR	KN00004	0.08 S	37.18 E	533	W	W	4780	4680	4580	0.024	0.300	B D
546	DARWIN	KN00006	0.09 S	37.18 E	533	SW	SW	4740	****	4640	0.023	0.200	B D
547	DIAMOND	KN00010	0.09 S	37.18 E	630	**	**	5120	****	4980	0.002	0.100	B D
548	FOREL	KN00011	0.09 S	37.18 E	630	W	W	4950	****	4803	0.015	0.150	B D
549	GREGORY	KN00009	0.09 S	37.19 E	533	N	N	4890	****	4713	0.051	0.420	B D
550	HEIM	KN00012	0.09 S	37.18 E	630	W	W	4800	4787	4775	0.016	0.080	B D
551	JOSEPH	KN00003	0.08 S	37.18 E	533	W	W	4775	****	4620	0.010	0.200	B D
552	KRAPF	KN00001	0.09 S	37.18 E	533	N	N	4800	4780	4620	0.022	0.300	B D
553	LEWIS	KN00008	0.09 S	37.18 E	533	SW	SW	4962	****	4611	0.242	0.950	BCDE
554	NORTHEY	KN00013	0.09 S	37.18 E	533	N	N	4930	****	4680	0.011	0.150	B D
555	TYNDALL	KN00005	0.09 S	37.18 E	533	S	S	4775	****	4513	0.078	0.500	B D

POLAND

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
556	MIEGUSZOWIECKIE	PL00140	49.11 N	20.04 E	780	N	N	2080	2015	1960	0.012	0.150	B DE
557	POD CUBRYNA	PL00180	49.11 N	20.03 E	780	N	N	2190	2125	2088	0.011	0.150	B DE

U.S.S.R.

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
558	ABANO	SU03037	42.42 N	44.32 E	539	SE	SE	5030	3800	2950	2.000	4.100	B
559	ABRAMOV	SU04101	39.39 N	71.38 E	528	N	N	4960	4200	3620	26.210	9.400	BC E
560	AKBULAKULKUN	SU05067	42.10 N	70.30 E	649	NW	NW	4140	3320	3050	2.000	3.500	B
561	AKSU ZAPADNIY	SU05115	42.51 N	77.05 E	538	N	N	4140	****	3480	4.700	4.600	B
562	AKSU-VOSTOCHNIY	SU05116	42.51 N	77.06 E	538	N	N	4338	4020	3520	6.900	4.900	B
563	ALIBEKSKIY	SU03002	43.10 N	41.30 E	538	NE	NE	3700	****	2000	5.400	4.600	B
564	AYUTOR-2	SU05066	42.05 N	70.30 E	538	NE	N	3810	3515	3120	3.200	3.200	B
565	BARKRAK SREDNIY	SU05072	42.05 N	71.10 E	538	N	N	4180	3760	3450	3.200	3.000	B
566	BATYRBAI	SU04063	39.05 N	67.35 E	538	NE	N	3500	3380	3280	1.600	2.400	B
567	BEZENGI	SU03006	43.10 N	43.00 E	529	NE	NE	5050	****	2080	36.200	17.600	B
568	BIRDZHALYCHIRAN	SU03026	43.22 N	42.32 E	006	NE	NE	5600	3650	3320	12.690	6.460	B
569	BITYUKTYUBE	SU03034	43.22 N	42.24 E	007	NW	NW	4670	4000	3325	2.220	3.340	B
570	BOGATYR	SU05111	43.03 N	77.16 E	512	SE	E	4580	****	3450	29.800	8.700	F
571	BOLSHOY AZAU	SU03004	43.17 N	42.26 E	008	S	SE	5610	3900	2517	18.770	9.010	B
572	BOLSHOY MAASHEY	SU07104	50.07 N	87.35 E	536	N	N	4180	3170	2223	16.000	8.200	B
573	CHACHI	SU03035	42.42 N	44.33 E	538	N	N	4430	3830	3230	2.800	3.200	B
574	CHONG-TUR PRAVI	SU05119	42.18 N	73.18 E	538	N	N	4000	3740	3550	0.600	1.310	B
575	CHUNGURCHATCHIR	SU03027	43.22 N	42.33 E	006	NE	NE	5600	3650	3182	12.500	6.720	B
576	DEVDORAKI	SU03036	42.43 N	44.32 E	539	NE	NE	5030	3900	2260	7.000	7.300	B
577	DJANKUAT	SU03010	43.12 N	42.46 E	528	N	NW	3990	3240	2698	3.130	4.200	BCDE
578	DOLONATA	SU05121	42.50 N	77.03 E	538	N	N	4440	3860	3490	3.200	4.000	B
579	DZHUUKUCHAK	SU05117	42.00 N	78.06 E	648	SE	SE	4560	****	3980	1.000	1.200	B
580	GARABASHI	SU03031	43.18 N	42.28 E	008	SE	S	5000	3880	3316	4.470	5.800	BC
581	GEOGRAPHICHESKO	SU04039	38.40 N	72.13 E	526	E	E	6200	4050	2580	64.400	24.200	B
582	GERGETI	SU03038	42.39 N	44.34 E	528	SE	SE	5030	3840	2870	8.300	8.500	B
583	GOLUBIN	SU05060	42.28 N	74.30 E	538	NW	NW	4437	3970	3250	6.210	5.100	BC
584	IGLI TUYUKSU	SU05076	43.00 N	77.06 E	536	NW	NW	4220	****	3450	1.720	2.200	C
585	IRIK	SU03029	43.20 N	42.30 E	007	SE	SE	5600	3900	2623	10.100	8.510	B
586	IRIKCHAT	SU03028	43.20 N	42.32 E	007	SE	SE	3960	3650	3222	1.730	2.370	B
587	KALESNIK	SU05001	42.10 N	71.10 E	538	NE	NW	4000	3865	3430	3.600	3.600	B
588	KARA-BATKAK	SU05080	42.06 N	78.18 E	536	N	N	4280	3780	3292	4.560	3.500	BC E

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	ELEVATIONS MED	ELEVATIONS MIN	AREA SQ KM	LEN KM	TYPE OF DATA
589	KARACHAUL	SU03022	43.23 N	42.27 E	006	N	N	5610	4000	3093	5.140	6.140	B
590	KENG-TUR	SU05118	41.48 N	71.30 E	642	NE	NE	3990	3810	3470	1.200	2.400	B
591	KHADYRSHA	SU04021	38.57 N	71.48 E	536	N	N	4550	****	3140	5.600	6.300	B
592	KHAKEL	SU03003	43.10 N	41.40 E	539	N	N	3240	****	2270	2.700	3.900	B E
593	KIBISHA	SU03042	42.28 N	44.44 E	539	N	N	3620	3400	3160	1.900	1.900	B
594	KIRCHIN	SU04056	39.40 N	70.45 E	539	E	NE	4800	3820	3040	2.200	4.200	B
595	KLJUEV	SU04059	39.25 N	70.45 E	549	E	NE	4400	3640	2880	5.900	4.200	B
596	KOKBELES	SU04057	39.40 N	70.45 E	539	NE	N	5080	4100	3120	3.200	5.600	B
597	KORELDASH	SU03015	42.58 N	43.10 E	539	S	S	3820	3500	2320	2.800	3.600	B
598	KORUMDU	SU07103	50.08 N	87.41 E	536	NE	NE	4043	3150	2244	5.200	4.700	B
599	KOZELSKIY	SU08005	53.14 N	158.49 E	539	S	S	2050	1590	880	1.800	4.600	BC
600	KYUKYURTLYU	SU03033	43.21 N	42.23 E	007	W	W	5640	4250	2788	6.590	7.430	B
601	LEVIY AKTRU	SU07102	50.05 N	87.43 E	536	SE	SE	4043	3250	2561	6.500	5.900	BC
602	MALIY AKTRU	SU07100	50.05 N	87.45 E	536	E	N	3714	3200	2229	3.800	4.400	BC E
603	MALIY AZAU	SU03032	43.17 N	42.27 E	006	S	S	5610	4000	3077	8.470	7.000	B
604	MANSHUK MAMETOV	SU05091	43.00 N	77.06 E	736	W	W	4190	****	3610	0.350	0.600	C
605	MARUKHSKIY	SU03001	43.20 N	41.10 E	539	NE	NE	3160	2785	2490	3.300	4.000	B
606	MAYAKOVSKIY	SU05094	43.00 N	77.06 E	736	W	W	4000	****	3570	0.180	0.800	C
607	MAZARSKIY	SU04042	38.37 N	71.34 E	526	NW	NW	5400	4400	3200	18.500	16.800	B
608	MEDVEZHIY	SU04040	38.35 N	72.17 E	536	W	W	4690	3800	2875	23.300	15.800	F
609	MIKELCHIRAN	SU03025	43.22 N	42.30 E	006	NE	NE	4900	3900	3262	4.440	4.650	B
610	MNA	SU03039	42.42 N	44.28 E	539	SE	SE	4600	3860	2860	4.600	4.100	B
611	MOLODEZHNIY	SU05090	43.00 N	77.06 E	736	NE	NE	4150	****	3448	1.430	1.700	BC
612	MURAVLEV	SU06002	45.06 N	80.14 E	***	NW	NW	4040	3408	3378	0.920	2.060	B
613	MURKAR	SU03020	41.14 N	47.46 E	539	N	N	3400	3100	2820	1.000	2.700	B
614	MUSHKETOV	SU04041	39.00 N	72.06 E	536	N	N	7100	4620	2870	17.100	14.000	B
615	NO.104	SU01001	79.22 N	95.39 E	300	**	**	728	500	****	1817.000	60.000	BC
616	NO.125	SU07105	50.06 N	87.42 E	303	N	N	3550	3100	3025	0.800	1.400	BC
617	NO.131	SU05081	41.51 N	77.46 E	538	NE	NE	4433	4151	3864	0.510	1.280	C
618	NO.191	SU03041	42.33 N	44.46 E	648	W	W	3450	3200	3060	0.500	1.300	B
619	NO.314	SU04045	39.22 N	70.07 E	538	NW	NW	4340	3970	3600	1.500	2.000	B
620	NO.356	SU05106	41.50 N	78.11 E	538	NE	NE	4800	4252	3860	3.610	4.480	BC E
621	NO.396	SU03016	42.35 N	44.19 E	648	NW	NW	3860	3320	3120	1.800	2.200	B
622	NO.462V	SU03005	43.05 N	42.55 E	539	NE	NE	4160	****	2500	4.100	3.700	B
623	NO.503	SU04003	39.01 N	70.54 E	536	N	N	3440	****	3000	0.900	2.500	B
624	NO.517	SU04017	38.58 N	70.40 E	536	N	N	3400	2950	2320	0.800	2.900	B
625	NO.675	SU04064	38.57 N	68.16 E	648	S	S	4000	****	3720	0.400	0.600	B

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
626	ORDZHONIKIDZE	SU05093	43.00	N	77.06	E	736	W	W	4120	****	3480	0.310	1.200	C
627	PAKHTAKOR	SU05071	42.12	N	70.10	E	538	NE	N	4000	3840	3540	2.800	3.600	B
628	PARTIZAN	SU05095	43.00	N	77.06	E	736	W	W	4370	****	3710	0.140	0.800	C
629	PRAVIY AKTRU	SU07101	50.05	N	87.44	E	536	NE	NE	3750	3000	2500	4.800	5.300	C
630	RAIGORODSKIY	SU04055	39.40	N	70.45	E	538	E	NE	4840	3795	2750	6.000	6.400	B
631	RAMA	SU04044	39.10	N	70.27	E	536	SE	SE	4800	4050	3500	6.600	5.600	B
632	SEVERTSOV	SU04062	39.05	N	67.40	E	545	NW	N	4000	3700	3270	2.600	3.100	B
633	SHOKALSKIY	SU05078	43.00	N	77.18	E	536	N	N	4540	****	3381	10.800	4.700	B
634	SHUMSKIY	SU06001	45.05	N	80.14	E	536	N	N	4463	3407	3126	2.830	3.580	BCD
635	SKAZKA	SU03008	42.50	N	43.40	E	539	N	N	3760	****	2540	2.000	3.200	B
636	SKOGACH	SU04023	38.43	N	71.30	E	536	N	N	5250	4200	3050	12.600	12.000	B
637	SUATISI SREDNIY	SU03040	42.42	N	44.25	E	539	S	S	4760	3800	2850	2.500	4.700	B
638	SUYOK ZAPADNIY	SU05082	41.47	N	77.47	E	538	N	N	4496	4187	3895	1.250	2.500	C
639	TALGAR YUZHNIY	SU05079	43.06	N	77.18	E	638	W	W	5000	****	3296	1.800	3.000	B
640	TEKESHSAI-I	SU05070	42.05	N	70.40	E	538	E	SE	4020	3600	3070	1.100	3.200	B
641	TERSKOL	SU03030	43.18	N	42.29	E	006	S	SE	5600	3900	2990	7.530	6.540	B
642	TIKHITSAR	SU03019	41.14	N	47.47	E	538	E	N	4330	3800	3330	1.100	2.000	B
643	TOKMAKSOLDY-I	SU05002	42.10	N	71.10	E	648	NW	NW	3960	3840	3520	1.400	1.900	B
644	TS.TUYUKSUYSKIY	SU05075	43.00	N	77.06	E	536	N	N	4219	3760	3403	2.750	3.200	BC E
645	TSANERI	SU03014	43.05	N	43.00	E	529	SW	SW	4150	3050	2410	28.800	10.100	B
646	TSEYA	SU03007	42.55	N	43.40	E	529	NE	NE	4460	****	2200	9.700	8.600	B
647	TURAMUZ-I	SU04060	39.25	N	70.50	E	649	SE	SE	4600	3800	3000	1.400	2.800	B
648	TURO	SU04046	39.32	N	70.08	E	526	NW	NW	4800	3750	3160	4.100	6.000	B
649	TURPAKBEL NIZHN	SU05065	42.05	N	70.30	E	538	E	SE	3640	3485	3200	0.600	1.400	B
650	TUTEK	SU04058	39.25	N	70.45	E	549	W	NW	4600	3930	3260	4.600	4.100	B
651	ULLUCHIRAN	SU03021	43.23	N	42.26	E	007	N	N	5640	4100	3065	11.920	6.170	B
652	ULLUKOL	SU03023	43.23	N	42.28	E	006	N	N	5600	3750	3363	2.370	5.700	B
653	ULLUMALIENDERKU	SU03024	43.23	N	42.29	E	006	N	N	5600	3750	3171	2.410	5.790	B
654	USHBA	SU03013	43.08	N	42.39	E	529	NE	NE	3940	2800	2440	8.600	5.800	B
655	VISYACHIY-1-2	SU05096	43.00	N	77.06	E	737	NE	NE	3850	****	3480	0.290	0.600	C
656	YUGO-VOSTOCHNIY	SU03018	42.17	N	46.16	E	547	NW	NW	3880	3480	3000	1.200	2.200	B
657	YUZHNIY	SU03017	42.17	N	46.15	E	649	N	N	3850	3400	2900	1.100	1.900	B
658	ZERAVSHANSKIY	SU04043	39.31	N	70.40	E	526	SW	SW	4900	3950	2810	38.700	27.800	B
659	ZOYA KOSMODEMYA	SU05092	43.00	N	77.06	E	737	NE	NE	4070	****	3570	0.360	1.200	C

CHINA

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
660	COLLIERY	CN00036	35.40	N	94.11	E	648	N	N	5520	5160	4810	1.180	1.900	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
661	DAGONGBA	CN00028	29.35 N	101.52 E	528	NW	W	6684	5100	3660	20.210	11.000	B
662	GOZHA	CN00034	35.16 N	81.05 E	528	S	SW	6530	5960	5390	33.470	13.100	B
663	GULIYA	CN00035	35.17 N	81.29 E	373	SW	SW	6667	6080	5500	119.330	12.400	B
664	HAILUOGOU	CN00031	29.35 N	101.56 E	528	SE	SE	7556	5100	2980	25.710	13.100	B
665	QIYI	CN00003	39.14 N	97.54 E	528	NW	NW	5145	4720	4310	2.980	3.800	B
666	URUMQIHE S.NO.1	CN00010	43.05 N	86.49 E	622	NE	NE	4486	4040	3735	1.840	2.200	BC E
667	XIAOGONGBA	CN00029	29.36 N	101.51 E	538	W	SW	6800	4900	4140	6.460	6.900	B
668	XIDATAN	CN00037	35.40 N	94.16 E	528	NE	NW	6050	5400	4480	6.130	4.900	B
669	YANZIGOU	CN00030	29.38 N	101.53 E	528	N	NE	7556	5200	3680	32.150	10.500	B

PAKISTAN

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
670	BAZHIN	PK01504	35.12 N	74.41 E	519	S	SE	8125	4340	3250	16.640	12.000	D
671	BIAFO GYANG	PK00001	35.55 N	75.43 E	529	S	SE	7286	5198	3110	544.090	59.000	F
672	BUALTAR	PK00004	36.07 N	74.48 E	529	N	N	7275	4857	2439	84.530	20.500	F
673	CHOGO LUNGMA	PK01001	36.00 N	75.00 E	519	SE	SE	7291	4600	2750	320.000	45.100	B D
674	CHUNGPAR-TASH.	PK01501	35.14 N	74.43 E	519	SE	SE	7070	4600	2870	21.650	12.000	B D
675	HISPAR	PK00011	36.09 N	75.13 E	519	NW	NW	7886	5406	3125	553.340	62.000	F
676	MINAPIN	PK00013	36.11 N	74.35 E	***	N	NW	7266	4350	2475	60.500	18.500	B D
677	SATSCHEN SANGO	PK00801	35.20 N	74.47 E	519	E	NE	6565	3860	3420	10.950	10.600	D
678	SHAIGIRI	PK01508	35.11 N	74.35 E	519	S	SE	7120	4910	3640	3.690	6.700	B D
679	TAP	PK01506	35.12 N	74.37 E	519	S	SE	7360	4870	3601	2.780	5.400	B D
680	TOSHAIN RUPAL	PK01515	35.10 N	74.34 E	519	NE	E	6337	4600	3703	54.850	16.800	B D

INDIA

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
681	CHANGMEKHANGPU	IN02522	27.57 N	88.41 E	530	S	S	5520	5300	4840	4.430	5.600	BC E
682	DUNAGIRI	IN00191	30.33 N	79.54 E	537	N	N	5150	4560	4240	2.560	5.500	BC E
683	SHAUNE GARANG	IN00084	31.17 N	78.20 E	527	W	N	5360	4600	4400	4.970	5.500	BC E
684	TIPRA BANK	IN00004	30.44 N	79.41 E	***	N	NW	5730	4400	3720	7.000	6.000	C E
685	ZEMU	IN02432	27.42 N	88.13 E	510	E	E	8440	5160	4160	41.200	24.540	B

NEPAL

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA
686	AX010	NP00005	27.42 N	86.34 E	636	E	SE	5360	5220	4952	0.570	1.700	B
687	AX030	NP00006	27.43 N	86.34 E	636	E	E	5600	5350	5050	0.530	1.100	B
688	DX080	NP00007	27.57 N	86.40 E	646	N	N	5480	5280	5140	1.150	1.300	B
689	EB050	NP00008	27.57 N	86.45 E	636	SW	SE	5560	5370	5220	0.420	1.500	B
690	KONGMA	NP00010	27.56 N	86.50 E	636	S	S	5790	5590	5450	0.190	0.800	B

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
691	KONGMA TIKPE	NP00009	27.55	N	86.50	E	736	N	N	5500	5470	5440	0.020	0.200	B	
692	YALA	NP00004	28.15	N	85.37	E	636	SW	SW	5749	5400	5090	2.570	1.500	B	

JAPAN

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
693	HAMAGURI YUKI	J 00001	36.36	N	137.37	E	730	NE	NE	2720	****	2700	0.002	0.050	C	

INDONESIA

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
694	CARSTENSZ	RI00004	4.06	S	137.10	E	538	W	NW	4800	4600	4380	0.890	1.800	B	
695	MEREN	RI00003	4.05	S	137.10	E	536	SW	W	4860	4610	4260	1.950	2.100	B	

NEW ZEALAND

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
696	DART	NZ07521	44.27	S	168.36	E	539	SW	SW	2470	1770	1070	9.860	7.600	B	
697	FRANZ JOSEF	NZ08881	43.30	S	170.13	E	528	NW	NW	2955	1690	425	32.600	10.250	B	
698	IVORY	NZ09011	43.08	S	170.55	E	644	S	S	1730	1510	1390	0.930	1.350	B	

ANTARCTICA

NR	GLACIER NAME	PSFG NR	LAT		LONG		CODE	EXP AC	EXP AB	ELEVATIONS MAX	MED	MIN	AREA SQ KM	LEN KM	TYPE OF DATA	
699	ADAMS	AN00027	78.06	S	163.45	E	534	W	SW	1200	785	370	5.730	10.000	B	E
700	BARTLEY	AN00016	77.31	S	162.14	E	534	N	N	2000	1350	220	*********	12.500	B	E
701	CLARK	AN00012	77.25	S	162.20	E	642	N	E	1790	850	460	*********	10.500	B	E
702	GARWOOD	AN00025	78.02	S	163.55	E	522	SE	S	1500	900	300	*********	3.000		E
703	GOODSPEED	AN00020	77.25	S	162.23	E	524	NW	NW	1700	1110	525	*********	5.100	B	
704	HART	AN00019	77.30	S	162.21	E	534	NW	NW	1700	1035	370	*********	5.700	B	
705	HEIMDALL	AN00003	77.35	S	162.52	E	538	W	NW	1800	1500	1200	7.960	6.000	B	
706	MESERVE	AN00017	77.33	S	162.22	E	534	N	NW	1750	1300	340	9.900	7.200	B	
707	MIERS	AN00026	78.05	S	163.45	E	534	W	NW	1000	650	350	5.890	6.550	B	E
708	VICTORIA LOWER	AN00015	77.22	S	162.17	E	418	SW	SW	1400	650	400	*********	5.800	B	
709	VICTORIA UPPER	AN00013	77.16	S	161.30	E	524	NE	SE	2200	1200	450	*********	18.000	B	E
710	WRIGHT LOWER	AN00018	77.25	S	162.50	E	203	NE	W	****	****	275	*********	*******	B	E
711	WRIGHT UPPER	AN00011	77.33	S	166.30	E	403	E	E	2400	****	850	*********	*******	B	

Notes

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS 1985-90

TABLE B

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
METHOD:	a = aerial photogrammetry
	b = terrestrial photogrammetry
	c = geodetic ground survey (theodolite, tape etc.)
	d = combination of a,b or c
	e = other methods or no information
1ST SURVEY:	Year when glacier was first surveyed
LAST SURVEY:	Last survey before reported period
VARIATIONS IN METERS:	Variation in the position of the glacier front in horizontal projection expressed as the change in length between the surveys

Key to Symbols:	M :	No data available
	+X:	Glacier in advance
	-X:	Glacier in retreat
	ST:	Glacier stationary
	SN:	Glacier front covered by snow

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
	CANADA									
1	ANDREI	CD00148	1978	1978	C	M	M	M	-47.0	-45.0
2	OVERLORD	CD01590	1928	1972	C	76.0	M	M	-4.4	1.0
3	WEDGEMOUNT	CD02333	1928	1985	B	-8.7	-7.0	-7.9	-1.6	-16.8
	U.S.A.									
4	BLUE GLACIER	US02126	1938	1985	C	-1.0	-11.0	-13.0	M	-23.0
5	CARBON	US02020	****	1985	A	M	M	M	M	-8.0
6	COLUMBIA (2057)	US02057	1984	1985	C	-2.0	-4.0	-1.0	1.0	-1.5
7	COLUMBIA (627)	US00627	1957	1985	B	-460.0	-230.0	-950.0	M	-1800.0
8	COWLITZ	US02025	****	1983	A	M	M	M	M	20.0
9	DANIELS	US02052	1984	1985	D	-2.0	-7.0	-5.0	0.0	-2.5
10	EKLUTNA	US00391	1957	1986	D	-1609.0	0.0	0.0	M	M
11	EXIT GLACIER	US00390	1988	1988	C	M	M	M	6.9	-46.7
12	LOWER CURTIS	US02055	1984	1985	C	4.5	M	1.5	M	-3.5
13	NISQUALLY	US02027	****	1984	A	3.0	M	M	M	-126.0
14	RAINBOW	US02003	1984	1985	C	M	-7.0	-3.5	-3.0	-4.5
15	SOUTH CASCADE	US02013	1953	1985	D	-14.0	-20.0	-18.0	-13.0	-11.0
16	TAHOMA NORTH-L.	US02030	****	1985	A	M	M	M	M	-123.0
17	TAHOMA SOUTH-L.	US02029	****	1985	A	M	M	M	M	-945.0
18	WEST GULKANA	US00195	1957	1985	D	-350.0	-10.0	M	M	M
	PERU									
19	BROGGI	PE00003	1968	1985	C	-10.7	-26.4	-23.0	-39.2	-28.0
20	GAJAP-YANACARCO	PE00009	1980	1985	C	-5.0	-22.9	-28.9	-9.3	-17.8
21	HUARAPASCA	PE00007	1980	1985	C	-10.6	-24.0	-26.7	-7.5	-22.4
22	PASTORURI	PE00008	1980	1985	C	-10.2	-34.6	-23.9	-8.4	-16.4
23	URUASHRAJU	PE00005	1968	1985	C	-3.3	-16.6	-28.9	-11.3	-30.1
24	YANAMAREY	PE00004	1972	1985	C	4.6	-13.1	-20.6	-7.9	M
	CHILE									
25	ARCO	RC00019	1945	1975	B	0.0	M	M	M	0.0
26	BENITO	RC00007	1945	1975	B	-200.0	M	M	M	-450.0
27	BRUEGGEN	RC00032	1945	1976	B	600.0	M	M	M	M
28	CACHET	RC00021	1945	1975	B	-500.0	M	M	M	-675.0

VARIATION IN POSITION OF GLACIER FRONTS TABLE B, PAGE 1

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
29	COLONIA	RC00020	1945	1975	B	0.0	M	M	M	-500.0
30	EXPLORADORES	RC00028	1945	1975	B	-150.0	M	M	M	0.0
31	FIERO	RC00026	1945	1975	B	0.0	M	M	M	-400.0
32	GROSSE	RC00001	1945	1975	B	-250.0	M	M	M	0.0
33	GUALAS N-TONGUE	RC000A4	1945	1975	B	-250.0	M	M	M	-125.0
34	GUALAS S-TONGUE	RC000B4	1945	1975	B	-350.0	M	M	M	0.0
35	HPN 1	RC00008	1945	1975	B	-300.0	M	M	M	-900.0
36	HPN 2	RC00009	1945	1975	B	0.0	M	M	M	-1350.0
37	HPN 3	RC00010	1945	1975	B	-850.0	M	M	M	-850.0
38	JORGE MONTT	RC00030	1945	1976	B	-400.0	M	M	M	M
39	LEONES	RC00025	1945	1975	B	-200.0	M	M	M	-160.0
40	NEF	RC00023	1945	1975	B	-350.0	M	M	M	0.0
41	O'HIGGINS	RC00031	1945	1976	B	-2400.0	M	M	M	M
42	PARED NORTE	RC00017	1945	1975	B	0.0	M	M	M	-400.0
43	PARED SUR	RC00016	1945	1975	B	-300.0	M	M	M	0.0
44	PISCIS	RC00015	1945	1975	B	0.0	M	M	M	0.0
45	REICHER NE	RC000A3	1945	1975	B	-2150.0	M	M	M	-400.0
46	REICHER SW	RC000B3	1945	1975	B	-280.0	M	M	M	-850.0
47	SAN QUINTIN	RC00006	1945	1975	B	0.0	M	M	M	0.0
48	SAN RAFAEL	RC00005	1945	1975	B	-2200.0	M	M	M	-1200.0
49	SOLER	RC00024	1945	1975	B	-110.0	M	M	M	-185.0
50	STEFFEN	RC00011	1945	1975	B	-150.0	M	M	M	-350.0
51	TYNDALL	RC00035	1945	1975	B	-700.0	M	M	M	M
52	UNNAMED 1	RC00002	1945	1975	B	0.0	M	M	M	M
	ARGENTINA									
53	MORENO	RA00034	1945	1970	B	-500.0	M	M	M	M
54	UPSALA	RA00033	1945	1984	B	-300.0	M	M	M	-1000.0
	ICELAND									
55	BREIDAMJOK.E.A	IS01126	1932	1985	C	8.0	52.0	-42.0	-38.0	-90.0
56	BREIDAMJOK.E.B	IS01126	1932	1985	C	-14.0	-24.0	-33.0	-40.0	-30.0
57	BREIDAMJOK.W.A	IS01125	1932	1985	C	-26.0	-3.0	7.0	-28.0	-39.0
58	BREIDAMJOK.W.C	IS01125	1932	1985	C	-108.0	-44.0	-108.0	-54.0	-16.0
59	BRUARJOKULL	IS02400	1963	1983	C	M	M	-338.0	M	M
60	FALLJOKULL	IS01021	1932	1985	C	7.0	5.0	8.0	4.0	3.0

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
61	FJALLS.FITJAR	IS01024	1948	1985	C	3.0	4.0	10.0	0.0	0.0
62	FJALLSJ. BRMFJ	IS01024	1948	1985	C	-2.0	3.0	ST	ST	ST
63	FJALLSJ. G-SEL	IS01024	1948	1985	C	-9.0	-12.0	-4.0	-17.0	-31.0
64	GIGJOKULL	IS00112	1930	1984	C	0.0	M	M	53.0	15.0
65	GLJUFURARJOKUL	IS00103	1939	1983	C	23.0	-5.0	8.0	15.0	M
66	HAGAFELLSJOK.E	IS00306	1934	1985	C	-25.0	M	-105.0	-46.0	-45.0
67	HAGAFELLSJOKUL	IS00204	1934	1985	C	-20.0	M	M	M	-174.0
68	HOFFELLSJ.E	IS02132	1930	1985	C	ST	ST	ST	ST	ST
69	HOFFELLSJ.W	IS02031	1930	1980	C	M	M	M	M	-67.0
70	HOFSJOKULL N	IS00510	1983	1985	C	-15.0	M	-80.0	-3.0	-5.0
71	HRUTARJOKULL	IS00923	1948	1985	C	35.0	0.0	22.0	0.0	-4.0
72	HYRNINGSJOKULL	IS00100	1931	1985	C	0.0	8.0	0.0	SN	35.0
73	JOKULHALS	IS00201	1934	1985	C	SN	SN	SN	SN	SN
74	KALDALONSJOKUL	IS00102	1931	1985	C	-100.0	0.0	-20.0	SN	SN
75	KVERKJOKULL	IS02500	1963	1985	C	-62.0	M	M	-7.0	M
76	KVIARJOKULL	IS00822	1934	1985	C	10.0	25.0	3.0	-28.0	25.0
77	LEIRUFJ.JOKULL	IS00200	1887	1985	C	-75.0	-40.0	-1.0	SN	-19.0
78	MORSARJOKULL	IS00318	1932	1985	C	0.0	-8.0	9.0	0.0	-20.0
79	MULAJOKULL S.	IS00311	1933	1985	C	318.0	17.0	M	-45.0	-16.0
80	MULAJOKULL W	IS00311	1967	1985	C	34.0	26.0	M	-52.0	-26.0
81	NAUTHAGAJOKULL	IS00210	1932	1985	C	0.0	1.0	M	7.0	4.0
82	OELDUFELLSJ.	IS00114	1967	1985	C	M	-68.0	M	-50.0	M
83	REYKJAFJARDARJ.	IS00300	1931	1985	C	-29.0	-37.0	-30.0	-10.0	-18.0
84	SIDUJOK.E M175	IS00015	1964	1985	C	-34.0	-38.0	-90.0	-64.0	-23.0
85	SIDUJOK.E M177	IS00015	1964	1985	C	-33.0	-54.0	-126.0	-59.0	-23.0
86	SKAFTAFELLSJ.	IS00419	1932	1985	C	-15.0	5.0	1.0	-14.0	-2.0
87	SKEIDARARJ. E1	IS00117	1932	1985	C	-20.0	-16.0	-8.0	-11.0	-2.0
88	SKEIDARARJ. E2	IS00117	1932	1985	C	0.0	-6.0	-6.0	-7.0	0.0
89	SKEIDARARJ. E3	IS00117	1932	1985	C	-5.0	-5.0	-4.0	0.0	0.0
90	SKEIDARARJOKUL	IS00116	1932	1985	C	290.0	-96.0	-114.0	-20.0	-105.0
91	SOLHEIMAJOK.W	IS00113	1930	1985	C	51.0	35.0	30.0	2.0	9.0
92	SVINAFELLSJ.	IS00520	1932	1985	C	8.0	-5.0	-9.0	8.0	-14.0
93	TUNGNAARJOKULL	IS02214	1955	1985	C	-59.0	0.0	-73.0	-21.0	-66.0
94	VIRKISJOKULL	IS00721	1932	1985	C	5.0	10.0	3.0	6.0	0.0
	NORWAY									
95	AUSTERDALSBREEN	N 31220	1906	1985	C	1.0	-22.0	-0.2	-0.1	M

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
96	BRIGSDALSBREEN	N 37110	1901	1985	C	-8.0	-7.0	43.0	1.0	30.0
97	ENGABREEN	N 67011	1903	1985	C	-8.0	-6.0	-51.0	M	-43.0
98	FAABERGSTOELSB.	N 31015	1907	1985	C	-27.0	-7.0	-38.0	-25.0	-19.0
99	HELLSTUGUBREEN	N 00511	1902	1981	C	-49.0	-10.0	-18.0	-7.0	-8.0
100	LEIRBREEN	N 00548	1910	1985	C	M	-11.5	M	M	-11.0
101	NIGARDSBREEN	N 31014	1907	1985	C	-3.0	-1.0	-9.0	4.0	-1.0
102	STEGHOLTBREEN	N 31021	1907	1985	C	0.0	0.0	-8.0	-7.0	-9.0
103	STORBREEN	N 00541	1904	1985	C	M	-2.5	-13.0	10.0	3.0
104	STYGGEDALSBREEN	N 30720	1903	1985	C	-12.0	-1.0	-10.0	2.0	M
105	AUSTRE TORELL	N 12503	1936	1985	B	45.7	M	-77.1	M	M
106	HANS	N 12419	1936	1985	B	8.4	-76.6	92.0	M	-24.4
107	WERENSKIOLD	N 12501	1936	1985	B	-21.0	M	-47.8	M	M
	SWEDEN									
108	HYLLGLACIAEREN	S 00780	1965	1984	C	M	M	M	SN	SN
109	ISFALLSGLAC.	S 00787	1897	1985	C	0.0	0.0	-9.0	0.0	4.0
110	KARSOJIETNA	S 00798	1905	1985	C	M	M	M	-20.0	-2.0
111	MIKKAJEKNA	S 00766	1896	1985	C	M	M	M	-48.0	-7.0
112	PARTEJEKNA	S 00763	1965	1979	C	-120.0	M	M	-33.0	-8.0
113	PASSUSJIETNA E.	S 00797	1968	1985	C	M	M	-24.0	0.0	0.0
114	PASSUSJIETNA W.	S 00796	1968	1978	C	M	M	-213.0	0.0	0.0
115	RABOTS GLACIAER	S 00785	1946	1985	C	-14.0	-14.0	-11.0	-5.0	-11.0
116	RIUKOJIETNA	S 00790	1963	1985	C	-10.5	M	-14.5	0.0	0.0
117	RUOPSOKJEKNA	S 00764	1965	1985	C	M	M	M	-20.0	M
118	RUOTESJEKNA	S 00767	1965	1984	C	M	M	M	-75.0	0.0
119	SALAJEKNA	S 00759	1897	1984	C	M	M	M	M	-66.0
120	SE KASKASATJ GL	S 00789	1910	1985	C	-1.0	0.0	-6.0	0.0	-2.0
121	STORGLACIAEREN	S 00788	1897	1985	C	-3.0	0.0	-9.0	0.0	0.0
122	STOUR RAEITAGL.	S 00784	1963	1985	C	M	M	M	SN	SN
123	SUOTTASJEKNA	S 00768	1964	1984	A	M	M	M	SN	SN
124	UNNA RAEITA GL.	S 00783	1963	1985	C	M	M	-8.0	0.0	0.0
125	VARTASJEKNA	S 00765	1964	1984	A	M	M	M	SN	SN
	FRANCE									
126	ARGENTIERE	F 00002	1878	1985	C	3.0	25.0	15.0	9.0	4.0
127	BLANC	F 00031	1871	1985	C	6.0	-6.0	-6.0	M	-20.0

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
128	BOSSONS	F 00004	1861	1985	C	-10.0	-46.0	-39.0	-34.5	-76.5
129	GEBROULAZ	F 00009	1730	1985	C	-5.0	M	-18.0	M	-5.0
130	MER DE GLACE	F 00003	1879	1985	C	1.0	0.0	13.0	0.0	2.0
131	SAINT SORLIN	F 00015	1904	1985	C	M	-18.8	4.7	-16.1	-8.7
	SWITZERLAND									
132	ALLALIN	CH00011	1880	1985	A	-53.2	-8.4	21.7	-49.1	-57.3
133	ALPETLI(KANDER)	CH00109	1893	1985	C	-0.1	-1.4	4.4	-2.0	-7.3
134	AMMERTEN	CH00111	1969	1985	C	-3.3	-3.5	-1.9	-20.8	-3.4
135	AROLLA (BAS)	CH00027	1884	1985	C	10.0	4.1	-3.0	-6.0	-10.2
136	BASODINO	CH00104	1893	1985	C	3.5	-7.3	3.0	-4.9	-2.9
137	BELLA TOLA	CH00021	1945	1985	C	-3.8	-1.8	-8.2	-37.5	-0.9
138	BIFERTEN	CH00077	1893	1985	C	-3.1	0.4	-1.0	-9.5	-5.0
139	BIS	CH00107	1883	1985	E	ST	-X	-X	-X	-X
140	BLUEMLISALP	CH00064	1892	1985	C	2.6	2.1	-2.3	-12.7	-5.5
141	BOVEYRE	CH00041	1888	1985	C	13.5	6.5	4.0	1.0	-2.0
142	BRENEY	CH00036	1892	1985	C	-2.8	SN	-10.2	-7.5	-12.3
143	BRESCIANA	CH00103	1896	1985	C	-5.0	M	-18.8	-3.4	-5.8
144	BRUNEGG	CH00020	1941	1985	C	4.4	3.6	0.4	2.7	2.8
145	BRUNNI	CH00072	1882	1985	C	M	M	M	M	-X
146	CALDERAS	CH00095	1920	1985	C	-6.0	-11.0	-10.1	-8.3	-11.6
147	CAMBRENA	CH00099	1889	1985	C	3.5	ST	-14.5	-12.0	-1.5
148	CAVAGNOLI	CH00119	1893	1985	C	-7.0	-10.0	-15.4	-10.5	-15.7
149	CHEILLON	CH00029	1919	1985	C	-7.2	-23.7	-X	-6.4	-70.6
150	CORBASSIERE	CH00038	1889	1985	C	12.0	18.0	0.0	7.0	8.0
151	CORNO	CH00120	1893	1985	C	5.8	2.3	-1.5	-5.2	-3.5
152	DAMMA	CH00070	1920	1985	C	27.7	1.7	5.9	8.4	1.8
153	EIGER	CH00059	1893	1985	C	-8.7	-6.3	-10.7	-15.3	-16.3
154	EN DARREY	CH00030	1929	1985	C	ST	-X	+X	7.0	ST
155	FEE NORTH	CH00013	1878	1985	C	+X	80.8	86.7	-51.0	-X
156	FERPECLE	CH00025	1884	1985	C	5.2	4.2	5.6	3.1	-7.5
157	FIESCHER	CH00004	1891	1985	C	0.2	-10.8	16.6	-16.8	-1.0
158	FINDELEN	CH00016	1892	1985	D	-20.0	-13.1	-2.1	-45.2	-58.4
159	FIRNALPELI	CH00075	1894	1985	C	-5.0	+X	-10.0	M	-4.5
160	FORNO	CH00102	1892	1985	C	-8.5	M	-55.8	-12.7	-18.5
161	GAMCHI	CH00061	1893	1985	C	5.1	1.9	-3.5	4.5	-2.4
162	GAULI	CH00052	1886	1985	C	-4.0	8.0	-6.0	M	-38.0

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
163	GIETRO	CH00037	1889	1985	A	-4.0	-4.1	-1.6	-18.4	-4.3
164	GLAERNISCH	CH00080	1923	1985	C	-4.7	0.0	-4.0	-3.2	-3.0
165	GORNER	CH00014	1892	1985	C	-7.0	-26.8	-19.0	-5.8	-8.5
166	GRAND DESERT	CH00031	1892	1985	C	-21.1	-20.2	-9.8	-13.2	M
167	GRAND PLAN NEVE	CH00045	1893	1985	C	-4.2	-2.0	15.6	-17.4	4.5
168	GRIES (AEGINA)	CH00003	1961	1985	C	-13.4	1.0	-5.0	-11.0	-6.2
169	GRIESS(KLAUSEN)	CH00074	1929	1985	C	6.0	11.0	M	-14.0	-16.2
170	GRIESSEN(OBWA.)	CH00076	1894	1985	C	-7.0	0.0	-1.5	M	-5.8
171	GROSSER ALETSCH	CH00005	1886	1985	D	-25.4	-21.8	-12.3	-13.8	-19.2
172	HUEFI	CH00073	1882	1985	C	6.0	-23.0	24.5	-21.0	-3.9
173	KALTWASSER	CH00007	1891	1985	C	6.0	-32.3	-3.8	1.7	-41.1
174	KEHLEN	CH00068	1893	1985	C	20.0	9.5	-2.0	-1.2	-5.9
175	KESSJEN	CH00012	1928	1985	C	-8.6	-21.3	-7.4	-5.1	-11.4
176	LAEMMERN	CH00063	1917	1985	C	-9.8	-0.3	-4.7	-6.3	-5.7
177	LANG	CH00018	1888	1985	C	18.0	9.0	31.0	13.0	0.0
178	LAVAZ	CH00082	1899	1985	C	102.5	-53.2	M	-91.0	-X
179	LENTA	CH00084	1895	1985	C	-14.7	-24.3	-11.2	-6.5	-23.3
180	LIMMERN	CH00078	1945	1985	C	3.2	-1.4	ST	4.8	-0.1
181	LISCHANA	CH00098	1895	1985	C	2.0	-7.8	-6.2	8.6	-2.9
182	MARTINETS	CH00046	1894	1980	E	+X	M	M	M	M
183	MITTELALETSCH	CH00106	1969	1985	C	-22.0	-X	-X	-X	-86.0
184	MOIRY	CH00024	1891	1985	C	-0.8	-1.5	-7.2	-1.4	-2.8
185	MOMING	CH00023	1911	1985	C	-19.3	-15.0	M	M	-32.0
186	MONT DURAND	CH00035	1885	1985	C	-6.0	-5.0	-28.0	-24.0	-15.0
187	MONT FORT	CH00032	1892	1985	C	-7.7	-21.5	-11.7	M	M
188	MONT MINE	CH00026	1956	1985	C	6.2	13.8	-8.0	13.0	-5.0
189	MORTERATSCH	CH00094	1874	1985	C	-6.0	-9.0	2.4	-7.0	-11.1
190	MUTT	CH00002	1918	1985	C	4.0	-0.5	1.9	-1.9	4.0
191	OB.GRINDELWALD	CH00057	1879	1985	C	-15.0	16.0	-2.0	-20.0	-9.0
192	OBERAAR	CH00050	1920	1985	A	-20.9	-4.9	-21.4	-4.7	2.3
193	OBERALETSCH	CH00006	1963	1985	C	-13.2	-6.2	-5.6	-39.0	24.0
194	OFENTAL	CH00009	1922	1985	C	0.0	-120.3	-197.2	-18.1	-84.1
195	OTEMMA	CH00034	1887	1985	C	-25.3	SN	-49.7	-25.0	-27.7
196	PALUE	CH00100	1894	1985	C	4.9	M	-6.8	M	-15.9
197	PANEYROSSE	CH00044	1893	1985	C	-5.1	5.0	-3.6	-7.0	1.1
198	PARADIES	CH00086	1898	199.	C	-10.7	-8.5	-20.6	-21.3	-12.5
199	PARADISINO	CH00101	1955	1985	C	1.0	-14.0	-12.0	-1.2	9.0

NR	GLACIER NAME	PSFG NR	FIRST LAST SURVEY		METHOD	VARIATIONS IN METERS 1986	1987	1988	1989	1990
200	PIERREDAR	CH00049	1921	1985	E	-X	+X	+X	-X	-X
201	PIZOL	CH00081	1894	1985	C	-73.6	13.5	-16.7	M	-21.4
202	PLATTALVA	CH00114	1969	1985	C	-X	+X	-X	-X	-53.1
203	PORCHABELLA	CH00088	1893	1985	C	-8.3	-6.8	-7.2	-4.1	-6.8
204	PRAPIO	CH00048	1898	1985	C	-2.0	10.5	-12.0	-8.0	-10.0
205	PUNTEGLIAS	CH00083	1895	1985	C	-10.3	-9.0	-23.0	-9.0	-X
206	RAETZLI	CH00065	1924	1985	C	-19.0	-16.0	-34.0	-29.5	-22.0
207	RHONE	CH00001	1870	1985	C	1.4	8.8	-19.0	-5.0	-16.0
208	RIED	CH00017	1895	1985	C	3.9	0.4	4.6	-15.8	-7.6
209	ROSEG	CH00092	1894	1985	C	-38.0	-13.0	-9.2	-1.0	-7.0
210	ROSENLAUI	CH00056	1880	1985	E	+X	ST	ST	-X	-X
211	ROSSBODEN	CH00105	1891	1985	C	12.3	7.3	16.0	3.1	3.0
212	ROTFIRN NORD	CH00069	1956	1985	C	-0.5	-3.5	-0.8	-6.2	-7.2
213	SALEINA	CH00042	1888	1985	C	11.5	5.0	5.0	0.0	-15.0
214	SANKT ANNA	CH00067	1926	1985	C	-0.5	0.0	-1.9	-2.8	M
215	SARDONA	CH00091	1895	1985	C	-6.9	4.4	-5.4	-14.7	-3.6
216	SCHWARZ	CH00062	1920	1985	C	-9.7	-38.0	-7.5	-13.0	-17.3
217	SCHWARZBERG	CH00010	1915	1985	C	2.5	-0.8	0.0	5.6	1.9
218	SESVENNA	CH00097	1956	1985	C	-5.8	-6.4	-5.7	-1.9	-3.5
219	SEX ROUGE	CH00047	1898	1985	C	-5.9	6.4	-8.4	-14.4	-14.1
220	SILVRETTA	CH00090	1956	1985	C	-6.5	-2.8	-7.8	-8.6	-18.2
221	STEIN	CH00053	1894	1985	C	9.0	5.0	5.5	3.0	-2.0
222	STEINLIMMI	CH00054	1961	1985	C	-3.0	-2.0	-2.0	-8.0	-4.0
223	SULZ	CH00079	1912	1985	C	-1.1	-3.8	-3.2	-4.4	M
224	SURETTA	CH00087	1921	1985	C	28.8	-77.6	-33.2	-16.1	-32.0
225	TAELLIBODEN	CH00008	1921	1985	C	7.9	-33.0	-16.4	-12.2	-17.9
226	TIATSCHA	CH00096	1926	1985	C	-2.0	-2.0	4.0	1.0	0.0
227	TIEFEN	CH00066	1923	1985	C	-3.0	-3.7	-6.4	-9.9	-11.5
228	TRIENT	CH00043	1878	1985	C	7.0	4.0	-10.0	-5.0	-13.0
229	TRIFT (GADMEN)	CH00055	1921	1985	E	-X	+X	+X	-X	-X
230	TSANFLEURON	CH00033	1882	1985	C	-9.5	-5.2	M	-21.5	-9.0
231	TSCHIERVA	CH00093	1943	1985	C	0.5	0.8	-20.8	-5.0	-10.5
232	TSCHINGEL	CH00060	1893	1985	C	-1.9	5.6	-1.5	0.4	-2.5
233	TSEUDET	CH00040	1890	1985	C	1.0	0.0	-1.0	-5.0	0.0
234	TSIDJIORE NOUVE	CH00028	1878	1985	C	12.0	5.0	7.0	5.0	6.5
235	TURTMANN (WEST)	CH00019	1883	1985	C	4.2	-2.6	1.7	-6.5	-9.9
236	UNT.GRINDELWALD	CH00058	1879	1985	E	+X	+X	+X	+X	-X

VARIATION IN POSITION OF GLACIER FRONTS TABLE B, PAGE 7

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
237	UNTERAAR	CH00051	1880	1985	A	-24.1	-11.5	-10.0	-16.7	-41.4
238	VAL TORTA	CH00118	1970	1985	C	15.2	-3.6	SN	-37.6	-2.3
239	VALLEGGIA	CH00117	1971	1985	C	-4.9	-2.0	-3.4	-3.7	-6.8
240	VALSOREY	CH00039	1888	1985	C	-10.0	0.0	-1.0	-10.0	7.5
241	VERSTANKLA	CH00089	1926	1985	C	-5.0	-0.5	-5.5	-1.0	-2.0
242	VORAB	CH00085	1881	1985	C	-26.2	-3.2	-13.4	M	-55.7
243	WALLENBUR	CH00071	1893	1985	C	-7.0	6.0	M	-2.0	-2.0
244	ZINAL	CH00022	1891	1985	C	-19.0	-24.7	3.7	M	-82.0
245	ZMUTT	CH00015	1892	1985	C	1.6	-3.0	10.0	-2.4	7.0
	AUSTRIA									
246	AEU.PIRCHLKAR	A 00229	1981	1985	C	8.6	7.4	7.0	4.0	5.2
247	ALP.KRAEUL F.	A 00321	1975	1985	C	-4.3	1.7	-3.3	-1.5	-3.4
248	ALPEINER F.	A 00307	1881	1985	C	-5.3	0.6	-10.8	-4.7	-7.0
249	BACHFALLEN F.	A 00304	1922	1985	C	-7.9	-0.8	-10.7	-5.6	-11.1
250	BAERENKOPF K.	A 00702	1924	1985	C	-6.3	-3.8	-10.9	-0.7	-2.2
251	BERGLAS F.	A 00308	1891	1985	C	-3.7	0.9	-1.1	-2.2	-4.0
252	BIELTAL F.	A 00105	1924	1985	C	-8.4	-9.0	-7.7	-4.9	-14.4
253	BILDSTOECKL F.	A 0B310	1922	1985	C	-19.0	-2.9	-X	M	-X
254	BOCKKOGEL F.	A 00302	1922	1985	E	-X	-X	-X	M	M
255	BRENNKOGL K.	A 00727	1987	1988	C	M	M	-0.3	0.7	-1.5
256	DAUNKOGEL F.	A 0A310	1891	1985	C	4.0	-1.4	-8.0	-2.4	-7.5
257	DIEM F.	A 00220	1893	1985	C	M	3.3	-2.5	-2.1	-9.0
258	DORFER K.	A 00509	1896	1985	C	-7.3	-5.6	-6.8	-2.1	-9.4
259	E.GRUEBL F.	A 00317	1891	1985	C	-8.0	-4.2	-4.0	-15.3	-13.9
260	EISER K.	A 00708	1961	1985	C	-17.7	-1.5	-7.5	3.0	M
261	FERNAU F.	A 00312	1890	1985	C	-6.7	1.7	-3.1	0.0	-3.8
262	FREIGER F.	A 00320	1974	1985	C	7.3	10.0	-5.1	0.3	-12.3
263	FREIWAND K.	A 00706	1950	1985	C	-6.1	-3.7	-4.0	1.2	-6.9
264	FROSNITZ K.	A 00507	1923	1985	C	6.0	7.6	4.3	0.9	-3.5
265	FRUSCHNITZ K.	A 00722	1974	1985	E	ST	M	M	M	M
266	FURTSCHAGL K.	A 00406	1978	1985	E	-X	-X	-X	-X	-3.0
267	GAISKAR F.	A 00325	1983	1985	C	-5.9	-3.1	-7.2	-0.5	-6.6
268	GAISSBERG F.	A 00225	1891	1985	C	-0.6	0.1	-4.9	-7.9	-9.6
269	GEPATSCH F.	A 00202	1896	1985	C	4.5	2.3	0.8	-2.7	-2.1
270	GOESSNITZ K.	A 01201	1982	1985	C	-11.5	-11.5	-37.2	-3.1	-4.2
271	GR.GOSAU G.	A 01101	1933	1985	C	-4.1	1.8	-4.1	1.3	-5.6

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
272	GRIESKOGL K.	A 00709	1954	1985	C	-4.6	-1.2	-2.6	0.6	M
273	GROSSELEND K.	A 01001	1898	1985	C	-6.0	-0.5	-4.2	-2.3	0.9
274	GRUENAU F.	A 00315	1891	1985	C	2.1	-3.0	-0.4	5.2	-3.0
275	GURGLER F.	A 00222	1895	1985	C	-3.0	-2.0	-X	-14.7	-11.5
276	GUSLAR F.	A 00210	1894	1985	E	-8.7	-7.2	-9.8	-9.6	-17.2
277	HALLSTAETTER G.	A 01102	1843	1985	C	-2.0	-0.5	-3.3	1.7	-3.2
278	HINTEREIS F.	A 00209	1891	1985	E	-5.7	-6.5	-8.0	-6.6	-12.0
279	HOCHALM K.	A 01005	1898	1985	C	-2.6	-3.2	-6.8	-0.8	-2.0
280	HOCHJOCH F.	A 00208	1890	1985	E	-7.6	-16.6	-17.2	-14.6	-26.3
281	HOCHMOOS F.	A 00309	1946	1985	C	-1.2	0.0	-4.8	0.0	-3.0
282	HOFMANNS K.	A 00724	1977	1985	E	ST	-X	M	M	M
283	HORN K.(SCHOB.)	A 01202	1983	1985	C	-3.4	-2.6	-3.7	-2.9	-3.5
284	HORN K.(ZILLER)	A 00402	1881	1985	C	7.0	6.5	4.5	2.0	-2.0
285	HT.OELGRUBEN F.	A 00203	1950	1985	C	-2.3	-2.7	M	M	M
286	INN.PIRCHLKAR	A 00228	1982	1985	C	14.1	10.7	9.8	7.2	6.4
287	JAMTAL F.	A 00106	1892	1985	C	-6.1	-6.2	-11.6	-6.5	-3.7
288	KA.TAUERN K.S	A 0B602	1961	1985	C	-4.3	-1.6	-12.7	1.0	-1.9
289	KAELBERSPITZ K.	A 01003	1927	1985	C	-10.8	-10.4	-8.4	-1.8	-8.5
290	KARLES F.	A 00207	1950	1985	C	-6.6	-3.4	0.5	-7.7	-8.2
291	KARLINGER K.	A 00701	1896	1985	C	2.3	6.0	-0.8	-0.3	-6.0
292	KESSELWAND F.	A 00226	1965	1985	E	-2.6	-4.0	-11.1	-9.9	-18.9
293	KL.FLEISS K.	A 00801	1896	1985	C	-11.6	-8.7	-11.2	-3.3	-11.7
294	KLEINEISER K.	A 00717	1961	1985	C	-4.4	0.7	-1.7	1.1	-2.5
295	KLEINELEND K.	A 01002	1898	1985	C	-10.0	-10.0	-2.6	-4.0	-7.0
296	KLOSTERTALER M.	A 0102B	1964	1985	C	-5.3	1.3	-3.4	-0.4	-3.1
297	KLOSTERTALER N.	A 0102A	1968	1985	C	2.2	-7.2	-0.1	-1.1	-3.6
298	KLOSTERTALER S.	A 0102C	1924	1985	C	-7.1	-4.3	-18.0	-22.8	-2.0
299	KRIMMLER K.	A 00501	1895	1985	C	-6.1	-13.5	-3.8	3.6	-2.2
300	KRUML K.	A 00806	1985	1986	C	-1.8	-1.1	M	-23.2	-3.8
301	LAENGENTALER F.	A 00305	1922	1985	C	4.2	5.9	-0.4	3.0	-0.4
302	LANDECK K.	A 00604	1979	1985	C	-3.0	2.2	-7.5	M	-1.7
303	LANGTALER F.	A 00223	1891	1985	C	-14.8	-X	-22.8	-7.2	-4.5
304	LAPERWITZ K.	A 00721	1974	1985	E	-X	M	M	M	M
305	LARAIN F.	A 00107	1928	1985	C	-10.0	-7.8	-35.7	-9.1	-4.4
306	LIESENSER F.	A 00306	1922	1985	C	-14.6	-20.4	-23.6	-6.1	-13.8
307	LITZNERGL.	A 00101	1932	1985	C	-10.2	-5.2	2.4	4.6	1.4
308	MARZELL F.	A 00218	1891	1985	C	2.5	2.7	0.2	2.0	-2.8

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
309	MAURER K.(GLO.)	A 00714	1961	1985	C	-5.9	2.4	-4.6	1.6	-2.7
310	MAURER K.(VEN.)	A 00510	1896	1985	C	M	-6.8	-10.2	-6.1	-2.2
311	MITTELBERG F.	A 00206	1924	1985	C	2.2	-0.9	-2.2	-3.0	3.1
312	MITTERKAR F.	A 00214	1891	1985	C	-15.6	-5.9	-11.0	-10.5	-7.1
313	MUTMAL F.	A 00227	1969	1985	C	-3.7	-1.2	-11.2	-2.6	-7.3
314	NIEDERJOCH F.	A 00217	1891	1985	C	-14.9	-27.6	-13.0	-9.1	-18.4
315	OBERSULZBACH K.	A 00502	1880	1985	C	-28.5	-57.5	-24.6	-7.5	-8.3
316	OCHSENTALERGL.	A 00103	1901	1985	C	-0.6	1.2	-2.9	2.7	-2.0
317	OEDENWINKEL K.	A 00712	1960	1985	C	-4.2	-3.4	-3.0	-1.6	-0.3
318	PASTERZEN K.	A 00704	1879	1985	C	-24.2	-7.4	-37.4	-11.3	-8.3
319	PFAFFEN F.	A 00324	1981	1985	C	-3.9	-2.0	-11.3	-0.7	-6.8
320	PFANDLSCHARTEN	A 00707	1931	1985	C	-48.0	-4.2	-13.3	SN	-1.7
321	PRAEGRAT K.	A 00603	1961	1985	C	-10.5	1.9	-1.8	M	-X
322	RETTENBACH F.	A 00212	1952	1985	C	-2.9	0.1	-4.2	1.2	-5.0
323	RIFFL K. N	A 00718	1961	1985	C	-5.6	2.1	-3.4	1.7	-0.9
324	RIFFLKAR KEES	A 0A713	1961	1985	C	ST	ST	M	ST	ST
325	ROFENKAR F.	A 00215	1891	1985	C	-0.9	-2.0	-1.9	1.0	-1.9
326	ROTMOOS F.	A 00224	1891	1985	C	1.6	-3.0	-8.1	-7.7	-1.4
327	SCHALF F.	A 00219	1924	1985	C	-20.0	-X	-3.0	M	-10.4
328	SCHATTENSPITZ	A 00108	1973	1985	C	4.1	0.5	-7.2	1.1	-5.1
329	SCHAUFEL F.	A 00311	1922	1985	C	1.2	-1.7	-2.6	-0.8	-0.8
330	SCHLADMINGER G.	A 01103	1933	1985	C	-2.5	0.0	-0.4	0.2	-0.2
331	SCHLAPPEREBEN K	A 00805	1983	1985	C	-3.2	-0.8	-1.9	1.2	-0.5
332	SCHLATEN K.	A 00506	1891	1985	C	-0.3	-1.2	-1.5	-0.8	-4.4
333	SCHLEGEIS K.	A 00405	1978	1985	E	-X	-X	-X	-X	-X
334	SCHMIEDINGER K.	A 00726	1981	1985	C	-10.6	-4.1	1.8	3.0	2.0
335	SCHNEEGLOCKEN	A 00109	1973	1985	C	0.6	1.2	-0.3	-2.3	-1.6
336	SCHNEELOCH G.	A 01104	1969	1985	C	-2.7	0.9	-0.9	1.2	-2.0
337	SCHOENACH K.	A 00407	1982	1985	C	-17.0	-10.0	-7.5	-12.5	M
338	SCHWARZENBERG F	A 00303	1905	1985	C	-4.9	-2.1	-6.5	-2.4	-9.2
339	SCHWARZENSTEIN	A 00403	1881	1985	C	9.0	0.0	0.0	7.0	-5.0
340	SCHWARZKARL K.	A 00716	1961	1985	C	-9.9	0.7	-4.9	-2.8	-4.3
341	SCHWARZKOEPFL K	A 00710	1954	1985	C	-9.0	-3.0	-1.8	-7.0	-5.8
342	SEXEGERTEN F.	A 00204	1919	1985	C	-0.6	0.0	-14.4	-1.8	-8.0
343	SIMMING F.	A 00318	1922	1985	C	0.5	3.2	-4.4	-4.1	-3.7
344	SIMONY K.	A 00511	1896	1985	C	-0.8	-1.6	-11.2	-2.9	-6.0
345	SONNBLICK K.	A 00601	1963	1985	C	-7.2	-0.1	-3.5	1.1	-4.5

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
346	SPIEGEL F.	A 00221	1891	1985	C	-7.8	-3.7	-4.6	0.7	-3.6
347	SULZENAU F.	A 00314	1891	1985	C	-1.5	2.2	-5.0	-4.8	-14.4
348	SULZTAL F.	A 00301	1922	1985	C	-0.6	-5.4	-2.0	-4.1	-7.5
349	TASCHACH F.	A 00205	1924	1985	C	7.1	2.4	-0.1	0.7	-5.0
350	TAUERN K.	A 0A602	1961	1985	C	-14.4	-3.0	-9.3	2.0	-5.6
351	TAUFKAR F.	A 00216	1891	1985	C	-8.8	-11.2	-9.5	-8.9	-5.4
352	TEISCHNITZ K.	A 00723	1975	1985	E	ST	M	M	M	M
353	TOTENFELD	A 00110	1976	1985	C	1.3	0.3	1.9	0.8	1.8
354	TRIEBENKARLAS F	A 00323	1978	1985	C	4.8	3.7	0.1	-0.1	-6.9
355	UEBERGOSS.ALM	A 00901	1892	1985	C	-7.7	ST	-0.2	1.7	-0.4
356	UMBAL K.	A 00512	1896	1985	C	-4.4	-23.8	-11.4	-3.8	-12.9
357	UNT. RIFFL KEE	A 0B713	1960	1985	C	-4.7	-3.1	-5.7	-2.4	-2.0
358	UNTERSULZBACH K	A 00503	1896	1985	C	6.0	-7.0	-8.1	-5.1	-4.4
359	VERBORGENBERG F	A 00322	1977	1985	C	-2.8	1.7	-4.0	-1.3	-2.0
360	VERMUNTGL.	A 00104	1913	1985	C	-7.3	-6.9	-9.3	-10.0	-7.6
361	VERNAGT F.	A 00211	1888	1985	E	-4.4	-3.0	-10.7	-7.4	-15.5
362	VILTRAGEN K.	A 00505	1891	1985	C	-10.3	-5.7	-14.6	-1.3	-6.9
363	VOG.OCHSENKAR K	A 00802	1896	1985	C	-1.0	-3.4	-7.5	-1.9	-5.2
364	W.GRUEBL F.	A 00316	1891	1985	E	-X	-X	-X	-X	M
365	W.TRIPP K.	A 01004	1925	1985	C	-7.2	-0.8	-2.0	10.3	-11.0
366	WASSERFALLWINKL	A 00705	1943	1985	C	-32.5	-0.2	-6.9	1.6	-7.1
367	WAXEGG K.	A 00401	1895	1985	C	+X	-0.9	1.8	-5.0	-8.0
368	WEISSEE F.	A 00201	1891	1985	C	5.6	-1.4	-5.8	-2.8	0.7
369	WIELINGER K.	A 00725	1980	1985	C	-14.6	-2.0	-13.0	-4.0	-16.2
370	WILDGERLOS	A 00404	1973	1985	C	2.2	-8.2	-8.6	-0.6	-24.9
371	WINKL K.	A 01006	1928	1985	C	-8.1	-6.5	-15.5	-2.5	-7.4
372	WURFER K.	A 00715	1961	1985	C	-3.3	ST	-2.7	M	SN
373	WURTEN K.	A 00804	1896	1985	C	-8.6	-12.3	-8.9	-0.6	-9.3
374	ZETTALUNITZ K.	A 00508	1896	1985	C	-14.5	-10.8	-15.2	-11.1	-12.5
	ITALY									
375	AGNELLO	I 00029	1928	1984	C	-16.0	M	M	M	-8.0
376	ALTA (VEDRETTA)	I 00730	1923	1985	C	M	M	-5.5	M	-5.5
377	AMOLA	I 00644	1942	1985	C	-7.5	-320.0	-10.0	-11.0	-15.0
378	ANDOLLA NORD	I 00336	1927	1985	C	-0.5	-6.0	-1.0	-2.0	-1.0
379	ANTELAO INF.	I 00967	1939	1985	C	-2.0	-3.0	-5.0	-3.5	-7.0
380	ANTELAO SUP.	I 00966	1934	1985	C	-2.0	-2.0	-1.0	-2.5	-2.5

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	VARIATIONS IN METERS 1986	1987	1988	1989	1990
381	AURONA	I 00338	1956	1985	C	-3.0	-16.0	-5.0	-13.0	-135.0
382	BARBADORSO D.	I 00778	1935	1985	C	M	-8.5	-22.0	M	-44.5
383	BASEI	I 00064	1925	1985	C	-3.0	-2.5	0.0	-2.5	-5.5
384	BELVEDERE	I 00325	1927	1980	C	1.5	7.0	0.0	1.5	-5.0
385	BRENVA	I 00219	1929	1984	C	14.0	10.0	+X	0.0	-9.0
386	CAMOSCI	I 00361	1958	1983	C	M	-X	0.0	M	M
387	CARDONNE OCC.	I 00469	1932	1984	C	-13.0	M	M	-X	-X
388	CASPOGGIO	I 00435	1928	1985	C	-4.5	M	-14.0	-2.5	-10.0
389	CEVEDALE	I 00732	1923	1985	C	M	M	-X	M	-X
390	COLLALTO	I 00927	1932	1985	C	-1.5	-2.0	-4.0	-3.0	-5.0
391	CRISTALLO	I 00937	1949	1983	C	SN	-6.0	-13.0	-5.0	-4.0
392	CRODA ROSSA	I 00828	****	1985	C	M	10.5	0.0	6.0	1.5
393	DOSDE OR.	I 00473	1932	1985	C	-3.5	-4.0	-15.0	-8.0	-11.0
394	DOSEGU	I 00512	1925	1985	C	-7.0	M	-14.0	-10.0	-13.0
395	F0RNI	I 00507	1880	1985	C	13.0	0.0	-82.0	-14.0	-33.0
396	FELLARIA OCC.	I 00439	1915	1985	C	-3.0	-25.0	-11.0	-9.5	-17.0
397	FONTANA OCC.	I 00780	1925	1985	C	M	24.0	-2.5	M	-1.0
398	FORCOLA	I 00731	1923	1985	C	M	M	-17.0	M	-27.0
399	FOSSA OR.	I 00823	1926	1983	C	-1.0	M	M	M	-50.0
400	GIGANTE CENTR.	I 00929	1930	1985	C	-28.0	-X	-31.5	-20.5	-25.0
401	GIGANTE OCC.	I 00930	1930	1985	C	-2.0	-7.0	-2.0	-4.5	-4.5
402	GIOGO ALTO	I 00813	1929	1985	C	M	-30.0	M	M	M
403	GOLETTA	I 00148	1929	1983	C	-2.0	-1.5	0.0	-7.0	0.0
404	GR. MURAILLES	I 00260	****	1980	C	+X	M	M	M	-2.0
405	GRAN PILASTRO	I 00893	1932	1985	C	M	M	-26.0	M	-14.0
406	HOSAND SETT.	I 00357	1926	1983	C	-12.0	-11.0	7.5	-4.0	-15.0
407	LA MARE	I 00699	1899	1985	C	2.0	M	-11.0	M	-41.5
408	LANA	I 00913	1930	1984	C	-4.0	-5.0	-3.0	-2.0	1.0
409	LEX BLANCHE	I 00209	1929	1985	C	25.0	-8.0	3.0	-2.5	-1.5
410	LUNGA(VEDRETTA)	I 00733	1923	1985	C	M	M	-27.0	M	-18.0
411	LYS	I 00304	1927	1985	C	-2.0	-7.0	-12.5	-8.0	-11.0
412	M.NEVOSO OCC.	I 00931	1930	1981	C	2.5	-1.0	-1.0	-0.5	-1.5
413	MALAVALLE	I 00875	1928	1984	C	M	-12.0	-8.0	-4.5	-3.0
414	MANDRONE	I 00639	1896	1985	C	-1.0	-4.0	-6.0	-5.0	-3.0
415	MARMOLADA	I 00941	1925	1985	C	-1.0	M	-6.0	M	-0.5
416	MIAGE	I 00213	1929	1980	C	M	+X	M	M	M
417	NARDIS OCC.	I 00640	1925	1983	C	7.0	-2.0	M	-47.0	-7.5

NR	GLACIER NAME	PSFG NR	FIRST LAST SURVEY		METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
418	NEVES OR.	I 00902	1932	1985	C	-6.5	M	-9.0	-3.5	-16.0
419	NISCLI	I 00633	1919	1985	C	-11.0	2.0	-6.0	-4.0	-7.0
420	PENDENTE	I 00876	1933	1984	C	M	-24.0	-6.5	-5.0	-2.5
421	PIODE	I 00312	1924	1985	C	-10.0	-13.0	-14.5	-32.0	M
422	PISGANA OCC.	I 00577	1920	1983	C	5.0	M	-8.0	6.0	-6.0
423	PLATIGLIOLE	I 00481	1922	1985	C	-7.0	M	0.0	M	-29.0
424	PRE DE BAR	I 00235	1929	1985	C	14.0	8.0	2.5	2.5	-1.0
425	PRESANELLA	I 00678	1951	1984	C	4.0	-1.0	-1.0	M	-6.5
426	ROSIM	I 00754	1926	1980	C	M	M	-28.5	M	-8.0
427	ROSSA (VEDR.)	I 00697	1923	1953	C	-720.0	-1.0	-3.0	-6.0	-2.5
428	ROSSO DESTRO	I 00920	1952	1984	C	0.0	-7.0	-6.0	-1.5	-7.0
429	RUTOR	I 00189	1927	1985	C	-1.0	-0.5	1.0	-2.0	-0.5
430	SASSOLUNGO OCC.	I 00926	1930	1985	C	-6.5	0.0	M	-9.5	M
431	SERANA(VEDR.)	I 00728	1925	1985	C	M	M	M	M	-18.5
432	SFORZELLINA	I 00516	1925	1985	C	-4.5	16.0	2.0	1.0	-2.0
433	SOLDA	I 00762	1922	1985	C	M	M	-2.0	-14.0	-5.0
434	TESSA	I 00829	1926	1985	C	M	16.5	2.5	2.0	0.0
435	TOULES	I 00221	1929	1984	C	14.0	M	0.5	3.0	-9.0
436	TRESERO	I 00511	1925	1985	C	M	M	-21.0	-5.0	-6.0
437	TZA DE TZAN	I 00259	1927	1985	C	-63.0	11.0	0.0	M	-4.0
438	ULTIMA(VEDR.)	I 00729	1925	1985	C	M	M	-18.0	M	-14.0
439	VALLE DEL VENTO	I 00919	1932	1984	C	-0.5	-1.0	-8.0	-3.5	0.0
440	VALLELUNGA	I 00777	1922	1985	C	M	12.0	2.0	M	-2.0
441	VALTOURNENCHE	I 00289	1927	1985	C	-9.0	-6.0	-1.0	0.0	M
442	VENEROCOLO	I 00581	1919	1984	C	-10.0	-7.0	-6.0	-1.0	-1.0
443	VENEZIA (VEDR.)	I 00698	1925	1986	C	M	-9.0	-11.5	-14.0	-9.0
444	VENTINA	I 00416	1890	1985	C	2.0	0.0	6.5	-2.0	-12.0
445	VITELLI	I 00483	1921	1985	C	M	M	-1.0	-9.0	-5.0

SPAIN

446	ALBA	E 09010	****	1985	*	M	M	M	M	-80.0
447	ANETO	E 09030	****	1985	*	M	M	M	M	-X
448	BALAITUS SE	E 01030	****	1985	*	M	M	M	M	-10.0
449	BARRANCS	E 09040	****	1985	*	M	M	M	M	-X
450	BRECHA LATOUR	E 01020	****	1985	*	M	M	M	M	-50.0
451	CLOT DE HOUNT	E 03010	****	1985	*	M	M	M	M	-20.0
452	CORONAS	E 09080	****	1985	*	M	M	M	M	-X

NR	GLACIER NAME	PSFG NR	FIRST LAST SURVEY	METHOD	1986	VARIATIONS IN METERS 1987	1988	1989	1990
453	CREGUENA N	E 0907A	**** 1985	*	M	M	M	M	-250.0
454	CREGUENA S	E 0907B	**** 1985	*	M	M	M	M	-X
455	INFIERNO E	E 02020	**** 1985	*	M	M	M	M	-X
456	INFIERNO W	E 0201A	**** 1985	*	M	M	M	M	-X
457	INFIERNO WW	E 0201B	**** 1985	*	M	M	M	M	-10.0
458	LA PAUL	E 07020	**** 1985	*	M	M	M	M	-10.0
459	LAS FRONDELLAS	E 01010	**** 1985	*	M	M	M	M	-20.0
460	LITEROLA	E 08010	**** 1985	*	M	M	M	M	-100.0
461	LLARDANA	E 07010	**** 1985	*	M	M	M	M	-30.0
462	LLOSAS	E 09090	**** 1985	*	M	M	M	M	-30.0
463	MALADETA	E 09020	**** 1985	*	M	M	M	M	-X
464	MARBORECILINDRO	E 05010	**** 1985	*	M	M	M	M	-100.0
465	MONFERRAT	E 0302B	**** 1985	*	M	M	M	M	-X
466	PERDIDO INF	E 0502B	**** 1985	*	M	M	M	M	-X
467	PERDIDO SUP	E 0502A	**** 1985	*	M	M	M	M	-X
468	POSETS	E 07030	**** 1985	*	M	M	M	M	-150.0
469	PUNTA ZARRA	E 02040	**** 1985	*	M	M	M	M	-10.0
470	ROBINERA	E 06010	**** 1985	*	M	M	M	M	-40.0
471	SALENCAS	E 09060	**** 1985	*	M	M	M	M	-X
472	SOUM RAMOND SE	E 05030	**** 1985	*	M	M	M	M	-X
473	SOUM RAMOND SW	E 05040	**** 1985	*	M	M	M	M	-100.0
474	TAILLON	E 04010	**** 1985	*	M	M	M	M	-X
475	TAPOU	E 0302A	**** 1985	*	M	M	M	M	-200.0
476	TEMPESTADES	E 09050	**** 1985	*	M	M	M	M	-30.0

KENYA

NR	GLACIER NAME	PSFG NR	FIRST LAST SURVEY	METHOD	1986	1987	1988	1989	1990
477	CESAR	KN00004	**** 1963	B	M	-70.0	M	M	M
478	DARWIN	KN00006	**** 1982	C	-12.8	M	7.5	M	M
479	DIAMOND	KN00010	**** 1963	B	M	-100.0	M	M	M
480	FOREL	KN00011	**** 1963	B	M	-50.0	M	M	M
481	GREGORY	KN00009	**** 1978	C	-25.0	M	M	-9.7	M
482	HEIM	KN00012	**** 1963	B	M	-20.0	M	M	M
483	JOSEPH	KN00003	**** 1985	C	M	M	-7.9	M	M
484	KRAPF	KN00001	**** 1963	B	M	-150.0	M	M	M
485	LEWIS	KN00008	1899 1982	B	-18.0	M	M	M	-48.0
486	NORTHEY	KN00013	**** 1963	B	M	-150.0	M	M	M
487	TYNDALL	KN00005	**** 1985	C	-9.0	M	4.5	M	M

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
	POLAND									
488	MIEGUSZOWIECKIE	PL00140	1958	1985	C	-3.0	2.0	2.0	SN	SN
489	POD CUBRYNA	PL00180	1978	1985	C	-9.0	7.0	3.0	SN	SN
	U.S.S.R.									
490	ABANO	SU03037	1957	1985	C	-1.2	1.2	1.0	-0.6	-0.9
491	ABRAMOV	SU04101	1967	1984	C	-45.0	-19.0	-0.9	-8.4	-10.7
492	AKBULAKULKUN	SU05067	1962	1985	C	-33.2	M	17.1	-12.5	0.0
493	AKSU ZAPADNIY	SU05115	1921	1984	C	M	-30.0	28.0	0.0	7.0
494	AKSU-VOSTOCHNIY	SU05116	1921	1984	C	-36.0	-50.0	-35.0	-10.0	0.0
495	ALIBEKSKIY	SU03002	1954	1985	C	-0.7	2.0	-8.5	4.0	-0.7
496	AYUTOR-2	SU05066	1957	1985	C	-17.2	-32.5	-10.2	0.0	-28.1
497	BARKRAK SREDNIY	SU05072	1963	1985	C	-51.7	ST	ST	ST	-13.0
498	BATYRBAI	SU04063	1940	1985	C	-7.8	M	-24.7	0.0	0.0
499	BEZENGI	SU03006	1956	1985	C	9.0	3.1	2.2	-2.1	-0.7
500	BIRDZHALYCHIRAN	SU03026	1958	1958	B	-845.0	M	M	M	M
501	BITYUKTYUBE	SU03034	1959	1959	B	M	M	-20.0	M	M
502	BOLSHOY MAASHEY	SU07104	1952	1985	C	M	M	-10.2	-4.8	-4.5
503	CHACHI	SU03035	1960	1984	C	M	M	-4.3	-1.2	-1.3
504	CHONG-TUR PRAVI	SU05119	1930	1985	C	-6.0	0.0	-10.0	-5.0	-9.0
505	CHUNGURCHATCHIR	SU03027	1958	1958	B	-590.0	M	M	M	M
506	DEVDORAKI	SU03036	1960	1985	C	2.4	1.9	2.3	-0.6	-0.6
507	DJANKUAT	SU03010	1965	1985	A	0.0	3.0	-2.0	1.0	1.5
508	DOLONATA	SU05121	1927	1984	C	-45.0	-30.0	-11.0	-10.0	-15.0
509	DZHUUKUCHAK	SU05117	1966	1983	C	-6.0	M	M	M	-20.0
510	GARABASHI	SU03031	1959	1959	B	M	-70.0	M	M	M
511	GEOGRAPHICHESKO	SU04039	1959	1984	C	ST	ST	ST	-9.1	M
512	GERGETI	SU03038	1951	1985	C	-15.7	-27.5	-28.1	-22.9	-21.1
513	GOLUBIN	SU05060	1958	1985	C	-2.0	-8.0	9.0	-7.0	-20.0
514	KALESNIK	SU05001	1973	1985	C	-7.2	0.0	-6.2	-13.0	-3.2
515	KARA-BATKAK	SU05080	1957	1985	C	-7.8	-8.3	-9.2	-8.0	-11.1
516	KARACHAUL	SU03022	1957	1957	B	-30.0	M	M	M	M
517	KENG-TUR	SU05118	1942	1984	C	-6.0	M	8.0	0.0	M
518	KHADYRSHA	SU01021	1977	1984	C	M	-10.2	10.2	2.2	-14.1
519	KHAKEL	SU03003	1957	1985	C	-4.6	-0.8	-0.7	-1.2	-5.9
520	KIBISHA	SU03042	1964	1984	C	M	M	-6.4	-1.4	-1.8

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
521	KIRCHIN	SU04056	1964	1985	C	-14.7	M	-11.3	-15.8	0.0
522	KLJUEV	SU04059	1936	1985	C	-12.2	M	-7.1	0.0	-24.0
523	KOKBELES	SU04057	1964	1985	C	-13.8	M	-26.8	-8.6	-16.9
524	KORELDASH	SU03015	1966	1983	C	M	M	-10.2	-2.1	-2.2
525	KORUMDU	SU07103	1952	1985	C	-10.2	-5.1	4.3	-7.0	-5.1
526	KOZELSKIY	SU08005	1948	1981	C	M	50.0	5.0	ST	ST
527	LEVIY AKTRU	SU07102	1952	1985	C	-25.6	-5.2	-39.0	-17.0	-6.3
528	MALIY AKTRU	SU07100	1952	1985	B	-8.0	-11.3	-5.2	-3.2	-2.0
529	MALIY AZAU	SU03032	1959	1959	B	M	-200.0	M	M	M
530	MARUKHSKIY	SU03001	1964	1985	C	-3.0	-2.6	-3.7	-4.3	-4.8
531	MAZARSKIY	SU04042	1958	1985	C	ST	-15.1	M	M	-40.3
532	MIKELCHIRAN	SU03025	1958	1958	B	-165.0	M	M	M	M
533	MNA	SU03039	1960	1984	C	M	M	-3.2	-1.0	-1.2
534	MOLODEZHNIY	SU05090	1958	1985	C	-12.5	-10.0	-0.5	-10.7	-7.0
535	MURAVLEV	SU06002	1966	1985	C	-2.5	-2.5	-1.7	-1.9	M
536	MUSHKETOV	SU04041	1962	1984	C	-7.2	-10.3	-8.1	ST	-8.3
537	NO.104	SU01001	1952	1985	D	+X	+X	+X	+X	+X
538	NO.125	SU07105	1956	1985	B	0.0	-3.0	-2.0	-0.9	-1.8
539	NO.191	SU03041	1964	1973	C	M	M	-24.0	-1.5	-1.3
540	NO.314	SU04045	1959	1985	C	-6.1	ST	-17.2	-7.8	-22.1
541	NO.356	SU05106	1985	1985	C	0.0	0.0	0.0	0.0	0.0
542	NO.396	SU03016	1966	1985	C	-1.0	1.0	-1.0	0.0	-1.0
543	NO.462V	SU03005	1934	1985	C	-0.4	-7.7	5.0	-14.9	-12.5
544	NO.503	SU04003	1974	1985	C	-16.1	2.3	M	18.9	M
545	NO.517	SU04017	1975	1985	C	-7.1	-5.2	M	-7.3	M
546	NO.675	SU04064	1972	1985	C	-26.3	8.2	-6.2	-8.4	-8.7
547	PAKHTAKOR	SU05071	1963	1985	C	0.0	-14.0	7.7	0.0	-15.2
548	RAIGORODSKIY	SU04055	1934	1985	C	-11.6	M	-21.2	-23.6	-12.0
549	RAMA	SU04044	1957	1985	C	-3.1	ST	-12.3	M	-73.3
550	SEVERTSOV	SU04062	1960	1985	C	-14.0	M	-28.1	-18.2	-5.6
551	SHOKALSKIY	SU05078	1961	1985	C	-0.9	-2.6	-5.6	-18.0	4.4
552	SHUMSKIY	SU06001	1956	1985	C	-4.5	-4.5	-3.0	-3.5	M
553	SKAZKA	SU03008	1932	1985	C	-8.9	14.0	-1.7	-1.3	0.3
554	SKOGACH	SU04023	1969	1985	C	5.2	-10.3	ST	-32.3	-21.0
555	SUATISI SREDNIY	SU03040	1960	1985	C	0.3	0.4	0.2	-0.5	-1.0
556	TALGAR YUZHNIY	SU05079	1961	1985	C	-3.9	-4.9	-14.6	-6.6	-12.8
557	TEKESHSAI-I	SU05070	1962	1985	C	-7.6	M	19.2	0.0	-4.4

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
						VARIATIONS IN METERS				
558	TERSKOL	SU03030	1959	1959	B	M	-60.0	M	M	M
559	TOKMAKSOLDY-I	SU05002	1975	1985	C	-8.5	M	0.0	-6.9	-5.2
560	TS.TUYUKSUYSKIY	SU05075	1956	1985	C	-8.6	-11.3	-17.7	-13.0	-19.3
561	TSANERI	SU03014	1964	1983	C	M	M	-42.6	-4.3	-4.4
562	TSEYA	SU03007	1927	1985	C	-1.4	-6.1	-5.2	-8.4	-3.8
563	TURAMUZ-I	SU04060	1963	1985	C	-5.2	M	-13.6	-39.6	-17.2
564	TURO	SU04046	1959	1985	C	-6.2	-7.1	-3.2	M	-25.4
565	TURPAKBEL NIZHN	SU05065	1928	1985	C	0.0	0.0	-7.9	-7.8	0.0
566	TUTEK	SU04058	1961	1985	C	-6.0	M	6.0	-9.5	1.2
567	ULLUCHIRAN	SU03021	1957	1957	B	-220.0	M	M	M	M
568	ULLUKOL	SU03023	1957	1957	B	-205.0	M	M	M	M
569	ULLUMALIENDERKU	SU03024	1957	1957	B	-120.0	M	M	M	M
570	USHBA	SU03013	1964	1983	C	M	M	-14.1	-3.0	-2.8
571	ZERAVSHANSKIY	SU04043	1957	1985	C	-125.0	-73.0	-335.0	M	-35.0

CHINA

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
572	COLLIERY	CN00036	1969	1969	C	M	M	M	2.0	M
573	DAGONGBA	CN00028	1957	1984	B	M	M	M	M	-25.0
574	GOZHA	CN00034	1970	1970	C	M	0.0	M	M	M
575	GULIYA	CN00035	1970	1970	C	M	M	M	M	0.0
576	HAILUOGOU	CN00031	1930	1983	C	M	M	M	-113.3	-22.7
577	QIYI	CN00003	1958	1985	C	-1.0	-0.8	M	M	M
578	URUMQIHE S.NO.1	CN00010	1959	1985	C	-4.6	-3.6	-3.8	-5.4	-3.6
579	XIAOGONGBA	CN00029	1957	1984	B	M	M	M	M	-15.0
580	XIDATAN	CN00037	1969	1969	C	M	M	M	2.8	M
581	YANZIGOU	CN00030	1930	1983	C	M	M	M	M	-200.0

PAKISTAN

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
582	CHOGO LUNGMA	PK01001	1902	1979	B	M	M	M	-95.0	M
583	CHUNGPAR-TASH.	PK01501	1856	1958	B	M	-206.0	M	M	M
584	MINAPIN	PK00013	1889	1980	B	M	-780.0	M	M	M
585	SHAIGIRI	PK01508	1934	1958	B	M	-200.0	M	M	M
586	TAP	PK01506	1934	1958	B	M	55.0	M	M	M
587	TOSHAIN RUPAL	PK01515	1934	1958	B	M	-160.0	M	M	M

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	1986	1987	1988	1989	1990
	INDIA									
588	CHANGMEKHANGPU	IN02522	1977	1985	C	-20.0	-25.0	M	M	M
589	DUNAGIRI	IN00191	1984	1984	C	15.0	-10.0	-8.0	ST	-18.0
590	SHAUNE GARANG	IN00084	1981	1985	C	ST	ST	ST	ST	M
591	ZEMU	IN02432	1975	1985	C	-60.0	-10.0	M	M	M
	NEPAL									
592	AX010	NP00005	1978	1979	C	M	M	M	-25.0	M
593	AX030	NP00006	1976	1978	B	M	M	M	ST	M
594	DX080	NP00007	1976	1976	C	M	M	M	-60.0	M
595	EB050	NP00008	1976	1976	C	M	M	M	-30.0	M
596	KONGMA	NP00010	1970	1978	C	M	M	M	-31.6	M
597	KONGMA TIKPE	NP00009	1974	1978	C	M	M	M	-26.9	M
598	YALA	NP00004	1982	1982	C	M	-3.4	M	-6.9	M
	INDONESIA									
599	CARSTENSZ	RI00004	1936	1973	B	M	M	M	M	-380.0
600	MEREN	RI00003	1936	1973	B	M	M	M	M	-500.0
	NEW ZEALAND									
601	DART	NZ07521	1980	1986	C	-50.0	-50.0	-100.0	-100.0	-100.0
602	FRANZ JOSEF	NZ08881	1867	1985	C	125.5	117.8	48.6	23.0	-44.4
603	IVORY	NZ09011	1969	1985	E	-X	-X	-X	-X	M
	ANTARCTICA									
604	ADAMS	AN00027	1988	1988	D	M	M	M	-2.1	0.0
605	BARTLEY	AN00016	1983	1985	C	0.2	0.5	-0.6	1.6	-0.6
606	CLARK	AN00012	1982	1985	C	M	0.7	0.6	0.8	0.5
607	GOODSPEED	AN00020	1985	1985	C	2.3	-2.6	-0.1	0.8	M
608	HART	AN00019	1985	1985	C	0.3	0.0	-1.0	-0.9	0.5
609	HEIMDALL	AN00003	1970	1984	C	M	0.2	M	-0.5	-0.3
610	MESERVE	AN00017	1983	1986	C	1.1	-1.7	2.0	-0.1	-0.2
611	MIERS	AN00026	1988	1988	D	M	M	M	-0.6	0.1
612	VICTORIA LOWER	AN00015	1982	1982	C	M	M	M	M	9.9
613	VICTORIA UPPER	AN00013	1984	1985	C	M	M	6.1	-3.1	0.8

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	VARIATIONS IN METERS 1986	1987	1988	1989	1990
614	WRIGHT LOWER	AN00018	1975	1985	C	M	0.3	-0.3	0.0	0.3
615	WRIGHT UPPER	AN00011	1984	1985	C	M	-1.4	-2.5	-0.4	0.9

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS

TABLE BB

ADDENDA FROM EARLIER YEARS

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
METHOD:	a = aerial photogrammetry b = terrestrial photogrammetry c = geodetic ground survey (theodolite, tape etc.) d = combination of a,b or c e = other methods or no information
1ST SURVEY:	Day, month and year of survey
2ND SURVEY:	Day, month and year of following survey
VARIATIONS IN METERS:	Variation in the position of the glacier front in horizontal projection expressed as the change in length between the surveys

Key to Symbols:	M:	No data available
	+X:	Glacier in advance
	-X:	Glacier in retreat
	ST:	Glacier stationary
	SN:	Glacier front covered by snow

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
	CANADA					
1	ANDREI	CD00148	C	**.09.1978	**.09.1984	-28.0
2	WEDGEMOUNT	CD02333	B	08.07.1949	22.08.1951	-68.0
				22.08.1951	26.07.1964	-260.0
				26.07.1964	19.07.1969	-53.0
				19.07.1969	30.07.1972	-110.0
				30.07.1972	08.08.1973	-27.0
	U.S.A.					
3	BLUE GLACIER	US02126	C	22.07.1979	11.07.1980	3.2
				11.07.1980	05.08.1981	-1.2
				05.08.1981	07.07.1982	-7.0
				07.07.1982	04.09.1983	4.0
				04.09.1983	25.09.1984	1.5
				25.09.1984	08.09.1985	2.0
	CHILE					
4	ARCO	RC00019	B	**.**.1945	**.**.1975	0.0
5	BENITO	RC00007	B	**.**.1945	**.**.1975	0.0
6	BRUEGGEN	RC00032	B	**.**.1945	25.02.1976	9000.0
7	CACHET	RC00021	B	**.**.1945	**.**.1975	-2000.0
8	COLONIA	RC00020	B	**.**.1945	**.**.1975	-500.0
9	EXPLORADORES	RC00028	B	**.**.1945	**.**.1975	0.0
10	FIERO	RC00026	B	**.**.1945	**.**.1975	-300.0
11	GROSSE	RC00001	B	**.**.1945	**.**.1975	-500.0
12	GUALAS N-TONGUE	RC000A4	B	**.**.1945	**.**.1975	-100.0
13	GUALAS S-TONGUE	RC000B4	B	**.**.1945	**.**.1975	-250.0
14	HPN 1	RC00008	B	**.**.1945	**.**.1975	-1400.0
15	HPN 2	RC00009	B	**.**.1945	**.**.1975	-1000.0
16	HPN 3	RC00010	B	**.**.1945	**.**.1975	0.0
17	JORGE MONTT	RC00030	B	**.**.1945	25.02.1976	-1000.0
18	LEONES	RC00025	B	**.**.1945	**.**.1975	-100.0
19	NEF	RC00023	B	**.**.1945	**.**.1975	0.0
20	O'HIGGINS	RC00031	B	**.**.1945	25.02.1976	-11000.0
21	PARED NORTE	RC00017	B	**.**.1945	**.**.1975	-1300.0
22	PARED SUR	RC00016	B	**.**.1945	**.**.1975	-1000.0

VARIATION IN POSITION OF GLACIER FRONTS, ADDENDA, TABLE BB, PAGE 1

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
23	PISCIS	RC00015	B	**.**.1945	**.**.1975	-760.0
24	REICHER NE	RC000A3	B	**.**.1945	**.**.1975	0.0
25	REICHER SW	RC000B3	B	**.**.1945	**.**.1975	400.0
26	SAN QUINTIN	RC00006	B	**.**.1945	**.**.1975	-200.0
27	SAN RAFAEL	RC00005	B	**.**.1945	**.**.1975	-650.0
28	SOLER	RC00024	B	**.**.1945	**.**.1975	-190.0
29	STEFFEN	RC00011	B	**.**.1945	**.**.1975	-900.0
30	TYNDALL	RC00035	B	**.**.1945	**.03.1975	-3200.0
31	UNNAMED 1	RC00002	B	**.**.1945	**.**.1975	-600.0
	ARGENTINA					
32	MORENO	RA00034	B	**.**.1945	**.03.1970	-500.0
33	UPSALA	RA00033	B	**.**.1945	18.11.1968	-900.0
				18.11.1968	11.03.1970	-350.0
				11.03.1970	01.01.1978	400.0
				01.01.1978	08.03.1979	-300.0
				08.03.1979	24.02.1981	-300.0
				24.02.1981	14.12.1984	-2100.0
	ICELAND					
34	HOFSJOKULL N	IS00510	C	01.09.1983	09.09.1984	-15.0
				09.09.1984	14.09.1985	-13.0
	POLAND					
35	MIEGUSZOWIECKIE	PL00140	C	08.09.1980	06.10.1981	-24.0
				06.10.1981	30.09.1982	0.0
				30.09.1982	29.09.1983	2.0
				29.09.1983	03.10.1984	27.0
				03.10.1984	03.10.1985	-27.0
36	POD CUBRYNA	PL00180	C	18.09.1980	08.10.1981	-16.0
				08.10.1981	25.09.1982	-2.0
				25.09.1982	28.09.1983	-15.0
				28.09.1983	07.10.1984	29.0
				07.10.1984	04.10.1985	-3.0

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
	U.S.S.R.					
37	ABANO	SU03037	C	14.08.1975	21.08.1976	1.6
				21.08.1976	22.08.1977	0.0
				22.08.1977	25.07.1978	3.0
				25.07.1978	31.07.1981	-3.7
				31.07.1981	12.08.1984	-4.2
				12.08.1984	23.08.1985	-1.9
38	ALIBEKSKIY	SU03002	C	09.09.1979	13.09.1980	-2.3
				13.09.1980	10.09.1981	5.0
				10.09.1981	06.09.1982	5.0
				06.09.1982	17.09.1983	6.8
				17.09.1983	10.09.1984	7.4
				10.09.1984	07.09.1985	-4.9
39	BEZENGI	SU03006	C	27.09.1979	21.09.1980	26.7
				21.09.1980	18.09.1981	9.1
				18.09.1981	20.09.1982	-11.9
				20.09.1982	12.09.1983	30.7
				12.09.1983	17.09.1984	9.2
				17.09.1984	22.09.1985	-4.3
40	BOLSHOY AZAU	SU03004	C	23.09.1970	14.09.1971	-0.8
				14.09.1971	18.09.1972	-6.0
				18.09.1972	23.09.1973	12.5
				23.09.1973	15.10.1974	17.9
				..1979	16.09.1980	-0.9
				16.09.1980	22.09.1981	1.6
				22.09.1981	11.09.1982	4.2
				11.09.1982	15.09.1983	-9.7
				15.09.1983	11.09.1984	-16.6
				11.09.1984	17.09.1985	-3.5
41	CHACHI	SU03035	C	28.07.1973	21.08.1978	8.0
				21.08.1978	26.07.1981	-5.4
				26.07.1981	08.08.1984	-6.7
42	DEVDORAKI	SU03036	C	19.08.1974	19.08.1975	0.8
				19.08.1975	26.08.1976	10.5
				26.08.1976	30.08.1977	5.5
				30.08.1977	15.07.1978	10.0
				15.07.1978	03.09.1979	-1.9

VARIATION IN POSITION OF GLACIER FRONTS, ADDENDA, TABLE BB, PAGE 3

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
				03.09.1979	27.07.1981	-4.5
				27.07.1981	16.08.1984	-8.6
				16.08.1984	05.09.1985	-4.0
43	GERGETI	SU03038	C	29.08.1974	17.08.1976	3.9
				17.08.1976	26.08.1977	-3.8
				26.08.1977	20.08.1978	-2.2
				20.08.1978	01.09.1979	-11.2
				01.09.1979	30.08.1980	-16.1
				30.08.1980	30.08.1981	-7.6
				30.08.1981	31.08.1982	-10.9
				31.08.1982	01.09.1983	-7.8
				01.09.1983	01.09.1984	-12.1
				01.09.1984	01.09.1985	-13.4
44	IRIK	SU03029	B	03.08.1958	20.08.1983	-355.0
45	IRIKCHAT	SU03028	B	03.08.1958	18.08.1983	-245.0
46	KHAKEL	SU03003	C	20.09.1979	12.09.1980	-0.2
				12.09.1980	11.09.1981	-0.8
				11.09.1981	07.09.1982	-0.8
				07.09.1982	11.09.1983	-6.4
				11.09.1983	14.09.1984	-0.6
				14.09.1984	12.09.1985	-5.2
47	KIBISHA	SU03042	C	23.08.1973	24.08.1978	20.0
				24.08.1978	02.08.1981	-14.0
				02.08.1981	08.08.1984	-18.0
48	KORELDASH	SU03015	C	27.08.1974	30.08.1975	-2.9
				30.08.1975	24.08.1976	-2.4
				24.08.1976	27.08.1977	-7.5
				27.08.1977	02.08.1980	-10.1
				02.08.1980	16.08.1983	-8.4
49	KOZELSKIY	SU08005	A	**.09.1948	01.09.1967	300.0
50	KYUKYURTLYU	SU03033	B	26.07.1959	15.08.1983	105.0
51	MARUKHSKIY	SU03001	C	10.09.1980	11.09.1981	-0.6
				11.09.1981	25.09.1982	-7.9
				25.09.1982	23.09.1983	-8.5
				23.09.1983	06.09.1984	0.0
				06.09.1984	17.09.1985	-8.8
52	MNA	SU03039	C	31.08.1974	28.08.1975	1.1

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
				28.08.1975	17.08.1976	0.9
53	MURAVLEV	SU06002	C	25.08.1984	26.08.1985	-3.6
54	MURKAR	SU03020	C	21.07.1968	11.08.1972	-49.0
				11.08.1972	15.08.1975	-15.0
				15.08.1975	12.08.1977	-13.0
				12.08.1977	06.08.1978	-30.0
				06.08.1978	12.08.1979	-10.0
				12.08.1979	06.08.1980	-16.0
				15.08.1984	07.08.1985	-3.0
55	NO.314	SU04045	C	05.08.1980	30.09.1981	-9.8
				30.09.1981	05.09.1983	-35.5
				05.09.1983	05.09.1984	-10.5
				05.09.1984	08.09.1985	-17.7
56	NO.396	SU03016	C	23.08.1974	14.08.1975	2.0
				14.08.1975	11.08.1976	1.0
				11.08.1976	17.08.1981	-8.7
				17.08.1981	30.07.1984	-6.0
				30.07.1984	11.09.1985	-3.5
57	NO.462V	SU03005	C	11.09.1970	15.09.1971	-8.3
				15.09.1971	18.09.1972	-3.7
				18.09.1972	28.09.1973	-4.6
				28.09.1973	11.10.1974	0.6
				..1979	19.09.1980	-4.3
				19.09.1980	25.09.1981	34.1
				25.09.1981	10.09.1982	-4.2
				10.09.1982	15.09.1983	10.8
				15.09.1983	14.08.1984	10.9
				14.08.1984	03.10.1985	-7.0
58	NO.675	SU04064	C	25.09.1977	09.09.1981	-8.2
				09.09.1981	09.08.1983	-13.6
				09.08.1983	17.08.1984	ST
				17.08.1984	22.08.1985	-8.4
59	SHUMSKIY	SU06001	C	26.08.1984	27.08.1985	-6.6
60	SKAZKA	SU03008	C	18.09.1970	06.09.1971	0.9
				06.09.1971	08.09.1972	-1.3
				08.09.1972	21.10.1973	0.0
				21.10.1973	30.09.1974	4.5

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
				..1979	06.09.1980	-2.1
				06.09.1980	16.09.1981	-0.2
				16.09.1981	04.09.1982	-5.0
				04.09.1982	07.09.1983	-0.8
				07.09.1983	19.09.1984	1.2
				19.09.1984	13.09.1985	-4.6
61	SUATISI SREDNIY	SU03040	C	12.07.1966	17.09.1967	-4.0
				17.09.1967	25.08.1968	3.0
				25.08.1968	25.08.1969	4.0
				25.08.1969	24.08.1970	5.2
				24.08.1970	27.08.1971	7.0
				27.08.1971	27.08.1972	2.6
				27.08.1972	30.08.1973	-4.0
				30.08.1973	24.08.1974	0.0
				24.08.1974	22.08.1975	2.0
				22.08.1975	06.08.1976	21.0
				06.08.1976	07.09.1977	4.7
				07.09.1977	05.09.1978	1.5
				05.09.1978	18.07.1981	-4.6
				18.07.1981	24.07.1984	-2.7
				24.07.1984	29.08.1985	1.2
62	TIKHITSAR	SU03019	C	02.08.1973	15.08.1974	-1.0
				15.08.1974	12.08.1975	-1.0
				12.08.1975	09.08.1976	2.0
				09.08.1976	12.08.1977	-7.0
				12.08.1977	05.08.1978	9.0
				05.08.1978	12.08.1979	-13.6
				12.08.1979	05.08.1980	7.9
				05.08.1980	08.08.1981	-6.8
				08.08.1981	15.09.1982	-0.8
				15.09.1982	28.08.1983	-3.9
				28.08.1983	14.08.1984	-8.5
				14.08.1984	06.08.1985	2.2
63	TSANERI	SU03014	C	14.08.1964	17.08.1968	-104.0
				17.08.1968	14.09.1973	-71.0
				14.09.1973	25.07.1980	-79.1
				25.07.1980	07.09.1983	-36.5

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
64	TSEYA	SU03007	C	**.**.1975	**.**.1976	-5.0
				..1976	**.**.1977	-11.0
				..1977	**.**.1978	-7.0
				..1978	**.**.1979	-6.0
				..1979	05.09.1980	-3.2
				05.09.1980	16.09.1981	-6.5
				16.09.1981	05.09.1982	-5.8
				05.09.1982	08.09.1983	-1.3
				08.09.1983	21.09.1984	-11.7
				21.09.1984	12.09.1985	-9.2
65	USHBA	SU03013	C	13.08.1973	27.07.1980	-44.7
				27.07.1980	27.08.1983	-14.7
66	YUGO-VOSTOCHNIY	SU03018	C	05.10.1970	29.09.1971	-1.9
				29.09.1971	15.10.1972	4.9
				15.10.1972	19.09.1973	-0.2
				19.09.1973	10.10.1974	-0.5
				10.10.1974	29.09.1975	-1.5
				29.09.1975	03.10.1976	-1.4
				03.10.1976	21.09.1977	-1.2
				21.09.1977	30.09.1978	-0.4
				30.09.1978	01.09.1979	-2.5
				01.09.1979	30.08.1980	74.7
				30.08.1980	14.08.1981	31.0
				14.08.1981	06.08.1982	10.1
				06.08.1982	02.10.1983	10.2
				02.10.1983	11.08.1984	17.7
				11.08.1984	13.08.1985	-7.5
67	YUZHNIY	SU03017	C	05.10.1970	29.09.1971	-1.7
				29.09.1971	15.10.1972	1.1
				15.10.1972	19.09.1973	0.5
				19.09.1973	10.10.1974	-0.8
				10.10.1974	29.09.1975	-1.5
				29.09.1975	03.10.1976	-1.4
				03.10.1976	26.09.1977	-0.8
				26.09.1977	30.09.1978	-2.4
				30.09.1978	01.09.1979	-1.5
				01.09.1979	30.08.1980	-1.5

VARIATION IN POSITION OF GLACIER FRONTS, ADDENDA, TABLE BB, PAGE 7

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
				30.08.1980	14.08.1981	9.0
				14.08.1981	06.08.1982	0.7
				06.08.1982	02.10.1983	2.9
				02.10.1983	11.08.1984	5.4
				11.08.1984	13.08.1985	-1.8

PAKISTAN

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
68	CHOGO LUNGMA	PK01001	*	**.07.1902	15.12.1913	205.0
			B	15.12.1913	08.10.1954	-100.0
				08.10.1954	10.06.1970	-210.0
				10.06.1970	16.08.1979	-117.0
69	CHUNGPAR-TASH.	PK01501	E	20.09.1856	22.06.1934	-680.0
			B	22.06.1934	13.09.1958	-70.0
70	MINAPIN	PK00013	D	**.**.1889	**.**.1893	1220.0
			D	**.**.1893	**.**.1906	270.0
			D	**.**.1906	**.**.1913	450.0
			D	**.**.1913	**.**.1925	-700.0
			D	**.**.1925	**.**.1954	-1720.0
			D	**.**.1954	**.**.1980	-250.0
71	SHAIGIRI	PK01508	B	24.06.1934	10.09.1958	-55.0
72	TAP	PK01506	B	19.06.1934	18.09.1958	-190.0
73	TOSHAIN RUPAL	PK01515	B	24.06.1934	20.09.1958	-65.0

INDIA

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
74	CHANGMEKHANGPU	IN02522	C	**.**.1980	**.**.1981	-30.0
				..1981	**.**.1982	-15.0
				..1982	**.**.1983	-12.0
				..1983	**.**.1984	-10.0
				..1984	**.**.1985	-20.0
75	ZEMU	IN02432	C	**.**.1980	**.**.1981	-8.0
				..1981	**.**.1982	-24.0
				..1982	**.**.1983	-35.0
				..1983	**.**.1984	-96.0
				..1984	**.**.1985	-60.0

NR	GLACIER NAME	PSFG NR	ME	1ST SURVEY DY MN YR	2ND SURVEY DY MN YR	VARIATIONS METRES
	NEW ZEALAND					
76	FRANZ JOSEF	NZ08881	C	01.02.1984	31.12.1984	179.4
				31.12.1984	31.12.1985	169.3
	ANTARCTICA					
77	BARTLEY	AN00016	C	30.12.1983	10.12.1984	-0.3
				10.12.1984	31.12.1985	-0.7
78	MESERVE	AN00017	C	08.01.1985	07.01.1986	-5.1

Notes

Notes

WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS
SUMMARY DATA 1985-90

TABLE C

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
SYS:	System of measurement: STR = Stratigraphic FXD = Fixed date COM = Combined System OTH = Other System
FROM:	Day, month and year of beginning of balance/measurement year
TO:	Day, month and year of end of balance/measuremnt year
BW:	Mean specific winter balance in mm water
AC:	Annual accumulation in mm water
BS:	Mean specific summer balance in mm water
AA:	Annual ablation in mm water
BN/BA:	Mean specific net balance or annual balance in mm water
ELA:	Altitude of equilibrium line or annual equilibrium line in meters above sea level
AAR:	Ratio of accumulation area to total area of the glacier in percent
AREA:	Area of the glacier used for calculation of mean specific quantities

Key to Symbols: * = No data available
*** = Unspecified System

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
	CANADA												
1	ALEXANDER	CD00133	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				14.09.88	21.09.89	1720	-2690	*****	*****	-970	1730	21.4	5.820
				21.09.89	21.09.90	1900	-2970	*****	*****	-1070	1815	16.2	5.740
2	ANDREI	CD00148	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				14.09.88	22.09.89	2090	-2550	*****	*****	-460	1535	47.1	91.940
				22.09.89	21.09.90	1980	-2400	620	-1060	-420	1540	32.6	91.890
3	BENCH	CD00234	STR	18.09.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	12.09.88	2300	-2300	*****	*****	0	1820	*****	10.510
				12.09.88	17.09.89	1900	-2960	*****	*****	-1060	1990	33.9	10.510
				17.09.89	17.09.90	1870	-2940	*****	*****	-1070	1905	31.3	10.350
4	DEVON ICE CAP	CD00431	STR	**.**.85	**.**.86	*****	*****	*****	*****	184	683	*****	*********
				..86	**.**.87	*****	*****	*****	*****	34	1000	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-226	1228	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-88	1142	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-166	1226	*****	*********
5	HELM	CD00855	STR	**.**.85	**.**.86	2150	-3484	*****	*****	-1333	****	*****	2.150
				..86	**.**.87	2128	-2917	*****	*****	-789	****	*****	1.950
				..87	**.**.88	2065	-2624	*****	*****	-559	****	*****	1.460
				..88	**.**.89	1641	-3223	*****	*****	-1630	****	*****	1.410
				..89	**.**.90	*****	*****	*****	*****	-1790	****	*****	*********
6	MEIGHEN ICE CAP	CD01335	STR	**.**.85	**.**.86	*****	*****	*****	*****	240	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-180	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-300	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	290	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-210	****	*****	*********
7	PEYTO	CD01640	COM	**.**.85	**.**.86	1200	-1670	*****	*****	-470	2685	39.8	12.900
				..86	**.**.87	820	-1440	*****	*****	-620	2645	48.8	12.900
				..87	**.**.88	890	-1880	*****	*****	-990	2715	34.1	12.900
				..88	**.**.89	1130	-1720	*****	*****	-590	2690	39.4	12.900
				..89	**.**.90	1140	-1880	*****	*****	-740	2695	37.8	12.900
8	PLACE	CD01660	COM	**.**.85	**.**.86	1664	-2977	*****	*****	-1313	****	*****	3.700

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				..86	**.**.87	1935	-2800	*****	*****	-865	****	*****	3.670
				..87	**.**.88	1541	-2501	*****	*****	-961	****	*****	3.650
				..88	**.**.89	1469	-2480	*****	*****	-1006	****	*****	3.630
				..89	**.**.90	*****	*****	*****	*****	-938	****	*****	*********
9	SENTINEL	CD01915	COM	**.**.85	**.**.86	2975	-3347	*****	*****	-372	****	*****	1.760
				..86	**.**.87	2916	-2818	*****	*****	98	****	*****	1.750
				..87	**.**.88	2753	-2387	*****	*****	367	****	*****	1.740
				..88	**.**.89	2137	-3018	*****	*****	-882	****	*****	1.740
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
10	TATS	CD02007	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	16.09.89	151	-328	151	-328	-178	1450	36.0	27.890
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
11	TIEDEMANN	CD02040	STR	18.09.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				**.09.88	17.09.89	1930	-3440	*****	*****	-1510	1990	36.1	62.690
				17.09.89	16.09.90	1940	-3500	*****	*****	-1560	2045	34.8	62.690
12	WHITE	CD02340	COM	**.**.85	**.**.86	*****	*****	*****	*****	-16	875	76.0	38.930
				..86	**.**.87	*****	*****	*****	*****	-304	915	73.0	38.930
				..87	**.**.88	*****	*****	*****	*****	-790	1165	50.0	38.930
				..88	**.**.89	*****	*****	*****	*****	91	700	83.0	38.930
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
13	YURI	CD02530	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				14.09.88	21.09.89	1270	-3090	*****	*****	-1820	2010	0.0	3.580
				21.09.89	21.09.90	1980	-2400	*****	*****	-420	1540	*****	3.580

U.S.A.

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
14	BLUE GLACIER	US02126	STR	**.**.85	**.**.86	*****	*****	*****	*****	-680	1910	40.0	*********
				..86	**.**.87	*****	*****	*****	*****	*****	1700	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	1625	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	1725	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	1900	*****	*********

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
15	COLUMBIA (2057)	US02057	FXD	20.09.85	20.09.86	*****	*****	*****	*****	-200	****	61.1	0.900
				20.09.86	20.09.87	*****	*****	*****	*****	-630	****	50.0	0.900
				19.09.87	19.09.88	*****	*****	*****	*****	140	****	*****	0.900
				20.09.88	20.09.89	*****	*****	*****	*****	-90	****	66.6	0.900
				19.09.89	19.09.90	*****	*****	*****	*****	-160	****	66.6	0.900
16	DANIELS	US02052	FXD	22.09.85	22.09.86	*****	*****	*****	*****	-360	****	60.0	0.500
				22.09.86	22.09.87	*****	*****	*****	*****	-870	****	40.0	0.500
				21.09.87	21.09.88	*****	*****	*****	*****	-150	****	60.0	0.500
				22.09.88	22.09.89	*****	*****	*****	*****	-370	****	60.0	0.500
				21.09.89	21.09.90	*****	*****	*****	*****	-680	****	50.0	0.500
17	EKLUTNA	US00391	FXD	01.10.85	30.09.86	1450	-1775	*****	*****	-325	1281	*****	31.600
				01.10.86	30.09.87	1375	-1575	*****	*****	-200	1281	*****	31.600
				01.10.87	30.09.88	2500	-2075	*****	*****	425	1220	*****	31.600
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
18	FOSS	US02053	FXD	23.09.85	23.09.86	*****	*****	*****	*****	120	****	71.4	0.700
				23.09.86	23.09.87	*****	*****	*****	*****	-380	****	57.1	0.700
				22.09.87	22.09.88	*****	*****	*****	*****	230	****	71.4	0.700
				23.09.88	23.09.89	*****	*****	*****	*****	90	****	64.3	0.700
				22.09.89	22.09.90	*****	*****	*****	*****	-270	****	57.1	0.700
19	GULKANA	US00200	COM	01.10.85	30.09.86	*****	*****	*****	*****	60	1690	67.0	19.300
				01.10.86	30.09.87	*****	*****	*****	*****	-120	1740	62.0	19.300
				01.10.87	30.09.88	*****	*****	*****	*****	-210	1760	60.0	19.300
				01.10.88	30.09.89	*****	*****	*****	*****	-920	1810	55.0	19.300
				01.10.89	30.09.90	*****	*****	*****	*****	-600	1780	58.0	19.300
20	ICE WORM	US02054	FXD	22.09.85	22.09.86	*****	*****	*****	*****	-450	****	50.0	0.200
				22.09.86	22.09.87	*****	*****	*****	*****	-1390	****	30.0	0.200
				21.09.87	21.09.88	*****	*****	*****	*****	-240	****	65.0	0.200
				22.09.88	22.09.89	*****	*****	*****	*****	-670	****	50.0	0.200
				21.09.89	21.09.90	*****	*****	*****	*****	-920	****	40.0	0.200
21	LOWER CURTIS	US02055	FXD	26.09.85	26.09.86	*****	*****	*****	*****	-220	****	62.5	0.800
				27.09.86	27.09.87	*****	*****	*****	*****	-560	****	50.0	0.800
				25.09.87	25.09.88	*****	*****	*****	*****	-60	****	68.8	0.800
				26.09.88	26.09.89	*****	*****	*****	*****	-290	****	56.0	0.800
				26.09.89	26.09.90	*****	*****	*****	*****	-460	****	50.0	0.800
22	LYNCH	US02056	FXD	23.09.85	23.09.86	*****	*****	*****	*****	-70	****	68.8	0.800
				23.09.86	23.09.87	*****	*****	*****	*****	-300	****	62.5	0.800

MASS BALANCE SUMMARY DATA, TABLE C, PAGE 3

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				22.09.87	22.09.88	*****	*****	*****	*****	170	****	75.0	0.800
				23.09.88	23.09.89	*****	*****	*****	*****	30	****	68.8	0.800
				22.09.89	22.09.90	*****	*****	*****	*****	-120	****	62.5	0.800
23	RAINBOW	US02003	FXD	28.09.85	28.09.86	*****	*****	*****	*****	200	****	70.0	1.700
				28.09.86	28.09.87	*****	*****	*****	*****	-260	****	62.0	1.700
				27.09.87	27.09.88	*****	*****	*****	*****	430	****	75.0	1.700
				28.09.88	28.09.89	*****	*****	*****	*****	-240	****	59.0	1.700
				28.09.89	28.09.90	*****	*****	*****	*****	-460	****	55.8	1.700
24	SOUTH CASCADE	US02013	STR	**.**.85	**.**.86	2430	-3140	*****	*****	-710	1950	48.0	2.520
				..86	**.**.87	1880	-4440	*****	*****	-2560	2100	8.0	2.510
				..87	**.**.88	1890	-3530	*****	*****	-1640	2030	24.0	2.510
				..88	**.**.89	2350	-3060	*****	*****	-710	1950	48.0	2.500
				..89	**.**.90	2800	-3530	*****	*****	-730	1960	44.0	2.500
25	WATSON	US02051	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				30.09.87	30.09.88	*****	*****	*****	*****	550	****	80.0	0.200
				30.09.88	30.09.89	*****	*****	*****	*****	-340	****	50.0	0.200
				30.09.89	30.09.90	*****	*****	*****	*****	-240	****	60.0	0.200
26	WOLVERINE	US00411	COM	**.**.85	**.**.86	*****	*****	*****	*****	-180	1120	67.0	17.240
				..86	**.**.87	*****	*****	*****	*****	1190	980	86.0	*********
				..87	**.**.88	*****	*****	*****	*****	1000	960	87.0	*********
				..88	**.**.89	*****	*****	*****	*****	-1960	1330	40.0	*********
				..89	**.**.90	*****	*****	*****	*****	-2510	1470	8.0	*********
27	YAWNING	US02050	FXD	25.09.85	25.09.86	*****	*****	*****	*****	-140	****	*****	*********
				25.09.86	25.09.87	*****	*****	*****	*****	-470	****	*****	*********
				24.09.87	24.09.88	*****	*****	*****	*****	-60	****	*****	*********
				25.09.88	25.09.89	*****	*****	*****	*****	-190	****	*****	*********
				25.09.89	25.09.90	*****	*****	*****	*****	-330	****	*****	*********

ICELAND

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
28	HOFSJOKULL N	IS00510	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				**.09.87	30.09.88	1370	-2110	*****	*****	-740	1330	39.0	90.600
				30.09.88	20.09.89	1760	-1180	*****	*****	580	1200	58.0	90.600
				20.09.89	14.09.90	1450	-2050	*****	*****	-600	1330	39.0	90.600

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
	NORWAY												
29	AALFOTBRE OEST	N 36206	STR	**.**.85	**.**.86	2280	-2870	*****	*****	-580	1195	38.0	3.320
				..86	**.**.87	*****	*****	*****	*****	1130	1095	75.5	3.320
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
30	AALFOTBREEN	N 36204	STR	**.10.85	**.10.86	2340	-2760	*****	*****	-410	1250	43.6	4.820
				**.10.86	**.10.87	4290	-2220	*****	*****	2070	870	100.0	4.820
				**.10.87	**.10.88	2720	-5200	*****	*****	-2480	1380	0.0	4.820
				**.10.88	**.10.89	5200	-2930	*****	*****	2270	1020	91.9	4.820
				**.10.89	**.10.90	5980	-4190	*****	*****	1790	980	96.9	4.820
31	AUST OKSTINDBRE	N 64902	STR	**.**.85	**.**.86	*****	*****	*****	*****	400	1290	65.0	14.010
				..86	**.**.87	2300	-1600	*****	*****	700	1280	68.0	14.010
				..87	**.**.88	1500	-3400	*****	*****	-1900	1750	0.0	14.010
				..88	**.**.89	3700	-2200	*****	*****	1600	1270	70.0	14.010
				..89	**.**.90	3000	-2700	*****	*****	300	1310	61.0	14.010
32	AUSTDALSBREEN	N 37323	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				**.09.87	**.09.88	1940	-3220	*****	*****	-1280	1575	12.0	11.950
				**.09.88	**.09.89	3180	-1340	*****	*****	1840	1270	93.0	11.950
				**.09.89	**.09.90	3650	-2440	*****	*****	1210	1315	87.5	11.950
33	ENGABREEN	N 67011	STR	**.09.85	**.09.86	2700	-2450	*****	*****	250	1140	66.0	38.020
				**.09.86	**.09.87	2570	-1630	*****	*****	940	1015	82.5	38.020
				**.09.87	**.09.88	2260	-4050	*****	*****	-1790	1430	6.0	38.020
				**.09.88	**.09.89	4620	-1450	*****	*****	3180	890	93.2	38.020
				**.09.89	**.09.90	3490	-2640	*****	*****	850	1000	86.2	38.020
34	GRAASUBREEN	N 00547	STR	**.09.85	**.09.86	410	-1180	*****	*****	-770	2290	0.0	2.200
				**.09.86	**.09.87	940	-230	*****	*****	720	1850	100.0	2.200
				**.09.87	**.09.88	1080	-1660	*****	*****	-590	2195	10.0	2.200
				**.09.88	**.09.89	1120	-670	*****	*****	450	1850	100.0	2.200
				**.09.89	**.09.90	1330	-600	*****	*****	730	1850	100.0	2.200
35	HARDANGERJOEKUL	N 22303	STR	**.09.85	**.09.86	1470	-1570	*****	*****	-100	1660	75.5	17.180
				**.09.86	**.09.87	2080	-1140	*****	*****	930	1530	88.0	17.180
				**.09.87	**.09.88	1610	-3130	*****	*****	-1520	1900	0.0	17.180
				**.09.88	**.09.89	3480	-1370	*****	*****	2110	1410	92.5	17.180
				**.09.89	**.09.90	3650	-1720	*****	*****	1930	1450	91.6	17.180

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
36	HELLSTUGUBREEN	N 00511	STR	**.09.85	**.09.86	780	-1270	*****	*****	-490	1940	33.0	2.980
				**.09.86	**.09.87	1150	-700	*****	*****	460	1700	80.3	2.980
				**.09.87	**.09.88	1280	-2320	*****	*****	-1040	2020	15.5	2.980
				**.09.88	**.09.89	1620	-900	*****	*****	720	1660	84.5	2.980
				**.09.89	**.09.90	1800	-1150	*****	*****	650	1650	85.8	2.980
37	LANGFJORDJOEKUL	N 85008	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				**.09.88	**.09.89	2460	-3030	*****	*****	-570	860	48.0	4.800
				**.09.89	**.09.90	2640	-3040	*****	*****	-400	775	60.5	4.800
38	NIGARDSBREEN	N 31014	STR	**.10.85	**.10.86	1610	-1710	*****	*****	-100	1580	58.0	48.200
				**.10.86	**.10.87	2730	-1250	*****	*****	1480	1350	90.0	48.200
				**.10.87	**.10.88	2240	-3130	*****	*****	-900	1660	37.0	48.200
				**.10.88	**.10.89	4050	-850	*****	*****	3200	1170	94.0	48.200
				**.10.89	**.10.90	3520	-1750	*****	*****	1770	1435	82.5	48.200
39	SPOERTEGGBREEN	N 31027	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				**.09.87	**.09.88	*****	*****	*****	*****	1000	1770	0.0	27.940
				**.09.88	**.09.89	2760	-1620	*****	*****	1140	1405	73.0	27.940
				**.09.89	**.09.90	3340	-2330	*****	*****	1020	1395	75.0	27.940
40	STORBREEN	N 00541	STR	**.**.85	**.**.86	1050	-1370	*****	*****	-320	1770	49.0	5.260
				..86	**.**.87	1800	-1300	*****	*****	300	1585	86.0	5.260
				..87	**.**.88	1450	-2400	*****	*****	-950	1970	6.0	5.260
				..88	**.**.89	2300	-1100	*****	*****	1200	1550	90.5	5.260
				..89	**.**.90	2600	-1350	*****	*****	1250	****	*****	*********
41	STORGLOMBREEN	N 67313	STR	**.09.85	**.09.86	2450	-2870	*****	*****	-410	1130	62.0	59.160
				**.09.86	**.09.87	2320	-1870	*****	*****	450	1035	74.5	59.160
				**.09.87	**.09.88	2060	-3750	*****	*****	-1690	1350	4.5	59.160
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
42	SVARTISHEIBREEN	N 65509	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				**.09.87	**.09.88	2420	-4030	*****	*****	-1610	1185	22.0	5.480
				**.09.88	**.09.89	3720	-1360	*****	*****	2360	895	80.5	5.480
				**.09.89	**.09.90	3790	-2970	*****	*****	820	935	73.0	5.480
43	TRETTEN-NULL-TO	N 67315	STR	**.09.85	**.09.86	2400	-2840	*****	*****	-440	1085	50.0	4.920
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
44	TROLLBERGDALSBR	N 68507	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				**.09.89	**.09.90	3060	-3170	*****	*****	-120	1075	35.0	1.820
45	AU.BROEGGERBR.	N 15504	STR	**.**.85	**.**.86	*****	*****	*****	*****	-320	380	25.0	*********
				..86	**.**.87	*****	*****	*****	*****	220	200	83.0	*********
				..87	**.**.88	*****	*****	*****	*****	-520	440	15.0	*********
				..88	**.**.89	*****	*****	*****	*****	-450	440	15.0	*********
				..89	**.**.90	*****	*****	*****	*****	-660	500	8.0	*********
46	HANS	N 12419	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				10.09.88	01.10.89	970	-1500	565	1445	-530	325	45.0	57.000
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
47	M.LOVENBREEN	N 15506	STR	**.**.85	**.**.86	*****	*****	*****	*****	-210	370	42.0	*********
				..86	**.**.87	*****	*****	*****	*****	240	225	77.0	*********
				..87	**.**.88	*****	*****	*****	*****	-490	425	27.0	*********
				..88	**.**.89	*****	*****	*****	*****	-240	375	41.0	*********
				..89	**.**.90	*****	*****	*****	*****	-510	450	19.0	*********

SWEDEN

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
48	KARSOJIETNA	S 00798	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				01.05.90	02.09.90	2130	-1780	*****	*****	350	1100	71.1	1.210
49	RABOTS GLACIAER	S 00785	COM	**.**.85	10.09.86	1280	-1468	540	-787	-188	1385	45.1	3.820
				10.09.86	10.09.87	1164	-941	682	-444	223	1335	59.2	3.910
				10.09.87	14.09.88	1075	-2127	800	-1339	-1052	1540	10.7	3.820
				14.09.88	21.08.89	1780	-1165	636	-568	615	1278	73.9	3.800
				21.08.89	02.09.90	1689	-1727	1057	-999	-38	1378	47.0	3.740
50	RIUKOJIETNA	S 00790	FXD	11.05.86	29.08.86	1230	-1770	*****	*****	-540	1444	2.0	4.600
				05.05.87	24.08.87	1070	-1330	*****	*****	-260	1414	12.0	4.590

MASS BALANCE SUMMARY DATA, TABLE C, PAGE 7

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				18.05.88	30.08.88	1130	-1040	*****	-910	-910	1526	0.0	4.590
				07.05.89	09.09.89	*****	*****	890	*****	890	1150	100.0	4.600
				14.04.90	11.08.90	1410	-1200	*****	*****	210	1300	82.0	4.600
51	STORGLACIAEREN	S 00788	COM	**.**.85	19.08.86	1609	-1685	1284	-1165	-76	1485	44.5	3.040
				19.08.86	14.09.87	1694	-1219	1196	-434	475	1410	55.8	3.030
				14.09.87	14.09.88	1424	-2263	617	-1390	-839	1564	27.0	3.060
				14.09.88	28.09.89	2580	-1340	2212	-456	1240	1374	64.0	2.990
				28.09.89	10.09.90	2259	-1666	1642	-1014	593	1495	60.0	3.030
52	TARFALAGL	S 00791	COM	**.**.85	04.09.86	2110	-2093	145	-222	17	1510	65.0	0.860
				04.09.86	10.09.87	1859	-975	884	*****	84	1390	100.0	0.860
				28.05.88	09.09.88	1590	-2880	*****	-1290	1290	1730	0.0	0.860
				15.06.89	14.09.89	3100	-1870	1210	*****	210	1390	100.0	0.860
				31.05.90	14.09.90	2000	-1870	332	-291	30	1470	70.0	0.860

FRANCE

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
53	SARENNES	F 00029	OTH	**.**.85	**.**.86	1890	-3680	*****	*****	-1790	****	*****	*********
				..86	**.**.87	1720	-2640	*****	*****	-920	****	*****	*********
				..87	**.**.88	2200	-2890	*****	*****	-690	****	*****	*********
				..88	**.**.89	1360	-3950	*****	*****	-2590	****	*****	*********
				..89	**.**.90	1560	-3720	*****	*****	-2140	****	*****	*********

SWITZERLAND

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
54	GRIES (AEGINA)	CH00003	FXD	28.10.85	22.09.86	*****	*****	*****	*****	-690	2997	36.0	6.249
				22.09.86	21.09.87	*****	*****	*****	*****	-940	3114	15.0	6.249
				21.09.87	21.09.88	*****	*****	*****	*****	-1100	3231	2.4	6.249
				21.09.88	27.09.89	*****	*****	*****	*****	-1040	3186	5.3	6.249
				27.09.89	25.09.90	*****	*****	*****	*****	-1890	3401	0.0	6.249
55	GROSSER ALETSCH	CH00005	FXD	01.10.85	30.09.86	*****	*****	*****	*****	-152	****	*****	127.560
				01.10.86	30.09.87	*****	*****	*****	*****	40	****	*****	127.500
				01.10.87	30.09.88	*****	*****	*****	*****	-345	****	*****	127.460
				01.10.88	30.09.89	*****	*****	*****	*****	-190	****	*****	127.430
				01.10.89	30.09.90	*****	*****	*****	*****	-1029	****	*****	127.380
56	SILVRETTA	CH00090	FXD	13.09.85	29.09.86	*****	*****	*****	*****	-270	2790	48.5	3.150
				29.09.86	14.09.87	*****	*****	*****	*****	-210	2783	53.5	3.150
				14.09.87	27.09.88	*****	*****	*****	*****	-580	2884	33.5	3.150
				27.09.88	20.09.89	*****	*****	*****	*****	-250	2792	51.0	3.150
				20.09.89	19.09.90	*****	*****	*****	*****	-530	2869	35.5	3.150

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
	AUSTRIA												
57	HINTEREIS F.	A 00209	FXD	01.10.85	30.09.86	*****	*****	318	-1468	-732	3080	40.0	9.060
				01.10.86	30.09.87	*****	*****	324	-1623	-717	3070	45.0	9.050
				01.10.87	30.09.88	*****	*****	297	-1484	-945	3130	29.0	9.030
				01.10.88	30.09.89	*****	*****	356	-1262	-637	3080	38.0	8.990
				01.10.89	30.09.90	*****	*****	231	-1623	-995	3115	32.0	8.980
58	JAMTAL F.	A 00106	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				01.10.88	30.09.89	*****	*****	324	-833	-439	2870	34.0	3.850
				01.10.89	30.09.90	*****	*****	239	-738	-426	2900	32.0	3.850
59	KESSELWAND F.	A 00226	FXD	01.10.85	30.09.86	*****	*****	217	-1293	-494	3160	52.0	4.440
				01.10.86	30.09.87	*****	*****	355	-1401	-243	3120	65.0	4.440
				01.10.87	30.09.88	*****	*****	339	-1128	-265	3150	58.0	4.440
				01.10.88	30.09.89	*****	*****	367	-1144	-151	3120	66.0	4.440
				01.10.89	30.09.90	*****	*****	312	-1057	-242	3130	60.0	4.430
60	SONNBLICK K.	A 00601	STR	10.10.85	19.10.86	*****	*****	225	-1575	-1432	2950	7.9	1.740
				20.10.86	17.10.87	*****	*****	317	-948	-525	2850	33.4	1.740
				18.10.87	05.10.88	*****	*****	290	-1054	-711	2875	25.5	1.710
				06.10.88	25.09.89	*****	*****	564	-693	252	2715	75.2	1.720
				26.09.89	01.09.90	*****	*****	*****	*****	*****	****	*****	*********
61	VERNAGT F.	A 00211	FXD	01.10.85	30.09.86	*****	*****	255	-1050	-808	3291	18.5	9.340
				01.10.86	30.09.87	*****	*****	182	-857	-290	3143	54.6	9.310
				01.10.87	30.09.88	*****	*****	180	-936	-497	3230	39.3	9.080
				01.10.88	30.09.89	*****	*****	200	-759	-312	3170	49.7	9.080
				01.10.89	30.09.90	*****	*****	172	-913	-568	3283	31.8	9.080
	ITALY												
62	CARESER	I 00701	FXD	29.09.85	01.10.86	*****	*****	*****	-1140	-1140	3383	0.0	4.830
				02.10.86	01.10.87	*****	*****	*****	-1640	-1640	3485	0.0	4.830
				02.10.87	01.10.88	*****	*****	*****	-1010	-1010	3398	0.0	4.830
				02.10.88	07.10.89	*****	*****	*****	-820	-820	3275	2.0	4.830
				08.10.89	06.10.90	*****	*****	*****	-1580	-1580	3420	0.0	4.830
63	SFORZELLINA	I 00516	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				19.09.86	16.09.87	*****	*****	*****	*****	-920	3050	0.0	0.420
				17.09.87	05.09.88	*****	*****	*****	*****	-970	3080	0.0	0.420

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				06.09.88	23.09.89	*****	*****	*****	*****	-570	2950	26.2	0.420
				24.09.89	23.09.90	*****	*****	*****	*****	-1160	3100	0.0	0.420
	KENYA												
64	LEWIS	KN00008	FXD	01.03.85	01.03.86	*****	*****	*****	*****	-680	5000	0.0	0.260
				01.03.86	01.03.87	*****	*****	*****	*****	-770	5000	20.0	0.250
				01.03.87	01.03.88	*****	*****	*****	*****	-2300	5000	0.0	0.250
				01.03.88	01.03.89	*****	*****	*****	*****	770	4700	82.0	0.250
				01.03.89	01.03.90	*****	*****	*****	*****	-1010	5000	0.0	0.250
	U.S.S.R.												
65	ABRAMOV	SU04101	STR	01.10.85	30.09.86	1010	-2020	400	-1550	-1010	4320	27.7	26.010
				01.10.86	30.09.87	1700	-1460	1000	-1100	240	4130	63.5	25.980
				01.10.87	30.09.88	1900	-1890	1160	-1380	10	4180	53.7	25.960
				01.10.88	30.09.89	1190	-1420	710	-1150	-230	4200	49.8	25.930
				01.10.89	30.09.90	1620	-2150	780	-1660	-530	4220	46.2	25.910
66	DJANKUAT	SU03010	STR	28.09.85	03.10.86	2240	-2740	*****	*****	-500	3280	49.9	3.130
				03.10.86	12.10.87	4000	-2460	*****	*****	1540	3020	79.7	3.130
				12.10.87	**.10.88	2760	-2240	*****	*****	520	3090	73.8	3.130
				**.10.88	26.09.89	2630	-2590	*****	*****	40	3170	65.2	3.130
				26.09.89	12.10.90	2660	-2320	*****	*****	340	3180	63.3	3.130
67	GARABASHI	SU03031	STR	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				02.10.86	30.09.87	1470	-1060	*****	*****	410	3700	71.1	4.470
				30.09.87	28.08.88	1190	-920	*****	*****	270	3730	67.3	4.470
				20.08.88	07.09.89	1310	-1280	*****	*****	30	3830	55.7	4.470
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
68	GOLUBIN	SU05060	STR	11.09.85	30.09.86	685	-1057	*****	*****	-372	4005	41.5	6.210
				01.10.86	08.09.87	915	-763	*****	*****	152	3780	77.0	6.210
				09.09.87	27.09.88	942	-1374	*****	*****	-432	3870	67.3	6.210
				28.09.88	21.09.89	466	-888	*****	*****	-422	3870	67.3	6.210
				22.09.89	01.10.90	820	-1410	*****	*****	-590	3900	58.6	6.210
69	IGLI TUYUKSU	SU05076	STR	**.**.85	**.**.86	*****	*****	*****	*****	-520	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-340	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-600	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-460	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-940	****	*****	*********

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
70	KARA-BATKAK	SU05080	STR	01.09.85	28.08.86	663	-1055	*****	*****	-392	3900	52.0	4.560
				29.08.86	10.09.87	432	-1114	*****	*****	-682	3820	55.9	4.560
				11.09.87	31.08.88	791	-1247	*****	*****	-456	3950	47.6	4.560
				01.09.88	26.08.89	691	-1087	*****	*****	-396	3900	52.0	4.560
				27.08.89	20.09.90	730	-1508	*****	*****	-778	3850	54.4	4.560
71	KOZELSKIY	SU08005	STR	**.**.85	**.**.86	*****	*****	*****	*****	-1660	1250	58.0	*********
				..86	**.**.87	*****	*****	*****	*****	-300	1270	45.0	*********
				19.09.87	17.10.88	2670	-4610	*****	*****	-1940	1300	5.6	1.800
				18.10.88	04.10.89	3400	-4140	*****	*****	-740	1370	24.2	1.810
				05.10.89	17.09.90	3440	-4720	*****	*****	-1280	1330	36.6	1.800
72	LEVIY AKTRU	SU07102	STR	05.09.85	01.09.86	930	-870	*****	*****	60	3150	60.0	6.240
				01.09.86	31.08.87	920	-720	*****	*****	200	3120	62.0	6.240
				31.08.87	13.09.88	1070	-700	*****	*****	370	3070	66.0	6.240
				13.09.88	05.09.89	980	-950	*****	*****	30	3180	58.0	6.240
				05.09.89	08.09.90	970	-820	*****	*****	150	3140	61.0	6.240
73	MALIY AKTRU	SU07100	STR	05.09.85	02.09.86	900	-860	*****	*****	40	3170	71.0	2.860
				02.09.86	09.09.87	900	-730	*****	*****	170	3140	77.0	2.860
				09.09.87	13.09.88	1160	-690	*****	*****	470	3040	83.0	2.860
				13.09.88	17.09.89	1040	-820	*****	*****	220	3150	76.0	2.860
				17.09.89	10.09.90	1060	-990	*****	*****	70	3160	73.0	2.860
74	MANSHUK MAMETOV	SU05091	STR	**.**.85	**.**.86	*****	*****	*****	*****	-510	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-270	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-630	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-430	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-1100	****	*****	*********
75	MAYAKOVSKIY	SU05094	STR	**.**.85	**.**.86	*****	*****	*****	*****	-140	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	0	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-210	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-100	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-490	****	*****	*********
76	MOLODEZHNIY	SU05090	STR	**.**.85	**.**.86	*****	*****	*****	*****	-660	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-450	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-750	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-590	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-1160	****	*****	*********
77	NO.104	SU01001	OTH	**.09.85	**.08.86	360	-280	*****	*****	80	450	35.0	1817.000
				**.09.86	**.08.87	310	-380	*****	*****	-70	500	30.0	1817.000

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				**.09.87	**.08.88	440	-20	*****	*****	420	300	67.0	1817.000
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
78	NO.125	SU07105	STR	31.08.85	01.09.86	540	-420	*****	*****	120	3170	71.0	0.930
				01.09.86	20.08.87	500	-320	*****	*****	180	3170	71.0	0.930
				20.08.87	24.08.88	700	-540	*****	*****	160	3130	77.0	0.930
				24.08.88	03.09.89	620	-520	*****	*****	100	3160	73.0	0.930
				03.09.89	29.08.90	630	-480	*****	*****	150	3160	73.0	0.930
79	NO.131	SU05081	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				01.09.87	31.08.88	507	-1219	*****	*****	-712	****	0.0	0.510
				01.09.88	31.08.89	548	-902	*****	*****	-354	4200	37.2	0.510
				01.09.89	31.08.90	562	-608	*****	*****	-46	4200	37.2	0.510
80	NO.356	SU05106	STR	31.08.85	25.08.86	491	-634	*****	*****	-143	4265	38.0	3.610
				25.08.86	25.08.87	625	-405	*****	*****	220	4150	56.0	3.610
				25.08.87	20.08.88	466	-919	*****	*****	-453	4340	27.0	3.610
				20.08.88	25.08.89	400	-567	*****	*****	-167	4258	37.0	3.610
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
81	ORDZHONIKIDZE	SU05093	STR	**.**.85	**.**.86	*****	*****	*****	*****	-220	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-80	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-300	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-180	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-530	****	*****	*********
82	PARTIZAN	SU05095	STR	**.**.85	**.**.86	*****	*****	*****	*****	220	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	350	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	160	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	260	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-90	****	*****	*********
83	PRAVIY AKTRU	SU07101	STR	05.09.85	01.09.86	970	-820	*****	*****	150	3140	47.0	4.760
				01.09.86	31.08.87	870	-640	*****	*****	230	3110	53.0	4.760
				31.08.87	13.09.88	1080	-770	*****	*****	310	3050	62.0	4.760
				13.09.88	05.09.89	1020	-830	*****	*****	190	3060	61.0	4.760
				05.09.89	08.09.90	950	-880	*****	*****	70	3160	45.0	4.760
84	SHUMSKIY	SU06001	FXD	10.09.85	09.09.86	468	-906	385	-927	-438	3716	37.2	2.820
				10.09.86	09.09.87	530	-1111	441	-1274	-581	3703	40.4	2.820
				10.09.87	09.09.88	532	-503	792	-596	29	3676	45.0	2.820
				10.09.88	09.09.89	657	-383	1051	-737	274	3615	56.4	2.820

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
85	SUYOK ZAPADNIY	SU05082	FXD	**.**.85	**.**.86	*****	*****	*****	*****	*****	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				31.08.88	01.09.89	699	-1198	*****	*****	-499	4300	22.4	1.250
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
86	TS.TUYUKSUYSKIY	SU05075	STR	02.10.85	20.09.86	1130	-1650	*****	*****	-520	3850	34.0	2.860
				20.09.86	01.09.87	930	-1270	*****	*****	-340	3800	40.0	2.860
				01.09.87	23.09.88	1090	-1700	*****	*****	-610	3835	35.0	2.800
				23.09.88	20.09.89	820	-1280	*****	*****	-460	3825	37.0	2.800
				20.09.89	02.10.90	920	-1880	*****	*****	-960	3885	28.0	2.750
87	VISYACHIY-1-2	SU05096	STR	**.**.85	**.**.86	*****	*****	*****	*****	-430	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-280	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-490	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-390	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-770	****	*****	*********
88	ZOYA KOSMODEMYA	SU05092	STR	**.**.85	**.**.86	*****	*****	*****	*****	-270	****	*****	*********
				..86	**.**.87	*****	*****	*****	*****	-120	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	-350	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	-220	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	-640	****	*****	*********

CHINA

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
89	URUMQIHE S.NO.1	CN00010	FXD	01.09.85	31.08.86	*****	*****	1	-134	-723	4130	30.0	1.840
				01.09.86	31.08.87	*****	*****	37	-69	-176	4025	50.0	1.840
				01.09.87	31.08.88	*****	*****	11	-129	-642	4080	40.0	1.840
				01.09.88	31.08.89	*****	*****	50	-31	106	3976	70.0	1.840
				01.09.89	31.08.90	*****	*****	54	-45	52	3959	70.0	1.840

INDIA

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
90	CHANGMEKHANGPU	IN02522	***	01.10.85	30.09.86	*****	*****	515	-329	-72	5325	50.0	4.500
				..86	**.**.87	*****	*****	*****	*****	*****	****	*****	*********
				..87	**.**.88	*****	*****	*****	*****	*****	****	*****	*********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********
91	DUNAGIRI	IN00191	FXD	01.10.85	30.09.86	*****	*****	1815	-1428	-945	4835	15.0	2.560

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				01.10.86	30.09.87	*****	*****	918	-1332	-1038	4840	13.0	2.560
				01.10.87	30.09.88	*****	*****	465	-1673	-1289	4835	18.0	2.560
				01.10.88	30.09.89	*****	*****	887	-1217	-976	4835	14.0	2.560
				01.10.89	30.09.90	*****	*****	685	-1516	-1235	4870	13.0	2.560
92	SHAUNE GARANG	IN00084	FXD	01.09.85	31.08.86	*****	*****	670	-1000	30	4800	62.0	4.940
				01.09.86	30.09.87	*****	*****	480	-1150	-790	4930	22.0	4.940
				01.10.87	30.09.88	*****	*****	880	-1200	-630	4940	46.0	4.940
				01.10.88	30.09.89	*****	*****	840	-450	340	4790	61.5	4.940
				01.10.89	30.09.90	*****	*****	330	-790	-270	4800	46.0	4.940
93	TIPRA BANK	IN00004	FXD	01.10.85	30.09.86	*****	*****	809	-387	-59	4600	27.4	7.000
				01.10.86	30.09.87	*****	*****	841	-343	-65	4650	23.4	7.000
				01.10.87	30.09.88	*****	*****	723	-920	-605	4750	13.9	7.000
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	*********
				..89	**.**.90	*****	*****	*****	*****	*****	****	*****	*********

JAPAN

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
94	HAMAGURI YUKI	J 00001	FXD	18.10.85	27.09.86	14520	-11010	*****	*****	3510	****	*****	0.007
				27.09.86	22.09.87	9450	-10131	*****	*****	-681	****	*****	0.003
				27.09.87	**.**.88	5658	*****	*****	*****	*****	****	*****	********
				..88	**.**.89	*****	*****	*****	*****	*****	****	*****	********
				..89	18.10.90	*****	-13120	*****	*****	*****	****	*****	0.002

Notes

WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS SUMMARY DATA

TABLE CC

ADDENDA FROM EARLIER YEARS

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
SYS:	System of measurement: STR = Stratigraphic FXD = Fixed date COM = Combined System OTH = Other System
FROM:	Day, month and year of beginning of balance/measurement year
TO:	Day, month and year of end of balance/measuremnt year
BW:	Mean specific winter balance in mm water
AC:	Annual accumulation in mm water
BS:	Mean specific summer balance in mm water
AA:	Annual ablation in mm water
BN/BA:	Mean specific net balance or annual balance in mm water
ELA:	Altitude of equilibrium line or annual equilibrium line in meters above sea level
AAR:	Ratio of accumulation area to total area of the glacier in percent
AREA:	Area of the glacier used for calculation of mean specific quantities

Key to Symbols: * = No data available

*** = Unspecified System

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
	CANADA												
1	MEIGHEN ICE CAP	CD01335	STR	**.**.84	**.**.84	*****	*****	*****	*****	-30	****	*****	*********
2	WHITE	CD02340	***	**.**.83	**.**.84	*****	*****	*****	*****	-104	860	76.0	38.930
				..84	**.**.85	*****	*****	*****	*****	-64	890	75.0	38.930
	U.S.A.												
3	BLUE GLACIER	US02126	STR	**.**.74	**.**.75	*****	*****	*****	*****	910	1620	72.0	4.200
				..78	**.**.79	*****	*****	*****	*****	-910	1970	34.0	4.300
				..79	**.**.80	*****	*****	*****	*****	-1370	2020	33.0	4.300
				..80	**.**.81	*****	*****	*****	*****	-1070	2030	32.0	4.300
				..81	**.**.82	*****	*****	*****	*****	990	1645	62.0	4.300
				..82	**.**.83	*****	*****	*****	*****	1580	1610	69.0	4.300
				..83	**.**.84	*****	*****	*****	*****	730	1660	60.0	4.300
				..84	**.**.85	*****	*****	*****	*****	660	1665	58.0	4.300
4	GULKANA	US00200	COM	**.**.80	**.**.81	*****	*****	*****	*****	40	1690	67.0	19.300
				..81	**.**.82	*****	*****	*****	*****	-110	1745	62.0	19.300
				..82	**.**.83	*****	*****	*****	*****	30	1753	61.0	19.300
				..83	**.**.84	*****	*****	*****	*****	-310	1769	60.0	19.300
				..84	**.**.85	*****	*****	*****	*****	690	1648	72.0	19.300
5	WOLVERINE	US00411	COM	**.**.80	**.**.81	*****	*****	*****	*****	1510	930	90.0	17.240
				..81	**.**.82	*****	*****	*****	*****	-380	1150	65.0	17.240
				..82	**.**.83	*****	*****	*****	*****	0	1110	68.0	17.240
				..83	**.**.84	*****	*****	*****	*****	-480	1160	64.0	17.240
				..84	**.**.85	*****	*****	*****	*****	340	1050	77.0	17.240
	U.S.S.R.												
6	SHUMSKIY	SU06001	FXD	10.09.84	09.09.85	525	-863	513	-1171	-338	3664	49.5	2.830
7	SUYOK ZAPADNIY	SU08012	FXD	01.09.70	04.09.71	123	-584	*****	*****	-461	4250	25.0	1.600
				01.09.83	02.09.84	358	-1719	*****	*****	-1361	4350	12.8	1.250
	INDIA												
8	CHANGMEKHANGPU	IN02522	OTH	**.**.80	**.**.81	*****	*****	635	-565	-392	5305	58.6	4.500
				..81	**.**.82	*****	*****	358	-461	-297	5285	45.5	4.500
				..82	**.**.83	*****	*****	520	-560	-291	5335	54.4	4.500
				..83	**.**.84	*****	*****	598	-482	-157	5283	54.5	4.400

MASS BALANCE SUMMARY DATA, ADDENDA TABLE CC, PAGE 1

NR	GLACIER NAME	PSFG NR	SYS	FROM DY MN YR	TO DY MN YR	BW MM WE	BS MM WE	AC MM WE	AA MM WE	BN/BA MM WE	ELA M	AAR 0/0	AREA SQ KM
				..84	**.**.85	*****	*****	335	-515	-240	5280	50.0	4.500
9	SHAUNE GARANG	IN00084	FXD	01.09.81	31.08.82	*****	*****	440	-1030	-570	4900	32.0	4.940
				01.09.82	31.08.83	*****	*****	420	-1330	-500	4893	47.0	4.940
				01.09.83	31.08.84	*****	*****	970	-570	460	4716	67.5	4.940
				01.09.84	31.08.85	*****	*****	250	-550	-100	4812	57.0	4.940

Notes

WORLD GLACIER MONITORING SERVICE

MASS BALANCE VERSUS ALTITUDE FOR SELECTED GLACIERS

TABLE CCC

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
YEAR:	Balance year or measurement year
SYS:	System of measurement: STR = Stratigraphic
	FXD = Fixed date
	COM = Combined System
	OTH = Other System
ALTITUDE:	Altitude interval in meters above sea level
AREA:	Area of altitude band and in square kilometers
BW:	Mean specific winter balance in mm
BS:	Mean specific summer balance in mm
BN/BA:	Mean specific net balance or annual balance in mm water
SUMMARY DATA:	Total and mean specific values computed from data for the individual altitude intervals

Key to Symbols: * = No data available

*** = Unspecified System

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
1.1	DEVON ICE CAP (CD 00431)	1985-86	STR	1700-1800	37.500	*****	*****	331
				1600-1700	6.000	*****	*****	281
				1500-1600	122.600	*****	*****	341
				1400-1500	115.000	*****	*****	335
				1300-1400	217.500	*****	*****	335
				1200-1300	180.000	*****	*****	202
				1100-1200	160.000	*****	*****	112
				1000-1100	235.000	*****	*****	233
				900-1000	192.500	*****	*****	210
				800- 900	96.000	*****	*****	200
				700- 800	82.500	*****	*****	99
				600- 700	75.000	*****	*****	- 60
				500- 600	70.000	*****	*****	- 220
				400- 500	10.000	*****	*****	- 411
				300- 400	12.500	*****	*****	- 538
				200- 300	12.500	*****	*****	- 634
				100- 200	7.000	*****	*****	- 730
				0- 100	5.000	*****	*****	- 926
	Summary Data			0-1800	1667.600	*****	*****	184
1.2	DEVON ICE CAP (CD 00431)	1986-87	STR	1700-1800	37.500	*****	*****	241
				1600-1700	6.000	*****	*****	278
				1500-1600	122.600	*****	*****	288
				1400-1500	115.000	*****	*****	288
				1300-1400	217.500	*****	*****	288
				1200-1300	180.000	*****	*****	255
				1100-1200	160.000	*****	*****	113
				1000-1100	235.000	*****	*****	81
				900-1000	192.500	*****	*****	27
				800- 900	96.000	*****	*****	61
				700- 800	82.500	*****	*****	- 541
				600- 700	75.000	*****	*****	- 724
				500- 600	70.000	*****	*****	- 764
				400- 500	10.000	*****	*****	- 804
				300- 400	12.500	*****	*****	- 844
				200- 300	12.500	*****	*****	- 884
				100- 200	7.000	*****	*****	- 934
				0- 100	5.000	*****	*****	- 964
	Summary Data			0-1800	1667.600	*****	*****	34
1.3	DEVON ICE CAP (CD 00431)	1987-88	STR	1700-1800	37.500	*****	*****	216
				1600-1700	6.000	*****	*****	175
				1500-1600	122.600	*****	*****	213
				1400-1500	115.000	*****	*****	205
				1300-1400	217.500	*****	*****	130
				1200-1300	180.000	*****	*****	34
				1100-1200	160.000	*****	*****	- 122
				1000-1100	235.000	*****	*****	- 277
				900-1000	192.500	*****	*****	- 433
				800- 900	96.000	*****	*****	- 588
				700- 800	82.500	*****	*****	- 744
				600- 700	75.000	*****	*****	- 899
				500- 600	70.000	*****	*****	-1061
				400- 500	10.000	*****	*****	-1136
				300- 400	12.500	*****	*****	-1203
				200- 300	12.500	*****	*****	-1271
				100- 200	7.000	*****	*****	-1339
				0- 100	5.000	*****	*****	-1406
	Summary Data			0-1800	1667.600	*****	*****	- 226
1.4	DEVON ICE CAP (CD 00431)	1988-89	STR	1700-1800	37.500	*****	*****	303
				1600-1700	6.000	*****	*****	256
				1500-1600	122.600	*****	*****	272
				1400-1500	115.000	*****	*****	252
				1300-1400	217.500	*****	*****	175
				1200-1300	180.000	*****	*****	135
				1100-1200	160.000	*****	*****	9
				1000-1100	235.000	*****	*****	- 116
				900-1000	192.500	*****	*****	- 241
				800- 900	96.000	*****	*****	- 422
				700- 800	82.500	*****	*****	- 558

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				600- 700	75.000	*****	*****	- 640
				500- 600	70.000	*****	*****	- 721
				400- 500	10.000	*****	*****	- 802
				300- 400	12.500	*****	*****	- 884
				200- 300	12.500	*****	*****	- 965
				100- 200	7.000	*****	*****	-1046
				0- 100	5.000	*****	*****	-1128
	Summary Data			0-1800	1667.600	*****	*****	- 88
1.5	DEVON ICE CAP (CD 00431)	1989-90	STR	1700-1800	37.500	*****	*****	298
				1600-1700	6.000	*****	*****	287
				1500-1600	122.600	*****	*****	273
				1400-1500	115.000	*****	*****	233
				1300-1400	217.500	*****	*****	129
				1200-1300	180.000	*****	*****	25
				1100-1200	160.000	*****	*****	- 79
				1000-1100	235.000	*****	*****	- 183
				900-1000	192.500	*****	*****	- 288
				800- 900	96.000	*****	*****	- 615
				700- 800	82.500	*****	*****	- 706
				600- 700	75.000	*****	*****	- 796
				500- 600	70.000	*****	*****	- 886
				400- 500	10.000	*****	*****	- 976
				300- 400	12.500	*****	*****	-1066
				200- 300	12.500	*****	*****	-1156
				100- 200	7.000	*****	*****	-1246
				0- 100	5.000	*****	*****	-1337
	Summary Data			0-1800	1667.600	*****	*****	- 166
2.1	HELM (CD 0855)	1985-86	STR	>2100	0.115	2748	-2748	0
				2000-2100	0.561	2455	-2963	- 508
				1900-2000	0.740	2074	-3589	-1515
				<1900	0.732	1900	-3892	-1992
	Summary Data			<1900->2100	2.148	2150	-3484	-1333
2.2	HELM (CD 0855)	1986-87	STR	>2100	0.115	2748	-1748	1000
				2000-2100	0.561	2446	-2250	196
				1900-2000	0.712	2025	-2799	- 774
				<1900	0.564	1817	-3968	-2151
	Summary Data			<1900->2100	1.952	2128	-2917	- 789
2.3	HELM (CD 0855)	1987-88	STR	>2100	0.115	2616	-1747	869
				2000-2100	0.561	2140	-2249	- 109
				1900-2000	0.605	1994	-2882	- 889
				<1900	0.175	1712	-3511	-1799
	Summary Data			<1900->2100	1.456	2065	-2624	- 559
2.4	HELM (CD 0855)	1988-89	STR	>2100	0.115	2250	-2290	40
				2000-2100	0.561	1920	-3050	-1130
				1900-2000	0.605	1350	-3450	-2210
				<1900	0.130	1250	-3740	-2490
	Summary Data			<1900->2100	1.411	1641	-3223	-1630
3.1	PEYTO (CD 1640)	1985-86	COM	3100-3200	0.010	1810	0	1810
				3000-3100	0.140	1700	0	1700
				2900-3000	0.620	1590	0	1590
				2800-2900	1.840	1480	- 280	1200
				2700-2800	2.160	1370	- 900	470
				2600-2700	2.520	1250	-1510	- 260
				2500-2600	2.600	1130	-2140	-1000
				2400-2500	1.400	860	-2650	-1790
				2300-2400	0.500	690	-2960	-2280
				2200-2300	0.950	820	-4180	-3360

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2100-2200	0.140	800	-3890	-3100
	Summary Data			2100-3200	12.900	1200	-1670	- 470
3.2	PEYTO (CD 1640)	1986-87	COM	3100-3200	0.010	1380	0	1380
				3000-3100	0.140	1270	0	1270
				2900-3000	0.620	1170	0	1170
				2800-2900	1.840	1060	0	1060
				2700-2800	2.160	950	- 30	920
				2600-2700	2.520	840	- 740	100
				2500-2600	2.600	730	-1780	-1050
				2400-2500	1.400	680	-3130	-2440
				2300-2400	0.500	480	-4460	-3970
				2200-2300	0.950	390	-5020	-4630
				2100-2200	0.140	440	-4370	-3930
	Summary Data			2100-3200	12.900	820	-1440	- 620
3.3	PEYTO (CD 1640)	1987-88	COM	3100-3200	0.010	1620	0	1620
				3000-3100	0.140	1480	0	1480
				2900-3000	0.620	1360	0	1360
				2800-2900	1.840	1220	- 160	1060
				2700-2800	2.160	1090	- 820	270
				2600-2700	2.520	950	-1520	- 560
				2500-2600	2.600	810	-2240	-1420
				2400-2500	1.400	510	-3610	-3100
				2300-2400	0.500	330	-4710	-4380
				2200-2300	0.950	390	-4700	-4310
				2100-2200	0.140	450	-4690	-4240
	Summary Data			2100-3200	12.900	890	-1880	- 990
3.4	PEYTO (CD 1640)	1988-89	COM	3100-3200	0.010	1890	0	1890
				3000-3100	0.140	1750	0	1750
				2900-3000	0.620	1620	0	1620
				2800-2900	1.840	1470	- 230	1240
				2700-2800	2.160	1330	- 850	470
				2600-2700	2.520	1180	-1490	- 30
				2500-2600	2.600	1040	-2140	- 110
				2400-2500	1.400	720	-3040	- 232
				2300-2400	0.500	570	-3850	- 329
				2200-2300	0.950	600	-4070	- 347
				2100-2200	0.140	650	-4080	- 343
	Summary Data			2100-3200	12.900	1130	-1720	- 590
3.5	PEYTO (CD 1640)	1989-90	COM	3100-3200	0.010	1770	0	1770
				3000-3100	0.140	1650	0	1650
				2900-3000	0.620	1540	0	1540
				2800-2900	1.840	1420	- 130	1290
				2700-2800	2.160	1300	- 830	470
				2600-2700	2.520	1180	-1610	- 430
				2500-2600	2.600	1060	-2410	-1350
				2400-2500	1.400	870	-3170	-2300
				2300-2400	0.500	810	-4200	-3390
				2200-2300	0.950	680	-4870	-4190
				2100-2200	0.140	710	-4690	-3970
	Summary Data			2100-3200	12.900	1140	-1880	- 740
4.1	PLACE (CD 1660)	1985-86	COM	>2500	0.040	1750	-1750	0
				2400-2500	0.200	1750	-1750	0
				2300-2400	0.467	1749	-2251	- 502
				2200-2300	0.296	1686	-2676	- 990
				2100-2200	0.637	1708	-2623	- 915
				2000-2100	1.325	1725	-3098	-1373
				1900-2000	0.698	1436	-3986	-2550
				<1900	0.040	1250	-5100	-3850
	Summary Data			<1900->2500	3.703	1664	-2977	-1313

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
4.2	PLACE (CD 1660)	1986-87	COM	>2500	0.040	2750	-1750	1000
				2400-2500	0.200	2750	-1750	1000
				2300-2400	0.467	2231	-1929	302
				2200-2300	0.296	2206	-2662	- 456
				2100-2200	0.637	2068	-2545	- 477
				2000-2100	1.325	1806	-2876	-1070
				1900-2000	0.674	1488	-3867	-2379
				<1900	0.029	1067	-4267	-3200
	Summary Data			<1900->2500	3.668	1935	-2800	- 865
4.3	PLACE (CD 1660)	1987-88	COM	>2500	0.040	2308	-1744	564
				2400-2500	0.200	2586	-1753	833
				2300-2400	0.467	1737	-1970	- 233
				2200-2300	0.296	1559	-2349	- 790
				2100-2200	0.637	1748	-2282	- 535
				2000-2100	1.325	1370	-2675	-1305
				1900-2000	0.663	1196	-3056	-1860
				<1900	0.019	786	-3286	-2500
	Summary Data			<1900->2500	3.647	1541	-2501	- 961
4.4	PLACE (CD 1660)	1988-89	COM	>2500	0.040	1750	- 250	1500
				2400-2500	0.200	1740	- 560	1180
				2300-2400	0.467	1570	-1380	190
				2200-2300	0.296	1630	-1640	0
				2100-2200	0.637	1730	-2540	- 810
				2000-2100	1.325	1420	-2830	-1400
				1900-2000	0.653	1080	-3560	-2480
				<1900	0.010	750	-5150	-4400
	Summary Data			<1900->2500	3.628	1469	-2480	-1006
5.1	SENTINEL (CD 1915)	1985-86	COM	>2200	0.033	3739	-2739	1000
				2000-2100	0.342	3035	-2832	203
				1900-2000	0.480	3116	-2849	267
				1800-1900	0.515	2922	-3241	- 319
				1700-1800	0.291	2823	-4347	-1524
				<1700	0.103	2565	-5275	-2710
	Summary Data			<1700->2200	1.764	2975	-3347	- 372
5.2	SENTINEL (CD 1915)	1986-87	COM	>2200	0.033	3739	-1261	2478
				2000-2100	0.342	3046	-1723	1323
				1900-2000	0.480	3120	-2159	961
				1800-1900	0.515	2831	-3130	- 299
				1700-1800	0.291	2531	-4202	-1671
				<1700	0.092	2759	-4759	-2000
	Summary Data			<1700->2200	1.753	2916	-2818	98
5.3	SENTINEL (CD 1915)	1987-88	COM	>2200	0.033	2308	- 751	1557
				2000-2100	0.342	2758	-1328	1430
				1900-2000	0.479	3049	-1898	1152
				1800-1900	0.514	2746	-2514	231
				1700-1800	0.287	2474	-3585	-1111
				<1700	0.084	2216	-5250	-3034
	Summary Data			<1700->2200	1.739	2753	-2387	367
5.4	SENTINEL (CD 1915)	1988-89	COM	>2200	0.033	2250	-1700	550
				2000-2100	0.345	2390	-1810	580
				1900-2000	0.479	2330	-2630	- 300
				1800-1900	0.515	2050	-3450	-1400
				1700-1800	0.287	1770	-4060	-2300
				<1700	0.084	1750	-4500	-2750
	Summary Data			<1700->2200	1.743	2137	-3018	- 882

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
6.1	WHITE (CD 2340)	1975-76	COM	>1500	2.154	*****	*****	300
				1400-1500	4.082	*****	*****	330
				1300-1400	6.276	*****	*****	340
				1200-1300	5.035	*****	*****	340
				1100-1200	5.153	*****	*****	320
				1000-1100	3.607	*****	*****	280
				900-1000	2.624	*****	*****	220
				800- 900	2.071	*****	*****	140
				700- 800	1.405	*****	*****	30
				600- 700	1.489	*****	*****	- 140
				500- 600	0.959	*****	*****	- 380
				400- 500	0.802	*****	*****	- 610
				300- 400	1.132	*****	*****	- 840
				200- 300	1.332	*****	*****	-1050
				100- 200	0.805	*****	*****	-1240
	Summary Data			100-1500	38.926	*****	*****	128
6.2	WHITE (CD 2340)	1976-77	COM	>1500	2.154	*****	*****	120
				1400-1500	4.082	*****	*****	130
				1300-1400	6.276	*****	*****	130
				1200-1300	5.035	*****	*****	120
				1100-1200	5.153	*****	*****	100
				1000-1100	3.607	*****	*****	70
				900-1000	2.624	*****	*****	- 160
				800- 900	2.071	*****	*****	- 720
				700- 800	1.405	*****	*****	-1270
				600- 700	1.489	*****	*****	-1680
				500- 600	0.959	*****	*****	-1960
				400- 500	0.802	*****	*****	-2150
				300- 400	1.132	*****	*****	-2280
				200- 300	1.332	*****	*****	-2390
				100- 200	0.805	*****	*****	-2520
	Summary Data			100-1500	38.926	*****	*****	- 376
6.3	WHITE (CD 2340)	1977-78	COM	>1500	2.154	*****	*****	200
				1400-1500	4.082	*****	*****	240
				1300-1400	6.276	*****	*****	240
				1200-1300	5.035	*****	*****	240
				1100-1200	5.153	*****	*****	230
				1000-1100	3.607	*****	*****	190
				900-1000	2.624	*****	*****	0
				800- 900	2.071	*****	*****	- 400
				700- 800	1.405	*****	*****	- 740
				600- 700	1.489	*****	*****	-1010
				500- 600	0.959	*****	*****	-1240
				400- 500	0.802	*****	*****	-1420
				300- 400	1.132	*****	*****	-1580
				200- 300	1.332	*****	*****	-1730
				100- 200	0.805	*****	*****	-1850
	Summary Data			100-1500	38.926	*****	*****	- 136
6.4	WHITE (CD 2340)	1978-79	COM	>1500	2.154	*****	*****	170
				1400-1500	4.082	*****	*****	200
				1300-1400	6.276	*****	*****	200
				1200-1300	5.035	*****	*****	200
				1100-1200	5.153	*****	*****	200
				1000-1100	3.607	*****	*****	180
				900-1000	2.624	*****	*****	40
				800- 900	2.071	*****	*****	- 270
				700- 800	1.405	*****	*****	- 550
				600- 700	1.489	*****	*****	- 780
				500- 600	0.959	*****	*****	- 980
				400- 500	0.802	*****	*****	-1120
				300- 400	1.132	*****	*****	-1230
				200- 300	1.332	*****	*****	-1340
				100- 200	0.805	*****	*****	-1450
	Summary Data			100-1500	38.926	*****	*****	- 89
6.5	WHITE (CD 2340)	1983-84	COM	>1500	2.154	*****	*****	139
				1400-1500	4.082	*****	*****	227

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1300-1400	6.276	*****	*****	289
				1200-1300	5.035	*****	*****	218
				1100-1200	5.153	*****	*****	209
				1000-1100	3.607	*****	*****	158
				900-1000	2.624	*****	*****	142
				800- 900	2.071	*****	*****	- 101
				700- 800	1.405	*****	*****	- 448
				600- 700	1.489	*****	*****	-1143
				500- 600	0.959	*****	*****	-1053
				400- 500	0.802	*****	*****	-1297
				300- 400	1.132	*****	*****	-1470
				200- 300	1.332	*****	*****	-1833
				100- 200	0.805	*****	*****	-1858
	Summary Data			100-1500	38.926	*****	*****	- 104
6.6	WHITE (CD 2340)	1984-85	COM	>1500	2.154	*****	*****	262
				1400-1500	4.082	*****	*****	526
				1300-1400	6.276	*****	*****	225
				1200-1300	5.035	*****	*****	205
				1100-1200	5.153	*****	*****	135
				1000-1100	3.607	*****	*****	114
				900-1000	2.624	*****	*****	62
				800- 900	2.071	*****	*****	- 82
				700- 800	1.405	*****	*****	- 299
				600- 700	1.489	*****	*****	-1143
				500- 600	0.959	*****	*****	- 845
				400- 500	0.802	*****	*****	-1022
				300- 400	1.132	*****	*****	-1090
				200- 300	1.332	*****	*****	-1454
				100- 200	0.805	*****	*****	-2242
	Summary Data			100-1500	38.926	*****	*****	- 63
6.7	WHITE (CD 2340)	1985-86	COM	>1500	2.154	*****	*****	317
				1400-1500	4.082	*****	*****	211
				1300-1400	6.276	*****	*****	428
				1200-1300	5.035	*****	*****	190
				1100-1200	5.153	*****	*****	119
				1000-1100	3.607	*****	*****	81
				900-1000	2.624	*****	*****	59
				800- 900	2.071	*****	*****	- 48
				700- 800	1.405	*****	*****	- 178
				600- 700	1.489	*****	*****	- 302
				500- 600	0.959	*****	*****	- 521
				400- 500	0.802	*****	*****	- 823
				300- 400	1.132	*****	*****	-1090
				200- 300	1.332	*****	*****	-1488
				100- 200	0.805	*****	*****	-2100
	Summary Data			100-1500	38.926	*****	*****	- 16
6.8	WHITE (CD 2340)	1986-87	COM	>1500	2.154	*****	*****	333
				1400-1500	4.082	*****	*****	259
				1300-1400	6.276	*****	*****	226
				1200-1300	5.035	*****	*****	225
				1100-1200	5.153	*****	*****	152
				1000-1100	3.607	*****	*****	105
				900-1000	2.624	*****	*****	80
				800- 900	2.071	*****	*****	- 497
				700- 800	1.405	*****	*****	-1363
				600- 700	1.489	*****	*****	-1968
				500- 600	0.959	*****	*****	-1950
				400- 500	0.802	*****	*****	-1895
				300- 400	1.132	*****	*****	-1964
				200- 300	1.332	*****	*****	-2571
				100- 200	0.805	*****	*****	-3242
	Summary Data			100-1500	38.926	*****	*****	- 304
6.9	WHITE (CD 2340)	1987-88	COM	>1500	2.154	*****	*****	78
				1400-1500	4.082	*****	*****	66
				1300-1400	6.276	*****	*****	- 244
				1200-1300	5.035	*****	*****	- 330

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1100-1200	5.153	*****	*****	- 89
				1000-1100	3.607	*****	*****	- 496
				900-1000	2.624	*****	*****	- 312
				800- 900	2.071	*****	*****	- 812
				700- 800	1.405	*****	*****	-1363
				600- 700	1.489	*****	*****	-1854
				500- 600	0.959	*****	*****	-2346
				400- 500	0.802	*****	*****	-2893
				300- 400	1.132	*****	*****	-4760
				200- 300	1.332	*****	*****	-4075
				100- 200	0.805	*****	*****	-3950
	Summary Data			100-1500	38.926	*****	*****	- 790
6.10	WHITE (CD 2340)	1988-89	COM	>1500	2.154	*****	*****	315
				1400-1500	4.082	*****	*****	213
				1300-1400	6.276	*****	*****	217
				1200-1300	5.035	*****	*****	249
				1100-1200	5.153	*****	*****	184
				1000-1100	3.607	*****	*****	164
				900-1000	2.624	*****	*****	149
				800- 900	2.071	*****	*****	111
				700- 800	1.405	*****	*****	21
				600- 700	1.489	*****	*****	- 27
				500- 600	0.959	*****	*****	- 136
				400- 500	0.802	*****	*****	- 175
				300- 400	1.132	*****	*****	- 172
				200- 300	1.332	*****	*****	-1040
				100- 200	0.805	*****	*****	-1153
	Summary Data			100-1500	38.926	*****	*****	91
7.1	AALFOTBREEN (N 36204)	1985-86	STR	1350-1380	0.274	2260	-2060	200
				1300-1350	1.015	2400	-1920	480
				1250-1300	0.811	2520	-2310	210
				1200-1250	0.765	2350	-2690	- 340
				1150-1200	0.649	2200	-3050	- 850
				1100-1150	0.553	2120	-3370	-1250
				1050-1100	0.356	2190	-3670	-1480
				1000-1050	0.216	2410	-4070	-1660
				950-1000	0.125	2640	-4410	-1770
				900- 950	0.047	2980	-4740	-1760
				870- 900	0.004	3250	-4900	-1650
	Summary Data			870-1380	4.815	2340	-2760	- 410
7.2	AALFOTBREEN (N 36204)	1986-87	STR	1350-1380	0.274	4920	-1570	3350
				1300-1350	1.015	5010	-1650	3360
				1250-1300	0.811	4590	-1800	2790
				1200-1250	0.765	4140	-2070	2070
				1150-1200	0.649	3910	-2400	1510
				1100-1150	0.553	3820	-2780	1040
				1050-1100	0.356	3710	-3110	600
				1000-1050	0.216	3330	-3330	0
				950-1000	0.125	3550	-3500	50
				900- 950	0.047	3620	-3590	30
				870- 900	0.004	3750	-3630	120
	Summary Data			870-1380	4.815	4290	-2220	2070
7.3	AALFOTBREEN (N 36204)	1987-88	STR	1350-1380	0.274	2810	-4260	-1450
				1300-1350	1.015	2770	-4530	-1760
				1250-1300	0.811	2840	-4820	-1980
				1200-1250	0.765	2710	-5190	-2480
				1150-1200	0.649	2690	-5480	-2790
				1100-1150	0.553	2670	-5760	-3090
				1050-1100	0.356	2580	-6060	-3480
				1000-1050	0.216	2540	-6330	-3790
				950-1000	0.125	2660	-6520	-3860
				900- 950	0.047	2910	-6650	-3740

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				870- 900	0.004	3150	-6750	-3600
	Summary Data			870-1380	4.815	2720	-5200	-2480
7.4	AALFOTBREEN (N 36204)	1988-89	STR	1350-1380	0.274	5130	-2060	3070
				1300-1350	1.015	5380	-2080	3300
				1250-1300	0.811	5330	-2200	3130
				1200-1250	0.765	5260	-2620	2640
				1150-1200	0.649	5200	-3100	2100
				1100-1150	0.553	5090	-3660	1430
				1050-1100	0.356	4950	-4280	670
				1000-1050	0.216	4860	-5000	- 140
				950-1000	0.125	4760	-5660	- 900
				900- 950	0.047	4680	-6000	-1320
				870- 900	0.004	4660	-6100	-1440
	Summary Data			870-1380	4.815	5200	-2930	2270
7.5	AALFOTBREEN (N 36204)	1989-90	STR	1350-1380	0.274	5550	-3520	2030
				1300-1350	1.015	5800	-3570	2230
				1250-1300	0.811	6060	-3780	2280
				1200-1250	0.765	6160	-4060	2100
				1150-1200	0.649	6130	-4290	1840
				1100-1150	0.553	6100	-4640	1460
				1050-1100	0.356	6020	-5020	1000
				1000-1050	0.216	5910	-5500	410
				950-1000	0.125	5760	-6020	- 260
				900- 950	0.047	5620	-6500	- 880
				870- 900	0.004	5600	-6900	-1300
	Summary Data			870-1380	4.815	5980	-4190	1790
8.1	ENGABREEN (N 67011)	1985-86	STR	1500-1594	0.120	2670	-1400	1270
				1400-1500	2.514	3670	-1500	2170
				1300-1400	9.350	3730	-1790	1940
				1200-1300	8.550	2950	-2170	780
				1100-1200	7.600	2540	-2490	50
				1000-1100	4.660	2050	-2770	- 720
				900-1000	2.460	1250	-3110	-1860
				800- 900	0.946	830	-3740	-2910
				700- 800	0.500	560	-4330	-3770
				600- 700	0.370	300	-5110	-4810
				500- 600	0.270	0	-5800	-5800
				400- 500	0.210	0	-6650	-6650
				300- 400	0.170	0	-7450	-7450
				200- 300	0.220	0	-8290	-8290
				40- 200	0.090	0	-9160	-9160
	Summary Data			40-1594	38.020	2700	-2450	250
8.2	ENGABREEN (N 67011)	1986-87	STR	1500-1594	0.120	2400	-1000	1400
				1400-1500	2.514	3110	-1050	2060
				1300-1400	9.350	3280	-1150	2130
				1200-1300	8.550	2860	-1400	1460
				1100-1200	7.600	2410	-1560	850
				1000-1100	4.660	2090	-1800	290
				900-1000	2.460	1670	-2200	- 530
				800- 900	0.946	1250	-2600	-1350
				700- 800	0.500	1090	-3050	-1960
				600- 700	0.370	800	-3650	-2850
				500- 600	0.270	630	-4250	-3620
				400- 500	0.210	290	-5000	-4710
				300- 400	0.170	150	-5850	-5700
				200- 300	0.220	0	-6750	-6750
				40- 200	0.090	0	-8100	-8100
	Summary Data			40-1594	38.020	2570	-1630	940
8.3	ENGABREEN (N 67011)	1987-88	STR	1500-1594	0.120	1970	-2200	- 230
				1400-1500	2.514	2650	-2550	100
				1300-1400	9.350	2720	-3080	- 360
				1200-1300	8.550	2470	-3630	-1160

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1100-1200	7.600	2160	-4140	-1980
				1000-1100	4.660	1970	-4740	-2770
				900-1000	2.460	1670	-5410	-3740
				800- 900	0.946	1430	-6020	-4590
				700- 800	0.500	1280	-6660	-5380
				600- 700	0.370	990	-7400	-6410
				500- 600	0.270	760	-8010	-7250
				400- 500	0.210	450	-8910	-8460
				300- 400	0.170	240	-9590	-9350
				200- 300	0.220	50	-10110	-10060
				40- 200	0.090	0	-10820	-10820
	Summary Data			40-1594	38.020	2260	-4050	-1790
8.4	ENGABREEN (N 67011)	1988-89	STR	1500-1594	0.120	6380	- 840	5540
				1400-1500	2.514	6750	- 760	5990
				1300-1400	9.350	6330	- 940	5390
				1200-1300	8.550	5270	-1150	4120
				1100-1200	7.600	3870	-1360	2510
				1000-1100	4.660	3130	-1560	1570
				900-1000	2.460	2620	-1980	640
				800- 900	0.946	2030	-2550	- 520
				700- 800	0.500	1540	-3430	-1890
				600- 700	0.370	1120	-4400	-3280
				500- 600	0.270	730	-5350	-4620
				400- 500	0.210	370	-6060	-5690
				300- 400	0.170	160	-6650	-6490
				200- 300	0.220	50	-7200	-7150
				40- 200	0.090	0	-7900	-7900
	Summary Data			40-1594	38.020	4620	-1450	3180
8.5	ENGABREEEN (N 67011)	1989-90	STR	1500-1594	0.120	3860	-1180	2680
				1400-1500	2.514	4030	-1400	2630
				1300-1400	9.350	4080	-1650	2430
				1200-1300	8.550	3920	-1960	1960
				1100-1200	7.600	3600	-2420	1180
				1000-1100	4.660	3220	-3060	1600
				900-1000	2.460	2580	-4360	-1780
				800- 900	0.946	1430	-5540	-4110
				700- 800	0.500	650	-6800	-6150
				600- 700	0.370	300	-7820	-7520
				500- 600	0.270	180	-8720	-8540
				400- 500	0.210	- 20	-9550	-9570
				300- 400	0.170	- 10	-10370	-10470
				200- 300	0.220	- 25	-11300	-11550
				40- 200	0.090	- 40	-12750	-13150
	Summary Data			40-1594	38.020	3490	-2640	850
9.1	GRAASUBREEN (N 00547)	1985-86	STR	2250-2290	0.037	410	- 610	- 200
				2200-2250	0.162	520	- 690	- 170
				2150-2200	0.256	340	- 880	- 540
				2100-2150	0.335	320	-1140	- 820
				2050-2100	0.380	360	-1260	- 900
				2000-2050	0.414	430	-1310	- 880
				1950-2000	0.369	460	-1300	- 840
				1900-1950	0.154	520	-1400	- 880
				1850-1900	0.092	590	-1490	- 900
	Summary Data			1850-2290	2.199	410	-1180	- 770
9.2	GRAASUBREEN (N 00547)	1986-87	STR	2250-2290	0.037	810	80	890
				2200-2250	0.162	740	30	770
				2150-2200	0.256	780	- 30	750
				2100-2150	0.335	810	- 90	720
				2050-2100	0.380	950	- 170	780
				2000-2050	0.414	1010	- 260	750
				1950-2000	0.369	1080	- 390	690
				1900-1950	0.154	1040	- 550	490

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1850-1900	0.092	1200	- 720	480
	Summary Data			1850-2290	2.199	940	- 230	720
9.3	GRAASUBREEN (N 00547)	1987-88	STR	2250-2290	0.037	1140	- 850	290
				2200-2250	0.162	1170	- 920	250
				2150-2200	0.256	1010	-1190	- 180
				2100-2150	0.335	1020	-1390	- 370
				2050-2100	0.380	1120	-1580	- 460
				2000-2050	0.414	1100	-1790	- 690
				1950-2000	0.369	1050	-1990	- 940
				1900-1950	0.154	1100	-2440	-1340
				1850-1900	0.092	1100	-2780	-1680
	Summary Data			1850-2290	2.199	1080	-1660	- 590
9.4	GRAASUBREEN (N 00547)	1988-89	STR	2250-2290	0.037	570	- 460	110
				2200-2250	0.162	860	- 390	470
				2150-2200	0.256	860	- 540	320
				2100-2150	0.335	830	- 590	240
				2050-2100	0.380	1080	- 670	410
				2000-2050	0.414	1170	- 720	450
				1950-2000	0.369	1350	- 790	560
				1900-1950	0.154	1640	- 850	790
				1850-1900	0.092	1640	- 900	740
	Summary Data			1850-2290	2.199	1120	- 670	450
9.5	GRAASUBREEN (N 00547)	1989-90	STR	2250-2290	0.037	1430	- 130	1300
				2200-2250	0.162	1260	- 170	1090
				2150-2200	0.256	1000	- 310	690
				2100-2150	0.335	1100	- 450	650
				2050-2100	0.380	1350	- 580	770
				2000-2050	0.414	1440	- 710	730
				1950-2000	0.369	1600	- 820	780
				1900-1950	0.154	1470	- 920	550
				1850-1900	0.092	1200	-1090	110
	Summary Data			1850-2290	2.199	1330	- 600	730
10.1	HARDANGERJOEKUL (N 22303)	1985-86	STR	1850-1900	0.070	1140	-1040	100
				1800-1850	3.375	1500	-1060	440
				1750-1800	3.866	1700	-1100	600
				1700-1750	3.910	1700	-1200	500
				1650-1700	2.084	1490	-1400	90
				1600-1650	0.936	1250	-1700	- 450
				1550-1600	0.640	1110	-2000	- 890
				1500-1550	0.542	1000	-2350	-1350
				1450-1500	0.319	910	-2700	-1790
				1400-1450	0.196	870	-3100	-2230
				1350-1400	0.112	800	-3500	-2700
				1300-1350	0.084	710	-3800	-3090
				1250-1300	0.270	740	-4350	-3610
				1200-1250	0.315	760	-4800	-4040
				1150-1200	0.321	690	-5250	-4560
				1100-1150	0.115	700	-5750	-5050
				1050-1100	0.022	910	-6250	-5340
	Summary Data			1050-1900	17.177	1470	-1570	- 100
10.2	HARDANGERJOEKUL (N 22303)	1986-87	STR	1850-1900	0.070	1700	- 750	950
				1800-1850	3.375	2210	- 750	1460
				1750-1800	3.866	2400	- 800	1600
				1700-1750	3.910	2220	- 950	1270
				1650-1700	2.084	2130	-1100	1030
				1600-1650	0.936	1800	-1250	550
				1550-1600	0.640	1740	-1450	290
				1500-1550	0.542	1600	-1650	- 50
				1450-1500	0.319	1540	-1850	- 310
				1400-1450	0.196	1430	-2150	- 720
				1350-1400	0.112	1330	-2400	-1070
				1300-1350	0.084	1260	-2700	-1440

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1250-1300	0.270	1100	-2900	-1800
				1200-1250	0.315	1010	-3250	-2240
				1150-1200	0.321	1020	-3550	-2530
				1100-1150	0.115	1010	-3850	-2840
				1050-1100	0.022	910	-4200	-3290
	Summary Data			1050-1900	17.177	2080	-1140	930
10.3	HARDANGERJOEKUL (N 22303)	1987-88	STR	1850-1900	0.070	1430	-2650	-1220
				1800-1850	3.375	1750	-2650	- 900
				1750-1800	3.866	1950	-2700	- 750
				1700-1750	3.910	1850	-2800	- 950
				1650-1700	2.084	1500	-2900	-1400
				1600-1650	0.936	1400	-3150	-1750
				1550-1600	0.640	1160	-3450	-2290
				1500-1550	0.542	1000	-3550	-2550
				1450-1500	0.319	910	-4100	-3190
				1400-1450	0.196	820	-4550	-3730
				1350-1400	0.112	710	-5000	-4290
				1300-1350	0.084	710	-5400	-4690
				1250-1300	0.270	670	-5900	-5230
				1200-1250	0.315	600	-6350	-5750
				1150-1200	0.321	590	-7250	-6660
				1100-1150	0.115	520	-7750	-7230
				1050-1100	0.022	450	-8250	-7800
	Summary Data			1050-1900	17.177	1610	-3130	-1520
10.4	HARDANGERJOEKUL (N 22303)	1988-89	STR	1850-1900	0.070	3250	-1100	2150
				1800-1850	3.375	3750	-1100	2650
				1750-1800	3.866	3800	-1120	2680
				1700-1750	3.910	3750	-1150	2600
				1650-1700	2.084	3500	-1200	2300
				1600-1650	0.936	3250	-1250	2000
				1550-1600	0.640	2800	-1350	1450
				1500-1550	0.542	2750	-1600	1150
				1450-1500	0.319	2400	-1900	500
				1400-1450	0.196	2300	-2200	100
				1350-1400	0.112	2250	-2600	- 350
				1300-1350	0.084	2250	-2950	- 700
				1250-1300	0.270	2200	-3250	-1050
				1200-1250	0.315	2170	-3650	-1480
				1150-1200	0.321	2150	-4000	-1850
				1100-1150	0.115	2150	-4400	-2250
				1050-1100	0.022	2120	-4750	-2630
	Summary Data			1050-1900	17.177	3480	-1370	2110
10.5	HARDANGERJOEKUL (N 22303)	1989-90	STR	1850-1900	0.070	3250	-1250	2000
				1800-1850	3.375	3750	-1200	2550
				1750-1800	3.866	4000	-1300	2700
				1700-1750	3.910	3900	-1450	2450
				1650-1700	2.084	3650	-1600	2050
				1600-1650	0.936	3400	-1800	1600
				1550-1600	0.640	3200	-2050	1150
				1500-1550	0.542	3000	-2350	650
				1450-1500	0.319	2900	-2650	250
				1400-1450	0.196	2750	-3000	- 250
				1350-1400	0.112	2700	-3350	- 650
				1300-1350	0.084	2600	-3700	-1100
				1250-1300	0.270	2550	-4100	-1550
				1200-1250	0.315	2500	-4500	-2000
				1150-1200	0.321	2450	-5300	-2850
				1100-1150	0.115	2400	-5750	-3350
				1050-1100	0.022	2400	-6000	-3630
	Summary Data			1050-1900	17.177	3650	-1720	1930
11.1	HELLSTUGBREEN (N 00511)	1985-86	STR	2150-2200	0.020	1650	- 350	1300
				2100-2150	0.084	1430	- 410	1020
				2050-2100	0.252	1270	- 550	720
				2000-2050	0.173	1160	- 710	450

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1950-2000	0.351	1030	- 810	220
				1900-1950	0.599	780	- 900	- 120
				1850-1900	0.351	740	-1150	- 410
				1800-1850	0.326	610	-1390	- 780
				1750-1800	0.141	570	-1700	-1130
				1700-1750	0.098	510	-1850	-1340
				1650-1700	0.163	490	-2040	-1550
				1600-1650	0.130	460	-2250	-1790
				1550-1600	0.173	350	-2470	-2120
				1500-1550	0.093	260	-2780	-2520
				1450-1500	0.027	190	-2890	-2700
	Summary Data			1450-2200	2.981	780	-1270	- 490
11.2	HELLSTUGBREEN (N 00511)	1986-87	STR	2150-2200	0.020	2000	- 100	1900
				2100-2150	0.084	1670	- 170	1500
				2050-2100	0.252	1390	- 250	1140
				2000-2050	0.173	1270	- 340	930
				1950-2000	0.351	1250	- 410	840
				1900-1950	0.599	1240	- 480	760
				1850-1900	0.351	1200	- 570	630
				1800-1850	0.326	1170	- 670	500
				1750-1800	0.141	1060	- 780	280
				1700-1750	0.098	1020	- 920	100
				1650-1700	0.163	1040	-1130	- 90
				1600-1650	0.130	850	-1400	- 550
				1550-1600	0.173	640	-1680	-1040
				1500-1550	0.093	540	-1920	-1380
				1450-1500	0.027	740	-2130	-1390
	Summary Data			1450-2200	2.981	1150	- 700	460
11.3	HELLSTUGBREEN (N 00511)	1987-88	STR	2150-2200	0.020	2200	- 900	1300
				2100-2150	0.084	2080	-1010	1070
				2050-2100	0.252	1910	-1250	660
				2000-2050	0.173	1650	-1510	140
				1950-2000	0.351	1490	-1770	- 280
				1900-1950	0.599	1360	-1900	- 540
				1850-1900	0.351	1300	-2360	-1060
				1800-1850	0.326	1240	-2720	-1480
				1750-1800	0.141	940	-2900	-1960
				1700-1750	0.098	900	-3140	-2240
				1650-1700	0.163	850	-3300	-2450
				1600-1650	0.130	800	-3400	-2600
				1550-1600	0.173	670	-3540	-2870
				1500-1550	0.093	530	-3700	-3170
				1450-1500	0.027	450	-3900	-3450
	Summary Data			1450-2200	2.981	1280	-2320	-1040
11.4	HELLSTUGBREEN (N 0511)	1988-89	STR	2150-2200	0.020	1940	- 160	1780
				2100-2150	0.084	2070	- 210	1860
				2050-2100	0.252	2450	- 250	2200
				2000-2050	0.173	2580	- 380	2200
				1950-2000	0.351	2180	- 540	1640
				1900-1950	0.599	1670	- 680	990
				1850-1900	0.351	1360	- 810	550
				1800-1850	0.326	1400	- 930	470
				1750-1800	0.141	1260	-1090	170
				1700-1750	0.098	1470	-1280	190
				1650-1700	0.163	1630	-1480	150
				1600-1650	0.130	960	-1710	- 750
				1550-1600	0.173	620	-1980	-1360
				1500-1550	0.093	410	-2240	-1830
				1450-1500	0.027	320	-2480	-2160
	Summary Data			1450-2200	2.981	1620	- 900	720
11.5	HELLSTUGBREEN (N 00511)	1989-90	STR	2150-2200	0.020	1940	- 90	1850
				2100-2150	0.084	1910	- 140	1770
				2050-2100	0.252	2070	- 230	1840
				2000-2050	0.173	2220	- 360	1860
				1950-2000	0.351	1990	- 550	1440
				1900-1950	0.599	1840	- 820	1020

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1850-1900	0.351	1930	-1210	720
				1800-1850	0.326	2000	-1580	420
				1750-1800	0.141	1840	-1760	80
				1700-1750	0.098	1760	-1690	70
				1650-1700	0.163	1710	-1560	150
				1600-1650	0.130	1550	-1740	- 190
				1550-1600	0.173	1090	-2360	-1270
				1500-1550	0.093	470	-2910	-2440
				1450-1500	0.027	300	-3320	-3020
	Summary Data			1450-2200	2.981	1800	-1150	650
12.1	NIGARDSBREEN (N 31014)	1985-86	STR	1900-1960	0.310	2160	- 300	1860
				1800-1900	3.930	2190	- 390	1800
				1700-1800	9.350	2020	- 640	1380
				1600-1700	12.760	1780	-1180	600
				1500-1600	9.620	1440	-1760	- 320
				1400-1500	6.120	1270	-2300	-1030
				1300-1400	2.180	1100	-3140	-2040
				1200-1300	0.880	970	-3550	-2580
				1100-1200	0.440	860	-4140	-3280
				1000-1100	0.540	800	-4820	-4020
				900-1000	0.450	710	-5430	-4720
				800- 900	0.470	660	-6080	-5420
				700- 800	0.310	550	-6900	-6350
				600- 700	0.380	450	-7600	-7150
				500- 600	0.260	350	-8450	-8100
				400- 500	0.140	290	-9690	-9400
				300- 400	0.060	170	-10400	-10230
	Summary Data			300-1960	48.200	1610	-1710	- 100
12.2	NIGARDSBREEN (N 31014)	1986-87	STR	1900-1960	0.310	2970	- 200	2770
				1800-1900	3.930	3220	- 300	2920
				1700-1800	9.350	3290	- 550	2740
				1600-1700	12.760	3070	- 850	2220
				1500-1600	9.620	2490	-1250	1240
				1400-1500	6.120	2310	-1700	610
				1300-1400	2.180	2120	-2120	0
				1200-1300	0.880	1920	-2500	- 580
				1100-1200	0.440	1760	-3000	-1240
				1000-1100	0.540	1680	-3520	-1840
				900-1000	0.450	1450	-4000	-2550
				800- 900	0.470	1240	-4500	-3260
				700- 800	0.310	1000	-5100	-4100
				600- 700	0.380	800	-5700	-4900
				500- 600	0.260	650	-6250	-5600
				400- 500	0.140	400	-6850	-6450
				300- 400	0.060	0	-7520	-7520
	Summary Data			300-1960	48.200	2730	-1250	1480
12.3	NIGARDSBREEN (N 31014)	1987-88	STR	1900-1960	0.380	2850	-1350	1500
				1800-1900	3.920	2820	-1470	1350
				1700-1800	9.390	2580	-1910	670
				1600-1700	12.880	2450	-2560	- 110
				1500-1600	9.180	2160	-3260	-1100
				1400-1500	5.820	1920	-3730	-1810
				1300-1400	2.280	1700	-4540	-2840
				1200-1300	0.900	1570	-5380	-3810
				1100-1200	0.450	1380	-6140	-4760
				1000-1100	0.580	1230	-6890	-5660
				900-1000	0.470	950	-7600	-6650
				800- 900	0.440	800	-8370	-7570
				700- 800	0.330	700	-9410	-8710
				600- 700	0.390	550	-10280	-9730
				500- 600	0.240	400	-10980	-10580
				400- 500	0.120	330	-11600	-11270
				320- 400	0.050	250	-12300	-12050
	Summary Data			320-1960	47.820	2240	-3130	- 900

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
12.4	NIGARDSBREEN	1988-89	STR	1900-1960	0.380	5550	- 80	5470
	(N 31014)			1800-1900	3.920	5600	- 100	5500
				1700-1800	9.390	5200	- 140	5060
				1600-1700	12.880	4330	- 250	4080
				1500-1600	9.180	3540	- 800	2740
				1400-1500	5.820	3050	-1380	1670
				1300-1400	2.280	2820	-1760	1060
				1200-1300	0.900	2700	-2180	520
				1100-1200	0.450	2560	-2750	- 190
				1000-1100	0.580	2420	-3450	-1030
				900-1000	0.470	2200	-4180	-1980
				800- 900	0.440	1950	-4820	-2870
				700- 800	0.330	1700	-5520	-3820
				600- 700	0.390	1320	-6150	-4830
				500- 600	0.240	950	-6850	-5900
				400- 500	0.120	700	-7450	-6750
				320- 400	0.050	500	-8100	-7600
	Summary Data			320-1960	47.820	4050	- 850	3200
12.5	NIGARDSBREEN	1989-90	STR	1900-1960	0.380	5740	- 700	5040
	(N 31014)			1800-1900	3.920	5680	- 760	4920
				1700-1800	9.390	4830	- 970	3860
				1600-1700	12.880	3730	-1340	2390
				1500-1600	9.180	2950	-1820	1130
				1400-1500	5.820	2420	-2240	180
				1300-1400	2.280	1920	-2680	- 760
				1200-1300	0.900	1760	-3150	-1390
				1100-1200	0.450	1500	-3630	-2130
				1000-1100	0.580	1280	-4040	-2760
				900-1000	0.470	1060	-4520	-3460
				800- 900	0.440	980	-5000	-4020
				700- 800	0.330	850	-5520	-4670
				600- 700	0.390	790	-6140	-5350
				500- 600	0.240	720	-6870	-6150
				400- 500	0.120	520	-7850	-7330
				320- 400	0.050	300	-9000	-8700
	Summary Data			320-1960	47.820	3520	-1750	1770
13.1	STORBREEN	1989-90	STR	2050-2100	0.040	2950	- 400	2550
	(N 00541)			2000-2050	0.120	2900	- 500	2400
				1950-2000	0.220	2850	- 600	2250
				1900-1950	0.330	2800	- 700	2100
				1850-1900	0.510	2750	- 800	1950
				1800-1850	0.840	2700	-1000	1700
				1750-1800	0.790	2650	-1200	1450
				1700-1750	0.650	2600	-1400	1200
				1650-1700	0.400	2550	-1600	950
				1600-1650	0.500	2450	-1800	650
				1550-1600	0.360	2350	-2050	300
				1500-1550	0.220	2250	-2300	- 50
				1450-1500	0.190	2150	-2550	- 400
				1400-1450	0.080	2000	-2850	- 850
				1350-1400	0.010	1850	-3200	-1350
	Summary Data			1350-2100	5.260	2600	-1350	1250
14.1	STORGLOMBREEN	1987-88	STR	1500-1580	0.150	1970	-2000	- 30
	(N 89013)			1400-1500	0.570	2260	-2170	90
				1300-1400	3.370	2620	-2600	20
				1200-1300	13.320	2470	-3290	- 820
				1100-1200	24.000	2260	-3490	-1230
				1000-1100	9.080	1830	-4000	-2170
				900-1000	5.210	1100	-4920	-3820
				800- 900	1.890	730	-5910	-5180
				700- 800	0.900	600	-6670	-6070
				600- 700	0.430	530	-7390	-6860

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				520- 600	0.240	420	-8040	-7620
	Summary Data			520-1580	59.160	2060	-3750	-1690
15.1	RABOTS GLACIAER	1985-86	COM	1700-1720	0.007	2250	- 556	1694
	(S 00785)			1680-1700	0.020	2250	- 627	1623
				1660-1680	0.032	2250	- 672	1578
				1640-1660	0.026	2266	- 713	1553
				1620-1640	0.062	2127	- 783	1345
				1600-1620	0.040	2102	- 827	1275
				1580-1600	0.060	1968	- 881	1087
				1560-1580	0.083	1900	- 937	963
				1540-1560	0.115	1916	- 993	923
				1520-1540	0.156	1729	-1040	688
				1500-1520	0.209	1598	-1093	505
				1480-1500	0.164	1464	-1144	320
				1460-1480	0.160	1417	-1201	217
				1440-1460	0.150	1545	-1258	288
				1420-1440	0.110	1655	-1318	337
				1400-1420	0.098	1595	-1372	222
				1380-1400	0.229	1462	-1423	40
				1360-1380	0.269	1325	-1474	- 149
				1340-1360	0.226	1104	-1523	- 419
				1320-1340	0.155	986	-1583	- 597
				1300-1320	0.135	1133	-1641	- 509
				1280-1300	0.190	1162	-1694	- 533
				1260-1280	0.254	1025	-1742	- 717
				1240-1260	0.182	929	-1799	- 870
				1220-1240	0.183	884	-1852	- 968
				1200-1220	0.114	700	-1905	-1204
				1180-1200	0.085	675	-1955	-1280
				1160-1180	0.089	576	-2007	-1430
				1140-1160	0.061	508	-2054	-1546
				1120-1140	0.066	441	-2114	-1673
				1100-1120	0.042	354	-2171	-1817
				1080-1100	0.045	402	-2235	-1833
	Summary Data			1080-1720	3.816	1280	-1468	- 188
15.2	RABOTS GLACIAER	1986-87	COM	1900-1940	0.006	1833	0	1833
	(S 00785)			1860-1900	0.007	1857	0	1857
				1820-1860	0.009	1889	0	1889
				1780-1820	0.010	1800	0	1800
				1740-1780	0.023	1783	- 43	1739
				1700-1740	0.039	1769	- 128	1641
				1660-1700	0.049	1755	- 245	1510
				1620-1660	0.082	1671	- 329	1341
				1580-1620	0.116	1612	- 422	1190
				1540-1580	0.184	1598	- 522	1076
				1500-1540	0.378	1487	- 611	876
				1460-1500	0.333	1366	- 709	658
				1420-1460	0.243	1284	- 798	486
				1380-1420	0.323	1316	- 901	415
				1340-1380	0.512	1172	- 990	182
				1300-1340	0.271	970	-1081	- 111
				1260-1300	0.439	918	-1180	- 262
				1220-1260	0.366	863	-1270	- 407
				1180-1220	0.220	768	-1368	- 600
				1140-1180	0.158	677	-1462	- 785
				1100-1140	0.097	495	-1557	-1062
				1060-1100	0.042	357	-1643	-1286
	Summary Data			1060-1940	3.907	1164	- 941	223
15.3	RABOTS GLACIAER	1987-88	COM	1900-1950	0.005	2122	0	2122
	(S 00785)			1850-1900	0.010	2126	- 214	1913
				1800-1850	0.010	2126	- 398	1728
				1750-1800	0.014	2126	- 600	1526
				1700-1750	0.050	2125	- 790	1335
				1650-1700	0.065	2126	- 991	1135
				1600-1650	0.112	2110	-1180	930
				1580-1600	0.065	1983	-1320	663

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1560-1580	0.083	1819	-1400	419
				1540-1560	0.099	1670	-1480	190
				1520-1540	0.162	1446	-1550	- 103
				1500-1520	0.211	1440	-1630	- 190
				1480-1500	0.181	1275	-1710	- 435
				1460-1480	0.148	1173	-1790	- 617
				1440-1460	0.126	1161	-1870	- 709
				1420-1440	0.109	1085	-1940	- 854
				1400-1420	0.103	1009	-2020	-1012
				1380-1400	0.216	1015	-2100	-1085
				1360-1380	0.270	1029	-2180	-1151
				1340-1360	0.235	977	-2260	-1283
				1320-1340	0.138	708	-2330	-1622
				1300-1320	0.135	721	-2410	-1689
				1280-1300	0.213	826	-2490	-1664
				1260-1280	0.222	766	-2570	-1804
				1240-1260	0.196	750	-2650	-1900
				1220-1240	0.170	686	-2720	-2035
				1200-1220	0.128	657	-2800	-2143
				1180-1200	0.090	524	-2880	-2356
				1160-1180	0.090	505	-2960	-2455
				1140-1160	0.065	490	-3040	-2550
				1120-1140	0.047	528	-3110	-2583
				1100-1120	0.037	477	-3191	-2714
				1080-1100	0.018	382	-3270	-2888
	Summary Data			1080-1950	3.824	1075	-2127	-1052
15.4	RABOTS GLACIAER (S 00785)	1988-89	COM	1900-1950	0.005	3367	- 429	2939
				1850-1900	0.010	2670	- 340	2330
				1800-1850	0.010	2750	- 350	2400
				1750-1800	0.014	2852	- 364	2489
				1700-1750	0.050	2778	- 354	2424
				1650-1700	0.065	2948	- 377	2571
				1600-1650	0.112	2654	- 433	2221
				1580-1600	0.065	2552	- 527	2025
				1560-1580	0.083	2556	- 585	1971
				1540-1560	0.099	2474	- 651	1823
				1520-1540	0.162	2391	- 747	1643
				1500-1520	0.211	2172	- 790	1382
				1480-1500	0.181	1982	- 834	1148
				1460-1480	0.148	1751	- 881	870
				1440-1460	0.126	1703	- 987	716
				1420-1440	0.109	1853	-1027	827
				1400-1420	0.103	2105	-1207	898
				1380-1400	0.216	2016	-1179	837
				1360-1380	0.270	2030	-1218	812
				1340-1360	0.235	1908	-1274	634
				1320-1340	0.138	1605	-1339	265
				1300-1320	0.135	1609	-1399	210
				1280-1300	0.213	1564	-1462	101
				1260-1280	0.222	1488	-1548	- 61
				1240-1260	0.196	1359	-1552	- 193
				1220-1240	0.170	1074	-1572	- 499
				1200-1220	0.128	972	-1705	- 733
				1180-1200	0.090	949	-1684	- 735
				1160-1180	0.090	798	-1677	- 878
				1140-1160	0.065	590	-1655	-1066
				1120-1140	0.047	504	-1744	-1239
				1100-1120	0.037	422	-1706	-1283
				1080-1100	0.018	225	- 938	- 713
	Summary Data			1080-1950	3.824	1780	-1165	615
15.5	RABOTS GLACIAER (S 00785)	1989-90	COM	1900-1950	0.005	2857	- 204	2653
				1850-1900	0.010	2913	- 194	2718
				1800-1850	0.010	2950	- 200	2750
				1750-1800	0.014	2963	- 222	2741
				1700-1750	0.050	2950	- 198	2752
				1650-1700	0.065	3129	- 261	2868
				1600-1650	0.112	2419	- 260	2159
				1580-1600	0.065	2782	- 634	2148
				1560-1580	0.083	2725	- 756	1969
				1540-1560	0.099	2500	- 850	1650

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1520-1540	0.162	1777	- 960	817
				1500-1520	0.211	2044	-1074	970
				1480-1500	0.181	1897	-1189	708
				1460-1480	0.148	1813	-1286	528
				1440-1460	0.126	1892	-1409	483
				1420-1440	0.109	1896	-1502	394
				1400-1420	0.103	1922	-1612	311
				1380-1400	0.216	1948	-1726	222
				1360-1380	0.270	1676	-1839	- 163
				1340-1360	0.235	1640	-1933	- 293
				1320-1340	0.138	1247	-2030	- 783
				1300-1320	0.135	1170	-2080	- 910
				1280-1300	0.213	1399	-2272	- 873
				1260-1280	0.222	1402	-2333	- 930
				1240-1260	0.196	1355	-2420	-1065
				1220-1240	0.170	1319	-2126	- 807
				1200-1220	0.128	1051	-2671	-1620
				1180-1200	0.090	872	-2782	-1911
				1160-1180	0.090	936	-2899	-1962
				1140-1160	0.065	781	-3002	-2221
				1120-1140	0.047	678	-2987	-2309
				1100-1120	0.037	654	-3134	-2480
				1080-1100	0.018	169	- 730	- 562
	Summary Data			1080-1950	3.824	1689	-1727	- 38
16.1	STORGLACIAEREN (S 0788)	1985-86	COM	1700-1720	0.014	3077	- 875	2202
				1680-1700	0.047	3309	- 890	2419
				1660-1680	0.076	3371	- 880	2492
				1640-1660	0.123	3540	-1004	2536
				1620-1640	0.146	3245	-1125	2120
				1600-1620	0.142	2935	-1123	1812
				1580-1600	0.135	2588	-1128	1460
				1560-1580	0.113	2014	-1320	694
				1540-1560	0.099	1774	-1464	310
				1520-1540	0.103	1892	-1317	574
				1500-1520	0.184	2140	-1309	831
				1480-1500	0.169	1565	-1527	38
				1460-1480	0.094	1113	-1632	- 518
				1440-1460	0.064	1244	-1671	- 427
				1420-1440	0.068	1540	-1862	- 322
				1400-1420	0.103	1212	-1879	- 667
				1380-1400	0.218	984	-1878	- 894
				1360-1380	0.274	773	-1981	-1208
				1340-1360	0.253	618	-2032	-1414
				1320-1340	0.151	536	-2133	-1597
				1300-1320	0.089	949	-2282	-1333
				1280-1300	0.076	901	-2237	-1336
				1260-1280	0.086	717	-2299	-1582
				1240-1260	0.069	788	-2376	-1588
				1220-1240	0.053	993	-2617	-1624
				1200-1220	0.041	1065	-2651	-1586
				1180-1200	0.022	1074	-2601	-1527
				1160-1180	0.011	1218	-2673	-1455
				1140-1160	0.012	1458	-2675	-1216
	Summary Data			1140-1720	3.038	1609	-1685	- 76
16.2	STORGLACIAEREN (S 00788)	1986-87	COM	1700-1720	0.014	3939	-1067	2872
				1680-1700	0.047	2735	- 914	1821
				1660-1680	0.076	2741	- 899	1841
				1640-1660	0.123	2810	- 874	1937
				1620-1640	0.146	2764	- 876	1888
				1600-1620	0.142	2538	- 876	1662
				1580-1600	0.135	2507	- 973	1534
				1560-1580	0.113	2158	-1163	996
				1540-1560	0.099	1930	-1054	876
				1520-1540	0.103	2362	-1187	1175
				1500-1520	0.184	2098	-1067	1031
				1480-1500	0.169	1767	-1063	704
				1460-1480	0.094	1464	-1088	375
				1440-1460	0.064	1580	-1055	526

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1420-1440	0.068	1832	-1080	751
				1400-1420	0.103	1548	-1094	454
				1380-1400	0.218	1116	-1327	- 211
				1360-1380	0.274	990	-1259	- 269
				1340-1360	0.253	814	-1407	- 593
				1320-1340	0.151	902	-1583	- 681
				1300-1320	0.089	1269	-1536	- 268
				1280-1300	0.076	1008	-1542	- 533
				1260-1280	0.086	1000	-1635	- 634
				1240-1260	0.069	1136	-1582	- 446
				1220-1240	0.053	1401	-1784	- 383
				1200-1220	0.041	1236	-1768	- 532
				1180-1200	0.022	1379	-1848	- 470
				1160-1180	0.011	1635	-1811	- 176
				1140-1160	0.012	1625	-1875	- 250
	Summary Data			1140-1720	3.038	1694	-1219	475
16.3	STORGLACIAEREN (S 00788)	1987-88	COM	1700-1720	0.070	2441	-1458	983
				1680-1700	0.047	2317	-1630	687
				1660-1680	0.076	2321	-1525	796
				1640-1660	0.123	2333	-1463	870
				1620-1640	0.146	2276	-1487	789
				1600-1620	0.142	2083	-1554	530
				1580-1600	0.135	2016	-1689	327
				1560-1580	0.113	2006	-1906	97
				1540-1560	0.099	1811	-2012	- 201
				1520-1540	0.103	1729	-2017	- 287
				1500-1520	0.184	1741	-1852	- 111
				1480-1500	0.169	1641	-1996	- 355
				1460-1480	0.094	1310	-2165	- 855
				1440-1460	0.064	1513	-2219	- 706
				1420-1440	0.068	1563	-2312	- 749
				1400-1420	0.103	1226	-2360	-1134
				1380-1400	0.218	828	-2577	-1748
				1360-1380	0.274	800	-2500	-1700
				1340-1360	0.253	648	-2634	-1986
				1320-1340	0.151	693	-2766	-2072
				1300-1320	0.089	990	-2815	-1825
				1280-1300	0.076	825	-3096	-2271
				1260-1280	0.086	697	-3153	-2457
				1240-1260	0.069	867	-3103	-2236
				1220-1240	0.053	951	-3070	-2119
				1200-1220	0.041	866	-3132	-2266
				1180-1200	0.022	1014	-3064	-2050
				1160-1180	0.011	1364	-3436	-2073
				1140-1160	0.012	1358	-3350	-1992
	Summary Data			1140-1720	3.094	1424	-2263	- 839
16.4	STORGLACIAEREN (S 00788)	1988-89	COM	1700-1720	0.014	6043	- 879	5164
				1680-1700	0.047	4430	- 674	3756
				1660-1680	0.076	3614	- 520	3094
				1640-1660	0.123	4205	- 593	3612
				1620-1640	0.146	4389	- 655	3734
				1600-1620	0.142	4032	- 560	3471
				1580-1600	0.135	3438	- 875	2563
				1560-1580	0.113	3079	- 910	2169
				1540-1560	0.099	2837	- 903	1934
				1520-1540	0.103	3351	- 881	2470
				1500-1520	0.184	3298	- 860	2438
				1480-1500	0.169	2705	-1126	1579
				1460-1480	0.094	1798	-1119	679
				1440-1460	0.064	2252	-1236	1016
				1420-1440	0.068	2956	-1428	1528
				1400-1420	0.103	3013	-1419	1594
				1380-1400	0.218	2007	-1620	387
				1360-1380	0.274	1594	-1688	- 93
				1340-1360	0.253	1271	-1755	- 484
				1320-1340	0.151	1233	-2029	- 796
				1300-1320	0.089	1789	-1887	- 98
				1280-1300	0.076	1443	-2034	- 591
				1260-1280	0.086	1268	-2269	-1001
				1240-1260	0.069	1219	-2141	- 922

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				1220-1240	0.053	1811	-2183	- 372
				1200-1220	0.041	2016	-2099	- 83
				1180-1200	0.022	1620	-1586	35
				1160-1180	0.011	1902	-1545	356
				1140-1160	0.012	711	- 452	258
	Summary Data			1140-1720	3.038	2580	-1340	1240
16.5	STORGLACIAEREN (S 00788)	1989-90	COM	1700-1720	0.014	6536	-1443	5093
				1680-1700	0.047	4404	-1123	3281
				1660-1680	0.076	4714	-1195	3520
				1640-1660	0.123	3850	- 977	2873
				1620-1640	0.146	3791	- 992	2799
				1600-1620	0.142	3277	- 947	2330
				1580-1600	0.135	3083	-1087	1996
				1560-1580	0.113	3075	-1142	1933
				1540-1560	0.099	2746	-1107	1639
				1520-1540	0.103	2930	-1293	1637
				1500-1520	0.184	2846	-1258	1588
				1480-1500	0.169	2541	-1495	1046
				1460-1480	0.094	1832	-1470	362
				1440-1460	0.064	2044	-1663	381
				1420-1440	0.068	2303	-1715	588
				1400-1420	0.103	1969	-1855	114
				1380-1400	0.218	1491	-1956	- 465
				1360-1380	0.274	1244	-2019	- 776
				1340-1360	0.253	1025	-2157	-1132
				1320-1340	0.151	1100	-2179	-1079
				1300-1320	0.089	1410	-2163	- 733
				1280-1300	0.076	1458	-2611	-1153
				1260-1280	0.086	1126	-2426	-1300
				1240-1260	0.069	1209	-2377	-1168
				1220-1240	0.053	1445	-2306	- 860
				1200-1220	0.041	1576	-2276	- 700
				1180-1200	0.22	1718	-2173	- 455
				1160-1180	0.011	2309	-2218	91
				1140-1160	0.012	1967	-1742	225
	Summary Data			1140-1720	3.038	2259	-1666	593
17.1	GRIES (AEGINA) (CH00003)	1961-62	FXD	3300-3400	0.010	*****	*****	930
				3200-3300	0.110	*****	*****	620
				3100-3200	0.488	*****	*****	300
				3000-3100	1.632	*****	*****	- 10
				2900-3000	1.032	*****	*****	- 340
				2800-2900	0.726	*****	*****	- 730
				2700-2800	0.558	*****	*****	-1190
				2600-2700	0.917	*****	*****	-1720
				2500-2600	0.643	*****	*****	-2330
				2400-2500	0.174	*****	*****	-3010
				2300-2400	0.002	*****	*****	-3760
	Summary Data			2300-3400	6.293	*****	*****	- 890
17.2	GRIES (AEGINA) (CH00003)	1962-63	FXD	3300-3400	0.010	*****	*****	2860
				3200-3300	0.110	*****	*****	2320
				3100-3200	0.488	*****	*****	1780
				3000-3100	1.632	*****	*****	1240
				2900-3000	1.032	*****	*****	690
				2800-2900	0.726	*****	*****	110
				2700-2800	0.558	*****	*****	- 510
				2600-2700	0.917	*****	*****	-1180
				2500-2600	0.643	*****	*****	-1880
				2400-2500	0.174	*****	*****	-2630
				2300-2400	0.002	*****	*****	-3420
	Summary Data			2300-3400	6.293	*****	*****	30
17.3	GRIES (AEGINA) (CH00003)	1963-64	FXD	3300-3400	0.010	*****	*****	1990
				3200-3300	0.110	*****	*****	1500
				3100-3200	0.488	*****	*****	1010
				3000-3100	1.632	*****	*****	520

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2900-3000	1.032	*****	*****	10
				2800-2900	0.726	*****	*****	- 540
				2700-2800	0.558	*****	*****	-1140
				2600-2700	0.917	*****	*****	-1800
				2500-2600	0.643	*****	*****	-2520
				2400-2500	0.174	*****	*****	-3300
				2300-2400	0.002	*****	*****	-4130
	Summary Data			2300-3400	6.293	*****	*****	- 660
17.4	GRIES (AEGINA) (CH00003)	1964-65	FXD	3300-3400	0.010	*****	*****	2000
				3200-3300	0.110	*****	*****	1760
				3100-3200	0.488	*****	*****	1520
				3000-3100	1.632	*****	*****	1280
				2900-3000	1.032	*****	*****	1020
				2800-2900	0.726	*****	*****	700
				2700-2800	0.558	*****	*****	290
				2600-2700	0.917	*****	*****	- 210
				2500-2600	0.643	*****	*****	- 790
				2400-2500	0.174	*****	*****	-1460
				2300-2400	0.002	*****	*****	-2210
	Summary Data			2300-3400	6.293	*****	*****	510
17.5	GRIES (AEGINA) (CH00003)	1965-66	FXD	3300-3400	0.010	*****	*****	930
				3200-3300	0.110	*****	*****	780
				3100-3200	0.488	*****	*****	640
				3000-3100	1.632	*****	*****	500
				2900-3000	1.032	*****	*****	330
				2800-2900	0.726	*****	*****	40
				2700-2800	0.558	*****	*****	- 400
				2600-2700	0.917	*****	*****	- 980
				2500-2600	0.643	*****	*****	-1720
				2400-2500	0.174	*****	*****	-2600
				2300-2400	0.002	*****	*****	-3630
	Summary Data			2300-3400	6.293	*****	*****	- 280
17.6	GRIES (AEGINA) (CH00003)	1966-67	FXD	3300-3400	0.010	*****	*****	1580
				3200-3300	0.110	*****	*****	1340
				3100-3200	0.488	*****	*****	1090
				3000-3100	1.632	*****	*****	850
				2900-3000	1.032	*****	*****	580
				2800-2900	0.726	*****	*****	240
				2700-2800	0.558	*****	*****	- 210
				2600-2700	0.917	*****	*****	- 760
				2500-2600	0.643	*****	*****	-1410
				2400-2500	0.174	*****	*****	-2170
				2300-2400	0.002	*****	*****	-3020
	Summary Data			2300-3400	6.293	*****	*****	20
17.7	GRIES (AEGINA) (CH00003)	1967-68	FXD	3300-3400	0.010	*****	*****	1940
				3200-3300	0.110	*****	*****	1700
				3100-3200	0.488	*****	*****	1450
				3000-3100	1.632	*****	*****	1200
				2900-3000	1.032	*****	*****	940
				2800-2900	0.726	*****	*****	600
				2700-2800	0.558	*****	*****	180
				2600-2700	0.917	*****	*****	- 340
				2500-2600	0.643	*****	*****	- 940
				2400-2500	0.174	*****	*****	-1640
				2300-2400	0.002	*****	*****	-2420
	Summary Data			2300-3400	6.293	*****	*****	410
17.8	GRIES (AEGINA) (CH00003)	1968-69	FXD	3300-3400	0.010	*****	*****	2250
				3200-3300	0.110	*****	*****	1970
				3100-3200	0.488	*****	*****	1690
				3000-3100	1.632	*****	*****	1410
				2900-3000	1.032	*****	*****	1110
				2800-2900	0.726	*****	*****	710
				2700-2800	0.558	*****	*****	210
				2600-2700	0.917	*****	*****	- 410

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2500-2600	0.643	*****	*****	-1140
				2400-2500	0.174	*****	*****	-1990
				2300-2400	0.002	*****	*****	-2940
	Summary Data			2300-3400	6.293	*****	*****	470
17.9	GRIES (AEGINA) (CH00003)	1969-70	FXD	3300-3400	0.010	*****	*****	740
				3200-3300	0.110	*****	*****	580
				3100-3200	0.488	*****	*****	430
				3000-3100	1.632	*****	*****	270
				2900-3000	1.032	*****	*****	90
				2800-2900	0.726	*****	*****	- 210
				2700-2800	0.558	*****	*****	- 660
				2600-2700	0.917	*****	*****	-1270
				2500-2600	0.643	*****	*****	-2020
				2400-2500	0.174	*****	*****	-2910
				2300-2400	0.002	*****	*****	-3960
	Summary Data			2300-3400	6.293	*****	*****	- 540
17.10	GRIES (AEGINA) (CH00003)	1970-71	FXD	3300-3400	0.010	*****	*****	730
				3200-3300	0.110	*****	*****	440
				3100-3200	0.488	*****	*****	150
				3000-3100	1.632	*****	*****	- 130
				2900-3000	1.032	*****	*****	- 440
				2800-2900	0.726	*****	*****	- 810
				2700-2800	0.558	*****	*****	-1250
				2600-2700	0.917	*****	*****	-1770
				2500-2600	0.643	*****	*****	-2370
				2400-2500	0.174	*****	*****	-3050
				2300-2400	0.002	*****	*****	-3800
	Summary Data			2300-3400	6.293	*****	*****	- 970
17.11	GRIES (AEGINA) (CH00003)	1971-72	FXD	3300-3400	0.010	*****	*****	1530
				3200-3300	0.110	*****	*****	1350
				3100-3200	0.488	*****	*****	1170
				3000-3100	1.632	*****	*****	1000
				2900-3000	1.032	*****	*****	800
				2800-2900	0.726	*****	*****	550
				2700-2800	0.558	*****	*****	220
				2600-2700	0.917	*****	*****	- 190
				2500-2600	0.643	*****	*****	- 670
				2400-2500	0.174	*****	*****	-1230
				2300-2400	0.002	*****	*****	-1870
	Summary Data			2300-3400	6.293	*****	*****	380
17.12	GRIES (AEGINA) (CH00003)	1972-73	FXD	3300-3400	0.010	*****	*****	620
				3200-3300	0.110	*****	*****	380
				3100-3200	0.488	*****	*****	130
				3000-3100	1.632	*****	*****	- 110
				2900-3000	1.032	*****	*****	- 380
				2800-2900	0.726	*****	*****	- 760
				2700-2800	0.558	*****	*****	-1270
				2600-2700	0.917	*****	*****	-1910
				2500-2600	0.643	*****	*****	-2690
				2400-2500	0.174	*****	*****	-3600
				2300-2400	0.002	*****	*****	-4640
	Summary Data			2300-3400	6.293	*****	*****	-1050
17.13	GRIES (AEGINA) (CH00003)	1973-74	FXD	3300-3400	0.010	*****	*****	1800
				3200-3300	0.110	*****	*****	1460
				3100-3200	0.488	*****	*****	1120
				3000-3100	1.632	*****	*****	780
				2900-3000	1.032	*****	*****	430
				2800-2900	0.726	*****	*****	10
				2700-2800	0.558	*****	*****	- 470
				2600-2700	0.917	*****	*****	-1030
				2500-2600	0.643	*****	*****	-1650
				2400-2500	0.174	*****	*****	-2350

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2300-2400	0.002	*****	*****	-3130
	Summary Data			2300-3400	6.293	*****	*****	- 30
17.14	GRIES (AEGINA)	1974-75	FXD	3300-3400	0.010	*****	*****	1740
	(CH00003)			3200-3300	0.110	*****	*****	1470
				3100-3200	0.488	*****	*****	1210
				3000-3100	1.632	*****	*****	940
				2900-3000	1.032	*****	*****	660
				2800-2900	0.726	*****	*****	330
				2700-2800	0.558	*****	*****	- 60
				2600-2700	0.917	*****	*****	- 530
				2500-2600	0.643	*****	*****	-1050
				2400-2500	0.174	*****	*****	-1640
				2300-2400	0.002	*****	*****	-2300
	Summary Data			2300-3400	6.293	*****	*****	280
17.15	GRIES (AEGINA)	1975-76	FXD	3300-3400	0.010	*****	*****	650
	(CH00003)			3200-3300	0.110	*****	*****	380
				3100-3200	0.488	*****	*****	120
				3000-3100	1.632	*****	*****	- 140
				2900-3000	1.032	*****	*****	- 430
				2800-2900	0.726	*****	*****	- 830
				2700-2800	0.558	*****	*****	-1360
				2600-2700	0.917	*****	*****	-2030
				2500-2600	0.643	*****	*****	-2830
				2400-2500	0.174	*****	*****	-3760
				2300-2400	0.002	*****	*****	-4830
	Summary Data			2300-3400	6.293	*****	*****	- 990
17.16	GRIES (AEGINA)	1976-77	FXD	3300-3400	0.010	*****	*****	3280
	(CH00003)			3200-3300	0.110	*****	*****	2870
				3100-3200	0.488	*****	*****	2470
				3000-3100	1.632	*****	*****	2060
				2900-3000	1.032	*****	*****	1650
				2800-2900	0.726	*****	*****	1230
				2700-2800	0.558	*****	*****	800
				2600-2700	0.917	*****	*****	350
				2500-2600	0.643	*****	*****	- 110
				2400-2500	0.174	*****	*****	- 600
				2300-2400	0.002	*****	*****	-1090
	Summary Data			2300-3400	6.293	*****	*****	1290
17.17	GRIES (AEGINA)	1977-78	FXD	3300-3400	0.010	*****	*****	2660
	(CH00003)			3200-3300	0.110	*****	*****	2350
				3100-3200	0.488	*****	*****	2050
				3000-3100	1.632	*****	*****	1740
				2900-3000	1.032	*****	*****	1420
				2800-2900	0.726	*****	*****	1040
				2700-2800	0.558	*****	*****	570
				2600-2700	0.917	*****	*****	20
				2500-2600	0.643	*****	*****	- 610
				2400-2500	0.174	*****	*****	-1330
				2300-2400	0.002	*****	*****	-2130
	Summary Data			2300-3400	6.293	*****	*****	970
17.18	GRIES (AEGINA)	1978-79	FXD	3300-3400	0.010	*****	*****	620
	(CH00003)			3200-3300	0.110	*****	*****	370
				3100-3200	0.488	*****	*****	110
				3000-3100	1.632	*****	*****	- 150
				2900-3000	1.032	*****	*****	- 430
				2800-2900	0.726	*****	*****	- 780
				2700-2800	0.558	*****	*****	-1230
				2600-2700	0.917	*****	*****	-1770
				2500-2600	0.643	*****	*****	-2410
				2400-2500	0.174	*****	*****	-3140
				2300-2400	0.002	*****	*****	-3970
	Summary Data			2300-3400	6.293	*****	*****	- 880

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
17.19	GRIES (AEGINA)	1979-80	FXD	3300-3400	0.010	*****	*****	1850
	(CH00003)			3200-3300	0.110	*****	*****	1670
				3100-3200	0.488	*****	*****	1500
				3000-3100	1.632	*****	*****	1330
				2900-3000	1.032	*****	*****	1130
				2800-2900	0.726	*****	*****	830
				2700-2800	0.558	*****	*****	410
				2600-2700	0.917	*****	*****	- 140
				2500-2600	0.643	*****	*****	- 810
				2400-2500	0.174	*****	*****	-1600
	Summary Data			2300-3400	6.293	*****	*****	660
17.20	GRIES (AEGINA)	1980-81	FXD	3300-3400	0.010	*****	*****	430
	(CH00003)			3200-3300	0.110	*****	*****	410
				3100-3200	0.488	*****	*****	400
				3000-3100	1.632	*****	*****	380
				2900-3000	1.032	*****	*****	320
				2800-2900	0.726	*****	*****	60
				2700-2800	0.558	*****	*****	- 450
				2600-2700	0.917	*****	*****	-1220
				2500-2600	0.643	*****	*****	-2230
				2400-2500	0.174	*****	*****	-3490
	Summary Data			2300-3400	6.293	*****	*****	- 350
17.21	GRIES (AEGINA)	1981-82	FXD	3300-3400	0.010	*****	*****	980
	(CH00003)			3200-3300	0.110	*****	*****	710
				3100-3200	0.488	*****	*****	440
				3000-3100	1.632	*****	*****	180
				2900-3000	1.032	*****	*****	- 130
				2800-2900	0.726	*****	*****	- 610
				2700-2800	0.558	*****	*****	-1310
				2600-2700	0.917	*****	*****	-2220
				2500-2600	0.643	*****	*****	-3340
				2400-2500	0.174	*****	*****	-4680
	Summary Data			2300-3400	6.293	*****	*****	- 910
17.22	GRIES (AEGINA)	1982-83	FXD	3300-3400	0.010	*****	*****	1070
	(CH00003)			3200-3300	0.110	*****	*****	770
				3100-3200	0.488	*****	*****	470
				3000-3100	1.632	*****	*****	170
				2900-3000	1.032	*****	*****	- 150
				2800-2900	0.726	*****	*****	- 520
				2700-2800	0.558	*****	*****	- 970
				2600-2700	0.917	*****	*****	-1500
				2500-2600	0.643	*****	*****	-2100
				2400-2500	0.174	*****	*****	-2780
	Summary Data			2300-3400	6.293	*****	*****	- 580
17.23	GRIES (AEGINA)	1983-84	FXD	3300-3400	0.010	*****	*****	1480
	(CH00003)			3200-3300	0.110	*****	*****	1210
				3100-3200	0.488	*****	*****	930
				3000-3100	1.632	*****	*****	660
				2900-3000	1.032	*****	*****	370
				2800-2900	0.726	*****	*****	10
				2700-2800	0.558	*****	*****	- 430
				2600-2700	0.917	*****	*****	- 950
				2500-2600	0.643	*****	*****	-1560
				2400-2500	0.174	*****	*****	-2250
	Summary Data			2300-3400	6.293	*****	*****	- 70
17.24	GRIES (AEGINA)	1984-85	FXD	3300-3400	0.010	*****	*****	40
	(CH00003)			3200-3300	0.110	*****	*****	- 80
				3100-3200	0.488	*****	*****	- 210
				3000-3100	1.632	*****	*****	- 360
				2900-3000	1.032	*****	*****	- 620
				2800-2900	0.726	*****	*****	-1020
				2700-2800	0.558	*****	*****	-1550
				2600-2700	0.917	*****	*****	-2220
				2500-2600	0.643	*****	*****	-3020

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NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2400-2500	0.174	*****	*****	-3960
	Summary Data			2300-3400	6.293	*****	*****	-1210
17.25	GRIES (AEGINA) (CH00003)	1985-86	FXD	3300-3400	0.010	*****	*****	580
				3200-3300	0.110	*****	*****	440
				3100-3200	0.488	*****	*****	290
				3000-3100	1.632	*****	*****	120
				2900-3000	1.032	*****	*****	- 140
				2800-2900	0.726	*****	*****	- 530
				2700-2800	0.558	*****	*****	-1030
				2600-2700	0.917	*****	*****	-1660
				2500-2600	0.643	*****	*****	-2410
				2400-2500	0.174	*****	*****	-3280
	Summary Data			2300-3400	6.293	*****	*****	- 690
17.26	GRIES (AEGINA) (CH00003)	1986-87	FXD	3300-3400	0.010	*****	*****	320
				3200-3300	0.110	*****	*****	190
				3100-3200	0.488	*****	*****	50
				3000-3100	1.632	*****	*****	- 110
				2900-3000	1.032	*****	*****	- 370
				2800-2900	0.726	*****	*****	- 760
				2700-2800	0.558	*****	*****	-1280
				2600-2700	0.917	*****	*****	-1930
				2500-2600	0.643	*****	*****	-2700
				2400-2500	0.174	*****	*****	-3610
	Summary Data			2300-3400	6.293	*****	*****	- 940
17.27	GRIES (AEGINA) (CH00003)	1987-88	FXD	3300-3400	0.010	*****	*****	160
				3200-3300	0.110	*****	*****	30
				3100-3200	0.488	*****	*****	- 100
				3000-3100	1.632	*****	*****	- 260
				2900-3000	1.032	*****	*****	- 520
				2800-2900	0.726	*****	*****	- 910
				2700-2800	0.558	*****	*****	-1440
				2600-2700	0.917	*****	*****	-2100
				2500-2600	0.643	*****	*****	-2890
				2400-2500	0.174	*****	*****	-3820
	Summary Data			2300-3400	6.293	*****	*****	-1100
17.28	GRIES (AEGINA) (CH00003)	1988-89	FXD	3300-3400	0.010	*****	*****	220
				3200-3300	0.110	*****	*****	90
				3100-3200	0.488	*****	*****	- 50
				3000-3100	1.632	*****	*****	- 200
				2900-3000	1.032	*****	*****	- 460
				2800-2900	0.726	*****	*****	- 860
				2700-2800	0.558	*****	*****	-1380
				2600-2700	0.917	*****	*****	-2040
				2500-2600	0.643	*****	*****	-2820
				2400-2500	0.174	*****	*****	-3740
	Summary Data			2300-3400	6.293	*****	*****	-1040
17.29	GRIES (AEGINA) (CH00003)	1989-90	FXD	3300-3400	0.010	*****	*****	- 670
				3200-3300	0.110	*****	*****	- 770
				3100-3200	0.488	*****	*****	- 870
				3000-3100	1.632	*****	*****	- 990
				2900-3000	1.032	*****	*****	-1250
				2800-2900	0.726	*****	*****	-1660
				2700-2800	0.558	*****	*****	-2230
				2600-2700	0.917	*****	*****	-2950
				2500-2600	0.643	*****	*****	-3830
				2400-2500	0.174	*****	*****	-4860
	Summary Data			2300-3400	6.293	*****	*****	-1890
18.1	SILVRETTA (CH00090)	1959-60	FXD	3000-3150	0.242	*****	*****	1150
				2900-3000	0.577	*****	*****	890
				2800-2900	0.628	*****	*****	630

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2700-2800	0.789	*****	*****	260
				2600-2700	0.498	*****	*****	- 300
				2500-2600	0.385	*****	*****	-1060
				2400-2500	0.031	*****	*****	-2030
	Summary Data			2400-3150	3.150	*****	*****	280
18.2	SILVRETTA (CH0090)	1960-61	FXD	3000-3150	0.242	*****	*****	1700
				2900-3000	0.577	*****	*****	1320
				2800-2900	0.628	*****	*****	940
				2700-2800	0.789	*****	*****	480
				2600-2700	0.498	*****	*****	- 110
				2500-2600	0.385	*****	*****	- 840
				2400-2500	0.031	*****	*****	-1720
	Summary Data			2400-3150	3.150	*****	*****	590
18.3	SILVRETTA (CH00090)	1961-62	FXD	3000-3150	0.242	*****	*****	580
				2900-3000	0.577	*****	*****	300
				2800-2900	0.628	*****	*****	20
				2700-2800	0.789	*****	*****	- 370
				2600-2700	0.498	*****	*****	- 950
				2500-2600	0.385	*****	*****	-1750
				2400-2500	0.031	*****	*****	-2750
	Summary Data			2400-3150	3.150	*****	*****	- 350
18.4	SILVRETTA (CH00090)	1962-63	FXD	3000-3150	0.242	*****	*****	480
				2900-3000	0.577	*****	*****	- 10
				2800-2900	0.628	*****	*****	- 500
				2700-2800	0.789	*****	*****	-1050
				2600-2700	0.498	*****	*****	-1710
				2500-2600	0.385	*****	*****	-2480
				2400-2500	0.031	*****	*****	-3360
	Summary Data			2400-3150	3.150	*****	*****	- 870
18.5	SILVRETTA (CH00090)	1963-64	FXD	3000-3150	0.242	*****	*****	- 340
				2900-3000	0.577	*****	*****	- 560
				2800-2900	0.628	*****	*****	- 790
				2700-2800	0.789	*****	*****	-1180
				2600-2700	0.498	*****	*****	-1900
				2500-2600	0.385	*****	*****	-2940
				2400-2500	0.031	*****	*****	-4320
	Summary Data			2400-3150	3.150	*****	*****	-1260
18.6	SILVRETTA (CH00090)	1964-65	FXD	3000-3150	0.242	*****	*****	2010
				2900-3000	0.577	*****	*****	1790
				2800-2900	0.628	*****	*****	1570
				2700-2800	0.789	*****	*****	1290
				2600-2700	0.498	*****	*****	900
				2500-2600	0.385	*****	*****	400
				2400-2500	0.031	*****	*****	- 220
	Summary Data			2400-3150	3.150	*****	*****	1340
18.7	SILVRETTA (CH00090)	1965-66	FXD	3000-3150	0.242	*****	*****	2000
				2900-3000	0.577	*****	*****	1830
				2800-2900	0.628	*****	*****	1640
				2700-2800	0.789	*****	*****	1350
				2600-2700	0.498	*****	*****	830
				2500-2600	0.385	*****	*****	80
				2400-2500	0.031	*****	*****	- 900
	Summary Data			2400-3150	3.150	*****	*****	1310
18.8	SILVRETTA (CH00090)	1966-67	FXD	3000-3150	0.242	*****	*****	1340
				2900-3000	0.577	*****	*****	1060
				2800-2900	0.628	*****	*****	770
				2700-2800	0.789	*****	*****	390
				2600-2700	0.498	*****	*****	- 150
				2500-2600	0.385	*****	*****	- 860

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2400-2500	0.031	*****	*****	-1740
	Summary Data			2400-3150	3.150	*****	*****	440
18.9	SILVRETTA (CH00090)	1967-68	FXD	3000-3150	0.242	*****	*****	1440
				2900-3000	0.577	*****	*****	1230
				2800-2900	0.628	*****	*****	1010
				2700-2800	0.789	*****	*****	680
				2600-2700	0.498	*****	*****	110
				2500-2600	0.385	*****	*****	- 690
				2400-2500	0.031	*****	*****	-1730
	Summary Data			2400-3150	3.150	*****	*****	650
18.10	SILVRETTA (CH00090)	1968-69	FXD	3000-3150	0.242	*****	*****	1190
				2900-3000	0.577	*****	*****	830
				2800-2900	0.628	*****	*****	460
				2700-2800	0.789	*****	*****	- 30
				2600-2700	0.498	*****	*****	- 770
				2500-2600	0.385	*****	*****	-1740
				2400-2500	0.031	*****	*****	-2970
	Summary Data			2400-3150	3.150	*****	*****	10
18.11	SILVRETTA (CH00090)	1969-70	FXD	3000-3150	0.242	*****	*****	1220
				2900-3000	0.577	*****	*****	910
				2800-2900	0.628	*****	*****	600
				2700-2800	0.789	*****	*****	180
				2600-2700	0.498	*****	*****	- 440
				2500-2600	0.385	*****	*****	-1270
				2400-2500	0.031	*****	*****	-2320
	Summary Data			2400-3150	3.150	*****	*****	210
18.12	SILVRETTA (CH00090)	1970-71	FXD	3000-3150	0.242	*****	*****	770
				2900-3000	0.577	*****	*****	480
				2800-2900	0.628	*****	*****	170
				2700-2800	0.789	*****	*****	- 360
				2600-2700	0.498	*****	*****	-1330
				2500-2600	0.385	*****	*****	-2760
				2400-2500	0.031	*****	*****	-4640
	Summary Data			2400-3150	3.150	*****	*****	- 470
18.13	SILVRETTA (CH00090)	1971-72	FXD	3000-3150	0.242	*****	*****	780
				2900-3000	0.577	*****	*****	520
				2800-2900	0.628	*****	*****	240
				2700-2800	0.789	*****	*****	- 140
				2600-2700	0.498	*****	*****	- 730
				2500-2600	0.385	*****	*****	-1530
				2400-2500	0.031	*****	*****	-2550
	Summary Data			2400-3150	3.150	*****	*****	- 160
18.14	SILVRETTA (CH00090)	1972-73	FXD	3000-3150	0.242	*****	*****	40
				2900-3000	0.577	*****	*****	- 340
				2800-2900	0.628	*****	*****	- 720
				2700-2800	0.789	*****	*****	-1180
				2600-2700	0.498	*****	*****	-1790
				2500-2600	0.385	*****	*****	-2560
				2400-2500	0.031	*****	*****	-3480
	Summary Data			2400-3150	3.150	*****	*****	-1130
18.15	SILVRETTA (CH00090)	1973-74	FXD	3000-3150	0.242	*****	*****	1280
				2900-3000	0.577	*****	*****	1200
				2800-2900	0.628	*****	*****	1110
				2700-2800	0.789	*****	*****	870
				2600-2700	0.498	*****	*****	340
				2500-2600	0.385	*****	*****	- 500
				2400-2500	0.031	*****	*****	-1640
	Summary Data			2400-3150	3.150	*****	*****	730

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
18.16	SILVRETTA (CH00090)	1974-75	FXD	3000-3150	0.242	*****	*****	1550
				2900-3000	0.577	*****	*****	1360
				2800-2900	0.628	*****	*****	1150
				2700-2800	0.789	*****	*****	810
				2600-2700	0.498	*****	*****	200
				2500-2600	0.385	*****	*****	- 680
				2400-2500	0.031	*****	*****	-1840
	Summary Data			2400-3150	3.150	*****	*****	730
18.17	SILVRETTA (CH00090)	1975-76	FXD	3000-3150	0.242	*****	*****	610
				2900-3000	0.577	*****	*****	450
				2800-2900	0.628	*****	*****	270
				2700-2800	0.789	*****	*****	- 140
				2600-2700	0.498	*****	*****	-1020
				2500-2600	0.385	*****	*****	-2380
				2400-2500	0.031	*****	*****	-4220
	Summary Data			2400-3150	3.150	*****	*****	- 350
18.18	SILVRETTA (CH00090)	1976-77	FXD	3000-3150	0.242	*****	*****	1890
				2900-3000	0.577	*****	*****	1520
				2800-2900	0.628	*****	*****	1130
				2700-2800	0.789	*****	*****	610
				2600-2700	0.498	*****	*****	- 180
				2500-2600	0.385	*****	*****	-1230
				2400-2500	0.031	*****	*****	-2560
	Summary Data			2400-3150	3.150	*****	*****	600
18.19	SILVRETTA (CH00090)	1977-78	FXD	3000-3150	0.242	*****	*****	1650
				2900-3000	0.577	*****	*****	1530
				2800-2900	0.628	*****	*****	1400
				2700-2800	0.789	*****	*****	1130
				2600-2700	0.498	*****	*****	560
				2500-2600	0.385	*****	*****	- 290
				2400-2500	0.031	*****	*****	-1450
	Summary Data			2400-3150	3.150	*****	*****	1010
18.20	SILVRETTA (CH00090)	1978-79	FXD	3000-3150	0.242	*****	*****	890
				2900-3000	0.577	*****	*****	630
				2800-2900	0.628	*****	*****	360
				2700-2800	0.789	*****	*****	- 20
				2600-2700	0.498	*****	*****	- 630
				2500-2600	0.385	*****	*****	-1470
				2400-2500	0.031	*****	*****	-2550
	Summary Data			2400-3150	3.150	*****	*****	- 50
18.21	SILVRETTA (CH00090)	1979-80	FXD	3000-3150	0.242	*****	*****	1600
				2900-3000	0.577	*****	*****	1530
				2800-2900	0.628	*****	*****	1460
				2700-2800	0.789	*****	*****	1240
				2600-2700	0.498	*****	*****	720
				2500-2600	0.385	*****	*****	- 100
				2400-2500	0.031	*****	*****	-1220
	Summary Data			2400-3150	3.150	*****	*****	1090
18.22	SILVRETTA (CH00090)	1980-81	FXD	3000-3150	0.242	*****	*****	1170
				2900-3000	0.577	*****	*****	960
				2800-2900	0.628	*****	*****	740
				2700-2800	0.789	*****	*****	400
				2600-2700	0.498	*****	*****	- 160
				2500-2600	0.385	*****	*****	- 960
				2400-2500	0.031	*****	*****	-1990
	Summary Data			2400-3150	3.150	*****	*****	350
18.23	SILVRETTA (CH00090)	1981-82	FXD	3000-3150	0.242	*****	*****	590
				2900-3000	0.577	*****	*****	340
				2800-2900	0.628	*****	*****	80
				2700-2800	0.789	*****	*****	- 270

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2600-2700	0.498	*****	*****	- 830
				2500-2600	0.385	*****	*****	-1580
				2400-2500	0.031	*****	*****	-2540
	Summary Data			2400-3150	3.150	*****	*****	- 290
18.24	SILVRETTA (CH00090)	1982-83	FXD	3000-3150	0.242	*****	*****	440
				2900-3000	0.577	*****	*****	240
				2800-2900	0.628	*****	*****	40
				2700-2800	0.789	*****	*****	- 370
				2600-2700	0.498	*****	*****	-1190
				2500-2600	0.385	*****	*****	-2420
				2400-2500	0.031	*****	*****	-4070
	Summary Data			2400-3150	3.150	*****	*****	- 530
18.25	SILVRETTA (CH00090)	1983-84	FXD	3000-3150	0.242	*****	*****	1520
				2900-3000	0.577	*****	*****	1090
				2800-2900	0.628	*****	*****	660
				2700-2800	0.789	*****	*****	210
				2600-2700	0.498	*****	*****	- 260
				2500-2600	0.385	*****	*****	- 760
				2400-2500	0.031	*****	*****	-1300
	Summary Data			2400-3150	3.150	*****	*****	360
18.26	SILVRETTA (CH00090)	1986-87	FXD	3000-3150	0.242	*****	*****	810
				2900-3000	0.577	*****	*****	530
				2800-2900	0.628	*****	*****	240
				2700-2800	0.789	*****	*****	- 170
				2600-2700	0.498	*****	*****	- 830
				2500-2600	0.385	*****	*****	-1740
				2400-2500	0.031	*****	*****	-2900
	Summary Data			2400-3150	3.150	*****	*****	- 210
18.27	SILVRETTA (CH00090)	1987-88	FXD	3000-3150	0.242	*****	*****	510
				2900-3000	0.577	*****	*****	200
				2800-2900	0.628	*****	*****	- 110
				2700-2800	0.789	*****	*****	- 550
				2600-2700	0.498	*****	*****	-1250
				2500-2600	0.385	*****	*****	-2200
				2400-2500	0.031	*****	*****	-3430
	Summary Data			2400-3150	3.150	*****	*****	- 580
18.28	SILVRETTA (CH00090)	1988-89	FXD	3000-3150	0.242	*****	*****	780
				2900-3000	0.577	*****	*****	500
				2800-2900	0.628	*****	*****	210
				2700-2800	0.789	*****	*****	- 210
				2600-2700	0.498	*****	*****	- 870
				2500-2600	0.385	*****	*****	-1790
				2400-2500	0.031	*****	*****	-2960
	Summary Data			2400-3150	3.150	*****	*****	- 250
18.29	SILVRETTA (CH00090)	1989-90	FXD	3000-3150	0.242	*****	*****	550
				2900-3000	0.577	*****	*****	250
				2800-2900	0.628	*****	*****	- 60
				2700-2800	0.789	*****	*****	- 500
				2600-2700	0.498	*****	*****	-1190
				2500-2600	0.385	*****	*****	-2140
				2400-2500	0.031	*****	*****	-3360
	Summary Data			2400-3150	3.150	*****	*****	- 530
19.1	HINTEREIS F. (A 00209)	1985-86	FXD	3700-3750	0.004	*****	***	120
				3650-3700	0.023	*****	***	50
				3600-3650	0.032	*****	***	50
				3550-3600	0.023	*****	***	5
				3500-3550	0.026	*****	*****	- 100
				3450-3500	0.086	*****	*****	80

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3400-3450	0.165	*****	*****	130
				3350-3400	0.294	*****	*****	120
				3300-3350	0.422	*****	*****	430
				3250-3300	0.469	*****	*****	180
				3200-3250	0.522	*****	*****	130
				3150-3200	0.711	*****	*****	130
				3100-3150	0.871	*****	*****	170
				3050-3100	0.809	*****	*****	- 10
				3000-3050	0.657	*****	*****	- 230
				2950-3000	0.628	*****	*****	- 490
				2900-2950	0.618	*****	*****	- 670
				2850-2900	0.519	*****	*****	-1050
				2800-2850	0.399	*****	*****	-1590
				2750-2800	0.617	*****	*****	-2120
				2700-2750	0.349	*****	*****	-2830
				2650-2700	0.383	*****	*****	-3040
				2600-2650	0.214	*****	*****	-3790
				2550-2600	0.110	*****	*****	-4070
				2500-2550	0.073	*****	*****	-4260
				2450-2500	0.036	*****	*****	-4720
	Summary Data			2450-3750	9.060	*****	*****	- 732
19.2	HINTEREIS F. (A 00209)	1986-87	FXD	3700-3750	0.004	*****	*****	120
				3650-3700	0.023	*****	*****	5042
				3600-3650	0.032	*****	*****	0
				3550-3600	0.023	*****	*****	30
				3500-3550	0.026	*****	*****	- 60
				3450-3500	0.086	*****	*****	160
				3400-3450	0.165	*****	*****	270
				3350-3400	0.294	*****	*****	270
				3300-3350	0.422	*****	*****	390
				3250-3300	0.469	*****	*****	260
				3200-3250	0.522	*****	*****	200
				3150-3200	0.711	*****	*****	220
				3100-3150	0.871	*****	*****	200
				3050-3100	0.809	*****	*****	50
				3000-3050	0.652	*****	*****	- 300
				2950-3000	0.628	*****	*****	- 650
				2900-2950	0.618	*****	*****	- 850
				2850-2900	0.519	*****	*****	-1220
				2800-2850	0.399	*****	*****	-1730
				2750-2800	0.617	*****	*****	-1990
				2700-2750	0.349	*****	*****	-2650
				2650-2700	0.383	*****	*****	-2980
				2600-2650	0.214	*****	*****	-3350
				2550-2600	0.110	*****	*****	-4050
				2500-2550	0.073	*****	*****	-4380
				2450-2500	0.035	*****	*****	-4650
	Summary Data			2450-3750	9.054	*****	*****	- 717
19.3	HINTEREIS F. (A 00209)	1987-88	FXD	3700-3750	0.004	*****	*****	0
				3650-3700	0.023	*****	*****	- 100
				3600-3650	0.032	*****	*****	- 10
				3550-3600	0.023	*****	*****	- 30
				3500-3550	0.026	*****	*****	- 170
				3450-3500	0.086	*****	*****	- 140
				3400-3450	0.165	*****	*****	20
				3350-3400	0.294	*****	*****	90
				3300-3350	0.422	*****	*****	230
				3250-3300	0.469	*****	*****	90
				3200-3250	0.522	*****	*****	70
				3150-3200	0.711	*****	*****	130
				3100-3150	0.871	*****	*****	- 10
				3050-3100	0.808	*****	*****	- 250
				3000-3050	0.647	*****	*****	- 460
				2950-3000	0.627	*****	*****	- 740
				2900-2950	0.614	*****	*****	-1140
				2850-2900	0.513	*****	*****	-1500
				2800-2850	0.396	*****	*****	-1910
				2750-2800	0.617	*****	*****	-2250
				2700-2750	0.349	*****	*****	-3090
				2650-2700	0.383	*****	*****	-3340

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2600-2650	0.214	*****	*****	-3930
				2550-2600	0.110	*****	*****	-4090
				2500-2550	0.072	*****	*****	-4960
				2450-2500	0.034	*****	*****	-6380
	Summary Data			2450-3750	9.032	*****	*****	- 945
19.4	HINTEREIS F.	1988-89	FXD	3700-3750	0.004	*****	*****	0
	(A 00209)			3650-3700	0.023	*****	*****	0
				3600-3650	0.032	*****	*****	30
				3550-3600	0.023	*****	*****	- 20
				3500-3550	0.026	*****	*****	- 40
				3450-3500	0.086	*****	*****	80
				3400-3450	0.165	*****	*****	20
				3350-3400	0.294	*****	*****	210
				3300-3350	0.422	*****	*****	480
				3250-3300	0.469	*****	*****	230
				3200-3250	0.522	*****	*****	160
				3150-3200	0.711	*****	*****	130
				3100-3150	0.871	*****	*****	130
				3050-3100	0.808	*****	*****	- 10
				3000-3050	0.627	*****	*****	- 290
				2950-3000	0.615	*****	*****	- 520
				2900-2950	0.614	*****	*****	- 600
				2850-2900	0.507	*****	*****	- 880
				2800-2850	0.396	*****	*****	-1190
				2750-2800	0.617	*****	*****	-1630
				2700-2750	0.348	*****	*****	-2550
				2650-2700	0.381	*****	*****	-2770
				2600-2650	0.213	*****	*****	-3240
				2550-2600	0.110	*****	*****	-4060
				2500-2550	0.072	*****	*****	-4670
				2450-2500	0.034	*****	*****	-5350
	Summary Data			2450-3750	8.990	*****	*****	- 637
19.5	HINTEREIS F.	1989-90	FXD	3700-3750	0.004	*****	*****	120
	(A 00209)			3650-3700	0.023	*****	*****	50
				3600-3650	0.032	*****	*****	40
				3550-3600	0.023	*****	*****	20
				3500-3550	0.026	*****	*****	- 40
				3450-3500	0.086	*****	*****	60
				3400-3450	0.165	*****	*****	30
				3350-3400	0.294	*****	*****	70
				3300-3350	0.422	*****	*****	230
				3250-3300	0.469	*****	*****	100
				3200-3250	0.522	*****	*****	30
				3150-3200	0.711	*****	*****	70
				3100-3150	0.871	*****	*****	30
				3050-3100	0.808	*****	*****	- 140
				3000-3050	0.632	*****	*****	- 400
				2950-3000	0.613	*****	*****	- 850
				2900-2950	0.606	*****	*****	-1200
				2850-2900	0.506	*****	*****	-1600
				2800-2850	0.396	*****	*****	-2010
				2750-2800	0.617	*****	*****	-2500
				2700-2750	0.348	*****	*****	-3330
				2650-2700	0.381	*****	*****	-3490
				2600-2650	0.213	*****	*****	-4020
				2550-2600	0.110	*****	*****	-4650
				2500-2550	0.072	*****	*****	-5350
				2450-2500	0.034	*****	*****	-5630
	Summary Data			2450-3750	8.984	*****	*****	- 995
20.1	JAMTAL F.	1988-89	FXD	3100-3000	0.210	*****	*****	220
	(A 00106)			3000-2900	0.850	*****	*****	240
				2900-2800	0.800	*****	*****	- 60
				2800-2700	0.850	*****	*****	- 310
				2700-2600	0.670	*****	*****	- 840
				2600-2500	0.340	*****	*****	-1960

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2500-2400	0.130	*****	*****	-3140
	Summary Data			2400-3100	3.850	*****	*****	- 439
20.2	JAMTAL F.	1989-90	FXD	3100-3000	0.210	*****	*****	120
	(A 00106)			3000-2900	0.850	*****	*****	160
				2900-2800	0.800	*****	*****	- 130
				2800-2700	0.850	*****	*****	- 340
				2700-2600	0.670	*****	*****	- 790
				2600-2500	0.340	*****	*****	-1610
				2500-2400	0.130	*****	*****	-2660
	Summary Data			2400-3100	3.850	*****	*****	- 426
21.1	KESSELWAND F.	1985-86	FXD	3450-3500	0.025	*****	*****	0
	(A 00226)			3400-3450	0.031	*****	*****	- 240
				3350-3400	0.066	*****	*****	- 170
				3300-3350	0.287	*****	*****	100
				3250-3300	0.647	*****	*****	230
				3200-3250	0.864	*****	*****	160
				3150-3200	0.749	*****	*****	60
				3100-3150	0.560	*****	*****	- 150
				3050-3100	0.437	*****	*****	- 810
				3000-3050	0.193	*****	*****	-1800
				2950-3000	0.133	*****	*****	-2030
				2900-2950	0.092	*****	*****	-2080
				2850-2900	0.127	*****	*****	-2380
				2800-2850	0.094	*****	*****	-3120
				2750-2800	0.062	*****	*****	-4330
				2700-2750	0.037	*****	*****	-5120
				2650-2700	0.034	*****	*****	-6000
				2600-2650	0.006	*****	*****	-6750
	Summary Data			2600-3500	4.444	*****	*****	- 494
21.2	KESSELWAND F.	1986-87	FXD	3450-3500	0.025	*****	*****	0
	(A 00226)			3400-3450	0.031	*****	*****	- 30
				3350-3400	0.066	*****	*****	- 20
				3300-3350	0.287	*****	*****	170
				3250-3300	0.647	*****	*****	440
				3200-3250	0.864	*****	*****	350
				3150-3200	0.770	*****	*****	300
				3100-3150	0.554	*****	*****	100
				3050-3100	0.412	*****	*****	- 590
				3000-3050	0.186	*****	*****	-1120
				2950-3000	0.150	*****	*****	-1500
				2900-2950	0.092	*****	*****	-1630
				2850-2900	0.127	*****	*****	-2040
				2800-2850	0.094	*****	*****	-2950
				2750-2800	0.062	*****	*****	-3950
				2700-2750	0.037	*****	*****	-4740
				2650-2700	0.033	*****	*****	-5700
				2600-2650	0.004	*****	*****	-6250
	Summary Data			2600-3500	4.441	*****	*****	- 243
21.3	KESSELWAND F.	1987-88	FXD	3450-3500	0.025	*****	*****	- 10
	(A 00226)			3400-3450	0.031	*****	*****	- 90
				3350-3400	0.066	*****	*****	- 10
				3300-3350	0.287	*****	*****	300
				3250-3300	0.647	*****	*****	430
				3200-3250	0.864	*****	*****	340
				3150-3200	0.745	*****	*****	150
				3100-3150	0.551	*****	*****	- 150
				3050-3100	0.420	*****	*****	- 630
				3000-3050	0.189	*****	*****	- 930
				2950-3000	0.144	*****	*****	-1040
				2900-2950	0.115	*****	*****	-1180
				2850-2900	0.115	*****	*****	-2140
				2800-2850	0.094	*****	*****	-2810
				2750-2800	0.065	*****	*****	-3550
				2700-2750	0.042	*****	*****	-4200

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				2650-2700	0.034	*****	*****	-5150
				2600-2650	0.007	*****	*****	-5750
	Summary Data			2600-3500	4.441	*****	*****	- 265
21.4	KESSELWAND F. (A 00226)	1988-89	FXD	3450-3500	0.025	*****	*****	50
				3400-3450	0.031	*****	*****	- 80
				3350-3400	0.066	*****	*****	70
				3300-3350	0.287	*****	*****	270
				3250-3300	0.647	*****	*****	500
				3200-3250	0.864	*****	*****	420
				3150-3200	0.745	*****	*****	280
				3100-3150	0.551	*****	*****	20
				3050-3100	0.420	*****	*****	- 390
				3000-3050	0.189	*****	*****	- 710
				2950-3000	0.144	*****	*****	- 960
				2900-2950	0.115	*****	*****	-1220
				2850-2900	0.115	*****	*****	-1980
				2800-2850	0.094	*****	*****	-2620
				2750-2800	0.065	*****	*****	-3530
				2700-2750	0.042	*****	*****	-4060
				2650-2700	0.034	*****	*****	-4850
				2600-2650	0.007	*****	*****	-5250
	Summary Data			2600-3500	4.441	*****	*****	- 151
21.5	KESSELWAND F. (A 00226)	1989-90	FXD	3450-3500	0.025	*****	*****	30
				3400-3450	0.031	*****	*****	- 160
				3350-3400	0.066	*****	*****	- 160
				3300-3350	0.287	*****	*****	200
				3250-3300	0.647	*****	*****	380
				3200-3250	0.864	*****	*****	250
				3150-3200	0.745	*****	*****	250
				3100-3150	0.551	*****	*****	- 30
				3050-3100	0.427	*****	*****	- 460
				3000-3050	0.180	*****	*****	- 800
				2950-3000	0.143	*****	*****	-1090
				2900-2950	0.117	*****	*****	-1290
				2850-2900	0.099	*****	*****	-2060
				2800-2850	0.104	*****	*****	-2810
				2750-2800	0.068	*****	*****	-3180
				2700-2750	0.041	*****	*****	-4460
				2650-2700	0.033	*****	*****	-5240
				2600-2650	0.006	*****	*****	-5750
	Summary Data			2600-3500	4.434	*****	*****	- 242
22.1	VERNAGT F. (A 00211)	1985-86	FXD	3500-3628	0.026	*****	*****	-3251
				3400-3500	0.296	*****	*****	-3200
				3300-3400	1.005	*****	*****	-2552
				3200-3300	2.078	*****	*****	-1151
				3100-3200	2.593	*****	*****	- 497
				3000-3100	2.097	*****	*****	- 144
				2900-3000	0.798	*****	*****	35
				2800-2900	0.407	*****	*****	46
				2739-2800	0.043	*****	*****	- 253
	Summary Data			2739-3628	9.343	*****	*****	- 808
22.2	VERNAGT F. (A 00211)	1986-87	FXD	3500-3628	0.031	*****	*****	25
				3400-3500	0.384	*****	*****	189
				3300-3400	0.776	*****	*****	113
				3200-3300	2.054	*****	*****	129
				3100-3200	2.580	*****	*****	16
				3000-3100	2.105	*****	*****	- 366
				2900-3000	1.035	*****	*****	-1578
				2800-2900	0.314	*****	*****	-2162
				2745-2800	0.029	*****	*****	-2715
	Summary Data			2745-3628	9.308	*****	*****	- 290

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM - TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
22.3	VERNAGT F.	1987-88	FXD	3500-3627	0.025	*****	*****	- 24
	(A 00211)			3400-3500	0.356	*****	*****	80
				3300-3400	0.659	*****	*****	61
				3200-3300	1.958	*****	*****	60
				3100-3200	2.534	*****	*****	- 105
				3000-3100	2.128	*****	*****	- 816
				2900-3000	1.052	*****	*****	-1827
				2800-2900	0.314	*****	*****	-2242
				2748-2800	0.026	*****	*****	-3095
	Summary Data			2748-3627	9.088	*****	*****	- 497
22.4	VERNAGT F.	1988-89	FXD	3500-3627	0.025	*****	*****	- 4
	(A 00211)			3400-3500	0.356	*****	*****	287
				3300-3400	0.695	*****	*****	137
				3200-3300	1.958	*****	*****	136
				3100-3200	2.534	*****	*****	3
				3000-3100	2.128	*****	*****	- 455
				2900-3000	1.052	*****	*****	-1430
				2800-2900	0.314	*****	*****	-2420
				2748-2800	0.026	*****	*****	-3220
	Summary Data			2748-3627	9.088	*****	*****	- 312
22.5	VERNAGT F.	1989-90	FXD	3500-3627	0.025	*****	*****	- 83
	(A 00211)			3400-3500	0.356	*****	*****	- 68
				3300-3400	0.695	*****	*****	29
				3200-3300	1.958	*****	*****	- 15
				3100-3200	2.534	*****	*****	- 258
				3000-3100	2.128	*****	*****	- 807
				2900-3000	1.052	*****	*****	-1786
				2800-2900	0.314	*****	*****	-2545
				2748-2800	0.026	*****	*****	-3220
	Summary Data			2748-3627	9.088	*****	*****	- 568
23.1	CARESER	1985-86	FXD	3200-3350	0.427	*****	*****	- 420
	(I 00701)			3150-3200	0.470	*****	*****	- 800
				3100-3150	1.321	*****	*****	-1000
				3050-3100	1.040	*****	*****	-1190
				3000-3050	0.877	*****	*****	-1390
				2950-3000	0.398	*****	*****	-1580
				2900-2950	0.228	*****	*****	-1780
				2860-2900	0.068	*****	*****	-1970
	Summary Data			2860-3350	4.829	*****	*****	-1140
23.2	CARESER	1986-87	FXD	3200-3350	0.427	*****	*****	- 900
	(I 00701)			3150-3200	0.470	*****	*****	-1300
				3100-3150	1.321	*****	*****	-1500
				3050-3100	1.040	*****	*****	-1700
				3000-3050	0.877	*****	*****	-1900
				2950-3000	0.398	*****	*****	-2100
				2900-2950	0.228	*****	*****	-2300
				2860-2900	0.068	*****	*****	-2500
	Summary Data			2860-3350	4.829	*****	*****	-1640
23.3	CARESER	1987-88	FXD	3200-3350	0.427	*****	*****	- 900
	(I 00701)			3150-3200	0.470	*****	*****	- 730
				3100-3150	1.321	*****	*****	- 890
				3050-3100	1.040	*****	*****	-1060
				3000-3050	0.877	*****	*****	-1220
				2950-3000	0.398	*****	*****	-1390
				2900-2950	0.228	*****	*****	-1550
				2860-2900	0.068	*****	*****	-1720
	Summary Data			2860-3350	4.829	*****	*****	-1010
23.4	CARESER	1988-89	FXD	3200-3350	0.427	*****	*****	0
	(I 00701)			3150-3200	0.470	*****	*****	- 440
				3100-3150	1.321	*****	*****	- 660

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3050-3100	1.040	*****	*****	- 880
				3000-3050	0.877	*****	*****	-1100
				2950-3000	0.398	*****	*****	-1310
				2900-2950	0.228	*****	*****	-1530
				2860-2900	0.068	*****	*****	-1750
	Summary Data			2860-3350	4.829	*****	*****	- 820
23.5	CARESER (I 00701)	1989-90	FXD	3200-3350	0.427	*****	*****	- 690
				3150-3200	0.470	*****	*****	-1170
				3100-3150	1.321	*****	*****	-1410
				3050-3100	1.040	*****	*****	-1640
				3000-3050	0.877	*****	*****	-1880
				2950-3000	0.398	*****	*****	-2120
				2900-2950	0.228	*****	*****	-2360
				2860-2900	0.068	*****	*****	-2590
	Summary Data			2860-3350	4.829	*****	*****	-1580
24.1	LEWIS (KN 00008)	1985-86	FXD	4950-5000	0.0028	*****	*****	- 100
				4900-4950	0.0140	*****	*****	- 100
				4850-4900	0.0568	*****	*****	- 80
				4800-4850	0.0438	*****	*****	- 100
				4750-4800	0.0628	*****	*****	- 610
				4700-4750	0.0430	*****	*****	-1420
				4650-4700	0.0247	*****	*****	-1600
				4600-4650	0.0129	*****	*****	-2170
				4550-4600	0.0001	*****	*****	-2400
	Summary Data			4550-5000	0.2609	*****	*****	- 680
24.2	LEWIS (KN 00008)	1986-87	FXD	4950-5000	0.0009	*****	*****	- 100
				4900-4950	0.0126	*****	*****	- 60
				4850-4900	0.0530	*****	*****	70
				4800-4850	0.0439	*****	*****	- 20
				4750-4800	0.0561	*****	*****	- 510
				4700-4750	0.0449	*****	*****	-1640
				4650-4700	0.0238	*****	*****	-2170
				4600-4650	0.0119	*****	*****	-2200
	Summary Data			4600-5000	0.2471	*****	*****	- 770
24.3	LEWIS (KN 00008)	1987-88	FXD	4950-5000	0.0009	*****	*****	-1500
				4900-4950	0.0126	*****	*****	-1500
				4850-4900	0.0530	*****	*****	-1660
				4800-4850	0.0439	*****	*****	-1940
				4750-4800	0.0561	*****	*****	-2200
				4700-4750	0.0449	*****	*****	-3120
				4650-4700	0.0238	*****	*****	-3000
				4600-4650	0.0119	*****	*****	-3000
	Summary Data			4600-5000	0.2471	*****	*****	-2300
24.4	LEWIS (KN 00008)	1988-89	FXD	4950-5000	0.0009	*****	*****	1500
				4900-4950	0.0126	*****	*****	1550
				4850-4900	0.0530	*****	*****	1290
				4800-4850	0.0439	*****	*****	1200
				4750-4800	0.0561	*****	*****	1200
				4700-4750	0.0449	*****	*****	60
				4650-4700	0.0238	*****	*****	- 520
				4600-4650	0.0119	*****	*****	- 800
	Summary Data			4600-5000	0.2471	*****	*****	770
24.5	LEWIS (KN 00008)	1989-90	FXD	4950-5000	0.0009	*****	*****	- 100
				4900-4950	0.0126	*****	*****	- 70
				4850-4900	0.0530	*****	*****	- 110
				4800-4850	0.0439	*****	*****	- 110
				4750-4800	0.0561	*****	*****	-1080
				4700-4750	0.0449	*****	*****	-1970
				4650-4700	0.0238	*****	*****	-2410

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				4600-4650	0.0119	*****	*****	-2600
	Summary Data			4600-5000	0.2471	*****	*****	-1010
25.1	ABRAMOV (SU 04101)	1985-86	STR	>4600	0.840	760	- 50	710
				4600-4500	0.910	1000	- 460	540
				4500-4400	1.550	1350	- 890	460
				4400-4300	4.890	1380	-1180	200
				4300-4200	4.720	1150	-1480	- 330
				4200-4100	5.130	980	-2310	-1330
				4100-4000	4.010	870	-2760	-1890
				4000-3900	1.970	600	-3420	-2820
				3900-3800	1.270	440	-3960	-3520
				3800-3700	0.610	380	-4610	-4230
				3700-3620	0.110	380	-5290	-4910
	Summary Data			3620-4960	26.010	1010	-2020	-1010
25.2	ABRAMOV (SU 04101)	1986-87	STR	>4600	0.840	1120	- 420	700
				4600-4500	0.910	1770	- 610	1160
				4500-4400	1.550	2130	- 670	1460
				4400-4300	4.890	2170	- 730	1440
				4300-4200	4.720	1870	- 940	930
				4200-4100	5.130	1700	-1510	190
				4100-4000	4.010	1490	-2010	- 520
				4000-3900	1.970	1180	-2620	-1440
				3900-3800	1.270	940	-3280	-2340
				3800-3700	0.590	860	-4230	-3370
				3700-3620	0.100	870	-4610	-3740
	Summary Data			3620-4960	25.980	1700	-1460	240
25.3	ABRAMOV (SU 04101)	1987-88	STR	>4600	0.840	1340	- 300	1040
				4600-4500	0.910	2190	- 580	1610
				4500-4400	1.550	2530	- 770	1760
				4400-4300	4.890	2400	- 970	1430
				4300-4200	4.720	2120	-1270	850
				4200-4100	5.130	1830	-2110	- 280
				4100-4000	4.010	1570	-2620	-1050
				4000-3900	1.970	1340	-3500	-2160
				3900-3800	1.270	1130	-4100	-2970
				3800-3700	0.570	960	-5010	-4050
				3700-3620	0.100	810	-5150	-4340
	Summary Data			3620-4960	25.960	1900	-1890	10
25.4	ABRAMOV (SU 04101)	1988-89	STR	>4600	0.840	840	- 360	480
				4600-4500	0.910	1520	- 570	950
				4500-4400	1.550	1530	- 510	1020
				4400-4300	4.890	1510	- 610	900
				4300-4200	4.720	1340	- 940	400
				4200-4100	5.130	1160	-1510	- 350
				4100-4000	4.010	880	-1930	-1050
				4000-3900	1.970	740	-2590	-1850
				3900-3800	1.270	630	-3170	-2540
				3800-3700	0.550	630	-3790	-3160
				3700-3620	0.090	590	-4200	-3610
	Summary Data			3620-4960	25.930	1190	-1420	- 230
25.5	ABRAMOV (SU 04101)	1989-90	STR	>4600	0.840	1040	- 640	430
				4600-4500	0.910	1940	- 970	970
				4500-4400	1.550	2000	- 940	1060
				4400-4300	4.890	2080	-1120	960
				4300-4200	4.720	1850	-1490	360
				4200-4100	5.130	1610	-1510	- 670
				4100-4000	4.010	1380	-3150	-1770
				4000-3900	1.970	1030	-3600	-2570
				3900-3800	1.270	820	-4430	-3610
				3800-3700	0.540	760	-5350	-4590
				3700-3620	0.080	540	-5890	-5350
	Summary Data			3620->4960	25.910	1620	-2150	- 530

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
26.1	DJANKUAT	1985-86	STR	>3600	0.228	1780	-1310	470
	(SU 03010)			3500-3600	0.491	2620	-1290	1330
				3400-3600	0.373	2350	-1670	680
				3300-3400	0.375	2540	-2270	270
				3200-3300	0.435	2570	-2690	- 120
				3100-3200	0.362	2440	-3290	- 850
				3000-3100	0.296	2310	-3910	-1600
				2900-3000	0.287	1590	-4760	-3170
				2800-2900	0.186	1250	-5160	-3910
				2698-2800	0.093	1240	-4980	-3740
	Summary Data			2698->3600	3.126	2240	-2740	- 500
26.2	DJANKUAT	1986-87	STR	>3600	0.228	300	-1150	1930
	(SU 03010)			3500-3600	0.491	4820	-1130	3690
				3400-3500	0.373	4410	-1710	2690
				3300-3400	0.375	4510	-2070	2440
				3200-3300	0.435	4380	-2180	2200
				3100-3200	0.362	3980	-2640	1340
				3000-3100	0.296	3990	-3460	530
				2900-3000	0.287	3150	-4530	-1380
				2800-2900	0.186	2480	-4870	-2390
				2698-2800	0.093	2330	-4670	-2340
	Summary Data			2698->3600	3.126	4000	-2460	1540
26.3	DJANKUAT	1987-88	STR	>3600	0.228	170	-1080	680
	(SU 03010)			3500-3600	0.491	3530	-1030	2500
				3400-3500	0.373	3080	-1390	1690
				3300-3400	0.375	2970	-1600	1370
				3200-3300	0.435	2990	-1820	1170
				3100-3200	0.362	2620	-2080	540
				3000-3100	0.296	2250	-2610	- 360
				2900-3000	0.287	1650	-4120	-2470
				2800-2900	0.186	1430	-4720	-3290
				2698-2800	0.093	1360	-4450	-3090
	Summary Data			2698->3600	3.126	2620	-2100	520
26.4	DJANKUAT	1988-89	STR	>3600	0.228	2110	-1090	1020
	(SU 03010)			3500-3600	0.491	3150	-1180	1970
				3400-3500	0.373	2720	-1490	1230
				3300-3400	0.375	2750	-1950	800
				3200-3300	0.435	2780	-2140	640
				3100-3200	0.362	2610	-2710	- 100
				3000-3100	0.296	2130	-3540	-1410
				2900-3000	0.287	1720	-4620	-2900
				2800-2900	0.186	1450	-5060	-3610
				2698-2800	0.093	1370	-4660	-3290
	Summary Data			2698->3600	3.126	2490	-2450	40
26.5	DJANKUAT	1989-90	STR	>3600	0.228	2020	-1070	950
	(SU 03010)			3500-3600	0.491	3600	-1180	2420
				3400-3500	0.373	3100	-1430	1670
				3300-3400	0.375	2670	-1780	890
				3200-3300	0.435	2640	-2130	510
				3100-3200	0.362	2430	-2740	- 310
				3000-3100	0.296	2450	-3390	- 940
				2900-3000	0.287	2120	-3980	-1860
				2800-2900	0.186	2040	-4600	-2560
				2698-2800	0.093	1950	-4660	-2710
	Summary Data			2698-3600	3.126	2660	-2320	340
27.1	GARABASHI	1986-87	STR	4600-5000	0.228	450	- 10	440
	(SU 03031)			4500-4600	0.130	560	- 80	480
				4400-4500	0.156	600	- 160	440
				4300-4400	0.152	640	- 290	350
				4200-4300	0.221	800	- 310	490
				4100-4200	0.263	1020	- 240	780
				4000-4100	0.422	1630	- 280	1350

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3900-4000	0.628	2250	- 490	1760
				3800-3900	0.635	1790	-1130	660
				3700-3800	0.489	1680	-1480	200
				3600-3700	0.322	1510	-1920	- 410
				3500-3600	0.269	1480	-2240	- 760
				3400-3500	0.302	1420	-2470	-1050
				3300-3400	0.255	1530	-2630	-1100
	Summary Data			3300-5000	4.472	1470	-1060	410
27.2	GARABASHI (SU 03031)	1987-88	STR	4600-5000	0.228	350	0	350
				4500-4600	0.130	410	- 10	400
				4400-4500	0.156	410	- 60	350
				4300-4400	0.152	410	- 170	240
				4200-4300	0.221	550	- 200	350
				4100-4200	0.263	860	- 180	680
				4000-4100	0.422	1330	- 260	1070
				3900-4000	0.628	1570	- 510	1060
				3800-3900	0.635	1510	- 910	600
				3700-3800	0.489	1380	-1260	120
				3600-3700	0.322	1220	-1610	- 390
				3500-3600	0.269	1530	-1950	- 420
				3400-3500	0.302	1370	-2290	- 920
				3300-3400	0.255	1270	-2520	-1250
	Summary Data			3300-5000	4.472	1190	- 920	270
27.3	GARABASHI (SU 03031)	1988-89	STR	4600-5000	0.228	300	0	300
				4500-4600	0.130	430	- 30	400
				4400-4500	0.156	430	- 90	340
				4300-4400	0.152	400	- 180	220
				4200-4300	0.221	570	- 170	400
				4100-4200	0.263	920	- 150	770
				4000-4100	0.422	1740	- 200	1540
				3900-4000	0.628	1970	- 500	1470
				3800-3900	0.635	1580	-1160	420
				3700-3800	0.489	1430	-1900	- 470
				3600-3700	0.322	1230	-2430	-1200
				3500-3600	0.269	1570	-2950	-1380
				3400-3500	0.302	1400	-3360	-1960
				3300-3400	0.255	1180	-3650	-2470
	Summary Data			3300-5000	4.472	1310	-1280	30
28.1	GOLUBIN (SU 05060)	1985-86	STR	4300-4350	0.018	400	- 100	300
				4250-4300	0.076	560	- 150	410
				4200-4250	0.250	720	- 190	530
				4150-4200	0.188	870	- 260	610
				4100-4150	0.406	980	- 385	595
				4050-4100	0.352	1067	- 496	571
				4000-4050	1.293	810	- 606	204
				3950-4000	0.465	595	-1026	- 431
				3900-3950	0.540	680	- 886	- 206
				3850-3900	0.589	769	- 893	- 124
				3800-3850	0.416	735	- 863	- 128
				3750-3800	0.184	660	-1078	- 418
				3700-3750	0.229	570	-1484	- 914
				3650-3700	0.271	474	-2324	-1850
				3600-3650	0.235	418	-2395	-1977
				3550-3600	0.206	290	-2558	-2268
				3500-3550	0.170	176	-2243	-2067
				3450-3500	0.145	234	-2444	-2210
				3400-3450	0.101	210	-2603	-2393
				3350-3400	0.044	157	-2926	-2769
				3300-3350	0.029	161	-2989	-2828
				3250-3300	0.008	236	-3593	-3357
	Summary Data			3250-4350	6.215	685	-1057	- 372
28.2	GOLUBIN (SU 05060)	1986-87	STR	4300-4350	0.018	60	0	60
				4250-4300	0.076	200	- 5	195
				4200-4250	0.250	360	- 10	350

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				4150-4200	0.188	520	- 15	505
				4100-4150	0.406	1095	- 20	1075
				4050-4100	0.352	1287	- 75	1212
				4000-4050	1.293	1170	- 585	585
				3950-4000	0.465	930	- 641	289
				3900-3950	0.540	914	- 490	424
				3850-3900	0.589	1447	- 316	1131
				3800-3850	0.416	1013	- 300	713
				3750-3800	0.184	978	- 510	468
				3700-3750	0.229	698	-1096	- 398
				3650-3700	0.271	679	-1977	-1298
				3600-3650	0.235	527	-2083	-1556
				3550-3600	0.206	449	-2130	-1681
				3500-3550	0.170	247	-2275	-2028
				3450-3500	0.145	179	-2362	-2183
				3400-3450	0.101	231	-2684	-2453
				3350-3400	0.044	222	-3037	-2815
				3300-3350	0.029	286	-3157	-2871
				3250-3300	0.008	442	-3256	-2814
	Summary Data			3250-4350	6.215	915	- 763	152
28.3	GOLUBIN (SU 05060)	1987-88	STR	4300-4350	0.018	500	- 300	200
				4250-4300	0.076	630	- 350	280
				4200-4250	0.250	760	- 410	350
				4150-4200	0.188	900	- 470	430
				4100-4150	0.406	1036	- 540	496
				4050-4100	0.352	1358	- 597	761
				4000-4050	1.293	1220	- 700	520
				3950-4000	0.465	1064	- 815	249
				3900-3950	0.540	1117	- 754	363
				3850-3900	0.589	1042	- 940	102
				3800-3850	0.416	980	-2050	-1070
				3750-3800	0.184	980	-2190	-1210
				3700-3750	0.229	712	-2578	-1866
				3650-3700	0.271	750	-2702	-1952
				3600-3650	0.235	413	-2887	-2474
				3550-3600	0.206	431	-2955	-2524
				3500-3550	0.170	252	-3284	-3032
				3450-3500	0.145	175	-3444	-3269
				3400-3450	0.101	290	-3703	-3413
				3350-3400	0.044	181	-3929	-3748
				3300-3350	0.029	300	-4434	-4134
				3250-3300	0.008	378	-4313	-3935
	Summary Data			3250-4350	6.215	942	-1374	- 432
28.4	GOLUBIN (SU 05060)	1988-89	STR	4300-4350	0.018	50	- 50	0
				4250-4300	0.076	170	- 106	64
				4200-4250	0.250	291	- 162	129
				4150-4200	0.188	411	- 219	192
				4100-4150	0.406	532	- 275	257
				4050-4100	0.352	652	- 331	321
				4000-4050	1.293	584	- 388	196
				3950-4000	0.465	517	- 444	73
				3900-3950	0.540	585	- 304	281
				3850-3900	0.589	543	- 476	67
				3800-3850	0.416	485	-1021	- 536
				3750-3800	0.184	427	-1566	-1139
				3700-3750	0.229	369	-2111	-1742
				3650-3700	1.271	311	-2019	-1708
				3600-3650	0.235	275	-2046	-1771
				3550-3600	0.206	278	-2299	-2021
				3500-3550	0.170	197	-2415	-2218
				3450-3500	1.145	164	-2589	-2425
				3400-3450	0.101	125	-2901	-2776
				3350-3400	0.044	133	-3244	-3111
				3300-3350	0.029	193	-3276	-3083
				3250-3300	0.008	609	-3400	-2791
	Summary Data			3250-4350	6.215	466	- 888	- 422
28.5	GOLUBIN (SU 05060)	1989-90	STR	4300-4350	0.018	60	- 20	40
				4250-4300	0.076	440	- 100	340

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				4200-4250	0.250	730	- 185	545
				4150-4200	0.188	960	- 270	690
				4100-4150	0.406	1009	- 360	649
				4050-4100	0.352	1154	- 473	681
				4000-4050	1.293	1069	- 740	329
				3950-4000	0.465	1010	- 984	26
				3900-3950	0.540	865	- 955	- 90
				3850-3900	0.589	1110	- 875	235
				3800-3850	0.416	956	-1440	- 484
				3750-3800	0.184	432	-2040	-1608
				3700-3750	0.229	640	-2640	-2000
				3650-3700	1.271	480	-3261	-2781
				3600-3650	0.235	361	-3261	-2900
				3550-3600	0.206	403	-3352	-2949
				3500-3550	0.170	250	-3578	-3328
				3450-3500	1.145	303	-4040	-3737
				3400-3450	0.101	177	-4075	-3898
				3350-3400	0.044	185	-4585	-4400
				3300-3350	0.029	105	-4768	-4663
				3250-3300	0.008	8	-4850	-4842
	Summary Data			3250-4350	6.215	820	-1410	- 590
29.1	KOZELSKIY (SU 08005)	1987-88	STR	1900-2050	0.120	3000	-3060	- 60
				1800-1900	0.333	2750	-3480	- 730
				1700-1800	0.273	4060	-4490	- 430
				1600-1700	0.165	3150	-4720	-1570
				1500-1600	0.110	2450	-5450	-3000
				1400-1500	0.110	2310	-6320	-4010
				1300-1400	0.143	3150	-6970	-3820
				1200-1300	0.095	2450	-7740	-5290
				1100-1200	0.141	1850	-7840	-5990
				1000-1100	0.204	1600	-2400	- 800
				880-1000	0.106	1000	-1350	- 350
	Summary Data			880-2050	1.800	2670	-4610	-1940
29.2	KOZELSKIY (SU 08005)	1988-89	STR	1900-2050	0.120	3260	-3140	120
				1800-1900	0.333	3140	-3350	- 210
				1700-1800	0.273	4640	-3840	800
				1600-1700	0.165	4580	-4740	- 160
				1500-1600	0.110	3920	-5230	-1310
				1400-1500	0.110	3300	-5870	-2570
				1300-1400	0.143	3730	-6500	-2770
				1200-1300	0.095	3210	-6940	-3730
				1100-1200	0.141	3430	-4780	-1350
				1000-1100	0.204	1800	-2200	- 400
				880-1000	0.106	1700	-1900	- 200
	Summary Data			880-2050	1.800	3400	-4140	- 740
29.3	KOZELSKIY (SU 08005)	1989-90	STR	1900-2050	0.120	3640	-3460	180
				1800-1900	0.333	3340	-3310	30
				1700-1800	0.273	4810	-4670	140
				1600-1700	0.165	5310	-5560	- 250
				1500-1600	0.110	4510	-6410	-1900
				1400-1500	0.110	3540	-7130	-3590
				1300-1400	0.143	3400	-8550	-5150
				1200-1300	0.095	2850	-9080	-6230
				1100-1200	0.141	2330	-4900	-2570
				1000-1100	0.204	1750	-1850	- 100
				880-1000	0.106	1140	-1340	- 200
	Summary Data			880-2050	1.800	3440	-4720	-1280
30.1	LEVIY AKTRU (SU 07102)	1987-88	STR	3900-4000	0.160	1310	0	1310
				3800-3900	0.160	1100	0	1100
				3700-3800	0.330	900	0	900
				3600-3700	0.690	980	- 10	970
				3500-3600	0.550	1180	- 20	1160

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3400-3500	0.580	1240	- 90	1150
				3300-3400	0.740	1260	- 140	1120
				3200-3100	0.540	1100	- 440	660
				3100-3200	0.480	940	- 780	160
				3000-3100	0.460	1160	-1130	- 30
				2900-3000	0.570	1050	-1650	- 600
				2800-2900	0.600	970	-1880	- 910
				2500-2800	0.380	670	-2650	-1980
	Summary Data			2500-4000	6.240	1070	- 700	370
30.2	LEVIY AKTRU	1988-89	STR	3900-4000	0.160	1130	0	1130
	(SU 07102)			3800-3900	0.160	950	0	950
				3700-3800	0.330	810	0	810
				3600-3700	0.690	940	0	940
				3500-3600	0.550	1100	0	1100
				3400-3500	0.580	1040	- 40	1000
				3300-3400	0.740	1080	- 90	990
				3200-3100	0.540	1100	- 530	570
				3100-3200	0.480	1040	-1130	- 90
				3000-3100	0.460	1150	-1500	- 350
				2900-3000	0.570	1020	-2400	-1380
				2800-2900	0.600	730	-2800	-2070
				2500-2800	0.380	560	-3400	-2840
	Summary Data			2500-4000	6.240	980	- 950	30
31.1	MALIY AKTRU	1987-88	STR	>3700	0.020	790	0	790
	(SU 07100)			3600-3700	0.140	1050	0	1050
				3500-3600	0.270	1330	0	1330
				3400-3500	0.290	1500	- 20	1480
				3300-3400	0.680	1460	- 150	1310
				3200-3300	0.790	1280	- 410	870
				3100-3200	0.180	890	- 930	- 40
				3000-3100	0.130	780	- 920	- 140
				2900-3000	0.080	700	- 930	- 230
				2800-2900	0.040	640	-1640	-1000
				2700-2800	0.050	590	-1890	-1300
				2600-2700	0.050	580	-2080	-1500
				2500-2600	0.060	540	-2820	-2280
				2400-2500	0.030	740	-3540	-2800
				2300-2400	0.040	590	-3870	-3280
				2200-2300	0.010	530	-4330	-3800
	Summary Data			2200->3700	2.860	1160	- 690	470
31.2	MALIY AKTRU	1988-89	STR	>3700	0.020	990	0	990
	(SU 07100)			3600-3700	0.140	1060	- 130	930
				3500-3600	0.270	1050	- 180	870
				3400-3500	0.290	1360	- 120	1240
				3300-3400	0.680	1300	- 230	1070
				3200-3300	0.790	1070	- 500	570
				3100-3200	0.180	850	- 870	- 20
				3000-3100	0.130	870	-1190	- 320
				2900-3000	0.080	860	-1160	- 300
				2800-2900	0.040	770	-1550	- 780
				2700-2800	0.050	540	-2390	-1850
				2600-2700	0.050	570	-2570	-2000
				2500-2600	0.060	530	-2730	-2200
				2400-2500	0.030	720	-3720	-3000
				2300-2400	0.040	410	-4670	-4260
				2200-2300	0.010	400	-5200	-4800
	Summary Data			2200->3700	2.860	1040	- 820	220
32.1	NO. 125	1987-88	STR	3500-3552	0.100	460	- 300	160
	(SU 07105)			3400-3500	0.220	570	- 390	180
				3300-3400	0.220	760	- 510	250
				3200-3300	0.150	940	- 400	540
				3100-3200	0.150	700	- 610	90

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3000-3100	0.090	750	-1320	- 570
	Summary Data			3000-3552	0.930	700	- 540	160
32.2	NO. 125 (SU 07105)	1988-89	STR	3500-3552	0.100	560	- 390	170
				3400-3500	0.220	580	- 390	190
				3300-3400	0.220	640	- 410	230
				3200-3300	0.150	860	- 370	490
				3100-3200	0.150	520	- 620	- 100
				3000-3100	0.090	520	-1310	- 790
	Summary Data			3000-3552	0.930	620	- 520	100
33.1	NO. 131 (SU 05081)	1987-88	FXD	4350-4430	0.065	428	- 527	- 99
				4200-4350	0.122	434	- 854	- 420
				4100-4200	0.084	554	-1299	- 745
				4000-4100	0.178	576	-1426	- 850
				3950-4000	0.028	486	-1580	-1094
				3850-3950	0.034	466	-2303	-1836
	Summary Data			3850-4430	0.511	507	-1219	- 712
33.2	NO. 131 (SU 05081)	1988-89	FXD	4350-4430	0.065	609	- 116	493
				4200-4350	0.122	486	- 430	56
				4100-4200	0.084	515	- 974	- 459
				4000-4100	0.178	635	-1301	- 666
				3950-4000	0.028	507	-1380	- 873
				3850-3950	0.034	324	-1413	-1089
	Summary Data			3850-4430	0.511	548	- 902	- 354
34.1	NO. 356 (SU 05106)	1985-86	STR	4500-4800	0.380	650	- 100	750
				4450-4500	0.156	1240	- 390	850
				4300-4450	0.977	516	- 340	176
				4200-4300	0.562	502	- 372	130
				4150-4200	0.336	420	- 760	- 340
				4100-4150	0.273	430	-1081	- 651
				4050-4100	0.266	346	-1148	- 802
				4000-4050	0.211	360	-1160	- 800
				3950-4000	0.180	286	-1232	- 946
				3860-3950	0.273	256	-1486	-1230
	Summary Data			3860-4800	3.614	491	- 643	- 143
34.2	NO. 356 (SU 05106)	1986-87	STR	4600-4800	0.208	830	- 34	796
				4550-4600	0.070	918	51	969
				4500-4550	0.102	1030	- 46	984
				4400-4450	0.156	1004	124	1128
				4350-4400	0.180	940	44	984
				4300-4350	0.375	776	62	838
				4250-4300	0.422	780	- 123	657
				4200-4250	0.289	672	- 210	462
				4150-4200	0.273	658	- 355	303
				4100-4150	0.336	483	- 391	92
				4100-4150	0.273	469	- 489	- 20
				4050-4100	0.266	416	- 657	- 241
				4000-4050	0.211	397	- 807	- 410
				3950-4000	0.180	301	-1034	- 733
				3900-3950	0.173	258	-1206	- 948
				3860-3900	0.100	147	-1289	-1142
	Summary Data			3860-4800	3.614	625	- 405	220
34.3	NO. 356 (SU 05106)	1987-88	STR	4600-4800	0.208	1060	- 378	682
				4550-4600	0.070	1271	- 113	1158
				4500-4550	0.102	1257	- 527	730
				4400-4450	0.156	970	- 384	586
				4350-4400	0.180	622	- 134	488
				4300-4350	0.375	406	- 235	171
				4250-4300	0.422	432	- 420	12

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				4200-4250	0.289	310	- 421	- 111
				4150-4200	0.273	403	-1032	- 629
				4100-4150	0.336	343	-1224	- 881
				4100-4150	0.273	314	-1219	- 905
				4050-4100	0.266	291	-1527	-1236
				4000-4050	0.211	270	-1701	-1431
				3950-4000	0.180	257	-1824	-1567
				3900-3950	0.173	251	-2019	-1768
				3860-3900	0.100	225	-2391	-2166
	Summary Data			3860-4800	3.614	466	- 919	- 453
34.4	NO. 356 (SU 05106)	1988-89	STR	4600-4800	0.208	357	69	426
				4550-4600	0.070	481	147	628
				4500-4550	0.102	603	90	693
				4400-4450	0.156	748	339	1087
				4350-4400	0.180	646	324	970
				4300-4350	0.375	420	- 136	284
				4250-4300	0.422	371	- 287	84
				4200-4250	0.289	411	- 383	28
				4150-4200	0.273	389	- 435	- 46
				4100-4150	0.336	344	- 962	- 618
				4100-4150	0.273	395	-1133	- 738
				4050-4100	0.266	334	-1099	- 765
				4000-4050	0.211	323	-1185	- 862
				3950-4000	0.180	250	-1329	-1079
				3900-3950	0.173	182	-1418	-1236
				3860-3900	0.100	73	-1847	-1774
	Summary Data			3860-4800	3.614	400	- 576	- 167
35.1	PRAVIY AKTRU (SU 07101)	1987-88	STR	3600-3700	0.170	1260	0	1260
				3500-3600	0.400	1470	0	1470
				3400-3500	0.370	1300	0	1300
				3300-3400	0.550	1450	0	1450
				3200-3300	0.340	1130	- 320	810
				3100-3200	0.790	990	- 710	280
				3000-3100	0.660	890	-1070	- 180
				2900-3000	0.500	950	-1470	- 520
				2800-2900	0.260	840	-1710	- 870
				2700-2800	0.140	750	-2120	-1370
				2600-2700	0.100	720	-2760	-2040
				2500-2600	0.120	430	-2770	-2340
				2400-2500	0.020	370	-2910	-5440
	Summary Data			2400-3700	4.420	1080	- 770	310
35.2	PRAVIY AKTRU (SU 07101)	1988-89	STR	3600-3700	0.170	1100	0	1100
				3500-3600	0.400	1200	0	1200
				3400-3500	0.370	1160	0	1160
				3300-3400	0.550	1290	0	1290
				3200-3300	0.340	1150	- 340	810
				3100-3200	0.790	1120	- 710	410
				3000-3100	0.660	950	-1050	- 100
				2900-3000	0.500	790	-1590	- 800
				2800-2900	0.260	680	-2090	-1410
				2700-2800	0.140	510	-2770	-2260
				2600-2700	0.100	480	-2980	-2500
				2500-2600	0.120	460	-3220	-2760
				2400-2500	0.020	420	-3560	-3140
	Summary Data			2400-3700	4.420	1020	- 830	190
36.1	SHUMSKIY (SU 06001)	1984-85	FXD	4380-4442	0.013	303	121	424
				4300-4380	0.053	321	130	451
				4220-4300	0.072	345	146	491
				4140-4220	0.094	379	184	563
				4060-4140	0.115	425	204	629
				3980-4060	0.133	477	163	640
				3900-3980	0.121	543	227	770

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3820-3900	0.177	624	201	825
				3740-3820	0.255	738	- 32	706
				3720-3740	0.096	868	- 251	617
				3700-3720	0.114	673	- 509	164
				3680-3700	0.145	633	- 988	- 355
				3660-3680	0.111	537	-1071	- 534
				3640-3660	0.077	465	-1167	- 702
				3620-3640	0.089	443	-1167	- 724
				3600-3620	0.076	430	-1145	- 715
				3580-3600	0.076	500	-1315	- 815
				3560-3580	0.092	491	-1455	- 964
				3540-3560	0.104	401	-1621	-1220
				3520-3540	0.113	372	-1828	-1456
				3500-3520	0.043	478	-1734	-1256
				3480-3500	0.035	852	-1608	-1026
				3460-3480	0.043	608	-1518	- 910
				3440-3460	0.058	572	-1608	-1036
				3420-3440	0.092	469	-1741	-1272
				3400-3420	0.052	432	-1808	-1376
				3380-3400	0.038	419	-1700	-1281
				3360-3380	0.031	438	-1652	-1214
				3340-3360	0.034	460	-1848	-1388
				3320-3340	0.053	432	-2150	-1718
				3300-3320	0.046	389	-2284	-1895
				3280-3300	0.026	500	-2207	-1707
				3260-3280	0.020	622	-2102	-1480
				3240-3260	0.023	609	-2137	-1528
				3220-3240	0.027	507	-2302	-1795
				3200-3220	0.028	494	-2420	-1926
				3180-3200	0.025	473	-2540	-2067
				3160-3180	0.015	369	-2520	-2151
				3140-3160	0.006	306	-2426	-2120
	Summary Data			3140-4442	2.823	525	- 863	- 338
36.2	SHUMSKIY (SU 06001)	1985-86	FXD	4380-4442	0.013	217	87	304
				4300-4380	0.053	230	92	322
				4220-4300	0.072	247	104	351
				4140-4220	0.094	272	131	403
				4060-4140	0.115	304	138	442
				3980-4060	0.133	344	62	406
				3900-3980	0.121	390	113	503
				3820-3900	0.177	451	25	476
				3740-3820	0.255	528	- 249	279
				3720-3740	0.096	646	- 701	- 55
				3700-3720	0.114	543	- 801	- 258
				3680-3700	0.145	580	- 846	- 266
				3660-3680	0.111	533	- 906	- 373
				3640-3660	0.077	495	- 986	- 491
				3620-3640	0.089	447	-1231	- 784
				3600-3620	0.076	510	-1238	- 728
				3580-3600	0.076	527	-1288	- 761
				3560-3580	0.092	509	-1444	- 935
				3540-3560	0.104	501	-1600	-1099
				3520-3540	0.113	470	-1707	-1237
				3500-3520	0.042	521	-1622	-1101
				3480-3500	0.035	575	-1501	- 926
				3460-3480	0.043	577	-1613	- 824
				3440-3460	0.058	559	-1613	-1054
				3420-3440	0.092	536	-1820	-1284
				3400-3420	0.052	461	-1855	-1394
				3380-3400	0.038	454	-1827	-1373
				3360-3380	0.031	464	-1761	-1297
				3340-3360	0.034	461	-1819	-1358
				3320-3340	0.053	442	-2029	-1587
				3300-3320	0.046	412	-2152	-1740
				3280-3300	0.026	490	-2091	-1601
				3260-3280	0.020	510	-1913	-1403
				3240-3260	0.023	491	-1891	-1400
				3220-3240	0.027	439	-2124	-1685
				3200-3220	0.028	446	-2313	-1867
				3180-3200	0.025	478	-2561	-2083
				3160-3180	0.015	450	-2629	-2179

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3140-3160	0.006	430	-2678	-2248
	Summary Data			3140-4442	2.822	468	- 906	- 438
36.3	SHUMSKIY	1986-87	FXD	4380-4442	0.013	254	103	357
	(SU 06001)			4300-4380	0.053	269	108	377
				4220-4300	0.072	288	120	408
				4140-4220	0.094	317	158	475
				4060-4140	0.115	356	172	528
				3980-4060	0.133	402	92	494
				3900-3980	0.121	456	154	610
				3820-3900	0.177	525	69	594
				3740-3820	0.255	617	- 262	355
				3720-3740	0.096	750	- 456	94
				3700-3720	0.114	622	- 818	- 196
				3680-3700	0.145	589	-1310	- 721
				3660-3680	0.111	450	-1390	- 940
				3640-3660	0.077	436	-1590	-1154
				3620-3640	0.089	507	-1831	-1324
				3600-3620	0.076	563	-1734	-1171
				3580-3600	0.076	554	-1674	-1120
				3560-3580	0.092	525	-1705	-1180
				3540-3560	0.104	526	-1890	-1364
				3520-3540	0.113	539	-2127	-1588
				3500-3520	0.043	562	-1932	-1370
				3480-3500	0.035	601	-1726	-1125
				3460-3480	0.043	609	-1596	- 987
				3440-3460	0.058	609	-1844	-1235
				3420-3440	0.092	601	-2050	-1449
				3400-3420	0.052	636	-2199	-1563
				3380-3400	0.038	669	-2183	-1514
				3360-3380	0.031	709	-2165	-1456
				3340-3360	0.034	631	-2254	-1623
				3320-3340	0.053	608	-2536	-1928
				3300-3320	0.046	574	-2628	-2054
				3280-3300	0.026	647	-2392	-1745
				3260-3280	0.020	643	-2050	-1407
				3240-3260	0.023	655	-2151	-1496
				3220-3240	0.026	506	-2331	-1825
				3200-3220	0.028	509	-2519	-2010
				3180-3200	0.024	555	-2800	-2245
				3160-3180	0.015	567	-3108	-2541
				3140-3160	0.006	579	-3067	-2488
	Summary Data			3140-4442	2.821	530	-1111	- 581
36.4	SHUMSKIY	1987-88	FXD	4380-4442	0.013	287	244	531
	(SU 06001)			4300-4380	0.053	304	255	559
				4220-4300	0.072	326	269	595
				4140-4220	0.094	359	290	679
				4060-4140	0.115	402	312	714
				3980-4060	0.133	452	319	771
				3900-3980	0.121	514	354	868
				3820-3900	0.177	592	364	956
				3740-3820	0.255	698	298	996
				3720-3740	0.096	829	64	893
				3700-3720	0.114	657	- 69	588
				3680-3700	0.145	613	- 636	- 23
				3660-3680	0.111	539	- 675	- 136
				3640-3660	0.077	496	- 776	- 280
				3620-3640	0.089	496	- 801	- 305
				3600-3620	0.076	491	- 676	- 185
				3580-3600	0.076	437	- 667	- 230
				3560-3580	0.092	487	- 805	- 518
				3540-3560	0.104	478	- 984	- 506
				3520-3540	0.113	485	-1219	- 734
				3500-3520	0.043	511	-1069	- 558
				3480-3500	0.035	563	- 869	- 335
				3460-3480	0.043	554	- 838	- 284
				3440-3460	0.058	540	-1007	- 467
				3420-3440	0.092	540	-1300	- 760
				3400-3420	0.052	558	-1490	- 932
				3380-3400	0.038	578	-1411	- 833
				3360-3380	0.031	585	-1337	- 752

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3340-3360	0.034	544	-1488	- 944
				3320-3340	0.053	494	-1684	-1190
				3300-3320	0.046	433	-1835	-1402
				3280-3300	0.026	489	-1769	-1280
				3260-3280	0.020	456	-1625	-1169
				3240-3260	0.023	454	-1676	-1222
				3220-3240	0.026	443	-1780	-1337
				3200-3220	0.028	540	-2241	-1701
				3180-3200	0.024	611	-2442	-1831
				3160-3180	0.014	537	-2645	-2108
				3140-3160	0.006	529	-2619	-2090
	Summary Data			3140-4442	2.820	532	- 503	29
36.5	SHUMSKIY (SU 06001)	1988-89	FXD	4380-4442	0.013	473	286	759
				4300-4380	0.053	502	299	801
				4220-4300	0.072	538	317	855
				4140-4220	0.094	591	343	934
				4060-4140	0.115	663	371	1034
				3980-4060	0.133	738	392	1130
				3900-3980	0.121	844	431	1275
				3820-3900	0.177	966	460	1426
				3740-3820	0.255	1151	458	1609
				3720-3740	0.096	1325	278	1602
				3700-3720	0.114	973	176	1148
				3680-3700	0.145	714	27	741
				3660-3680	0.111	452	- 418	34
				3640-3660	0.077	431	- 534	- 103
				3620-3640	0.089	448	- 532	- 84
				3600-3620	0.076	512	- 556	- 44
				3580-3600	0.076	505	- 591	- 86
				3560-3580	0.092	459	- 696	- 237
				3540-3560	0.104	417	- 842	- 425
				3520-3540	0.113	399	-1043	- 644
				3500-3520	0.042	431	-1024	- 593
				3480-3500	0.035	461	- 929	- 468
				3460-3480	0.043	477	- 812	- 335
				3440-3460	0.058	454	- 965	- 511
				3420-3440	0.092	460	-1254	- 794
				3400-3420	0.052	456	-1514	-1058
				3380-3400	0.038	466	-1479	-1013
				3360-3380	0.031	466	-1405	- 939
				3340-3360	0.034	446	-1576	-1130
				3320-3340	0.053	425	-1851	-1426
				3300-3320	0.046	407	-1965	-1558
				3280-3300	0.026	433	-1831	-1398
				3260-3280	0.020	464	-1751	-1287
				3240-3260	0.023	474	-1798	-1324
				3220-3240	0.026	432	-1990	-1558
				3200-3220	0.027	441	-2363	-1922
				3180-3200	0.023	463	-2516	-2053
				3160-3180	0.014	432	-2745	-2313
				3140-3160	0.005	414	-2723	-2309
	Summary Data			3140-4442	2.818	657	- 383	274
37.1	SUYOK ZAPADNIY (SU 05082)	1988-89	FXD	4300-4496	0.283	1106	- 226	880
				4200-4300	0.309	608	-1020	- 340
				4100-4200	0.339	676	-2077	-1401
				4000-4100	0.203	448	-1488	-1040
				3900-4000	0.076	289	-1132	- 843
				3845-3900	0.038	184	- 632	- 448
	Summary Data			3845-4496	1.248	699	-1198	- 499
38.1	TS.TUYUKSUYSKIY (SU 05075)	1985-86	STR	4100-4219	0.150	810	- 440	370
				4000-4100	0.340	920	- 470	450
				3900-4000	0.300	1130	- 760	370
				3800-3900	0.360	1310	-1020	290
				3700-3800	0.820	1270	-1970	- 700

NR	GLACIER NAME	YEAR	SYS	ALTITUDE FROM TO	AREA SQ KM	BW MM WE	BS MM WE	BN/BA MM WE
				3600-3700	0.340	1100	-2230	-1130
				3500-3600	0.380	1100	-2840	-1740
				3400-3500	0.170	970	-2660	-1690
	Sunmmary Data			3400-4219	2.860	1130	-1650	- 520
38.2	TS.TUYUKSUYSKIY (SU 05075)	1986-87	STR	4100-4219	0.150	660	- 480	180
				4000-4100	0.340	780	- 550	230
				3900-4000	0.300	970	- 680	290
				3800-3900	0.360	1140	- 850	290
				3700-3800	0.820	1040	-1570	- 530
				3600-3700	0.340	820	-1640	- 820
				3500-3600	0.380	820	-1800	- 980
				3400-3500	0.170	890	-2020	-1130
	Summary Data			3400-4219	2.860	930	-1270	- 340
38.3	TS.TUYUKSUYSKIY (SU 05075)	1987-88	STR	4100-4219	0.140	820	- 320	500
				4000-4100	0.300	1090	- 620	470
				3900-4000	0.300	1220	- 920	300
				3800-3900	0.300	1380	-1160	220
				3700-3800	0.890	1150	-1860	- 710
				3600-3700	0.320	980	-2260	-1280
				3500-3600	0.350	910	-2670	-1760
				3400-3500	0.200	900	-2930	-2030
	Summary Data			3400-4219	2.800	1090	-1700	- 610
38.4	TS.TUYUKSUYSKIY (SU 05075)	1988-89	STR	4100-4219	0.140	660	- 350	310
				4000-4100	0.300	890	- 52	370
				3900-4000	0.300	940	- 740	200
				3800-3900	0.300	1070	- 920	150
				3700-3800	0.890	850	- 420	- 570
				3600-3700	0.320	730	- 530	- 800
				3500-3600	0.350	610	- 980	-1370
				3400-3500	0.200	640	- 180	-1540
	Summary Data			3400-4219	2.800	820	-1280	- 460
38.5	TS.TUYUKSUYSKIY (SU 05075)	1989-90	STR	4100-4219	0.140	560	- 400	160
				4000-4100	0.300	750	- 450	300
				3900-4000	0.300	950	- 710	240
				3800-3900	0.300	1120	-1340	- 220
				3700-3800	0.890	1020	-2000	- 980
				3600-3700	0.320	870	-2630	-1760
				3500-3600	0.350	840	-3340	-2500
				3400-3500	0.150	940	-3940	-3000
	Summary Data			3400-4219	2.750	920	-1880	- 960

WORLD GLACIER MONITORING SERVICE

CHANGES IN AREA, VOLUME AND THICKNESS

TABLE D

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
PERIOD FROM TO:	Period in which the changes take place
ALTITUDE:	Altitude interval in meters above sea level
AREA MEAN:	Mean area of altitude interval for period of change (thousand square meters)
AREA CHANGE:	Change in area of altitude interval for period of change (thousand square meters)
VOLUME CHANGE:	Change in volume of altitude interval for period of change (thousand cubic meters)
THICK CHANGE:	Change in thickness of altitude interval for period of change (millimeters)

Key to Symbols: * = No data available

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
1.1	WOLVERINE	1974-85	1600-1700	80	******	400	5000
	(US 00411)		1500-1600	720	******	4200	5800
			1400-1500	2280	******	13700	6000
			1300-1400	4640	******	27800	6000
			1200-1300	2800	******	16200	5800
			1100-1200	1520	******	7600	5000
			1000-1100	2440	******	10200	4200
			900-1000	1160	******	2900	2500
			800- 900	320	******	100	300
			700- 800	400	******	- 1000	- 2400
			600- 500	440	******	- 3000	- 6800
			500- 600	360	******	- 6700	-18500
			400- 500	80	******	- 2600	-33000
	Summary Data		400-1700	17240	******	69900	4060
2.1	BLAUEIS	1970-80	2300-2400	19	5	101	5316
	(D 00004)		2200-2300	37	0	32	865
			2100-2200	29	10	106	3655
			2000-2100	32	8	198	6188
			1900-2000	26	14	163	6269
	Summary Data		1900-2400	143	37	600	4196
2.2	BLAUEIS	1980-89	2300-2400	19	- 5	- 137	- 7210
	(D 00004)		2200-2300	36	- 2	- 308	- 8556
			2100-2200	28	- 11	- 147	- 5250
			2000-2100	34	- 5	- 240	- 7059
			1900-2000	27	- 12	- 162	- 6000
	Summary Data		1900-2400	144	- 35	- 994	- 6903
3.1	HOELLENTAL	1981-89	2500-2600	11	- 1	- 62	- 5600
	(D 00003)		2400-2500	77	- 4	- 420	- 5454
			2300-2400	133	0	- 509	- 3827
			2200-2300	72	11	- 72	- 1000
			2100-2200	1	1	1	3100
	Summary Data		2100-2600	294	7	- 1062	- 3612
4.1	SCHNEEFERNER N	1979-90	2800-2900	1	- 1	- 3	- 3000
	(D 00001)		2700-2800	49	- 12	- 185	- 3784
			2600-2700	247	- 34	- 1006	- 4072
			2500-2600	71	- 19	- 424	- 5976
	Summary Data		2500-2900	368	- 66	- 1618	- 4397
5.1	SCHNEEFERNER S	1979-90	2600-2700	64	- 15	- 277	- 4344
	(D 00002)		2500-2600	101	- 65	- 445	- 4391
	Summary Data		2500-2700	165	- 80	- 722	- 4376
6.1	WATZMANNGL.	1970-80	2100-2200	34	21	121	3559
	(D 00005)		2000-2100	145	39	797	5497
			1900-2000	28	3	110	3929
	Summary Data		1900-2200	207	63	1028	4966
6.2	WATZMANNGL.	1980-89	2100-2200	36	- 17	- 92	- 2556
	(D 00005)		2000-2100	146	- 38	- 489	- 3349
			1900-2000	28	- 4	- 83	- 2946
	Summary Data		1900-2200	210	- 59	- 664	- 3162

CHANGES IN AREA, VOLUME AND THICKNESS, TABLE D, PAGE 1

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
7.1	GRIES (AEGINA)	1979-86	3300-3400	10	0	- 10	- 570
	(CH 00003)		3200-3300	110	- 40	- 40	- 390
			3100-3200	488	-117	- 80	- 160
			3000-3100	1632	69	- 150	- 90
			2900-3000	1032	57	- 300	- 290
			2800-2900	726	1	- 310	- 430
			2700-2800	558	30	- 200	- 360
			2600-2700	917	-134	- 650	- 710
			2500-2600	643	70	- 410	- 640
			2400-2500	174	- 20	- 200	- 1140
			2300-2400	2	- 4	******	******
	Summary Data		2300-3400	6293	- 88	- 2350	- 400
8.1	FERNERSTUBE	1979-89	3100-3200	******	******	******	- 1620
	(A 00314)		3000-3100	******	******	******	- 5600
			2900-3000	******	******	******	- 5770
			2800-2900	******	******	******	- 4710
			2700-2800	254	- 15	- 1320	- 5190
			2600-2700	168	- 2	- 600	- 3580
			2500-2600	56	0	- 10	- 180
			2400-2500	2	2	20	2600
	Summary Data		2400-3200	******	******	******	- 4810
9.1	GEPATSCH F.	1979-90	3500-3600	12	- 4	- 20	- 1667
	(A 00202)		3400-3500	358	- 24	- 1995	- 5573
			3300-3400	1628	- 104	- 6430	- 3950
			3200-3300	2796	- 137	-11145	- 3986
			3100-3200	3763	- 63	-11515	- 3060
			3000-3100	3310	- 170	-14235	- 4301
			2900-3000	2850	- 16	-15485	- 5433
			2800-2900	1264	- 50	- 9750	- 7714
			2700-2800	486	- 24	- 4600	- 9465
			2600-2700	240	- 60	- 1715	- 7146
			2500-2600	263	4	- 1090	- 4144
			2400-2500	230	- 17	- 695	- 3022
			2300-2400	232	4	- 495	- 2134
			2200-2300	260	0	525	2019
			2100-2200	121	10	885	7314
			2000-2100	4	0	126	31500
	Summary Data		2000-3600	17817	- 651	-77634	- 4357
10.1	GRUENAU F.	1979-89	3100-3200	******	******	******	- 770
	(A 00315)		3000-3100	******	******	******	- 410
			2900-3000	******	******	******	- 3920
			2800-2900	******	******	******	- 2100
			2700-2800	******	******	******	- 3240
			2600-2700	******	******	******	- 1580
			2500-2600	******	******	******	160
			2400-2500	18	2	145	7340
			2300-2400	3	2	49	16520
	Summary Data		2300-3200	******	******	******	- 1500
11.1	GUSLAR F.	1979-90	3400-3500	21	- 2	- 74	- 3524
	(A 00210)		3300-3400	179	- 44	- 1212	- 6771
			3200-3300	413	- 45	- 2701	- 6540
			3100-3200	586	- 59	- 4156	- 7092
			3000-3100	800	- 58	- 5344	- 6680
			2900-3000	602	- 67	- 5380	- 8937
			2800-2900	196	- 66	- 2941	-15005
			2700-2800	4	- 1	- 46	-11500
	Summary Data		2700-3500	2801	- 342	-21854	- 7802

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
12.1	HINTEREIS F.	1979-91	3700-3800	3	-1	-2	-667
	(A 00209)		3600-3700	52	-4	-82	-1576
			3500-3600	48	-16	-58	-1208
			3400-3500	229	-50	-944	-4122
			3300-3400	701	-66	-2694	-3843
			3200-3300	975	-110	-5155	-5287
			3100-3200	1535	-260	-9390	-6117
			3000-3100	1469	-181	-11802	-8034
			2900-3000	1221	-112	-12738	-10432
			2800-2900	909	-64	-12846	-14132
			2700-2800	968	-70	-11516	-11897
			2600-2700	662	-19	-9636	-14556
			2500-2600	280	19	-6046	-21593
			2400-2500	156	-39	-2529	-16212
			2300-2400	9	-18	-48	-5333
	Summary Data		2300-3800	9217	-991	-85486	-9275
13.1	HORN K. (ZILLER)	1979-89	3200-3300	2	0	0	0
	(A 00402)		3100-3200	130	-16	-324	-2490
			3000-3100	362	-7	-749	-2070
			2900-3000	630	-33	-1033	-1640
			2800-2900	743	-69	-2288	-3080
			2700-2800	693	-56	-3534	-5100
			2600-2700	591	-102	-2630	-4450
			2500-2600	260	-65	-1838	-7070
			2400-2500	231	-2	-1325	-5740
			2300-2400	92	-6	-405	-4380
			2200-2300	100	2	0	0
			2100-2200	37	13	475	12800
			2000-2100	2	3	64	0
	Summary Data		2000-3300	3873	-338	-13587	-3508
14.1	SCHLEGEIS K.	1979-89	3400-3500	13	-2	0	0
	(A 00405)		3300-3400	35	-36	0	0
			3200-3300	150	-20	-475	-3167
			3100-3200	232	-30	-825	-3556
			3000-3100	666	-69	-3345	-5022
			2900-3000	1039	-37	-6255	-6020
			2800-2900	1170	-3	-6950	-5940
			2700-2800	895	-3	-6200	-6927
			2600-2700	731	26	-4455	-6094
			2500-2600	416	14	-2400	-5769
			2400-2500	161	-12	-1305	-8106
			2300-2400	31	-10	-405	-13064
	Summary Data		2300-3500	5539	-182	-32615	-5888
15.1	SCHWARZENSTEIN	1979-89	3300-3400	30	0	0	0
	(A 00403)		3200-3300	100	-12	-524	-5240
			3100-3200	490	-4	-2582	-5270
			3000-3100	727	-53	-3584	-4930
			2900-3000	986	-12	-5926	-6010
			2800-2900	943	-29	-6922	-7340
			2700-2800	738	-39	-6413	-8690
			2600-2700	436	-37	-3400	-7800
			2500-2600	213	-10	-1380	-6480
			2400-2500	112	16	-284	-2540
			2300-2400	48	5	191	3970
			2200-2300	14	9	54	3870
	Summary Data		2200-3400	4837	-166	-30770	-6361
16.1	SULZENAU F.	1979-89	3400-3500	******	******	******	******
	(A 00314)		3300-3400	******	******	******	******

CHANGES IN AREA, VOLUME AND THICKNESS, TABLE D, PAGE 3

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
			3200-3300	******	******	******	******
			3100-3200	******	******	******	******
			3000-3100	239	- 10	- 575	- 2410
			2900-3000	200	- 6	- 535	- 2680
			2800-2900	142	- 10	- 775	- 5460
			2700-2800	150	- 8	- 1120	- 7460
			2600-2700	137	- 13	- 1350	- 9840
			2500-2600	276	- 18	- 840	- 3040
			2400-2500	26	20	52	2020
	Summary Data		2400-3500	1170	- 45	- 5143	- 4396
17.1	VERNAGT F. (A 00211)	1982-90	3600-3700	4	- 1	- 15	- 3750
			3500-3600	42	- 14	- 222	- 5285
			3400-3500	486	- 15	- 2188	- 4502
			3300-3400	813	- 106	- 3850	- 4736
			3200-3300	2073	- 138	- 9442	- 4555
			3100-3200	2519	- 120	-15028	- 5966
			3000-3100	2075	69	-10550	- 5084
			2900-3000	1017	8	- 1882	- 1850
			2800-2900	309	1	120	388
			2700-2800	26	- 2	- 142	- 5462
	Summary Data		2700-3700	9364	- 318	-43199	- 4613
18.1	WAXEGG K. (A 00401)	1979-89	3300-3400	3	- 3	0	0
			3200-3300	148	- 5	- 80	- 540
			3100-3200	292	- 2	- 145	- 497
			3000-3100	434	- 5	- 215	- 495
			2900-3000	599	- 26	- 760	- 1269
			2800-2900	679	- 13	- 1550	- 2283
			2700-2800	630	- 3	- 1970	- 3127
			2600-2700	592	- 8	- 1840	- 3108
			2500-2600	358	- 31	- 1625	- 4539
			2400-2500	205	- 13	- 1225	- 5976
			2300-2400	116	6	- 285	- 2457
			2200-2300	28	9	103	3679
	Summary Data		2200-3400	4084	- 94	- 8657	- 2120
19.1	CARESER (I 00701)	1980-90	3200-3350	0	-203.0	- 2175	- 5090
			3150-3200	0	-169.5	- 3940	- 8380
			3100-3150	0	-277.0	-12525	- 9480
			3050-3100	0	- 75.5	-13085	-12580
			3000-3050	0	-221.5	-11195	-12760
			2950-3000	0	- 27.0	- 6220	-15630
			2900-2950	0	- 29.5	- 3885	-17030
			2860-2900	0	30.5	- 1240	-18340
	Summary Data		2860-3350	0	-972.5	-54265	-11235
20.1	DJANKUAT (SU 03010)	1968-74	>3600	158	- 23	- 158	- 1000
			3500-3600	189	- 22	- 284	- 1500
			3400-3500	565	- 20	- 961	- 1700
			3300-3200	365	3	- 695	- 1900
			3200-3300	425	36	- 723	- 1700
			3100-3200	374	- 28	- 561	- 1500
			3000-3100	290	- 23	- 464	- 1600
			2900-3000	291	- 21	- 845	- 2900
			2800-2900	194	- 8	- 621	- 3200
			2698-2800	82	- 2	- 336	- 4100
	Summary Data		2698->3600	2933	- 114	- 5648	- 1900

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
20.2	DJANKUAT	1974-84	>3600	187	81	168	900
	(SU 03010)		3500-3600	335	313	- 167	- 500
			3400-3500	4164	- 182	- 882	- 1900
			3300-3200	369	11	- 406	- 1100
			3200-3300	439	- 8	132	300
			3100-3200	361	2	0	0
			3000-3100	287	18	- 115	- 400
			2900-3000	284	7	- 341	- 1200
			2800-2900	188	- 4	- 564	- 3000
			2698-2800	87	12	- 470	- 5400
	Summary Data		2698->3600	3001	250	- 2645	- 900
21.1	SHUMSKIY	1984-85	3720-3740	96	*****	- 50	- 520
	(SU 06001)		3700-3720	114	*****	- 62	- 540
			3680-3700	145	*****	- 80	- 550
			3660-3680	111	*****	- 71	- 640
			3640-3600	77	*****	- 54	- 700
			3620-3640	89	*****	- 28	- 320
			3600-3620	76	*****	- 20	- 260
			3580-3600	76	*****	- 30	- 390
			3560-3580	92	*****	- 45	- 490
			3540-3560	104	*****	- 68	- 650
			3520-3540	113	*****	- 81	- 720
			3500-3520	43	*****	- 19	- 450
			3480-3500	35	*****	- 11	- 320
			3460-3480	43	*****	- 15	- 340
			3440-3460	58	*****	- 27	- 460
			3420-3440	92	*****	- 54	- 590
			3400-3420	52	*****	- 33	- 640
			3380-3400	38	*****	- 24	- 620
			3360-3380	31	*****	- 20	- 650
			3340-3360	34	*****	- 25	- 730
			3320-3340	53	*****	- 41	- 770
			3300-3320	46	*****	- 38	- 820
			3280-3300	26	*****	- 22	- 840
			3260-3280	20	*****	- 14	- 720
			3240-3260	23	*****	- 15	- 670
			3220-3240	27	*****	- 23	- 870
			3200-3220	28	*****	- 32	- 30
			3180-3200	25	*****	- 36	- 1140
			3160-3180	15	*****	- 20	- 1340
			3140-3160	6	*****	- 8	- 1280
	Summary Data		3140-3740	1788	*****	- 1066	- 600
21.2	SHUMSKIY	1985-86	3720-3740	96	*****	- 17	- 180
	(SU 06001)		3700-3720	114	*****	- 22	- 190
			3680-3700	145	*****	- 36	- 250
			3660-3680	111	*****	- 17	- 150
			3640-3600	77	*****	- 19	- 250
			3620-3640	89	*****	- 55	- 620
			3600-3620	76	*****	- 28	- 370
			3580-3600	76	*****	- 5	- 70
			3560-3580	92	*****	9	100
			3540-3560	104	*****	- 22	- 210
			3520-3540	113	*****	- 30	- 270
			3500-3520	43	*****	- 17	- 400
			3480-3500	35	*****	- 15	- 420
			3460-3480	43	*****	- 19	- 450
			3440-3460	58	*****	- 33	- 570
			3420-3440	92	*****	- 49	- 530
			3400-3420	52	*****	- 26	- 510
			3380-3400	38	*****	- 16	- 430
			3360-3380	31	*****	- 12	- 380
			3340-3360	34	*****	- 20	- 590
			3320-3340	53	*****	- 44	- 830
			3300-3320	46	*****	- 39	- 850
			3280-3300	26	*****	- 20	- 790
			3260-3280	20	*****	- 15	- 730
			3240-3260	23	*****	- 17	- 740
			3220-3240	27	*****	- 24	- 890

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
			3200-3220	28	*****	- 32	- 1140
			3180-3200	25	*****	- 35	- 1400
			3160-3180	15	*****	- 22	- 1460
			3140-3160	6	*****	- 8	- 1320
	Summary Data		3140-3740	1788	*****	- 705	- 400
21.3	SHUMSKIY (SU 06001)	1986-87	3720-3740	96	*****	- 102	- 1060
			3700-3720	114	*****	- 120	- 1050
			3680-3700	145	*****	- 154	- 1060
			3660-3680	111	*****	- 101	- 910
			3640-3600	77	*****	- 74	- 960
			3620-3640	89	*****	- 91	- 1020
			3600-3620	76	*****	- 79	- 1040
			3580-3600	76	*****	- 68	- 900
			3560-3580	92	*****	- 68	- 740
			3540-3560	104	*****	- 86	- 830
			3520-3540	113	*****	- 105	- 930
			3500-3520	43	*****	- 29	- 670
			3480-3500	35	*****	- 16	- 470
			3460-3480	43	*****	- 23	- 540
			3440-3460	58	*****	- 34	- 590
			3420-3440	92	*****	- 63	- 690
			3400-3420	52	*****	- 50	- 970
			3380-3400	38	*****	- 38	- 1000
			3360-3380	31	*****	- 29	- 950
			3340-3360	34	*****	- 31	- 910
			3320-3340	53	*****	- 57	- 1070
			3300-3320	46	*****	- 56	- 1210
			3280-3300	26	*****	- 25	- 950
			3260-3280	20	*****	- 14	- 710
			3240-3260	23	*****	- 21	- 920
			3220-3240	27	*****	- 35	- 1310
			3200-3220	28	*****	- 39	- 1390
			3180-3200	25	*****	- 40	- 1600
			3160-3180	15	*****	- 31	- 2040
			3140-3160	6	*****	- 12	- 1950
	Summary Data		3140-3740	1788	*****	- 1691	- 950
21.4	SHUMSKIY (SU 06001)	1987-88	3720-3740	96	*****	6	60
			3700-3720	114	*****	8	70
			3680-3700	145	*****	22	150
			3660-3680	111	*****	16	140
			3640-3600	77	*****	14	180
			3620-3640	89	*****	12	130
			3600-3620	76	*****	12	160
			3580-3600	76	*****	20	270
			3560-3580	92	*****	24	260
			3540-3560	104	*****	11	110
			3520-3540	113	*****	18	160
			3500-3520	43	*****	8	180
			3480-3500	35	*****	8	230
			3460-3480	43	*****	12	280
			3440-3460	58	*****	11	190
			3420-3440	92	*****	- 6	- 70
			3400-3420	52	*****	- 8	- 160
			3380-3400	38	*****	2	60
			3360-3380	31	*****	0	0
			3340-3360	34	*****	- 8	- 240
			3320-3340	53	*****	- 15	- 290
			3300-3320	46	*****	- 20	- 430
			3280-3300	26	*****	- 15	- 570
			3260-3280	20	*****	- 12	- 610
			3240-3260	23	*****	- 11	- 470
			3220-3240	26	- 1	- 15	- 560
			3200-3220	27	- 1	- 28	- 1050
			3180-3200	24	- 1	- 29	- 1220
			3160-3180	14	- 1	- 26	- 1880
			3140-3160	6	*****	- 12	- 1970
	Summary Data		3140-3740	1784	- 4	- 1	- 20

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
21.5	SHUMSKIY	1988-89	3720-3740	96	*****	20	210
	(SU 06001)		3700-3720	114	*****	22	190
			3680-3700	145	*****	32	220
			3660-3680	111	*****	33	300
			3640-3600	77	*****	24	310
			3620-3640	89	*****	33	370
			3600-3620	76	*****	38	500
			3580-3600	76	*****	30	400
			3560-3580	92	*****	35	380
			3540-3560	104	*****	27	260
			3520-3540	113	*****	14	120
			3500-3520	43	*****	- 2	- 40
			3480-3500	35	*****	- 1	- 20
			3460-3480	43	*****	3	80
			3440-3460	58	*****	11	190
			3420-3440	92	*****	- 13	- 140
			3400-3420	52	*****	- 30	- 570
			3380-3400	38	*****	- 19	- 500
			3360-3380	31	*****	- 15	- 480
			3340-3360	34	*****	- 21	- 610
			3320-3340	53	*****	- 39	- 730
			3300-3320	46	*****	- 34	- 740
			3280-3300	26	*****	- 20	- 770
			3260-3280	20	*****	- 17	- 830
			3240-3260	23	*****	- 20	- 880
			3220-3240	26	*****	- 26	- 1010
			3200-3220	27	*****	- 39	- 1460
			3180-3200	23	- 1	- 38	- 1670
			3160-3180	14	*****	- 28	- 2030
			3140-3160	5	- 1	- 11	- 2200
	Summary Data		3140-3740	1782	- 2	- 51	- 50
22.1	BAZHIN	1934-58	4200-4300	300	0	- 600	- 2000
	(PK 01504)		4100-4200	360	0	- 1660	- 4600
			4000-4100	370	0	- 2550	- 6900
			3900-4000	1074	0	- 8810	- 8200
			3800-3900	924	0	- 8040	- 8700
			3700-3800	1027	0	- 3080	- 3000
			3600-3700	1224	0	- 1960	- 1600
			3500-3600	1698	0	-10190	- 6000
			3400-3500	651	0	- 3440	- 5280
	Summary Data		3400-4300	7628	0	-40330	- 5290
22.2	BAZHIN	1958-87	3600-3650	787	0	- 2400	- 3050
	(PK 01504)		3550-3600	756	0	- 1459	- 1930
			3500-3550	871	0	-12804	-14700
	Summary Data		3500-3650	2414	0	-16663	- 6900
23.1	CHOGO LUNGMA	1954-70	2850-2870	286	0	- 6864	-24000
	(PK 01001)		2800-2850	500	0	-17000	-34000
	Summary Data		2800-2870	786	0	-23864	-30400
23.2	CHOGO LUNGMA	1970-79	2850-2870	290	0	- 2561	- 8800
	(PK 01001)		2800-2850	510	0	- 5950	-11700
	Summary Data		2800-2870	800	0	- 8511	-10600
24.1	CHUNGPAR-TASH.	1934-58	3400-3500	324	0	- 2592	- 8000
	(PK 01501)		3300-3400	680	0	0	0
			3200-3300	828	0	- 4140	- 5000
			3100-3200	490	0	0	0
			3000-3100	315	0	0	0
			2900-3000	180	0	5022	-27900

NR	GLACIER NAME	PERIOD FROM TO	ALTITUDE FROM TO	AREA MEAN	AREA CHANGE	VOLUME CHANGE	THICK. CHANGE
			2850-3000	186	- 13	6510	-35000
	Summary Data		2850-3500	1338	0	13242	- 9900
24.2	CHUNGPAR-TASH. (PK 01501)	1958-87	3400-3500	324	0	- 4212	-13000
			3300-3400	680	0	0	0
			3200-3300	828	0	-14076	-17000
			3100-3200	490	0	0	0
			3000-3100	315	0	0	0
			2900-3000	180	- 16	- 5400	-30000
	Summary Data		2900-3500	1332	0	-23688	-17800
25.1	SATSCHEN SANGO (PK 00801)	1934-58	3700-3800	1070	0	- 1016	- 950
			3600-3700	1471	0	- 2324	- 1580
			3500-3600	1550	0	- 8060	- 5200
			3400-3500	200	0	- 3200	-16000
	Summary Data		3400-3800	4291	0	-14600	- 3400
25.2	SATSCHEN SANGO (PK 00801)	1958-87	3600-3700	1530	0	- 979	- 640
			3500-3600	1450	0	- 3190	- 2200
	Summary Data		3500-3700	2980	0	- 4169	- 1400
26.1	SHAIGIRI (PK 01508)	1934-58	3800-3900	144	0	- 1224	- 8500
			3700-3800	210	0	- 210	- 1000
	Summary Data		3700-3900	354	0	- 1434	- 4050
26.2	SHAIGIRI (PK 01508)	1958-87	3800-3900	144	0	2606	18100
			3700-3800	210	0	1092	5200
	Summary Data		3700-3900	354	0	3698	10446
27.1	TAP (PK 01506)	1934-58	3700-3750	53	0	- 450	- 8500
			3650-3700	58	0	- 1195	-20600
			3600-3650	60	- 30	- 1668	-27800
	Summary Data		3600-3750	171	- 30	- 3313	-19370
27.2	TAP (PK 01506)	1958-87	3750-3800	51	0	586	11500
			3700-3750	52	0	650	12500
			3650-3700	45	0	774	17200
			3600-3650	47	18	677	14400
	Summary Data		3600-3800	195	18	2687	13800
28.1	TOSHAIN RUPAL (PK 01515)	1934-58	3850-3900	872	0	-15700	-18000
			3800-3850	810	0	-14090	-17400
			3750-3800	539	0	-10350	-19200
			3700-3750	226	0	- 4520	-20000
	Summary Data		3700-3900	2447	- 36	-44660	-18250
28.2	TOSHAIN RUPAL (PK 01515)	1958-87	3850-3900	810	0	-19600	-24200
			3800-3850	753	- 60	-20700	-27500
			3750-3800	672	- 75	-15120	-22500
			3700-3750	320	- 136	- 7360	-23000
	Summary Data		3700-3900	2555	- 271	-62780	-24570

Notes

Notes

WORLD GLACIER MONITORING SERVICE

AVAILABILITY OF HYDRO-METEOROLOGICAL DATA

TABLE E

NR:	Record number
GLACIER NAME:	15 alphabetic or numeric digits
SGS:	Streamflow gauging station
MS:	Meteorological station
Name:	Name of station
GL:	Geographical location of SGS or MS
GCo:	Geographical coordinates of SGS or MS
Alt:	Altitude of SGS or MS in m a.s.l.
DA (%):	Drainage area of SGS in square kilometers. Figure in brackets represents % of glacierized area.
Loc:	Location where data is available. Where abbreviation is given, please see Chapter 6, under the relevant country.

Key to Symbols: * = No data available

1 ALEXANDER
(CD00133)

	SGS	MS
Name	More Creek, Station No. 08CG005	Andrei Glacier base camp site
GL	Near the confluence of More Creek and Iskut River	Rock outcrop between Andrei Glacier and Forrest Kerr Glacier
GCo	***	56 55 10 N, 130 54 30 W
Alt	415	1100
DA	894	
Loc	Water Survey of Canada, Terrace,British Columbia	B.C. Hydro, Hydroelectric Generation Projects Division, Vancouver, British Columbia

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2 ANDREI
(CD00148)

	SGS	MS
Name	Forrest Kerr Creek	Andrei Glacier base camp site
GL	Periglacial zone on stream draining Andrei and Forrest Kerr Glaciers	Rock outcrop between Andrei Glacier and Forrest Kerr Glacier
GCo	56 55 05 N, 130 43 30 W	56 55 10 N, 130 54 30 W
Alt	500	1100
DA	287	
Loc	Water Survey of Canada, Terrace,British Columbia	B.C. Hydro, Hydroelectric Generation Projects Division, Vancouver, British Columbia

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3 HELM
(CD00855)

	SGS	MS
Name	***	Sentinel Glacier camp site
GL	***	Periglacial zone of Sentinel Glacier
GCo	***	49 54 05 N, 122 59 51 W
Alt	***	1540
DA	***	
Loc	***	National Hydrology Research Institute, Environment Canada, 11 Innovation Boulevard, Saskatoon, Saskatchewan,S7N 3H5

4 PEYTO
(CD01640)

	SGS	MS
Name	Peyto Creek at Peyto Glacier Station 5DA-8	Base camp weather station. Global radiation, air temperature, relative humidity wind speed and direction, ground surface temperature and rainfall measured at hourly intervals throughout the year.
GL	At downstream end of narrow gorge of Peyto Creek	Peyto glacier basin, Rocky Mountain, Banff National Park, Alberta, Canada
GCo	51 41 37 N, 116 32 08 W	51 41 05 N, 116 32 40 W
Alt	1951	2220
DA	22.3	
Loc	Water Survey of Canada, Environment Canada, Ontario, K1A 0E7	Department of Geography, University of Toronto, Erindale Campus, Mississauga, Ontario, L5L 1C6, Canada

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5 PLACE
(CD01660)

	SGS	MS
Name	Place Creek near Birken Station 8MG-19	Place Glacier base camp site
GL	Periglacial zone on stream draining Place Glacier	Periglacial zone of Place Glacier
GCo	50 21 02 N, 122 36 35 W	50 26 11 N, 122 36 35 W
Alt	1800	1840
DA	6.5	
Loc	Water Survey of Canada, Vancouver, British Columbia	National Hydrology Research Institute, Environment Canada, 11 Innovation Boulevard, Saskatoon, Saskatchewan, S7N 3H5

6 SENTINEL
(CD01915)

	SGS	MS
Name	Sentinel Creek above Garibaldi Lake Station 8GA-56	Sentinel Glacier camp site
GL	On stream between Sentinel Glacier and Garibaldi lake	Periglacial zone of Sentinel Glacier
GCo	49 53 54 N, 122 59 34 W	49 54 05 N, 122 59 51 W
Alt	1500	1540
DA	5.61	
Loc	Water Survey of Canada, Vancouver, British Columbia	National Hydrology Research Institute, Environment Canada, 11 Innovation Boulevard, Saskatoon, Saskatchewan, S7N 3H5

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7 SMALL RIVER
(CD01940)

	SGS	MS
Name	1. North proglacial stream 2. Central proglacial stream 3. South proglacial stream 4. North conduit (underground) 5. North spring (surface) 6. South spring 7. North ridge springs 8. Avalanche spring 9. Valley spring	Main weather station Camp weather station and scattered rain gauges
GL	"Glacier creek", Small river, Upper Fraser River, Western Rockies	"Glacier creek", Small river, Upper Fraser River, Western Rockies
GCo	53 10 ** N, 119 29 ** W	53 10 ** N, 119 29 ** W
Alt	1200 - 2400	1200 - 2400
DA	Generally "undefineable"	
Loc	Department of Geography, University of Western Ontario London, Ontario, N6A 5C2, Canada	Department of Geography, University of Western Ontario London, Ontario, N6A 5C2, Canada

8 YURI
(CD02530)

	SGS	MS
Name	More Creek Station No. 08CG005	Andrei Glacier base camp site
GL	Near the confluence of More Creek and Iskut River	Rock outcrop between Andrei Glacier and Forrest Kerr Glacier
GCo	***	56 55 10 N, 130 54 30 W
Alt	415	1100
DA	894	
Loc	Water Survey of Canada, Terrace,British Columbia	B.C. Hydro, Hydroelectric Generation Projects Division, Vancouver, British Columbia

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9 EKLUTNA
(US00391)

	SGS	MS
Name	West Fork Eklutna Creek near Palmer	Air and temperatures and precipitation data at gaging station
GL	South-central Alaska, 30 Miles Northeast of Anchor-age, Alaska	South-central Alaska, 30 Miles Northeast of Anchorage, Alaska
GCo	61 17 00 N, 148 58 00 W	61 17 00 N, 148 58 00 W
Alt	336	336
DA	31. 6	
Loc	U.S. Geological Survey, Water Resources Division, 4230 Uni-versity Dr., Suite 201, Ancho-rage, Alaska 99508 Some data in Journal of Glaciology, Vol.32, No.111	U.S. Geological Survey, Water Resources Division, 4230 University Dr., Suite 201 Anchorage, Alaska 99508

10 GULKANA
(US00200)

	SGS	MS
Name	Phelan Creek near Paxson	Gulkana Glacier
GL	ca. 1.5 km downstream from terminus of Gulkana Glacier	On lateral moraine adjacent to middle of ablation area of Gulkana Glacier
GCo	63 14 27 N, 145 28 03 W	63 16 ** N, 145 25 ** W
Alt	1150	1480
DA	19.6	
Loc	U.S Geological Survey, WRD, 800 Yukon Drive, Fairbanks, 99775 USA	U.S. Geological Survey, WRD, 800 Yukon Drive, Fairbanks, 99775 USA

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11 SOUTH CASCADE
(US02013)

	SGS	MS
Name	South Fork	South Cascade Glacier gaging station
GL	Skagit County, Mt. Baker National Forest, on left bank at outlet of South Cascade Lake	At the outlet of South Cascade Lake
GCo	48 22 13 N, 121 04 23 W	48 22 13 N, 121 04 23 W
Alt	1613	1617
DA	6.11	
Loc	U.S Geological Survey, University of Puget Sound, Tacoma, WA 98416	U.S. Geological Survey, University of Puget Sound, Tacoma, WA 98416

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12 WEST GULKANA
(US00195)

	SGS	MS
Name	***	West Gulkana Glacier West Gulkana Tundra
GL	***	On West Gulkana Glacier On Tundra bench 1.2 km down valley
GCo	***	63 16 ** N, 145 28 ** W Glacier 63 14 ** N, 145 27 ** W Tundra
Alt	***	1495 Glacier 1265 Tundra
DA	***	
Loc		Lab. Climatology, Arizona State University Tempe AZ 85289

13 URUASHRAJU
(PE00005)

	SGS	MS
Name	***	Uruashraju
GL	***	On a moraine ridge at the left boundary of the glacier tongue.
GCo	***	09 35 ** S, 77 19 ** W
Alt	***	4700
DA	***	
Loc	***	Unidad de Glaciologia e Hidro-logia, Calle 28 de Julio 857, Huaraz - Peru

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14 YANAMAREY
(PE00004)

	SGS	MS
Name	***	Yanamarey
GL	***	At the left boundary of the glacier tongue
GCo	***	09 39 ** S, 77 16 ** W
Alt	***	4760
DA	***	
Loc	***	Unidad de Glaciologia e Hidro-logia, Calle 28 de Julio 857, Huaraz - Peru

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15 QAMANARSSUP S.
(G 00003)

	SGS	MS
Name	***	Qamanarssup base camp
GL	***	Godthabsfjord, West Greenland, east of Godthab
GCo	***	64 29 ** N, 49 32 ** W
Alt	***	760
DA	***	
Loc	***	The Geological Survey of Greenland, Oester Voldgade 10, DK-1350 Koebenhown K

16 AALFOTBREEN
(N 36204)

	SGS	MS
Name	Bre-Elva	Aalfotbreen, Obs. Hut
GL	Store Aaskara, Sogn og Fjordane	Aalfotbreen, Sogn og Fjordane
GCo	61 45 ** N, 05 39 ** E	61 45 ** N, 05 39 ** W
Alt	720	905
DA	7.8	
Loc	NVE-Brekontoret, P.O. 5091 Majorstua, 0301 Oslo 3, Norway	NVE-Brekontoret, P.O. 5091 Majorstua, 0301 Oslo 3, Norway

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17 ENGABREEN
(N 67011)

	SGS	MS
Name	Engavatn	Engabreen
GL	Holandsfjord, Nordland	Vestre Svartisen, Nordland
GCo	66 39 ** N, 13 51 ** E	66 39 ** N, 13 51 ** E
Alt	7	1100
DA	50.4	
Loc	NVE-Brekontoret, P.O. 5091 Majorstua,0301 Oslo 3,Norway	NVE-Brekontoret, P.O. 5091 Majorstua, 0301 Oslo 3, Norway

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18 NIGARDSBREEN
(N 31014)

	SGS	MS
Name	1) Nigardsvatn, Innloep 2) Nigardsvatn, Utloep	1) Steinmannen 2) Nigardsvatn
GL	Jostedalen, Sogn og Fjordane	Sogn og Fjordane
GCo	61 43 ** N, 07 08 ** E	61 41 ** N, 07 08 ** E
Alt	300	1) 1630, 2) 300
DA	1) 42, 2) 64	
Loc	NVE-Brekontoret, P.O. 5091 Majorstua,0301 Oslo 3,Norway	NVE-Brekontoret, P.O. 5091 Majorstua, 0301 Oslo 3, Norway

19 HANS
(N 12419)

	SGS	MS
Name	***	Polish Polar Station
GL	***	Spitsbergen, Wedel Jarlsberg Land, North Shore of Hornsund Fjord
GCo	***	77 00 03 N, 15 33 37 E
Alt	***	10
DA	***	
Loc	***	Instytut Meteorologii i Gospodarki Wodnej, Oddzial Morski, ul. Waszyngtona 42, 81-342 Gdynia, Poland

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20 WERENSKIOLD
(N 12501)

	SGS	MS
Name	University of Wroclaw Baranowski Station	University of Wroclaw Baranowski Station
GL	Glacial River, River gorge Werenskiold Glacier basin, Spitsbergen	Frontal Moraine, Werenskiold Glacier, Spitsbergen
GCo	77 05 ** N, 15 24 *** E	75 05 ** N, 15 24 ** E
Alt	12	26
DA	28.00	
Loc	Zaklad Meteorologii i Klimatologii, Uniwersytet Wroclawskiego UL. Kosiby 8 51-670 Wroclaw	Zaklad Meteorologii i Klimatologii Uniwersytet Wroclawskiego UL. Kosiby 8, 51-670 Wroclaw

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21 ISFALLSGLACIAEREN
(S 00787)

	SGS	MS
Name	Isfallsjoen	Tarfala
GL	Tarfala, Kebnekaise, northern Sweden	Tarfala, Kebnekaise, northern Sweden
GCo	67 55 ** N, 18 35 ** E	67 55 ** N, 18 35 ** E
Alt	1164	1130
DA	***	
Loc	Department of Physical Geography, Glaciology Section, University of Stockholm, S-10691 Stockholm, Sweden	Department of Physical Geography, Glaciology Section, University of Stockholm, S-10691 Stockholm, Sweden

22 STORGLACIAEREN
(S 00788)

	SGS	MS
Name	"Sydjakk" (the south stream) "Nordjakk"(the north stream) "Raennan"	Tarfalastationen
GL	Tarfala, Kebnekaise, northern Sweden	Tarfala, Kebnekaise, northern Sweden
GCo	67 55 ** N, 18 35 ** E	67 55 ** N, 18 35 ** eW
Alt	1164(Sydjakk), 1080(Nordjakk) 1000(Raennan)	1130
DA	20.9	
Loc	Department of Physical Geography, Glaciology Section, University of Stockholm, S-10691 Stockholm, Sweden	Department of Physical Geography, Glaciology Section, University of Stockholm, S-10691 Stockholm, Sweden

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23 GROSSER ALETSCH
(CH00005)

	SGS	MS
Name	Massa, Blatten near Naters	1) Fiesch 2) Grindelwald 3) Ried (Loetschental)
GL	About 1 km downstream of snout of Grosser Aletsch Glacier	Valley stations, SE, N and W outside of Massa River basin
GCo	26 23 ** N, 08 01 ** E	1) 46 24 ** N, 08 08 ** E 2) 46 38 ** N, 08 03 ** E 3) 46 25 ** N, 07 50 ** E
Alt	1446	1) 1060, 2) 1040, 3) 1480
DA	194.7	
Loc	Landeshydrologie und -geologie, Hallwylstrasse 4, CH-3003 Bern	Schweizerische Meteorologische Anstalt, Kraehbuehlstrasse 58 CH-8044, Zurich

AVAILABILITY OF HYDROMETEOROLOGICAL INFORMATION, TABLE E, PAGE 9

24. VERNAGT F.
(A 00211)

	SGS	MS
Name	Pegelstation Vernagtbach	Pegelstation Vernagtbach in combination with gaging station
GL	Oetztal Alps, Tyrol, 1.4 km ahead of Vernagtferner	Oetztal Alps, Tyrol, 1.4 km ahead of Vernagtferner
GCo	46 52 ** N, 10 49 ** E	46 52 ** N, 10 49 ** E
Alt	2640	2640
DA	11.441	
Loc	Commission for Glaciology, Marstallplatz 8, D-8000 Muenchen 22	Commission for Glaciology Marstallplatz 8, D-8000 Muenchen 22

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25 LEWIS
(KN00008)

	SGS	MS
Name	***	1) Teleki Ranger Camp, 2) Radio Ridge (Camp No. 9037218)
GL	***	***
GCo	***	***
Alt	***	1) 4200, 2) 4800
DA	***	
Loc	***	Department of Meteorology University of Wisconsin 1225 West Dayton Street Madison, Wisconsin 53706, U.S.A

26 TATRAS PATCHES
(PL00001)

	SGS	MS
Name	***	1) Climatic Station-Morskie Oko 2) Climatic Station-Piec Stawow 3) Snow Research Station-Hala Gasienicowa, Institute of Meteorology and Water Management
GL	***	Tatra Mountains
GCo	***	1) 49 12 ** N, 20 04 ** E 2) 49 13 ** N, 20 03 ** E 3) 49 15 ** N, 20 05 ** E
Alt	***	1) 1407, 2) 1668, 3) 1520
DA	***	
Loc	***	Institute of Meteorology and Water Management, Department of Hydrology and Meteorology of Tatra Mountains ul. Sienkiewiona 26C, 34-500 Zakopone Poland

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27 ABRAMOV
(SU04101)

	SGS	MS
Name	Abramov Glacier, Koksu river, Aral sea basin.	Abramov Glacier
GL	Alai range	Alai range
GCo	39 36 ** N, 71 38 ** E	39 38 ** N, 71 38 ** E
Alt	3600	3837
DA	55.5	
Loc	SANIGMI, 72, Observatorskaya, str., 700052 Tashkent	SANIGMI, 72 Observatorskaya str., 700052 Tashkent

28 DJANKUAT
(SU03010)

	SGS	MS
Name	Usengi	1) Terskol Peak 2) Terskol 3) Mestia
GL	Kabardino-Balkarian ASSR, Elbrus region, Baksan River (13 km from the snout of Djankuat Glacier)	1) Kabardino-Balkarian ASSR, Elbrus Region (18 km from the glacier) 2) Kabardino-Balkarian ASSR, Elbrus Region (16 km from the glacier) 3) Georgian SSR, Mulkhra Valley (Inguri River basin , 12 km from the glacier)
GCo	***	
Alt	1831	1) 3050, 2) 2146, 3) 1443
DA	214	
Loc	Hydrometeorological Service, Northern Caucasian Department (Rostov-na-Donu); World Data Center 2 (Moscow, Obninsk)	1) High-mountain Geophysical Institute (Nalchik) 2,3) Hydrometeorological Service, Northern Caucasian Department (Rostov-na-Donu), World Data Center 2 (Moscow, Obninsk)

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29 KARA-BATKAK
(SU05080)

	SGS	MS
Name	River Chon-Kyzylsu- mouth of a river, Kashkator	Chon Kyzylsu
GL	Tien-Shan, Terskey, Ala-Too	Tien-Shan, Terskey Ala-Too
GCo	42 12 ** N, 78 11 ** E	42 12 ** N, 78 11 ** E
Alt	2550	2550
DA	170	
Loc	Control Gidrometeorology Karasyiskay 1, Bishpek Kyrgyzstan	Control Gidrometeorology Karasyiskay 1, Bishpek Kyrgyzstan

30 KHAKEL
(SU03003)

	SGS	MS
Name	Tebezda, River Tebezda	Cluhozsky pass
GL	Caucasus, River Kuban	Caucasus, River Kuban
GCo	44 27 ** N, 41 44 ** E	43 15 ** N, 41 50 ** E
Alt	1305	2037
DA	504	
Loc	North Caucasian Hydro- meteorlogical Department Erevanskaya, 1 Rostov/Don	North Caucasian Hydro- meteorological Department Erevanskaya, 1 Rostov/Don

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31 MALIY AKTRU
(SU07100)

	SGS	MS
Name	Gidrometeorological Station Aktru	Gidrometeorological Station Aktru
GL	Central Altay, north slope of the North-Chuisky Range, 2 km from Maliy Aktru	Central Altay, north slope of the North_Chuisky Range, 2 km. from Maliy Aktru
GCo	***	
Alt	2150	2150
DA	34.86	
Loc	Scientific Report " Fluc- tuations of Glaciers in the USSR, Mountain Altay ",1981- 85, Laboratory of Glaciocli- matology, Tomsk University	Meteorological Monthly Data, Novosibirsk

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32 NO. 356
(SU05106)

	SGS	MS
Name	River Sari-Tor II, tributary of the Naryn river	Tien-shan
GL	Tien-Shan, Akshiyzak	Tien-Shan, Akshiyzak, Kumtor river
GCo	41 50 ** N, 78 11 ** E	41 52 ** N, 78 12 ** E
Alt	3800	3614
DA	7.8	
Loc	Department of Glaciology, Institute of Geography Academy of Science, Moscow	Control Gidrometeorology Karasyiskay 1, Bishpek Kyrgyzstan

33 TS. TUYUKSUYSKIY
(SU05075)

	SGS	MS
Name	1) Sarisai, 2) Alma-Ata	1) Minzhilki, 2) Verhniy Gorelnik
GL	Zailiyskiy Alatau, The North Tien-Shan Malaia Almatinka River	Zailiyskiy Alatau Range
GCo	***	
Alt	1) 1950, 2) 1100	1) 3017, 2) 2268
DA	1) 45.2, 2) 120	
Loc	Kaz. UGKS, Alma-Ata	Kaz. UGKS, Alma-Ata

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34 URUMQIHE S.NO.1
(CN00010)

	SGS	MS
Name	Tianshan Hydrometric Station of Glacier No. 1	Tianshan Meteorological Station of Glacier No. 1
GL	Head of Urumqi River, 200 m from the end of the glacier	Headwater of Urumqi River, 200 m from the end of the glacier
GCo	43 06 ** N, 87 15 ** E	43 06 ** N, 87 15 ** E
Alt	3639	3588
DA	3.34	
Loc	Tianshan Glaciological Station, Houxia, Urumqi, Xinjiang, China	Tianshan Glaciological Station Houxia, Urumqi, Xinjiang China

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35 CHANGMEKHANGPU
(IN02522)

	SGS	MS
Name	Changmekhangpu stream gaging station	Changmekhangpu base camp observatory
GL	Near the snout of Changmekhangpu glacier	0.4 km down from the snout of Changmekhangpu glacier
GCo	27 55 40 N, 88 41 45 E	27 55 20 N, 88 42 00 E
Alt	4815	4704
DA	0.8	
Loc	Glaciological Division, ER Geological Survey of India, Calcutta	Glaciological Division, ER Geological Survey of India, Calcutta

36 DUNAGIRI
(IN00191)

	SGS	MS
Name	Dunagiri Gad	Dunagiri Glacier Camp
GL	Chamoli District, U.P.	Chamoli District, U.P.
GCo	30 35 37 N, 79 53 14 E	30 35 22 N, 79 53 06 E
Alt	3770	4012
DA	17.9	
Loc	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020

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37 SHAUNE GARANG
(IN00084)

	SGS	MS
Name	Ratia Thatch	Ratia Thatch
GL	Ratia Thatch Baspa Valley, Dist. Kinnaur Himachal Pradesh	Ratia Thatch Baspa Valley, Dist. Kinnaur Himachal Pradesh
GCo	31 20 12 N, 78 20 20 E	31 20 12 N, 78 20 20 E
Alt	3960	3968
DA	36	
Loc	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020

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38 TIPRA BANK
(IN00004)

	SGS	MS
Name	Tipra Bank	Tipra Bank
GL	Chamoli District, U.P. Valley of Flowers	Chamoli District, U.P. Valley of Flowers
GCo	30 44 40 N, 79 38 24 E	30 44 40 N, 79 38 24 E
Alt	3650	3650
DA	48	
Loc	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020	Glaciology Division, Geological Survey of India, Plot 2, Sector E, Aliganj Lucknow 226 020

39 ADAMS
(AN00027)

	SGS	MS
Name	Adams at Adams Glacier	Adams Climate Station
GL	100 m below Adams glacier terminus	Adjacent to the gaging station in the Adams stream
GCo	78 06 ** S, 163 45 ** E	78 06 ** S, 163 45 ** E
Alt	370	370
DA	5.73	
Loc	Research School of Earth Science, Victoria University of Wellington, P.O. Box 600 Wellington	Research School of Earth Science, Victoria University of Wellington, P.O. Box 600 Wellington

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40 BARTLEY
(AN00016)

	SGS	MS
Name	1) Bartley Flume 2) Bartley East Weir 3) Bartley West Weir	See Vanda Station
GL	Between Bartley Glacier and Onyx River, Wright Valley. 1) at the confluence with Onyx, 2) East Branch 3) West Branch	Onyx River
GCo	1,2,3) 77 31 ** S 162 10 ** E	***
Alt	180	***
DA	***	
Loc	Water and Soil Division Ministry of Works and Development, P.O. Box 1479, Christchurch, New Zealand	

41 CLARK
(AN00012)

	SGS	MS
Name	Clark Flume	See Vanda Station
GL	Close to confluence with Onyx River, Wright Valley	Onyx River
GCo	77 27 ** S, 162 38 ** E	***
Alt	275	***
DA	***	
Loc	Water and Soil Division Ministry of Works and Development, P.O. Box 1479, Christchurch, New Zealand	

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42 GARWOOD
(AN00025)

	SGS	MS
Name	Garwood at L. Colleenht	***
GL	On Joyce glacier stream at Garwood terminus	***
GCo	78 02 ** S, 163 55 ** E	***
Alt	***	***
DA	***	
Loc	DSIR Marine and Freshwater, Water Resources Survey, P.O. Box 384, Greymouth	

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43 MIERS
(AN00026)

	SGS	MS
Name	Miers at Miers Glacier	Miers Climate Station
GL	Downstream of the Miers glacier terminus	Adjacent to the gaging station in the Miers stream
GCo	78 05 ** S, 163 45 ** E	78 05 ** S, 163 45 ** E
Alt	350	350
DA	5.89	
Loc	Research School of Earth Science, Victoria University of Wellington, P.O. Box 600 Wellington	Research School of Earth Science, Victoria University of Wellington, P.O. Box 600 Wellington

44 VICTORIA UPPER
(AN00013)

	SGS	MS
Name	Upper Victoria	***
GL	Downstream of Upper Victoria Lake	***
GCo	77 20 ** S, 161 32 ** E	***
Alt	400	***
DA	***	
Loc	DSIR Marine and Freshwater, Water Resources Survey, P.O. Box 384, Greymouth	

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45 WRIGHT LOWER
(AN00018)

	SGS	MS
Name	1) Onyx at lower wright 2) Onyx at weir	Vanda Station
GL	1) Downstream of proglacial Lake Brownworth, Onyx River 2) Close to the Lake Vanda on Onyx River,Wright Valley	Vanda Station, Lake Vanda Wright Valley
GCo	1) 77 27 ** S,162 39 ** E 2) 77 31 ** S,161 41 ** E	77 32 ** S, 161 40 ** E
Alt	1) 275, 2) 95	95
DA	***	
Loc	DSIR Marine and Freshwater, Water Resources Survey, P.O. Box 384, Greymouth	Meteorological Service, P.O. Box 722, Wellington, New Zealand

Notes

WORLD GLACIER MONITORING SERVICE

ALPHABETIC INDEX

GLACIER NAME:	15 alphabetic or numeric digits, names arranged in alphabetical order
PSFG NUMBER:	5 digits identifying glacier with alphabetic prefix denoting country
WGI-NR:	World glacier inventory number (provisional)
DATA TABLE AND RECORD NUMBER:	Table and record number where data are located

A = General information on the observed glaciers

B = Variations in the position of glacier fronts: 1985-90

BB = Variations in the position of glacier fronts: addenda from earlier years

C = Mass balance summary data: 1985-90

CC = Mass balance summary data: addenda from earlier years

CCC = Mass balance versus altitude for selected glaciers

D = Changes in area, volume and thickness

E = Availability of hydrometeorological data

F = Index measurements and special events - see Chapter 7

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER					
AALFOTBRE OEST	N 36206	N 4A000BO 1A	A.136			C.29		
AALFOTBREEN	N 36204	N A000BO 1	A.137			C.30	CCC. 7	E.16
ABANO	SU03037	SU4G0038 17	A.558	B.490	BB. 37			
ABRAMOV	SU04101	SUXA310 40	A.559	B.491		C.65	CCC.25	E.27
ADAMS	AN00027	AN 27	A.699	B.604				E.39
AEU.PIRCHLKAR	A 00229	A J143OE 164	A.312	B.246				
AGNELLO	I 00029	I L013 29	A.441	B.375				
AKBULAKULKUN	SU05067	SUXA121 137	A.560	B.492				
AKSU ZAPADNIY	SU05115	SU XXX 018	A.561	B.493				
AKSU-VOSTOCHNIY	SU05116	SU XXX 017	A.562	B.494				
ALBA	E 09010	E 4000122 9	A.514	B.446				
ALEXANDER	CD00133	CDN002 1	A. 1			C. 1		E. 1
ALIBEKSKIY	SU03002	SUH001 138	A.563	B.495	BB. 38			
ALLALIN	CH00011	CHN01252 29	A.195	B.132				
ALP.KRAEUL F.	A 00321	A J143SI 053	A.313	B.247				
ALPEINER F.	A 00307	A J143SI 055	A.314	B.248				
ALPETLI(KANDER)	CH00109	CHR01355 B13	A.196	B.133				
ALTA (VEDRETTA)	I 00730	I L001 730	A.442	B.376				
AMMERTEN	CH00111	CHR01355 F 1	A.197	B.134				
AMOLA	I 00644	I L0102 644	A.443	B.377				
ANDOLLA NORD	I 00336	I 4L01213 19	A.444	B.378				
ANDREI	CD00148	CDN002 2	A. 2	B. 1	BB. 1	C. 2		E. 2
ANETO	E 09030	E 4000122 7	A.515	B.447				
ANTELAO INF.	I 00967	I 4L00024 3	A.445	B.379				
ANTELAO SUP.	I 00966	I 4L00024 2	A.446	B.380				
ARCO	RC00019	RC1L002X 19	A. 58	B. 25	BB. 4			
ARGENTIERE	F 00002	F N01035 A08	A.188	B.126				
AROLLA (BAS)	CH00027	CHN01273 14	A.198	B.135				
AU.BROEGGERBR.	N 15504	N W01555 6	A.159			C.45		
AURONA	I 00338	I L012 338	A.447	B.381				
AUST OKSTINDBRE	N 64902	N 4A000CV 1	A.138			C.31		
AUSTDALSBREEN	N 37323	N 4A000A4 23	A.139			C.32		
AUSTERDALSBREEN	N 31220	N A000A5 20	A.140	B. 95				
AUSTRE TORELL	N 12503	N 4W00125503	A.160	B.105				
AX010	NP00005	NP XXX 5	A.686	B.592				
AX030	NP00006	NP XXX 6	A.687	B.593				
AYUTOR-2	SU05066	SUXA121 172	A.564	B.496				

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER							
BACHFALLEN F.	A 00304	A J143OE 012	A.315	B.249						
BAERENKOPF K.	A 00702	A J143SA 071	A.316	B.250						
BAKLIBREEN	N 31013	N 4A000A5 X	A.141							F
BALAITUS SE	E 01030	E 4O001105 5	A.516	B.448						
BARBADORSO D.	I 00778	I L001 778	A.448	B.382						
BARKRAK SREDNIY	SU05072	SUXA121 54	A.565	B.497						
BARRANCS	E 09040	E 4O00122 6	A.517	B.449						
BARTLEY	AN00016	AN 16	A.700	B.605	BB. 77				E.40	
BASEI	I 00064	I 4L01451 13	A.449	B.383						
BASODINO	CH00104	CHL01214 10	A.199	B.136						
BATYRBAI	SU04063	SUXA223 15	A.566	B.498						
BAZHIN	PK01504	PK5Q13021504	A.670					D.22		
BELLA TOLA	CH00021	CHN01261 2	A.200	B.137						
BELVEDERE	I 00325	I L012 325	A.450	B.384						F
BENCH	CD00234	CD XXX 013	A. 3			C. 3				
BENITO	RC00007	RC1L002X 7	A. 59	B. 26	BB. 5					
BERGLAS F.	A 00308	A J143SI 058	A.317	B.251						
BEZENGI	SU03006	SUG0037 1	A.567	B.499	BB. 39					
BIAFO GYANG	PK00001	PK5Q15012 7	A.671							F
BIELTAL F.	A 00105	A J143SN 028	A.318	B.252						
BIFERTEN	CH00077	CHR01350 I12	A.201	B.138						
BILDSTOECKL F.	A 0B310	A J143SI B36	A.319	B.253						
BIRDZHALYCHIRAN	SU03026	SU4G0037 6	A.568	B.500						
BIS	CH00107	CHN01258 8	A.202	B.139						
BITYUKTYUBE	SU03034	SU4G0037 14	A.569	B.501						
BLACK RAPIDS	US00222	US2O01283 54	A. 22							F
BLANC	F 00031	F N01083 B21	A.189	B.127						
BLAUEIS	D 00004	D 4J143 4	A.183					D. 2		
BLUE GLACIER	US02126	USM000B 114	A. 23	B. 4	BB. 3	C.14	CC. 3			
BLUEMLISALP	CH00064	CHR01355 B 2	A.203	B.140						
BOCKKOGEL F.	A 00302	A J143OE 018	A.320	B.254						
BOGATYR	SU05111	SU XXX 011	A.570							F
BOLSHOY AZAU	SU03004	SUG0037 29	A.571		BB. 40					
BOLSHOY MAASHEY	SU07104	SU XXX 001	A.572	B.502						
BOSSONS	F 00004	F N01037 D03	A.190	B.128						
BOVEYRE	CH00041	CHN01284 4	A.204	B.141						
BRECHA LATOUR	E 01020	E 4O001105 2	A.518	B.450						

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GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER								
BREIDAMJOK.E.A	IS01126	ISV 11 26A	A. 94	B. 55							F
BREIDAMJOK.E.B	IS01126	ISV 11 26B	A. 95	B. 56							
BREIDAMJOK.W.A	IS01125	ISV 11 25A	A. 96	B. 57							
BREIDAMJOK.W.B	IS01125	ISV 11 25B	A. 97								
BREIDAMJOK.W.C	IS01125	ISV 11 25C	A. 98	B. 58							
BRENEY	CH00036	CHN01282 19	A.205	B.142							
BRENNKOGL K.	A 00727	A J143SA 043	A.321	B.255							
BRENVA	I 00219	I L013 219	A.451	B.385							
BRESCIANA	CH00103	CHL01244 2	A.206	B.143							
BRIGSDALSBREEN	N 37110	N A000BS 10	A.142	B. 96							
BROGGI	PE00003	PEP005C1 F03	A. 51	B. 19							
BRUARJOKULL	IS02400	ISV 2 400	A. 99	B. 59							F
BRUEGGEN	RC00032	RC1L002X 32	A. 60	B. 27	BB. 6						
BRUNEGG	CH00020	CHN01260 A9	A.207	B.144							
BRUNNI	CH00072	CHR01351 D72	A.208	B.145							
BUALTAR	PK00004	PK5Q1421 7	A.672								F
CACHET	RC00021	RC1L002X 21	A. 61	B. 28	BB. 7						
CALDERAS	CH00095	CHJ14335 17	A.209	B.146							
CAMBRENA	CH00099	CHL01193 9	A.210	B.147							
CAMOSCI	I 00361	I L012 361	A.452	B.386							
CARBON	US02020	USM000B 126	A. 24	B. 5							
CARDONNE OCC.	I 00469	I L011 469	A.453	B.387							
CARESER	I 00701	I L00102 519	A.454			C.62		CCC.23	D.19		
CARSTENSZ	RI00004	RI XXX 4	A.694	B.599							
CASPOGGIO	I 00435	I L011 435	A.455	B.388							
CAVAGNOLI	CH00119	CHL01214 17	A.211	B.148							
CESAR	KN00004	KNE021B 5	A.545	B.477							
CEVEDALE	I 00732	I L001 732	A.456	B.389							
CHACHI	SU03035	SU4G0038 15	A.573	B.503	BB. 41						
CHANGMEKHANGPU	IN02522	IN5P25 22	A.681	B.588	BB. 74	C.90	CC. 8			E.35	
CHEILLON	CH00029	CHN01274 8	A.212	B.149							
CHOGO LUNGMA	PK01001	PK5Q13051001	A.673	B.582	BB. 68				D.23		
CHONG-TUR PRAVI	SU05119	SU XXX 012	A.574	B.504							
CHUNGPAR-TASH.	PK01501	PK5Q13021501	A.674	B.583	BB. 69				D.24		
CHUNGURCHATCHIR	SU03027	SU4G0037 7	A.575	B.505							
CLOT DE HOUNT	E 03010	E 4000121 1	A.519	B.451							
CLARK	AN00012	AN 12	A.701	B.606						E.41	

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER							
COLLALTO	I 00927	I L001 927	A.457	B.390						
COLLIERY	CN00036	CN Y533B 33	A.660	B.572						
COLONIA	RC00020	RC1L002X 20	A. 62	B. 29	BB. 8					
COLUMBIA (2057)	US02057	US2M00332 4	A. 25	B. 6		C.15				
COLUMBIA (627)	US00627	USN000D 39	A. 26	B. 7						F
COOLIDGE	I 01420	I 4L01481 3	A.458							F
CORBASSIERE	CH00038	CHN01283 3	A.213	B.150						
CORNO	CH00120	CHL01234 1	A.214	B.151						
CORONAS	E 09080	E 4O00122 10	A.520	B.452						
COWLITZ	US02025	USM000B 128	A. 27	B. 8						
CREGUENA N	E 0907A	E 4O00122A14	A.521	B.453						
CREGUENA S	E 0907B	E 4O00122B14	A.522	B.454						
CRISTALLO	I 00937	I 4L001243 2	A.459	B.391						
CRODA ROSSA	I 00828	I L001 828	A.460	B.392						
DAGONGBA	CN00028	CN5K612D 44	A.661	B.573						
DAMMA	CH00070	CHR01351 F10	A.215	B.152						
DANIELS	US02052	US2M10015 4	A. 28	B. 9		C.16				
DART	NZ07521	NZ6D 752C087	A.696	B.601						
DARWIN	KN00006	KNE021D 6	A.546	B.478						
DAUNKOGEL F.	A 0A310	A J143SI A36	A.322	B.256						
DEVDORAKI	SU03036	SU4G0038 16	A.576	B.506	BB. 42					
DEVON ICE CAP	CD00431	CDS2 1	A. 4			C. 4	CCC. 1			
DIAMOND	KN00010	KNE021D 5	A.547	B.479						
DIEM F.	A 00220	A J143OE 100	A.323	B.257						
DJANKUAT	SU03010	SUG0037 62	A.577	B.507		C.66	CCC.26	D.20	E.28	
DOLONATA	SU05121	SU XXX 014	A.578	B.508						
DORFER K.	A 00509	A J131IS 052	A.324	B.258						
DOSDE OR.	I 00473	I L011 473	A.461	B.393						
DOSEGU	I 00512	I L011 512	A.462	B.394						
DUNAGIRI	IN00191	IN5O1222 191	A.682	B.589		C.91			E.36	
DX080	NP00007	NP XXX 7	A.688	B.594						
DZHUUKUCHAK	SU05117	SU XXX 015	A.579	B.509						
E.GRUEBL F.	A 00317	A J143SI 023	A.325	B.259						
EB050	NP00008	NP XXX 8	A.689	B.595						
EIGER	CH00059	CHN01254 M 3	A.216	B.153						
EIGER (WEST)	CH00353	CH4R0144M 2	A.217							F
EISER K.	A 00708	A J143SA 074	A.326	B.260						

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
EKLUTNA	US00391	US2N00673 6	A. 29	B. 10		C.17		E. 9	
EN DARREY	CH00030	CHN01274 11	A.218	B.154					
ENGABREEN	N 67011	N A000C4 11	A.143	B. 97		C.33	CCC. 8	E.17	
EXIT GLACIER	US00390	US2N00517 7	A. 30	B. 11					
EXPLORADORES	RC00028	RC1L002X 28	A. 63	B. 30	BB. 9				
EYJABAKKAJ.	IS02300	ISV 2 300	A.100						F
FORNI	I 00507	I L011 507	A.463	B.395					
FAABERGSTOELSB.	N 31015	N A000A4 15	A.144	B. 98					
FALLJOKULL	IS01021	ISV 1 021	A.101	B. 60					
FEE NORTH	CH00013	CHN01253 4	A.219	B.155					
FELLARIA OCC.	I 00439	I L011 439	A.464	B.396					
FERNAU F.	A 00312	A J143SI 034	A.327	B.261					
FERPECLE	CH00025	CHN01272 11	A.220	B.156					
FIERO	RC00026	RC1L002X 26	A. 64	B. 31	BB. 10				
FIESCHER	CH00004	CHN01240 7	A.221	B.157					
FINDELEN	CH00016	CHN01256 3	A.222	B.158					
FIRNALPELI	CH00075	CHR01351 H13	A.223	B.159					
FJALLS.FITJAR	IS01024	ISV 10 24F	A.102	B. 61					
FJALLSJ. BRMFJ	IS01024	ISV 10 24B	A.103	B. 62					
FJALLSJ. G-SEL	IS01024	ISV 10 24G	A.104	B. 63					
FONTANA OCC.	I 00780	I L001 780	A.465	B.397					
FORCOLA	I 00731	I L001 731	A.466	B.398					
FOREL	KN00011	KNE021D 4	A.548	B.480					
FORNO	CH00102	CHL01183 12	A.224	B.160					
FOSS	US02053	US2M00BH4 5	A. 31			C.18			
FOSSA OR.	I 00823	I L001 823	A.467	B.399					
FRANZ JOSEF	NZ08881	NZ6D888B 004	A.697	B.602	BB. 76				
FREIGER F.	A 00320	A J143SI 027	A.328	B.262					
FREIWAND K.	A 00706	A J131MO 030	A.329	B.263					
FROSNITZ K.	A 00507	A J131IS 066	A.330	B.264					
FRUSCHNITZ K.	A 00722	A J131IS 108	A.331	B.265					
FURTSCHAGL K.	A 00406	A J143ZI 086	A.332	B.266					
FYLES	CD00698	CDM000C 8	A. 5						F
GAISKAR F.	A 00325	A J143OE 039	A.333	B.267					
GAISSBERG F.	A 00225	A J143OE 060	A.334	B.268					
GAJAP-YANACARCO	PE00009	PEIP004DDF01	A. 52	B. 20					
GAMCHI	CH00061	CHR01355 A 4	A.225	B.161					

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GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER							
GARABASHI	SU03031	SU4G0037 11	A.580	B.510		C.67	CCC.27			
GARWOOD	AN00025	AN 25	A.702						E.42	
GAULI	CH00052	CHR01354 I 5	A.226	B.162						
GEBROULAZ	F 00009	F N01046 E06	A.191	B.129						
GEOGRAPHICHESKO	SU04039	SUXA401 992	A.581	B.511						
GEPATSCH F.	A 00202	A J143FA 022	A.335	B.269				D. 9		
GERGETI	SU03038	SU4G0038 18	A.582	B.512	BB. 43					
GIETRO	CH00037	CHN01282 14	A.227	B.163						
GIGANTE CENTR.	I 00929	I L001 929	A.468	B.400						
GIGANTE OCC.	I 00930	I L001 930	A.469	B.401						
GIGJOKULL	IS00112	ISV 112	A.105	B. 64						
GIOGO ALTO	I 00813	I L001 813	A.470	B.402						
GLAERNISCH	CH00080	CHR01350 K 4	A.228	B.164						
GLJUFURARJOKUL	IS00103	ISV 103	A.106	B. 65						
GOESSNITZ K.	A 01201	A J131MO 011	A.336	B.270						
GOLETTA	I 00148	I 4L0152 148	A.471	B.403						
GOLUBIN	SU05060	SUX0C1 250	A.583	B.513		C.68	CCC.28			
GOODSPEED	AN00020	AN 20	A.703	B.607						
GORNER	CH00014	CHN01256 7	A.229	B.165						
GOZHA	CN00034	CN52431B 14	A.662	B.574						
GR. MURAILLES	I 00260	I L013 260	A.472	B.404						
GR.GOSAU G.	A 01101	A J142TR 004	A.337	B.271						
GRAASUBREEN	N 00547	N A000AB 47	A.145			C.34	CCC. 9			
GRAN PILASTRO	I 00893	I L001 893	A.473	B.405						
GRAND DESERT	CH00031	CHN01275 6	A.230	B.166						
GRAND PLAN NEVE	CH00045	CHN01217 3	A.231	B.167						
GREGORY	KN00009	KNE021B 1	A.549	B.481						
GRIES (AEGINA)	CH00003	CHN01245 4	A.232	B.168		C.54	CCC.17	D. 7		
GRIESKOGL K.	A 00709	A J143SA 075	A.338	B.272						
GRIESS(KLAUSEN)	CH00074	CHR01351 C 2	A.233	B.169						
GRIESSEN(OBWA.)	CH00076	CHR01351 H 2	A.234	B.170						
GROSSE	RC00001	RC1L002X 1	A. 65	B. 32	BB. 11					
GROSSELEND K.	A 01001	A J131LI 014	A.339	B.273						
GROSSER ALETSCH	CH00005	CHN01236 26	A.235	B.171		C.55			E.23	
GRUBEN	CH00352	CH4N01351005	A.236							F
GRUENAU F.	A 00315	A J143SI 030	A.340	B.274				D.10		
GUALAS N-TONGUE	RC000A4	RC1L002X A4	A. 66	B. 33	BB. 12					

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER								
GUALAS S-TONGUE	RC000B4	RC1L002X B4	A. 67	B. 34	BB. 13						
GULIYA	CN00035	CN52431C 22	A.663	B.575							
GULKANA	US00200	US0012 2	A. 32			C.19	CC. 4			E.10	
GURGLER F.	A 00222	A J143OE 074	A.341	B.275							
GUSLAR F.	A 00210	A J143OE 132	A.342	B.276					D.11		
HAGAFELLSJOK.E	IS00306	ISV 306	A.107	B. 66							
HAGAFELLSJOKUL	IS00204	ISV 204	A.108	B. 67							
HAILUOGOU	CN00031	CN5K612F 3	A.664	B.576							
HALLSTAETTER G.	A 01102	A J142TR 002	A.343	B.277							
HAMAGURI YUKI	J 00001	J XXX 001	A.693			C.94					
HANS	N 12419	N W01244 19	A.161	B.106		C.46				E.19	
HARDANGERJOEKUL	N 22303	N A000AQ 1	A.146			C.35		CCC.10			
HART	AN00019	AN 19	A.704	B.608							
HEIM	KN00012	KNE021D 3	A.550	B.482							
HEIMDALL	AN00003	AN 3	A.705	B.609							
HELLSTUGUBREEN	N 00511	N A000AD 11	A.147	B. 99		C.36		CCC.11			
HELM	CD00855	CDM000C 2	A. 6			C. 5		CCC. 2		E. 3	
HINTEREIS F.	A 00209	A J143OE 125	A.344	B.278		C.57		CCC.19	D.12		
HISPAR	PK00011	PK5Q1421 3	A.675								F
HOCHALM K.	A 01005	A J131LI 011	A.345	B.279							
HOCHJOCH F.	A 00208	A J143OE 121	A.346	B.280							
HOCHMOOS F.	A 00309	A J143SI 043	A.347	B.281							
HOELLENTAL	D 00003	D 4J144 3	A.184						D. 3		
HOFFELLSJ.E	IS02132	ISV 2 132	A.109	B. 68							
HOFFELLSJ.W	IS02031	ISV 2 031	A.110	B. 69							
HOFMANNS K.	A 00724	A J131MO 026	A.348	B.282							
HOFSJOKULL N	IS00510	ISV 510	A.111	B. 70	BB. 34	C.28					
HORCONES INF.	RA05006	RA1J111855 1	A. 87								F
HORN K.(SCHOB.)	A 01202	A J131MO 010	A.349	B.283							
HORN K.(ZILLER)	A 00402	A J143ZI 075	A.350	B.284					D.13		
HOSAND SETT.	I 00357	I 4L01216 18	A.474	B.406							
HPN 1	RC00008	RC1L002X 8	A. 68	B. 35	BB. 14						
HPN 2	RC00009	RC1L002X 9	A. 69	B. 36	BB. 15						
HPN 3	RC00010	RC1L002X 10	A. 70	B. 37	BB. 16						
HRUTARJOKULL	IS00923	ISV 923	A.112	B. 71							
HT.OELGRUBEN F.	A 00203	A J143FA 018	A.351	B.285							
HUARAPASCA	PE00007	PEIP005ZWE03	A. 53	B. 21							

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
HUBBARD	US01290	US2N00342 8	A. 33						F
HUEFI	CH00073	CHR01351 D10	A.237	B.172					
HYLLGLACIAEREN	S 00780	S 4B000E6 6	A.164	B.108					
HYRNINGSJOKULL	IS00100	ISV 100	A.113	B. 72					
ICE WORM	US02054	US2M10015 1	A. 34			C.20			
IGLI TUYUKSU	SU05076	SUXB22 108	A.584			C.69			
INFIERNO E	E 02020	E 40001105 4	A.523	B.455					
INFIERNO W	E 0201A	E 40001105A3	A.524	B.456					
INFIERNO WW	E 0201B	E 40001105B3	A.525	B.457					
INN.PIRCHLKAR	A 00228	A J143OE 163	A.352	B.286					
IRIK	SU03029	SU4G0037 9	A.585		BB. 44				
IRIKCHAT	SU03028	SU4G0037 8	A.586		BB. 45				
ISFALLSGLAC.	S 00787	S B000E0 6	A.165	B.109				E.21	
IVORY	NZ09011	NZ6D901 009	A.698	B.603					
JAMTAL F.	A 00106	A J143SN 019	A.353	B.287		C.58	CCC.20		
JOKULHALS	IS00201	ISV 201	A.114	B. 73					
JORGE MONTT	RC00030	RC1L002X 30	A. 71	B. 38	BB. 17				
JOSEPH	KN00003	KNE021B 4	A.551	B.483					
KA.TAUERN K.S	A 0B602	A J131IS 102	A.354	B.288					
KAELBERSPITZ K.	A 01003	A J131LI 015	A.355	B.289					
KALDALONSJOKUL	IS00102	ISV 102	A.115	B. 74					
KALESNIK	SU05001	SUXA121 95	A.587	B.514					
KALTWASSER	CH00007	CHN01247 4	A.238	B.173					
KARA-BATKAK	SU05080	SUX00C 265	A.588	B.515		C.70		E.29	
KARACHAUL	SU03022	SU4G0037 2	A.589	B.516					
KARLES F.	A 00207	A J143PI 007	A.356	B.290					
KARLINGER K.	A 00701	A J143SA 073	A.357	B.291					
KARSOJIETNA	S 00798	S B000EV 19	A.166	B.110		C.48			
KEHLEN	CH00068	CHR01351 F15	A.239	B.174					
KENG-TUR	SU05118	SU XXX 013	A.590	B.517					
KESSELWAND F.	A 00226	A J143OE 129	A.358	B.292		C.59	CCC.21		
KESSJEN	CH00012	CHN01252 33	A.240	B.175					
KHADYRSHA	SU04021	SU XXX 002	A.591	B.518					
KHAKEL	SU03003	SUH001 173	A.592	B.519	BB. 46			E.30	
KIBISHA	SU03042	SU4G0037 22	A.593	B.520	BB. 47				
KIRCHIN	SU04056	SUXA131 209	A.594	B.521					
KL.FLEISS K.	A 00801	A J131MO 036	A.359	B.293					

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER					
KLEINEISER K.	A 00717	A J143SA 089	A.360	B.294				
KLEINELEND K.	A 01002	A J131LI 022	A.361	B.295				
KLJUEV	SU04059	SUXA131 284	A.595	B.522				
KLOSTERTALER M.	A 0102B	A R013IL 014	A.362	B.296				
KLOSTERTALER N.	A 0102A	A R013IL 013	A.363	B.297				
KLOSTERTALER S.	A 0102C	A R013IL 015	A.364	B.298				
KOKBELES	SU04057	SUXA131 215	A.596	B.523				
KONGMA	NP00010	NP XXX 10	A.690	B.596				
KONGMA TIKPE	NP00009	NP XXX 9	A.691	B.597				
KORELDASH	SU03015	SU5T001 25	A.597	B.524	BB. 48			
KORUMDU	SU07103	SUA125 133	A.598	B.525				
KOZELSKIY	SU08005	SU XXX 006	A.599	B.526	BB. 49	C.71	CCC.29	
KRAPF	KN00001	KNE021B 2	A.552	B.484				
KRIMMLER K.	A 00501	A J143SA 141	A.365	B.299				
KRUML K.	A 00806	A J143SA 038	A.366	B.300				
KVERKJOKULL	IS02500	ISV 2 500	A.116	B. 75				
KVIARJOKULL	IS00822	ISV 822	A.117	B. 76				
KYUKYURTLYU	SU03033	SU4G0037 13	A.600		BB. 50			
LA MARE	I 00699	I L001 699	A.475	B.407				
LA PAUL	E 07020	E 4O00122 2	A.526	B.458				
LAEMMERN	CH00063	CHR01355 C13	A.241	B.176				
LAENGENTALER F.	A 00305	A J143ME 004	A.367	B.301				
LANA	I 00913	I L001 913	A.476	B.408				
LANDECK K.	A 00604	A J143SA 105	A.368	B.302				
LANG	CH00018	CHN01231 4	A.242	B.177				
LANGFJORDJOEKUL	N 85008	N 4A000ET 8	A.148			C.37		
LANGTALER F.	A 00223	A J143OE 072	A.369	B.303				
LAPERWITZ K.	A 00721	A J131IS 107	A.370	B.304				
LARAIN F.	A 00107	A J143SN 007	A.371	B.305				
LAS FRONDELLAS	E 01010	E 4O001105 1	A.527	B.459				
LAVAZ	CH00082	CHR01314 F15	A.243	B.178				
LEIRBREEN	N 00548	N 4A000AD 47	A.149	B.100				
LEIRUFJ.JOKULL	IS00200	ISV 200	A.118	B. 77				
LENTA	CH00084	CHR01314 D17	A.244	B.179				
LEONES	RC00025	RC1L002X 25	A. 72	B. 39	BB. 18			
LEVIY AKTRU	SU07102	SUA125 128	A.601	B.527		C.72	CCC.30	
LEWIS	KN00008	KNE021D 1	A.553	B.485		C.64	CCC.24	E.25

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
LEX BLANCHE	I 00209	I L013 209	A.477	B.409					
LIESENSER F.	A 00306	A J143ME 002	A.372	B.306					
LIMMERN	CH00078	CHR01350 I 6	A.245	B.180					
LISCHANA	CH00098	CHJ14302 6	A.246	B.181					
LITEROLA	E 08010	E 4O00122 3	A.528	B.460					
LITZNERGL.	A 00101	A R013IL 021	A.373	B.307					
LLARDANA	E 07010	E 4O00121 9	A.529	B.461					
LLOSAS	E 09090	E 4O00122 11	A.530	B.462					
LOWER CURTIS	US02055	US2M00212 4	A. 35	B. 12		C.21			
LUNGA(VEDRETTA)	I 00733	I L001 733	A.478	B.410					
LYNCH	US02056	US2M00334 2	A. 36			C.22			
LYS	I 00304	I L013 304	A.479	B.411					
M.LOVENBREEN	N 15506	N W01555 7	A.162			C.47			
M.NEVOSO OCC.	I 00931	I L001 931	A.480	B.412					
MALADETA	E 09020	E 4O00122 8	A.531	B.463					
MALAVALLE	I 00875	I L001 875	A.481	B.413					
MALIY AKTRU	SU07100	SUA125 126	A.602	B.528		C.73	CCC.31	E.31	
MALIY AZAU	SU03032	SU4G0037 12	A.603	B.529					
MANDRONE	I 00639	I L0102 639	A.482	B.414					
MANSHUK MAMETOV	SU05091	SUXB22 112	A.604			C.74			
MARBORECILINDRO	E 05010	E 4O00121 7	A.532	B.464					
MARMOLADA	I 00941	I 4L001011 1	A.483	B.415					
MARTINETS	CH00046	CHN01217 8	A.247	B.182					
MARUKHSKIY	SU03001	SU 001 108	A.605	B.530	BB. 51				
MARZELL F.	A 00218	A J143OE 110	A.374	B.308					
MAURER K.(GLO.)	A 00714	A J143SA 083	A.375	B.309					
MAURER K.(VEN.)	A 00510	A J131IS 048	A.376	B.310					
MAYAKOVSKIY	SU05094	SUXB22 111	A.606			C.75			
MAZARSKIY	SU04042	SUXA300 392	A.607	B.531					
MEDVEZHIY	SU04040	SUXA401 991	A.608						F
MEIGHEN ICE CAP	CD01335	CD2R9 1	A. 7			C. 6	CC. 1		
MER DE GLACE	F 00003	F N01036 A01	A.192	B.130					
MEREN	RI00003	RI XXX 3	A.695	B.600					
MESERVE	AN00017	AN 17	A.706	B.610	BB. 78				
MIAGE	I 00213	I L013 213	A.484	B.416					
MIEGUSZOWIECKIE	PL00140	PL XXX 140	A.556	B.488	BB. 35			E.26	
MIERS	AN00026	AN 26	A.707	B.611				E.43	

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
MIKELCHIRAN	SU03025	SU4G0037 5	A.609	B.532					
MIKKAJEKNA	S 00766	S B000FA 46	A.167	B.111					
MINAPIN	PK00013	PK5Q1420 15	A.676	B.584	BB. 70				
MINSTIGER	CH00164	CH4N01341 7	A.248						F
MITTELALETSCH	CH00106	CHN01236 21	A.249	B.183					
MITTELBERG F.	A 00206	A J143PI 008	A.377	B.311					
MITTERKAR F.	A 00214	A J143OE 135	A.378	B.312					
MNA	SU03039	SU4G0038 19	A.610	B.533	BB. 52				
MOIRY	CH00024	CHN01264 2	A.250	B.184					
MOLODEZHNIY	SU05090	SUXB22 105	A.611	B.534		C.76			
MOMING	CH00023	CHN01262 10	A.251	B.185					
MONFERRAT	E 0302B	E 4000121B10	A.533	B.465					
MONT DURAND	CH00035	CHN01282 36	A.252	B.186					
MONT FORT	CH00032	CHN01275 12	A.253	B.187					
MONT MINE	CH00026	CHN01272 15	A.254	B.188					
MORENO	RA00034	RA1I031 326	A. 88	B. 53	BB. 32				
MORSARJOKULL	IS00318	ISV 318	A.119	B. 78					
MORTERATSCH	CH00094	CHJ14322 3	A.255	B.189					
MUIR	US01340	USN000C 908	A. 37						F
MULAJOKULL S.	IS00311	ISV 3 11B	A.120	B. 79					F
MULAJOKULL W	IS00311	ISV 3 11A	A.121	B. 80					
MURAVLEV	SU06002	SU XXX 020	A.612	B.535	BB. 53				
MURKAR	SU03020	SU4G0037 30	A.613		BB. 54				
MUSHKETOV	SU04041	SUXA320 710	A.614	B.536					
MUTMAL F.	A 00227	A J143OE 108	A.379	B.313					
MUTT	CH00002	CHN01244 3	A.256	B.190					
NARDIS OCC.	I 00640	I L0102 516	A.485	B.417					
NAUTHAGAJOKULL	IS00210	ISV 210	A.122	B. 81					
NEF	RC00023	RC1L002X 23	A. 73	B. 40	BB. 19				
NEVES OR.	I 00902	I L001 902	A.486	B.418					
NIEDERJOCH F.	A 00217	A J143OE 111	A.380	B.314					
NIGARDSBREEN	N 31014	N A000A4 14	A.150	B.101		C.38	CCC.12	E.18	
NISCLI	I 00633	I 4L01011 6	A.487	B.419					
NISQUALLY	US02027	USM000B 129	A. 38	B. 13					
NO.104	SU01001	SUEZ 1	A.615	B.537		C.77			
NO.125	SU07105	SU5A125 105	A.616	B.538		C.78	CCC.32		
NO.131	SU05081	SU5XXX 81	A.617			C.79	CCC.33		

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
NO.191	SU03041	SU4G0037 21	A.618	B.539					
NO.314	SU04045	SUXA200 994	A.619	B.540	BB. 55				
NO.356	SU05106	SU XXX 019	A.620	B.541		C.80	CCC.34	E.32	
NO.396	SU03016	SU5V012 26	A.621	B.542	BB. 56				
NO.462V	SU03005	SUG0036 22	A.622	B.543	BB. 57				
NO.503	SU04003	SUXA300 503	A.623	B.544					
NO.517	SU04017	SUXA300 517	A.624	B.545					
NO.675	SU04064	SUXA223 999	A.625	B.546	BB. 58				
NORTHEY	KN00013	KNE021B 3	A.554	B.486					
O'HIGGINS	RC00031	RC1L002X 31	A. 74	B. 41	BB. 20				
OB.GRINDELWALD	CH00057	CHR01354 L 4	A.257	B.191					
OBERAAR	CH00050	CHR01354 G 3	A.258	B.192					
OBERALETSCH	CH00006	CHN01236 1	A.259	B.193					
OBERSULZBACH K.	A 00502	A J143SA 129	A.381	B.315					
OCHSENTALERGL.	A 00103	A R013IL 008	A.382	B.316					
OEDENWINKEL K.	A 00712	A J143SA 094	A.383	B.317					
OELDUFELLSJ.	IS00114	ISV 114	A.123	B. 82					
OFENTAL	CH00009	CHN01252 17	A.260	B.194					
ORDZHONIKIDZE	SU05093	SUXB22 110	A.626			C.81			
OTEMMA	CH00034	CHN01282 7	A.261	B.195					
OVERLORD	CD01590	CD XXX 011	A. 8	B. 2					
PAKHTAKOR	SU05071	SUXA121 89	A.627	B.547					
PALUE	CH00100	CHL01193 4	A.262	B.196					
PANEYROSSE	CH00044	CHN01217 2	A.263	B.197					
PARADIES	CH00086	CHR01313 N 6	A.264	B.198					
PARADISINO	CH00101	CHL01195 1	A.265	B.199					
PARED NORTE	RC00017	RC1L002X 17	A. 75	B. 42	BB. 21				
PARED SUR	RC00016	RC1L002X 16	A. 76	B. 43	BB. 22				
PARTEJEKNA	S 00763	S B000E8 2	A.168	B.112					
PARTIZAN	SU05095	SUXB22 109	A.628			C.82			
PASSUSJIETNA E.	S 00797	S B000EZ 11	A.169	B.113					
PASSUSJIETNA W	S 00796	S B000EZ 12	A.170	B.114					
PASTERZEN K.	A 00704	A J131MO 027	A.384	B.318					
PASTORURI	PE00008	PE1P005ZWF02	A. 54	B. 22					
PECK-HUASCARAN	PE00002	PE1P005XIK01	A. 55						F
PENDENTE	I 00876	I L001 876	A.488	B.420					
PERDIDO INF	E 0502B	E 4000121 B5	A.534	B.466					

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER						
PERDIDO SUP	E 0502A	E 4O00121 A5	A.535	B.467					
PETERS	US00310	US2001492 13	A. 39						F
PEYTO	CD01640	CDM122 2	A. 9			C. 7	CCC. 3	E. 4	
PFAFFEN F.	A 00324	A J143OE 040	A.385	B.319					
PFANDLSCHARTEN	A 00707	A J131MO 032	A.386	B.320					
PIERREDAR	CH00049	CHN01216 5	A.266	B.200					
PIODE	I 00312	I L0104 312	A.489	B.421					
PISCIS	RC00015	RC1L002X 15	A. 77	B. 44	BB. 23				
PISGANA OCC.	I 00577	I L0102 577	A.490	B.422					
PIZOL	CH00081	CHR01350 D 1	A.267	B.201					
PLACE	CD01660	CDM200 2	A. 10			C. 8	CCC. 4	E. 5	
PLATIGLIOLE	I 00481	I L011 481	A.491	B.423					
PLATTALVA	CH00114	CHR01350 I 7	A.268	B.202					
PLOMO	RA05007	RA1J111797 6	A. 89						F
POD CUBRYNA	PL00180	PL XXX 180	A.557	B.489	BB. 36			E.26	
PORCHABELLA	CH00088	CHR01312 E 4	A.269	B.203					
POSETS	E 07030	E 4O00122 1	A.536	B.468					
PRAEGRAT K.	A 00603	A J131IS 092	A.387	B.321					
PRAPIO	CH00048	CHN01216 3	A.270	B.204					
PRAVIY AKTRU	SU07101	SUA125 127	A.629			C.83	CCC.35		
PRE DE BAR	I 00235	I L013 235	A.492	B.424					
PRESANELLA	I 00678	I L001 678	A.493	B.425					
PUNTA ZARRA	E 02040	E 4O001105 7	A.537	B.469					
PUNTEGLIAS	CH00083	CHR01314 M 9	A.271	B.205					
QAMANARSSUP S.	G 00003	G 2U1CH21002	A. 91						F
QIYI	CN00003	CN Y0437C 18	A.665	B.577					
RABOTS GLACIAER	S 00785	S B000E1 16	A.171	B.115		C.49	CCC.15		
RAETZLI	CH00065	CHR01355 F 3	A.272	B.206					
RAIGORODSKIY	SU04055	SUXA131 213	A.630	B.548					
RAINBOW	US02003	US2M00B11 8	A. 40	B. 14		C.23			
RAMA	SU04044	SUXA200 993	A.631	B.549					
REICHER NE	RC000A3	RC1L002X A3	A. 78	B. 45	BB. 24				
REICHER SW	RC000B3	RC1L002X B3	A. 79	B. 46	BB. 25				
RETTENBACH F.	A 00212	A J143OE 150	A.388	B.322					
REYKJAFJARDARJ.	IS00300	ISV 300	A.124	B. 83					
RHONE	CH00001	CHN01243 3	A.273	B.207					
RIED	CH00017	CHN01254 3	A.274	B.208					

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER					
RIFFL K. N	A 00718	A J143SA 092	A.389	B.323				
RIFFLKAR KEES	A 0A713	A J143SA A91	A.390	B.324				
RIUKOJIETNA	S 00790	S 4A000DW 65	A.172	B.116		C.50		
ROBINERA	E 06010	E 4O00121 8	A.538	B.470				
ROCKFALL	CD01877	CD2N003BP007	A. 11					F
ROFENKAR F.	A 00215	A J143OE 136	A.391	B.325				
ROSEG	CH00092	CHJ14323 11	A.275	B.209				
ROSENLAUI	CH00056	CHR01354 J 2	A.276	B.210				
ROSIM	I 00754	I L001 754	A.494	B.426				
ROSSA (VEDR.)	I 00697	I L001 697	A.495	B.427				
ROSSBODEN	CH00105	CHL01202 4	A.277	B.211				
ROSSO DESTRO	I 00920	I L001 920	A.496	B.428				
ROTFIRN NORD	CH00069	CHR01351 F13	A.278	B.212				
ROTMOOS F.	A 00224	A J143OE 063	A.392	B.326				
RUIZ	CO00001	CO1A1 XXXXXX	A. 49					F
RUOPSOKJEKNA	S 00764	S B000E8 9	A.173	B.117				
RUOTESJEKNA	S 00767	S B000FA 40	A.174	B.118				
RUTOR	I 00189	I L013 189	A.497	B.429				
SAINT SORLIN	F 00015	F N01062 B09	A.193	B.131				
SALAJEKNA	S 00759	S B000FE 2	A.175	B.119				
SALEINA	CH00042	CHN01285 16	A.279	B.213				
SALENCAS	E 09060	E 4O00122 4	A.539	B.471				
SAN QUINTIN	RC00006	RC1L002X 6	A. 80	B. 47	BB. 26			
SAN RAFAEL	RC00005	RC1L002X 5	A. 81	B. 48	BB. 27			
SANKT ANNA	CH00067	CHR01351 E12	A.280	B.214				
SARDONA	CH00091	CHR01315 B 5	A.281	B.215				
SARENNES	F 00029	F N01063 A02	A.194			C.53		
SASSOLUNGO OCC.	I 00926	I L001 926	A.498	B.430				
SATSCHEN SANGO	PK00801	PK5Q13020802	A.677				D.25	
SCHALF F.	A 00219	A J143OE 107	A.393	B.327				
SCHATTENSPITZ	A 00108	A R013IL 011	A.394	B.328				
SCHAUFEL F.	A 00311	A J143SI 035	A.395	B.329				
SCHLADMINGER G.	A 01103	A J142TR 001	A.396	B.330				
SCHLAPPEREBEN K	A 00805	A J143SA 021	A.397	B.331				
SCHLATEN K.	A 00506	A J131IS 077	A.398	B.332				
SCHLEGEIS K.	A 00405	A J143ZI 087	A.399	B.333			D.14	
SCHMIEDINGER K.	A 00726	A J143SA 081	A.400	B.334				

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER								
SCHNEEFERNER N	D 00001	D 4J144 1	A.185						D. 4		
SCHNEEFERNER S	D 00002	D 4J144 2	A.186						D. 5		
SCHNEEGLOCKEN	A 00109	A R013IL 009	A.401	B.335							
SCHNEELOCH G.	A 01104	A J142TR 003	A.402	B.336							
SCHOENACH K.	A 00407	A J143ZI 008	A.403	B.337							
SCHWARZ	CH00062	CHR01355 C 5	A.282	B.216							
SCHWARZBERG	CH00010	CHN01252 24	A.283	B.217							
SCHWARZENBERG F	A 00303	A J143OE 017	A.404	B.338							
SCHWARZENSTEIN	A 00403	A J143ZI 073	A.405	B.339					D.15		
SCHWARZKARL K.	A 00716	A J143SA 088	A.406	B.340							
SCHWARZKOEPFL K	A 00710	A J143SA 072	A.407	B.341							
SE KASKASATJ GL	S 00789	S 4B000E0 10	A.176	B.120							
SENTINEL	CD01915	CDM000C 96	A. 12			C. 9		CCC. 5		E. 6	
SERANA(VEDR.)	I 00728	I L001 728	A.499	B.431							
SESVENNA	CH00097	CHJ14303 4	A.284	B.218							
SEVERTSOV	SU04062	SUXA223 5	A.632	B.550							
SEX ROUGE	CH00047	CHN01216 1	A.285	B.219							
SEXEGERTEN F.	A 00204	A J143PI 016	A.408	B.342							
SFORZELLINA	I 00516	I 4L01137 36	A.500	B.432		C.63					
SHAIGIRI	PK01508	PK5Q13021508	A.678	B.585	BB. 71				D.26		
SHAUNE GARANG	IN00084	IN5Q220 1984	A.683	B.590		C.92	CC. 9			E.37	
SHOKALSKIY	SU05078	SUXB22 167	A.633	B.551							
SHUMSKIY	SU06001	SU XXX 024	A.634	B.552	BB. 59	C.84	CC. 6	CCC.36	D.21		
SIDUJOK.E M175	IS00015	ISV 15A	A.125	B. 84							
SIDUJOK.E M177	IS00015	ISV 15B	A.126	B. 85							
SILVRETTA	CH00090	CHR01310 G 5	A.286	B.220		C.56		CCC.18			
SIMMING F.	A 00318	A J143SI 014	A.409	B.343							
SIMONY K.	A 00511	A J131IS 045	A.410	B.344							
SKAFTAFELLSJ.	IS00419	ISV 4 19M	A.127	B. 86							
SKAZKA	SU03008	SUG0033 5	A.635	B.553	BB. 60						
SKEIDARARJ. E1	IS00117	ISV 1 17A	A.128	B. 87							
SKEIDARARJ. E2	IS00117	ISV 1 17B	A.129	B. 88							
SKEIDARARJ. E3	IS00117	ISV 1 17C	A.130	B. 89							F
SKEIDARARJOKUL	IS00116	ISV 116	A.131	B. 90							F
SKOGACH	SU04023	SUXA300 353	A.636	B.554							
SMALL RIVER	CD01940	CDA121 3	A. 13							E. 7	
SOLDA	I 00762	I L001 762	A.501	B.433							

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER								
SOLER	RC00024	RC1L002X 24	A. 82	B. 49	BB. 28						F
SOLHEIMAJOK.W	IS00113	ISV 1 13W	A.132	B. 91							
SONNBLICK K.	A 00601	A J143SA 097	A.411	B.345		C.60					
SOUM RAMOND SE	E 05030	E 4O00121 4	A.540	B.472							
SOUM RAMOND SW	E 05040	E 4O00121 3	A.541	B.473							
SOUTH CASCADE	US02013	USM100 121	A. 41	B. 15		C.24				E.11	
SPIEGEL F.	A 00221	A J143OE 097	A.412	B.346							
SPOERTEGGBREEN	N 31027	N 4A000A4 27	A.151			C.39					
STEFFEN	RC00011	RC1L002X 11	A. 83	B. 50	BB. 29						
STEGHOLTBREEN	N 31021	N A000A4 21	A.152	B.102							
STEIN	CH00053	CHR01354 E12	A.287	B.221							
STEINLIMMI	CH00054	CHR01354 E13	A.288	B.222							
STORBREEN	N 00541	N A000AD 41	A.153	B.103		C.40		CCC.13			
STORGLACIAEREN	S 00788	S B000E0 5	A.177	B.121		C.51		CCC.16		E.22	
STORGLOMBREEN	N 67313	N 4A000C7 13	A.154			C.41		CCC.14			
STOUR RAEITAGL.	S 00784	S B000E1 9	A.178	B.122							
STYGGEDALSBREEN	N 30720	N A000A2 20	A.155	B.104							
SUATISI SREDNIY	SU03040	SU4G0038 20	A.637	B.555	BB. 61						
SULZ	CH00079	CHR01350 I 2	A.289	B.223							
SULZENAU F.	A 00314	A J143SI 032	A.413	B.347					D.16		
SULZTAL F.	A 00301	A J143OE 022	A.414	B.348							
SUOTTASJEKNA	S 00768	S B000E5 4	A.179	B.123							
SURETTA	CH00087	CHR01313 I 2	A.290	B.224							
SUYOK ZAPADNIY	SU05082	SU5XXX 82	A.638			C.85	CC. 7	CCC.37			
SVARTISHEIBREEN	N 65509	N 4A000CX 9	A.156			C.42					
SVINAFELLSJ.	IS00520	ISV 5 20M	A.133	B. 92							
TAELLIBODEN	CH00008	CHN01252 20	A.291	B.225							
TAHOMA NORTH-L.	US02030	USM000BN 901	A. 42	B. 16							
TAHOMA SOUTH-L.	US02029	USM000B 131	A. 43	B. 17							F
TAILLON	E 04010	E 4Q0033Q02	A.542	B.474							
TALGAR YUZHNIY	SU05079	SUXB22 172	A.639	B.556							
TAP	PK01506	PK5Q13021506	A.679	B.586	BB. 72				D.27		
TAPOU	E 0302A	E 4O00121A10	A.543	B.475							
TARFALAGL	S 00791	S 4B000E0 11	A.180			C.52					
TASCHACH F.	A 00205	A J143PI 014	A.415	B.349							
TATS	CD02007	CD2N003CA028	A. 14			C.10					
TAUERN K.	A 0A602	A J131IS 103	A.416	B.350							

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER							
TAUFKAR F.	A 00216	A J143OE 137	A.417	B.351						
TEISCHNITZ K.	A 00723	A J131IS 110	A.418	B.352						
TEKESHSAI-I	SU05070	SUXA121 116	A.640	B.557						
TEMPESTADES	E 09050	E 4O00122 5	A.544	B.476						
TERSKOL	SU03030	SU4G0037 10	A.641	B.558						
TESSA	I 00829	I L001 829	A.502	B.434						
TIATSCHA	CH00096	CHJ14350 7	A.292	B.226						
TIEDEMANN	CD02040	CD XXX 017	A. 15			C.11				
TIEFEN	CH00066	CHR01351 E37	A.293	B.227						
TIKHITSAR	SU03019	SU4G0037 29	A.642		BB. 62					
TIM WILLIAMS	CD02055	CD2M000C 12	A. 16							F
TIMONCITO	VZ00001	VZ1B1214 PB2	A. 50							F
TIPRA BANK	IN00004	IN5O1220 4	A.684			C.93			E.38	
TOKMAKSOLDY-I	SU05002	SUXA121 93	A.643	B.559						
TOSHAIN RUPAL	PK01515	PK5Q13001515	A.680	B.587	BB. 73			D.28		
TOTENFELD	A 00110	A J143SN 021	A.419	B.353						
TOULES	I 00221	I L013 221	A.503	B.435						
TRESERO	I 00511	I 4L01137 30	A.504	B.436						
TRETTEN-NULL-TO	N 67315	N 4A000C7 15	A.157			C.43				
TRIEBENKARLAS F	A 00323	A J143OE 041	A.420	B.354						
TRIENT	CH00043	CHN01290 2	A.294	B.228						
TRIFT (GADMEN)	CH00055	CHR01354 E24	A.295	B.229						
TROLLBERGDALSBR	N 68507	N A000DE 7	A.158			C.44				
TRONQUITOS	RC00029	RC1M004X 29	A. 84							F
TS.TUYUKSUYSKIY	SU05075	SUXB22 107	A.644	B.560		C.86	CCC.38		E.33	
TSANERI	SU03014	SU4G0037 24	A.645	B.561	BB. 63					
TSANFLEURON	CH00033	CHN01222 1	A.296	B.230						
TSCHIERVA	CH00093	CHJ14323 6	A.297	B.231						F
TSCHINGEL	CH00060	CHR01354 M 3	A.298	B.232						
TSEUDET	CH00040	CHN01284 17	A.299	B.233						
TSEYA	SU03007	SUG0033 2	A.646	B.562	BB. 64					
TSIDJIORE NOUVE	CH00028	CHN01273 16	A.300	B.234						
TUNGNAARJOKULL	IS02214	ISV 2 214	A.134	B. 93						
TURAMUZ-I	SU04060	SUXA131 305	A.647	B.563						
TURO	SU04046	SUXA200 991	A.648	B.564						
TURPAKBEL NIZHN	SU05065	SUXA121 196	A.649	B.565						
TURTMANN (WEST)	CH00019	CHN01260 B9	A.301	B.235						

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TUTEK	SU04058	SUXA131 286	A.650	B.566						
TYNDALL	KN00005	KNE021D 2	A.555	B.487						
TYNDALL	RC00035	RC1L002X 35	A. 85	B. 51	BB. 30					
TZA DE TZAN	I 00259	I L013 259	A.505	B.437						
UEBERGOSS.ALM	A 00901	A J143SA 160	A.421	B.355						
ULLUCHIRAN	SU03021	SU4G0037 1	A.651	B.567						
ULLUKOL	SU03023	SU4G0037 3	A.652	B.568						
ULLUMALIENDERKU	SU03024	SU4G0037 4	A.653	B.569						
ULTIMA(VEDR.)	I 00729	I L001 729	A.506	B.438						
UMBAL K.	A 00512	A J131IS 040	A.422	B.356						
UNNA RAEITA GL.	S 00783	S 4B000E0 17	A.181	B.124						
UNNAMED 1	RC00002	RC1L002X 2	A. 86	B. 52	BB. 31					
UNNAMED (12)	G 00012	G 2U1AH04001	A. 92							F
UNNAMED (13)	G 00013	G 2U1DG02002	A. 93							F
UNNAMED (5155)	CD05155	CD2MXXX 1	A. 17							F
UNNAMED (5160)	CD05160	CD2MXXX 2	A. 18							F
UNT. RIFFL KEE	A 0B713	A J143SA B91	A.423	B.357						
UNT.GRINDELWALD	CH00058	CHR01354 L19	A.302	B.236						
UNTERAAR	CH00051	CHR01354 G11	A.303	B.237						
UNTERSULZBACH K	A 00503	A J143SA 123	A.424	B.358						
UPSALA	RA00033	RA1I031 264	A. 90	B. 54	BB. 33					
URUASHRAJU	PE00005	PEP005CT CA2	A. 56	B. 23					E.13	
URUMQIHE S.NO.1	CN00010	CN Y072 10	A.666	B.578		C.89			E.34	
USHBA	SU03013	SU4G0037 23	A.654	B.570	BB. 65					
VAL TORTA	CH00118	CHL01233 4	A.304	B.238						
VALLE DEL VENTO	I 00919	I L001 919	A.507	B.439						
VALLEGGIA	CH00117	CHL01233 8	A.305	B.239						
VALLELUNGA	I 00777	I L001 777	A.508	B.440						
VALSOREY	CH00039	CHN01284 15	A.306	B.240						
VALTOURNENCHE	I 00289	I 4L0156 289	A.509	B.441						
VARTASJEKNA	S 00765	S B000E8 28	A.182	B.125						
VENEROCOLO	I 00581	I 4L01028 11	A.510	B.442						
VENEZIA (VEDR.)	I 00698	I L001 698	A.511	B.443						
VENTINA	I 00416	I L011 416	A.512	B.444						
VERBORGENBERG F	A 00322	A J143SI 056	A.425	B.359						
VERMUNTGL.	A 00104	A R013IL 007	A.426	B.360						
VERNAGT F.	A 00211	A J143OE 133	A.427	B.361		C.61	CCC.22	D.17	E.24	

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER
VERSTANKLA	CH00089	CHR01310 G 8	A.307 B.241
VICTORIA LOWER	AN00015	AN 15	A.708 B.612
VICTORIA UPPER	AN00013	AN 13	A.709 B.613 E.44
VILTRAGEN K.	A 00505	A J131IS 078	A.428 B.362
VIRKISJOKULL	IS00721	ISV 721	A.135 B. 94
VISYACHIY-1-2	SU05096	SUXB22 103	A.655 C.87
VITELLI	I 00483	I L011 483	A.513 B.445
VOG.OCHSENKAR K	A 00802	A J143SA 030	A.429 B.363
VORAB	CH00085	CHR01314 P 1	A.308 B.242
W.GRUEBL F.	A 00316	A J143SI 025	A.430 B.364
W.TRIPP K.	A 01004	A J131LI 007	A.431 B.365
WALLENBUR	CH00071	CHR01351 F24	A.309 B.243
WASSERFALLWINKL	A 00705	A J131MO 028	A.432 B.366
WATSON	US02051	US2M00B19 4	A. 44 C.25
WATZMANNGL.	D 00005	D 4J143 5	A.187 D. 6
WAXEGG K.	A 00401	A J143ZI 076	A.433 B.367 D.18
WEDGEMOUNT	CD02333	CDM000C 4	A. 19 B. 3 BB. 2
WEISSEE F.	A 00201	A J143FA 023	A.434 B.368
WERENSKIOLD	N 12501	N W01255 1	A.163 B.107 E.20
WEST FORK	US00205	US2N006 623	A. 45 F
WEST GULKANA	US00195	US2O01283 27	A. 46 B. 18 E.12
WHITE	CD02340	CDR014E 15	A. 20 C.12 CC. 2 CCC. 6 F
WIELINGER K.	A 00725	A J143SA 066	A.435 B.369
WILDGERLOS	A 00404	A J143ZI 003	A.436 B.370
WINKL K.	A 01006	A J131MO 043	A.437 B.371
WOLVERINE	US00411	USN000D 6	A. 47 C.26 CC. 5 D. 1
WRIGHT LOWER	AN00018	AN 18	A.710 B.614 E.45
WRIGHT UPPER	AN00011	AN 11	A.710 B.615
WURFER K.	A 00715	A J143SA 085	A.438 B.372
WURTEN K.	A 00804	A J131MO 038	A.439 B.373
XIAOGONGBA	CN00029	CN5K612D 43	A.667 B.579
XIDATAN	CN00037	CN5Y533B 25	A.668 B.580
YALA	NP00004	NP XXX 4	A.692 B.598
YANAMAREY	PE00004	PEP005CV AC2	A. 57 B. 24 E.14
YANZIGOU	CN00030	CN5K612F 13	A.669 B.581
YAWNING	US02050	US2M10446 7	A. 48 C.27
YUGO-VOSTOCHNIY	SU03018	SU4G0037 28	A.656 BB. 66

GLACIER NAME	PSFG-NR	WGI-NR	DATA TABLE + RECORD NUMBER				
YURI	CD02530	CDN002 3	A. 21			C.13	E. 8
YUZHNIY	SU03017	SU4G0037 27	A.657		BB. 67		
ZEMU	IN02432	IN5P24 32	A.685	B.591	BB. 75		
ZERAVSHANSKIY	SU04043	SUXA200 992	A.658	B.571			
ZETTALUNITZ K.	A 00508	A J131IS 054	A.440	B.374			
ZINAL	CH00022	CHN01263 5	A.310	B.244			
ZMUTT	CH00015	CHN01257 15	A.311	B.245			
ZOYA KOSMODEMYA	SU05092	SUXB22 106	A.659			C.88	