FLUCTUATIONS

OF

GLACIERS

2000–2005

(Vol. IX)

A contribution to the
Global Terrestrial Network for Glaciers (GTN-G)
as part of the Global Terrestrial/Climate Observing System (GTOS/GCOS),

the Division of Early Warning and Assessment and the Global Environment Outlook
as part of the United Nations Environment Programme (DEWA and GEO, UNEP),

and the International Hydrological Programme (IHP, UNESCO)

Prepared by the
World Glacier Monitoring Service (WGMS)

ICSU (FAGS) – IUGG (IACS) – UNEP – UNESCO – WMO

2008

FLUCTUATIONS OF GLACIERS 2000–2005
with addenda from earlier years

This publication was made possible by support and funds from

the Federation of Astronomical and Geophysical Data Analysis Services (FAGS/ICSU),

the Swiss Academy of Sciences (SCNAT),

the Swiss Federal Office for the Environment (FOEN),

the Swiss National Science Foundation (SNF; WGMS Bridging Credit),

the United Nations Educational, Scientific and Cultural Organisation (UNESCO),

and the University of Zurich, Switzerland (UZH).

This publication is the most
recent volume in the series:

FLUCTUATIONS OF GLACIERS 1959–1965
Paris, IAHS (ICSI) – UNESCO, 1967

FLUCTUATIONS OF GLACIERS 1965–1970
Paris, IAHS (ICSI) – UNESCO, 1973

FLUCTUATIONS OF GLACIERS 1970–1975
Paris, IAHS (ICSI) – UNESCO, 1977

FLUCTUATIONS OF GLACIERS 1975–1980
Paris, IAHS (ICSI) – UNESCO, 1985

FLUCTUATIONS OF GLACIERS 1980–1985
Paris, IAHS (ICSI) – UNEP– UNESCO, 1988

FLUCTUATIONS OF GLACIERS 1985–1990
Paris, IAHS (ICSI) – UNEP– UNESCO, 1993

FLUCTUATIONS OF GLACIERS 1990–1995
Paris, IAHS (ICSI) – UNEP– UNESCO, 1998

FLUCTUATIONS OF GLACIERS 1995–2000
Zurich, IUGG (CCS) – UNEP– UNESCO, 2005

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Compiled for the
World Glacier Monitoring Service
by Wilfried Haeberli, Michael Zemp,
Andreas Kääb, Frank Paul and Martin Hoelzle

Department of Geography
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Zurich
Switzerland

wgms

International Council for Science
(Federation of Astronomical and Geophysical Data Analysis Services)
and
International Union of Geodesy and Geophysics
(International Association of Cryospheric Sciences)
and
United Nations Environment Programme
and
United Nations Educational, Scientific and Cultural Organisation
and
World Meteorological Organization

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and the
United Nations Environment Programme (UNEP)
and the
United Nations Educational, Scientific and Cultural Organisation (UNESCO)
and the
World Meteorological Organization (WMO)

Printed by

Staffel Druck AG
8045 Zurich
Switzerland

ISSN 1997-910X (printed issues)
ISSN 1997-9118 (online issues)

For bibliographic and reference purposes this publication should be referred to as:

WGMS (2008): Fluctuations of Glaciers 2000–2005, Volume IX. Haeberli, W., Zemp, M., Kääb, A., Paul, F. and Hoelzle, M. (eds.), ICSU(FAGS)/IUGG(IACS)/UNEP/UNESCO/WMO, World Glacier Monitoring Service, Zurich, Switzerland.

ICSU (FAGS)
IUGG (IACS)
UNEP
UNESCO
WMO

PREFACE by UNEP

Monitoring the changes of glaciers on a year-to-year basis and providing scientifically sound, concise and easy-to-understand information is a critical function in today's world. Consistent trends on glacier changes are one of the most compelling indicators of climate change and its impacts that can be witnessed all around us.

The basic data collection on glaciers from all over the world, as undertaken for many decades by the World Glacier Monitoring Service and its predecessor organisations, is of critical importance to United Nations Environment Programme and the efforts to continuously keep the state of the global environment under review and provide the world community with improved access to meaningful environmental data and information. As a key component of this, the fourth edition of the Global Environment Outlook (GEO-4), published towards the end of 2007, has also benefited from such data on glacier fluctuations – and so have many other reports that are raising awareness on climate change and related environmental issues such as impacts on water availability, land degradation and the health of people and ecosystems.

This ninth volume of the "Fluctuations of Glaciers", the first report of this century and covering the years 2000 to 2005, continues the series of detailed reports on measurements of world-wide glacier fluctuations. It presents the most up-to-date scientific data on individual terrestrial glaciers in many countries of the world, including their length, area, volume and thickness. The report points to a strong acceleration of glacier melting in those years, with a doubling of the rate compared with the two preceding decades. The observations are consistent with recent accelerating global warming and corresponding energy flux towards the surface of the earth.

The five-yearly comprehensive Fluctuation of Glaciers reports are complemented with the bi-annual Glacier Mass Balance Bulletins, which present the data in a summary form for non-specialists through the use of graphic presentations rather than as purely numerical data. A Global Outlook for Ice and Snow was published by UNEP at the occasion of World Environment Day 2007, while a joint UNEP-WGMS illustrative report on "Global Glacier Changes: facts and figures" was released in September 2008.

UNEP looks forward to continued cooperation with the WGMS while supporting efforts to strengthen the scientific base for environment assessment and early warning – a high-priority issue of global climate change.

Peter Gilruth, Dr.

Director
Division of Early Warning and Assessment, UNEP

PREFACE by UNESCO

Many of our headwater catchments around the world accommodate glaciers and they are most vulnerable towards climate change. They contribute to stream flow in terms of quantity, timing and variability. Their role is significant in the light of worldwide increase of freshwater demand and the potential impacts of future climate change. The effect of snow and ice runoff varies between different climatic regions. While in the mid- and high-latitude areas seasonal snow cover exerts a strong control on runoff variations, in low latitudes glaciers provide the most dominant source of water during the dry season. Therefore, the understanding of glacial changes as a response to changing climate is essential for integrated water resources management.

A broad and worldwide public today recognizes glacier changes as a key indication of regional and global climate and environment change. Observational strategies established by expert groups within international monitoring programmes build on advanced process understanding and new strategies. These strategies ensure rapid development of new technologies and relate them to traditional approaches to apply integrated, multilevel concepts enabling a comprehensive view.

Based on important data collected through an international network of glaciologists, the World Glacier Monitoring Service (WGMS) of the International Association of Cryospheric Sciences with their partners, have been providing quantitative and intelligible information about glacial changes. The current Volume IX (2000–2005) of the "Fluctuations of Glaciers" series has been the backbone of the active compilation of glacier fluctuation data since 1967. It comprises information about changes in glacier length, mass, area, volume and thickness from 723 glaciers of 27 countries/regions, as well as 21 special events and 10 glaciological maps. Volume IX elaborates questions about process understanding, change detection, model validation and environmental impacts in transdisciplinary knowledge transfer to the scientific community and the policymakers.

The International Hydrological Programme (IHP) of UNESCO, within its 7th Phase "Water dependences, systems under stress and societal responses", aims to asses the impact and consequences of global climate change on the biophysical environment and socioeconomic conditions of mountain people. Therefore UNESCO IHP, under the theme devoted to mountains, undertakes considerable efforts to improve knowledge of glacial changes in various parts of the world.

UNESCO is honored to support this publication and pleased to congratulate the team for their excellent work.

Siegfried Demuth, Prof. Dr.

Chief
Water Sciences Division, UNESCO

FOREWORD by IACS (IUGG)

Glaciers and ice caps, located in the mountains of the world and in both polar regions, are an important part of the global cryosphere. Indeed, the most recent report by the Intergovernmental Panel on Climate Change (IPCC), published in 2007, recognized the particular significance of glaciers and ice caps in contributing to the observed modern sea-level rise of about 3 mm per year. It is likely that glaciers and ice caps will continue to be important contributors to sea-level rise over the coming century. Such ice bodies are also integral to the hydrological cycle in the mountain regions of the world, and changing discharge from them can affect agricultural practice and also influence the frequency of natural hazards.

The long time series of changes in glacier geometry described in the series of volumes, "Fluctuations of Glaciers", that the WGMS has produced, is also important evidence of the sign and magnitude of the cryospheric response to climate change. Glaciers, taken worldwide, are decreasing in size.

This volume is number IX in the series of publications titled "Fluctuations of Glaciers". Each one has covered a five-year period and the present volume relates to the period 2000 to 2005.

For many years, the International Commission on Snow and Ice (ICSI) was the parent organization for the WGMS. In 2007, recognizing the increasing importance of cryospheric change in a warming world, the International Union of Geodesy and Geophysics (IUGG) approved a change in the status and title of ICSI and the establishment of the new IUGG International Association of Cryospheric Sciences (IACS). Glacier monitoring now becomes an important part of IACS activity through its role as the new home of the WGMS.

The Bureau of IACS thanks Professor Wilfred Haeberli and his staff at the WGMS for their efforts in putting this new volume together. It is an important addition to the existing series of volumes on the fluctuations of glaciers.

Julian A. Dowdeswell, Prof. Dr.

Head
Division of Glacier and Ice Sheets, IACS/IUGG

PRELIMINARY REMARKS AND THANKS

The present Volume IX of the "Fluctuations of Glaciers" focuses primarily on the time period from 2000–2005. It was prepared by the World Glacier Monitoring Service (WGMS) and is the most recent addition to the continuing series of publications containing internationally collected and 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)
Vol. VI	:	Fluctuations of Glaciers 1985–1990 (W. Haeberli and M. Hoelzle)
Vol. VII	:	Fluctuations of Glaciers 1990–1995 (W. Haeberli, M. Hoelzle, S. Suter and R. Frauenfelder)
Vol. VIII	:	Fluctuations of Glaciers 1995–2000 (W. Haeberli, M. Zemp, R. Frauenfelder, M. Hoelzle and A. Kääb)

The World Glacier Monitoring Service was formed in 1986, by the merger of the 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 Data Analysis Services of the International Council for Science (FAGS/ICSU) and the International Association of Cryospheric Sciences of the International Union of Geodesy and Geophysics (IACS/IUGG), the former International Commission on Snow and Ice of the International Association of Hydrological Sciences (ICSI/IAHS). The WGMS operates at the University of Zurich, Switzerland, under the auspices of the United Nations Environment Programme (UNEP), the United Nations Educational, Scientific and Cultural Organisation (UNESCO), and the World Meteorological Organization (WMO). 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 glacier changes,
- – encourages more extensive measurements,
- – invites further processing of results,
- – facilitates consultation with the other data sources, and
- – serves as a basis for research.

In fact, the publication of this standardized data set is the main driver of the active, international data collection and should be regarded as a working tool for the scientific community, especially with regard to the fields of glaciology, climatology, hydrology, and quaternary geology. Thereby, the printing and shipment of the volumes to several hundred of libraries and institutions all over the world is a core element in securing the long-term availability of the collected data and published maps. The following guidelines and instructions are most relevant for the present volume (Vol. IX) of the "Fluctuations of Glaciers":

1. Forel, F.A. (1895): Instructions pour l'observation des variations des glaciers. Discours préliminaire. Archives des Sciences physiques et naturelles, XXXIV, 209-229.

2. Kaser, G., Fountain, A., and Jansson, P. (2003): A manual for monitoring the mass balance of mountain glaciers with particular attention to low latitude characteristics. A contribution from the International Commission on Snow and Ice (ICSI) to the UNESCO HKH-Friend programme. IHP-VI, Technical Documents in Hydrology, No. 59, UNESCO, Paris. 107 p. + Appendices.

3. Østrem, G. and Stanley, A. (1969): Glacier mass balance measurements. A manual for field and office work. Canadian Department of Energy, Mines and Resources, Norwegian Water Resources and Electricity Board. 125 pp.

4. Østrem, G. and Brugman, M. (1991): Glacier mass balance measurements: a manual for field and office work, NHRI Science Report.

5. UNESCO (1969): Variations of Existing Glaciers. A Guide to International Practices for their Measurement. Technical Papers in Hydrology No. 3.

6. UNESCO/IAHS (1970): Perennial Ice and Snow Masses. A Guide for Compilation and Assemblage of Data for the World Glacier Inventory. Technical Papers in Hydrology No. 1, which has been superseded in part 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, Department of Geography, University of Zurich.

7. UNESCO 1970/73. 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. UNESCO/IAHS Technical Papers in Hydrology 5.

These guidelines have in part been superseded and made more specific by: Instructions for Submission of Data for "Fluctuations of Glaciers 2000–2005", issued by the WGMS in September 2006 (cf. also the Appendix in the present volume).

Modern concepts for integrated climate-related glacier observations have been developed for the Global Terrestrial Network for Glaciers (GTN-G) within the Global Terrestrial/Climate Observing Systems (GTOS/GCOS; Haeberli et al. 2000, Haeberli 2004). Such concepts combine in-situ measurements reported primarily in the present volume with results and information obtained from numerical modeling and remote sensing. The Chapters 6 "The Global Land Ice Measurements from Space initiative (GLIMS)" and 7 "The new ESA project GlobGlacier" give overviews on the activities towards the completion of a global glacier inventory based on satellite images. More details on the integrative, tiered monitoring strategy, global glacier changes, and recent developments related to the international glacier monitoring are provided in Chapter 8 "General Comments and Perspectives for the Future".

The data published in the present volume are also available in digital form. The guidelines for data submission and order as well as meta-data on the available fluctuations series are available on the homepage of the WGMS (http://www.wgms.ch).

The present volume was successfully completed thanks to the cooperation and efforts of the national correspondents and their collaborators. In addition to this work of glaciologists all over the world, the main burden of the undertaking had once more to be borne by the staff members of the central service of the WGMS, located at the Department of Geography of the University of Zurich, Switzerland. Philip Woodworth (FAGS/ICSU), Julian A. Dowdeswell and Georg Kaser (IACS/IUGG), Jaap van Woerden (UNEP), Siegfried Demuth (UNESCO) and Stephan Bojinski (WMO) assisted in ensuring proper international administration and coordination. Special thanks are due to Sabine Baumann, Rachel Carr, Luzia Fischer, Susanna Hoinkes, Eva Huintjes, Björn Kröger and Bruno Seiler for their assistance with data collection, and to Susan Braun-Clarke for carefully editing the English.

K. Echelmeyer (Fairbanks), M. Kuhn (Innsbruck), M.F. Meier (Boulder), J. Oerlemans (Utrecht), G. Østrem (Oslo), V.V. Popovnin (Moscow), L. Reynaud (Grenoble) and R.S. Williams (Reston) have accompanied our work through many years as scientific consultants to the WGMS, covering the important fields of energy balance at the glacier surface, glacier dynamics, modelling of glaciers, glacier mass balance, glacier inventories, statistical analysis of glacier fluctuations and remote sensing of perennial surface ice. The discrete but invaluable long-term assistance and help by these internationally recognized experts is greatly appreciated. With the now planned establishment of a steering committee for the Global Terrestrial Network for Glaciers (GTN-G) within the framework of the Global Terrestrial Observing System, the quality controlling and assurance for WGMS is also likely to receive a new structure.

The printing of this volume was made possible by generous grants from the Swiss National Science Foundation (SNF; WGMS Bridging Credit), the Swiss Federal Office for the Environment (FOEN), the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the Federation of Astronomical and Geophysical Data Analysis Services (FAGS/ICSU), and the Department of Geography of the University of Zurich, Switzerland.

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CHAPTER 1 **INTRODUCTION**

1.1 Preparation of Volume IX of “Fluctuations of Glaciers”

The call-for-data for this volume, including revised guidelines and Excel-based data submission forms, was sent out to the national correspondents by the end of September 2006; one year after the end of the observation period 2000–2005, in order to enable the investigators to properly analyse and publish their data before making it available to the scientific community and the wider public. The call-for-data for the “Fluctuations of Glaciers Vol. IX (2000–2005)“ coincided with the one for the „Glacier Mass Balance Bulletin No. 9 (2004–2005)“. In addition to the material submitted by the national correspondents, completed, revised and updated data series on glacier mass balance and front variation were collected from the literature. A first draft of this volume’s data tables was sent out with the press proof of the „Glacier Mass Balance Bulletin No. 9 (2004–2005)“ to the national correspondents and principle investigators for double-checking in January 2008, followed by the correction and update of the data series according to the received feedback as well as by the compilation of the maps, prefaces and foreword of the overarching organisations. The final press proof was sent out to all national correspondents in October 2008. Computer work was done using facilities at the Department of Geography of the University of Zurich, Switzerland.

In order to ensure maximum continuity and comparability within the published data series, only minor changes were introduced relating to the format and content of Volume IX. However, as the received meta-data to the submitted glacier fluctuation data was again of moderate extent, the information was summarised in one chapter for all data tables. The digital information in the WGMS database is the most complete and up-to-date of all, more so even than the data printed in the tables of this volume. Updated information on available data can be found and browsed on the WGMS website (http://www.wgms.ch).

The present Volume IX of the “Fluctuations of Glaciers“ contains information on 723 glaciers from 27 countries/regions. Data on “Variations in the Positions of Glacier Fronts” during the period 2000–2005 were received for 605 glaciers in 22 countries/regions, with “Addenda from Earlier Years” for 107 glaciers in 11 countries/regions. “Mass Balance Study Results – Summary Data” for the period 2000–2005 were submitted for a total of 112 glaciers in 21 countries with “Addenda from Earlier Years” for 28 glaciers in 10 countries/regions. Detailed information on “Mass Balance versus Altitude” was made available for 58 glaciers in 16 countries/regions and data relating to “Changes in Area, Volume and Thickness” are presented for 41 glaciers in 11 countries/regions.

The Chapter 4 contains three sections on index measurements from three countries as well as information on 21 special events in 10 countries/regions. Following a well-established tradition, 10 special glacier maps from 5 countries/regions are included in the back pocket of this volume with brief comments on each given in Chapter 5 of the present volume. The World Glacier Monitoring Service is again grateful for the donation of all these maps.

1.2 Organisation 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, 2000–2005
Table BB	Variations in the Position of Glacier Fronts – Addenda from Earlier Years
Table C	Mass Balance Summary Data, 2000–2005
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 F	Index Measurements and Special Events presented in Chapter 4

Sources of data and comments can be found in Chapter 2. Within each data table, the glaciers are organised according to the country where they are situated. Table A provides the user with general information on the glaciers of a particular country or region, and 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 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.

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, as provided by the national correspondents, shall help 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". In most cases the numbers were given to glaciers in some historical sequence and may therefore appear to be somewhat unsystematic. Already in the last volume, the alphabetical prefix denoting the country was adapted from a historically evolved one- or two-digit code to the ISO 2-digit-country code (ISO 3166-1-alpha-2), as proposed by the International Organisation for Standardisation (ISO). However, the abbreviation SU has been maintained for C.I.S. in order to facilitate comparison with former volumes of "Fluctuations of Glaciers".

It is strongly recommended that all data tabulated in Tables A to D 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 4. Furthermore, when using or citing data from this volume, we strongly suggest to check and refer to the original sources/references of the data – given in the relevant chapters of the text – for full details on measurement methodologies and background.

In contrast to the previously used system in the "Fluctuations of Glaciers" of classifying the countries according to geographical location, the data in the volumes VIII and IX are arranged alphabetically according to (i) country name and (ii) glacier name.

Country/Region	Prefix	Country/Region	Prefix
Antarctica	AQ	Italy	IT
Argentina	AR	Japan	JP
Austria	AT	Kenya	KE
Bolivia	BO	New Zealand	NZ
C.I.S.	SU	Norway	NO
Canada	CA	Peru	PE
Chile	CL	Poland	PL
China	CN	South Georgia	GS
Colombia	CO	Spain	ES
Ecuador	EC	Sweden	SE
France	FR	Switzerland	CH
Heard and McDonald Islands	HM	Tanzania	TZ
Iceland	IS	U.S.A.	US
India	IN		

CHAPTER 2 **INFORMATION ON THE OBSERVED GLACIERS AND SUBMITTED DATA**

The following section provides an overview on the submitted meta-data, principal investigators, national correspondents, and their sponsoring agencies, as well as publications related to glacier data presented in Tables A–F. Full addresses of the sponsoring agencies and organisations holding original data are given in Chapter 3. The information in this chapter is ordered by country/region.

Additional and well illustrated information can be found in the report on "Global Glacier Changes: facts and figures" (WGMS 2008) jointly published by WGMS and UNEP. The report provides a review on the available data up to 2005, the global distribution of glaciers and ice caps, and their changes since the maximum extents of the so-called Little Ice Age. It is available online at: http://www.grid.unep.ch/glaciers/

2.1 Antarctica (AQ)

Data of Glaciar Bahía del Diablo were submitted by P. Skvarca and Y. Yerrmolin (IAA-DNA).

Selected recent publications on glacier fluctuations on the Antarctic Peninsula and adjacent islands are from Rott et al. (2002), Skvarca and De Angelis (2003), Skvarca et al. (2003), Rau et al. (2004) and Cook et al. (2005).

2.2 Argentina (AR)

Data and information were submitted by L. Espizua (IANIGLA).

Reported investigators of glacier front variations are L. Espizua, F. Díaz, L. Ferri Hidalgo, H. Gargantini, P. Lizana, G. Maldonado and P. Pitte (IANIGLA), and V. Popovnin (for Glaciar De Los Tres; MGU).

Reported investigator of glacier mass balances is J.A. Strelin (UNC) for Martial Este.

Front variations of De Las Vacas, Güssfeldt, Tupungato 01/02/03/04, Peñón and Azufre were derived from Landsat 5 TM and Landsat 7 ETM images, georeferenced based on the Earth Science Database Interface image set (cf. Tucker et al. 2004). Glacier outlines were produced by application of a Normal Difference Snow Index (NDSI) using the methodology described by Dozier (1989). Topographic information was obtained from the SRTM Digital Elevation Model.

Selected recent publications related to Argentinean glacier fluctuations are from Leiva (1999), Espizua (2005), Ferri Hidalgo et al. (2006), Espizua and Maldonaldo (2007), Milana (2007) and Strelin and Iturraspe (2007).

2.3 Austria (AT)

Data were submitted by L.N. Braun (CGBAS), B. Hynek (ZAMG), H. Slupetzky (DGGS), as well as by A. Fischer and M. Kuhn (IMGI).

Front variation information was compiled from publications of the Austrian Alpine Club (OEAV) on behalf of G. Patzelt (OEAV). Complete information on investigators of glacier front variations for the observation period 2000–2005 is given in Patzelt (2002, 2003, 2004, 2004, 2006).

Reported investigators of glacier mass balances are A. Fischer, G. Markl and H. Schneider for Hintereisferner, Jamtalferner and Kesselwandferner; H. Slupetzky (DGGS) for Sonnblickkees; L.N. Braun (CGBAS) for Vernagtferner; R. Böhm, W. Schöner, B. Hynek and C. Kroisleitner (ZAMG) for Goldbergkees, Kleinfleisskees, Pasterzenkees and Wurtenkees.

A partly revised mass balance series of Vernagtferner back to 1965 including winter and summer balances is given in Table CC.

Selected recent publications related to Austrian glacier fluctuations are from Schöner et al. (2000), Paul (2002), Hall et al. (2003), Escher-Vetter et al. (2005), Braun et al. (2007), Koboltschnig et al. (2007), Lambrecht and Kuhn (2007), Schöner and Böhm (2007).

2.4 Bolivia (BO)

Data were submitted by J.C. Mendoza Rodríguez (IHH).

Reported investigators are P. Edouard (IRD), J.C. Mendoza Rodríguez (IHH) and B. Francou (CNRS/IRD) for Chacaltaya, Charquini Sur and Zongo.

In 2005, Chacaltaya was reported to have split into parts.

Selected recent publications on Bolivian glacier fluctuations are from Wagnon et al. (2001) and Sicart et al. (2007).

2.5 C.I.S. (SU)

Data were submitted by V.V. Popovnin (MGU).

Reported investigators are A.A. Aleynikov, Ye.A. Zolotaryov and V.V. Popovnin (MGU) for Djankuat; O. Rototayeva and I.F. Khmelevskoy (IGRAN) for Garabashi; Yu K. Narozhniy (TGU) for Dzhelo, Korumdu, Leviy Karagemsk, Praviy Karagemskiy, No. 125 (Vodopadniy), Leviy Aktru and Maliy Aktru; P.A. Cherkasov, N.E. Kasatkin and K.G. Makarevich (IGNANKaz) for Ts. Tuyuksuyskiy.

Selected recent publications on glacier fluctuations in the C.I.S. are from Solomina (2000), Zeeberg and Forman (2001), Hagg et al. (2004), Ananicheva (2006), Kotlyakov (2007), Bolch (2007), Kotlyakov et al. (2008), Shahgedanova et al. (2008).

2.6 Canada (CA)

Data and information were reported by M.N. Demuth (GSC).

Reported investigators are M.N. Demuth (GSC) for Helm, Peyto and Place; G. Cogley (TU/G) for White and Baby; R.M. Koerner (GSC) for Devon Ice Cap.

Natural Resources Canada (at GSC), through an interdepartmental Memorandum of Agreement with Environment Canada on Glaciology, is responsible for the delivery of a National Glacier-Climate Observing System that measures and evaluates changes in glacier mass balance and related glaciological parameters (length, thickness, surface changes and flow regime). The framework for this Earth Observation system is currently based on an in situ network of 12 glaciers and ice caps located in the Cordillera and Arctic Islands. These sites broadly represent the variation in glacier-climate settings that exist in Canada. Aircraft and orbital remote sensing is used to extend these site perspectives to provide estimates of regional glacier-climate behaviour. Each system is maintained through the collaboration of Geological Survey of Canada, Geomatics Canada and university scientists. Site selection was based on the consensus of a formal working group established during the definition of Canada's GCOS plan for the cryosphere (Agnew et al. 1999, 2002).

New glacier research initiatives include:
The "State and Evolution of Canada's Arctic and Alpine Glaciers" is a component activity of Natural Resources Canada's Climate Change Program, attending the documentation and understanding of long-term changes in Canada's glacier-climate system and the impacts of those changes on freshwater resources and fluxes of glacial origin.
Weblink: http://ess.nrcan.gc.ca/ercc-rrcc/

The "Western Canadian Cryosphere Network" (WC2N) is a consortium of six Canadian universities, two American universities and government and private scientists who are examining the links between climatic change and glacier fluctuations in western Canada.
Weblink: http://wc2n.unbc.ca/

The "IP3 Network for Improved Prediction, Measurement and Use of Water in Cold Regions" is a Canada-wide research network devoted to improving the understanding of surface water and weather systems in cold regions, particularly in Canada's Rocky Mountains and western Arctic regions. Weblink: http://www.usask.ca/ip3/

Selected recent literature providing perspectives on glacier changes include Hopkinson et al. (2001), Moore and Demuth (2001), Demuth and Pietroniro (2002), Moore et al. (2002), Wheate et al. (2002), Shea et al. (2004), Fleming and Clarke (2005), Watson and Luckman (2005), Demuth and Keller (2006), Fisher et al. (2006), Hopkinson and Demuth (2006), Stahl and Moore (2006), Larsen et al. (2007) and Demuth et al. (2008) for Western Canada; and Dowdeswell et al. (2003), Mair et al. (2003), Abdalati et al. (2004), Burgess et al. (2005), Koerner (2005), Paul and Kääb (2005) and Short and Gray (2005) for the Canadian Arctic Islands.

2.7 Chile (CL)

Data were submitted by F. Escobar Caceres (DGA).

Reported investigators are C. Garin, J. Quinteros and F. Escobar Caceres (DGA) for Echaurren Norte.

Selected recent publications were published from Rignot et al. (2003), Carrasco et al. (2005) and Rivera et al. (2007).

2.8 China (CN)
Data were submitted by Z. Li and H. Yang (CAREERI).

Reported investigator of glacier front variations is Z. Jin (CAREERI) for Lapate No. 51 and Urumqihe S. No. 1.
Reported investigator of glacier mass balances is H. Yang (CAREERI) for Urumqihe S. No. 1.

An overview of the fluctuations of Urumqihe S. No. 1 was published from Wang et al. (2007). Other selected recent publications on glacier fluctuations in China are by Su and Shi (2002), Xiao et al. (2007) and Li et al. (in press).

2.9 Colombia (CO)
Data (in Tables B and D) were compiled within a Master thesis by S. Baumann at GIUZ with support from J.L. Ceballos Liévando (IDEAM) and J. Ramirez Cadenas (INGEOMINAS).

Selected recent publications on Colombian glacier fluctuations are from Ceballos et al. (2006), Huggel et al. (2007), Ceballos and Tobon (2008).

2.10 Ecuador (EC)
Data and information were submitted by B. Cáceres Correa (INAMHI).

Reported investigators are B. Francou (CNRS/IRD) and B. Cáceres Correa (INAMHI) for Antizana 15 alpha.

In 2006, the glacier inventory of 1998 by Jordan and Hastenrath (1998) was updated based on field observations and aerial photographs. The new inventory of 2006 resulted in an overall Ecuadorian glacier cover of about 70 km^2, and an area loss of 27 km^2 (or 28%) since 1998 (Cáceres et al. 2008). Other recent publications on Ecuadorian glacier fluctuations are by Francou et al. (2000, 2004).

2.11 France (FR)
Data were submitted by C. Vincent (CNRS).

Reported investigators are E. Thibert and D. Richard (CEMAGREF) for Blanc and Sarennes; C. Vincent, M. Vallon and L. Reynaud (CNRS) for Argentière, Bossons, Gébroulaz, Mer de Glace and Saint Sorlin; Pierre René (AM) for Ossoue.

Selected recent publications on French glacier fluctuations are from René (2000), Vincent (2002), Vincent et al. (2004, 2005), and Thibert et al. (2008).

2.12 Germany (DE)
L. Braun (CGBAS) reported that there were no glacier fluctuation data available for the period 2000–2005.

Selected recent publications on the Bavarian glaciers are from Hagg (2006a, b; 2008).

2.13 Heard and McDonald Islands (HM)

Data were submitted by D. Thost (AAD).

General information about glaciers on Heard Islands was updated according to Ruddell (2006). Recent publications on glacier fluctuations on Heard Islands are from Ruddell (2006) and Thost and Truffer (2008).

2.14 Iceland (IS)

Data and information were submitted by F. Pálsson (IES) and O. Sigurðsson (NEAHS).

Reported investigators of glacier mass balances are O. Sigurðsson (NEAHS) for Hofsjökull; H. Björnsson and F. Pálsson (IES) and H. Haraldsson (NPC) for Breidamerkurjökull, Brúarjökull, Dyngjujökull, Eyjabakkajökull, Köldukvíslarjökull, Langjökull S. Dome and Tungnaárjökull.

Reported investigators of glacier front variations are Á. Hjartarson (IGS-NEA) for Gljufurarjökull; Á. Sólbergsson (IGS-NEA) for Leirufj. Jökull; B. Kristinsson (IGS-NEA) for Geitlandsjökull; B. Oddsson (IGS-NEA) for Kvislajökull; B. Skúlason (IGS-NEA) for Satujökull; E.H. Haraldsson (IGS-NEA) for Kirkjujökull, Blagnipujökull and Lodmundarloekul; E. Guðmundsson (IGS-NEA) for Flaajökull and Heinabergsjökull; G. Jóhannesson (IGS-NEA) for Oldufellsjökull; G. Gunnarsson (IGS-NEA) for Falljökull, Skalafellsjökull, Svinafellsjökull and Virkisjökull; H.B. Harðarson (IGS-NEA) for Tungnaarjökull; H. Haraldsson (IGS-NEA) for Hyrningsjökull; H. Jónsson (IGS-NEA) for Sidujökull E M177, Skeidararjökullen W and M, Solheimajökull W; H. Davids (IGS-NEA) for Morsarjökull; H. Björnsson (IES/IGS-NEA) for Breidamjökullen W.A and W.C, Fjallsj. FITJAR, BRMFJ, and G-SEL, Hrutarjökull and Kviarjökull; H.J. Brynjólfsson (IGS-NEA) for Kotlujökull; I. Aðalsteinsson (IGS-NEA) for Kaldalonsjökull; I. Kaldal (IGS-NEA) for Slettjökull; J. Gissurarson (IGS-NEA) for Oldufellsjökull, K.E. Hjartarson (IGS-NEA) for Gljufurarjökull; K.G. Eyþórsdóttir (IGS-NEA) for Jökullkrokur; L. Jónsson (IGS-NEA) for Mulajökull S and Nauthagajökull; O. Sigurðsson (NEAHS/IGS-NEA) for Kotlujökull and Skeidararjökull M; R.F. Kristjánsson (IGS-NEA) for Morsarjökull, Skeidararjökullen E1, E2 and E3; S. Sigurðsson (IGS-NEA) for Rjupnabrekkujökull; S. Þórhallsson (IGS-NEA) for Breidamjökull E.B; T. Theodórsson (IGS-NEA) for Gigjökull, Hagafellsjökullen E and W; Þ. Hjartarson (IGS-NEA) for Gljufurarjökull; Þ. Jóhannesson (IGS-NEA) for Reykjafjardarjökull.

A glacier inventory for Iceland from approximately the year 2000 was submitted to the GLIMS database. Selected recent publications related to Icelandic glacier fluctuations are from Björnsson et al. (2002), Kirkbride (2002), Sigurdsson (2005) and Sigurdsson et al. (2007).

2.15 India (IN)

Data were submitted by C.V. Sangewar (IGS). Mass balances of Chhota Shigri were submitted by P. Wagnon (IRD).

Unfortunately, the involved investigators and institutions were not able to reach a consensus on the origin of the data.

Mass balance measurements and a comparision of mass balance estimates from field and remote sensed data of Chhota Shigri were published by Wagnon et al. (2007) and Berthier et al. (2006), respectively.

2.16 Italy (IT)
Data and information were submitted by M. Meneghel (DGUP).

Reported investigators of glacier front variations are A. Fusinaz (CGI) for Pre de Bar and Toules; A. Borghi (SGL) for Tresero Lingua Mer.; A. Viotti (CGI) for Chavannes; A. Mazza (CGI) for Aurona and Belvedere (Macugnaga); A. Cerutti (CGI) for Brenva; C. Voltolini (CGI) for Vedr. La Mare, Vedr. Rossa and Vedr. Venezia; E. Massa Micon, G. Bosio, R. Miravalle and M. Nicolino (CGI) for Aouille; F. Pollicini (CGI) for Goletta; F. Rodeva (SGL) for Pisgana Occ.; F. Marchetti (SAT) for Amola, Cornisello Mer., Lares, Lobbia, Mandrone, Nardis Occ. and Niscli; F. Rogliardo (CGI) for Bessanese; G. Casartelli (CGI) for Forni and Pizzo Scalino; G. Franchi (CGI) for Malavalle, Neves Or., Pendente, Quaira Bianca; G. Cibin (CGI) for Collalto, Gigante Centr. and Occ.; G. Fontana (SGL) for Dosegu; G. Perini (CGI) for Vedr. Alta, Antelao Inf. Occ. and Sup., Cevedale Principale, Cevedale Forcola and Vedr. Lunga; G. Stella (CGI) for Ventina; G. Catasta (SGL) for Fellaria Occ.; L. Bolognini (SGL) for Tresero Lingua Mer.; L. Carturan (SAT) for Careser; L. Mercalli (SMI) for Basei and Ciardoney; M.Cesco Cancian (CGI) Antelao Inf. Occ., Fradusta and Travignolo; M. Tesoro (CGI) for Grandes Murailles; M. Maggioni (SGL) for Venerocolo; M. Monfredini (SGL) for Pisgana Occ.; M. Pala (SGL) for Pisgana Occ.; M. Pecci (IMONT) for Calderone; M. Tron (CGI) for Agnello Mer.; M. Varotto (CGI) for Marmolada Centr.; M. Meneghel (CGI) for Croda Rossa and Tessa; P. Pagliardi (SGL) for Pisgana Occ. and Venerocolo; R. Ossola (CGI) for Hohsand Sett. (Sabbione Sett.); R. Scotti (SGL) for Fellaria Occ.; R. Bezzi (SAT) for Presanella; R. Garino (CGI) for Rutor; R. Serandrei Barbero (CGI) for Lana, Rosso Destro and Valle del Vento; S. Rossi (CGI) for Sforzellina; S. Alberti (SGL) for Caspoggio; S. Bettola (SGL) for Dosegu; U. Mattana (CGI) for Marmolada Centr., U. Ferrari (CGI) for Rosim, Zai di Dentro, Zai di Mezzo and Zai di Fuori; V. Bertoglio (CGI) for Lauson; W. Monterin (CGI) for Lys and Piode.

Reported investigators of glacier mass balances are R. Seppi (SAT) for Careser; L. Mercalli, D. Cat Berro and F. Fornengo (SMI) for Ciardoney; R. Dinale, C. Oberschmied and M. Munari (UI/HA) for Fontana Bianca; G. Kaser and R. Prinz (DGI) for Verdretta Lunga; G.L. Franchi and G.C. Rossi (CGI) for Malavalle and Pendente; M. Pecci, P. D’Aquila, A. Marino, M. Ciucci and S. Bellagamba (IMONT/ISPESL) for Calderone.

In 2000, Calderone fragmented into two ice aprons which are separated by limestone outcropping for a few metres from the ice. The glacier has been considered as a whole for the calculation of the glacier mass balance (see Table C and CCC). The mass balance calculated by the direct glaciological method is about 30% less negative than the one based on laser GPS measurements (performed in summer 2007 and 2008), which might be explained by intensified ablation along the rock-ice interface not covered by the direct glaciological method.

Winter mass balance at Ciardoney is usually estimated at the end of May or beginning of

June based on snow depth and density measurements at five sites on the glacier. In the first half of September, the summer mass balance is estimated based on snow and ice ablation measurements at five stakes; in addition the glacier front variation is measured.

Selected recent publications related to Italian glacier fluctuations are from D'Orefice et al. (2000), Balerna et al. (2001), D'Alessandro et al. (2001), Pecci (2001, 2005), Pecci et al. (2001), Diolaiuti et al. (2005), Carturan and Seppi (2007), Mercalli and Berro (2007), Citterio et al. (2007), Pelfini et al. (2007) and Piccini et al. (2007).

2.17 Japan (JP)

Data from Hamaguri Yuki perennial snowfield were submitted by K. Fujita (DHAS).

2.18 Kenya (KE)

Data were submitted by S. Hastenrath (UWAOS).

Selected recent publications related to glaciers fluctuations on Mount Kenya are from Hastenrath and Polzin (2004) and Hastenrath (2005a, b), Caukwell and Hastenrath (2006), Rostom and Hastenrath (2007).

2.19 New Zealand (NZ)

Data and information were submitted by T.J. Chinn (APPC).

Reported investigators of glacier front variations are T.J. Chinn (APPC) for Adams, Almer/Salisbury, Andy, Ashburton, Axius, Balfour, Brewster, Butler, Cameron, Classen, Colin Campell, Crow, Dart, Dispute, Donne, Douglas (Kar.), Evans, Fitzgerald, Fox, Freshfield, Godley, Grey and Maud, Gunn, Hooker, Horace Walker, Ivory, Kahutea, La Perouse, Lambert, Lawrence, Leeb-Lornty, Lyell, Marion, Marmaduke Dixon, Mathaias, Mueller, Murchison, Park Pass, Ramsay, Reischek, Sale, Siege, Snow White, Snowball, South Cameron, St. James, Strauchon, Tasman, Tewaewae, Thurneyson, Victoria, Whataroa, Whitbourne, White, Whymper, Wilkinson and Zora; I. Owens (DGUC) for Franz Josef.

Reported investigators of glacier mass balances are B. Anderson (SGEES), N.J. Cullen (DGUO-NZ), S. Fitzsimons (DGUO-NZ), L. George (DGUO-NZ), A. Mackintosh (SGEES) and D. Stumm (DGUO-NZ/GIUZ) for Brewster.

Qualitative glacier front variations are given in Table B. The assessments have been made from oblique aerial photographs taken on annual light aircraft flights made at about 3000 m a.s.l. for annual end-of -summer-snowline (EOSS) surveys on a set of 50 selected glaciers. The full EOSS data series 1977–2005 is given in Chapter 4 'Index Measurements and Special Events'. Full details on these observations are published in Chinn (1995) and Chinn et al. (2005a, 2006).

Over the survey the period (2000–2005), all of the glaciers of New Zealand have averaged near zero mass balances. However, the glacier responses have been been spectacularly contrasting, depending on the glacier reaction time and whether or not a proglacial lake is present.

Three dominant and conflicting processes occur simultaneously:
• The fast response glaciers (which have gained an equilibrium with the climate of the past few decades) are undergoing periodic expansions and retreats from positive balances, best seen in the record of extremely reactive Franz Josef Glacier. All of the other glaciers follow these trends according to their individual response times.

• The slow response glaciers have had perceptible thickening in their upper trunks. In some cases, these pulses enter the collapsing ice of thermokarst tongues, still in readjustment from the climate a century ago. This situation produces a case of simultaneous retreat and advance!

• Most of the large debris-covered valley glaciers are continuing to downwaste from the climate of a century ago and have entered a phase of acceleration and devastatingly spectacular proglacial lake growth. These glaciers have been divorced from the climate signals at their termini, but continue to reflect balance changes in their upper feeders. Observations of the upper feeders to the Tasman, Murchison, Classen and Godley glaciers, well beyond the influence of the lakes, all show evidence that the present ice is lowering from a recent thickening that built moraine lateral.

Current work on New Zealand glaciers is concentrated on direct mass balance measurements, changes in glacier size by remote sensing, and GPS measurements and glacier modelling. In 2004, a new mass balance monitoring programme was started with on-site support by the WGMS on Brewster Glacier. Recent publications related to glacier fluctuations in New Zealand are from Chinn (2001), Clare et al. (2002), Chinn et al. (2005b) and Hoelzle et al. (2007).

2.20 Norway (NO)
Data were submitted by H. Elvehøy (NVE), B. Gadek (SUP), I. Sobota (NCU) and J. Kohler (NPI), under the coordination of J.O. Hagen (DGUO-NO).

Reported investigators of glacier front variations are P. Solnes (NVE) for Austerdalsbreen; K. Åsen (NVE) for Bergsetbreen and Stegholtbreen; S. Winkler (IGUW) for Bødalsbreen, Bøverbreen, Brenndalsbreen, Kjenndalsbreen and Storgjuvbreen; L. Vedaa (NBF) for Bøyabreen; G. Knutsen and J. Flatebø (NVE) for Bondhusbreen; G. Knutsen and J. Flatebø (NVE) for Botnabreen; B. Kjøllmoen, N. Haakensen and O.M. Tøndberg (NVE) for Breidalsblikkbrea; E. Briksdal (NVE) for Briksdalsbreen; M.B. Buer (NVE) for Buarbreen; H. Elvehøy and M. Jackson (NVE) for Engabreen; B. Kjøllmoen, N. Haakensen and O.M Tønsberg (NVE) for Gråfjellsbrea; L. Kolondra (SUP) for Hansbreen; H. Elvehøy, L. Høydal, L.M. Andreassen and M. Jackson (NVE) for Hellstugubreen; I. Soboda (NCU) for Irenebreen and Waldemarbreen; B. Kjøllmoen, C. Nyheim and L.M. Andreassen (NVE) for Koppangsbreen; B. Kjøllmoen, E. Alfnes, N. Haakensen and O.M. Tønsberg (NVE) for Langfjordjøkul; B. Kjøllmoen, L.M. Andreassen and M. Jackson (NVE) for Leirbreen; A. Nesje (DES) for Midtdalsbreen; H. Elvehøy and N. Haakensen (NVE) for Nigardsbreen; H. Elvehøy and S. Villmones (NVE) for Rembesdalsskåka; B. Kjøllmoen and C. Nyheim (NVE) for Steindalsbreen; L.M. Andreassen and N. Haakensen (NVE) for Storbreen; M. Jackson and N. Haakensen (NVE) for Styggedalsbreen; A.L. Brobak, K. Weichart and L. Vedaa (NBF) for Supphellebreen.

Reported investigators of glacier mass balances are J. Kohler (NPI) for Austre Brøggerbreen, Kongsvegen and Midtre Lovénbreen; D. Puczko (PAS), J. Jania (SUP), M. Grabiec (SUP), P. Glowacki (PAS) and L. Kolondra (SUP) for Hansbreen; I. Sobota (NCU) for Irenebreen and Waldemarbreen; R. Engeset and colleagues (NVE) for Ålfotbreen, Austdalsbreen, Breidalblikkbrea, Engabreen, Gråfjelsbrea, Gråsubreen, Hansebreen, Hardangerjøkulen, Hellstugubreen, Langfjordjøkelen, Nigardsbreen, Rundvassbreen, Storbreen and Storglombreen.

An updated front variation series 1897–2005 of Briksdalsbreen is published in Table BB. Full details and methods are published in NVE (2007, Chapter 13-2).

Detailed information on the glaciers investigated through the NVE is published in their annual report series: NVE (2003a, 2003b, 2004, 2005, 2006; and earlier issues). Other selected recent publications related to Norwegian glacier fluctuations are from Jania et al. (2002), Hagen et al. (2003), Pälli et al. (2003), Andreassen et al. (2005), Sobota and Grzes (2006), Kääb (2007), Sobota (2007a, b) and Nesje et al. (2000, 2008).

2.21 Peru (PE)
Data were submitted by A. Raissig (GIUZ) and J. Gómez (INRENA) on behalf of M. Zapata Luyo (INRENA).

Reported investigators for glacier front variations are J. Gómez, A. Cochachin and M. Zapata Luyo (INRENA) for Broggi, Uruashraju, Gajap-Yanacarco, Pastoruri, Yanamarey, Artesonraju and Shallap; J. Gómez, A. Cochachin and M. Zapata Luyo (INRENA) and R. Gallaire (IRD-PE) for Shullcon.

Reported investigators for glacier mass balances are J. Gómez, and A. Cochachin (INRENA) for Yanamarey and Artesonraju.

Selected recent publications related to Peruvian glacier fluctuations are from Kaser et al. (2003), Georges (2004), Racoviteanu et al. (2007, 2008) and Vuille et al. (2007).

2.22 Poland (PL)
Data and information of the glacierets in the Tatra Mountains were submitted by B. Gadek (SUP).

Reported investigators of glacierets in the Tatra Mountains are Z. Kijkowska-Wiślińska, M. Wiśliński, M. Maciejewski and A. Wiśliński (MPG) for Pod Cubryna; A. Wiśliński (MPG) for Mieguszowieckie; Z. Kijkowska-Wiślińska, M. Wiśliński, J. Dzierżek and A. Wiśliński (MPG) for Pod Bula.

Recent related literature are from Wiśliński (1985, 2002) and Ciupak et al. (2005).

2.23 South Georgia (GS)
Data on glacier front variations based on satellite image, aerial photographs, ground photo and field surveys were submitted by J.E. Gordon, V.M. Haynes and A. Hubbard (UASE). Details are published in Gordon et al. (2008).

2.24 Spain (ES)
Data were submitted by A. Pedrero Muñoz (I75SA) on behalf of M. Arenillas (I75SA) and E. Martinez de Pisón (UAM).

Reported investigator of glacier front variations is G. Cobos Campos (MMA) for Alba, Aneto, Balaitus SE, Barrancs, Brecha Latour, Clot de Hount, Coronas, Greguena N and S, Infierno E, W and WW, La Paul, Las Frondellas, Llardana, Llosas, Los Gemelos, Maladeta, Marborecilindro, Perdido Inf. and Sup., Posets, Punta Zarra, Salencas, Tapou and Tempestades.

Reported investigators of glacier mass balances are M. Arenillas and A. Pedrero Muñoz (I75SA) as well as G. Cobos Campos (MMA) for Maladeta.

The front variations in Tables B and BB are derived from Quick-Bird satellite images of 2004 and 2005 as well as from geodetic ground surveys. The following glaciers disappeared during the observation period of 2000–2005: Alba, Balaitus SE, Brecha Latour, Creguena N and S, Infierno WW, Llosas, Salencas and Tapou. Selected recent publications are from Chueca et al. (2005, 2007) and Lopez-Moreno et al. (2006).

2.25 Sweden (SE)
Data were submitted by P. Holmlund (INK).

Reported investigators of glacier front variations are R. Pettersson and P. Holmlund (INK) for Partejekna, Mikkajekna and Storglaciären; H. Grudd and P. Holmlund (INK) for SE Kaskasatj Gl.; P. Holmlund (INK) for Hyllglaciären, Isfallsglaciären, Ruotesjekna, Salajekna, Suottasjekna and Vartasjekna; M. Nyman (INK) for Rabotsglaciär and Riukojietna.

Reported investigators of glacier mass balances are P. Holmlund and P. Jansson (INK) for Mårmaglaciären, Rabotsglaciär, Riukojietna, Storglaciären and Tarfalaglaciären.

Selected recent publications related to Swedish glacier fluctuations are from Schneeberger et al. (2001), Schneider and Jansson (2004), Holmlund and Jansson (2005), Jansson and Linderholm (2005) and Hock et al. (2007).

2.26 Switzerland (CH)
Data and information were submitted by M. Hoelzle (GIUZ/DGUF).

The programme of front variation observations is largely supported by the EKK and operated by the VAW and in collaboration with many Cantonal Forestry Services, hydroelectric power companies, private persons and Universities. The individual observers and their sponsoring agencies involved in this programme are: VAW – A. Bauder (Gries, Silvretta, Rhône, Giétro, Corbassière Grosser Aletsch, Rhône, Findelen, Trift (Gadmen)), VAW – H. Bösch (Schwarzberg, Allalin, Kessjen) – Forestry Service of Canton Valais – U. Andenmatten (Fee), L. Jörger/S. Walther (Gorner), M. Schmidhalter (Kaltwasser), F. Pfammatter (Rossboden), H. Henzen (Lang), M. Barmaz (Zinal, Moming, Moiry), J. Guex (Valsorey, Tseudet, Boveyre, Saleina), S. Seppey (Cheillon, En Darrey), F. Vouillamoz (Grand Dèsert, Mt. Fort), J.D. Brodard (Tsanfleuron), F. Pralong (Ferpècle, Mt. Miné, Arolla, Tsidjiore Nouve), P. Tscherrig (Turtmann, Brunegg, Bella Tola); Forestry Service of Canton Vaud – J. Binggeli (Sex Rouge, Prapio), J.P. Marlètaz (Paneyrosse, Grand Plan Névé); Forestry Service of Canton Bern – C. von Grünigen (Rätzli), R. Straub (Gauli, Stein, Steinlimmi), U. Vogt (Schwarz, Lämmern), R. Descloux (Gamchi), U. Fuhrer (Alpetli, Blümlisalp), R. Zumstein (Eiger, Tschingel); Forestry Service of Canton Glarus – T. Rageth (Sulz); Forestry Service of Canton Obwalden – S. Hess (Firnalpeli), W. Bissig (Griessen); Forestry Service of Canton St. Gallen – A. Hartmann (Pizol, Sardona); Forestry Service of Canton Graubünden – C. Barandun (Porchabella), G. Berchier (Palü, Paradisino, Cambrena), R. Hefti (Vorab), O. Hugentobler (Paradies, Suretta), M. Frei (Punteglias), M. Stadler (Tiatscha), C. Mengelt (Forno), G. Bott (Calderas, Roseg, Tschierva, Morteratsch), B. Riedi (Lenta), G-C. Feuerstein (Sesvenna, Lischana), U. Maissen (Lavaz), M. Maikoff (Verstankla); Forestry Service of Canton Ticino – C. Valeggia (Basòdino, Val Torta, Cavagnoli, Corno, Croslina, Bresciana, Valleggia); Forestry Service of Canton Uri – M. Planzer (Kehlen, Damma, Rotfirn), P. Kläger (Wallenbur), B. Annen (Griess), J. Marx (Brunni, Tiefen, St. Anna), A. Arnold (Hüfi); private investigators – Flotron AG (Oberaar, Unteraar); J.L. Chabloz (Otemma, Mt. Durand, Breney), H. Boss jun. (Ober Grindelwald, Unter Grindelwald), E. Hodel (Ammerten), J. Ehinger (Trient), H.P. Klauser (Biferten, Glärnisch), U. Steinegger (Limmern, Plattalva), A. Wipf (Dungel, Gelten), P. Aschilier (Fiescher);P. Rovina (Ried); B. Teufen (Scaletta); U. Wittdorf (Mutt), C. Theler (Oberaletsch). Glaciers of the front variation programme that were not observed during the observation period are Albigna, Bis, Lötschberg, Martinets, Mittelaletsch, Ofental, Orny, Pierredar, Rosenlaui, Tälliboden, and Zmutt.

The investigators and their sponsoring agencies of glaciers with mass balance series are as follow: A. Bauder and M. Funk (VAW) for Gries and Silvretta; G. Kappenberger (G.K.) and G. Casartelli (G.G.) for Basodino; H. Machguth (GIUZ) and M. Hoelzle (GIUZ/DGUF) for Findelen. Recent comparisons with geodetically derived volume changes have shown that the mass balance measurements of Silvretta (Table C and CCC) have been systematically too positive by several decimetres w.e. per year (cf. Huss et al. in press; A. Bauder pers. comm.). An entirely revised mass balance series with information on corresponding errors and corrections is expected to be published in the next issues of the "Glacier Mass Balance Bulletin" and "Fluctuations of Glaciers" series. For the first time data from Findelengletscher are included in the data sheet. The corresponding data from stake and pit observations are not yet calibrated with geodetic methods. Findelengletscher is situated in the Southern Wallis, Swiss Alps (Mattertal). Process studies focusing on accumulation processes are currently running on this glacier (Machguth et al. 2006b).

The most recent Swiss glacier monitoring data are published in Herren and Bauder (2008). The long-term volume change has been determined for 19 glaciers in the Swiss glacier monitoring network (see Table D, Bauder et al. 2007). The evaluation of these 19 glaciers revealed a total ice volume loss of about 13 km^3 since the 1870s, of which 8.7 km^3 occurred since the 1920s and 3.5 km^3 since the 1980s. Decadal mean net balance rates for the periods 1920–60, 1960–80 and 1980 to present are -0.29, -0.03 and -0.53 m w.e. per year, respectively. The mass balance of Grubengletscher was reconstructed with photogrammetry and by applying a kinematic ice-flow model (Kääb 2001). A study by (Sugiyama et al. 2007) showed the past and future evolution of Rhonegletscher by using a newly developed flowline model, which included the shape effects more accurately than previous models. At Unteraargletscher the thickness distribution was determined by ground penetrating radar measurements (Bauder et al. 2003). Huss et al. (2007a) investigated retreat scenarios for the same glacier by using a combined ice-flow and mass-balance model. The model was validated for the period 1961 to 2005 and showed a good agreement between modelled and measured evolution of surface geometry. Glacier changes were investigated by neural networks using high-resolution multiproxy reconstructions of temperature and precipitation and glacier length variations reconstructed from different sources (Steiner et al. 2005 and 2006, Nussbaumer et al. 2007a and b, Steiner et al. 2008a and b, Zumbühl et al. 2008). Larger glacier ensembles using length change or inventory data were investigated in several studies (e.g. Hoelzle et al. 2003, Paul et al. 2004, Zemp et al. 2006, Haeberli et al. 2007, Hoelzle et al. 2007, Paul et al. 2007a and b, Zemp et al. 2007 and 2008). Automated glacier mapping from multi-spectral satellite data has been used in combination with a digital elevation model (DEM) and geo-informatic techniques to create a new glacier inventory for Switzerland (Paul et al. 2002, Kääb et al. 2002, Paul et al. 2004). Several glacier studies were related to natural hazards, in particular to glacier lake outbursts and ice avalanches (Huggel et al. 2002a and b, 2003, 2004a and b, Raymond et al. 2003, Pralong et al. 2005, Pralong and Funk 2005, Huss et al. 2007b). In addition, many studies focused on the measurement and modelling of glacier energy and mass balance on mainly three glaciers: Arolla (Brock et al. 2000a, Brock et al. 2000b, Hubbard et al. 2000, Strasser et al. 2004, Pellicciotti et al. 2005), Morteratsch (Oerlemans 2000, Oerlemans and Klok 2002, Klok and Oerlemans 2002), and Findelen (Machguth et al. 2006a, Paul et al. 2008).

2.27 Tanzania (TZ)

Ice cover and area changes of Kilimanjaro (see Table D) are taken from Cullen et al. (2006).

2.28 U.S.A. (US)

Data were submitted by W.R. Bidlake (USGS-T).

Reported investigator of glacier front variations is M. Pelto (NCD) for Boulder, Columbia (2057), Daniels, Deming, Easton, Foss, Ice Worm, Lower Curtis, Lynch, Rainbow, Watson and Yawning.

Reported investigators of glacier mass balances are W.R. Bidlake (USGS-T) for South Cascade; D. Trabant (USGS-F) for Wolverine; J. Riedel (NPNC) for Noisy Creek, North Klawatti, Sandalee and Silver; M. Pelto (NCD) for Columbia (2057), Daniels, Easton, Foss, Ice Worm, Lemon Creek, Lower Curtis, Lynch, Rainbow, Sholes and Yawning.

Selected recent publications related to glacier fluctuations in the U.S.A. are from Pelto and Hedlund (2001), Arendt et al. (2002), Meier and Dyurgerov (2002), Krimmel (2002), Bidlake et al. (2004, 2005, 2007), Pelto and Hartzell (2004), Truffer et al. (2005), Pelto (2006, 2007a, b), Josberg et al. (2007), and Larsen et al. (2007).

CHAPTER 3 SPONSORING AGENCIES AND NATIONAL CORRESPONDENTS FOR THE GLACIER FLUCTUATIONS

3.1 General Remarks

The information in the present volume was supplied by national correspondents of the WGMS and individual glaciological workers. For operational and efficiency reasons, the number of correspondents per country must be limited to one. In each country, the national correspondent is responsible for coordinating 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 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.

3.2 Sponsoring Agencies and Sources of Data for the Various Countries

Antarctica (AN)

IAA-DNA	see IAA-DNA – Argentina (AR)

Argentina (AR)

CADIC-CONICET	Centro Austral de Investigaciones Científicas Casilla de Correo 92 AR-9410 Ushuaia, Tierra de Fuego
CIIN	Centro de Investigaciones Interdisciplinarias de Neuquen Rivadiria 153, 6B AR-8300 Neuquen
UNC	Convenio DNA – UNC Departamento de Geología Básica Facultad de Ciencias Exactas Físicas y Naturales Universidad Nacional de Córdoba Avda. Vélez Sarsfield 1611 AR-X5016 GCA Córdoba

IAA-DNA	Instituto Antártico Argentino Cerrito 1248 AR-1010 Ciudad de Buenos Aires
IANIGLA	Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales CONICET Casilla de Correo 330 AR–5500 Mendoza
UHG	see UHG – Germany

Australia (AU)

AAD	Australian Antarctic Division Antarctic Climate & Ecosystems CRC University of Tasmania Private Bag 80 Hobart, AU-7001 Tasmania

Austria (AT)

CGBAS	see CGBAS – Germany
DGI	Department of Geography University of Innsbruck Innrain 52 AT–6020 Innsbruck
DGGS	Department of Geography and Geology University of Salzburg Hellbrunnerstrasse 34 / III AT–5020 Salzburg
IMGI	Institute for Meteorology and Geophysics University of Innsbruck Innrain 52 AT–6020 Innsbruck
OEAV	Oesterreichischer Alpenverein (Austrian Alpine Club) Wilhelm Greil Strasse 15 AT–6020 Innsbruck

ZAMG	Zentralanstalt für Meteorologie und Geodynamik Hohe Warte 38 AT–1190 Vienna

Bolivia (BO)

CNRS	see CNRS – France
IHH	Instituto de Hidráulica e Hidrología Universidad Mayor de San Andrés P.O. Box 699 BO–La Paz
IRD	see IRD – France
SENAMHI	Servicio Nacional de Meteorología e Hidrología P.O. Box 10993 BO–La Paz

Bulgaria (BG)

DUT	see DUT – Germany

C.I.S. (SU)

IGNANKaz	Institute of Geography National Academy of Sciences of Kazakh Republic Pushkin Str. 99 KZ–480100 Alma Ata
IGNANKir	Institute of Geology National Academy of Sciences of Kirghiz Republic Erkindik Boulevard, 30 KG–720481 Bishkek
IGRAN	Institute of Geography Russian Academy of Sciences Staromonetny, 29 RU–109017 Moscow
IVRAN	Institute of Volcanology Russian Academy of Sciences Piyp Boulevard, 9 RU–683006 Petropavlovsk-Kamchatskiy

KGM	State Agency for Hydrometeorology for the Government of the Krighiz Republic (Kirghizgidromet) Karasuyskaya 1 KG–720017 Bishkek
MGU	Moscow State University Geographical Faculty Leninskiye Gory RU–119992 Moscow, Russia
SANIGMI	Central Asian Regional Research Hydrometeorological Inst. Observatorskaya, 72 UZ–700052 Tashkent
SKGM	North Caucasian Regional Hydrometeorology Department (Sevkavgidromet) Yerevanskaya, 1/7 RU–344025 Rostov/Don
TGU	Tomsk State University Laboratory of Glacioclimatology Lenin Str., 36 RU–634050 Tomsk

Canada (CA)

BCH	British Columbia Hydro Hydrology Department 970 Burrard Street CA–Vancouver, BC, V6Z 1Y3
GSC	Natural Resources Canada Geological Survey of Canada Terrain Sciences Division 601 Booth Street CA–Ottawa, ON, K1A 0E8
MUN/G	Memorial University of Newfoundland Department of Geography CA–Saint John’s, NF, A1B 3X9
NHRI/CGVMAN	National Hydrology Research Institute Canadian Glacier Variations Monitoring and Assessment Network 11 Innovation Boulevard CA–Saskatoon, SK, S7N 3H5

TU/G	Trent University Geography Department P.O. Box 4800 CA–Peterborough, ON, K9J 7B8

Chile (CL)

CECS	Centro de Estudios Científicos Avda. Prat 514 CL–Valdivia
DGA	Dirección General de Aguas Morandé 59 CL–Santiago

China (CN)

CAREERI	Cold and Arid Regions Environment and Engineering Research Institute, Chinese Academy of Sciences (CAS) 260 West Donggang Road CN–730 000 Lanzhou
LIGG	Lanzhou Institute of Glaciology and Geocryology Chinese Academy of Sciences CN–730 000 Lanzhou

Colombia (CO)

IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales Subdirección de Geomorfología y Suelos Diagonal 97 No. 17–60, Piso 3 CO–Bogotá
INGEOMINAS	Instituto Colombiano de Geología y Minería Observatorio Vulcanológico y Sismológico de Manizales Grupo de Glaciología Av. 12 de Octubre No. 15–47 CO–Manizales

UCALDAS	Universidad de Caldas Departamento de Geología Calle 65 No. 26–10 CO–Manizales

Ecuador (EC)

INAMHI	Instituto Nacional de Meteorología y Hidrología P.O. Box EC–16 310 Quito
IRD	see IRD – France
CEMAGREF	Snow Division – ETNA Ministry of Agriculture Domaine Universitaire, BP 76 FR–38402 Saint Martin d'Hères, Cedex
CNRS	see CNRS – France

France (FR)

AM	Association Moraine Village FR – 31110 Poubeau
CEMAGREF	Snow Division – ETNA Ministry of Agriculture Domaine Universitaire, BP 76 FR–38402 Saint Martin d'Hères, Cedex
CNRS	Laboratory of Glaciology and Environmental Geophysics (L.G.G.E.) Domaine Universitaire, BP 96 FR–38402 Saint Martin d'Hères, Cedex
IRD	Institut de Recherche pour le Développement P.O. Box 96 FR–38402 St-Martin d'Hères Cedex
PNE	Parc National des Ecrins FR–38740 Entraignes

Germany (DE)

CGBAS	Commission for Glaciology Bavarian Academy of Sciences Alfons-Goppel-Str.11 DE–80539 Munich
DUT	Technische Universität Dresden Institut für Geographie DE–01062 Dresden
FGUT	Fachbereich Geowissenschaften Universität Trier DE–54296 Trier
IGUW	Institut für Geographie Universität Würzburg Am Hubland DE-97074 Würzburg
IPG	Institut für Physische Geographie Universität Freiburg Werderring 4 DE–79085 Freiburg

Greenland (GL)

GEUS	The Geological Survey of Denmark and Greenland (GEUS) Thoravej 8 DK–2400 Copenhagen NV

Heard and McDonald Islands (HM)

AAD	see AAD – Australia

Iceland (IS)

IES	Institute of Earth Sciences University of Iceland Sturlugata 7, Askja IS - 101 Reykjavík

IGS-NEA	Iceland Glaciological Society National Energy Authority Grensásvegi 9 IS-108 Reykjavík
NEAHS	National Energy Authority Hydrological Service Orkustofnun Grensasvegi 9 IS–108 Reykjavik
NPC	National Power Company Háleitisbraut 68 IS – 103 Reykjavík

India (IN)

CNRS	see CNRS – France
IGS	Glaciology Division Geological Survey of India Vasundara Complex, Sector E, Aliganj IN - 226024 Lucknow
IRD	see IRD – France
HIGH-ICE	HIGH-ICE INDIA 409, Slylark Building Nehru Palace IN-110019 New Delhi
RSD-BIT	Remote Sensing Division BIT Extension Centre Jaipur BMBSTC, Statue Circle IN-302005 Jaipur
SES	School of Environmental Sciences Jawaharlal Nehru University INDIA – New Dehli 110067

Indonesia (ID)

TAMU	see TAMU – U.S.A.

Italy (IT)

CGI	Comitato Glaciologico Italiano Via Valperga Caluso 35 IT–10125 Torino
CNR	Consiglio Nazionale delle Ricerche Istituto di Ricerca per la Protezione Idrogeologica, Sezione di Torino Strada delle Cacce, 73 IT–10135 Torino
DGI	see DGI – Austria
DGUP	Department of Geography University of Padua Via del Santo 26 IT–35123 Padova
G.C.	Giacomo Casartelli IT–22032 Albese
IMONT	Italian Mountain Institute Piazza dei Caprettari 70 IT-00186 Roma.
ISPESL	Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro Environmental Department Via Urbana 167 IT-00100 Rome
SAT	Società degli Alpinisti Tridentini Comitato Glaciologico Trentino via Manci, 57 IT-38100 Trento
SGL	Servizio Glaciologico Lombardo Via Alessandro Volta 22 IT-20121 Milano
SMI	Società Meteorologica Italiana Castello Borello IT-10053 Bussoleno (TO)

UI/HA	Ufficio Idrografico / Hydrographisches Amt Provincia Autonoma di Bolzano - Alto Adige Autonome Provinz Bozen - Südtirol via Mendola / Mendelstrasse 33 IT–39100 Bolzano / Bozen

Japan (JP)

DHAS	Department of Hydrospheric-Atmospheric Sciences Graduate School of Environmental Studies Hydrospheric Atmospheric Research Center, Nagoya University JP– 464 8601 Nagoya

Kenya (KE)

UWAOS	see UWAOS – U.S.A.

Mexico (MX)

UNAM	Instituto de Geofísica Universidad Nacional Autónoma de Mexico Circuito Cientifico MX–Coyoacan 04510 D.F.

Nepal (NP)

DHAS	see DHAS – Japan
ICIMOD	International Centre for Integrated Mountain Development P.O. Box 3226 Khumaltar NP–Kathmandu

New Zealand (NZ)

APPC	Alpine and Polar Processes Consultancy 20 Muir Rd. Lake Hawea RD 2 Wanaka NZ–Otago 9382
DGUC	Department of Geography University of Canterbury P.B. 4800 NZ-Christchurch

DGUO-NZ	Department of Geography/Te Ihowhenua University of Otago P.B. 56 NZ-Dunedin
NIWA	National Institute of Water and Atmospheric Research Ltd P.B. 6414 NZ–Dunedin
SGEES	School of Geography, Environment and Earth Science Victoria University of Wellington P.B. 600 NZ-Wellington

Norway (NO)

DES	Department of Earth Sciences University of Bergen Allegaten 41 NO–5007 Bergen
DGUO-NO	Department of Geosciences University of Oslo P.O. Box 1047, Blindern NO–0316 Oslo
IGUW	see IGUW – Germany
NBF	Norsk Bremuseum NO-6848 Fjaerland
NCU	see NCU – Poland
NPI	Norwegian Polar Institute Polar Environmental Centre NO–9296 Tromsø
NVE	Norwegian Water Resources and Energy Administration Hydrology Division – Glacier section P.O. Box 5091 Majorstua NO–0301 Oslo
PAS	see PAS – Poland
SUP	see SUP – Poland

Pakistan (PK)

GCISC	Global Change Impact Studies Center 61/A, 1st Floor, Jinnah Avenue PK - Islamabad

Peru (PE)

EP	Electroperú S.A. Sim Norte, Unidad de Glaciología Av. Confraternidad Internacional s/n PE–Huaraz, Region Chavin
HID	Hidrandina S.A. Av. Confraternidad Internacional s/n PE–Huaraz, Chavin
INRENA	Unidad de Glaciología y Recursos Hídricos Av. Confraternidad Internacional Oeste No. 167 PE–Huaraz, Ancash
IRD-PE	Instituto de Investigación para el Desarrollo (IRD) Jr. Terruel 357, Miraflores PE–Lima

Poland (PL)

MPG	Little Geographical Workshop ul. Wschodnia 19/6 PL–20 015 Lublin
NCU	Department of Cryology and Polar Research Institute of Geography Gagarina 9 PL–87 100 Torun
PAS	Institute of Geophysics Polish Academy of Sciences ul. Ksiecia Janusza 64 PL-01 452 Warsaw
SUP	Department of Geomorphology University of Silesia ul. Bedzinska 60 PL–41 200 Sosnowiec

South Georgia (GS)

UASE — see UASE - United Kingdom

Spain (ES)

I75SA	Ingeniería 75, S.A. C/ Velázquez 87 - 4° Dcha ES–28006 Madrid
MMA	Dirección General del Agua Ministerio de Medio Ambiente Plaza de San Juan de la Cruz s/n. ES-28071 Madrid
UAM	Departamento de Geografía Física Universidad Autónoma Canto Blanco ES–Madrid

Sweden (SE)

INK	Department of Physical Geography and Quaternary Geology Glaciology Section University of Stockholm SE–106 91 Stockholm
SRC	The Swedish Research Council SE–103 78 Stockholm

Switzerland (CH)

DGUF	Department of Geosciences University of Fribourg Chemin de musée 4 CH–1700 Fribourg
EKK	Cryospheric Commission Swiss Academy of Sciences Schwarztorstrasse 9 CH–3007 Bern
G.C.	see G.C. – Italy

G.K.	Giovanni Kappenberger CH–6654 Cavigliano
GIUZ	Department of Geography University of Zurich-Irchel Winterthurerstrasse 190 CH–8057 Zürich
SCNAT	Glaciological Commission Swiss Academy of Sciences Schwarztorstr. 9 CH–3007 Bern
VAW	Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie (VAW) ETH Zürich Gloriastr. 37/39 CH–8092 Zürich

United Kingdom (UK)

UASE	Universities of St Andrews, Stirling and Edinburgh St Andrews, Fife KY16 9AJ UK-Scotland

U.S.A. (US)

NCD	Nichols College 124 Center Road US-Dudley, MA 01571
NPSD	Denali National Park PO Box 9 US–Denali National Park, AK 99755
NPNC	North Cascades National Park Sandalee Marblemount Ranger Station Silver 7280 Ranger Station Rd. US–Marblemount, WA 98267

TAMU	Department of Geography Texas A&M University 810 O&M Bldg College Station US-Texas, TX 77843
UAF	Geophysical Institute University of Alaska Southeast 11120 Glacier Highway US–Juneau, AK 99801
UAS	Geophysical Institute University of Alaska 903 Koyukuk Drive PO Box 757320 US–Fairbanks, AK 99775 7320
USGS-F	U.S. Geological Survey Alaska Science Center, Glaciology 3400 Shell Street US–Fairbanks, AK 99701 7245
USGS-T	U.S. Geological Survey Washington Water Science Center 934 Broadway, Suite 300 US–Tacoma, WA 98402
UW	Geophysics Program University of Washington, AK 50 US–Seattle, WA 98195
UWAOS	Department of Atmospheric and Oceanic Sciences University of Wisconsin-Madison 1225 W. Dayton Street US–Wisconsin, MA 53706

3.3 National Correspondents of WGMS for Glacier Fluctuations

ANTARCTICA	see ARGENTINA and AUSTRALIA
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NEPAL	see JAPAN
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NORWAY	Jon Ove Hagen Department of Geosciences Section of Physical Geography P.O. Box 1047, Blindern NO–0316 Oslo E-mail: j.o.m.Hagen@geo.uio.no
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This chapter includes 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 and glaciers which are systematically studied using reduced stake networks in combination with statistical considerations or flow calculations.

- information on special events which may pose risks 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.

4.1 Index Measurements

It is not without hesitation that WGMS publishes isolated measurements, because they do not always directly relate to the other components (mass balance, length change, inventories) of the integrated and coherent approach used in modern international monitoring strategies. Experience shows that – over longer time periods – index measurements tend to disappear without leading to results of major scientific interest or significance. WGMS is a service to collect standardised information for a coherent observation programme at highest possible scientific levels and – as a consequence – strongly encourages the principal investigators and sponsoring agencies of index measurements to develop a clear concept that relates to the central monitoring strategy and can integrate in prarticular the long-term index observation series. For the same reason, index measurements are published in the “Fluctuations of Glaciers” but not stored in the WGMS database.

JAPAN (JP)

Hamaguri Yuki (JP1)

K. Fujita (DHAS)

Mass balance measurements with the direct glaciological method have been carried out on the Hamaguri Yuki perennial snowfield since 1981. The data for the present observation period are given in Tables A and C. An inventory of perennial snow patches in central Japan was published by Higuchi et al. (1980).

NEW ZEALAND (NZ)

End-of-summer-snowline (EOSS) surveys

T.J. Chinn (APPC)

Since 1977, the end-of-summer-snowline (EOSS) has been surveyed on 50 index glaciers distributed over New Zealand's Southern Alps. The surveys are carried out by hand-held oblique photography taken from a light aircraft (since 2001 also in digital form), where the position of the glacier snowline is recorded at the end of the summer season from a similar viewpoint each year. The flights are generally flown in March at an altitude between 2700 and 3000 m a.s.l. (9000–10000 ft). Back in the office, the snowlines visible on the photographs are sketched onto a map of each glacier and the accumulation and ablation areas are mapped and measured by digitiser. The elevation of the snowline is then accurately read from the glacier area-altitude curve. The data is reported as deviations from a steady-state equilibrium line altitude (ELA_0) which is calculated from the area-altitude curve for each glacier, assuming a steady-state accumulation area ratio (AAR_0) of 0.6. The most recently started mass balance monitoring programme at Brewster Glacier shall help to better link the EOSS data series to on-site measured glacier mass balance. Methods, data and more details are given in Chinn (1995) and Chinn et al. (2005a, 2006); Clare et al. (2002) investigated the inter-annual EOSS in response to patterns of atmospheric circulation and sea surface temperature.

Table 1 Annual EOSS deviations (in m) from assumed ELA_0 (with AAR_0 = 0.6). Number of observations (Obs.) and average (Avg.) are given for years and glaciers.

Source: Chinn et al. (2006)

Table 1

	KAIKOURA	MT. ELLA	MT. FAERIE QUEENE	MT. WILSON	MT. FRANKLI	ROLLESTON	MT. CARRINGTON	MT. AVOCA	MARMADUKE	RETREAT	BROWNING	DOUGLAS	MT. BUTLER
ELA_0	2490	2142	2030	1820	1814	1763	1715	1965	1830	1742	1598	2040	1840
1977				-37		-13			-42.5				-55
1978				-11	-12	5	-45	-55	-35	-4	7	91	112
1979					122	-13			78				55
1980					-54	1	-22		2	38	10	-163	-34
1981				15	-74	-3	-87		-28	-50	-34		-40
1982	5	12	-45			10	25	-15	30	14	7	-18	28
1983				-115	-148	-123	-150		-136	-252	-113	-214	-200
1984	-17			-141		-10	-115	-95	-122			-240	-65
1985				-63		-18		-55	-50	-4	-2	-223	-70
1986				41	-18	13	-10	-5	9	20	17	-128	10
1987				-89	-41	15	45		-5				-9
1988	-5		5	68	35	-1	55	10	65			91	42
1989	50	28	5	93	52	7	5	6	-13	36	-25	172	-34
1990									168				
1991													
1992												-197	-95
1993	-57	-87	-60	-167	-164	-143	-170	-115	-175	-73	-116	-260	-136
1994	-17	-72	-57	-102	-107	-53	-128	-25	-75	-120	-71	-154	-28
1995	-60	-142	-65	-154	-156	-143	-158	-45	-155	-277	-118	-231	-190
1996		-15	-57		-82	-44	-120	12	-82	16	-11	-150	-60
1997				-149		-123	-137	-75	-129	-97	-108	-223	-176
1998	30	17	-50	41	122	49	-39	70	143	47	30	220	68
1999	15	108	145	113	164	87	190	115	164	146		240	98
2000	10	60	160	108	136	97	237	65	153	133		250	148
2001	-15	-22	-55	13	-104	-42	-135	-52	-57	-60	-30	-40	-95
2002	25	46	55	93	121	89	210	88	140	93	62	245	90
2003		-64	-54	-121	-70	-94	-84	-52	-117	-78	-77	-134	-147
2004				-92		-1	-120	-20	-27	18	-28	-35	-80
2005	-25	-77	-60	-82	-106	-55	-137	-53	-130	-132	-110	-163	-176
Obs.	**13**	**13**	**14**	**22**	**20**	**26**	**23**	**20**	**27**	**21**	**19**	**23**	**27**
Avg.	**-5**	**-16**	**-10**	**-34**	**-19**	**-19**	**-39**	**-15**	**-16**	**-28**	**-37**	**-55**	**-38**

Table 1 continued

	DAINTY	KEA	JASPUR	SIEGE	VERTEBRAE #12	VERTEBRAE #25	RIDGE	LANGDALE	TASMAN	SALISBURY	JALF	CHANCELLOR DOME	GLENMARY
ELA_0	1954	1820	1725	1736	1864	1840	2226	2186	1790	1810	1790	1756	2164
1977	-32			-64				12	-10	17	-15	96	
1978	57	65	43	-24	-13	30	79	65	85	17	-10	95	74
1979									-90				
1980	-7	44	63	-76	33	25			20	32	-32	77	-91
1981	-77	-85		-70	-60	-39	2	79	-35	-58	-65	-93	-34
1982	93	134	-15	-70	-33	-8	10	52	-30	17	5	92	17
1983	-96	-230	-155	-268	-73	-62	-15	-1	-80	-92	-230	-211	-29
1984							-141	-236	-95	-51	-78		-144
1985	-81	-120	-105	-94	-67	-50	-32	-96	-90	-76	-146	-147	-56
1986	-73	-82	-42	35	-53	-27	-9	-41	-10	-1	-20	-78	
1987	-84	-83						-69	-29	-35	-51	-28	
1988	-12	-58	-42	-70	-13	3	59	39	50	-81	-32	52	16
1989	-32	-36	-29	-64	-51	-20	51	69	-30	-66	-31	-78	16
1990									310				
1991									-35				
1992	-103			-323	-96	-94		-216	-100	-129	-210		-24
1993	-176	-230	-150	-386	-86	-84	-126	-231	-108	-100	-220	-206	-57
1994	-73	-92	-120	-62	-68	-54	-61	83	-20	-38	-38	-147	-43
1995	-111	-250	-145	-396	-86	-84	-94	-226	-124	-165	-240	-211	-45
1996	-12	80	-92	-72	-68	-54	-88	51	-35	-58	-8	-36	-36
1997	-92	-152	-100	-203	-77	-71	-136	-226	-102	-84	-191	-176	-112
1998	98	78	43	214	-29	-5	9	142	63	42	-3	92	36
1999	176	200		414	226	125	89	114	186	220	260	194	108
2000	74	190		279	129	70	79	89	110	172	265	189	84
2001	-58	-150	-95	-126	-70	-33	-116	-211	-80	-95	-85	-186	-46
2002	126	195	195	239	136	80	74	104	105	50		159	46
2003	-67	-159	-74	-160	-55	-51	-63	-211	-80	-95	-190	-186	-49
2004	-44	-90	-95	-116	-68	-45	2	18	-40	-78	-170	-151	-39
2005	-94	-155	-125	-203	-79	-75	-61	-206	-40	-95	-190	-181	-54
Obs.	**25**	**23**	**19**	**24**	**23**	**23**	**22**	**25**	**29**	**26**	**25**	**24**	**23**
Avg.	**-28**	**-43**	**-55**	**-69**	**-27**	**-23**	**-22**	**-42**	**-12**	**-32**	**-69**	**-45**	**-20**

Table 1 continued

	BLAIR	MT. McKENZIE	JACKSON	JACK	MT. ST. MARY	THURNEYSON	BREWSTER	MT. STUART	LINDSAY	FOG PK	SNOWY CK	MT. CARIA	FINDLAY
ELA_0	1938	1904	2070	1907	1926	1970	1935	1673	1730	1987	2092	1472	1693
1977						-36		-86					
1978	74	46	28	31			25	57	8		64	-30	
1979													
1980	-75	6	-20	23		-44	-89	-23	-78	-71	-68		
1981	-13	-16		-22		-27	-80	-67	-49		66	-59	-89
1982	-51	-2	8	44			36	3	51	35	-54	-48	42
1983	-126	-184	-38	-157		-105	-141	-135	-170		-59	-100	-111
1984	-80	-62	-80	-79	-171	-88	-135			-96	-68		
1985	-85	-124	-56	-32		-65	-139	-53	-64		-72	-49	-64
1986		13		28	-91	-32	-93	-13	38	-57	-56	53	32
1987	-68	-14	-9	-2		-52	-107	5	-115	-85	-67	-50	-71
1988	57			-32	-19	-20			42	35	-55	28	-8
1989	-62	8	10	-9	46	0	-17	-10	34	45	11	-43	-51
1990													
1991													
1992				-90	-76	-36	-84						
1993	15	-122	-78	-142	-141	-60	-185	-138	-175	-93	-34	-97	-118
1994	-73	8	-25	-27	-76	-66	-145	-33	-120	-87	-58	-72	-59
1995	-85	-99	-52	-152	-156	-102	-158	-158	-180	-99	-62	-106	-132
1996	2	6	2	51	-71	-32	27	39	45	-93	-35	-82	-61
1997		-189	-54	-102	-84	-70	-156	-106	-85	-97	-72	-77	-113
1998	34	31	12	33	-37	-5	47	-17	70	111	66	-55	26
1999	152	174	95	101	199	142	345	132	145	135	148	178	197
2000	147	148	63	85	204	162	220	177	140	121	54	188	140
2001	-96	-99	-54	-109	-146	-92	-165	-83	-90	-92	-88	-52	-79
2002	67	56	33	78	189	135	115	142	142	125	28	153	109
2003	-93	-134	-55	-147	-131	-97	-141	-103	-123	-25	-51	-50	-81
2004	-88	-122	-54		-71	-35	-155	-108	-122	-95	-58	-92	-115
2005	-88	-132	-56	-112	-126	-70	-155	-108	-118	-97	-72	-98	-113
Obs.	**22**	**23**	**21**	**24**	**18**	**24**	**24**	**23**	**23**	**20**	**24**	**22**	**21**
Avg.	**-24**	**-35**	**-18**	**-31**	**-42**	**-29**	**-55**	**-30**	**-34**	**-24**	**-25**	**-25**	**-34**

Table 1 continued

	PARK PASS	MT. LARKINS	BRYANT	AILSA MTS.	MT. GUNN	MT. GENDARME	LLAWRENNY PKS.	BARRIER PK.	MT. IRENE	MERRIE	CAROLINE PK.	**Obs.**	**Avg.**
ELA_0	1824	1945	1783	1648	1593	1616	1476	1596	1563	1515	1380	**50**	**1834**
1977			-43		22							**15**	**-19**
1978	79		101	-5	45		4	116	137	140		**40**	**38**
1979												**5**	**30**
1980	-16				-64			-51				**32**	**-22**
1981	-46		-20		-62	-46	-68	-73				**36**	**-42**
1982	34		-3		17	-43	-4	-31				**41**	**9**
1983	-62		-163	-88	-115	-136	-132	-218	-156			**41**	**-131**
1984	-59	-265	-163	-53								**27**	**-109**
1985	-122		-173	-53	-53	-94	-36	-72	-37			**40**	**-77**
1986	39	-53	-13	1		59						**38**	**-16**
1987	19		-20	-23	-38	34	-22	-41	-37			**33**	**-37**
1988		135										**33**	**13**
1989	-30	91	-30	-36	-59	-36	-47	-71	-26	30		**49**	**-3**
1990												**2**	**239**
1991												**1**	**-35**
1992												**15**	**-125**
1993		-275	-27	-84	-108	-114	-116	-168	-156	-135	-160	**49**	**-135**
1994	-41	-95	-55	-52	-64	-64	-68	-118	-51	-95	-47	**50**	**-66**
1995	-214	-315	-153	-93	-122	-198	-176	-236	-163	-165	-150	**50**	**-152**
1996	-64	-163	-113	-64	-86	-100	-15	-126	-65	-90	-78	**48**	**-46**
1997	-134	-312	-113	-55	-73	-126	-155	-132	-103	-130	-130	**45**	**-125**
1998	48	261	-5	-27	-34	32	2	86	49	-70	2	**50**	**44**
1999	138	270	227	182	209	188	194	304	102	173	182	**48**	**171**
2000	119	255	182	137	217	159	181	207	122			**46**	**146**
2001	-154	-280	-118	-55	-78	-131	-71	-108	-125	-103	-105	**50**	**-92**
2002	99	245	87	37	42	34	137	194	165	175	195	**49**	**115**
2003	-163	-205	-117	-65	-68	-96	-100	-148	-109	-100	-89	**49**	**-103**
2004	-159	-255	-108	-58	-108	-133	-96	-131	-93	-110	-110	**45**	**-84**
2005	-154	-285	-118	-68	-108	-129	-76	-131	-123	-105	-125	**50**	**-113**
Obs.	**22**	**17**	**23**	**20**	**22**	**20**	**20**	**21**	**18**	**14**	**12**		
Avg.	**-38**	**-73**	**-42**	**-26**	**-31**	**-47**	**-33**	**-45**	**-37**	**-42**	**-51**		

POLAND (PL)

Pod Bula (PL1617)

A. Wislinski (MPG)

The firn-and-ice patch (glacieret) 'Pod Bula' is situated within a flat hollow beneath the north-west wall of 'Niznie Rysy' peak (2430 m a.s.l.) and 'Bula pod Rysami' (2054 m a.s.l.) in the 'Czarny Staw pod Rysami' cirque which is located in the eastern part of Polish Tatra Mountains at an elevation of 1651–1687 m a.s.l. This elevation is in the middle of the subalpine belt of the Polish Tatras. The patch is fed mainly by snow avalanches developing within the 'Kociol pod Rysami' cirque from an altitude of about 2000–2300 m a.s.l. Topographical surveys and glaciological observations were started by A. Adamowski (Institute of Meteorology and Water Management, Zakopane) and A. Wiśliński (Maria Curie-Sklodowska University (UMCS), Lublin) in 1978. Since 1980 they have been continued by A. Wislinski (until 1992 UMCS, since 1993 MPG). In September 1978 the glacieret consisted of about 15 ice and firn layers. It was 10 m thick in its rear part and its area was 3.4 x 10^3 m^2. Underneath the firn and ice the glacieret was crossed by a tunnel, which was about 10 m wide and 3–5 m high. On the glacieret's surface there were several narrow slanting crevices. During the following years the crevices were developing and some new ones occurred. In September 1981 the weakened ceiling of the tunnel fell down completely. Since then the patch has never regained the same state as before the collapse. Each phase of development, which took either a few years or only one year, ended with a collapse of the tunnel ceiling. During the first warm season the new tunnel, establishing itself in new snow, reached 3–4 m in height and 5–10 m in width. The trial to refer the fluctuations of the patch to the meteorological data from 'Kasprowy Wierch' (1991 m a.s.l.) proved rather weak statistical correlations.

The data from Pod Bula, as well as of Mieguszowiecki and Pod Cubryna are given in Tables A, B and D. Related references and data sources are Wislinski (1985, 2002) and Ciupak et al. (2005).

4.2 Special Events

ARGENTINA (AR)

Horcones Inferior (AR5006) **glacier surge**

L. Espizua, P. Pitte and L.F. Hidalgo (IANIGLA)

The Horcones Inferior glacier is located at 32º40'S latitude and 70º00'W longitude at the south wall of Cerro Aconcagua (6959 m a.s.l.), the highest peak in the Western Hemisphere. It is a valley glacier covered by debris with thermokarst features, that flows to the southeast. Between 1963 and 1984 the glacier front position did not show significant changes. The glacier surged between 1984 and 1986 and stopped in 1989. It was about 10.5 km long between 1990 and 1997. From 1997 to 1999 the glacier retreated 130 m based on field observations (Happold and Schrott 1993, Unger et al. 2000, 2005). A new surge event started in 2004. The evolution of the surge front was detected through analysis of Landsat images and field observations. We cannot establish the exact start of the surge, but on the image of 13 February, 2003, in the upper part of the glacier at 4175 m a.s.l., a partly debris-covered ice wave advanced 320 m with respect to 10 February, 1999. Between the images of 13 February, 2003, and 8 February, 2004, this ice wave advanced 5140 m with a mean velocity of 14.3 m per day on the debris-covered glacier. It reached an altitude of 3910 m a.s.l., 360 m upstream from the stable front position of the glacier. On the image of 25 January, 2005, the surge advanced another 3000 m with a mean velocity of 8.5 m per day, finally advancing the glacier front position. The satellite image of 28 January, 2006, shows that the surge front advanced another 440 m with a mean velocity of 1.2 m per day. The resulting front variations are given in Tables B and BB.

BOLIVIA (BO)

Chacaltaya (BO5180) **glacier disintegration**

During the observation period (2000–2005) the glaciar lost all the 15 stakes and split into parts.

C.I.S. (SU)

Djankuat (SU3010) **rockfall**

V.V. Popovnin (MGU)

A large rockfall from the crestal part of the Main Caucasus Ridge took place on 1st July 2003, completing a series of similar rockfalls of a smaller extent that had occurred here after the summer of 2001. Recent intensification of rockslide processes was caused by the progressive deglaciation on the crestal revetment of the firn basin due to strongly unfavourable glacier mass balance conditions of the 1999–2001 period. Being devoid of an icy weathering-protective layer, the steep slopes of the axial ridge zone began to be eroded too rapidly, continuing even during the winter months. The deposits from the event of 1st of July, 2003 covered parts of the glacier accumulation area within the 3200–3600 m a.s.l. altitudinal belt, reaching the opposite margin of the glacier and covering the glacier surface with a debris layer approx. 0.7 m thick on average. The volume of the collapsed matter, distributed over an area of about 0.10 km^2, or 4% of the glacier surface, is estimated at about 70000 m^3. The consequent reduction of heat influx to the snow/firn/ice surface distorted the spatial pattern considerably and diminished ablation values greatly. As a result, the surface of the glacier zones, not affected by the rock fall activity, turned out to be 1–2 m lower by the end of the 2002/03 ablation season than those parts of the glacier surface, which are now covered with rockfall debris.

Kolka (SU) **rock-ice avalanche**

V.V. Popovnin (MGU)

A tremendous glacier hazard of a complex nature arose in the Genaldon Valley, North Ossetia Republic in the Caucasus, Russia, on 20 September, 2002. An ice/rock avalanche (or a series of ice avalanches) from the glaciers, hanging on the northern flank of the Main Caucasus Rudge over the Kolka Glacier, provoked a strong mechanical impact upon the glacier body. Most of the valley part of the glacier was pushed away from its original location. A mixture of ice, water and entrapped rocks tumbled about 20 km downvalley at a velocity of up to 180 km/hr until it collided with the narrow entrance of the Karmadon gorge. A huge body of ice/debris conglomerate of 115±10 x 10^6 m^3 piled up there, whereas a mud and debris flow travelled further on for another 17 km downvalley and stopped only 4 km short of the town of Gizel. Depending on the exact definition of the initiation and farthest travel point (initial ice/rock slide, Kolka glacier and ice dam or farthest point of debris flow) the ratio of vertical drop height (H) to horizontal travel distance (L) is 0.08–0.15. The body dammed the right-hand tributary of the Genaldon River, and a number of glacier-dammed lakes were formed. The largest, Saniba Lake, inundated the nearby village and attained a volume of 4.9 x 10^6 m^3 by October 2002, with the maximum depth exceeding 21 m. The catastrophe claimed at least 125 lives. In spite of the fact that similar hazards have been registered here in the past (1834, 1902 A.D.), the 2002 event was extraordinary by the scale of the disaster. The mechanism of hazard origination, extreme initial acceleration, high flow velocity, long travel distance and a huge mass of transported material (130–140 x 10^6 m^3 in total, including 110 x 10^6 m^3 of ice and debris) is still enigmatic and several points of view, some of them mutually contradictory, were published. The principal triggering impulse was explained by at least three groups of possible reasons: meteorological (abundant precipitation and excessive snow/ice masses on the slope), seismic (geological faults, slight earthquake on the eve of the hazard) and volcanic (activation of sub-glacier fumarole activity of Mt. Kazbek, adjacent extinct volcano). The hypothesis of premature glacier surge (after the previous surge of the Kolka Glacier in 1969) was also suggested. Ongoing monitoring of land regeneration and present evolution of the ice/debris conglomerate body in the Karmadon Depression reveals a rather rapid icemelt rate at present, though the ice body could take about 10 years or so to vanish completely.

More details are found in Haeberli et al. (2004), Kotlyakov et al. (2004), Huggel et al. (2005) and Petrakov et al. (2008) as well as in several articles (e.g., Berger, Goncharov et al., Huggel et al., Petrakov et al., Swartz and Ardell) published in the proceedings of the High Mountain Hazard Prevention conference, held in Vladikavkaz-Moscow, June 23–26, 2004 (Polkvoy et al. 2006).

INDIA (IN)

Chhota Shigri (IN) **tectonic event**

P. Wagnon (IRD)

The Pakistan Earthquake was felt by people in the field. Light rockfalls happened on moraines but without consequences on the glacier.

ICELAND (IS)

Reykjafjardar (IS300) **glacier surge**

O. Sigurðsson (NEAHS)

A surge-type activity started at the glacier snout in 2001 and continued during the entire 2001–2005 period.

Skeidarar E3 (IS0117C) **jökulhlaup (flood)**

O. Sigurðsson, Iceland Glaciological Society, National Energy Authority

Many small and one relatively large jökulhlaup occurred in Skeidara (Skeidararjökull E3). The biggest one started on October 29, 2004, and is supposed to have been connected to the triggering of the volcanic eruption of November 1, 2004. Maximum discharge was 3300 m^3/s with a total runoff volume of about 0.8 km^3.

Skeidarar E3 (IS0117C) **volcanic eruption**

O. Sigurðsson (NEAHS)

A small volcanic eruption started on November 1, 2004, in Grimsvötn Volcano within the catchment area of Skeidararjökull and lasted for almost a week.

ITALY (IT)

Malavalle (IT875) **flood**

R. Dinale (UI/HA)

The strong retreat of Malavalle Glacier (Übeltalgletscher) during the past years led to an outburst of the Vogelhütten See. This lake at 2550 m a.s.l. was dammed by the north-eastern part of the glacier tongue. Due to the glacier retreat the lake broke out on July 15, 2005, and drained over the glacier tongue. About 2/3 of the water volume (approx. 1 x 10^6 m^3) drained through a surface channel in the glacier ice into another proglacial lake on the orographic right side. The ice channel reached a size of about 10 m depth and 5 m width. A detailed description and photos of the event can be found in the glacier reports 01/2005 and 03/2006 of the Hydrographical Office, Bolzano, IT, available on the following website: http://www.provincia.bz.it/hydro/glacierreport/index_d.htm.

Belvedere Glacier (IT) **ice avalanche**

L. Fischer (GIUZ)

On 25 August, 2005, an ice avalanche of ca. 1 x 10^6 m^3 volume occurred in the Monte Rosa east face (Italy). The avalanche detached between 3600 and 3900 m a.s.l. and increased its volume further along the runout path by eroding underlying debris and ice. The main part of the material was deposited on the Belvedere Glacier, particularly in the depression of the former lake Effimero that had formed in 2002 and 2003. The powder-part of the avalanche including ice and debris fragments, however, overtopped the lateral moraine of the Belvedere glacier and covered the plain around the Zamboni alpine hut. The runout length was 3.3 km for the main part and 3.9 km for the powder-part of the avalanche with corresponding drop heights of 1750 and 1800 m, respectively. The corresponding ratios of vertical drop height to horizontal travel distance (H/L) were about 0.58 for the solid part and 0.52 for the powder part of the avalanche. Fortunately, this ice avalanche occurred at night when no people were present on the plain around the hut. During the day, when many tourists frequent this morain region, such an ice avalanche would have caused many casualties.

More details are found in Fischer et al. (2006).

Belvedere Glacier (IT) **glacier surge and flood**

A. Kääb (DGUO-NO) and C. Huggel (GIUZ)

Belvedere Glacier has been subject to unusual developments during the past few years. A surge-type flow acceleration started in 2001 and continued a few years with a maximum ice flow speed increase of an entire order of magnitude compared to normal conditions. At the terminal area Belvedere Glacier experienced a strong uplift of the ice causing several hazard and tourist facility problems. In the upper glacier area, at the foot of the Monte Rosa east face, the surge-type development and related changes in the hydraulic system resulted in the formation of a smaller supraglacial lake in 2001, that reformed in 2002 and significantly increased in size with up to 1 x 10^6 m^3 of water. The rapid lake increase and associated serious hazards for the downstream community of Macugnaga prompted a major emergency action by the Italian civil protection authorities, including pumping and detailed monitoring of the lake. In 2003, the lake formed once more and grew to approximately the same size as in 2002. On 18 June, 2003, a subglacial outburst of the supraglacial lake occurred. The duration of the lake outburst was about 3 days with relatively moderate discharge peaks of ca. 25 m^3/s. No damage was caused by the outburst.

The events are described in Haeberli et al. (2002) and Kääb et al. (2004).

Zebrù Glacier (IT490) rock avalanche

C. Huggel (GIUZ)

On September, 18, 2004, a large rock avalanche occurred from the south face of Thurwieser Peak, Ortles-Cevedale region, Italy, in September 2004. The rock mass detached over an elevation range of 3280 to 3 630 m a.s.l., travelled over Zebrù Glacier and further down the moraines, stopping at 2235 m a.s.l. The ratio of vertical drop height to horizontal travel distance (H/L) of the avalanche was 0.47. Estimates of the volume of the avalanche were in the range of 3–5 x 10^6 m^3. The avalanche affected hiking trails and alpine pasture but no one was hurt or killed. The rock slope failure and avalanche was recorded on video by mountaineers. After the slope failure liquid water was observed at the detachment zone. A possible role of permafrost and related degradation was suggested.

More details are found in Cola (2005) and Sosio et al. (2008).

NORWAY (NO)

Blåmannsisen (NO) **flood**

NVE

A subglacial drainage of a glacier-dammed lake occurred at Rundvassbreen, part of Blåmannsisen. On September 5, 2001, 40 x 10^6 m^3 of water drained in 35 hours, with peak discharge of 800–900 m^3 per second. The water level in the hydropower reservoir downstream increased by 2.5 m and was thus financially beneficial to the hydropower station.

The first known jøkulhlaup from the glacier Blåmannsisen in northern Norway occurred on 6^{th} to 7^{th} September, 2001. About 40 x 10^6 m^3 of water drained from a lake (known as Vatn 1051) that was adjacent to and dammed by the glacier. The water drained under the glacier and eventually to the Sisovatn reservoir where the water level rose by 2.5 m. Fortunately, there were no casualties or material damage from the jøkulhlaup; on the contrary, the jøkulhlaup increased the volume of water in the reservoir that is used to supply a hydropower plant operated by Elkem ASA, and was financially beneficial.

On August, 29, 2005, a second subglacial drainage of a glacier-dammed lake occurred. During the event, 35 x 10^6 m^3 of water drained in 36 hours, with peak discharge of ca. 840 m^3 per second. The water level in the hydropower reservoir downstream increased by 2.5 m, and was again financially beneficial to the hydropower station.

Buarbreen (NO21307) **flood**

NVE

A flood event that probably occurred in August 2002 was reported by local inhabitants and the aftermath observed by NVE 10 October, 2002. The estimated volume of water was 1 x 10^6 m^3.

Supphellebreen (NO33014) **flood**

NVE

On 8 May, 2004, a debris flow and flood was caused by the failure in the glacier moraine that dammed water from Flatbreen (part of Supphellebreen). There was significant erosion due to the debris flow. The water volume is unknown but estimated to have been at least 50000 m^3. The debris flow volume was about 240000 m^3. A total of 250000 m^2 of farmland were covered by debris.

PERU (PE)

Pucajirca (PE) **flood**

C. Huggel (GIUZ)

On April 22, 2002, a rock avalanche occurred immediately to the south-west of Laguna Safuna Alta in the Cordillera Blanca. Field mapping indicated that the avalanche deposited 8–20 x 10^6 m^3 of rock into the lake and onto the surface of the frontal section of Glaciar Pucajirca, which flows into the lake. The resulting flood damaged security structures installed to secure the lake, and killed cattle that had been grazing in the area. However, the moraine dam essentially remained intact and the resulting flood was largely contained within a lower lake, Laguna Safuna Baja. The moraine dam cannot be expected to resist a second large displacement wave and mitigation strategies are therefore being developed.

More details are found in Hubbard et al. (2005).

SWITZERLAND (CH)

Bis (CH0107) **ice avalanche**

VAW

A part of Bis Glacier, a hanging glacier on the north-eastern face of Weisshorn, broke off in three parts, with an overall volume of about 460000 m^3, between 23 and 31 March, 2005. No damages were reported because the avalanche did not reach the valley bottom. Already in October 2004, the opening of crevasses pointed to a flow acceleration of the glacier. At the beginning of 2005, a monitoring system based on laser, GPS and geophone measurements was installed to observe the glacier movement and acceleration in order to predict the break-off and, in good time, to close and evacuate the road, railway, and the village Randa (VS) that are located about 3000 m below the glacier.

Bis Glacier has a long history of reported similar events (see Raymond et al. 2003).

U.S.A (US)

Black Rapids (US222) **tectonic event / ice-rock avalanche**

U.S. Geological Survey

South-central Alaska and the Alaska Range were severely shaken on the morning of 3 November, 2002, by an earthquake of magnitude 7.9 with a surface rupture 320 km long and displacements up to 6.9 m. The shaking triggered several rock and ice avalanches on the Black Rapids Glacier. The main rockfall originated from the south walls of the glacier, crossed a medial moraine (~30 m high), and continued across the entire glacier valley (> 2 km). The rock blanket covers an estimated 13 km^2 of the glacier's ablation area. A very crude estimate suggests that the total volume exceeds 10 x 10^6 m^3.

Details are found on the USGS website:
U.S. Geological Survey. http://ak.water.usgs.gov/glaciology/m7.9_quake/

Hubbard (US1290) **flood**

U.S. Geological Survey

Hubbard Glacier dammed Russell Fiord in late June 2002; as a consequence, the ice-dammed Russell Lake grew to a height of 15 m above sea level and to an area of 215 km^2 with a volume of about 3 km^3. Russell Lake outburst took place on August, 14, 2002. Peak flow was about 55000 m^3/s.

More information is found on the USGS website:
http://ak.water.usgs.gov/glaciology/hubbard/

Bering Glacier (US) **ice-rock avalanche**

C. Huggel (GIUZ)

On 14 September, 2005, an exceptionally large rock-ice avalanche occurred from the south face of Mt. Steller between the Bagley Icefield and the Bering Glacier, Alaska. The failure close to the summit of Mt. Steller (3236 m a.s.l.) involved hanging glacier ice and underlying bedrock, with layering sub-parallel to the surface slope. The avalanche with an estimated total volume of 40–60 x 10^6 m^3 travelled for 9 km horizontally with a vertical drop of 2.4 km (resulting in a H/L of 0.27) until the mass was deposited on Bering Glacier. Based on seismic signals recorded at several Alaskan seismic stations, an avalanche velocity of up to 100 m/s could be reconstructed. Reconstruction of mean annual ground surface temperature yielded -10 to -15°C for the failure zone. Modelling results, however, indicated that the failure area was significantly thermally disturbed by warmer overlying firn and glacier ice in the summit region.

More information is found in Huggel et al. (2008).

Red Glacier (US) **ice avalanche**

C. Huggel (GIUZ)

On August, 28, 2000, two large ice-rock avalanches of 11–20 x 10^6 m^3 volume occurred at Iliamna Volcano (3050 m a.s.l.), Cook Inlet Region, Alaska, and travelled down Red Glacier. A second similar avalanche of 12–20 x 10^6 m^3 volume took place on July 25, 2003. The runout length was 8.9 and 8.6 km for the 2000 and 2003 avalanches, respectively, while the corresponding drop height were 1800 and 1760 m, respectively. The ratios of vertical drop height to horizontal travel distance (H/L) were 0.2 in 2000 and 0.21 in 2003. In recent studies, an unusually high frequency of large ice avalanches has been documented at Iliamna Volcano, with avalanches of 10–30 x 10^6 m^3 volume approximately every 4 years. Most of the avalanches descend on Red Glacier and show very similar failure and runout conditions. Iliamna is an active volcano and it is suggested that enhanced geothermal heat flow and fumarolic activity have an impact on glacier stability.

More information is given in Huggel et al. (2007).

CHAPTER 5 **THE ANNEXED MAPS**

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

1. Granatspitz with Stubacher Sonnblick Kees 1990, Austria (1:5000)
2. Stubacher Sonnblick Kees 2003, Austria (1:10000)
3. Stubacher Sonnblick Kees 2004, Austria (1:10000)
4. Pasterze 2004/05, Austria (1:25000)
5. Zongo 1983–2006, Bolivia (1:10000)
6. Novaya Zemlya 1990–2000, C.I.S.
7. Glaciers of Mount Kenya 1899–2004, Kenya (1:5000)
8. Glaciers of Mount Kenya 2004, Kenya (1:5000)
9. Lewis Glacier 1958, Kenya (1:2500)
10. Wahlenbergfjord, Austfonna, Svalbard, 1987–1998, Norway

GRANATSPITZE WITH STUBACHER SONNBLICK KEES 1990, AUSTRIA, (1:5000)

(Image Line Map)

H. Slupetzky

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The Stubacher Sonnblick Glacier in the Hohe Tauern Range of the Austrian Alps was mapped in 1991 by J. Aschenbrenner, Vienna, and H. Slupetzky, Salzburg. The cartography was done by H. Krottendorfer, Vienna. The presented map is one of a series of five maps of glaciers in the upper Stubach valley. The sheet Granatspitze is derived from the prototype map ‘Stubacher Sonnblickkees’ (published in Vol. VII, 1998), counted as ‘first generation’, a preliminary version (Aschenbrenner et al. 1998). The experience gained here was used to produce the other four maps ‘Alpinzentrum Rudolfshütte’, ‘Hohe Riffel’, ‘Johannisberg’, ‘Medelzkopf’). Basically, to have the same cartographic design on all five maps and to make further improvements, the sheet Granatspitze covering the Sonnblickkees (‘third generation’) was developed and printed in 1993 (Aschenbrenner and Slupetzky 1995).

When comparing the two versions of maps, the improvement is obvious. The black plate was reduced to the area of rock by providing enhancement of the rock drawing; even in the previous version the black plate was lightened in order to reduce the darkness in the shade. Three features were additionally depicted by a free-hand line drawing: crevasses, rock and debris. The modulation of contour lines only worked sufficiently well on the glacier surface, so it was not used on the terrain anymore. The production of the orthophoto was entirely done by digital picture processing.

Looking back, it is interesting to note the rapid change in the techniques and methods of surveying and in the way of documentation of glaciers. The main goal of the ‘Aschenbrenner maps’ was to combine a conventional orthophoto-map with a conventional line map including all characteristics of a topographic map, especially glaciers. The ‘Granatspitze’ map is an example of the change from classical glacier maps to digital ones. It will, however, be an everlasting question, whether a minimum standard of representing glaciers in digital versions is sufficient (to fulfil scientific demands), or whether a glacier map should be (and not only could be) more sophisticated: a beautiful cartographic-artistic product representing a part of nature in an adequate way.

In terms of glaciological purposes: the Stubacher Sonnblick Kees had an area of 1.504 km² in 1990 compared to 1.772 km² in 1969 (Austrian Glacier Inventory 1969). On all five maps the glacierized area (17 glaciers) was reduced from 7.2 km² in 1969 to 6.5 km² in 1990, which means an area loss of 9% (Slupetzky 1997).

STUBACHER SONNBLICK KEES 2003 AND 2004, AUSTRIA (1:10000)

(Colour Orthophoto Map 2003 and Thematic-Topographic Map 2004)

R. Braunshier[1], W. Gruber[1], H. Slupetzky[1] and H. Wiesenegger[2]

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Within the framework of the long-term glaciological and glacial-hydrological measurement programme carried out on the glacier Stubacher Sonnblick Kees, situated in the Granatspitz Group (Hohe Tauern, Eastern Alps), new maps were produced primarily for mass balance calculation purposes but also to document area changes in the glacier, due to rapid mass loss caused by global warming. The project was carried out by the Department of Geography and Geology at the University of Salzburg in cooperation with the Hydrological Service of Salzburg.

In view of the extraordinary hot summer of 2003 in Central Europe, which resulted in a record mass loss in Alpine glaciers, an aerial photogrammetric survey was initiated just at the right time. It covered the area of the Pasterze, the largest glacier in the Austrian as well as the Eastern Alps, and the surrounding glaciers including the Stubacher Sonnblick Kees (note: this glacier is not to be confused with the famous meteorological observatory on the Hoher Sonnblick, which is situated 30 km to the east). The aerial photographs were taken on August 13, 2003, by Luftbild Fischer, Klagenfurt, and are of excellent quality. The scale of the images is, on average, 1:12000 due to a flight elevation of approx. 4800 m above the Adriatic Sea. In 2004, an ortho-photo using the DTM of the Bundesamt für Eich- und Vermessungswesen, Vienna was produced by students, supervised by B. Zagel and G. Griesebner, Salzburg, of the Department of Geography (now the Department of Geography and Geology).

The map from 2003, with a scale 1:10000, covers the Stubacher Sonnblick Glacier and the catchment area of the Lake Weißsee, which is used as a reservoir for the hydro power plant of the Austrian Federal Railways. It shows the situation of the accumulation area, which is reduced to a few snow patches; by the end of the mass balance year, September 11, 2003, almost no accumulation was left. Therefore, the mean ELA at 3080 m a.s.l. was above the highest point of the glacier and the AAR was only 0.006. Firn layers dating back to the 1960s have melted away since 1982, which was the beginning of an almost continuous mass loss up to the present. The mean specific mass balance was -2.870 m ($B = -4.024 \times 10^6$ m^3). In 2003, the glacier showed the highest yearly mass loss since the beginning of mass balance records in 1964 and probably even exceeded the most extreme year up until now, which was 1947. At the terminus of the glacier, situated at an altitude of 2500 m a.s.l. a proglacial lake developed. On July 27, 2006, the lake drained and the surface level was lowered by 6 m, stabilising at a final elevation of 2499 m a.s.l. according to the outflow situation. After the complete melting of the glaciated basin, the final length of the lake named Unterer Eisboden See, which means the Lower Glacier Basin Lake, will be approx. 400 m.

The basis for producing the 2004 map 1:10000 was elaborated by R. Braunshier in his thesis (2005). A calibrated conventional camera was used to take photos of the Sonnblick-kees from different positions by H. Slupetzky in September 2004. The photos were evaluated by applying the photogrammetric PhotoModeler software, which led then to a DTM. Initially, W. Gruber (2002) used this software, which had originally been developed for architectural purposes, on the Cathedral Massif Glacier, B.C., Canada, and proved it to be an adequate method with satisfactory accuracy. Using the 2003 ortho-photo, the glacier edge was defined and outlined, showing that old snow was covering the ice border at higher altitudes and therefore not yet part to the glacier. The new contour lines were derived from the DTM, the accumulation / ablation patterns and the ELA were determined photogrammetrically.

The map of 2004 shows the areas of old snow, firn and ice and rock islands, which have been melting out more and more in recent years and thus adding considerably to the downwasting of the glacier. The ortho-photo of 2003 was used for the map background. A semi-direct method, derived from a function between the specific mass balance and the AAR, was used to calculate the mass balance for 2004 at the end of the natural balance year (September 9). A net mass budget of +0.011 x 10^6 m^3 was estimated. The ELA was calculated to be at 2755 m a.s.l. Therefore, on small glaciers with a surface area of only a few km^2, it is possible to use amateur photos, apply the PhotoModeler software to them and thus create, with reasonable accuracy, good results for the basic elements needed to produce new glacier maps.

PASTERZE 2004/05, HOHE TAUERN, AUSTRIA (1:25000)

(Mass Balance Map)

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The mass balance of Pasterze was monitored during 1980–1997 by the Austrian Electricity Provider Tauernkraft (now VERBUND-AHP). After a break of seven years, measurements of Pasterze mass balance were restarted in 2004 by the Central Institute for Meteorology and Geodynamics (ZAMG). Hence the annexed map of mass balance 2004/2005, obtained by the glaciological method and a fixed date system, is the first complete mass balance after the interruption.

In September 2004, 31 ablation stakes were drilled in the ablation zone of Pasterze. During summer 2005 the stake network was extended by 6 further stakes in the ablation zone, (4 stakes on the debris-covered area) and by 11 stakes on the Oberer Pasterzenboden near the supposed equilibrium line. In sum the ablation data of 48 different stake sites were used to calculate the mass balance of the 2004/05 observation period.

Accumulation was measured by snow depth probing on 88 different points at the end of September 2005. Because of current weather conditions, snow pits could not be dug in 2005. For the calculation of the snow-water equivalent, the snow density values of September 2005 measured on the nearby Goldbergkees and Kleinfleißkees glaciers were used instead (firn: 530 kg/m^3, new snow: 400 kg/m^3). Accumulation measurements in the following years with higher accuracy and spatial resolution (ground penetrating radar, in addition to snow pits and probing, was used to detect horizons from previous years) and led to the estimation that the accumulation in 2005 was obtained with an accuracy of about +/-5%.

Surveying of snow depletion, which was almost the only information of mass balance in the hardly accessible areas in the south-eastern parts of the glacier and the large crevasse zones of Hufeisenbruch, was done at various times during summer 2005; maximum snow depletion was reached in early September 2005. Due to the use of a fixed date system (1.10.2004–30.9.2005) the line of maximum snow depletion (blue line with blue dots for snow in the annexed map) is not identical to the equilibrium line (red-blue border).

Total mass balance 2004/05 was calculated for the glacier area of 2003, which was derived from an ortho-photo taken on the 4th of September 2003 (source: Land Kärnten). The main results of the mass balance measurements are summarised in Table 1. In order to calculate the mass balance for different altitudinal zones (cf. Table 2), a digital elevation model (DEM) from 1998 (Kuhn, 1998) was used. The equilibrium line altitude (ELA) was obtained graphically from the diagram of mass balance versus altitude.

Table 1 Mass balance results for 2004/05 at Pasterze

S (area 2003)	17.7	km²	B (total net mass balance)	-15925 · 10⁶	kg
Sc (accumulation area)	10.6	km²	Bc (total net accumulation)	5466 · 10⁶	kg
Sa (ablation area)	7.1	km²	Ba (total net ablation)	-21391 · 10⁶	kg
Sc/S (AAR)	0.6		b (mean specific mass balance)	-899	mm w.e.
Sc/Sa	1.5		bc (mean specific accumulation)	309	mm w.e.
ELA	2920	m a.s.l.	ba (mean specific ablation)	-1208	mm w.e.

Table 2 Mass balance for 2004/05 at Pasterze versus altitude for the debris-free and the debris-covered areas. Altitudinal zones were calculated from the DEM of 1998 (Kuhn, 1998). Glacier area was derived from the ortho-photo 2003 (source: State of Kärnten).

Altitude	Area S (2003)			Specific Mass Balance b			Mass Balance B		
DEM 98	total	debris-free	debris-covered	total	debris-free	debris-covered	total	debris-free	debris-covered
m a.s.l.	km²	km²	km²	m w.e.	m w.e.	m w.e.	10⁶ kg	10⁶ kg	10⁶ kg
2000 - 2100	0.007		0.007	-1.801		-1.801	-13		-13
2100 - 2200	0.620	0.323	0.298	-4.513	-6.976	-1.846	-2800	-2250	-550
2200 - 2300	1.242	0.678	0.564	-4.413	-6.027	-2.474	-5481	-4085	-1396
2300 - 2400	1.138	0.823	0.316	-4.921	-5.260	-4.040	-5602	-4326	-1276
2400 - 2500	0.543	0.505	0.038	-4.491	-4.474	-4.711	-2440	-2259	-181
2500 - 2600	0.434	0.420	0.015	-3.081	-3.041	-4.223	-1338	-1276	-62
2600 - 2700	0.583	0.582	0.002	-2.000	-1.995	-3.659	-1167	-1161	-6
2700 - 2800	0.853	0.853		-1.536	-1.536		-1310	-1310	
2800 - 2900	1.372	1.372		-0.661	-0.661		-907	-907	
2900 - 3000	2.383	2.383		0.259	0.259		617	617	
3000 - 3100	3.089	3.089		0.634	0.634		1959	1959	
3100 - 3200	2.868	2.868		0.544	0.544		1559	1559	
3200 - 3300	1.679	1.679		0.416	0.416		699	699	
3300 - 3400	0.704	0.704		0.358	0.358		252	252	
3400 - 3500	0.191	0.191		0.242	0.242		46	46	
3500 - 3600	0.003	0.003		0.160	0.160		0	0	
2000 - 3600	17.711	16.471	1.240	-0.899	-0.755	-2.810	-15925	-12442	-3484

ZONGO 1983–2006, BOLIVIA (1:10000)

(Ortho-Photo Map)

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In 1991, the French Institute for Development (IRD) initiated glaciological investigations on tropical glaciers using Zongo (16°S) as the principal monitored glacier in Bolivia. Mass balance calculations require a precise hypsometric map to integrate the mass balance by altitudinal sections along the glacier. In Bolivia, six photogrammetrical flights were carried out over Zongo Gacier, that is, in 1956, 1963, 1975, 1983, 1997 and 2006. Between 1991 and 2001 the glacier mass balance was calculated using a manual digitalization of the cartographic map of the Bolivian Army, based on 1963 photographs (planimetry: UTM – PSAD56 Zone 19S; altimetry: International Geoid, assumed precision between 10 to 15m). Due to the poor quality of the Bolivian Army map, in 2002, IRD has selected the 1983 pictures to carry out another base map of Zongo Glacier. The 1983 picture presents the best contrast quality which allows the photogrametric restitution over snow-covered regions. A digital elevation model was elaborated in an analytical stereoplotter Planicom (Zeiss) with a regular grid of 50 x 50 m (planimetry: UTM – WGS84 Zone 19S; altimetry: EGM96 Geoid), but the accuracy of the model and the number of GCP (Ground Control Points) points were not known. Finally in 2006, IRD in cooperation with their local partners started a program to observe by aerial photogrammetry the evolution of several glaciers around La Paz city. The selected planimetry and altimetry were the UTM-WGS84 and the Ellipsoid-WGS84 respectively, because the geometric leveling of GCP points was not possible in remote areas.

The map aims at describing the new hypsometry and ortho-photo map of Zongo glacier based in 1983 photographs and, moreover, the glacier extension in 2006. The geometric distortion inherent to the corners of aerial images is removed by the ortho re-sampling process also called "ortho-rectification".

The 1983 photogrammetric flight was carried out by the Bolivian cartography army corps on June 20th using a Wild RC10 metric camera. Due to the size of the glacier (less than 2.5 km^2) and the flight height, resulting in a scale of 1:45000, only one stereo-pair (stereo-pair: 0295-0296) was required to generate the digital elevation model. A copy of negatives was scanned using a VEXEL Ultra Scan 5000 with a pixel size of 14 µm, which corresponds to an average ground resolution of 0.70 m. The aero-triangulation process was performed with 20 tie points and 9 GCP points using the Orima DP software. The precision of the model was Sigma0: 9.7 µm; RMSX: 0.75 m; RMSY: 0.97 m; RMSZ: 0.65 m. 12300 points were restituted manually with a 25 x 25 m regular grid in the Stereo Analyst for ArcGIS software and edited using the Terrain Editor of the Leica Photogrammetry Suite software (LPS). The DEM was interpolated linearly to 1m pixel size raster DEM format in ArcGIS. Finally, the ortho-photography (photography 0296) was ortho-rectified using the 1 m pixel size DEM in the LPS software.

In conclusion, the Zongo glacier consists now of six digital elevation models between 1956 and 2006 and in the future the glacier mass balance will be recalculated taking into account the hypsometric variation between 1983 and 2006.

Acknowledgements
The glaciological program was supported by IRD and the LGGE. We are grateful for the assistance received in Bolivia from the IHH (Instituto de Hidráulica e Hidrología) and the SNA (Servicio Nacional de Aerofotogrametría). The Sintegra Society (France) and the Heinrich Heine University (Germany) collaborated in the technical elaboration of this work. The printing of the maps was funded through the Department of Geography of the University of Zurich (GIUZ), Switzerland.

NORTHERN NOVAYA ZEMLYA OUTLET GLACIERS 1990–2000, C.I.S.

(Thematic Satellite Map)

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The map based on satellite images shows changes in glacier terminal position of outlet glaciers of the Northern Novaya Zemlya Island. To assess glacier position changes, Landsat TM and ETM+ GeoCover imagery for two periods were used: circa 1990 and circa 2000. By comparing glacier terminal position for the two datasets, assessment of glacier advance/retreat was made for several outlet glaciers: 24 on the western (Barents sea) coast, 12 on the eastern (Kara sea) coast, and for 4 glaciers of the Lednikovoye lake in the southern part of the Northern Novaya Zemlya.

Most of the glaciers retreated during this period, the most pronounced retreat was observed for large Moshniy (-7.76 km^2) and Roze (-6.55 km^2) glaciers on the eastern coast. Only four glaciers of 40 advanced: two of them (Oga and Serp i Molot) on the eastern coast, they advanced very slightly (less than 1 km^2), and two other glaciers (Borzova and Pavlova) on the western coast, whose advance as more pronounced (3.84 and 3.94 km^2, respectively).

Map is made in the UTM (Zone 40) Projection. Glacier boundaries and ice divide line are after a schematic map from Varnakova and Kotlyakov (1978), one of the few available sources of maps for Novaya Zemlya glaciers. Comparison of these boundaries with the ice-surface motion map produced using offset tracking from JERS-1 L-band SAR data (Strozzi et al. 2007) shows that they are generally consistent in the lower parts. However for upper parts, the JERS-1 based map shows significantly larger glacier feeding zones, suggesting potential improvement of the Novaya Zemlya glacier boundaries using remote sensing techniques.

Acknowledgements:
This research was done within the framework of the FP6 EC INTEGRAL (Interferometric Evaluation of Glacier Rheology and Alterations) project (Contract No. SST3-CT-2003-502845). We would like to thank A. Sharov (Joanneum Research, Graz, Austria) for his comment on the Vera glacier state in 2001. Landsat GeoCover imagery is from the MrSID image server (https://zulu.ssc.nasa.gov/mrsid). Map printed by Norwegian Water Resources and Energy Directorate.

GLACIERS OF MOUNT KENYA 1899–2004, KENYA, (1:5000)

(Glaciological Map)

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University of Wisconsin, Madison, U.S.A.

The map documents in the context of the century-long history of glacier recession on Mount Kenya. Observations from early expeditions provide evidence from the end of the 19th century to the 1940s, and photogrammetric mappings in 1947, 1963, 1974, 1978, 1982, 1985, 1986, 1987, 1993 and 2004 give quantitative detail for the later decades. Of the eighteen ice entities at the end of the 19th century, one glacier may have disappeared before 1926, five vanished after 1926, one after 1978, and one after 1993. All other glaciers also suffered substantial shrinkage, especially from the 1970s onward. Mount Kenya, right under the Equator, is the mountain with best documentation of glacier recession in all of the tropics. Full documentation on this map is contained in Hastenrath (2005b). Further background information is available in Hastenrath (1984), Caukwell and Hastenrath (2006), Rostom and Hastenrath (2007).

GLACIERS OF MOUNT KENYA 2004,
KENYA (1:5000)

(Aerial Photogrammetric Map)

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The map documents the distribution of glaciers on Mount Kenya in the year 2004. A new glacier inventory was compiled from the map dated September 2004, and the glacier changes during 1993–2004 were evaluated with reference to Rostom and Hastenrath (1994). The map's ground control network is described in Hastenrath et al. (1989). The aerial photograph was flown on 1st of September, 2004, by Photomap International at an average height of 1483 m above the average terrain level of 4800 m a.s.l. The photographs were taken by a Wild 153 mm RC10 camera, and are at an approximante average scale of 1:10000 with 80% forelap and 60% sidelap, to cope with the extreme local relief. Aerial triangulation was conducted to determine the coordinates of control points. In addition to 8 ground control points a further 16 control points established from stereo models were used. Refer to Hastenrath et al. (1989) for a discussion of coordinate systems. Full documentation on this map is contained in Rostom and Hastenrath (2007). Further background information is provided in Hastenrath (1984).

LEWIS GLACIER 1958, KENYA (1:2500)

(Glaciological Map)

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The present map is a product of the International Geophysical Year (IGY) Mount Kenya Expedition in 1957–1958. Although nearly half a century had passed, this map had not been published and risked being lost to posterity. It is now made accessible to the research community. The IGY Mount Kenya Expedition formed part of the program of the British National Committee for the IGY. The main field program was conducted during December 1957 to January 1958. The expedition established a network of ground control points in local coordinates, which formed the basis for glacier research in later decades. With reference to part of the mentioned network of ground control points, the Lewis Glacier was mapped tacheometrically at scale 1:2500. Full documentation on this map is contained in Caukwell and Hastenrath (2006). Further background information is provided in Charnley (1959).

WAHLENBERGFJORD, AUSTFONNA, SVALBARD, OUTLET GLACIERS: 1987–1998, NORWAY

(Thematic Satellite Map)

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with the contribution of A. Taurisano[3] , J. Kohler[3] and M. Jackson[4]

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The map based on satellite images shows changes of glacier terminal position of several outlet glaciers in the Wahlenbergfjord, North-Western part of Austfonna, Svalbard archipelago. The map is produced in the UTM (Zone 34) projection, glacier boundaries are after Hagen et al. (1993). In order to assess glacier position changes, SPOT-1 to SPOT-4 imagery for various dates between 1987 and 1998 have been used. The images have been georeferenced (using ice-free land and coastal features) based on the NPI vector coastline data, and multi-temporal analysis of glacier terminal position has been done.

For five glaciers (Bodleybreen, Aldousbreen, Frazerbreen, Ericabreen and Palanderbreen) changes between 15 April, 1987 and 28 March, 1998 are provided as (a) color-coded regions of advance/retreat of glacier terminal position and (b) resulting changes in km^2 and change rate (km^2 per year). These changes are rather small (less than 1 km^2). Four of these five glaciers have retreated, and only Ericabreen has slightly advanced.

Etonbreen and the neighbouring Basin 03 glaciers feature more pronounced dynamics. For these glaciers we provide (a) a map of glacier terminus positions for five dates between 1987 and 1988 and (b) corresponding changes in square kilometre and change rate (km^2 per year) for each period. Both glaciers continually retreated between 1987 and 1988, with maximal speed (-1.01 km^2 per year) observed between July 1988 and July 1991. Since then, the retreat gradually slowed down to -0.48 km^2 per year (between July 1993 and March 1998).

Acknowledgements:
This research was done within the framework of the FP6 EC INTEGRAL (Interferometric Evaluation of Glacier Rheology and Alterations) project (Contract No. SST3-CT-2003-502845). SPOT imagery for 1987, 1988, 1991, 1993 and 1998 are from SPOT/ ISIS Program. © CNES, Distribution Spot Image SA. Map printed by Norwegian Water Resources and Energy Directorate.

CHAPTER 6 THE GLOBAL LAND ICE MEASUREMENTS FROM SPACE (GLIMS) INITIATIVE

GLIMS goals

The international GLIMS project is a global consortium of universities and research institutes, coordinated by Jeff Kargel, University of Arizona, Department of Hydrology and Water Resources, whose purpose is to assess and monitor the world's glaciers primarily using data from optical satellite instruments, such as ASTER (Advanced Spaceborne Thermal Emission and reflection Radiometer). Specifically, GLIMS objectives are to ascertain the extent and condition of the world's glaciers so that we may understand a variety of Earth surface processes and produce information for resource management and planning. These scientific, management and planning objectives are supported by the monitoring and information production objectives of the United Nations scientific organizations (Kieffer et al. 2000, Bishop et al. 2004, Kargel et al. 2005, Raup et al. 2006).

A first attempt to obtain an overview of the Earth's glaciers and ice caps was made with the compilation of the World Glacier Inventory (WGMS, 1989), a database of glacier locations and attributes produced mainly on the basis of aerial photographs and topographic maps. In 1999, the GLIMS project was established to, among others, continue this inventorying task based on space technologies and in close cooperation with the National Snow and Ice Data Center (NSIDC; Boulder, USA) and the World Glacier Monitoring Service (WGMS).

GLIMS entails comprehensive satellite multi spectral and stereo-image acquisition of land ice, use of satellite imaging data to measure inter-annual changes in glacier area, boundaries, and snowline elevation, measurement of glacier ice-velocity fields, and development of a comprehensive digital database to inventory the world's glaciers. This work and the global image archive at the EROS Data Center (Sioux Falls, USA) is useful for a variety of scientific and planning applications. The GLIMS glacier database and GLIMS web site are developed and maintained by the NSIDC.

Beside the GLIMS main applications glacier mapping and monitoring, ASTER proved also to be very suitable for assessing glacier hazards and managing related disasters (Kääb et al. 2003). GLIMS is closely collaborating with the international working group on glacier and permafrost hazards in mountains, GAPHAZ, under the International Association for the Cryospheric Sciences (IACS) and the International Permafrost Association (IPA) (http://www.geo.uio.no/remotesensing/gaphaz).

GLIMS technologies

GLIMS primarily utilizes multispectral imaging from the Landsat TM and ETM+ series, and the ASTER sensor. Landsat TM and ETM+ data represent a well-established and robust data source for glacier inventorying and monitoring from space (Kääb et al. 2002, Paul et al. 2002). Capabilities of the ASTER sensor, available since 2000 onboard the NASA Terra spacecraft, include 3 bands in VNIR (visible and near infrared) with 15 m resolution, 6 bands in the SWIR (short-wave infrared) with 30 m, 5 bands in the

TIR (thermal infrared) with 90 m, and a 15 m resolution NIR along-track stereo-band looking backwards from nadir. Of special interest for glaciological studies are the high spatial resolution in VNIR, the stereo-, and the pointing-capabilities of ASTER. With topography being a crucial parameter for the understanding of high-mountain phenomena and processes, such as glacier volume changes, DEMs generated from the ASTER along-track stereo band are especially helpful (Kääb 2005). The nominal ASTER lifetime was designed to be six years, i.e. until 2006. Currently, 2008, in particular the ASTER SWIR bands are deteriorating significantly. The vast archive of ASTER data useful for world-wide glacier mapping already forms, however, an important data source for time series of glacier change between 2000 and the present, and an invaluable baseline data set for comparisons with data from other similar multi spectral satellite missions.

GLIMS database and tools

Currently the GLIMS database at NSIDC holds over 80000 glacier outlines in North and South America, Europe, Asia, Antarctica and is quickly growing (Raup et al. 2007, updated). NSIDC has developed easy-to-use search and extraction tools which allow download of GLIMS data in a variety of geo-information formats. A number of tutorials, documented procedures, specifications, example data and auxiliary tools for data formatting and quality control are available from the GLIMS web site. The GLIMSView software is a free software that facilitates extraction of glacier outlines from optical satellite imagery and their export to GLIMS format. The tool can be used as stand-alone software or in combination with other image processing packages and geo-information systems.

Further information on GLIMS and contacts

GLIMS coordinator: Jeff Kargel, University of Arizona, USA: kargel@hwr.arizona.edu

GLIMS web-page: http://www.glims.org

GLIMS at NSIDC: http://www.nsidc.org/glims/; Richard Armstrong, Bruce Raup

Goals of GlobGlacier

The new ESA project GlobGlacier is a data user element (DUE) activity within ESAs Living Planet program that responds to the needs of a certain number of users and organisations which are actively involved in the project as a user group. The major aim of the GlobGlacier project is to establish a service for glacier monitoring from space, that builds upon, complements and strengthens the existing services and network of global glacier monitoring (e.g. as conducted by the WGMS and GLIMS within the framework of GTN-G). The basic strategy is to apply and document well-established remote sensing techniques to archived satellite data for generating a set of glacier-related products in key regions all over the world (GCOS, 2006). The data products that will be created within the project lifetime consist of (in brackets the foreseen amount): glacier outlines and terminus position (20000 each), snow lines (5000), topography (5000), elevation changes (1000) and flow velocity (200). All data will be provided in a publicly accessible and open digital format through the existing databases at NSIDC and WGMS.

The selection of key regions is mainly driven by places that are not yet covered in the GLIMS database or where detailed glacier inventory data still have to be created. Further selection criteria for the regions include: sea level rise contribution, freshwater resources, climate sensitivity and glacier-related hazards. In order to provide a service that could be widely used, key regions will also cover different sensor types, several validation sites for the individual products, data integration sites (where all or several products will be created) and glaciers/ice caps on all continents. More than ten text documents will describe, among others, the applied methods, workflows, standards, challenges and results. While the target time period for the glacier outlines and topography products is around the year 2000 (driven by the availability of the Landsat ETM+ Geocover and the SRTM DEM), other products will go back in time up to twenty years.

GlobGlacier technologies

The applied technologies will strongly depend on the product and the sensors used for their generation. For a more detailed overview than provided below, see Paul et al. (subm).

Glacier outlines will be created from multispectral sensors (e.g. Landsat TM/ETM+, Terra ASTER, SPOT HRV) using well-established methods (thresholded band ratios) combined with manual editing and GIS-based data fusion at three different levels of detail: Level 0 (L0): outlines enclosing contiguous ice masses that are corrected for misclassification (e.g. debris, shadow, water); L1: individual glaciers that result from combining L0 outlines with hydrologic divides; L2: outlines from L1 combined with DEM data to obtain a detailed glacier inventory. The terminus position will be stored as a glacier specific point with a certain elevation and assigned manually from multispectral sensors or by intersecting a central flowline with the L1 glacier outlines. The snowline will be mapped from multispectral sensors using images from the end of the ablation period combined with L1 outlines and topographic information. Topography will be compiled from already available resources (mostly the SRTM3 DEM) and complemented by satellite-derived DEMs, either from multispectral stereo sensors (e.g. ASTER, SPOT) or interferometric SAR data (e.g. from the ERS1/2 tandem mission). Elevation change will be derived from differencing DEMs from two epochs in time and from time series of airborne or satellite altimetry data (e.g. RADAR, LiDAR). The spatial extrapolation of point measurements to the entire surface will be a special challenge. Velocity fields will be obtained from either feature tracking of repeat pass optical imagery or from microwave sensors using differential SAR interferometry or offset tracking. The time period analyzed will depend on the available satellite data and vary from seasonal to annual means.

GlobGlacier organization

The project started in November 2007 for a duration of three years and is led by the Geography Department, University of Zurich (Switzerland). The designated European consortium further includes Gamma Remote Sensing (Switzerland), Enveo (Austria), and the Universities of Oslo (Norway) and Edinburgh (UK). While the University of Zurich is in charge of the products glacier outlines and terminus position, each of the consortium partners is responsible for one of the other products. The first 16 months of the project (phase 1) are mostly committed to the creation of the text documents and some data examples for the selected key regions. In the second 20 months (phase 2) the data products will be created. The user group members will give feedback on the quality of the generated products and provide data for validation purposes where possible. In a first step data holdings will be compared to the demands for the selected key regions and a strategy will be developed to determine in which regions which products will be created from which sensors. The related compilation will be cross-checked with the user group and currently ongoing activities by the GLIMS community before the products will be created. Where possible, it is also planned to integrate existing results from previous studies (either by the consortium members or other scientists) into the project. A frequently updated meta-information web page will be used for harmonization of the activities within the consortium and to communicate the actual status and results of the project to the public.

Links

ESA: http://dup.esrin.esa.it/projects/summaryp98.asp

GCOS: http://www.wmo.ch/pages/prog/gcos/Publications/gcos-107.pdf

GlobGlacier Project: http://www.globglacier.ch

IGOS cryosphere theme report: http://igos-cryosphere.org/docs/cryos-theme-report.pdf

CHAPTER 8 GENERAL COMMENTS AND PERSPECTIVES FOR THE FUTURE

Strong acceleration of glacier melting characterized the first five-year period of the 21st century (WGMS 2003, 2005a and b, 2007; cf. Zemp et al. 2005). Rates of mass losses (-0.60 m w.e.) of the 30 'reference' glaciers with (almost) continuous measurements since 1976 more than doubled the mean value observed during the two preceding decades 1980–2000 (-0.29 m w.e.). The average annual mass loss of 0.58 m water equivalent (w.e.) for the decade 1996–2005 is more than twice the loss rate during the period 1986–1995 (-0.25 m w.e.), and more than four times the rate of the period 1976–1985 (-0.14 m w.e.). The mean of the 30 'reference' glaciers is influenced by the great number of Alpine and Scandinavian glaciers but closely corresponds to the mean value calculated using only one single (in some places averaged) value for each of the involved mountain ranges and can be considered representative for all measured mass balances according to analyses using various statistic aproaches (Kaser et al. 2006). While 34% of the reference glaciers had an overall positive balance during 1976–1995, only two (7%) of them had an overall mass gain over the past decade (1996–2005). This indicates that glacier shrinkage not only becomes faster but also more spatially uniform. Further analysis requires detailed consideration of such aspects as glacier sensitivity and feedback mechanisms. The cumulative mass balances reported for the individual glaciers not only reflect regional climatic variability but also marked differences in the sensitivity of the observed glaciers.

The past quarter of a century 1980–2005 shows a striking trend of increasingly negative balances with average annual ice thickness losses of decimeters and nearing the meter scale (Braithwaite 2002, Zemp et al. in press). Because unchanged climatic conditions would cause mass balances to approach zero values, constant non-zero mass balances reflect continued climatic forcing. The observed trend of increasingly negative mass balances is consistent with accelerated global warming and correspondingly enhanced energy flux towards the earth surface. In comparison with mass balances, changes in glacier length are strongly enhanced and easily measured but indirect, filtered and delayed signals of climate change. Total retreat of glacier termini during the 20th century is commonly measured in kilometers for larger glaciers and in hundreds of meters for smaller ones. Characteristic long-term average rates of glacier thinning (mass loss) can be calculated from cumulative length change data using a continuity approach over time periods corresponding to the dynamic response time of individual glaciers (Haeberli and Hoelzle 1995, Hoelzle et al. 2003). Assuming negligible changes in precipitation, cumulative glacier length changes can even provide strong independent evidence of global warming at fast rates (Oerlemans 2005). However, the assumption that the mass balance of a glacier is fairly well decoupled from the dynamic response of the glacier and primarily constitutes a direct signal of climatic conditions at the site is reasonable only for relatively steep glaciers with a short response time and/or for slow climate forcing. With accelerating climate change, various feedbacks come into play.

Small and steep glaciers with relatively short dynamic response times can adjust more quickly to changing climatic conditions than large glaciers with lower overall surface slopes. Positive feedbacks between mass balance and altitude, therefore, start playing a predominant role for large glaciers (Raymond et al. 2005) and make direct transfer of mass balance information from small to large glaciers difficult. Cold firn areas may warm up and start losing melt water to the sea, changing their climate sensitivity (Haeberli 2006, Vincent et al. 2007). Independently of size and firn temperature, albedo lowering due to retreating or even disappearing firn areas and to enhanced pollution by soot or dust reinforces melting and mass loss (Paul et al. 2005). Process changes such as widespread appearance of rock outcrops, collapse features at glacier margins, or lake formation further speed up the rate of glacier shrinkage (Paul et al. 2004). The acceleration of negative mass balance and corresponding thickness loss causes increasing disequilibria to develop and glaciers to downwaste and disintegrate rather than to retreat, making length observations as part of long-term glacier monitoring increasingly difficult (Haeberli et al. 2007, Paul et al. 2007). This development could cause the complete vanishing of glaciers which constitute the presently existing in-situ mass balance network. In the European Alps, for instance, several glaciers with long observational series of mass balance could indeed disappear within the first half of our century and three of them (Sarennes, Careser and Sonnblick: Carturan and Seppi 2007, Le Meur et al. 2007) may even not survive more than a decade or two. In order to preserve the continuity of the mass balance network, therefore, mass balance measurements are now being started on still larger and higher reaching glaciers. This is, in fact, an urgent task if sufficient overlap in time is to be assured.

The striking worldwide glacier changes (Ohmura 2006) were accompanied by rapid developments in observational technology. Prominent technologies such as airborne laser altimetry in combination with kinematic GPS (Abdalati et al. 2004), space-borne digital elevation models (DEMs) from SRTM, ASTER or SPOT (e.g. Berthier et al. 2004, Larsen et al. 2007, Rignot et al. 2003, Schiefer et al. 2007, Surazakov and Aizen 2006) and distributed modeling of the climatic accumulation area or the mass and energy balance for individual glaciers (Arnold et al. 2006) or large glacier ensembles (Machguth et al. 2006a, Zemp et al. 2007) open new dimensions for glacier monitoring and data analysis. Correct determination of complex precipitation and accumulation patterns influenced by wind drift and avalanching remains a fundamental problem and a large uncertainty with distributed energy and mass balance modeling (Machguth et al. 2006b), as well as with in-situ measurements of mass balance with networks of stakes and pits (direct glaciological method). Careful validation and calibration with geodetic/photogrammetric volume change determinations is therefore essential. Laser altimetry thereby enables very high precisions to be reached. Differencing of DEMs is much less precise but for the first time helps to establish the extent to which mass balance observations at single glaciers are representative with respect to all glaciers of a mountain range (Paul and Haeberli 2008).

Mountain glaciers are Essential Climate Variables (ECV) in global climate-related observations and assessments (GCOS 2004). The integrated perception and documentation of glacier changes within the framework of such internationally coordinated programmes is a challenge of historical dimensions. Since the initiation in 1894 of a worldwide programme for collection of standardized information about ongoing glacier changes with the foundation of the International Glacier Commission at the 6th International Geological Congress in Zurich, Switzerland (Forel 1895; Haeberli et al. 1998), various related aspects have changed in a most remarkable way:

- It has become obvious that the ongoing trend of worldwide and fast, if not accelerating, glacier shrinkage at the century time scale is of a non-cyclic nature – there is definitely no further question of the originally envisaged “variations périodiques des glaciers”.

- Under the influence of human impacts on the climate system (enhanced greenhouse effect), dramatic scenarios of future developments – including complete deglaciation of entire mountain ranges – must be taken into consideration.

- Such scenarios may lead far beyond the range of historical/holocene variability and most likely introduce processes (extent and rate of glacier vanishing, distance to equilibrium conditions) without precedence in history.

- A broad and worldwide public today recognizes glacier changes as a key indication of regional and global climate and environment change.

- Observational strategies established by expert groups within international monitoring programmes build on advanced process understanding and include extreme perspectives.

- These strategies make use of the rapidly developing new technologies and relate them to traditional approaches in order to apply integrated, multilevel concepts (in-situ measurements to remote sensing, local process oriented to regional and global coverage), within which individual observational components (length, area, volume change) fit together, enabling a comprehensive view.

An international network of glacier observations such as the World Glacier Monitoring Service (WGMS) of the International Association of Cryospheric Sciences (IACS/IUGG) and the Federation of Astronomical and Geophysical Data Analysis Services (FAGS/ICSU), together with its Terrestrial Network for Glaciers (GTN-G; Haeberli et al., 2000, 2002) within the Global Terrestrial Observing System (GTOS) and the Global Climate Observing System (GCOS), is designed to provide quantitative and understandable information in connection with questions about process understanding, change detection, model validation and environmental impacts in a transdisciplinary knowledge transfer to the scientific community as well as to policymakers, the media and the public. A Global Hierarchical Observing Strategy (GHOST) is used to bridge the gap in scale, logistics and resolution between detailed process studies at a few selected sites and global coverage at pixel resolution using techniques of remote sensing and geo-informatics. This tiered system includes

- ***extensive glacier mass balance and flow studies within major climatic zones for improved process understanding and calibration of numerical models:*** Full parameterization of coupled numerical energy/mass balance and flow models is based on detailed – wherever possible, seasonal, or even more frequent – observations for improved process understanding, sensitivity experiments and extrapolation to areas with less comprehensive measurements.

- ***determination of regional glacier volume change within major mountain systems using cost-saving methodologies***: Strategically placed stakes/pits combined with photogrammetric/geodetic mapping of the entire glacier enables annual resolution in time to be combined with exact determination of volume and mass changes for the entire glacier.

- ***long-term observations of numerous glacier length, area and thickness changes within major mountain ranges for assessing the representativeness of continuous mass balance and volume change measurements on single glaciers:*** Documented cumulative glacier length changes allow for worldwide intercomparison of glacier fluctuations, serve as unique demonstration objects concerning long-term climate change, and are the key proxy linking the glacier changes of the 20th century to the past centuries and millennia (Haeberli and Holzhauser 2003, Oerlemans 2005, Sugiyama et al. 2007). However, glaciers in many regions increasingly react with vertical downwasting (instead of dynamical retreat) to the rapid warming since the mid-1980s, and have definitely become a non-linear climate proxy. Here, differentiation of DEMs increasingly assists in these tasks and greatly enhances the potential for regional glacier change assessments (Paul and Haeberli 2008).

- ***glacier inventories repeated at time intervals of a few decades by using (satellite) remote sensing:*** Air- and spaceborn remote sensing is used to compile detailed or preliminary glacier inventories as a basis for quantifying the evolution of large glacier ensembles, for assessing corresponding impacts and for modeling possible future developments at regional to continental scales.

This integrated and multilevel strategy aims at combining in-situ observations with remotely sensed data, process understanding with global coverage and traditional measurements with new technologies. Application of this integrative concept was illustrated for the European Alps (Haeberli et al. 2007), where glaciers can be shown to have lost about half their total volume (roughly -0.5% per year) between 1850 and around 1975, another 25% (or -1% per year) of the remaining amount between 1975 and 2000, and additional 10 to 15% (or -2 to -3% per year) in the first five years of this century. Scenario calculations concerning effects of global atmospheric warming (Nesje et al. 2008, Zemp et al. 2006) clearly confirm earlier regional projections (Haeberli and Hoelzle 1995) that many mountain ranges could lose major parts of their glacier volumes within the 21st century and that the strongest melting in such regions is likely to take place during the coming decades. Impacts are especially severe in relation to the regional water cyle (Huss et al. 2008) and also continue to affect sea level (Meier et al. 2007).

Glacier fluctuation data compiled by the WGMS is widely used in order to analyze regional and global glacier changes as well as theirs impact on hydrology, natural hazards and sea level changes. Since the publication of the last issue of the 'Fluctuations of Glaciers' series (WGMS 2005) several thematic journal volumes (Casassa et al. 2007, International Glaciological Society 2007, Kääb et al. 2007, Kull et al. 2008, International Glaciological Society in prep.) and books (Grove 2004, Bamber and Payne 2004, Knight 2006, Kotlyakov 2007, Orlove et al. 2008, WGMS 2008) have been published on the measurement and modeling of glacier changes and their impacts. In 2007 the '4th Assessment Report of the Intergovernmental Panel on Climate Changes' (IPCC 2007) was released summarizing, among other things, the state-of-knowledge of the research on glaciers and ice caps. In the same year, the 'Global Outlook for Ice and Snow' was published by the United Nations Environment Programme (UNEP 2007), written by more than 70 scientists from around the world as a contribution to the International Polar Year 2007–2008, including chapters dedicated to glaciers and ice caps (Zemp et al. 2007) and to ice and sea level change (Church et al. 2007).

Overall it can be concluded that glaciers and ice caps around the globe have been shrinking dramatically since their Holocene maximum extent towards the end of the Little Ice Age, between the 17th and the second half of the 19th century, with increasing rates of ice loss since the mid-1980s. On a time scale of decades, glaciers in various mountain ranges have shown intermittent re-advances. However, under the present climate scenarios, the ongoing trend of worldwide and fast, if not accelerating, glacier shrinkage on the century time scale is not a periodic change and may lead to the deglaciation of large parts of many mountain regions by the end of the 21st century.

In 2006, the WGMS was evaluated through IACS/IUGG. The evaluation, comprising a self-evaluation report, a site visit by the evaluation committee, and a subsequent evaluation report, came to the main conclusions that (i) WGMS is the only organization with an established network able to continue the collection of in-situ data in one database, (ii) the current rapid technological developments require traditional measurements to be related to modern techniques in order to apply integrated, multi level monitoring concepts, which cannot be accomplished by WGMS in its present form, organization and funding structure, and that (iii) WGMS should, therefore, strengthen its cooperation with the World Data Center for Glaciology, at the National Snow and Ice Data Center (NSIDC) in Boulder, USA, and the Global Land Ice Measurements from Space (GLIMS) project. The implementation of the re-organization of the international glacier monitoring has already been started resulting in a Memorandum of Understanding between WGMS and NSIDC as a first step towards a common GTN-G Steering Committee to be established under the umbrella of IACS/IUGG in order to coordinate, consult and support WGMS, NSIDC and GLIMS regarding the monitoring of glaciers and ice caps, facing the challenges of the 21st century.

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APPENDIX **NOTES ON THE COMPLETION OF THE DATA SHEETS**

This appendix includes the explanatory notes on the completion of the Excel-based data submission forms, sent out with the call-for-data for the observation period 2000–2005 (also valid for Addenda from earlier years):

- Notes on the completion of the data sheet "A GENERAL INFORMATION"
- Notes on the completion of the data sheet "B STATE"
- Notes on the completion of the data sheet "C FRONT VARIATION"
- Notes on the completion of the data sheet "D SECTION"
- Notes on the completion of the data sheet "E MASS BALANCE OVERVIEW"
- Notes on the completion of the data sheet "F MASS BALANCE"
- Notes on the completion of the data sheet "G SPECIAL EVENT"

The notes on the completion of the data sheets A−G describe all attributes compiled during the call-for-data, whereas the Tables A, B, BB, C, CC, CCC and D in this Volume provide a summary of the collected data. The presentation of the data and the corresponding fields are consistent with the Volume VIII of the "Fluctuations of Glaciers". A modification was made in Table D: instead of the mean area for the period of change (AREA MEAN, in thousand square metres), as in the last Volume, the area for the survey year (AREA SY, in square kilometre) is given.

At the beginning of 2005, the WGMS website was revised to simplify the access to information on available data, to procedures for data order and data submission as well as to the addresses of national correspondents. The website can be accessed via:

http://www.wgms.ch

A GENERAL INFORMATION

NOTES ON THE COMPLETION OF THE DATA SHEET

A1 POLITCAL UNIT
Name of country or territory in which glacier is located (For 2 digit abbreviations, see ISO 3166 country code, available at www.iso.org).
Political unit is part of WGI key (positions 1 and 2).
Political unit is part of FoG and MBB key (positions 1 and 2).

A2 WGMS ID
5 digit key identifying glacier in the WGMS data base.

A3 GLACIER NAME
The name of the glacier, written in CAPITAL letters.
Format: Max. 30 column positions.
If neccessary, the name can be abbreviated; in this case, please give the full name under "A16 REMARKS".

A4 HYDROLOGICAL CATCHMENT AREA
Part of WGI key: Position 3 denotes the continent. Positions 4 to 7 denote the drainage basin.

A5 FREE POSITION
Part of WGI number: Positons 8 and 9 are freely chosen identification numbers.

A6 LOCAL CODE
Part of WGI number: Positons 10 to 12

A7 LOCAL PSFG
The local PSFG number is part of FoG and MBB key (positions 3 to 7).
It consists of 4 or, as an exception, 5 numerical digits. Empty spaces should be filled with the digit 0.

A8 GEOGRAPHICAL LOCATION (GENERAL)
Refers to a very large geographical entity (e.g. a large mountain range or large politcal subdivision) which gives a rough idea of the location of the glacier, without requiring the use of a map or an atlas.
Format: max. 30 positions.
Examples: Western Alps, Southern Norway, Polar Ural, Tien Shan, Himalayas.

A9 GEOGRAPHICAL LOCATION (SPECIFIC)
Refers to a more specific geographical location (e.g. mountain group, drainage basin), which can easily be found on a small scale map of the country concerned.
Format: max. 30 positions.

A10 LATITUDE
The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may lie outside the glacier.
Latitude should be given in decimal degrees, positive values indicating the northern hemisphere and negative values indicating the southern hemisphere.
Latitude should be given to a maximum accuracy of 4 decimal places.

A11 LONGITUDE
The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may lie outside the glacier.
Longitude should be given in decimal degrees, positive values indicating east of zero meridian and negative values indicating west of zero meridian.
Longitude should be given to a maximum accuracy of 4 decimal places.

A12 CODE
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 Characteristcs Digit 3

A12.1 PRIMARY CLASSIFICATION - Digit 1

0	Miscellaneous	Any type not listed below (please explain)
1	Continental ice sheet	Inundates areas of continental size
2	Icefield	Ice masses of sheet or blanket type of a thickness that is insufficient to obscure the subsurface topography
3	Ice cap	Dome-shaped ice masses with radial flow
4	Outlet glacier	Drains an ice sheet, icefield or ice cap, usually of valley glacier form; the catchement area may not be easily defined
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, avalanhcing, and/or particularly heavy accumulation in certain years; usually no marked flow

pattern is visible; in existence for at least two consecutive years.

8 Ice shelf — Floating ice sheet of considerable thickness attached to a coast nourished by a glacier(s); snow accumultaion on its surface or bottom freezing

9 Rock glacier — Lava-stream-like debris mass containing ice in several possible forms and moving slowly downslope

A12.2 FORM – Digit 2

0 Miscellaneous — Any type not listed below (please 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)

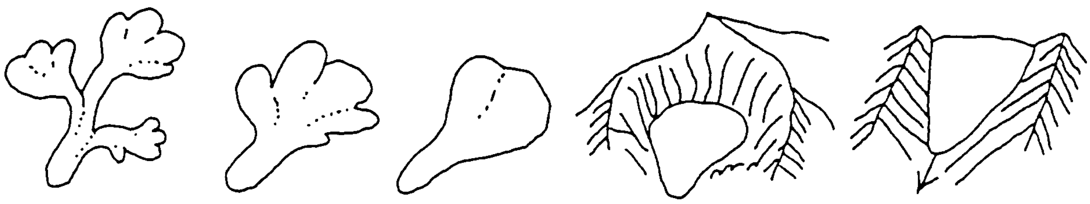
5 Niche — Small glacier in a V-shaped gulley or depression on a mountain slope (Fig. 1e); generally more common than genetically further developed cirque glacier.

6 Crater — Occurring in extinct or dormant volcanic craters

7 Ice apron — Irregular, usually thin ice mass which adheres to mountain slope or ridge

8 Group — A number of similar ice masses occurring in close proximity and too small to be assessed individually

9 Remnant — Inactive, usually small ice masses left by a receding glacier



1a 1b 1c 1d 1e

A12.3 FRONTAL CHARACTERISTICS – Digit 3

0	Miscellaneous	Any type not listed below (please explain)
1	Piedmont	Icefield formed on a lowland area 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 amd 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 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 ice calving which would be recognisable from the "lowest glacier elevation"

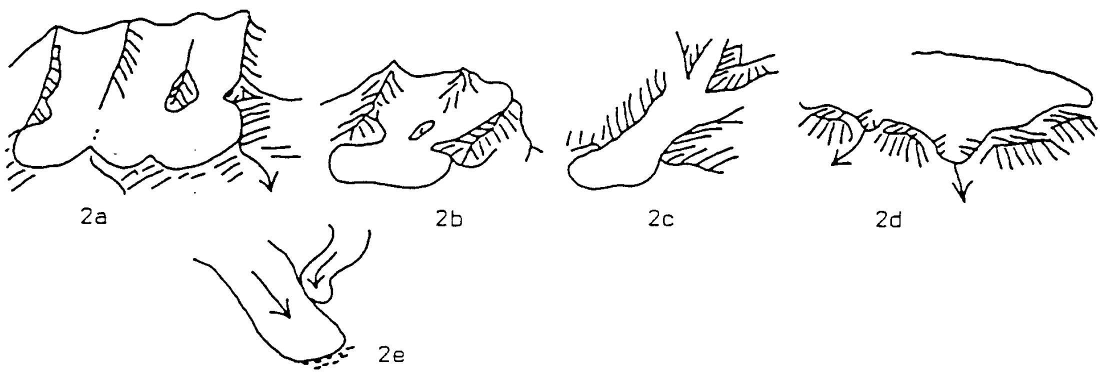
5 Coalescing, non-contributing (Fig. 2e)

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)



A13 EXPOSITION OF ACCUMULATION AREA
The main orientation of the accumulation area using the 8 cardinal points (8-point compass).

A14 EXPOSITION OF ABLATION AREA
The main orientation of the accumulation area using the 8 cardinal points (8-point compass).

A15 PARENT GLACIER
Links separated glacier parts with former parent glacier, using WGMS ID (see "A2 WGMS ID").

A16 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

B STATE

NOTES ON THE COMPLETION OF THE DATA SHEET

B1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. “A1 POLITICAL UNIT”).

B2 WGMS ID
5 digit key identifying glacier in the WGMS data base (cf. “A2 WGMS ID”).

B3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A3 GLACIER NAME”).

B4 YEAR
Year of present survey.

B5 MAXIMUM ELEVATION OF GLACIER
Altitude of the highest point of the glacier.

B6 MEDIAN ELEVATION OF GLACIER
Altitude of the contour line which halves the area of the glacier.

B7 MINIMUM ELEVATION OF GLACIER
Altitude of the lowest point of the glacier.

B8 ELEVATION ACCURACY
Estimated maximum error of reported elevations.

B9 LENGTH
Maximum length of glacier measured along the most important flowline (in horizontal projection).

B10 LENGTH ACCURACY
Estimated maximum error, in length.

B11 SURVEY DATE
Date of present survey.
For each survey, please indicate the complete date (day, month, year).
Missing data: For unknown day or month, put “01” in the corresponding position(s) and make a note under “B15 REMARKS”

B12 SURVEY METHOD
The survey method should be given using the following alphabetic code:

- A Aerial photography
- B Terrestrial photogrammetry
- C Geodetic ground survey (theodolite, tape, etc.)
- D Combination of a, b or c (please explain under “B15 REMARKS”)
- E Other methods (please explain under “B15 REMARKS”)

B13 INVESTIGATOR
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.

B14 SPONSORING AGENCY
Full name, abbreviation and address of the agency where the data are held.

B15 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

C FRONT VARIATION

NOTES ON THE COMPLETION OF THE DATA SHEET

C1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. “A1 POLITICAL UNIT”).

C2 WGMS ID
5 digit key identifying glacier in the WGMS data base (cf. “A2 WGMS ID”).

C3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A3 GLACIER NAME”).

C4 YEAR
Year of present survey.

C5 FRONT VARIATION
Variation in the position of the glacier front (in horizontal projection) between the previous and present survey.

Signs:

+	Advance
-	Retreat

C6 FRONT VARIATION ACCURACY
Estimated maximum error for front variation.

C7 QUALITATIVE VARIATION
If no quantitative data are available for a particular year, but qualitative data are available, then the front variation should be denoted using the following symbols. They should be positioned in the far left of the data field.

+X	Glacier in advance
- X	Glacier in retreat
ST	Glacier stationary
SN	Glacier front covered by snow making survey impossible.

Qualitative variations will be understood with reference to the previous survey data, whether this data is qualitative or quantitative.

C8 SURVEY DATE
Date of present survey
For each survey, please indicate the complete date (day, month, year).
Missing data : For unknown day or month, put “01” in the corresponding position(s) and make a note under “C13 REMARKS”

C9 SURVEY METHOD
The survey method should be given using the following alphabetic code:

- A Aerial photography
- B Terrestrial photogrammetry
- C Geodetic ground survey (theodolite, tape etc.)
- D Combination of a, b or c (please explain under "C13 REMARKS")
- E Other methods (please explain under "C13 REMARKS")

C10 REFERENCE DATE
Date of previous survey
For each survey, please indicate the complete date (day, month, year).
Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "C13 REMARKS"

C11 INVESTIGATOR
Name(s) of the person(s) or agency doing the fieldwork and / or the name(s) of the person(s) or agency processing the data.

C12 SPONSORING AGENCY
Full name, abbreviation and address of the agency where the data are held.

C13 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

D SECTION

NOTES ON THE COMPLETION OF THE DATA SHEET

D1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. "A1 POLITICAL UNIT").

D2 WGMS ID
5 digit key identifying glacier in the WGMS data base (cf. "A2 WGMS ID").

D3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3 GLACIER NAME").

D4 YEAR
Year of present survey.

D5 LOWER BOUNDARY
Lower boundary of altitude interval.
If refers to entire glacier, then lower bound = 9999.

D6 UPPER BOUNDARY
Upper boundary of altitude interval
If refers to entire glacier, then upper bound = 9999.

D7 AREA
Area of each altitude interval (in horizontal projection).

D8 AREA CHANGE
Area change for each altitude interval.

D9 AREA CHANGE ACCURACY
Estimated maximum error for area change.

D10 THICKNESS CHANGE
Thickness change for each altitude interval.

D11 THICKNESS CHANGE ACCURACY
Esitmated maximum error for thickness change.

D12 VOLUME CHANGE
Volume change for each altitude interval.

D13 VOLUME CHANGE ACCURACY
Esitmated maximum error for volume change.

D14 SURVEY DATE
Date of present survey
For each survey, please indicate the complete date (day, month, year).
Missing data : For unknown day or month, put “01” in the corresponding position(s) and make a corresponding note under “D19 REMARKS”

D15 SURVEY METHOD
The survey method should be given using the following alphabetic code:

- A Aerial photography
- B Terrestrial photogrammetry
- C Geodetic ground survey (theodolite, tape etc.)
- D Combination of a, b or c (please explain under “D19 REMARKS”)
- E Other methods (e.g., LIDAR, RADAR, map comparison; please explain and add at least one reference under “D19 REMARKS”)

D16 REFERENCE DATE
Date of previous survey.
For each survey, please indicate the complete date (day, month, year).
Missing data: For unknown day or month, put “01” in the corresponding position(s) and make a corresponding note under “D19 REMARKS”

D17 INVESTIGATOR
Name(s) of the person(s) or agency doing the fieldwork and / or the name(s) of the person(s) or agency processing the data.

D18 SPONSORING AGENCY
Full name, abbreviation and address of the agency where the data are held.

D19 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

E MASS BALANCE OVERVIEW

NOTES ON THE COMPLETION OF THE DATA SHEET

E1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. “A1 POLITICAL UNIT”).

E2 WGMS ID
5 digit key identifying glacier in the WGMS database (cf. “A2 WGMS ID”).

E3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A3 GLACIER NAME”).

E4 YEAR
Year of present survey.

E5 TIME MEASUREMENT SYSTEM
The time measurement system should be given using the following 3 digit alphabetic code:

STR	Stratigraphic system
FXD	Fixed data system
COM	Combined system
OTH	Other (please explain under “E22 REMARKS”)

E6 BEGINNING OF SURVEY PERIOD
Date on which survey period began.
For each survey, please give the complete date (day, month, year).
Missing data: For unknown day or month, put “01” in the corresponding position(s) and make a note under “E22 REMARKS”

E7 END OF WINTER SEASON
Date of end of winter season (day, month, year, if known).
Missing data: For unknown day or month, put “01” in the corresponding position(s) and make a note under “E22 REMARKS”

E8 END OF SURVEY PERIOD
Date on which survey period ended.
For each survey, please give the complete date (day, month, year).
Missing data: For unknown day or month, put “01” in the corresponding position(s) and make a note under “E22 REMARKS”

E9 EQUILIBRIUM LINE ALTITUDE (ELA)
Mean altitude (averaged over the glacier) of the (end of mass balanc year) equilibrium line.

E10 EQUILIBRIUM LINE ALTITUDE ACCURACY
Estimated maximum error of ELA.

E11 MINIMUM NUMBER OF MEASUREMENT SITES USED IN ACCUMULATION AREA
The minimum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E12 MAXIMUM NUMBER OF MEASUREMENT SITES USED IN ACCUMULATION AREA
The maximum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E13 MINIMUM NUMBER OF MEASUREMENT SITES USED IN ABLATION AREA
The minimum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E14 MAXIMUM NUMBER OF MEASUREMENT SITES USED IN ABLATION AREA
The maximum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E15 ACCUMULATION AREA
Accumulation area in horizontal projection.

E16 ACCUMULATION AREA ACCURACY
Estimated maximum error for accumulation area.

E17 ABLATION AREA
Ablation area in horizontal projection.

E18 ABLATION AREA ACCURACY
Estimated maximum error for ablation area.

E19 ACCUMULATION AREA RATIO
Accumulation area divided by the total area, multiplied by 100. Given in percent.

E20 INVESTIGATOR
Name(s) of the person(s) or agency doing the fieldwork and / or the name(s) of the person(s) or agency processing the data.

E21 SPONSORING AGENCY
Full name, abbreviation and address of the agency where the data are held.

E22 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

F MASS BALANCE

NOTES ON THE COMPLETION OF THE DATA SHEET

F1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. “A1 POLITICAL UNIT”).

F2 WGMS ID
5 digit key identifying glacier in the WGMS database (cf. “A2 WGMS ID”).

F3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A3 GLACIER NAME”).

F4 YEAR
Year of present survey.

F5 LOWER BOUNDARY OF ALTITUDE INTERVAL
If refers to entire glacier, then lower bound = 9999.

F6 UPPER BOUNDARY OF ALTITUDE INTERVAL
If refers to entire glacier, then lower bound = 9999.

F7 ALTITUDE INTERVAL AREA
Area of each altitude interval (in horizontal projection).

F8 SPECIFIC WINTER BALANCE
Specific means the total value divided by the total glacier area under investigation.
Specific winter balance equals the net winter balance divided by the total area of the glacier.

F9 SPECIFIC WINTER BALANCE ACCURACY
Estimated maximum error for specific winter balance.

F10 SPECIFIC SUMMER BALANCE
Specific means the total value divided by the total glacier area, in this case, it is the net summer balance divided by the total area of the glacier.

F11 SPECIFIC SUMMER BALANCE ACCURACY
Estimated maximum error for specific winter balance.

F12 SPECIFIC NET BALANCE
Net balance of glacier divided by the area of the glacier.

F13 SPECIFIC NET BALANCE ACCURACY
Estimated maximum error for specific net balance.

F14 INVESTIGATOR
Name(s) of the person(s) or agency doing the fieldwork and / or the name(s) of the person(s) or agency processing the data.

F15 SPONSORING AGENCY
Full name, abbreviation and address of the agency where the data are held.

F16 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

G SPECIAL EVENT

NOTES ON COMPLETION OF THE DATA SHEET

This data sheet should be completed in cases of extraordinary events, especially concerning glacier hazards and uncommon changes in glaciers.

G1 POLITCAL UNIT
Name of country or territory in which glacier is located (cf. "A1 POLITICAL UNIT").

G2 WGMS ID
5 digit key identifying glacier in the WGMS database (cf. "A2 WGMS ID").

G3 GLACIER NAME
The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3 GLACIER NAME").

G4 EVENT DATE
Date of event.
For events lasting for several days, please indicate the date of the main event, and describe the sequence of the event under "G6. EVENT DESCRIPTION."

G5 EVENT TYPE
Indicate the involved event type(s) using 1 = event type involved and 0 = event type not involved for the following event types:

- G5.1 GLACIER SURGE
- G5.2 CALVING INSTABILITY
- G5.3 GLACIER FLOOD (including debris flow, mudflow)
- G5.4 ICE AVALANCHE
- G5.5 TECTONIC EVENT (earthquake, volcanic eruption)
- G5.6 OTHER

G6 EVENT DESCRIPTION
Please give quantitative information wherever possible, for example:

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

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

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

- Ice avalanche: Volume released, runout distance, overall slope (i.e., ratio of vertical drop height to horizontal travel distance) of avalanche path;

- Tectonic event: Volumes, runout distances and overall slopes of rockslides on glacier surfaces, amount of geothermal melting in craters, etc.

G7 DATA SOURCE
Please indicate at least one reference or source 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.

G8 REMARKS
Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantative comments. Only significant decimals should be given.

The amount and/ or kind of possible destruction, particular technical measures taken against glacier hazards, or special studies carried out in connection with the event may be given.

Notes

WORLD GLACIER MONITORING SERVICE

GENERAL INFORMATION ON THE OBSERVED GLACIERS 2000-2005

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 decimal degrees north or south
LONG	Longitudes in decimal degrees 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 in metres
ELEVATION MED	Median elevation of glacier in metres*
ELEVATION MIN	Minimum elevation of glacier in metres*
AREA	Total area of glacier in square kilometres*
LEN	Length of glacier along a flowline from maximum to minimum elevation in kilometres*
TYPE OF DATA	B = Variations in the positions of glacier fronts 2000–2005 or Variations in the position of glacier fronts: addenda from earlier years
	C = Mass balance summary data 2000–2005 or Mass balance summary data: addenda from earlier years
	D = Changes in area, volume and thickness
	F = Index measurements or special events – see Chapter 4

* these are the last reported values which may not correspond to the same survey year

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
	ANTARCTICA												
1	BAHIA DEL DIA.	AQ	63.82 S	57.43 W		NE	E	638		38	14.3		C
	ARGENTINA												
2	AZUFRE	AR	35.29 S	70.55 W	538	E	E	3700	3350	2850	3.87	3.50	B
3	DE LOS TRES	AR	49.33 S	73.00 W	544	SE	SE	1990		1200	0.976	1.70	B
4	GUSSFELDT	AR	32.61 S	70.03 W	526	E	E	5300	4950	4310	14.67	6.57	B
5	HORCONES INF.	AR5006	32.68 S	69.98 W	539	SE	S	4825	4100	3475	6.17	12.15	B F
6	MARTIAL	AR131	54.78 S	68.42 W	143	SE	SE	1170	1050	940	0.33	0.45	B C
7	MARTIAL ESTE	AR	54.78 S	68.40 W	646	SE	SE	1170	1070	970	0.093	0.33	C
8	PENON	AR	35.27 S	70.56 W	525	E	NE	4100	3650	3180	4.42	3.10	B
9	TUPUNGATO 01	AR	33.39 S	69.75 W	507	SE	NE	6600	5300	4380		8.07	B
10	TUPUNGATO 02	AR	33.38 S	69.75 W	507	SE	E	6100	5100	4600		3.34	B
11	TUPUNGATO 03	AR	33.36 S	69.75 W	507	E	NE	6400	5650	4650		2.99	B
12	TUPUNGATO 04	AR	33.34 S	69.75 W	507	NE	NE	6450	6050	4800		3.28	B
13	VACAS	AR	32.55 S	69.99 W	526	E	E	5400	4700	3730	18.32	6.08	B
	AUSTRIA												
14	AEU.PIRCHLKAR	AT229	47.00 N	10.92 E	606	SE	NE	3260	3030	2720	0.94	1.9	B
15	ALPEINER F.	AT307	47.05 N	11.13 E	528	N	NE	3340	2930	2310	3.94	4.6	B
16	BACHFALLEN F.	AT304	47.08 N	11.08 E	608	N	N	3120	2850	2580	2.55	2.9	B
17	BAERENKOPF K.	AT702	47.13 N	12.72 E	624	N	N	3400	3030	2270	2.5	3.1	B
18	BERGLAS F.	AT308	47.07 N	11.12 E	608	E	NE	3290	2990	2490	1.47	2.5	B
19	BIELTAL F. W	AT0105B	46.87 N	10.13 E	646	NW	NW	2810	2680	2540	0.29	0.9	B
20	BIELTAL F.	AT0105A	46.88 N	10.13 E	606	NW	NW	3000	2740	2544	0.73	1.1	B
21	BIELTALF. MITTE	AT	46.88 N	10.13 E	---								B
22	BRENNKOGL K.	AT727	47.10 N	12.80 E	646	N	N	2960	2670	2430	0.59	1.2	B
23	DAUNKOGEL F.	AT0310A	47.00 N	11.10 E	608	NE	NE	3240	2880	2550	2.69	2.9	B
24	DIEM F.	AT220	46.81 N	10.98 E	608	NW	NW	3540	3060	2710	3.5	3.4	B
25	DORFER K.	AT509	47.10 N	12.33 E	628	SE	SE	3600	2790	2270	6.24	4	B
26	EISKAR G.	AT1301	46.62 N	12.90 E	646	N	N	2390	2250	2160	0.151	0.4	B
27	FERNAU F.	AT312	46.98 N	11.13 E	648	NW	N	3310	2850	2380	2.02	2.5	B
28	FREIGER F.	AT320	46.97 N	11.20 E	606	NE	NE	3370	3090	2720	0.59	1.5	B
29	FREIWAND K.	AT706	47.10 N	12.75 E	648	SE	SE	3130	2890	2690	0.35	1.1	B
30	FROSNITZ K.	AT507	47.08 N	12.40 E	636	E	E	3330	2780	2400	4.19	4.4	B
31	FURTSCHAGL K.	AT406	47.00 N	11.77 E	608	NW	NW	3480	2890	2542	1	1.6	B
32	GAISKAR F.	AT325	46.97 N	11.12 E	648	SE	SE	3190	3070	2890	0.75	1.1	B
33	GAISSBERG F.	AT225	46.83 N	11.07 E	528	NW	NW	3390	2850	2460	1.35	3.3	B
34	GEPATSCH F.	AT202	46.85 N	10.77 E	528	NE	N	3536	3057	2060	17.346	8.2	B
35	GOESSNITZ K.	AT1201	46.97 N	12.75 E	647	NW	NW	3060	2690	2520	0.86	1.5	B
36	GOLDBERG K.	AT0802B	47.03 N	12.47 E	648	SE	NE	3080	2680	2310	1.494	2.8	B C
37	GR.GOSAU G.	AT1101	47.48 N	13.60 E	646	NW	NW	2810	2520	2250	1.48	2.2	B
38	GROSSELEND K.	AT1001	47.03 N	13.32 E	636	NW	NW	3140	2720	2410	2.76	2.4	B
39	GRUENAU F.	AT315	46.98 N	11.20 E	648	N	N	3415	2941	2363	1.72	2.24	B
40	GURGLER F.	AT222	46.80 N	10.98 E	528	NW	N	3420	2990	2270		8	B
41	GUSLAR F.	AT210	46.85 N	10.80 E	648	E	SE	3480	3120	2780		2.5	B
42	HABACH K.	AT504	47.15 N	12.37 E	636	N	N	3240	2670	2170	5.03	2.4	B
43	HALLSTAETTER G.	AT1102	47.48 N	13.62 E	608	NE	NE	2910	2560	2080	3.3	2.3	B
44	HINTEREIS F.	AT209	46.80 N	10.77 E	528	E	NE	3727	3011	2400	7.4	7.1	B C
45	HOCHALM K.	AT1005	47.02 N	13.33 E	636	E	E	3350	2880	2540	3.16	2.4	B
46	HOCHJOCH F.	AT208	46.78 N	10.82 E	526	N	NW	3500	3030	2580	7.13	3.8	B
47	HOCHMOOS F.	AT309	47.05 N	11.15 E	609	E	NE	3460	2940	2520	1.74	3	B
48	HORN K.(SCHOB.)	AT1202	46.97 N	12.77 E	648	N	NW	3010	2780	2600	0.46	1.1	B
49	HORN K.(ZILLER)	AT402	47.00 N	11.82 E	538	N	N	3213	2777	2089	3.416	3	B
50	INN.PIRCHLKAR	AT228	47.00 N	10.92 E	656	E	NE	3340	2990	2720	0.62	1.8	B
51	JAMTAL F.	AT106	46.87 N	10.17 E	528	N	N	3120	2780	2370	3.48	2.8	B C
52	KAELBERSPITZ K.	AT1003	47.03 N	13.28 E	608	N	N	2890	2690	2450	0.82	2.2	B
53	KAL.BAERENKOPF	AT	47.11 N	13.60 E	---								B
54	KARLINGER K.	AT701	47.13 N	12.70 E	624	NE	N	3340	2800	2060	4.04	3.6	B
55	KESSELWAND F.	AT226	46.84 N	10.79 E	638	SE	E	3490	3180	2698	3.85	4.25	B C
56	KLEINFLEISS K.	AT801	47.05 N	12.95 E	606	W	W	3080	2840	2510	0.898	2.3	B C

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM^2	KM	DATA
57	KLEINEISER K.	AT717	47.15 N	12.67 E	646	NW	NW	2880	2730	2620	0.25	0.7	B
58	KLEINELEND K.	AT1002	47.07 N	13.25 E	634	NE	NE	3190	2750	2150	3.04	2.7	B
59	KLOSTERTALER M	AT0102B	46.87 N	10.07 E	608	W	W	3220	2940	2640	0.45	1.6	B
60	KLOSTERTALER N	AT0102A	46.87 N	10.07 E	608	NW	NW	3220	2880	2600	2.59	1.7	B
61	KRIMMLER K.	AT0501A	47.08 N	12.25 E	626	NW	NW	3490	2550	1910	7.52	3.5	B
62	KRIMMLER K. OST	AT0501B	47.08 N	12.25 E	636	W	W	3280	2550	2290	7.52	2.2	B
63	LAENGENTALER F.	AT305	47.08 N	11.10 E	647	NE	N	3200	2820	2540	0.89	2.2	B
64	LANDECK K.	AT604	47.13 N	12.58 E	646	N	N	2940	2600	2430	0.41	0.9	B
65	LANGTALER F.	AT223	46.79 N	11.01 E	538	N	NW	3420	2910	2450	3.0492	5.1	B
66	LARAIN F.	AT107	46.90 N	10.22 E	637	N	N	3170	2750	2430	1.64	2.1	B
67	LIESENSER F.	AT306	47.08 N	11.12 E	626	NE	NE	3270	2930	2430	4.17	4.6	B
68	LITZNERGL.	AT101	46.88 N	10.04 E	647	N	N	2970	2630	2450	0.71	1.2	B
69	MARZELL F.	AT218	46.78 N	10.88 E	528	NW	N	3620	3160	2450	5.14	4.4	B
70	MAURER K. (GLO.)	AT714	47.18 N	12.68 E	646	W	W	2890	2730	2610	0.49	1.4	B
71	MAURER K. (VEN.)	AT510	47.08 N	12.30 E	608	S	S	3490	2840	2330	7.33	3.1	B
72	MITTERKAR F.	AT214	46.88 N	10.87 E	646	SE	SE	3580	3230	2960	1.1	2.1	B
73	MUTMAL F.	AT227	46.78 N	10.92 E	648	N	NW	3520	3080	2720	0.79	1.5	B
74	NIEDERJOCH F.	AT217	46.78 N	10.87 E	528	N	N	3600	3100	2690	2.9	3	B
75	OBERSULZBACH	AT502	47.11 N	12.29 E	518	NW	NW	3600	2730	1990	15.3	5.7	B
76	OCHSENTALER G.	AT103	46.85 N	10.10 E	528	N	N	3160	2910	2290	2.59	2.8	B
77	OEDENWINKEL K.	AT712	47.11 N	12.64 E	539	NW	NW	3180	2590	2130	2.22	3.8	B
78	PASTERZEN K.	AT704	47.10 N	12.7 E	528	SE	SE	3700	2990	2070	17.71	9.4	B C
79	PFAFFEN F.	AT324	46.96 N	11.13 E	648	W	W	3470	3060	2770	1.21	1.8	B
80	PRAEGRAT K.	AT603	47.12 N	12.59 E	606	W	W	3020	2800	2630	1.44	1.1	B
81	RETTENBACH F.	AT212	46.93 N	10.93 E	646	N	N	3350	2920	2610	1.79	2.5	B
82	RIFFL K. N	AT718	47.13 N	12.67 E	646	W	SW	3070	2880	2710	0.26	0.8	B
83	ROFENKAR F.	AT215	46.88 N	10.88 E	644	SE	SE	3750	3290	2820	1.26	2.2	B
84	ROTER KNOPF K.	AT	46.97 N	12.75 E	---								B
85	ROTMOOS F.	AT224	46.82 N	11.05 E	628	N	N	3410	2960	2370	3.17	3.3	B
86	SCHALF F.	AT219	46.78 N	10.93 E	528	NW	NW	3500	3130	2500	8.47	5.6	B
87	SCHAUFEL F.	AT311	46.98 N	11.12 E	608	NE	NE	3150	2850	2560	1.46	2.3	B
88	SCHLADMINGER	AT1103	47.47 N	13.63 E	646	NE	NE	2700	2600	2420	0.81	0.9	B
89	SCHLATEN K.	AT506	47.11 N	12.38 E	518	NE	NE	3670	2810	1940	11.27	6.3	B
90	SCHLEGEIS K.	AT405	46.98 N	11.77 E	604	NW	NW	3480	2846	2446		1.7	B
91	SCHMIEDINGER K.	AT726	47.18 N	12.68 E	606	NE	NE	3160	2750	2410	1.81	2	B
92	SCHNEEGLOCKEN	AT109	46.87 N	10.10 E	646	NE	NE	3020	2770	2570	0.72	1.2	B
93	SCHNEELOCH G.	AT1104	47.50 N	13.60 E	648	NW	NW	2530	2300	2190	0.23	0.8	B
94	SCHWARZENBERG	AT303	47.05 N	11.12 E	638	SE	SW	3490	3030	2590	1.84	2.9	B
95	SCHWARZENSTEIN	AT403	47.02 N	11.85 E	508	NW	NW	3320	2902	2319		2.5	B
96	SCHWARZKARL K.	AT716	47.17 N	12.67 E	646	NW	NW	2970	2750	2560	0.47	1.2	B
97	SCHWARZKOEPFL	AT710	47.15 N	12.72 E	648	N	NW	2860	2570	2340	0.54	1.2	B
98	SEXEGERTEN F.	AT204	46.90 N	10.80 E	628	N	NE	3470	2950	2560	2.83	2.9	B
99	SIMILAUN F.	AT	46.78 N	10.88 E	---								B
100	SIMMING F.	AT318	46.98 N	11.25 E	608	N	N	3170	2700	2340	2.52	2.3	B
101	SIMONY K.	AT511	47.07 N	12.27 E	609	SE	SE	3490	2810	2230	4.16	3.5	B
102	SONNBLICK K.	AT0601A	47.13 N	12.60 E	606	NE	E	3050	2780	2500	1.393	1.5	B C
103	SPIEGEL F.	AT221	46.83 N	10.95 E	648	NW	NW	3430	3080	2780	1.11	1.7	B
104	SULZENAU F.	AT0314A	46.98 N	11.15 E	518	N	N	3501	3012	2468	4.47	3.64	B
105	SULZTAL F.	AT301	47.00 N	11.08 E	528	N	N	3350	2860	2290	4.48	4.1	B
106	TASCHACH F.	AT205	46.90 N	10.84 E	528	N	NW	3760	3130	2240	8.16	5.6	B
107	TAUFKAR F.	AT216	46.88 N	10.90 E	646	SE	SE	3340	3120	2980	0.44	1	B
108	TOTENFELD	AT110	46.88 N	10.15 E	648	NE	NE	3040	2790	2550	0.72	1.5	B
109	TOTENKOPF K.	AT	47.13 N	12.66 E	---								B
110	TRIEBENKARLAS.	AT323	46.96 N	11.15 E	648	W	W	3460	3040	2760	1.79	2	B
111	UMBAL K.	AT512	47.05 N	12.25 E	538	SW	SW	3440	2850	2230	7.33	5	B
112	UNT. RIFFL K.	AT0713B	47.13 N	12.67 E	649	N	NW	2910	2530	2290	1.01	2	B
113	UNTERSULZBACH	AT503	47.13 N	12.35 E	528	N	NW	3670	2720	2070	5.92	6.3	B
114	VERBORGENBERG	AT322	47.07 N	11.12 E	646	E	E	3260	3000	2780	0.89	1.3	B
115	VERMUNT G.	AT104	46.85 N	10.13 E	628	NW	NW	3130	2790	2430	2.16	2.8	B
116	VERNAGT F.	AT211	46.88 N	10.82 E	626	S	SE	3627	3142	2765	8.357	3.15	B C
117	VILTRAGEN K.	AT505	47.13 N	12.37 E	528	NE	E	3480	2660	2190	4.35	4.5	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
118	W. GRUEBL F.	AT316	46.98 N	11.22 E	608	NW	N	3050	2970	2820	0.24	0.9	B
119	W. TRIPP K.	AT1004	47.02 N	13.32 E	646	SE	S	3230	2880	2780	0.6	1.5	B
120	WASSERFALLWIN.	AT705	47.12 N	12.72 E	638	SE	S	3150	2870	2610	1.93	2.5	B
121	WAXEGG K.	AT401	47.00 N	11.80 E	636	NE	N	3310	2852	2394	3.207	1.97	B
122	WEISSEE F.	AT201	46.85 N	10.72 E	608	N	N	3530	2970	2540	3.48	3.4	B
123	WEST.GRUEBLER	AT	46.96 N	11.18 E	---								B
124	WIELINGER K.	AT725	47.15 N	12.75 E	604	N	NW	3560	2940	2180	0.98	2.4	B
125	WILDGERLOS	AT404	47.15 N	12.11 E	608	N	N	3260	2650	2110	3.68	2.8	B
126	WINKL K.	AT1006	47.02 N	13.32 E	648	W	W	3100	2710	2390	0.66	1.5	B
127	WURTEN K.	AT804	47.03 N	13.01 E	628	SW	S	3120	2680	2380	0.972	3	B C
128	ZETTALUNITZ K.	AT508	47.08 N	12.38 E	638	SW	SW	3470	2980	2450	5.47	4.5	B
	BOLIVIA												
129	CHACALTAYA	BO5180	16.35 S	68.12 W	648	S	S	5346	5274	5214	0.01	0.305	B C D F
130	CHARQUINI SUR	BO	16.17 S	68.09 W	---	S	S	5334	5100	4965	0.3819	0.544	D
131	ZONGO	BO5150	16.25 S	68.17 W	538	S	E	5795	5450	4844	1.8857	2.875	B C D
	C.I.S												
132	DJANKUAT	SU3010	43.20 N	42.77 E	528	N	NW	3760	3250	2700	2.737	4.2	B C F
133	DZHELO	SU7106	50.12 N	88.30 E	536	SE	SE	3780	3150	2590	8.66	5.53	B
134	GARABASHI	SU3031	43.30 N	42.47 E	008	SE	S	5000	3880	3316	4.47	5.8	C
135	KOLKA	SU	42.73 N	44.70 E	---	N	N						F
136	KORUMDU	SU7103	50.13 N	87.68 E	536	NE	NE	4043	3150	2240	4.85	4.64	B
137	LEVIY AKTRU	SU7102	50.08 N	87.72 E	536	SE	SE	4043	3250	2575	5.95	5.84	B C
138	LEVIY KARAGEMS.	SU7107	50.23 N	88.17 E	538	S	S	3760	3100	2290	4.04	3.4	B
139	MALIY AKTRU	SU7100	50.08 N	87.75 E	538	E	N	3714	3200	2234	2.73	4.22	B C
140	NO.125 (VODOP.)	SU7105	50.10 N	87.70 E	303	N	N	3552	3230	3038	0.75	1.38	B C
141	PR.KARAGEMSKIY	SU7109	50.17 N	88.13 E	538	SE	SE	3960	3200	2390	2.03	3.6	B
142	TS.TUYUKSUYSK.	SU5075	43.05 N	77.08 E	536	N	N	4219	3810	3441	2.525	2.928	B C D
	CANADA												
143	BABY GLACIER	CA205	79.43 N	90.97 W	650	SW	SW	1170	1020	710	0.61	1.4	C
144	DEVON ICE CAP	CA0431	75.42 N	83.25 W	303	NW	NW	1890	1200	0	1696	50	C
145	HELM	CA855	49.97 N	123.00 W	626	NW	NW	2150	1900	1770	0.756	2.4	C
146	PEYTO	CA1640	51.67 N	116.53 W	538	NE	NE	3190	2640	2130	11.45	5.3	C
147	PLACE	CA1660	50.43 N	122.60 W	538	NE	NW	2610	2089	1860	3.174	4.2	C
148	WHITE	CA2340	79.45 N	90.67 W	515	SE	SE	1780	1160	80	39.38	15.4	C
	CHILE												
149	ECHAURREN NOR.	CL0001B	33.58 S	70.13 W	643	SW	SW	3880	3750	3650	0.4	1.2	C
	CHINA												
150	LAPATE NO.51	CN27	43.70 N	84.40 E	640	NE	NE	4049	3640	3400	1.48	1.7	B
151	URUMQIHE E-BR.	CN1	43.08 N	86.82 E	628	NE	NE	4267	3977	3736	1.101	2.1	B C
152	URUMQIHE S.NO.1	CN10	43.08 N	86.82 E	622	NE	NE	4486	4040	3736	1.708	2.2	C
153	URUMQIHE W-BR.	CN2	43.08 N	86.82 E	628	NE	NE	4486	4082	3820	0.607	1.9	B C
	COLOMBIA												
154	ALFOMBRALES E	CO0013B	4.87 N	75.33 W	636	S	SW			4621			B
155	AZUFRADO E	CO0005B	4.90 N	75.32 W	659	N	NE			4620			B
156	AZUFRADO W	CO0005A	4.90 N	75.32 W	659	N	NE			4830			B
157	CENTRAL	CO32	4.47 N	75.22 W	636	NW	NW	4900	4770	4700	0.6	0.81	B
158	CERRO CON-CAV. 7	CO	6.45 N	72.30 W	---								B
159	CERRO CON-CAV. 8	CO	6.45 N	72.30 W	---								B
160	CERRO TOTI (B)	CO	6.45 N	74.06 W	---								B
161	CERRO TOTI (C)	CO	6.45 N	72.30 W	---								B
162	DESA S	CO	2.92 N	76.05 W	---								B
163	DESA SE	CO	2.92 N	76.05 W	---								B
164	DESA WSW	CO	2.92 N	76.05 W	---								B
165	EL MAYOR	CO	2.92 N	76.05 W	---			5284		4163			B
166	EL OSO	CO	2.92 N	76.05 W	---					4910	2.1		B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
167	EL VENADO	CO	2.92 N	76.05 W	---			5304		4308			B
168	GUALI	CO3	4.90 N	75.33 W	633	NW	NW			5025	0.43		B
169	HOJALARGA 1	CO	6.45 N	73.72 W	---								B
170	LA CABANA	CO7	4.90 N	75.22 W	639	E	NE	5260		4650	0.87	2.6	B
171	LA CONEJERA	CO33	4.48 N	75.22 W	636	NW	NW	4870	4755	4700	0.33	1.08	B
172	LA LISA	CO4	4.92 N	75.22 W	633	N	NW			5100	0.21		B
173	LA PLAZUELA	CO6	4.90 N	75.30 W	639	NE	NE	5180		4870	0.32	0.9	B
174	LAGUNA AZUL	CO26	4.47 N	75.37 W	636	SE	E	4925	4738	4694	0.63	1.14	B
175	LAGUNILLAS	CO8	4.88 N	72.30 W	539	E	E	5220		4610	1.08	2	B
176	LENGUA-SI 1	CO	4.81 N	75.37W	---					4634			B
177	LENGUA-SI 2	CO	4.82 N	75.37 W	---					4672			B
178	LENGUA-SI 4 CEN	CO	4.82 N	75.37 W	---								B
179	LENGUA-SI 4 DER	CO	4.82 N	75.37 W	---								B
180	LENGUA-SI 4 IZQ	CO	4.81 N	75.37 W	---					4673			B
181	LENGUA-SI 5	CO	4.82 N	75.37 W	---								B
182	LENGUA-SI 6	CO	4.82 N	75.37 W	---								B
183	LENGUA-SI 7	CO	4.82 N	75.37 W	---								B
184	LENGUA-SI 8	CO	4.82 N	75.37 W	---					4673			B
185	LENGUA-SI 8 DER	CO	4.82 N	75.37 W	---								B
186	LENGUA-SI N	CO	4.82 N	75.37 W	---								B
187	LENGUA-SI P N	CO	4.82 N	75.34 W	---					4650			B
188	LEONERA ALTA	CO9	4.88 N	75.30 W	636	SE	SE	5218		4830	1.32	1.72	B
189	MOLINOS	CO2	4.90 N	73.72 W	638	NW	NW	5260		5126	0.31	1.2	B
190	NEREIDAS	CO14	4.88 N	75.33 W	537	SW	W	5300		4850	0.68	2.5	B
191	PA3	CO	6.45 N	73.72 W	---								B
192	PAB	CO	6.45 N	72.30 W	---								B
193	PASO BELLAVIST. A	CO	6.45 N	73.72 W	---								B
194	PULPITO DEL DIA.	CO	6.45 N	72.30 W	---								B
195	SECTOR NORTE	CO	2.92 N	72.30 W	---								B
196	TRIDENTE	CO12	4.88 N	73.72 W	638	S	S	5220		4830	0.5	1.39	B
	ECUADOR												
197	ANTIZANA15ALPH.	EC1	0.47 S	78.15 W	478	NW	NW	5760	5309	4858	0.294	1.856	B C
	FRANCE												
198	ARGENTIERE	FR00002	45.95 N	6.99 E	519	NW	NW	3500	2600	1500	15.6	9	B C
199	BLANC	FR00031	44.94 N	6.39 E	528	E	S	4000	3000	2500	7.7	7	B
200	BOSSONS	FR00004	45.88 N	6.87 E	528	N	N	4800	3200	1190	10.53	7.2	B
201	GEBROULAZ	FR00009	45.30 N	6.63 E	529	N	N	3400	3000	2600	2.76	3	B C
202	MER DE GLACE	FR00003	45.88 N	6.93 E	519	N	N	3600	3000	1480	33	12	B
203	OSSOUE	FR	42.77 N	0.14 W	529	E	E	3210	3000	2750		1.5	B C
204	SAINT SORLIN	FR00015	45.17 N	6.15 E	529	N	N	3400	2900	2600	3	3	B C
205	SARENNES	FR00029	45.14 N	6.14 E	548	S	S	3150	3000	2850	0.5	1	C
	HEARD ISLAND												
206	ALLISON	HM1350	53.08 S	73.40 E	624	W	W	2360	1183	5	6.5	8.23	B
207	ANZAC PEAK	HM1020	53.00 S	73.30 E	333	NE	NE	710		340	1.75	1.6	B
208	BAUDISSIN	HM105	53.03 S	73.34 E	624	NW	NW	2300	1150	0	17.04	8.42	B
209	BROWN	HM111	53.07 S	73.64 E	628	NE	NE	1210	655	75	11.21	4.8	B
210	CHALLENGER	HM1130	53.03 S	73.48 E	624	N	N	2300	1150	0	5	7.19	B
211	COMPTON 1	HM112	53.07 S	73.61 E	627	NE	NE	1478	739	0		2.02	B
212	DOWNES 1	HM1150	53.02 S	73.32 E	624	N	N	2360	1180	0		8.46	B
213	EALEY 1	HM1170	53.02 S	73.56 E	624	N	N	2320	1160	0		8.12	B
214	JACKA	HM0113A	53.00 S	73.33 E	636	NE	NE	500	325	150	0.95	2.24	B
215	MARY-POWELL	HM1140	53.03 S	73.50 E	628	N	N	1075	570	65	2.49	3.71	B
216	MT DIXON	HM1010	53.00 S	73.53 E	333	NW	NW	700		250	1.98	1	B
217	MT OLSEN	HM1040	53.02 S	73.35 E	333	NE	NE	640		300	1.45	0.8	B
218	NARES	HM1120	53.03 S	73.46 E	622	N	N	850	500	150	3.5	2.76	B
219	STEPHENSON 1	HM110	53.10 S	73.70 E	624	E	E	2270	1135	0		10.19	B
220	VAHSEL	HM106	53.06 S	73.40 E	624	W	W	2360	1183	5	12.4	8.99	B
221	WINSTON 1	HM109	53.12 S	73.63 E	627	SE	SE	2270	1135	0		8.01	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATION MAX	ELEVATION MED	ELEVATION MIN	AREA KM²	LEN KM	TYPE OF DATA
	ICELAND												
222	BLAGNIPUJOK.	IS	64.72 N	19.13 W	4-3	SW	SW						B
223	BREIDAMJOK.E.B	IS1126B	64.22 N	16.33 W	424	S	SE	1900	1175	20	995	40	B C
224	BREIDAMJOK.W.A	IS1125A	64.17 N	16.47 W	424	E	SE	1900		60		20	B
225	BREIDAMJOK.W.C	IS1125C	64.17 N	16.47 W	423	SE	SE	1730		40		30	B
226	BRUARJOK.	IS2400	64.67 N	16.17 W	433	N	N	1800	1260	590	1695	54	C
227	DYNGJUJOK.	IS2600	64.67 N	17.00 W	423	N	N	200	1440	720	1040	46	C
228	EYJABAKKAJOK.	IS2300	64.65 N	15.58 W	423	N	NE	690	1130	1565	119	15	C
229	FALLJOK.	IS1021	63.98 N	16.75 W	433	W	W	2000		140	8	8	B
230	FJALLS.FITJAR	IS1024B	64.03 N	16.52 W	434	SE	E	2040		40	48	15	B
231	FJALLSJ. BRMFJ	IS1024A	64.03 N	16.52 W	434	SE	E	2040		40	45	15	B
232	FJALLSJ.G-SEL	IS1024C	64.03 N	16.52 W	434	SE	E	2040		40	48	15	B
233	FLAAJOK.	IS1930A	64.33 N	15.13 W	432	SE	SE	1520		50	180	29	B
234	GEITLANDSJOK.	IS	64.67 N	20.53 W	4-3	W	W						B
235	GIGJOK.	IS112	63.65 N	19.62 W	434	N	N	1666		190	7.5	7.5	B
236	GLJUFURARJOK.	IS103	65.72 N	18.67 W	548	N	N	1350		600	3	2.5	B
237	HAGAFELLSJOK.E	IS306	64.57 N	20.22 W	433	SW	SW	1350		440	105	19	B
238	HAGAFELLSJOK.W	IS204	64.57 N	20.40 W	433	SW	SW	1350		450	150	18	B
239	HEINABERGSJOK.	IS	64.29 N	15.67 W	4-4	SE	E						B
240	HOFSJOK. E	IS0510B	64.80 N	18.58 W	433	E	E	1800	1185	640	250	19	C
241	HOFSJOK. N	IS0510A	64.95 N	18.92 W	433	N	N	1800	1250	860	90.6	19.9	C
242	HOFSJOK. SW	IS0510C	64.72 N	19.05 W	433	SW	SW	1750	1205	750	51	13	C
243	HRUTARJOK.	IS923	64.02 N	16.53 W	433	E	E	1900		100	12	8.5	B
244	HYRNINGSJOK.	IS100	64.80 N	23.77 W	433	E	E	1445		700	2	2	B
245	JOKULKROKUR	IS7	64.80 N	19.73 W	433	NE	NE	1350		720	55	11	B
246	KALDALONSJOK.	IS102	66.13 N	22.27 W	433	SW	SW	900		140	37	6	B
247	KIRKJUJOK.	IS	64.70 N	19.83 W	4-3	SE	E						B
248	KOELDUKVISLARJ.	IS2700	64.58 N	17.83 W	433	NW	NW	870	1420	2000	313	27	C
249	KOTLUJOK.	IS	63.55 N	18.84 W	4-3	SE	SE						B
250	KVIARJOK.	IS822	63.97 N	16.57 W	433	SE	SE	2100		40		13	B
251	KVISLAJOK.	IS	64.85 N	19.16 W	4-3	W	W						B
252	LANGJOK. S DOME	IS	64.62 N	20.30 W	---			430	1110	1440	925		C
253	LEIRUFJ.JOK.	IS200	66.18 N	22.38 W	433	NW	NW	925		140		6	B
254	LODMUNDARLOK.	IS108	64.67 N	19.47 W	---								B
255	MORSARJOK.	IS318	64.12 N	16.88 W	433	SW	SW	1380		180	30	10	B
256	MULAJOK. S	IS0311A	64.67 N	18.72 W	432	SE	SE	1800		610	70	20	B
257	NAUTHAGAJOK.	IS210	64.67 N	18.77 W	433	S	S	1780		630	25	18	B
258	OLDUFELLSJOK.	IS114	63.73 N	18.92 W	432	NE	E	1400		320	40	15	B
259	REYKJAFJARDARJ.	IS300	66.18 N	22.20 W	433	NE	NE	925		100	22	7	B F
260	RJUPNABREKKUJ.	IS	64.72 N	17.57 W	4-3	NW	NW						B
261	SATUJOK.	IS530	64.92 N	18.83 W	433	N	N	1800		860	91	20	B
262	SIDUJOK.E M177	IS0015B	64.18 N	17.88 W	432	SW	S	1700		590	350	40	B
263	SKALAFELLSJOK.	IS1728A	64.28 N	14.98 W	433	SE	E	1480		60	100	25	B
264	SKEIDARARJ. E1	IS0117A	64.22 N	17.22 W	432	S	S	1725		100	850	50	B
265	SKEIDARARJ. E2	IS0117B	64.22 N	17.22 W	432	S	S	1725		100	850	50	B
266	SKEIDARARJ. E3	IS0117C	64.22 N	17.22 W	432	S	S	1725		100	850	50	B F
267	SKEIDARARJ. W	IS116	64.22 N	17.22 W	432	S	S	1740		80	530	45	B
268	SKEIDARARJOK. M	IS	64.00 N	17.27 W	4-3	S	S						B
269	SLETTJOK.	IS	63.77 N	19.22 W	4-3	NW	NW						B
270	SOLHEIMAJOK. W	IS0113A	63.58 N	19.28 W	433	SW	SW	1500		110	44	15	B
271	SVINAFELLSJOK.	IS0520A	64.03 N	16.75 W	423	W	SW	2119		120	24	12	B
272	TUNGNAARJOK.	IS2214	64.32 N	18.07 W	433	SW	W	690	1220	1680	352	39	B C
273	VIRKISJOK.	IS721	64.00 N	16.75 W	430	W	W	2119		150	6	8.5	B
	INDIA												
274	ADI KAILASH	IN	30.33 N	80.63 E	531	NE	NE	5925	4960	4622		2.3	B
275	BARA SHIGRI	IN	32.16 N	77.70 E	---	NW	NW				131.1		D
276	BEAS KUND	IN	32.34 N	77.08 E	531	NE	NE	4800	3760	3640		2.1	B
277	BHAGIRATHI KHA.	IN	30.78 N	79.30 E	531	E	E	5800	4480	3840		17.8	B
278	CHHOTA SHIGRI	IN	32.20 N	77.50 E	519	N	N	6263	5020	4050	15.72	9	C F
279	CHIPA	IN	30.18 N	80.49 E	531	E	E	5930	4020	3527		9.95	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
280	GI.NO.30	IN	32.26 N	77.34 E	531	N	N	5090	4560	4020		2.2	B
281	HAMTAH	IN	32.23 N	77.37 E	530	NW	NW	4683	4452	4040	3.458	5.32	B C
282	JHULANG KHARSA	IN	30.36 N	80.40 E	531	NE	NE	5200	4480	3920		6.2	B
283	JOBRI	IN	32.20 N	77.35 E	531	NW	NW	5240	4000	3760		3	B
284	MEOLA	IN	30.20 N	80.45 E	532	E	E	6040	4000	3430		10.3	B
285	NIKARCHU	IN	30.28 N	80.65 E	531	NE	NE	5995	4840	4560		3.9	B
286	PINDARI	IN	30.30 N	80.00 E	530	SE	S	6545	5120	3720		6.05	B
287	SARA UMGA	IN	32.16 N	77.55 E	531	W	SW	6160		3882		15.25	B
	<u>ITALY</u>												
288	AGNELLO MER.	IT29	45.14 N	6.90 E	640	NE	NE	3200	3010	3020	0.5	1.45	B
289	ALTA (VEDRETTA)	IT730	46.46 N	10.68 E	538	NE	N	3350	3059	2690	1.75	2	B
290	AMOLA	IT644	46.19 N	10.72 E	630	E	E	3120	2785	2510	0.86	1.8	B
291	ANDOLLA SETT.	IT336	46.09 N	8.04 E	640	SE	SE	3010	2860	2705		0.7	B
292	ANTELAO INF.OCC.	IT967	46.45 N	12.27 E	640	N	N	2800	2472	2340	0.2	0.85	B
293	ANTELAO SUP.	IT966	46.45 N	12.27 E	630	N	NE	3130	2465	2510	0.37	1.3	B
294	AOUILLE	IT138	45.52 N	7.15 E	64-			3350		2980	0.25	0.8	B
295	AURONA	IT338	46.26 N	8.09 E	520	NW	NE	3385	2940	2360	1.17	2.3	B
296	BASEI	IT64	45.47 N	7.11 E	600	NE	NE	3320		2950	0.37	0.8	B
297	BELVEDERE MAC.	IT325	45.95 N	7.91 E	525	NE	NE	4520		1780	5.58	6.05	B F
298	BESSANESE	IT40	45.30 N	7.12 E	532	SE	SE	3210		2580	1.04	2.55	B
299	BRENVA	IT219	45.83 N	6.90 E	528	SE	E	4810	3100	2400	8.06	7.64	B
300	CALDERONE	IT1006	42.47 N	13.62 E	640			2830	2730	2630	0.033	0.3	B C D
301	CARE ALTO OR.	IT632	46.11 N	10.61 E	676			3220		3050	0.27	0.5	B
302	CARESER	IT701	46.45 N	10.70 E	638	S	S	3313	3092	2857	2.829	2.2	B C
303	CASPOGGIO	IT435	46.33 N	9.91 E	648	NW	NW	2985	2800	2715	0.84	1.1	B
304	CASSANDRA OR.	IT411	46.26 N	9.75E	52-			3100		2680	0.4	1.8	B
305	CASTELLI OCC.	IT494	46.45 N	10.53 E	52-			3200		2760	0.65	1.3	B
306	CASTELLI OR.	IT493	46.45 N	10.55 E	64-			3050		2770	0.4	0.8	B
307	CEVEDALE FORCO.	IT731	46.45 N	10.65 E	538	E	NE	3750	3105	2645	2.52	3.5	B
308	CEVEDALE PRINC.	IT732	46.45 N	10.62 E	538	E	E	3700	3078	2635	3.2	3.7	B
309	CHAVANNES	IT204	45.73 N	6.82 E	630	E	E	3090	2857	2710	1.09	1.5	B
310	CIAMARELLA	IT43	45.32 N	7.13 E	64-			3400		3180	0.7	0.9	B
311	CIARDONEY	IT81	45.52 N	7.39 E	640	E	E	3170	3000	2850	0.83	1.9	B C
312	COL DEL. MARE I	IT0506A	46.42 N	10.60 E	53-			3700		2810	1	2.5	B
313	COLLALTO	IT927	46.92 N	12.14 E	638	NW	NW	3380	2955	2515	2.57	2.1	B
314	COLLERIN D'ARN.	IT42	45.32 N	7.11 E	---								B
315	CORNISELLO MER.	IT646	46.22 N	10.67 E	64	NE	NE	3130	2965	2775	0.4	1.4	B
316	COR. D. SALARNO	IT603	46.14 N	10.50 E	---								B
317	COUPE DE MONEY	IT109	45.53 N	7.38 E	64			3600		2650	1.54	2	B
318	CRODA ROSSA	IT828	46.73 N	10.98 E	638	N	N	3205	3002	2790	0.21	1	B
319	DISGRAZIA	IT419	46.28 N	9.74 E	---								B
320	DOSDE OR.	IT473	46.39 N	10.21 E	646	N	N	3200	2850	2580	0.85	1.7	B
321	DOSEGU	IT512	46.37 N	10.54 E	526	SW	SW	3670	3260	2805	3.3	2.8	B
322	DZASSET	IT113	45.53 N	7.27 E	---								B
323	FELLARIA OCC.	IT439	46.35 N	9.92 E	528	SE	SE	3700	3090	2600	5.09	3	B
324	FOND OCCID.	IT146	45.47 N	7.07 E	---								B
325	FOND OR.	IT145	45.47 N	7.08 E	---			3300		2800	1.15	2.1	B
326	FONTANA BIANCA	IT713	46.48 N	10.77 E	640	E	E	3360	3120	2880	0.538	1.151	C
327	FORNI	IT507	46.40 N	10.58 E	529	N	NW	3678	3150	2490	20	5	B
328	FOURNEAUX	IT27	45.10 N	6.84 E	---			3050		2850	0.04	0.6	B
329	FRADUSTA	IT950	46.25 N	11.87 E	600	N	N	2936	2730	2645	0.43	0.95	B
330	GIGANTE CENTR.	IT929	46.90 N	12.12 E	649	NW	N	3265	2816	2535	2.57	2.1	B
331	GIGANTE OCC.	IT930	46.90 N	12.10 E	636	N	N	3300	2955	2610	2.57	2.1	B
332	GOLETTA	IT148	45.49 N	7.05 E	520	N	N	3290	3055	2700	3.02	2.4	B
333	GRAN PILASTRO	IT893	46.97 N	11.72 E	538	SW	W	3370	2935	2465	2.62	3.7	B
334	GRAND CROUX C.	IT111	45.51 N	7.31 E	---			3300		2300	2	2.1	B
335	GRAN. MURAILLES	IT260	45.95 N	7.58 E	520	W	W	4000	3308	2400	7.57	4.2	B
336	GRUETTA ORIENT.	IT232	45.89 N	7.03 E	---								B
337	HOHSAND SETT.	IT357	46.40 N	8.30 E	620	NE	E	3180	2860	2550	1.98	2.87	B
338	JUMEAUX	IT280	45.93 N	7.60 E	---								B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
339	LA MARE (VED.)	IT699	46.43 N	10.63 E	525	E	E	3769	3260	2610	4.75	3.5	B
340	LAGOL	IT657	46.15 N	10.86 E	538			2920		2580	0.34	1	B
341	LANA	IT913	47.06 N	12.21 E	529	NW	NW	3480	2720	2260	1.69	2.9	B
342	LARES	IT634	46.12 N	10.60 E	676	E	NE	3463	3023	2600	6.24	3.7	B
343	LAUSON	IT116	45.56 N	7.28 E	640	N	N	3370	3100	2965		1.05	B
344	LAVACCIU	IT129	45.52 N	7.25 E	52-			3770		2710	1.83	2.6	B
345	LAVASSEY	IT144	45.47 N	7.10 E	64-			3130		2730	1.5	1.9	B
346	LOBBIA	IT637	46.16 N	10.58 E	530	N	N	3438	2968	2620	5.4	1.8	B
347	LOCCE SETT.	IT321	45.93 N	7.91 E	---								B
348	LUNGA VEDRETTA	IT733	46.46 N	10.62 E	529	NE	E	3390	3120	2720	1.86	2.7	B C
349	LYS	IT304	45.90 N	7.83 E	515	SW	SW	4530	3732	2355	11.83	5.6	B
350	M.BLANC D. CRET.	IT279	45.92 N	7.59 E	---								B
351	MALAVALLE	IT875	46.95 N	11.20 E	515	E	E	3470	2950	2520	7.198	4	B C F
352	MANDRONE	IT639	46.17 N	10.55 E	520	NE	NE	3436	3022	2530	12.38	5.38	B
353	MARMOLADA CEN.	IT941	46.43 N	11.86 E	606	N	N	3340	2825	2590	2.6	1.5	B
354	MAROVIN	IT541	46.07 N	10.00 E	---								B
355	MARTELOT	IT49	45.37 N	7.17 E	65			2860		2470	0.23	0.8	B
356	MONCIAIR	IT132	45.49 N	7.23 E	65			3230		2820	0.53	0.7	B
357	MONCORVE	IT131	45.50 N	7.25 E	622	NW	NW	3642	3158	2870	2.23	1.5	B
358	MONEY	IT110	45.52 N	7.33 E	52-			3600		2450	1.86	2.6	B
359	MONTE GIOVE	IT347	46.36 N	8.39 E	---								B
360	MULINET MERID.	IT47	45.36 N	7.17 E	---								B
361	MULINET SETT.	IT48	45.37 N	7.16 E	64-			2920		2660	0.18	0.5	B
362	NARDIS OCC.	IT640	46.21 N	10.65 E	530	SE	SE	3500	3160	2790	1.67	2.55	B
363	NEVES OR.	IT902	46.98 N	11.80 E	638	S	S	3300	2990	2600	2.27	2.2	B
364	NISCLI	IT633	46.11 N	10.60 E	630	E	E	3200	2783	2590	0.66	1.5	B
365	OSAND MER	IT356	46.41 N	8.31 E	52-			3000		2560	3.2	3.5	B
366	PALON DEL. MARE	IT0506C	46.41 N	10.60 E	---								B
367	PENDENTE	IT876	46.96 N	11.23 E	520	S	S	3110	2818	2620	1.067	2	B C
368	PIODE	IT312	45.91 N	7.87 E	520	SE	SE	4436	3120	2500	2.55	2.65	B
369	PISGANA OCC.	IT577	46.19 N	10.52 E	537	N	NE	3320	3000	2560	3.36	2.8	B
370	PIZZO FERRE	IT365	46.46 N	9.28 E	53-			2990		2490	0.9	1.8	B
371	PIZZO SCALINO	IT443	46.28 N	9.98 E	636	N	N	3100	2920	2595	1.94	2.1	B
372	PLATTES D. CHAM.	IT172	45.53 N	6.99 E	---			3560		2700	0.7	1.3	B
373	PRA FIORITO	IT658	46.14 N	10.85 E	656			2830		2590	0.27	1.2	B
374	PRE DE BAR	IT235	45.91 N	7.04 E	520	SE	SE	3750	3095	2081	3.53	3.93	B
375	PREDAROSSA	IT408	46.26 N	9.74 E	53-			3400		2560	0.88	2.5	B
376	PRESANELLA	IT678	46.23 N	10.66 E	520	N	N	3525	2860	2455	3.92	3.2	B
377	QUAIRA BIANCA	IT889	46.55 N	10.86 E	520	SW	SW	3509	3132	2575	1.41	2.8	B
378	RASICA ORIENT.	IT399	46.29 N	9.68 E	---								B
379	ROSIM	IT754	46.53 N	10.64 E	630	NW	W	3405	3215	2900	0.78	1.5	B
380	ROSOLE	IT506	46.44 N	10.61 E	64-			3200		2980	1.11	1.5	B
381	ROSSA (VEDR.)	IT697	46.42 N	10.63 E	630	NE	NE	3640	3195	2765	1.24	1.7	B
382	ROSSO DESTRO	IT920	47.03 N	12.20 E	536	W	W	3285	2838	2560	0.88	1.7	B
383	RUTOR	IT189	45.50 N	7.00 E	520	N	NW	3460	2998	2480	9.54	4.8	B
384	SCERSCEN INF.	IT432	46.35 N	9.85 E	52			3400		2430	7	4.5	B
385	SCERSCEN SUP.	IT433	46.36 N	9.89 E	---								B
386	SEA	IT46	45.33 N	7.14 E	53			3020		2580	0.62	1.9	B
387	SFORZELLINA	IT516	46.35 N	10.51 E	648	NW	NW	3120	2925	2790	0.4	0.7	B
388	SISSONE	IT422	46.29 N	9.72 E	---								B
389	SOCHES TSANTEL.	IT147	45.48 N	7.06 E	64			3450		2700	3.4	3.5	B
390	SURETTA MERID.	IT371	46.51 N	9.36 E	---								B
391	TESSA	IT829	46.73 N	10.98 E	632	N	NW	3300	2990	2698	0.8	1.8	B
392	TORRENT	IT155	45.57 N	7.09 E	---								B
393	TOULES	IT221	45.83 N	6.93 E	640	SE	SE	3500	3050	2661	0.93	1.65	B
394	TRAVIGNOLO	IT947	46.29 N	11.82 E	647	N	N	2850	2520	2330	0.28	0.9	B
395	TRESERO LIN. MER	IT0511B	46.38 N	10.53 E	---					3020			B
396	TRIBOLAZIONE	IT112	45.52 N	7.28 E	64			3870		2680	5.78	2.1	B
397	TUCKETT	IT650	46.18 N	10.90 E	---								B
398	TZA DE TZAN	IT259	45.98 N	7.57 E	520	SE	S	3810	3285	2530	3.95	3.7	B
399	VALLE DEL VENTO	IT919	47.04 N	12.20 E	538	NW	NW	3050	2710	2475	0.36	1.2	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
400	VALTOURNANCHE	IT289	45.93 N	7.70 E	422	W	W	3695	3315	2990	1.68	2	B
401	VENEROCOLO	IT581	46.16 N	10.51 E	539	NW	N	3280	2810	2560	1.5	2.2	B
402	VENEZIA (VEDR.)	IT698	46.41 N	10.63 E	630	E	E	3705	3200	2805	1.71	2.5	B
403	VENTINA	IT416	46.27 N	9.77 E	536	NE	N	3500	2790	2225	2.37	3.7	B
404	VERRA GRAND. DI	IT297	45.91 N	7.75 E	52-			4000		2290	6.11	5.2	B
405	ZAI DI DENTRO	IT749	46.56 N	10.64 E	650	NW	W	3314	3117	2960	0.45	1.1	B
406	ZAI DI FUORI	IT751	46.54 N	10.63 E	657	NW	NW	3475	2995	2830		1	B
407	ZAI DI MEZZO	IT750	46.55 N	10.64 E	600	NW	W	3520	3020	2880	0.72	1.4	B
408	ZEBRU	IT490	46.48 N	10.56 E	52-	S	S						F
	JAPAN												
409	HAMAGURI YUKI	JP1	36.60 N	137.62 E	730	NE	NE	2720		2690	0.002	0.07	C F
	KENYA												
410	CESAR	KE4	0.13 S	37.30 E	533	W	W	4780	4680	4640	0.016	0.2	B D
411	DARWIN	KE6	0.15 S	37.30 E	533	SW	SW	4785	4710	4655	0.012	0.09	B D
412	DIAMOND	KE10	0.15 S	37.30 E	630	S	S	5150	5070	4995	0.003	0.1	B D
413	FOREL	KE11	0.15 S	37.30 E	630	W	W	4920	4950	4860	0.012	0.05	B D
414	GREGORY	KE9	0.15 S	37.30 E	533	N	N	4850		4740	0.012	0.27	B D
415	HEIM	KE12	0.15 S	37.30 E	630	W	W	4780	4787	4750	0.005	0.05	B D
416	JOSEPH	KE3	0.13 S	37.30 E	533	W	W	4750	4790	4620	0	0.2	B D
417	KRAPF	KE1	0.15 S	37.30 E	533	N	N	4802	4750	4640	0.014	0.25	B D
418	LEWIS	KE8	0.15 S	37.30 E	533	SW	SW	4695		4840	0.21	0.7	B D
419	NORTHEY	KE13	0.15 S	37.30 E	533	N	N	4820	4790	4730	0.003	0.1	B D
420	TYNDALL	KE5	0.15 S	37.32 E	533	S	S	4790		4550	0.051	0.4	B D
	NEW ZEALAND												
421	ADAMS	NZ	43.32 S	170.72 E	518	W	N	2470	1880	1295	9.96	6.6	B
422	ALMER/SALISBUR.	NZ	43.47 S	170.22 E	518	W	SW	2390	1865	1340	3.1	2.98	B
423	ANDY	NZ	44.43 S	168.37 E	418	N	N	2190	1750	840	10.49	7.1	B
424	ASHBURTON	NZ	43.37 S	170.97 E	539	S	S	2590	2085	1575	1.69	2.5	B
425	AXIUS	NZ	44.17 S	168.98 E	648	W	W	2285	1920	1555	0.566	1.3	B
426	BALFOUR	NZ	43.55 S	170.12 E	539	W	W	3305	1525	730	7	9.9	B
427	BREWSTER	NZ	44.07 S	169.43 E	638	SW	SW	2390	2023	1655	2.542	2.69	B C
428	BUTLER	NZ	43.25 S	170.93 E	626	E	SE	2040	1860	1680	0.76	0.66	B
429	CAMERON	NZ	43.33 S	171.00 E	629	SW	SE	2470	1980	1380	1.97	3.1	B
430	CLASSEN	NZ	43.50 S	170.42 E	-34	SE	SE	2560	1780	1005	10.32	8.25	B
431	COLIN CAMPBELL	NZ	43.32 S	170.42 E	-39	S	E	2500	1815	1130	3.94	3.65	B
432	CROW	NZ	42.92 S	171.50 E	636	SE	S	2210	1940	1675	0.47	1.2	B
433	DART	NZ	44.45 S	168.60 E	539	SW	SW	2470	1770	1070	9.85	7.6	B
434	DISPUTE	NZ	44.14 S	168.96 E	648	E	E	1720	1660	1600	0.296	0.85	B
435	DONNE	NZ	44.58 S	168.02 E	638	E	SE	2745	1615	1220	3.52	3.6	B
436	DOUGLAS (KAR.)	NZ	43.68 S	170.00 E	524	SW	W	3160	1980	960	11.76	7.4	B
437	EVANS	NZ	43.20 S	170.92 E	529	SW	W	2455	1860	1250	2.79	2.9	B
438	FITZGERALD GOD.	NZ	43.47 S	170.57 E	638	W	SW	2530	2165	1660	1.057	1.8	B
439	FOX	NZ	43.53 S	170.15 E	528	NW	W	3500	1900	305	34.69	13.2	B
440	FRANZ JOSEF	NZ	43.50 S	170.22 E	528	NW	NW	2955	1690	425	32.59	10.25	B
441	FRESHFIELD	NZ	43.58 S	170.19 E	529	E	E	2285	2010	1525	0.572	1.2	B
442	GODLEY	NZ	43.43 S	170.57 E	524	S	SW	2440	1785	1130	15.85	8.6	B
443	GREY & MAUD	NZ	43.45 S	170.48 E	514	SW	S	2440	1750	1065	10.87	7.2	B
444	GUNN	NZ	44.76 S	168.09 E	638	SE	E	1860	1615	1495	0.77	1.25	B
445	HOOKER	NZ	43.60 S	170.12 E	534	W	S	3765	2320	870	16.54	13.1	B
446	HORACE WALKER	NZ	43.67 S	169.97 E	538	W	SW	2455	2075	945	5.99	6.6	B
447	IVORY	NZ	43.13 S	170.92 E	644	S	S	1730	1510	1390	0.93	1.35	B
448	KAHUTEA	NZ	43.02 S	171.38 E	638	S	SW	2300	2025	1740	0.75	1.6	B
449	LA PEROUSE	NZ	43.57 S	170.12 E	539	NW	W	3320	1980	855	9.5	11.15	B
450	LAMBERT	NZ	43.30 S	170.75 E	224	E	NW	2425	1810	1190	9.32	5.15	B
451	LAWRENCE	NZ	43.32 S	171.00 E	529	W	E	2375	1860	1480	1.497	2.25	B
452	LEEB-LORNTY	NZ	43.22 S	170.90 E	628	W	W	2635	2135	1190	3.46	3.3	B
453	LYELL	NZ	43.28 S	170.83 E	529	S	E	2440	1720	1005	10.79	6.2	B
454	MARION	NZ	44.47 S	168.48 E	628	W	N	2470	1905	1340	7.03	5.1	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP AC	EXP AB	ELEVATION MAX	ELEVATION MED	ELEVATION MIN	AREA KM²	LEN KM	TYPE OF DATA
455	MARMADUKE DIX.	NZ	42.98 S	171.38 E	648	E	SE	2100	1858	1615	0.77	1.7	B
456	MATHAIAS	NZ	43.18 S	171.03 E	648	E	E	1740	1526	1340		1	B
457	MUELLER	NZ	43.75 S	170.02 E	524	SE	SE	2895	1330	760	18.54	13.65	B
458	MURCHISON	NZ	43.52 S	170.40 E	529	E	SW	3155	2080	1005	36.57	16.45	B
459	PARK PASS	NZ	44.58 S	168.23 E	638	S	S	2200	1850	1500	3.02	2.63	B
460	RAMSAY	NZ	43.22 S	170.93 E	534	SW	S	2315	1650	990	9.2	8.6	B
461	REISCHEK	NZ	43.32 S	171.00 E	638	SW	SW	2440	2075	1615	1.72	2.65	B
462	SALE	NZ	43.22 S	170.95 E	638	E	SE	2134	1753	1372	0.95	1.8	B
463	SIEGE	NZ	43.27 S	170.53 E	538	SE	SE	2130	1750	1435	1.19	3.19	B
464	SNOW WHITE	NZ	44.45 S	168.58 E	538	N	E	2425	1950	1220	5.54	5.5	B
465	SNOWBALL	NZ	44.45 S	168.52 E	638	NW	W	2345	1905	1465	3.31	2.7	B
466	SOUTH CAMERON	NZ	43.35 S	170.99 E	638	NE	NE	2620	2285	1980		1.2	B
467	ST. JAMES	NZ	43.28 S	170.89 E	629	NE	E	2377	1645	1035	0.981	2.8	B
468	STRAUCHON	NZ	43.62 S	170.08 E	534	W	SW	2530	1745	960	3.62	5.8	B
469	TASMAN	NZ	43.52 S	170.32 E	524	S	S	3690	2210	730	98.34	28.5	B
470	TEWAEWAE	NZ	43.68 S	170.07 E	-38	SE	SE	2226	1920	1495	0.595	1.15	B
471	THURNEYSON	NZ	44.17 S	169.60 E	626	S	S	2425	2085	1720	1.79	1.23	B
472	VICTORIA	NZ	43.50 S	170.17 E	539	W	W	2560	1890	1065	4.5	6.5	B
473	WHATAROA	NZ	43.40 S	170.53 E	638	W	SW	2180	1590	1005	2.973	3.35	B
474	WHITBOURNE	NZ	44.47 S	168.57 E	539	W	S	2575	1830	1080	9.47	6.7	B
475	WHITE	NZ	43.00 S	171.38 E	638	NE	NE	2320	2015	1710	0.6	1.8	B
476	WHYMPER	NZ	43.48 S	170.37 E	539	NW	NE	2775	1780	790	6.55	7.2	B
477	WILKINSON	NZ	43.20 S	170.93 E	624	NE	NE	2286	1615	945	3.95	3.8	B
478	ZORA	NZ	43.75 S	169.83 E	628	S	S	2455	1920	1095	4.44	3.25	B
	NORWAY												
479	AALFOTBREEN	NO36204	61.75 N	5.65 E	436	NE	NE	1380	1230	890	4.497	2.9	C
480	AUSTDALSBREEN	NO37323	61.80 N	7.35 E	424	SE	SE	1630	1480	1160	11.84	5.7	C
481	AUSTERDALSB.	NO31220	61.62 N	6.93 E	438	SE	SE	1920	1600	390	26.84	8.5	B
482	AUST.BROEGGERB.	NO15504	78.88 N	11.83 E	529	NW	N	600	260	60	6.1	6	C
483	BERGSETBREEN	NO31013	61.65 N	7.03 E	438	SE	E						B
484	BLAAMANNSISEN	NO	67.25 N	16.06 E	---								F
485	BOEDALSBREEN	NO37219	61.77 N	7.12 E	438	NW	N						B
486	BOEVERBREEN	NO548	61.55 N	8.09 E	---								B
487	BOEYABREEN	NO33014	61.30 N	6.46 E	---								B
488	BONDHUSBREEN	NO20408	60.03 N	6.33 E	438	NW	NW	1660	1450	480	10.2	7.8	B
489	BOTNABREEN	NO20515	60.20 N	6.43 E	438	W	W						B
490	BREIDALBLIKKBR.	NO	60.10 N	6.40 E	---	NW	NW				3.61		B C
491	BRENNDALSB.	NO37109	61.68 N	6.92 E	438	W	W						B
492	BRIKSDALSBREEN	NO37110	61.65 N	6.92 E	438	W	W	1910	1650	350	11.94	6	B
493	BUARBREEN	NO21307	60.02 N	6.40 E	438	E	NE	1640		620	15.48	7.5	B F
494	ENGABREEN	NO67011	66.65 N	13.85 E	438	N	NW	1594	1220	40	39.55	11.5	B C
495	FAABERGSTOELS	NO31015	61.72 N	7.23 E	438	E	E	1810	1540	760	15	7	B
496	GRAAFJELLSBREA	NO	60.10 N	6.40 E	---	NW	NW				8.94		B C
497	GRAASUBREEN	NO547	61.65 N	8.60 E	676	NE	E	2300	2060	1850	2.253	2.3	C
498	HANSBREEN	NO12419	77.08 N	15.67 E	424	S	S	510	255	0	56.76	15.8	B C D
499	HANSEBREEN	NO36206	61.75 N	5.68 E	---	NE	N	1320	1160	925	3.06	2.5	C
500	HARBARDSBREEN	NO30704	61.67 N	7.58 E	---								C
501	HARDANGERJOEK.	NO22303	60.53 N	7.37 E	438	W	W	1850	1740	1050	17.117	8.1	C
502	HELLSTUGUB.	NO511	61.57 N	8.43 E	518	N	N	2130	1900	1470	3.028	3.4	B C
503	IRENEBREEN	NO15402	78.65 N	12.10 E	538	NW	SW	650	340	110	4.15	3.9	B C
504	KJENNDALSBREEN	NO37223	61.70 N	7.02 E	438	N	N						B
505	KONGSVEGEN	NO15510	78.80 N	12.98 E	424	NW	NW	1050	500	0	189	27	C
506	KOPPANGSBREEN	NO	69.68 N	20.08 E	---								B
507	LANGFJORDJOEK.	NO85008	70.12 N	21.77 E	438	SE	E	1062	850	300	3.65	4	B C
508	LEIRBREEN	NO548	61.57 N	8.10 E	---	NW	NW	2070		1530	4.87	3.8	B
509	MID. LOVENBREEN	NO15506	78.88 N	12.07 E	529	NE	N	650	330	50	5.8	4.8	C
510	MIDTDALSBREEN	NO4302	60.57 N	7.47 E	438	NE	NE						B C
511	NIGARDSBREEN	NO31014	61.72 N	7.13 E	438	SE	SE	1950	1618	355	47.82	9.6	B C
512	REMBESDALSKAA.	NO22303	60.53 N	7.37 E	438	W	W						B
513	RUNDVASSBREEN	NO	67.30 N	16.10 E	---	NE	N				11.6		C

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
514	STEGHOLTBREEN	NO31021	61.80 N	7.32 E	438	S	S	1900	1480	880	15.34	7.7	B
515	STEINDALSBREEN	NO	69.39 N	18.89 E	---								B
516	STORBREEN	NO541	61.57 N	8.13 E	526	NE	NE	1970	1770	1380	5.35	3	B C
517	STORGJUVBREEN	NO	61.64 N	8.28 E	---								B
518	STORGLOMBREEN	NO67313	66.67 N	14.00 E	---	NE	NE	1580		520	62.4	10.5	C
519	STYGGEDALSB.	NO30720	61.48 N	7.88 E	526	N	N	2240	1650	1270	1.81	3.2	B
520	SUPPHELLEBREEN	NO33014	61.52 N	6.80 E	408	S	S	1730		730	12	7	B F
521	WALDEMARBREEN	NO15403	78.67 N	12.00 E	538	NW	SW	570	320	135	2.59	3.35	B C
	PERU												
522	ARTESONRAJU	PE3	8.95 S	77.62 W	534	W	W	5600	5000	4705	3.25	3.36	B C
523	BROGGI	PE3	8.98 S	77.58 W	630	NW	NW	5000	4867	4734	0.55	0.421	B
524	GAJAP-YANACAR.	PE9	9.83 S	77.17 W	634	SE	SE	5200	5033	4958	1.2	0.789	B
525	PASTORURI	PE8	9.90 S	77.17 W	630	NW	NW	5100	5095	5061	1.25	0.31	B
526	PUCAJIRCA	PE	8.86 S	77.61 W	---	NW	NW						F
527	SHALLAP	PE3	9.48 S	77.33 W	524	NW	NW	5974	4873	4765		2.86	B
528	SHULLCON	PE1	11.88 S	76.05 W	630	N	N	5600	5163	5003		2.3	B
529	URUASHRAJU	PE5	9.58 S	77.32 W	530	SW	SW	5650	5006	4689	2.14	0.203	B
530	YANAMAREY	PE4	9.65 S	77.27 W	520	SW	SW	5150	4839	4641	0.41	0.72	B C
	POLAND												
531	MIEGUSZOWIECKI.	PL140	49.18 N	20.07 E	780	N	N	2080	2015	1970	0.012	0.15	B
532	POD BULA	PL111	49.18 N	20.08 E	756	NW	NW	1687	1674	1651	0.004	0.071	B D F
533	POD CUBRYNA	PL180	49.19 N	20.05 E	780	N	N	2190	2125	2092	0.011	0.15	B
	SOUTH GEORGIA												
534	COOK	GS	54.48 S	36.02 W	527	NE	NE	1200		10		8.4	B
535	HARKER	GS	54.37 S	36.53 W	524	NE	NE	2000		0		8.4	B
536	HEANEY	GS	54.45 S	36.27 W	528	NE	E	1000		25		9.6	B
537	HODGES	GS	54.27 S	36.54 W	648	S	S	550		420		0.15	B
538	ROSS	GS	54.56 S	36.18 W	524	NE	NE	1600		0		11.6	B
	SPAIN												
539	ALBA	ES9010	42.65 N	0.62 E	648	NE	NE	3025	2988	2950	0	0	B
540	ANETO	ES9030	42.63 N	0.65 E	648	NE	NE	3270	3150	2960	0.73	0.68	B
541	BALAITUS SE	ES1030	42.83 N	0.28 W	748	SE	SE	2860	2800	2735	0	0	B
542	BARRANCS	ES9040	42.63 N	0.67 E	648	NE	NE	3310	3250	3015	0.8	0.5	B
543	BRECHA LATOUR	ES1020	42.83 N	0.28 W	648	E	E	2935	2875	2750	0	0	B
544	CLOT DE HOUNT	ES3010	42.78 N	0.15 W	749	NW	NW	3020	2970	2940	0.01	0.12	B
545	CORONAS	ES9080	42.63 N	0.63 E	648	SW	SW	3215	3180	3140	0.02	0.12	B
546	CREGUENA N	ES0907A	42.63 N	0.63 E	798	W	W	3020	2970	2920	0	0	B
547	CREGUENA S	ES0907B	42.63 N	0.63 E	798	W	W	3025	2950	2880	0	0	B
548	INFIERNO E	ES2020	42.78 N	0.25 W	648	N	N	2920	2870	2815	0.01	0.09	B
549	INFIERNO W	ES0201A	42.78 N	0.25 W	649	N	N	2950	2830	2720	0.06	0.27	B
550	INFIERNO WW	ES0201B	42.78 N	0.25 W	748	N	N	2940	2820	2700	0	0	B
551	LA PAUL	ES7020	42.65 N	0.43 E	648	NE	NE	3190	3030	2930	0.01	0.39	B
552	LAS FRONDELLAS	ES1010	42.83 N	0.28 W	749	W	W	2925	2870	2820	0.01	0.9	B
553	LLARDANA	ES7010	42.65 N	0.43 E	649	NW	NW	3110	3020	2970	0.10	0.28	B
554	LLOSAS	ES9090	42.63 N	0.65 E	746	SW	SW	3110	3060	3050	0	0	B
555	LOS GEMELOS	ES7040	42.48 N	0.43 E	949	N	N	3020	2930	2830	0.08	0.36	B
556	MALADETA	ES9020	42.65 N	0.63 E	648	NE	NE	3190	3090	2845	0.328	0.77	B C D
557	MARBORECILIND.	ES5010	42.68 N	0.02 E	676	NE	NE	3040	2800	2700	0.07	0.21	B
558	PERDIDO INF	ES0502B	42.67 N	0.05 E	648	NE	NE	3090	2950	2760	0.31	0.36	B
559	PERDIDO SUP	ES0502A	42.67 N	0.05 E	648	NE	NE	3260	3190	3110	0.05	0.13	B
560	POSETS	ES7030	42.65 N	0.43 E	648	NE	NE	3170	3130	3090	0.2	0.23	B
561	PUNTA ZARRA	ES2040	42.83 N	0.23 W	748	NW	NW	2825	2790	2770	0.01	0.08	B
562	SALENCAS	ES9060	42.62 N	0.68 E	648	E	E	3140	3000	2820	0	0	B
563	TAPOU	ES0302A	42.77 N	0.13 W	748	W	W	3010	2880	2780	0	0	B
564	TEMPESTADES	ES9050	42.63 N	0.68 E	648	NE	NE	3190	2980	2890	0.12	0.28	B

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						AC	AB	MAX	MED	MIN	KM²	KM	DATA
	<u>SWEDEN</u>												
565	HYLLGLACIAEREN	SE780	67.58 N	17.47 E	538	N	N	1820		1360	1.4	2.1	B
566	ISFALLSGLAC.	SE787	67.92 N	18.57 E	536	E	E	1700		1200	1.4	2.1	B
567	MARMAGLAC.	SE799	68.83 N	18.67 E	521	E	E	1740		1340	3.965	3.5	C
568	MIKKAJEKNA	SE766	67.40 N	17.70 E	518	S	S	1825		980	7.1	4.3	B
569	PARTEJEKNA	SE763	67.17 N	17.67 E	528	E	E	1800		1090	9.913	5.1	B
570	RABOTS GLAC.	SE785	67.90 N	18.55 E	528	NW	W	1930		1080	3.946	4.1	B C
571	RIUKOJIETNA	SE790	68.08 N	18.08 E	303	E	E	1456		1130	4.651	3	B C
572	RUOTESJEKNA	SE767	67.42 N	17.47 E	538	NE	N	1600		1040	5.2	4.3	B
573	SALAJEKNA	SE759	67.12 N	16.38 E	528	SE	S	1580		890	24.5	9.2	B
574	SE KASKASATJ GL	SE789	67.93 N	18.60 E	536	SE	S	1890	1560	1440	0.6	1.4	B
575	STORGLACIAEREN	SE788	67.90 N	18.57 E	528	E	E	1720		1140	3.211	3.7	B C
576	SUOTTASJEKNA	SE768	67.47 N	17.58 E	528	NE	N	1800		1130	7.9	4.2	B
577	TARFALAGL	SE791	67.93 N	18.65 E	670	E	E	1710		1390	1.006	1	C
578	VARTASJEKNA	SE765	67.45 N	17.67 E	538	NE	NE	1800		1300	3.6	3	B
	<u>SWITZERLAND</u>												
579	ALLALIN	CH11	46.05 N	7.93 E	626	N	E	4190	3320	2601	9.68	6.5	B D
580	ALPETLI (KANDER)	CH109	46.48 N	7.80 E	536	NW	SW	3270	2800	2250	14.02	6.8	B
581	AMMERTEN	CH111	46.42 N	7.53 E	607	NW	NW	3240	2720	2350	1.89	2.8	B
582	AROLLA (BAS)	CH27	45.98 N	7.50 E	519	N	N	3720	3080	2135	6.02	5	B
583	BASODINO	CH104	46.42 N	8.48 E	636	NE	NE	3230	2880	2539	2.201	1.6	B C D
584	BELLA TOLA	CH21	46.24 N	7.65 E	646	N	N	3000	2840	2660	0.31	0.6	B
585	BIFERTEN	CH77	46.82 N	8.95 E	538	E	NE	3610	2840	1961	2.86	4.2	B
586	BIS	CH0107	46.11 N	7.74 E	624	E	E	4510	3440	2000	4.79	3.8	F
587	BLUEMLISALP	CH64	46.50 N	7.77 E	616	NW	NW	3660	2960	2250	2.98	2.9	B
588	BOVEYRE	CH41	45.97 N	7.25 E	529	NW	NW	3660	3220	2620	1.99	2.5	B
589	BRENEY	CH36	45.97 N	7.42 E	517	S	SW	3830	3240	2575	9.8	6.3	B
590	BRESCIANA	CH103	46.50 N	9.03 E	636	W	W	3400	3080	2910	0.94	1.6	B
591	BRUNEGG	CH20	46.15 N	7.70 E	530	NW	NW	4130	3160	2500	6.12	4.9	B
592	BRUNNI	CH72	46.73 N	8.78 E	624	E	N	3300	2760	2560	2.99	2.9	B
593	CALDERAS	CH95	46.53 N	9.71 E	617	N	NE	3360	3070	2745	1.2	2	B
594	CAMBRENA	CH99	46.39 N	10.00 E	614	NE	NE	3500	2960	2520	1.72	2.5	B
595	CAVAGNOLI	CH119	46.45 N	8.48 E	628	NE	E	2880	2720	2522	1.32	2.3	B
596	CHEILLON	CH29	46.00 N	7.42 E	517	N	N	3830	2960	2689	4.73	4	B
597	CLARIDENFIRN	CH141	46.84 N	8.90 E	600						5.127		D
598	CORBASSIERE	CH38	45.98 N	7.30 E	519	N	N	4310	3200	2219	15.996	9.8	B D
599	CORNO	CH120	46.45 N	8.38 E	656	N	N	2880	2720	2570	0.27	0.7	B
600	CROSLINA	CH121	46.43 N	8.73 E	---	NE	NE	3060	2860	2704	0.42	0.8	B
601	DAMMA	CH70	46.63 N	8.45 E	616	E	NE	3520	2820	2085	6.32	3.3	B
602	DUNGEL	CH112	46.37 N	7.37 E	600	NE	N	3200	2800	2608	1.21	1.8	B
603	EIGER	CH59	46.57 N	7.98 E	616	W	NW	4100	3100	2202	2.27	2.6	B
604	EN DARREY	CH30	46.02 N	7.38 E	639	NE	NE	3700	3120	2445	1.86	2.4	B
605	FEE NORTH	CH13	46.08 N	7.88 E	606	NE	NE	4360	3260	2135	16.66	5.1	B
606	FERPECLE	CH25	46.02 N	7.58 E	538	NW	N	3680	3300	2095	9.79	6	B
607	FIESCHER	CH4	46.50 N	8.15 E	519	SE	S	4180	3140	1681	33.06	16	B
608	FINDELEN	CH16	46.00 N	7.87 E	516	NW	W	4190	3300	2492	15.3	9.3	B C
609	FIRNALPELI	CH75	46.78 N	8.47 E	606	NW	N	2920	2680	2172	1.18	1.1	B
610	FORNO	CH102	46.30 N	9.70 E	519	N	N	3360	2740	2232	8.77	6.8	B
611	GAMCHI	CH61	46.51 N	7.79 E	619	N	N	2840	2260	1950	1.73	2.7	B
612	GAULI	CH52	46.62 N	8.18 E	516	E	E	3630	2880	2110	13.7	6.8	B
613	GELTEN	CH113	46.35 N	7.33 E	600	N	N	3060	2700	2440	1.17	0.8	B
614	GIETRO	CH37	46.00 N	7.38 E	634	NW	W	3830	3240	2597	5.549	5.4	B D
615	GLAERNISCH	CH80	47.00 N	8.98 E	626	W	W	2910	2600	2330	2.09	2.3	B
616	GORNER	CH14	45.97 N	7.80 E	519	N	NW	4610	3220	2240	38.247	14.1	B D
617	GRAND DESERT	CH31	46.07 N	7.34 E	636	NW	N	3340	2960	2760	1.85	2.3	B
618	GRAN.PLAN NEVE	CH45	46.25 N	7.15 E	647	N	N	2560	2460	2350	0.2	0.4	B
619	GRIES	CH3	46.44 N	8.34 E	534	NE	NE	3370	2920	2413	5.264	6.2	B C D
620	GRIESS (KLAUSEN)	CH74	46.83 N	8.83 E	617	N	NW	3080	2420	2223	2.48	1.3	B
621	GRIESSEN (OBWA.)	CH76	46.85 N	8.50 E	626	W	NW	2890	2600	2515	1.27	1.3	B
622	GR.ALETSCH	CH5	46.50 N	8.03 E	519	SE	S	4160	3140	1565	126.99	24.7	B D

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
623	HOHLAUB	CH	46.06 N	7.92 E	---						2.256		D
624	HUEFI	CH73	46.82 N	8.85 E	518	S	SW	3240	2780	1700	13.73	7	B
625	KALTWASSER	CH7	46.25 N	8.08 E	606	NW	W	3370	2940	2660	1.85	1.6	B
626	KEHLEN	CH68	46.68 N	8.42 E	518	SE	SE	3418	2800	2200	3.15	3.3	B
627	KESSJEN	CH12	46.06 N	7.93 E	656	NE	NE	3240	2980	2868	0.195	0.9	B D
628	LAEMMERN	CH63	46.40 N	7.55 E	616	E	E	3240	2900	2540	3.35	2.5	B
629	LANG	CH18	46.46 N	7.93 E	519	SW	SW	3900	2960	2077	10.03	7.7	B
630	LAVAZ	CH82	46.63 N	8.93 E	618	NE	N	3020	2580	2428	1.76	2.6	B
631	LENTA	CH84	46.51 N	9.03 E	527	N	N	3400	2820	2360	1.4	2.6	B
632	LIMMERN	CH78	46.82 N	8.98 E	627	NE	NE	3420	2760	2290	2.52	2.9	B D
633	LISCHANA	CH98	46.77 N	10.35 E	659	NW	NW	3030	2880	2800	0.21	0.6	B
634	MOIRY	CH24	46.08 N	7.60 E	518	N	N	3850	3120	2410	6.11	5.6	B
635	MOMING	CH23	46.08 N	7.67 E	609	N	NW	4070	3160	2580	5.77	3.8	B
636	MONT DURAND	CH35	45.92 N	7.33 E	519	E	NE	4280	3060	2340	7.59	6	B
637	MONT FORT	CH32	46.08 N	7.32 E	636	NW	N	3330	2900	2780	1.1	2	B
638	MONT MINE	CH26	46.02 N	7.55 E	519	NW	N	3720	3220	1963	10.89	8.1	B
639	MORTERATSCH	CH94	46.40 N	9.93 E	519	N	N	4020	3000	2085	17.15	7	B
640	MUTT	CH2	46.55 N	8.42 E	656	NW	NW	3000	2780	2623	0.57	1.1	B
641	OB.GRINDELWALD	CH57	46.62 N	8.10 E	518	NW	NW	3740	3000	1250	10.07	5.5	B
642	OBERAAR	CH50	46.53 N	8.22 E	524	NE	NE	3460	2860	2300	5.23	5.2	B
643	OBERALETSCH	CH6	46.42 N	7.97 E	519	SE	SE	3890	2920	2144	21.71	9.1	B
644	OTEMMA	CH34	45.95 N	7.45 E	517	SW	SW	3800	3020	2460	16.55	8.5	B
645	PALUE	CH100	46.37 N	9.98 E	629	E	E	3870	3180	2640	6.62	4	B
646	PANEYROSSE	CH44	46.27 N	7.17 E	646	N	N	2760	2560	2380	0.45	0.7	B
647	PARADIES	CH86	46.50 N	9.07 E	606	N	NE	3400	2880	2688	4.6	3.6	B
648	PARADISINO	CH101	46.42 N	10.11 E	639	NW	W	3250	2980	2830	0.55	1	B
649	PIZOL	CH81	46.97 N	9.40 E	656	N	N	2790	2600	2600	0.32	0.6	B
650	PLATTALVA	CH114	46.83 N	8.98 E	656	E	E	2980	2740	2580	0.73	1.1	B D
651	PORCHABELLA	CH88	46.63 N	9.88 E	616	N	N	3390	2880	2645	2.59	2.5	B
652	PRAPIO	CH48	46.32 N	7.20 E	657	NW	NW	3020	2780	2525	0.36	0.9	B
653	PUNTEGLIAS	CH83	46.79 N	8.95 E	617	SE	S	3010	2520	2350	0.93	2	B
654	RAETZLI	CH65	46.38 N	7.52 E	626	N	NW	2970	2760	2450	9.8	4	B
655	RHONE	CH1	46.62 N	8.40 E	514	S	S	3620	2940	2208	17.38	10.2	B D
656	RIED	CH17	46.13 N	7.85 E	539	NW	NW	4280	3460	2069	8.26	6.3	B
657	ROSEG	CH92	46.38 N	9.84 E	517	N	N	3650	3060	2160	8.72	5.2	B
658	ROSSBODEN	CH105	46.18 N	8.00 E	539	N	NE	3990	3080	1915	1.89	3.9	B
659	ROTFIRN NORD	CH69	46.66 N	8.42 E	619	E	NE	3525	2680	2035	1.21	2.3	B
660	SALEINA	CH42	45.98 N	7.07 E	518	E	NE	3900	2940	1788	5.03	6.4	B
661	SANKT ANNA	CH67	46.60 N	8.60 E	636	N	N	2905	2720	2580	0.44	0.9	B
662	SARDONA	CH91	46.92 N	9.27 E	646	E	E	2790	2580	2450	0.38	0.7	B
663	SCALETTA	CH115	46.70 N	9.95 E	650	N	N	3100	2780	2580	0.66	1.1	B
664	SCHWARZ	CH62	46.42 N	7.67 E	519	SW	NW	3670	2800	2267	1.6	3.9	B
665	SCHWARZBERG	CH10	46.02 N	7.93 E	626	NE	NE	3650	3080	2660	5.332	4.3	B D
666	SEEWJINEN	CH	46.00 N	7.95 E	---						1.538		D
667	SESVENNA	CH97	46.71 N	10.41 E	656	NE	N	3150	2940	2735	0.67	1.2	B
668	SEX ROUGE	CH47	46.33 N	7.21 E	656	N	NW	2890	2820	2650	0.72	1.2	B
669	SILVRETTA	CH90	46.85 N	10.08 E	626	NW	W	3160	2780	2466	2.893	3.5	B C D
670	STEIN	CH53	46.70 N	8.43 E	528	N	N	3490	2880	1945	6.52	4.7	B
671	STEINLIMMI	CH54	46.70 N	8.40 E	517	N	N	3300	2640	2100	2.21	2.7	B
672	SULZ	CH79	46.88 N	9.05 E	658	N	N	2480	2000	1789	0.2	0.5	B
673	SURETTA	CH87	46.52 N	9.38 E	617	NE	NE	3010	2720	2227	1.17	1.6	B
674	TIATSCHA	CH96	46.83 N	10.08 E	634	S	S	3130	2900	2650	2.11	2.2	B
675	TIEFEN	CH66	46.62 N	8.43 E	519	SE	SE	3530	2960	2520	3.17	3.4	B
676	TRIENT	CH43	46.00 N	7.03 E	538	N	N	3490	3140	2030	6.58	5	B
677	TRIFT (GADMEN)	CH55	46.67 N	8.37 E	518	N	N	3505	2900	1652	15.335	7.1	B D
678	TSANFLEURON	CH33	46.32 N	7.23 E	606	NE	E	3020	2760	2420	3.78	3.6	B
679	TSCHIERVA	CH93	46.40 N	9.88 E	518	NW	NW	4000	3060	2340	6.83	5	B
680	TSCHINGEL	CH60	46.50 N	7.85 E	627	N	E	3510	2680	2269	6.18	3.8	B
681	TSEUDET	CH40	45.90 N	7.25 E	617	N	N	3730	2900	2464	1.73	3	B
682	TSIDJIORE NOUVE	CH28	46.00 N	7.45 E	528	N	NE	3800	3260	2205	3.12	5	B
683	TURTMANN W	CH19	46.13 N	7.68 E	528	NW	N	4190	3380	2270	6.98	5.8	B

NR	GLACIER NAME	PSFG NR	LAT	LONG	CODE	EXP		ELEVATION			AREA	LEN	TYPE OF
						AC	AB	MAX	MED	MIN	KM²	KM	DATA
684	UNT.GRINDELWAL.	CH58	46.57 N	8.09 E	519	N	N	4100	2780	1090	20.6	9	B D
685	UNTERAAR	CH51	46.57 N	8.22 E	517	E	E	4090	2660	1930	22.727	13.5	B D
686	VAL TORTA	CH118	46.47 N	8.53 E	649	N	N	2740	2580	2512	0.17	0.6	B
687	VALLEGGIA	CH117	46.47 N	8.50 E	648	NE	NE	2820	2560	2426	0.59	1.2	B
681	VALSOREY	CH39	45.90 N	7.27 E	518	NE	NW	3730	3100	2399	2.34	4.1	B
689	VERSTANKLA	CH89	46.84 N	10.06E	617	NW	NW	3100	2680	2405	1.06	2	B
690	VORAB	CH85	46.88 N	9.17 E	606	E	SE	2980	2720	2560	2.51	2	B
691	WALLENBUR	CH71	46.70 N	8.47 E	619	E	SE	3280	2580	2250	1.7	2.2	B
692	ZINAL	CH22	46.07 N	7.63 E	519	N	N	4260	3060	2040	16.24	8	B
	<u>TANZANIA</u>												
693	KILIMANJARO	TZ	3.06 S	37.35 E	---						2.51		D
	<u>U.S.A.</u>												
694	BERING GLACIER	US	60.52 N	143.08 W	---	S	S						F
695	BLACK RAPIDS	US222	63.48 N	146.50 W	517	N	E	3200	1750	800	224.94	43	F
696	BOULDER	US2005	48.77 N	120.88 W	538	SE	E	3280		1250		4	B
697	COLUMBIA (2057)	US2057	47.97 N	121.35 W	648	S	S	1750	1600	1450	0.9	1.5	B C
698	DANIELS	US2052	47.57 N	121.17 W	636	NE	NE	2300	2200	1970	0.4	0.8	B C
699	DEMING	US2009	48.75 N	120.82 W	--0	SW	SW	3260		1180		6	B
700	EASTON	US2008	48.75 N	120.83 W	538	SW	S	2900	2200	1700	2.9	4	B C
701	EMMONS	US2022	46.85 N	121.72 W	539	NE	NE	4330		1522	11.6	2.8	C
702	FOSS	US2053	47.55 N	121.20 W	638	NE	NE	2225	2125	1840	0.4	1	B C
703	GAKONA	US215	63.25 N	145.20 W	529	S	S	2550	1585	1040	112	32	
704	GULKANA	US200	63.25 N	145.42 W	529	S	SW	2460	1840	1165		8.5	C D
705	HUBBARD	US1290	60.08 N	139.33 W	514	SE	SE	5800	1500	0	3400	122	F
706	ICE WORM	US2054	47.55 N	121.17 W	648	E	E	2100	2010	1900	0.1	0.5	B C
707	LEMON CREEK	US	58.38 N	134.40 W	---	N	NW						C
708	LOWER CURTIS	US2055	48.83 N	121.62 W	648	W	W	1850	1620	1460	0.8	1.6	B C
709	LYNCH	US2056	47.57 N	121.18 W	654	N	N	2300	2185	1950	0.7	1.2	B C
710	NISQUALLY	US2027	46.82 N	121.74 W	529	S	S	4330		1487	4.36	2.9	C
711	NOISY CREEK	US2078	48.67 N	121.53 W	648	N	N	1890	1791	1683	0.53	1.14	C
712	NORTH KLAWATTI	US2076	48.57 N	121.12 W	55	SE	SE	2399	1729	1729	1.46	2.77	C
713	RAINBOW	US2003	48.80 N	121.77 W	638	E	E	2040	1740	1310	1.6	2.7	B C
714	RED GLACIER	US	60.02 N	153.02 W		SE	SE						F
715	SANDALEE	US2079	48.42 N	120.80 W	645	N	N	2280	2154	1965	0.2	0.79	C
716	SHOLES	US	48.80 N	121.78 W	---	NE	NE						C
717	SILVER	US2077	48.98 N	121.25 W	648	N	NE	2698	2309	2080	0.48	1.08	C
718	SOUTH CASCADE	US2013	48.37 N	121.05 W	538	N	N	2100	1850	1635	1.95	2	C
719	SUSITNA	US206	63.52 N	146.95 W	519	W	SW			815	323	36	
720	WATSON	US2051	48.65 N	121.57 W	636	N	N	1790	1620	1475	0.2	0.7	B
721	WEST FORK	US205	63.52 N	147.38 W	529	SW	S	3591	1433	845	311	41	
722	WOLVERINE	US411	60.4 N	148.92 W	538	S	S	1700	1310	400	17.24	8	C
723	YAWNING	US2050	48.45 N	121.03 W	658	NE	NE	2100	1975	1880	0.3	0.8	B C

WORLD GLACIER MONITORING SERVICE

VARIATIONS IN THE POSITION OF GLACIER FRONTS 2000-2005

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 first front variation data is available (at WGMS)
LAST SURVEY	Last survey before reported period
VARIATION IN METRES	Variation in the position of the glacier front in horizontal projection expressed as the change in length between the surveys
Key to Symbols	+X: Glacier in advance -X : Glacier in retreat ST : Glacier stationary SN : Glacier front covered by snow

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
	ARGENTINA									
1	AZUFRE	AR	1963	1997	E				-340	50
2	DE LOS TRES	AR	1996	1998	C			-43		
3	GUESSFELDT	AR	1929	1999	E			30	0	30
4	HORCONES INFERIOR	AR5006	1974	1999	E	-740		0	0	2620
5	MARTIAL	AR131	1943	1984	D		-190	0		
6	PENON	AR	1963	1997	E				-150	10
7	TUPUNGATO 01	AR	1975	1999	E			-140		0
8	TUPUNGATO 02	AR	1975	1999	E			-20		-60
9	TUPUNGATO 03	AR	1975	1999	E			-30		-10
10	TUPUNGATO 04	AR	1975	1999	E			0		0
11	VACAS	AR	1929	1999	E			40	-100	-70
	AUSTRIA									
12	AEU.PIRCHLKAR	AT229	1982	2000	C	-21.3	-6	-4.5	-30.3	
13	ALPEINER F.	AT307	1848	2000	C	-34.8		-X	-X	
14	BACHFALLEN F.	AT304	1892	2000	C	-X	-X	-14.3	-7	-10.4
15	BAERENKOPF K.	AT702	1915	2000	C	-0.1	-13		-6.2	-7.6
16	BERGLAS F.	AT308	1892	2000	C	-5.4	-7	-27.8	-3.5	-69.2
17	BIELTAL F W	AT0105B	1970	2000	C	-4.4	-4.9	-24.1	-2.9	-8.6
18	BIELTAL F.	AT0105A	1924	2000		-2.9	-7.7			
19	BIELTALF. MITTE	AT	1997	2000	C	-2.9	-7.7	-14.2	-1.2	-5.3
20	BRENNKOGL K.	AT727	1988	2000	C	-5.2	-11	-11.7	-0.5	-3.5
21	DAUNKOGEL F.	AT0310A	1891	2000	C	-7.4	-8.5	-25.7	-9.3	-13.9
22	DIEM F.	AT220	1848	2000	C	-6.2	-5	-42.2	-15.1	-11.4
23	DORFER K.	AT509	1891	2000				-X		
24	EISKAR G.	AT1301	1920	2000	C	SN	-1.1	-4.9	0	-10
25	FERNAU F.	AT312	1891	2000	C	-0.1	-7.8	-20.5	-2.1	
26	FREIGER F.	AT320	1899	2000	C			-3.2	-0.7	1.9
27	FREIWAND K.	AT706	1929	2000	C	-4.1	-0.1	-15.3	-2.3	-10.2
28	FROSNITZ K.	AT507	1860	2000	C	-13.5	-13	-32.1	-6.5	-7.5
29	FURTSCHAGL K.	AT406	1897	2000	E	-X	-X	-X	-X	-X
30	GAISKAR F.	AT325	1984	2000	C	-X	-8.7	-22.2	-5	-11.4
31	GAISSBERG F.	AT225	1856	2000	C	-17	-16.8	-32.5	-6.3	-17
32	GEPATSCH F.	AT202	1856	2000	C	-22.9	-26.6	-62.6	-12.6	-20.5
33	GOESSNITZ K.	AT1201	1983	2000	C	-8.6	-7.1	-14.8	-10	-13.3
34	GOLDBERG K.	AT0802B	1850	2000	C	-3.7	-8.5	-10.3	0.9	-21.2
35	GR.GOSAU G.	AT1101	1884	2000	C	-11.7	-4.8	-14.1	-0.6	-0.4
36	GROSSELEND K.	AT1001	1900	2000	C	-4.9	-6.5	-11.4	SN	
37	GRUENAU F.	AT315	1892	2000	C	-5.6	-35	-8.9	SN	-20.8
38	GURGLER F.	AT222	1897	2000	C	-8.8	-X	-X	-8	-16.7
39	GUSLAR F.	AT210	1893	2000	C	-16.9	-16.1	-31.4	-16.9	-21.5
40	HABACH KEES	AT504	1925	1991				-X		
41	HALLSTAETTER G.	AT1102	1848	2000	C	-3.4	-6.6	-13.3	-4.7	-13.4
42	HINTEREIS F.	AT209	1848	2000	C	-19.1	-18.4	-30.4	-14.1	-27.1
43	HOCHALM K.	AT1005	1900	2000	C	-1.2	-9.2	-19.7	-4.9	-12
44	HOCHJOCH F.	AT208	1856	2000	C	-18.5	-25.5	-42.9	-17.9	-22.5
45	HOCHMOOS F.	AT309	1947	1994				-X		
46	HORN K.(SCHOB.)	AT1202	1984	2000	C	-4.8	-7.5	-14.8	-5.7	-6.1
47	HORN K.(ZILLER)	AT402	1882	2000	C	-21	-44	-52	-X	-50
48	INN.PIRCHLKAR	AT228	1982	2000	C	-6.3	-7.4	-24.6	-6.8	-7.2
49	JAMTAL F.	AT106	1892	2000	C	-9	-12.4	-22.4	-4.1	-13.5
50	KAELBERSPITZ K.	AT1003	1927	2000	C	-6.8	-8	-16.2	2.7	-7.5
51	KAL. BAERENKOPF K.	AT	1971	2000	C	-4.5	-0.1	-18.9	1	1.1
52	KARLINGER K.	AT701	1860	2000	E	ST	-X		-X	-X
53	KESSELWAND F.	AT226	1900	2000	C	-17.2	-13	-32.1	-15.3	-17.1
54	KLEINFLEISS K.	AT801	1851	2000	C	-14.5	10.3	-160.5	2	-1.7
55	KLEINEISER K.	AT717	1963	2000	C	-3	-8.3	-12.4	SN	-1.4
56	KLEINELEND K.	AT1002	1900	2000	C	3.4	-4.1	-9	5.8	-5.6
57	KLOSTERTALER M	AT0102B	1969	2000	C	-10.3	-7.3	-17.9	-2	-4.7
58	KLOSTERTALER N	AT0102A	1969	2000	E	SN	-2.2	-X	-X	-X

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
59	KRIMMLER K.	AT0501A	1897	2000	C	-8.1	-9.5	-18	-8.5	-16.5
60	KRIMMLER K. EAST	AT0501B	1897	2000		-8.1	-9.5	-18		
61	LAENGENTALER F.	AT305	1905	2000	C	-15.9	-9.4	-X	-23.2	
62	LANDECK K.	AT604	1978	2000	C	-1.5	-7.7	-9.2	-0.3	-2.6
63	LANGTALER F.	AT223	1846	2000	C	-13.5	-12.5	-27	-10.2	-22.8
64	LARAIN F.	AT107	1929	1992				-X		
65	LIESENSER F.	AT306	1905	2000	C	-5	-12	-14.5	-1.7	
66	LITZNERGL.	AT101	1933	2000	C	-2.9	-3.4	-14.5	-2.9	-7.3
67	MARZELL F.	AT218	1856	2000	C	-6.8	-9.6	-22.9	-12.3	-12.2
68	MAURER K.(GLO.)	AT714	1896	2000	C	0.9	-3.5	-5.9	SN	2.4
69	MAURER K.(VEN.)	AT510	1897	1999	E	SN	SN	-X		
70	MITTERKAR F.	AT214	1892	2000	C	SN	-7	-43	-9.4	-8.4
71	MUTMAL F.	AT227	1969	2000	C	-7.8		-45	-4.5	-X
72	NIEDERJOCH F.	AT217	1883	2000	C	-7.8	-11.5	-64.2	-3.8	- -X
73	OBERSULZBACH K.	AT502	1815	2000	C	-24.3		-134.3		-29.2
74	OCHSENTALERGL.	AT103	1891	2000	C	-18.9	-64.2	-31	-6.5	-58.8
75	OEDENWINKEL K.	AT712	1897	2000	C	-2.6	-6.7	-5.1	-4.1	-4.9
76	PASTERZEN K.	AT704	1880	2000	C	-19.4	-7.1	-29.6	-13.4	-23.4
77	PFAFFEN F.	AT324	1981	2000	C	-11.4	-5.2	-12.3	-1.9	-4.5
78	PRAEGRAT K.	AT603	1963	2000	C		-36	-28.9	SN	-5.4
79	RETTENBACH F.	AT212	1889	2000	C	-8.8	-6.3	-24	-5.6	-8.6
80	RIFFL K. N	AT718	1963	2000		-5.3	-11			
81	ROFENKAR F.	AT215	1892	2000	C	-8.2	-15.2	-24	-0.3	-7.6
82	ROTER KNOPF K.	AT	2002		C		-1.1	-7.1	-1.9	-0.3
83	ROTMOOS F.	AT224	1847	2000	C	-19	-12.8	-31.2	-5	-22.3
84	SCHALF F.	AT219	1925	2000	C	-22.2	-24	-50.5	-24	-40.7
85	SCHAUFEL F.	AT311	1912	2000	C	-0.1	-12.2	-46.7	-5.2	
86	SCHLADMINGER G.	AT1103	1884	2000	C	-1.1	-0.6	-4.5	-4.3	-2
87	SCHLATEN K.	AT506	1857	2000	C	-7.5	-12	-14	-5.5	-15.8
88	SCHLEGEIS K.	AT405	1897	2000	E	-X	-X	-X	-X	-X
89	SCHMIEDINGER K.	AT726	1952	2000	C	-1.8	-4.7	-10.3	-0.2	-4.7
90	SCHNEEGLOCKEN	AT109	1974	2000	C	SN	-3.1	-12.5	-0.3	-6.6
91	SCHNEELOCH G.	AT1104	1969	2000	C	-6.9	-6	-16.6	-3.1	-5.7
92	SCHWARZENBERG F.	AT303	1891	2000	C	-15.4	-14.4	-28.6	-8.5	-22.4
93	SCHWARZENSTEIN	AT403	1882	2000	C	-4	-18	-15	-X	-15
94	SCHWARZKARL K.	AT716	1963	2000	C	-6.2	-6.2	-16.2	-2.2	-5
95	SCHWARZKOEPFL K.	AT710	1955	2000	C	-10.9	-18.3		-18.3	-8.1
96	SEXEGERTEN F.	AT204	1883	2000	C	-13.8	-23.6	-73.5	-26.8	-42.5
97	SIMILAUN F.	AT	2003		C			-12	-5	-25.8
98	SIMMING F.	AT318	1892	2000	C	-0.3		-22.3	-10.2	-29.7
99	SIMONY K.	AT511	1897	2000	C	-14	-15.5	-21.7	-8.9	-27.1
100	SONNBLICK K.	AT0601A	1961	2000	C	-1.5	-2.9	-4.6	0.1	-0.4
101	SPIEGEL F.	AT221	1892	2000	C	-6.5	-6.1	-21.5	-15.6	-8.6
102	SULZENAU F.	AT0314A	1891	2000	C	-1	-10.5	-6.7	-2	-7.3
103	SULZTAL F.	AT301	1898	2000	C	-14.5	19.3	-31.3	-17	-84.3
104	TASCHACH F.	AT205	1878	2000	C	-20.2	-19.5	-22	-61	-104.5
105	TAUFKAR F.	AT216	1892	2000	C			-17.5		
106	TOTENFELD	AT110	1975	2000	C	-5.8	-10	-16.2	-1.1	-10.6
107	TOTENKOPF K.	AT	1971	2000	C	-0.8	0.5	-7.1	-0.4	0.8
108	TRIEBENKARLAS F.	AT323	1978	2000	C		-37.4	-17	-16.3	-21
109	UMBALL K.	AT512	1897	2000	C	-18	-70.3	-52.5	-34	-11
110	UNT. RIFFL K.	AT0713B	1961	2000	C	-5.3	-11	-9	-1.9	-7
111	UNTERSULZBACH K.	AT503	1829	2000	C	-16.9	-20.5	-29.4	-16.5	-46.9
112	VERBORGENBERG F.	AT322	1977	2000	C	-5.8		-17.3	-2.1	-4.7
113	VERMUNTGL.	AT104	1903	2000	C	-9.9	-10.8	-19.5	-2.7	-13.5
114	VERNAGT F.	AT211	1889	2000	C	-21.2	-20.7	-39.6	-16.3	-27.1
115	VILTRAGEN K.	AT505	1892	2000	C	-8.5	-11.5	-27.1	-17.5	-28.3
116	W.GRUEBL F.	AT316	1893	1989				-X		
117	W.TRIPP K.	AT1004	1928	2000	C	-6.3	-6.3	-36.6	-0.2	
118	WASSERFALLWINKL	AT705	1944	2000	C	-2.1	-3.6	-13.7	-5.7	-6.2
119	WAXEGG K.	AT401	1882	2000	C	-12	-20.5	-32	-9.5	-25

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	VARIATIONS IN METRES 2001	2002	2003	2004	2005
120	WEISSEE F.	AT201	1891	2000	C	-4.4	-15.2	-36.8	-8.5	-9.4
121	W. GRUEBLER F. W	AT	1975	2000				-3.2		
122	WIELINGER K.	AT725	1897	2000	E	-X	-X		-X	-X
123	WILDGERLOS	AT404	1913	2000	C	-8.2	-16.8	-13.1	-5.3	-8
124	WINKL K.	AT1006	1928	2000	C	-0.3		-9.3	3.1	
125	WURTEN K.	AT804	1851	2000	C	-10	-15.1	-22.4	-2.4	-13.4
126	ZETTALUNITZ K.	AT508	1897	2000	C	-14.5	-14	-17.2	-17.3	-34.5
	BOLIVIA									
127	CHACALTAYA	BO5180	1983	2000	C	-9	0	-12	-73	-131
128	ZONGO	BO5150	1992	2000	C	-5	-18	-35	-5	-29
	C.I.S.									
129	DJANKUAT	SU3010	1967	1999	B	-4.9	-3.3	-6.9	-1.7	-8.2
130	DZHELO	SU7106	1952	2000	C	-9.5	-8.9	-16.1	-14.5	-12.1
131	KORUMDU	SU7103	1937	2000	C	-8.9	-12.1	-18.6	-13.2	-10.1
132	LEVIY AKTRU	SU7102	1976	2000	D	-8.7	-8.3	-31.6	-28.4	-16.9
133	LEVIY KARAGEMSK	SU7107	1938	2000	C	-12.1	-10.3	-16.8	-15.1	-11.5
134	MALIY AKTRU	SU7100	1936	2000	D	-13	-21.6	-14.8	-13.4	-12
135	NO. 125 (VOD.)	SU7105	1986	2000	D	-4	-5.9	-6.8	-4.9	-3
136	PRA. KARAGEMSKIY	SU7109	1952	2000	C	-10	-9.5	-18.1	-14.5	-12
137	TS.TUYUKSUYSKIY	SU5075	1908	2000	C	-24.8	-X	-X	-X	-52.9
	CHINA									
138	LAPATE NO.51	CN27	1981	2000	C	-5.2	-4.9	-5.1	-5.2	-5
139	URUMQIHE E-BR.	CN1	1996	2000	C	-3.1	-3.1	-3.1	-3.2	-3.1
140	URUMQIHE W-BR.	CN2	1996	2000	C	-7	-6.2	-6.1	-6.3	-6.1
	COLOMBIA									
141	CERRO CON-CAVO (7)	CO	1991	1998					-120	
142	CERRO CON-CAVO (8)	CO	1991	1998					-102	
143	LENGUA-SI 2	CO	1989	1994				-126.3		
144	LENGUA-SI 4CEN	CO	1991	2000		-5.9				
145	LENGUA-SI 4DER	CO	1989	1999				-30.4		
146	LENGUA-SI 4IZQ	CO	1992	2000		-6.9	-9.5	-14.8	-27.5	
147	LENGUA-SI 8	CO	1990	1996				-162.5		
148	LENGUA-SI N	CO	2002				-12.3	-14.2	-25.6	
149	LENGUA-SI PNORTE	CO	2003					-23.6	-34	
150	PA3	CO	1988	1998					-95.7	
151	PAB	CO	1997	1998					-110	
152	PASO BELLAVISTA (A)	CO	1998	1998					-149.1	
153	PULPITO DEL DIABLO	CO	1988	1998					-140	
	ECUADOR									
154	ANTIZANA15ALPHA	EC1	1995	2000	C	-18	-19	-31	-31	-28
	FRANCE									
155	ARGENTIERE	FR00002	1883	2000	C	-21	-43	-33	-42	-60
156	BLANC	FR00031	1899	2000		-23	-35	-39	-18	-10
157	BOSSONS	FR00004	1874	2000	C	-13	-29	0	-6	-27
158	GEBROULAZ	FR00009	1908	2000	C	-7	-X	-X	-X	-X
159	MER DE GLACE	FR00003	1866	2000	C	-36	-82	-20	-40	-30
160	OSSOUE	FR	2002		C		-6	-3	-2	-48
161	SAINT SORLIN	FR00015	1923	1996	C	-X	-X	-X	-X	-X
	HEARD ISLAND									
162	BROWN	HM111	1980	2000	E				-63	
163	STEPHENSON 1	HM110	1980	1990	E			-X	-200	

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
	ICELAND									
164	BLAGNIPUJOKULL	IS	1998	2000	A	-44	-29	-39	-51	-85
165	BREIDAMJOK.E.B	IS1126B	1937	2000	A		-158			
166	BREIDAMJOK.W.A	IS1125A	1934	2000	A	-16	-75	-79	-60	-45
167	BREIDAMJOK.W.C	IS1125C	1933	2000	A	-70	-75	-52	-63	-65
168	FALLJOKULL	IS1021	1958	2000	A	0	-32	-34	-18	-9
169	FJALLS.FITJAR	IS1024B	1936	2000	A	-X	-4	-5		
170	FJALLSJ. BRMFJ	IS1024A	1934	2000	A	-8	-27	-15	-90	-10
171	FJALLSJ.G-SEL	IS1024C	1934	2000	A	-8	-27	-15	-90	-10
172	FLAAJOKULL	IS1930A	1971	1994	A	-X				
173	GEITLANDSJOKULL	IS	2003		A			-31	-89	-55
174	GIGJOKULL	IS112	1934	2000	A	-67		-35		-357
175	GLJUFURARJOKULL	IS103	1933	2000	A	14	-10	0	-24	-X
176	HAGAFELLSJOK.E	IS306	1902	2000	A	-37		-141		
177	HAGAFELLSJOK.W	IS204	1972	2000	A	-92		-170		
178	HEINABERGSJOKULL	IS	1990	1999	A	-34	52	-52	-76	
179	HRUTARJOKULL	IS923	1948	2000	A	-X	-X			-22
180	HYRNINGSJOKULL	IS100	1933	2000	A	0	-7	-2	-80	-14
181	JOKULKROKUR	IS7	1936	2000	A	-7		-24		
182	KALDALONSJOKULL	IS102	1931	2000	A	0	0	-12	-36	-81
183	KIRKJUJOKULL	IS	1998	2000	A	-9	-13	-25	-23	-22
184	KOTLUJOKULL	IS	1993	1998	A	-98				-40
185	KVIARJOKULL	IS822	1935	2000	A	-150	-65	-X	-X	-X
186	KVISLAJOKULL	IS	2003		A			-51	-63	-10
187	LEIRUFJ.JOKULL	IS200	1886	2000	A	10	0	3		
188	LODMUNDARLOEKUL	IS108	1936	1999	A	-2	-24	5		-10
189	MORSARJOKULL	IS318	1935	2000	A	-27	-41	-27	-35	
190	MULAJOKULL S.	IS0311A	1935	2000	A			-184	-20	
191	NAUTHAGAJOKULL	IS210	1935	2000	A	-7	-28	-23	-25	-20
192	OLDUFELLSJOKULL	IS114	1967	1996	A	-318		-127		-143
193	REYKJAFJARDARJ.	IS300	1914	2000	A	-2	17	70	72	36
194	RJUPNABREKKUJOK.	IS	2001		A	-101	-14	-25	-24	-21
195	SATUJOKULL	IS530	1991	2000	A	-22	-25	-35	-30	
196	SIDUJOK.E M177	IS0015B	1934	1999	A			-137		
197	SKALAFELLSJOKUL	IS1728A	1935	1995	A	-20	-48	-82	-30	-97
198	SKEIDARARJ. E1	IS0117A	1951	2000	A	-94	-38	-18	-14	-22
199	SKEIDARARJ. E2	IS0117B	1932	2000	A	0	-9	9	-4	9
200	SKEIDARARJ. E3	IS0117C	1932	2000	A	-49	0	81	12	-13
201	SKEIDARARJ. W	IS116	1932	2000	A	-50	-100	-190	0	-10
202	SKEIDARARJOKULL M	IS	1991	2000	A	-50	-110	-160	-83	-50
203	SLETTJOKULL	IS	2002		A		-46	-92	-55	
204	SOLHEIMAJOK. W	IS0113A	1931	2000	A	-41	-36	-92	-87	-28
205	SVINAFELLSJ.	IS0520A	1951	2000	A	-8	-48	7	-10	-25
206	TUNGNAARJOKULL	IS2214	1946	2000	A	-48	-X	-45	-85	-68
207	VIRKISJOKULL	IS721	1933	1996	A	-X	-X	-X	-X	-X
	INDIA									
208	ADI KAILASH	IN	2002				-525			
209	BEAS KUND	IN	2003					-750		
210	BHAGIRATHI KHARAK	IN	2001			-17				
211	CHIPA	IN	2001			-1077				
212	GI.NO.30	IN	2003					-550		
213	HAMTAH	IN	2001			-15	-15	-15	-15	-15
214	JHULANG (KHARSA)	IN	2001			-937				
215	JOBRI	IN	2003					-100		
216	MEOLA	IN	2001			-1720				
217	NIKARCHU	IN	2002				375			
218	PINDARI	IN	2001			-13				
219	SARA UMGA	IN	2004						-1697	

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
	ITALY									
220	AGNELLO MER.	IT29	1927	2000	C			-9.5		-5
221	ALTA (VEDRETTA)	IT730	1924	2000	C	-9.5	-10	-13	-6	-17
222	AMOLA	IT644	1949	2000	C	-2.5	-7.5	-8.5	-5.5	-9
223	ANDOLLA SETT.	IT336	1981	2000		4				
224	ANTELAO INF. (OCC.)	IT967	1952	2000	C	SN	-6	-28.5	0	0
225	ANTELAO SUP.	IT966	1952	2000	C		-12	-9	-5	-5
226	AOUILLE	IT138	1972	1973	C		-12.5	-32	1	-9
227	AURONA	IT338	1962	1997	C				-399	-9
228	BASEI	IT64	1961	2000	C		-2.5	-15		-1
229	BELVEDERE (MAC.)	IT325	1922	2000	C	5.5	15	8	15	7
230	BESSANESE	IT40	1947	2000	C	-0.5	0	-6	-2	-1
231	BRENVA	IT219	1925	1996	C				-145	
232	CALDERONE	IT1006	1947	1974	C					ST
233	CARE ALTO OR.	IT632	1953	2000		SN				
234	CARESER	IT701	1898	1990	C					-67
235	CASPOGGIO	IT435	1927	2000	C	-18.5	-29.5	-21.5	-18	0
236	CASSANDRA OR.	IT411	1927	2000		SN				
237	CASTELLI OCC.	IT494	1929	2000		SN				
238	CASTELLI OR.	IT493	1928	2000		SN				
239	CEVEDALE FORCOLA	IT731	1899	2000		-27				
240	CEVEDALE PRINCIP.	IT732	1899	2000	C	-25	-14	-48	-17	-29
241	CHAVANNES	IT204	1952	2000	C		1	-26.5	-3	
242	CIAMARELLA	IT43	1928	2000		-3				
243	CIARDONEY	IT81	1973	2000	C	-4	-7.5	-28.5	-10.5	-22
244	COL DELLA MARE I	IT0506A	1925	2000		6.5				
245	COLLALTO	IT927	1974	2000	C	-7	-15	-8.5	-1.5	-9
246	COLLERIN D'ARNAS	IT42	1973	2000		0				
247	CORNISELLO MER.	IT646	1928	2000	C		-4.5	5		
248	CORNO DI SALARNO	IT603	1996	2000		SN				
249	COUPE DE MONEY	IT109	1927	2000		-7				
250	CRODA ROSSA	IT828	1973	2000	C	-19	-15		-53	
251	DISGRAZIA	IT419	1926	2000		SN				
252	DOSDE OR.	IT473	1932	2000		-5.5				
253	DOSEGU	IT512	1926	2000	C	13	-22	-25.5	-8.5	-15.5
254	DZASSET	IT113	1996	2000		-0.5				
255	FELLARIA OCC.	IT439	1898	2000	C	-10.5	-26	-21		-49.5
256	FOND OCCID.	IT146	1986	2000		-3				
257	FOND OR.	IT145	1963	2000		-1				
258	FORNI	IT507	1970	2000	C	-12	-23.5	-33	-13.5	-33
259	FOURNEAUX	IT27	1905	1986		0				
260	FRADUSTA	IT950	1948	2000	C	0	-4	-14.5	-5.5	-14.7
261	GIGANTE CENTR.	IT929	1974	2000	C	-8		-56	-21.5	-9
262	GIGANTE OCC.	IT930	1973	2000	C	-3.5	-17		-25.5	-5
263	GOLETTA	IT148	1928	2000	C	-5	-2.5	-44	-14.5	-14
264	GRAN PILASTRO	IT893	1926	2000		-10	-11	-41	-22	-32
265	GRAN. CROUX CENTR.	IT111	1903	2000		-3				
266	GRANDES MURAILLES	IT260	1961	2000	C	-50	-6	-100	-47	-24
267	GRUETTA ORIENT.	IT232	1995	1999		-7				
268	HOHSAND SETT. (SAB.)	IT357	1926	1999	C	-19		-16	9	-4
269	JUMEAUX	IT280	1928	2000		17				
270	LA MARE (VED.)	IT699	1897	2000	C	SN	-16	-30	-8.5	-18.5
271	LAGOL	IT657	1936	2000		SN				
272	LANA	IT913	1977	2000	C	-4	-10	-14.5	-1	-8
273	LARES	IT634	1920	2000	C	-17	-12		-8.5	-29
274	LAUSON	IT116	1928	2000	C	-2.5		-10	-3	-5
275	LAVACCIU	IT129	1933	1998		-22				
276	LAVASSEY	IT144	1928	2000		-4				
277	LOBBIA	IT637	1899	1999	C	-15	-64	-57.5	0.5	-51
278	LOCCE SETT.	IT321	1986	2000		-6				
279	LUNGA (VEDRETTA)	IT733	1901	2000	C	-29	-5	-25	-62	-58

NR	GLACIER NAME	PSFG NR	FIRST SURVEY	LAST SURVEY	METHOD	VARIATIONS IN METRES 2001	2002	2003	2004	2005
280	LYS	IT304	1902	2000	C	-10	0	-38	-18	-34
281	M.BLANC DU CRETON	IT279	1986	1997		28.5				
282	MALAVALLE	IT875	1915	2000	C	-8	-18	-11	-17	-49
283	MANDRONE	IT639	1911	2000	C	-1.5	-13.5	-19	-5.5	-17.5
284	MARMOLADA CENTR.	IT941	1902	2000	C	-326.5	-17.5	-90	-20	-26
285	MAROVIN	IT541	1953	2000		SN				
286	MARTELOT	IT49	1928	2000		-0.5				
287	MONCIAIR	IT132	1951	2000		11				
288	MONCORVE	IT131	1928	1999		-4				
289	MONEY	IT110	1903	2000		-3				
290	MONTE GIOVE	IT347	1997	1998		-2				
291	MULINET MERID.	IT47	1955	2000		-3				
292	MULINET SETT.	IT48	1907	2000		-0.5				
293	NARDIS OCC.	IT640	1927	2000	C	0	-7		SN	
294	NEVES OR.	IT902	1910	2000	C	-8	-33	-71	-20	
295	NISCLI	IT633	1920	2000	C	SN	SN	SN		-55
296	OSAND MER. (SAB.)	IT356	1941	2000		-15.5				
297	PALON DE. MARE LOBO OR.	IT0506C	1990	2000		-3				
298	PENDENTE	IT876	1923	2000	C	-4	-9	-29	-3	-1
299	PIODE	IT312	1915	1999	C	-49.5	-6	-3	-2	-3
300	PISGANA OCC.	IT577	1918	2000	C	SN	-62	-X	-24.5	-2
301	PIZZO FERRE	IT365	1927	2000		-X				
302	PIZZO SCALINO	IT443	1899	2000	C	0	-38	-23	-5	-14
303	PLATTES D. CHAMOIS	IT172	1949	2000		0				
304	PRA FIORITO	IT658	1920	2000		SN				
305	PRE DE BAR	IT235	1904	2000	C	-16.5	-31.5	-26	-13.5	-20
306	PREDAROSSA	IT408	1916	2000		0				
307	PRESANELLA	IT678	1925	1999	C			-17	-8.5	
308	QUAIRA BIANCA	IT889	1930	2000	C	-3	-25	-5	-5	-72
309	RASICA ORIENT.	IT399	1990	2000		SN				
310	ROSIM	IT754	1898	2000	C	SN	-4.5	-5.5	-8.5	-10.9
311	ROSOLE	IT506	1926	2000		-6				
312	ROSSA (VEDR.)	IT697	1898	2000	C	SN	-18	-6	-4	
313	ROSSO DESTRO	IT920	1930	2000	C	-6	-8	-22	-1.5	-12
314	RUTOR	IT189	1927	2000	C	-4	-19.5	-20	-7.5	-16.5
315	SCERSCEN INFERIORE	IT432	1897	2000		-5				
316	SCERSCEN SUP.	IT433	1927	1999		-50				
317	SEA	IT46	1928	2000		0				
318	SFORZELLINA	IT516	1926	2000	C	SN	-11	-10.3	-0.7	-4.5
319	SISSONE	IT422	1927	2000		SN				
320	SOCHES TSANTELEINA	IT147	1951	2000		-1.5				
321	SURETTA MERID.	IT371	1927	2000		SN				
322	TESSA	IT829	1927	2000	C	-4	0	0	0	
323	TORRENT	IT155	1962	2000		-4.5				
324	TOULES	IT221	1933	2000	C	5.5	-12	-14.5	2	
325	TRAVIGNOLO	IT947	1953	2000		SN	-X		-X	-X
326	TRESERO LING. MER.	IT0511B	1926	2000	C	-7	5			
327	TRIBOLAZIONE	IT112	1927	2000		0				
328	TUCKETT	IT650	1946	1999		SN				
329	TZA DE TZAN	IT259	1926	2000		-68				
330	VALLE DEL VENTO	IT919	1981	2000	C	-9	-9.5	-27.5	8	-X
331	VALTOURNANCHE	IT289	1927	2000	C		-9	-4	-4.5	-0.5
332	VENEROCOLO	IT581	1920	2000	C		-9.5		-45.5	-26
333	VENEZIA (VEDR.)	IT698	1934	2000	C	SN	-29	-7.5	-34	
334	VENTINA	IT416	1907	2000	C		-20	-18	-20	-18
335	VERRA (GRANDE DI)	IT297	1914	2000		-43				
336	ZAI DI DENTRO	IT749	1930	2000	C	-4.5	-9	-12	-9	-7
337	ZAI DI FUORI	IT751	1899	2000	C			-11	-5.5	-5.5
338	ZAI DI MEZZO	IT750	1934	2000	C	0	-9	-13.5	-6	-9

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
	KENYA									
339	CESAR	KE4	1908	1993	A				-75	
340	DARWIN	KE6	1963	1993	A				-95	
341	DIAMOND	KE10	1963	1993	A				0	
342	FOREL	KE11	1963	1993	A				-50	
343	GREGORY	KE9	1944	1993	A				-65	
344	HEIM	KE12	1963	1993	A				-50	
345	JOSEPH	KE3	1930	1993	A				-200	
346	KRAPF	KE1	1944	1993	A				-25	
347	LEWIS	KE8	1899	1993	A				-215	
348	NORTHEY	KE13	1963	1993	A				-50	
349	TYNDALL	KE5	1899	1993	A				-50	
	NEW ZEALAND									
350	ADAMS	NZ	1992	2000	A		ST	+X		
351	ALMER/SALISBURY	NZ	1993	2000	A	ST		-X	+X	+X
352	ANDY	NZ	1993	2000	A	-X	-X	-X		+X
353	ASHBURTON	NZ	1993	2000	A	+X	+X			+X
354	AXIUS	NZ	1998	2000	A		ST			
355	BALFOUR	NZ	1995	2000	A	ST	+X	+X		-X
356	BREWSTER	NZ	1992	2000	A	ST	-X	ST	ST	-X
357	BUTLER	NZ	1992	2000	A	SN	-X	SN	SN	+X
358	CAMERON	NZ	1993	2000	A	ST	-X			ST
359	CLASSEN	NZ	1994	2000	A	-X	-X			
360	COLIN CAMPBELL	NZ	1995	2000	A	-X				
361	CROW	NZ	1995	2000	A			+X		+X
362	DART	NZ	1981	2000	A	+X	+X	+X		+X
363	DISPUTE	NZ	1998	2000	A		-X			
364	DONNE	NZ	1995	2000	A	ST		-X		
365	DOUGLAS (KAR.)	NZ	1993	2000	A	ST		-X	-X	+X
366	EVANS	NZ	1992	2000	A			-X		
367	FITZGERALD (GOD)	NZ	2000	2000	A	ST				
368	FOX	NZ	1991	2000	A	-X	ST	-X		+X
369	FRANZ JOSEF	NZ	1894	2000	C	-63	-94	-73	-23	-81
370	FRESHFIELD	NZ	1996	1996	A	-X	ST			
371	GODLEY	NZ	1995	2000	A	-X		-X		
372	GREY & MAUD	NZ	1994	2000	A	ST			-X	
373	GUNN	NZ	1993	2000	A	-X	-X	-X	-X	-X
374	HOOKER	NZ	1992	2000	A		-X			
375	HORACE WALKER	NZ	1988	2000	A	-X				-X
376	IVORY	NZ	1981	2000	A	ST	-X	+X	ST	+X
377	KAHUTEA	NZ	1995	2000	A		-X		ST	
378	LA PEROUSE	NZ	1995	2000	A	ST	ST	ST		+X
379	LAMBERT	NZ	1992	2000	A			-X		+X
380	LAWRENCE	NZ	1997	2000	A	-X	-X			
381	LEEB-LORNTY	NZ	1999	2000	A	ST	-X	+X		+X
382	LYELL	NZ	1995	2000	A				-X	
383	MARION	NZ	1993	2000	A					-X
384	MARMADUKE DIXON	NZ	1993	2000	A	ST		SN	SN	SN
385	MATHAIAS	NZ	2000	2000	A	SN		SN		
386	MUELLER	NZ	1991	2000	A	-X		-X		-X
387	MURCHISON	NZ	1993	2000	A	-X	-X	-X		-X
388	PARK PASS	NZ	1994	2000	A	-X	-X	-X	-X	-X
389	RAMSAY	NZ	1995	2000	A	-X			-X	
390	REISCHEK	NZ	1995	2000	A	-X	-X	-X		-X
391	SALE	NZ	1995	2000	A	-X			-X	
392	SIEGE	NZ	1992	2000	A		-X	-X		-X
393	SNOW WHITE	NZ	1993	2000	A	-X	-X		-X	-X
394	SNOWBALL	NZ	1993	2000	A			ST		
395	SOUTH CAMERON	NZ	2004		A				-X	
396	ST. JAMES	NZ	1996	2000	A	ST		+X		

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
397	STRAUCHON	NZ	1994	2000	A					+X
398	TASMAN	NZ	1991	2000	A	-X	-X	-X	-X	-X
399	TEWAEWAE	NZ	2000	2000	A	-X		-X	+X	
400	THURNEYSON	NZ	1992	2000	A	ST	ST		+X	+X
401	VICTORIA	NZ	1995	2000	A	ST				-X
402	WHATAROA	NZ	1999	2000	A	-X		ST		ST
403	WHITBOURNE	NZ	1995	2000	A	-X				
404	WHITE	NZ	1993	2000	A	+X	-X	+X		+X
405	WHYMPER	NZ	1995	2000	A	-X	-X	-X		-X
406	WILKINSON	NZ	1995	2000	A	-X	-X	-X		-X
407	ZORA	NZ	1995	2000	A	ST		-X		ST
	NORWAY									
408	AUSTERDALSBREEN	NO31220	1909	1995	C	-20	5	0	-5	-9
409	BERGSETBREEN	NO31013	1997	2000	C	-13	-17	-19	-45	-15
410	BOEDALSBREEN	NO37219	1997	2000	C	-9	-2	-20	-21	-15
411	BOEVERBREEN	NO548	1904	2000	C	1	-5	-9	-2	-4
412	BOEYABREEN	NO33014	1905	1959	C				-8	-9
413	BONDHUSBREEN	NO20408	1903	2000	C	-9	-15	-21	-37	-4
414	BOTNABREEN	NO20515	1997	2000	C	0	-12	-8	-8	2
415	BREIDALBLIKKBREA	NO	2003		C			-6	0	-1
416	BRENNDALSBREEN	NO37109	1997	2000	C	-17	-20	-30	-20	-54
417	BRIKSDALSBREEN	NO37110	1899	2000	C	1	-13	-38	-96	-25
418	BUARBREEN	NO21307	1909	2000	C	-6	-2	-38	-90	27
419	ENGABREEN	NO67011	1910	2000	C	-25	-6	-60	-22	-56
420	FAABERGSTOELSB.	NO31015	1903	2000	C	-20	-28	-16	-1	18
421	GRAAFJELLSBREA	NO	2003		C			-6	-20	-14
422	HANSBREEN	NO12419	1936	2000	E				-385	
423	HELLSTUGUBREEN	NO511	1902	2000	C	-4	-17	-10	-5	-4
424	IRENEBREEN	NO15402	2001		C	-X	-X	-X	-X	-10
425	KJENNDALSBREEN	NO37223	1997	2000	C	-48	-17	-26	-59	-7
426	KOPPANGSBREEN	NO	1999	2000	C	-12	-20			-44
427	LANGFJORDJOEKUL	NO85008	1999	2000	C	-25	-62	-37	-17	-29
428	LEIRBREEN	NO548	1908	2000	C	-7		-28	-5	
429	MIDTDALSBREEN	NO4302	1983	2000	C	1	-26	-24	4	3
430	NIGARDSBREEN	NO31014	1909	2000	C	-4	-1	24	-25	-8
431	REMBESDALSKAAKI	NO22303	1996	2000	C	-46	-16	-54	-30	-60
432	STEGHOLTBREEN	NO31021	1909	2000	C	-15	-1	-21	-19	-4
433	STEINDALSBREEN	NO	1999	2000	C		-51			-32
434	STORBREEN	NO541	1902	2000	C	-12		-20	-5	
435	STORGJUVBREEN	NO	1998	2000	C	4	4	0	-5	2
436	STYGGEDALSBREEN	NO30720	1902	2000	C	2	-24	-1	-7	-7
437	SUPPHELLEBREEN	NO33014	1903	2000	C	-9	-28	-32	-27	19
438	WALDEMARBREEN	NO15403	1936	2000	C	-X	-X	-X	-7	-8
	PERU									
439	ARTESONRAJU	PE3	2005		C					-X
440	BROGGI	PE3	1968	2000	C	-10.2		-51.8	-46.1	
441	GAJAP-YANACARCO	PE9	1981	1990	C			-122.3	-18.6	-15
442	PASTORURI	PE8	1981	2000	C	-46.6		-28.4	-13.7	-17
443	SHALLAP	PE3	2005		C					-X
444	SHULLCON	PE1	2002		C		-27.1	-13.5		-47.4
445	URUASHRAJU	PE5	1968	2000	C	-11.1	-6	-12.6	-12.7	-11.7
446	YANAMAREY	PE4	1972	2000	C	-3.2	-31.8	-31.4	-46.1	-34
	POLAND									
447	MIEGUSZOWIECKIE	PL140	1981	1999	E		-X	-X	+X	+X
448	POD BULA	PL111	1981	2000	C	3.2	-X		+X	-0.5
449	POD CUBRYNA	PL180	1981	1999	C	-22	SN	SN	SN	19.5

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
	SOUTH GEORGIA									
450	COOK	GS	1928	1982	E			-200		
451	HARKER	GS	1914	1985	E			45		
452	HEANEY	GS	1975	1998	E			-250		
453	HODGES	GS	1955	1982	E			-200		
454	ROSS	GS	1883	1982	E			-350		
	SPAIN									
455	ANETO	ES9030	1957	2000	E				-120	-20
456	BARRANCS	ES9040	1957	1990	E				-80	-10
457	CLOT DE HOUNT	ES3010	1905	1990	E				0	-20
458	CORONAS	ES9080	1957	2000	E				-40	-20
459	INFIERNO E	ES2020	1957	2000	E				-10	0
460	INFIERNO W	ES0201A	1957	1990	E				0	0
461	LA PAUL	ES7020	1983	1990	E				-70	-10
462	LAS FRONDELLAS	ES1010	1957	1990	E				-210	0
463	LLARDANA	ES7010	1983	2000	E				-110	-10
464	LOS GEMELOS	ES7040	1983	2000	E				0	0
465	MALADETA	ES9020	1983	2000	C	-10	-40	0	-20	-50
466	MARBORECILINDRO	ES5010	1990	1990	E				-60	-30
467	PERDIDO INF	ES0502B	1990	2000	E				-20	-20
468	PERDIDO SUP	ES0502A	1990	2000	E				-15	-30
469	POSETS	ES7030	1983	1990	E				-200	-95
470	PUNTA ZARRA	ES2040	1957	1990	E				-120	-35
471	TEMPESTADES	ES9050	1957	2000	E				0	-20
	SWEDEN									
472	HYLLGLACIAEREN	SE780	1968	2000	C			-89.7		
473	ISFALLSGLAC.	SE787	1910	2000	C	2.3	-5.8	-3	-3	0.5
474	MIKKAJEKNA	SE766	1899	2000	C	-52.8	-14.8			
475	PARTEJEKNA	SE763	1970	2000	C	-21.1	-24	-25.5		
476	RABOTS GLACIAER	SE785	1951	2000	C		-31.3			
477	RIUKOJIETNA	SE790	1968	2000	C		-24.7			
478	RUOTESJEKNA	SE767	1967	2000	C		-33.7			
479	SALAJEKNA	SE759	1908	2000	C		-15.1			
480	SE KASKASATJ GL	SE789	1951	2000	C	-1	5	-3	-3	0
481	STORGLACIAEREN	SE788	1908	2000	C	-1	-2.1	-X		
482	SUOTTASJEKNA	SE768	1901	2000	C		-26.8			
483	VARTASJEKNA	SE765	1968	2000	A		0SN	-17.5		
	SWITZERLAND									
484	ALLALIN	CH11	1884	2000	A	-12.2	14.5	-52.6	2.8	-4.5
485	ALPETLI(KANDER)	CH109	1894	2000	C	-3.8	-41	-33	-10.8	-16.3
486	AMMERTEN	CH111	1970	2000	C	0	-0.6	-4.2	-0.6	-0.3
487	AROLLA (BAS)	CH27	1886	2000	C	-20	-24	-10	-26	-28
488	BASODINO	CH104	1894	2000	C	-3	-16.1	-18.3	-4.7	-14.9
489	BELLA TOLA	CH21	1946	2000	C	-4.5	-4.9	-10	-7.8	-2.4
490	BIFERTEN	CH77	1884	2000	C	-9	-5.5	-15.9	-1.8	-10.5
491	BLUEMLISALP	CH64	1894	2000	C	-9.5	-10.8	-46.7	-18.9	-40.4
492	BOVEYRE	CH41	1890	1999	C	-18		-30		-24
493	BRENEY	CH36	1882	2000	C	-55.7	-40.1	-108.3	-31.5	-17.4
494	BRESCIANA	CH103	1898	2000	C	-14	-18.8	-77.1	-76.8	-1.8
495	BRUNEGG	CH20	1941	2000	C	-8.5	-30.5	-156.9	-9.6	-24
496	BRUNNI	CH72	1883	1997	C			-7.2		
497	CALDERAS	CH95	1921	2000	C	-1.7	-8.6	-44.8	-12.4	-11.2
498	CAMBRENA	CH99	1889	2000	C	-8	-14	-17	-6	-9.7
499	CAVAGNOLI	CH119	1894	2000	C	-10.5	-11.7	-20.3	-4.2	-14.9
500	CHEILLON	CH29	1925	2000	C	-1.7	-5.7		-21.6	-14.5
501	CORBASSIERE	CH38	1890	2000	A	-13.6	-11	-34.3	-54	-27
502	CORNO	CH120	1895	2000	C	-8.3	-1.5	-56.3	0.1	-3.8
503	CROSLINA	CH121	1990	2000	C	-0.5	-2.4	-8.4	-1.4	-3.2

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
504	DAMMA	CH70	1922	2000	C	-6.7	-16.8	-10.7		
505	DUNGEL	CH112	1894	1943	C				-1	-6
506	EIGER	CH59	1883	2000	C	-4.1	-20.8	-11.6	-11.9	-12
507	EN DARREY	CH30	1929	2000	C	0	0	-8	-7.3	-28.5
508	FEE NORTH	CH13	1884	2000	C	-209.4	-65.1	-23.7	-5.1	-7.4
509	FERPECLE	CH25	1892	2000	C	-5	-15	-20	-38	-2
510	FIESCHER	CH4	1892	2000	C	-11.6				
511	FINDELEN	CH16	1886	2000	D		-118.1	-18.8	-18.1	-19.2
512	FIRNALPELI	CH75	1895	2000	C		0.7	-14	-36.2	-13
513	FORNO	CH102	1864	2000	C	-21	-23.4	-25.6	-23.6	-43.8
514	GAMCHI	CH61	1884	2000	C	-5.4	-14.4	-21.4	-15	-16.6
515	GAULI	CH52	1886	2000	C	-X	-55	-27	-5	-1
516	GELTEN	CH113	2003		C			-26		
517	GIETRO	CH37	1890	2000	A	-7	-7	-4.8	-34.8	-58.1
518	GLAERNISCH	CH80	1926	2000	C	-2.5	-2.6	-14.9	-16.2	-3.1
519	GORNER	CH14	1883	1999	C	-29.3	-6.2	-16	-5	-17
520	GRAND DESERT	CH31	1893	2000	C	-29.2	-30.6	-72	-6.4	-5.2
521	GRAND PLAN NEVE	CH45	1894	2000	C	-5.3		-12.5	-1.6	0.1
522	GRIES	CH3	1880	2000	A	-13	-26.4	-29.9	-27	-58
523	GRIESS(KLAUSEN)	CH74	1930	2000	C	-0.2	-5.2	-14.6	2.2	-9.2
524	GRIESSEN (OBWA.)	CH76	1895	2000	C	-6.3	1.2	-11.3	-6.3	-5.5
525	GROSSER ALETSCH	CH5	1881	2000	A	-47.8	-57	-28.4	-41	-65.6
526	HUEFI	CH73	1883	2000	C	-25.6	-19	-61.5	-34	-4
527	KALTWASSER	CH7	1892	2000	C	13.1	-19	-16.9	-2	-0.6
528	KEHLEN	CH68	1894	2000	C	-25.8	-23.4	-24.1	-20.5	-21.3
529	KESSJEN	CH12	1931	2000	A	1.5	-3.5	-15.5	-15	-13
530	LAEMMERN	CH63	1919	2000	C	-1.5	-9.4	-11.5	-14.6	-13.7
531	LANG	CH18	1889	2000	C	-5.3	-23.7	-16.3	-16	-24
532	LAVAZ	CH82	1886	1999	C				-354	-7.2
533	LENTA	CH84	1897	2000	C	-25	-19.4	-9.8	-37.1	-21
534	LIMMERN	CH78	1886	1997	C	-9.5	-6.2	-5.5	-1.7	-3.4
535	LISCHANA	CH98	1897	2000	C	-1.7	-27.7	-52.2	-4.2	-3.9
536	MOIRY	CH24	1892	2000	C	-6	-18.5	-21	5	-24.5
537	MOMING	CH23	1880	2000	C	-90				
538	MONT DURAND	CH35	1891	2000	C	-2.2	6.2	-26.1	1.4	-36.4
539	MONT FORT	CH32	1893	2000	C	-10.2		-34.8	-23.4	-1.4
540	MONT MINE	CH26	1957	2000	C	-25	-61	-32	-36	-29
541	MORTERATSCH	CH94	1880	2000	C	-26.4	-30.2	-76.5	10.3	-22.2
542	MUTT	CH2	1919	2000	C	-4.8	-2.2	-7.6	-11.7	-6.8
543	OB.GRINDELWALD	CH57	1880	2000		-X				
544	OBERAAR	CH50	1880	1998	A	-16.3				
545	OBERALETSCH	CH6	1881	1999	C	-14.4		-25.7	-3.3	-5.8
546	OTEMMA	CH34	1882	2000	C	-24.2	-29.2	-107	-19.1	-41.5
547	PALUE	CH100	1895	2000	C	9.5	-28		-66	
548	PANEYROSSE	CH44	1887	2000	C	-4.6		-2.2	-1	
549	PARADIES	CH86	1898	2000	C	4.4	-3.9	-10.5	-0.1	-0.8
550	PARADISINO	CH101	1956	2000	C	17	-6.5	-52	-35	-24
551	PIZOL	CH81	1894	2000	C		-41.1	-29.6	9.7	-10.8
552	PLATTALVA	CH114	1970	1997	C	-11.6	-8.5	-22	-2.9	-19.6
553	PORCHABELLA	CH88	1894	2000	C	-0.5		-32	-11	-19.8
554	PRAPIO	CH48	1899	2000	C	-X	-1	-4		-15.5
555	PUNTEGLIAS	CH83	1897	1999	C	-15.6		-10	-4.6	-10.6
556	RAETZLI	CH65	1928	2000		-X				
557	RHONE	CH1	1880	2000	A	-6.1	-11.1	-2	-11.4	-7.5
558	RIED	CH17	1896	2000	C	-32.4		-62.2	-29.1	-16.2
559	ROSEG	CH92	1881	2000	C	-118	-4.1	-53.5	-53.7	-55.5
560	ROSSBODEN	CH105	1892	2000	C	-1.8	-0.1			
561	ROTFIRN NORD	CH69	1957	2000	C	-18.2	-9.2	-41.1	-1	-16.7
562	SALEINA	CH42	1880	1999	C	-32	-14	-54	-17	-8
563	SANKT ANNA	CH67	1882	2000	C		-7.8	-17.9	-7.8	
564	SARDONA	CH91	1897	2000	C		-0.8	-22.2	-1.4	-7.2

NR	GLACIER NAME	PSFG NR	FIRST	LAST	METHOD	VARIATIONS IN METRES				
			SURVEY			2001	2002	2003	2004	2005
565	SCALETTA	CH115	1999	2000	C	4.6		-15.5	-3.1	-3.3
566	SCHWARZ	CH62	1925	2000	C	-X	-6.4	-1.2	-20	-25.7
567	SCHWARZBERG	CH10	1909	2000	A	-20	-15	-12	-13	-19
568	SESVENNA	CH97	1957	2000	C	-8		-74.1	-6.8	
569	SEX ROUGE	CH47	1899	2000	C	62	-5.5	-6.4	3.1	-5.5
570	SILVRETTA	CH90	1957	2000	A		-10.9	-6.6	-5.8	-15.9
571	STEIN	CH53	1894	2000	C	-14	-18	-27	-32	-52
572	STEINLIMMI	CH54	1962	2000	C	-18	-18	-34.5	-8	-59.5
573	SULZ	CH79	1913	2000	C	-9.3		-16.5	1.5	0.5
574	SURETTA	CH87	1931	2000	C	103.2	-93.8	-8.2	-58.5	-54.6
575	TIATSCHA	CH96	1894	2000	C	13.2	-21.5	-15		
576	TIEFEN	CH66	1923	2000	C	-7.4	-15.3	-22.1	-6.8	-19.8
577	TRIENT	CH43	1880	2000	C	-30	-35	-50	-19	-35
578	TRIFT (GADMEN)	CH55	1892	2000	A	-58.1	-89.3	-152.1	-135.7	-215.8
579	TSANFLEURON	CH33	1885	2000	C	-30	-75	-13.5	-19	-37.5
580	TSCHIERVA	CH93	1943	2000	C	-46.7	-55.2	-48.8	-34	-34.3
581	TSCHINGEL	CH60	1894	2000	C	-5.2	-9.3	-7.8	-1.7	-3.2
582	TSEUDET	CH40	1891	1999	C	-9		-30.5		-54
583	TSIDJIORE NOUVE	CH28	1882	2000	C	-12	-52	-33	-22	-45
584	TURTMANN (WEST)	CH19	1886	2000	C	-1.4	-9.6	-126.9	-46.4	-17.4
585	UNT.GRINDELWALD	CH58	1880	2000		-X				
586	UNTERAAR	CH51	1880	2000	A	-40.1				
587	VAL TORTA	CH118	1971	2000	C	-0.3	-1.7	-4.8	-0.1	0
588	VALLEGGIA	CH117	1973	2000	C	-3.3	-1.8	-7.5	-1.2	-4.4
589	VALSOREY	CH39	1890	1999	C	-4		-51		-27
590	VERSTANKLA	CH89	1927	2000	C	-5.2	-24	-22	-3.3	-14.7
591	VORAB	CH85	1886	2000	C			-39.9		-27.4
592	WALLENBUR	CH71	1894	2000	C	-3.4	-4.8	-6.2	-6.6	-12
593	ZINAL	CH22	1892	2000	C	-5	-4	-4.3	-9	-8
	U.S.A.									
594	BOULDER	US2005	1965	1974	C			-225		
595	COLUMBIA (2057)	US2057	1986	1990	C	-12	-10	-8	-12	-22
596	DANIELS	US2052	1986	1990	C					-139
597	DEMING	US2009	1965	1974	C					-150
598	EASTON	US2008	1970	1974	C	-24	-15	-21	-10	-30
599	FOSS	US2053	2005		C					-230
600	ICE WORM	US2054	2005		C					-53
601	LOWER CURTIS	US2055	1986	1990	C	-7	-10	-15	-17	-31
602	LYNCH	US2056	2005		C					-42
603	RAINBOW	US2003	1970	1990	C	-9	-5	-20	-26	-20
604	WATSON	US2051	2003		C			-35		
605	YAWNING	US2050	2005		C					-24

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
VARIATION IN METRES	Variation in the position of the glacier front in horizontal projection expressed as the change in length between the surveys
Key to Symbols	+X : Glacier in advance -X : Glacier in retreat ST : Glacier stationary SN : Glacier front covered by snow

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
	BOLIVIA					
1	CHACALTAYA	BO5180	C	1999	26.09.2000	-7
2	ZONGO	BO5150	C	15.12.1999	27.10.2000	-12
	CHINA					
3	LAPATE NO.51	CN27	C	19.08.1999	20.08.2000	-4.8
	COLOMBIA					
4	ALFOMBRALES E	CO0013B	A	13.01.1945	10.02.1959	-50
			A	10.02.1959	11.01.1975	-50
			A	11.01.1975	10.12.1985	-80
			A	10.12.1985	19.01.1987	-20
5	AZUFRADO E	CO0005B	A	13.01.1945	10.02.1959	60
			A	10.02.1959	11.01.1975	-20
			A	11.01.1975	10.12.1985	-130
			A	10.12.1985	19.01.1987	ST
6	AZUFRADO W	CO0005A	A	13.01.1945	10.02.1959	-70
			A	10.02.1959	11.01.1975	-20
			A	11.01.1975	10.12.1985	-80
			A	10.12.1985	19.01.1987	ST
7	CENTRAL	CO32	D	1987	01.12.2000	-177
8	CERRO CON-CAVO (7)	CO		26.03.1986	25.03.1991	-157.4
				25.03.1991	22.01.1997	-87
				22.01.1997	20.01.1998	-34
9	CERRO CON-CAVO (8)	CO		26.03.1986	26.03.1991	-136.5
				26.03.1991	15.01.1997	-79.7
				15.01.1997	20.01.1998	-21
10	CERRO TOTI (B)	CO		22.01.1997	21.01.1998	-25.5
11	CERRO TOTI (C)	CO		22.01.1997	21.01.1998	-28
12	DESA S	CO		1961	1989	0
				1989	1995	-810
13	DESA SE	CO		1961	1989	-250
				1989	1995	-575
14	DESA WSW	CO		1961	1989	-1050
				1989	1995	-20
15	EL MAYOR	CO		1961	1965	6.9
				1965	1970	-4.7
				1970	1989	-112.4
				1989	1995	-0.2
16	EL OSO	CO		1961	1965	-33.3
				1965	1989	-136.7
				1989	1995	-221.7
			D	1987	2000	-370
17	EL VENADO	CO		1961	1970	-1.9
				1970	1995	-97
18	GUALI	CO3	D	1987	01.05.2000	-550
19	HOJALARGA 1	CO		21.02.1988	17.03.1991	-64
				17.03.1991	15.01.1997	-49.1
20	LA CABANA	CO7	A	10.02.1959	11.01.1975	-200
			A	11.01.1975	10.12.1985	-200
			A	10.12.1985	19.01.1987	-20
21	LA CONEJERA	CO33	D	1987	01.12.2000	-147
22	LA LISA	CO4	D	1987	01.05.2000	-530
23	LA PLAZUELA	CO6	A	13.01.1945	10.02.1959	-20
			A	10.02.1959	11.01.1975	-30
			A	10.12.1985	19.01.1987	-220
24	LAGUNA AZUL	CO26	D	01.01.1987	01.12.2000	-190
25	LAGUNILLAS	CO8	A	13.01.1945	10.02.1959	0
			A	10.02.1959	11.01.1975	0
			A	11.01.1975	10.12.1985	-50
			A	10.12.1985	19.01.1987	-10

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
26	LENGUA-SI 1	CO		29.03.1988	22.02.1989	-9
				22.02.1989	27.07.1991	-38
				24.02.1992	17.09.1992	-10
				17.09.1992	07.05.1993	-7
27	LENGUA-SI 2	CO		29.03.1988	14.04.1989	-8.5
				06.02.1990	14.11.1990	-13.1
				14.05.1991	27.07.1991	-8.5
				24.02.1992	17.09.1992	-27.7
				17.09.1992	07.05.1993	-16
				07.05.1993	23.09.1994	-13.7
28	LENGUA-SI 4 CEN	CO		07.02.1990	17.05.1991	-16
				27.07.1991	09.02.1996	-71.1
				09.02.1996	31.10.1999	-55.9
				31.10.1999	16.12.2000	-10
29	LENGUA-SI 4 DER	CO		22.02.1989	15.07.1989	-31.1
				15.07.1989	07.02.1990	-15.5
				16.11.1990	27.07.1991	-2.3
				25.07.1991	24.02.1992	-7.1
				24.02.1992	10.02.1996	-29.2
				09.02.1996	31.10.1999	-57
30	LENGUA-SI 4 IZQ	CO		27.07.1991	24.02.1992	-44.9
				17.09.1992	07.05.1993	-6.4
				07.05.1993	10.02.1996	-38.4
				10.02.1996	31.10.1999	-70.2
				31.10.1999	16.12.2000	-8.2
31	LENGUA-SI 5	CO		15.07.1989	07.02.1990	-6
				07.02.1990	27.07.1991	-27
				24.02.1992	17.09.1992	-20
				17.09.1992	07.05.1993	-23
32	LENGUA-SI 6	CO		22.02.1989	07.02.1990	-6
				07.02.1990	27.07.1991	-32
				27.07.1991	24.02.1992	-8
				17.09.1992	07.05.1993	-2
				07.05.1993	10.02.1996	-36
33	LENGUA-SI 7	CO		22.02.1989	07.02.1990	-8.5
				07.02.1990	27.07.1991	-20.5
				27.07.1991	24.02.1992	-9
34	LENGUA-SI 8	CO		18.02.1989	07.02.1990	-5.9
				08.06.1990	26.07.1991	-31.4
				26.07.1991	25.02.1992	-8.8
				20.09.1992	03.05.1993	-3
				03.05.1993	25.09.1994	-14
				25.09.1994	09.02.1996	-21.9
35	LENGUA-SI 8DER	CO		29.03.1988	22.02.1989	-19
				07.02.1990	27.07.1991	-23
				27.07.1991	24.02.1992	-7
				17.09.1992	07.05.1993	-4
36	LEONERA ALTA	CO9	A	13.01.1945	10.02.1959	-330
			A	10.02.1959	11.01.1975	-180
			A	11.01.1975	10.12.1985	-100
			A	10.12.1985	19.01.1987	-30
37	MOLINOS	CO2	D	1987	01.05.2000	-850
38	NEREIDAS	CO14	C	1958	06.03.1986	-644.5
			C	06.03.1986	05.05.1987	-40
			C	05.05.1987	18.03.1988	-50
			C	18.03.1988	27.12.1990	-150
			C	27.12.1990	09.05.1991	-50
			C	09.05.1991	20.06.1992	-80
				20.06.1992	1993	-X
				1993	1994	-X
			C	20.06.1992	21.09.1995	-260

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
			D	21.09.1995	01.05.2000	-850
39	PA3	CO		24.03.1986	21.02.1988	-67.7
				21.02.1988	19.03.1991	-83
				19.03.1991	15.01.1997	-68.1
				15.01.1997	18.01.1998	-51.3
40	PAB	CO		17.03.1991	19.01.1997	-68.1
				19.01.1997	18.01.1998	-72.5
41	PASO BELLAVISTA (A)	CO		22.01.1997	21.01.1998	-34.5
42	PULPITO DEL DIABLO	CO		24.03.1986	27.02.1988	-61.5
				27.02.1988	20.03.1991	-90
				20.03.1991	18.01.1997	-150
				18.01.1997	17.01.1998	-37.5
43	SECTOR NORTE	CO		1961	1989	140
				1989	1995	-56.7
44	TRIDENTE	CO12	D	1987	01.05.2000	-400
	ECUADOR					
45	ANTIZANA15ALPHA	EC1	C	26.01.2000	15.01.2001	18
	HEARD DONALD ISLAND					
46	ALLISON	HM1350		01.02.1947	1980	0
47	ANZAC PEAK	HM1020		01.02.1947	1980	-380
48	BAUDISSIN	HM105		01.02.1947	1980	0
49	BROWN	HM111		01.02.1947	1980	-600
			E	1990	23.11.2000	-350
50	CHALLENGER	HM1130		01.02.1947	1980	0
51	COMPTON 1	HM112		01.02.1947	1980	-1400
52	DOWNES 1	HM1150		01.02.1947	1980	0
53	EALEY 1	HM1170		01.02.1947	1980	-50
54	JACKA	HM0113A		01.02.1947	1980	-310
55	MARY-POWELL	HM1140		01.02.1947	1980	-350
56	MT DIXON	HM1010		01.02.1947	1980	-700
57	MT OLSEN	HM1040		01.02.1947	1980	-550
58	NARES	HM1120		01.02.1947	1980	0
59	STEPHENSON 1	HM110		01.02.1947	1980	-350
60	VAHSEL	HM106		01.02.1947	1980	0
61	WINSTON 1	HM109		01.02.1947	1980	-1400
	ICELAND					
62	BLAGNIPUJOKULL	IS	A	12.10.1997	03.10.1998	-25
			A	03.10.1998	10.10.1999	-27
			A	10.10.1999	07.10.2000	-1
63	HEINABERGSJOKULL	IS	A	1967	01.10.1990	-668
			A	01.10.1990	14.10.1992	91
			A	14.10.1992	07.11.1993	-45
			A	07.11.1993	05.11.1994	-55
			A	05.11.1994	17.10.1995	167
			A	17.10.1995	04.11.1996	-110
			A	04.11.1996	10.11.1997	7
			A	10.11.1997	12.11.1998	25
			A	12.11.1998	28.10.1999	-39
64	KIRKJUJOKULL	IS	A	12.10.1997	02.10.1998	-3
			A	02.10.1998	09.10.1999	-11
			A	09.10.1999	08.10.2000	-30
65	KOTLUJOKULL	IS	A	14.06.1993	28.10.1993	-1
			A	28.10.1993	10.11.1995	-20
			A	10.11.1995	12.10.1998	-16
66	LODMUNDARLOEKUL	IS108	A	1965	11.10.1997	-6
			A	11.10.1997	03.10.1998	-9
			A	03.10.1998	10.10.1999	-19
67	SKEIDARARJOKULL M	IS	A	03.11.1996	01.11.1997	-89

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
			A	01.11.1997	01.11.1998	-46
			A	01.11.1998	24.10.1999	-80
			A	24.10.1999	06.12.2000	-60
			A	01.11.1990	01.11.1991	800
	NEW ZEALAND					
68	ADAMS	NZ	A	21.03.1999	08.03.2000	+X
69	LEEB-LORNTY	NZ	A	15.03.1993	08.03.2000	+X
70	MATHAIAS	NZ	A		08.03.2000	-X
71	TEWAEWAE	NZ	A		08.03.2000	+X
	NORWAY					
72	BRIKSDALSBREEN	NO37110		1897	1899	-10
				1900	1901	-12
				1901	1902	-3
				1902	1903	-3
				1903	1904	-8
				1904	1905	16
				1905	1906	15
				1906	1907	5
				1907	1908	20
				1908	1909	8
				1909	1910	8
				1910	1911	-1
				1911	1912	-6
				1912	1913	-15
				1913	1914	-26
				1914	1915	-35
				1915	1916	-10
				1916	1917	-2
				1917	1918	-12
				1918	1919	-12
				1919	1920	-7
				1920	1921	-33
				1921	1922	0
				1922	1923	8
				1923	1924	34
				1924	1925	12
				1925	1926	3
				1926	1927	1
				1927	1928	2
				1928	1929	11
				1929	1930	-11
				1930	1931	2
				1931	1932	-3
				1932	1933	-9
				1933	1934	-11
				1934	1935	-25
				1935	1936	-39
				1936	1937	-28
				1937	1938	-34
				1938	1939	-43
				1939	1940	-48
				1940	1941	-41
				1941	1942	-39
				1942	1943	-45
				1943	1944	-37
				1944	1945	-37
				1945	1946	-60
				1946	1947	-62
				1947	1948	-80

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
				1948	1949	-48
				1949	1950	-78
				1950	1951	-37
				1951	1952	10
				1952	1953	5
				1953	1954	-14
				1954	1955	-9
				1955	1956	5
				1956	1957	8
				1957	1958	18
				1958	1959	10
				1959	1960	8
				1960	1961	4
				1961	1962	-19
				1962	1963	-11
				1963	1964	-6
				1964	1965	2
				1965	1966	2
				1966	1967	12
				1967	1968	11
				1968	1969	4
				1969	1970	-11
				1970	1971	-7
				1971	1972	-7
				1972	1973	-20
				1973	1974	13
				1974	1975	54
				1975	1976	40
				1976	1977	30
				1977	1978	4
				1978	1979	34
				1979	1980	24
				1980	1981	-9
				1981	1982	-7
				1982	1983	6
				1983	1984	-9
				1984	1985	-7
				1985	1986	-6
				1986	1987	-6
				1987	1988	29
				1988	1989	1
				1989	1990	24
				1990	1991	8
				1991	1992	28
				1992	1993	59
				1993	1994	61
				1994	1995	50
				1995	1996	44
				1996	1997	-2
				1997	1998	-3
				1998	1999	-2
				1999	2000	-37
73	HANSBREEN	NO12419	E	12.08.1990	08.07.2000	-135
	PERU					
74	BROGGI	PE3	C	17.12.1998	23.08.2000	-8.6
75	PASTORURI	PE8	C	24.11.1994	18.04.2000	-179.6
76	URUASHRAJU	PE5	C	13.10.1999	22.11.2000	-8.2
77	YANAMAREY	PE4	C	23.10.1999	15.11.2000	-5.7

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
	SOUTH GEORGIA					
78	COOK	GS	E	1882	1928	ST
			C	1928	1975	ST
			C	1975	1982	-25
79	HARKER	GS	E	1902	1914	-220
			E	1914	1927	250
			E	1926	1934	675
			C	1934	1954	-200
			A	1954	1957	-60
			A	1957	1974	230
			E	1974	1985	-X
80	HEANEY	GS	C	1928	1975	-160
			C	1975	1982	-140
			A	1982	1998	-320
81	HODGES	GS	C	1930	1955	-320
			C	1955	1974	-170
			C	1974	1982	-45
82	ROSS	GS	C	1882	1883	-1200
			C	1883	1902	1400
			C	1902	1922	-1100
			C	1922	1965	500
			A	1965	1976	225
			C	1976	1982	ST
	SPAIN					
83	ALBA	ES9010	A	23.09.1983	01.09.2000	-150
84	ANETO	ES9030	A	1946	1957	-130
			A	1957	23.09.1983	-150
			A	23.09.1983	01.09.2000	-40
85	BALAITUS SE	ES1030	A	1946	23.09.1983	0
			A	23.09.1983	01.09.2000	-180
86	BARRANCS	ES9040	A	1946	23.09.1983	-40
87	BRECHA LATOUR	ES1020	A	1946	23.09.1983	0
			A	23.09.1983	01.09.2000	-250
88	CLOT DE HOUNT	ES3010	A	1946	23.09.1983	-30
89	CORONAS	ES9080	A	1946	23.09.1983	-90
			A	23.09.1983	01.09.2000	-90
90	CREGUENA N	ES0907A	A	1946	23.09.1983	-75
			A	23.09.1983	01.09.2000	-150
91	CREGUENA S	ES0907B	A	1946	23.09.1983	-50
			A	23.09.1983	01.09.2000	-110
92	INFIERNO E	ES2020	A	1946	23.09.1983	0
			A	23.09.1983	01.09.2000	-220
93	INFIERNO W	ES0201A	A	1946	23.09.1983	-60
94	INFIERNO WW	ES0201B	A	1946	23.09.1983	30
			A	23.09.1983	01.09.2000	-300
95	LA PAUL	ES7020	A	1957	23.09.1983	-50
96	LAS FRONDELLAS	ES1010	A		23.09.1983	-40
97	LLARDANA	ES7010	A	1957	23.09.1983	-40
				23.09.1983	01.09.2000	-30
98	LLOSAS	ES9090	A	1946	23.09.1983	-100
			A	23.09.1983	01.09.2000	-220
99	LOS GEMELOS	ES7040	A	1957	23.09.1983	0
			A	23.09.1983	01.09.2000	0
100	MALADETA	ES9020	A	1957	23.09.1983	-100
			C	23.09.1983	08.08.2000	-90
101	PERDIDO INF	ES0502B	A	23.09.1983	01.09.2000	-10
102	PERDIDO SUP	ES0502A	A	23.09.1983	01.09.2000	-5
103	POSETS	ES7030	A	1957	23.09.1983	-80
104	PUNTA ZARRA	ES2040	A	1946	23.09.1983	5
105	SALENCAS	ES9060	A	1946	23.09.1983	-280

NR	GLACIER NAME	PSFG NR	METHOD	1ST SURVEY D M Y	2ND SURVEY D M Y	VARIATIONS IN METRES
			A	23.09.1983	01.09.2000	-300
106	TAPOU	ES0302A	A	23.09.1983	01.01.2000	-290
107	TEMPESTADES	ES9050	A	1946	23.09.1983	-85
			A	23.09.1983	01.09.2000	-290

WORLD GLACIER MONITORING SERVICE

MASS BALANCE STUDY RESULTS
SUMMARY DATA 2000-2005

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/measurement year
BW	Mean specific winter balance in mm water equivalent
BS	Mean specific summer balance in mm water equivalent
BN/BA	Mean specific net balance or annual balance in mm water equivalent
ELA	Altitude of equilibrium line or annual equilibrium line in metres 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

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
	ANTARCTICA										
1	BAHIA DEL DIABLO	AQ		2001	2002			-510	440	30	14.3
				2002	2003			-150	410	40	14.3
				2003	2004			-110	380	44	14.3
				2004	2005			-230	400	38	14.3
	ARGENTINA										
2	MARTIAL	AR131		2000	2001			785	1000	100	0.33
				2001	2002			-691	1050	45	
3	MARTIAL ESTE	AR	STR	26.03.2000	02.04.2001	969	-184	785	1045	100	0.093
			STR	21.04.2001	08.04.2002	581	-1263	-682	>1125	0	0.093
			STR	19.05.2002	25.04.2003	675	-877	-202	1095	40	0.093
			STR	01.06.2003	14.04.2004	720	-1976	-1318	>1180	0	0.093
			STR	01.04.2004	31.03.2005			-991	1140	13	0.093
	AUSTRIA										
4	GOLDBERG K.	AT0802B	FXD	01.10.2000	30.09.2001	1788	-2176	-388	2940	18	1.494
			FXD	01.10.2001	30.09.2002	1857	-2468	-612	>3100	20	1.494
			FXD	01.10.2002	30.09.2003	1734	-3540	-1806	>3100	0	1.494
			FXD	01.10.2003	30.09.2004	1737	-1600	137	2925	52	1.425
			FXD	01.10.2004	30.09.2005	1391	-1651	-260	2880	51	1.425
5	HINTEREIS FERNER	AT209	FXD	01.10.2000	30.09.2001			-173	2955	64	7.963
			FXD	01.10.2001	30.09.2002			-647	3050	51	7.906
			FXD	01.10.2002	30.09.2003			-1814	>3750	3	7.817
			FXD	01.10.2003	30.09.2004			-667	3185	32	7.554
			FXD	01.10.2004	30.09.2005			-1061	3225	29	7.47
6	JAMTAL F.	AT106	FXD	01.10.2000	30.09.2001	1418	-1480	-62	2780	61	3.654
			FXD	01.10.2001	30.09.2002	1530	-2220	-671	2910	28	3.62
			FXD	01.10.2002	30.09.2003	1293	-3520	-2229	>3200	0	3.458
			FXD	01.10.2003	30.09.2004	1330	-1560	-228	2870	40	3.458
			FXD	01.10.2004	30.09.2005	850	-1825	-975	>3200	15	3.54
7	KESSELWAND F.	AT226	FXD	01.10.2000	30.09.2001			525	3063	87	4.042
			FXD	01.10.2001	30.09.2002			17	3120	75	4.037
			FXD	01.10.2002	30.09.2003			-1546	>3550	0	3.938
			FXD	01.10.2003	30.09.2004			-189	3157	61	3.905
			FXD	01.10.2004	30.09.2005			-59	3136	66	3.9
8	KLEINFLEISS K.	AT801	FXD	01.10.2000	30.09.2001	1691	-1887	-195	2920	51	0.945
			FXD	01.10.2001	30.09.2002	1332	-2140	-808	3100	13	0.945
			FXD	01.10.2002	30.09.2003	1614	-3056	-1442	>3100	0	0.898
			FXD	01.10.2003	30.09.2004	1417	-1291	125	2820	75	0.872
			FXD	01.10.2004	30.09.2005	1143	-1254	-111	2850	63	0.872
9	PASTERZEN K.	AT704	FXD	1.10.2004	30.9.2005			-899	2920	60	17.71
10	SONNBLICK K.	AT0601A		18.10.2000	31.8.2001			-399	2840	40	1.502
				1.9.2001	15.9.2002			-485	2845	35	1.501
				16.9.2002	10.9.2003			-2870	3080	1	1.402
				11.9.2003	24.9.2004			8	2755	62	1.394
				25.9.2004	30.9.2005			-323	2810	44	1.393
11	VERNAGT FERNER	AT211	FXD	1.10.2000	30.9.2001	1139	-1363	-224	3128	47	8.68
			FXD	1.10.2001	30.9.2002	1013	-1279	-266	3122	53	8.68
			FXD	1.10.2002	30.9.2003	986	-3119	-2133	>3630	0	8.53
			FXD	1.10.2003	30.9.2004	891	-1298	-407	3205	34	8.36
			FXD	1.10.2004	30.9.2005	621	-1144	-523	3224	40	8.36
12	WURTEN K.	AT804	FXD	1.10.2000	30.9.2001	1790	-2090	-300	2985	33	0.972
			FXD	1.10.2001	30.9.2002	1399	-2365	-966	3020	4	0.972
			FXD	1.10.2002	30.9.2003	1732	-3909	-2177	3070	3	0.972
			FXD	1.10.2003	30.9.2004	1501	-1814	-313	2980	28	0.824
			FXD	1.10.2004	30.9.2005	1194	-1642	-448	3020	16	0.824
	BOLIVIA										
13	CHACALTAYA	BO5180	FXD	1.9.2000	31.8.2001	123	33	-350	>5451	0	0.044
			FXD	1.9.2001	31.8.2002	-11	-676	-1827	>5518	0	0.042

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
			FXD	1.9.2002	31.8.2003	-96	-674	-507	>5329	0	0.036
			FXD	1.9.2003	31.8.2004	-35	-513	-1822	>5599	0	0.027
			OTH	1.9.2004	31.8.2005			-2057	>5431	0	0.01
14	CHARQUINI SUR	BO	FXD	1.9.2002	1.9.2003			-884	5172	26	0.394
			FXD	1.9.2003	1.9.2004			-1486	5315	4	0.396
			FXD	1.9.2004	1.9.2005			-2499	>5393	0	0.381
15	ZONGO	BO5150	COM	1.9.2000	1.9.2001			557	5139	75	1.951
			COM	1.9.2001	1.9.2002			-58	5246	64	1.947
			COM	1.9.2002	1.9.2003			-86	5137	76	1.930
			COM	1.9.2003	1.9.2004			-521	5422	48	1.919
			COM	1.9.2004	1.9.2005			-1559	5515	37	1.885
	C.I.S.										
16	DJANKUAT	SU3010	STR	1.11.2000	28.9.2001			-620	3280	43	
			STR	28.9.2001	3.10.2002	2900	-2470	430	3110	43	2.737
			STR	3.10.2002	12.10.2003	2630	-2350	280	3130	43	2.737
			STR	12.10.2003	3.10.2004	3220	-2490	730	3070	43	2.737
			STR	3.10.2004	3.10.2005	3120	-2730	390	3080	43	2.737
17	GARABASHI	SU3031	STR	2000	2001	1120	-1870	-750	3920	42	
			STR	2001	2002	1370	-1110	260	3760	67	
			STR	2002	2003	1330	-1170	160	3810	61	
			STR	2003	2004	1330	-1080	250	3750	66	
			STR	2004	2005	1350	-1150	200	3750	66	
18	LEVIY AKTRU	SU7102	STR	4.9.2000	8.9.2001			-240	3240	58	
			STR	9.9.2001	6.9.2002			-370	3260	56	
			STR	7.9.2002	5.9.2003			-400	3260	56	
			STR	6.9.2003	7.9.2004			-260	3250	57	
			STR	8.9.2004	30.8.2005			40	3190	62	
19	MALIY AKTRU	SU7100	STR	6.9.2000	12.9.2001	630	-820	-190	3250	61	
			STR	13.9.2001	6.9.2002	520	-930	-410	3290	50	
			STR	7.9.2002	8.9.2003	500	-870	-370	3280	53	
			STR	9.9.2003	11.9.2004	650	-800	-150	3240	63	
			STR	12.9.2004	9.5.2005	710	-550	160	3200	72	
20	NO. 125 (VODOP.)	SU7105	STR	1.9.2000	24.8.2001	280	-420	-140	3230	69	
			STR	25.8.2001	27.8.2002	230	-520	-290	3250	66	
			STR	28.8.2002	31.8.2003	210	-530	-320	3260	64	
			STR	1.9.2003	29.8.2004	220	-440	-220	3250	66	
			STR	30.8.2004	25.8.2005	320	-260	60	3210	71	
21	TS.TUYUKSUYSKIY	SU5075	STR	25.9.2000	10.9.2001	643	-1198	-555	3820	38	2.534
			STR	10.9.2001	14.9.2002	740	-1042	-302	3820	35	2.534
			STR	14.9.2002	9.9.2003	556	-197	359	3750	52	2.534
			STR	9.9.2003	8.9.2004	580	-518	62	3790	42	2.626
			STR	8.9.2004	18.9.2005	735	-1075	-340	3785	48	2.525
	CANADA										
22	BABY GLACIER	CA205	COM		2001			-100			0.61
			COM		2002			293			0.61
			COM		2003			-334			0.61
			COM	1.9.2003	31.8.2005			-370			0.61
23	DEVON ICE CAP	CA0431		2000	2001	82	-641	-559	1570		
				2001	2002	104	-125	-21	1106		
				2002	2003	78	-216	-139	1229		
				2003	2004	81	-112	46	1090		
				2004	2005	133	-374	-262	1328		
24	HELM	CA855		2000	2001			-600	2010	23	
				2001	2002			-2544	>2150	0	
				2002	2003			-1895	>2150	0	
			STR	24.11.2003	24.9.2004			-1995	>2150	0	0.756
			STR	24.9.2004	3.10.2005			-2765	>2150	0	0.756
25	PEYTO	CA1640			2001			-920	2740	26	
					2002			-500	2688	37	11.45

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
					2003			-1370	>3190	0	11.45
			STR	16.9.2003	13.9.2004			-550	2680	29	11.45
			STR	13.9.2004	24.9.2005			-810	2730	21	11.45
26	PLACE	CA1660		2000	2001			-760	2170	22	
				2001	2002			-123	2070	38	
				2002	2003			-995	>2610	0	
			STR	23.9.2003	20.10.2004			-2210	>2610	0	3.174
			STR	20.10.2004	1.10.2005			-1295	2405	1	3.174
27	WHITE	CA2340	COM	2000	2001			-151	1167	51	39.38
			COM	2001	2002			32	848	80	39.38
			COM	2002	2003			-106	1120	58	39.38
			COM	2003	2004			37	921	75	39.38
			COM	2004	2005			-612	1291	33	39.38
	CHILE										
28	ECHAURREN NORT.	CL0001B	COM	1.4.2000	31.3.2001	4660	-2850	1810			
			COM	1.4.2001	31.3.2002	3400	-3320	80			
			COM	1.4.2002	31.3.2003	4830	-2770	2060			
			COM	1.4.2003	31.3.2004	2000	-2570	-570			
				1.4.2004	31.3.2005	3300	-4150	-850			
	CHINA										
29	URUMQIHE E-BR.	CN1	FXD	30.8.2000	30.8.2001				4115	35	
			FXD	30.8.2001	1.9.2002				4140	31	
			FXD	1.9.2002	30.8.2003				3789	45	
			FXD	30.8.2003	31.8.2004			-706	4066	42	1.101
			FXD	31.8.2004	30.8.2005	89	-525	-480	4096	48	1.101
30	URUMQIHE S.NO.1	CN10	FXD	30.8.2000	30.8.2001	34	-525	-840	4128	38	
			FXD	30.8.2001	1.9.2002	85	-573	-834	4143	35	
			FXD	1.9.2002	30.8.2003	103	-328	-384	3862	48	
			FXD	30.8.2003	31.8.2004			-755	4074	41	
			FXD	31.8.2004	30.8.2005			-488	4123	51	
31	URUMQIHE W-BR.	CN2	FXD	30.8.2000	30.8.2001	92	-1251	-1159	4153	44	0.607
			FXD	30.8.2001	1.9.2002	213	-1477	-1264	4141	42	0.607
			FXD	1.9.2002	30.8.2003	255	-877	-622	3994	52	0.607
			FXD	30.8.2003	31.8.2004	-37	-1353	-844	4089	40	0.607
			FXD	31.8.2004	30.8.2005	152	-980	-503	4173	54	0.607
	ECUADOR										
32	ANTIZANA15ALPHA	EC1	FXD	2000	2001			-598	5085	60	0.34
			FXD	2001	2002			-769	5145	50	0.313
			FXD	2002	2003			-1363	5225	42	0.303
			FXD	2003	2004			-572	5145	56	0.298
			FXD	2004	2005			-789	5150	55	0.294
	FRANCE										
33	ARGENTIERE	FR00002	STR	4.10.2000	2.11.2001			660	2698		
			STR	2.11.2001	17.10.2002			-1330	2888		
			STR	17.10.2002	2.10.2003			-2090	2930		
			STR	2.10.2003	21.10.2004			-1310	2850		
			STR	21.10.2004	30.9.2005			-1930	2930		
34	GEBROULAZ	FR00009	STR	20.9.2000	28.8.2001			460	2913		
			STR	28.8.2001	9.10.2002			-400	3044		
			STR	9.10.2002	25.9.2003			-1650	3250		
			STR	25.9.2003	9.10.2004			-790	3100		
			STR	9.10.2004	20.9.2005			-1510	3200		
35	OSSOUE	FR	STR	1.10.2001	3.10.2002	2080	-2930	-850			
			STR	3.10.2002	3.10.2003	3230	-4110	-880			
			STR	3.10.2003	10.10.2004	3550	-4770	-1220	3200	9	
			STR	10.10.2004	25.9.2005	2580	-5070	-2490	3200	9	
36	SAINT SORLIN	FR00015	STR	22.9.2000	6.9.2001			160	2837		

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
			STR	6.9.2001	26.9.2002			-1690	3003		
			STR	26.9.2002	24.9.2003			-2950	3300		
			STR	24.9.2003	5.10.2004			-2450	3230		
			STR	5.10.2004	11.10.2005			-2500	3200		
37	SARENNES	FR00029	STR	19.10.2000	5.10.2001	2420	-2030	390			
			STR	5.10.2001	16.10.2002	1040	-3360	-2320			
			STR	16.10.2002	29.9.2003	1850	-5030	-3140			
			STR	29.9.2003	11.10.2004	1660	-4480	-2820			
			STR	11.10.2004	24.10.2005	1210	-4490	-3280			
	ICELAND										
38	BREIDAMJOK.E.B	IS1126B	STR	2000	2001	1190	-2290	-1100	1150	51	995
			STR	2001	2002	1397	-2260	-863	1110	53	995
			STR	2002	2003	1790	-2565	-775	1050	60	995
			STR	2003	2004	1160	-2490	-1330	1175	50	995
			STR	2004	2005	939	-2469	-1530	1230	38	995
39	BRUARJOKULL	IS2400	STR	2000	2001	1670	-1530	140	1192	66	1695
			STR	2001	2002	1533	-1481	52	1200	59	1695
			STR	2002	2003	1842	-2410	-568	1258	52	1695
			STR	2003	2004	1510	-2310	-800	1280	49	1695
			STR	2004	2005	1042	-2599	-1557	1445	24	1695
40	DYNGJUJOKULL	IS2600	STR	2004	2005	1127	-2454	-1327	1540	37	1040
41	EYJABAKKAJOK.	IS2300	STR	2000	2001	2176	-1890	286	1040	60	119
			STR	2001	2002	1616	-2709	-1093	1157	47	119
			STR	2002	2003	2276	-3370	-1094	1205	39	119
			STR	2003	2004	1580	-2890	-1310	1180	37	119
			STR	2004	2005	1106	-3308	-2202	1255	25	119
42	HOFSJOKULL E	IS0510B		2000	2001			-1550	1385	30	
				2001	2002			-730	1250	43	235.9
				2002	2003			-1310	1320	35	235.9
				2003	2004			-1630	1300	37	
				2004	2005			-20	1136	54	
43	HOFSJOKULL N	IS0510A		2000	2001			-580	1340	40	
				2001	2002			-1000	1340	38	81.5
				2002	2003			-980	1380	33	81.5
				2003	2004			-1360	1414	30	
				2004	2005			-430	1323	42	
44	HOFSJOKULL SW	IS0510C		2000	2001			-1890	1385	20	
				2001	2002			-640	1320	51	51.5
				2002	2003			-1170	1340	47	51.5
				2003	2004			-1500	1355	24	
				2004	2005			-580	1319	51	
45	KOELDUKVISLARJ.	IS2700	STR	2000	2001	898	-1716	-818	1480	47	313
			STR	2001	2002	1364	-1591	-227	1370	56	313
			STR	2002	2003	1644	-2719	-1075	1480	52	313
			STR	2003	2004	1401	-2177	-776	1454	46	313
			STR	2004	2005	1225	-1852	-627	1470	46	313
46	LANGJOKULL S. D.	IS	STR	2000	2001	1279	-2550	-1271	1130	28	925
			STR	2001	2002	1566	-3222	-1656	1120	28	925
			STR	2002	2003	2105	-4051	-1946	1130	23	925
			STR	2003	2004	1789	-3276	-1487	1130	33	925
			STR	2004	2005	1617	-2511	-894	1060	41	925
47	TUNGNAARJOKULL	IS2214	STR	2000	2001	1065	-2694	-1629	1310	44	352
			STR	2001	2002	1418	-2694	-1276	1255	35	352
			STR	2002	2003	1989	-3209	-1220	1290	45	352
			STR	2003	2004	1243	-2942	-1699	1290	40	352
			STR	2004	2005	1177	-2934	-1757	1320	38	352
	INDIA										
48	CHHOTA SHIGRI	IN		4.10.2002	4.10.2003			-1416	5170	31	15.72
				4.10.2003	22.9.2004			-1227	5165	31	15.72

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
				22.9.2004	3.10.2005			144	4855	74	15.72
49	HAMTAH	IN	FXD	1.8.2001	30.9.2001			-1654		8	3.462
			FXD	1.7.2002	30.9.2002			-1221		11	3.462
			FXD	1.7.2003	30.9.2003			-1621		11	3.462
			FXD	1.7.2004	30.9.2004			-1857		7	3.458
			FXD	1.7.2005	30.9.2005			-1856			
	ITALY										
50	CALDERONE	IT1006	COM	30.09.2000	28.9.2001			-511	2730	22	0.05
			COM	28.09.2001	3.10.2002			-1847	>2830	0	0.033
			COM	3.10.2002	3.10.2003			-264	2730	21	0.033
			COM	3.10.2003	8.10.2004			252	2630	100	0.033
			COM	8.10.2004	30.9.2005			-194	2730	21	0.033
51	CARESER	IT701	FXD	1.10.2000	30.9.2001			-250	3170	12	
			FXD	1.10.2001	30.9.2002			-1149	3250	1	2.829
			FXD	1.10.2002	30.9.2003			-3317	>3700	0	2.829
			FXD	1.10.2003	30.9.2004			-1562	>3430	0	2.829
			FXD	1.10.2004	30.9.2005			-2005	>3391	0	2.829
52	CIARDONEY	IT81	COM	5.9.2000	13.9.2001	2000	-1840	160	2900	75	0.83
			COM	13.9.2001	13.9.2002	590	-990	-400	3070	30	0.83
			COM	13.9.2002	17.9.2003	810	-3810	-3000	>3150	0	0.83
			COM	17.9.2003	8.9.2004	1170	-2230	-1060	>3150	0	0.83
			COM	8.9.2004	15.9.2005	770	-3000	-2230	>3150	0	0.83
53	FONTANA BIANCA	IT713	FXD	1.10.2000	1.10.2001	2206	-1811	395	3020	95	0.612
			FXD	2.10.2001	28.9.2002	784	-1219	-435	>3355	10	0.612
			FXD	29.9.2002	3.10.2003	1115	-4065	-2950	>3355	0	0.612
			FXD	4.10.2003	30.9.2004	983	-1977	-994	>3355	0	0.550
			FXD	1.10.2004	30.9.2005	744	-2215	-1471	>3355	0	0.538
54	LUNGA (VED.)	IT733	FXD	1.10.2003	2.10.2004	1083	-2607	-1524	>3390	0	2.03
			FXD	3.10.2004	1.10.2005	772	-2014	-1233	>3390	0	1.86
55	MALAVALLE	IT875		13.9.2001	14.9.2002			-909	3042	39	7.198
				14.9.2002	20.9.2003			-1461	3120	26	7.198
				20.9.2003	18.9.2004			-208	2990	47	7.198
				18.9.2004	24.9.2005	967	-1767	-800	3036	37	7.198
56	PENDENTE	IT876		16.9.2000	15.9.2001			48	2801	61	1.067
				15.9.2001	16.9.2002			-1294	>3100	0	1.067
				16.9.2002	20.9.2003			-2078	>3100	0	1.067
				20.9.2003	19.9.2004			-427	2935	9	1.067
				19.9.2004	24.9.2005	1563	-2526	-963	2985	2	1.067
	JAPAN										
57	HAMAGURI YUKI	JP1	FXD	5.10.2000	8.10.2001	9008	-11333	-2324			0.003
			FXD	8.10.2001	13.10.2002	11253	-11662	-409			0.002
			FXD	13.10.2002	14.10.2003	12116	-11193	923			0.004
			FXD	14.10.2003	1.10.2004	8247	-9443	-1196			0.002
			FXD	1.10.2004	3.10.2005	11009	-11190	-181			0.002
	NEW ZEALAND										
58	BREWSTER	NZ	COM	21.3.2004	21.3.2005	2979	-1838	1141	1810	88	2.542
	NORWAY										
59	AALFOTBREEN	NO36204		2000	2001	1858	-3951	-2093	>1382	0	4.497
				2001	2002	3776	-5306	-1530	>1382	0	4.497
				2002	2003	2523	-5025	-2502	>1382	0	4.497
				2003	2004	3325	-3425	-100	1225	53	4.497
				2004	2005	4988	-4320	668	1135	78	4.497
60	AUSTDALSBREEN	NO37323		2000	2001			-1620	>1757	0	
				2001	2002	1910	-3920	-2010	>1757	0	11.84
				2002	2003	1600	-3940	-2340	>1757	0	11.84
				2003	2004	1600	-2560	-960	1495	46	11.84
				2004	2005	2850	-2660	190	1385	78	11.84

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM^2
61	AUS. BROEGGERBR.	NO15504		2000	2001	600	-1080	-480	442	7	
				2001	2002			-580	528	5	
				2002	2003			-900	281	1	
				2003	2004			-1120	>695	0	
				2004	2005			-1000	>558	0	
62	BREIDALBLIKKB.	NO		2002	2003	2080	-4350	-2260	>1659	0	3.61
				2003	2004	2210	-3160	-940	1605	17	3.61
				2004	2005	3090	-3370	-280	1500	48	3.61
63	ENGABREEN	NO67011		2000	2001	1049	-2579	-1530	>1594	0	38.03
				2001	2002	2903	-3460	-557	1200	54	39.55
				2002	2003	2413	-2997	-584	1195	55	39.55
				2003	2004	2916	-2099	817	1040	83	39.55
				2004	2005	3313	-2416	897	1060	80	39.55
64	GRAAFJELLSBREA	NO		2002	2003	1900	-4070	-2170	>1659	0	8.94
				2003	2004	2040	-2850	-820	1565	24	8.94
				2004	2005	3160	-3150	10	1460	67	8.94
65	GRAASUBREEN	NO547		2000	2001	804	-780	24	2070	45	2.253
				2001	2002	634	-2049	-1415	>2290	0	2.253
				2002	2003	445	-1840	-1394	>2290	0	2.253
				2003	2004	476	-968	-492	2210	7	2.253
				2004	2005	833	-1326	-493	2180	13	2.253
66	HANSBREEN	NO12419	FXD	28.10.2000	10.10.2001	776	-1876	-1100	>500	0	56.76
			FXD	10.10.2001	16.10.2002	965	-1572	-606	380	25	56.76
			FXD	16.10.2002	16.10.2003	689	-1258	-569	380	25	56.76
			FXD	16.10.2003	3.10.2004	906	-1483	-577	390	25	56.76
			FXD	3.10.2004	7.9.2005	1231	-1184	47	250	65	56.76
67	HANSEBREEN	NO36206		2000	2001			-2720	>1327	0	
				2001	2002	3510	-5440	-1930	>1327	0	3.06
				2002	2003	2450	-5120	-2670	>1327	0	3.06
				2003	2004	2870	-3380	-500	1220	31	3.06
				2004	2005	4520	-4610	-90	1150	53	3.06
68	HARBARDSBREEN	NO30704		2000	2001			-1110	>1960	0	
69	HARDANGERJOEK.	NO22303		2000	2001	1031	-1876	-845	1760	42	17.117
				2001	2002	2388	-3097	-708	1750	47	17.117
				2002	2003	1331	-2694	-1364	>1865	0	17.117
				2003	2004	1886	-1806	80	1670	75	17.117
				2004	2005	2791	-2068	723	1590	84	17.117
70	HELLSTUGUBREEN	NO511		2000	2001	847	-1211	-364	1910	48	3.028
				2001	2002	957	-2372	-1415	2080	7	3.028
				2002	2003	706	-2234	-1528	>2200	0	2.897
				2003	2004	649	-1492	-843	1980	23	3.028
				2004	2005	1343	-1630	-287	1930	39	3.028
71	IRENEBREEN	NO15402	FXD	2001	2002	647	-1260	-613	380	29	4.3
			FXD	2002	2003	481	-1111	-630	420	25	4.3
			FXD	2003	2004	551	-1156	-605	405	27	
			FXD	2004	2005	409	-1271	-862	480	10	4.2
72	KONGSVEGEN	NO15510		2000	2001	590	-1080	-480	653	13	
				2001	2002			-220	589	31	
				2002	2003			-350	608	25	
				2003	2004			-740	703	5	
				2004	2005			-440	631	19	
73	LANGFJORDJOEK.	NO85008		2000	2001	1360	-3640	-2280	>1050	0	
				2001	2002	2190	-3730	-1540	>1050	0	3.65
				2002	2003	2440	-3510	-1070	>1050	0	3.65
				2003	2004	1690	-3610	-1920	>1050	0	3.65
				2004	2005	1800	-3140	-1250	940	28	3.65
74	MIDTRE LOVEBREEN	NO15506		2000	2001	620	-950	-330	403	18	
				2001	2002			-520	436	9	
				2002	2003			-790	517	1	
				2003	2004			-970	>571	0	
				2004	2005			-740	467	5	

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
75	MIDTDALSBREEN	NO4302		2000	2001			-640	1790	34	
76	NIGARDSBREEN	NO31014		2000	2001	1754	-1972	-219	1560	64	47.82
				2001	2002	2411	-3299	-888	1715	25	47.82
				2002	2003	1563	-2722	-1159	>1960	0	47.82
				2003	2004	1972	-2014	-43	1530	70	47.82
				2004	2005	2799	-1702	1098	1395	87	47.82
77	RUNDVASSBREEN	NO		2001	2002	2140	-3190	-1050	1320	23	11.6
				2002	2003	1880	-2950	-1070	1360	28	11.6
				2003	2004	1950	-2160	-210	1260	31	11.6
78	STORBREEN	NO541		2000	2001	1045	-1615	-570	1845	24	5.35
				2001	2002	1086	-2872	-1786	>2075	0	5.35
				2002	2003	1110	-2676	-1566	2025	2	5.35
				2003	2004	1006	-1591	-585	1855	22	5.35
				2004	2005	1830	-1892	-63	1795	43	5.35
79	STORGLOMBREEN	NO67313		2000	2001			-1760	>1580	0	
				2001	2002	2330	-3580	-1250	>1580	0	62.4
				2002	2003	2180	-3280	-1100	>1580	0	62.4
				2003	2004	2260	-2140	110	1075	78	62.4
				2004	2005	2740	-2410	330	1060	79	62.4
80	WALDEMARBREEN	NO15403	FXD	2000	2001	360	-1127	-767	500	1	2.66
			FXD	2001	2002	632	-1146	-514	390	20	
			FXD	2002	2003	454	-1181	-727	430	14	2.62
			FXD	2003	2004	496	-1137	-641	400	21	
			FXD	2004	2005	434	-1156	-722	429	15	2.59
	PERU										
81	ARTESONRAJU	PE3	FXD	2004	2005			-1548	5015	56	3.25
82	YANAMAREY	PE4	FXD	2004	2005			-1962	4921	32	0.41
	SPAIN										
83	MALADETA	ES9020	FXD	5.6.2001	13.9.2001	2448	-1945	502	3025	69	0.377
			FXD	11.6.2002	27.9.2002	1776	-2587	-811	3142	10	0.366
			FXD	9.6.2003	18.9.2003	3103	-4205	-1102	>3200	0	0.355
			FXD	10.6.2004	31.8.2004	2446	-3962	-1516	>3200	0	0.345
			FXD	26.5.2005	2.9.2005	1759	-3238	-1479	>3150	0	0.328
	SWEDEN										
84	MARMAGLACIAER.	SE799		2000	2001	770	-1180	-410	1621	24	3.957
				2001	2002	1170	-1830	-660	1643	15	3.965
				2002	2003	930	-2350	-1420	1663	6	3.965
				2003	2004	1290	-1870	-580			3.965
				2004	2005	1110	-1900	-790			3.965
85	RABOTS GLACIAER	SE785		2000	2001	520	-1280	-760	1530	12	3.938
				2001	2002	1190	-2070	-879	1508	14	3.802
				2002	2003	830	-2270	-1440	1720	1	3.938
				2004	2005	1150	-2320	-1170			3.946
86	RIUKOJIETNA	SE790		2000	2001	590	-2320	-1730	>1460	0	4.246
				2001	2002	1390	-3220	-1830	>1460	0	4.648
				2002	2003	1230	-3010	-1780	>1460	0	4.168
				2004	2005	1330	-1680	-350			4.651
87	STORGLACIAEREN	SE788		2000	2001	1140	-1840	-700	1530	30	3.242
				2001	2002	1750	-2580	-830	1496	37	3.212
				2002	2003	1380	-2480	-1040	1582	29	3.212
				2003	2004			-120			
				2004	2005	1640	-1720	-70			3.211
88	TARFALAGL	SE791		2000	2001	790	-1160	-370			1.002
				2003	2004	1660	-2070	-410			1.006
				2004	2005	1370	-2300	-920			1.006

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
	SWITZERLAND										
89	BASODINO	CH104	FXD	25.10.2000	8.9.2001	3015	-2423	591	2765	76	2.28
				8.9.2001	28.9.2002	1676	-2031	-356	2880	48	2.28
				28.9.2002	22.9.2003	1601	-3643	-2043	>3300	0	2.28
				22.9.2003	3.10.2004	1702		-490	2950	33	
				3.10.2004	16.9.2005	1369		-1172	3100	5	
90	FINDELEN	CH16	COM	28.10.2004	17.10.2005			-200	3200	62	15.3
91	GRIES	CH3	FXD	12.9.2000	1.10.2001	2130		-50	2897	57	6.194
				1.10.2001	13.9.2002	1010		-600	2975	45	
				13.9.2002	20.9.2003	1700		-2630	>3400	0	
				20.9.2003	18.9.2004	1370		-1330	>3400	0	
				18.9.2004	14.9.2005	1190		-1670	3153	4	
92	SILVRETTA	CH90	FXD	12.9.2000	12.10.2001			860	2661	78	3.009
				12.10.2001	13.9.2002			-240	2809	45	3.009
				13.9.2002	22.9.2003			-1674	3019	4	3.009
				22.9.2003	21.9.2004	1713		119	2738	62	
				21.9.2004	24.9.2005	1264		-651	2835	45	
	U.S.A										
93	COLUMBIA (2057)	US2057		2000	2001			-1520			
				2001	2002			600		86	0.91
				2002	2003			-1170		23	0.91
				2003	2004			-1830			
				2004	2005			-3210			
94	DANIELS	US2052		2000	2001			-1750			
				2001	2002			-180		64	0.44
				2002	2003			-1520		21	0.41
				2003	2004			-2130			
				2004	2005			-2900			
95	EASTON	US2008		2000	2001			-1930			
				2001	2002			180		74	2.92
				2002	2003			-980		46	2.91
				2003	2004			-1060			
				2004	2005			-2450			
96	EMMONS	US2022		2002	2003			-2822	3425	11	11.6
97	FOSS	US2053		2000	2001			-1920			
				2001	2002			100		70	0.38
				2002	2003			-1350		25	0.36
				2003	2004			-1940			
				2004	2005			-3120			
98	GULKANA	US200		2000	2001			-690	1791	59	
				2001	2002			-1060	1833	53	
				2002	2003			-20	1718	67	
				2003	2004			-2290			
			COM	2004	2005	1730	-1990	-260	1758	63	
99	ICE WORM	US2054		2000	2001			-2150			
				2001	2002			50		72	0.13
				2002	2003			-1400		0	0.13
				2003	2004			-2000			
				2004	2005			-2850			
100	LEMON CREEK	US		2000	2001			400			
				2001	2002			-250			
				2002	2003			-1900			
				2003	2004			-650	1100	59	
				2004	2005			-470	1080	61	
101	LOWER CURTIS	US2055		2000	2001			-1880			
				2001	2002			130		68	0.84
				2002	2003			-1250		55	0.83
				2003	2004			-1510			
				2004	2005			-2750			
102	LYNCH	US2056		2000	2001			-1820			

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
				2001	2002			-130		65	0.72
				2002	2003			-1200		38	0.72
				2003	2004			-1980			
				2004	2005			-2620			
103	NISQUALLY	US2027		2002	2003			-2397	4075	11	4.36
104	NOISY CREEK	US2078	COM	25.9.2001	23.9.2002			462	1750	83	0.54
				2002	2003			-952	>1920	0	0.54
				2003	2004			-1575	>2043	0	
			COM	28.9.2004	26.9.2005			-2410	>2100	0	
105	NORTH KLAWATTI	US2076		2001	2002			224	2100	72	1.46
				2002	2003			-1367	>2400	0	1.46
				2003	2004			-1272	2300	19	
			COM	27.9.2004	26.9.2005			-2060	2360	3	
106	RAINBOW	US2003		2000	2001			-1710			
				2001	2002			120		73	1.58
				2002	2003			-980		45	1.56
				2003	2004			-1670			
				2004	2005			-2650			
107	SANDALEE	US2079		2001	2002			752	2200	9	0.2
				2002	2003			-1155	>2350	0	0.2
				2003	2004			-1232	>2330	0	
			COM	27.9.2004	28.9.2005			-2293	>2330	0	
108	SHOLES	US		2000	2001			-1830			
				2001	2002			210			
				2002	2003			-1120			
				2003	2004			-1860			
				2004	2005			-2840			
109	SILVER	US2077		2001	2002			-147	2340	54	0.49
				2002	2003			-1421	2400	37	0.49
				2003	2004			-563	2435	14	
			COM	29.9.2004	26.9.2005			-1490	2555	8	
110	SOUTH CASCADE	US2013		2000	2001			-1570	>2125	0	
				2001	2002			550	1820	84	1.92
				2002	2003			-2100	>2125	7	1.89
				2003	2004			-1650			
			COM	15.10.2004	19.10.2005	1970	-4420	-2450	>2125	5	
111	WOLVERINE	US411		2000	2001			450	1080	73	
				2001	2002			-690	1193	62	
				2002	2003			-340	1176	63	
				2003	2004			-2280			
112	YAWNING	US2050		2000	2001			-1940			
				2001	2002			260		77	0.28
				2002	2003			-1850		10	0.28
				2003	2004			-1780			
				2004	2005			-3020			

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/measurement year
BW	Mean specific winter balance in mm water equivalent
BS	Mean specific summer balance in mm water equivalent
BN/BA	Mean specific net balance or annual balance in mm water equivalent
ELA	Altitude of equilibrium line or annual equilibrium line in metres 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

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
	AUSTRIA										
1	HINTEREIS FERNER	AT209	FXD	01.10.1999	30.09.2000			-633	3050	48	8.11
2	JAMTAL F.	AT106	FXD	01.10.1999	30.09.2000	1550	-1631	-80	2765	62	3.67
3	KESSELWAND F.	AT226	FXD	01.10.1999	30.09.2000			140	3120	74	4.16
4	VERNAGT FERNER	AT211	FXD	01.10.1964	30.09.1965			751	2946	92	9.52
			FXD	01.10.1965	30.09.1966	1570	-938	632	2940	93	9.52
			FXD	01.10.1966	30.09.1967	1292	-1209	83	3015	70	9.52
			FXD	01.10.1967	30.09.1968	677	-376	301	2995	86	9.52
			FXD	01.10.1968	30.09.1969	616	-923	-307	3153	56	9.46
			FXD	01.10.1969	30.09.1970	916	-1140	-224	3113	61	9.46
			FXD	01.10.1970	30.09.1971	761	-1185	-424	3155	39	9.46
			FXD	01.10.1971	30.09.1972	878	-741	137	3028	79	9.46
			FXD	01.10.1972	30.09.1973	643	-1103	-460	3185	43	9.30
			FXD	01.10.1973	30.09.1974	851	-621	230	2999	81	9.30
			FXD	01.10.1974	30.09.1975	1131	-960	171	3025	80	9.30
			FXD	01.10.1975	30.09.1976	613	-563	50	3036	74	9.30
			FXD	01.10.1976	30.09.1977	1190	-838	352	2984	88	9.30
			FXD	01.10.1977	30.09.1978	985	-697	288	3004	84	9.55
			FXD	01.10.1978	30.09.1979	993	-949	44	3059	73	9.55
			FXD	01.10.1979	30.09.1980	868	-728	140	3027	77	9.55
			FXD	01.10.1980	30.09.1981	936	-991	-55	3101	72	9.55
			FXD	01.10.1981	30.09.1982	1313	-2158	-845	3418	24	9.35
			FXD	01.10.1982	30.09.1983	1081	-1618	-537	3304	25	9.35
			FXD	01.10.1983	30.09.1984	870	-850	20	3063	71	9.34
			FXD	01.10.1984	30.09.1985	1410	-1522	-112	3102	61	9.34
			FXD	01.10.1985	30.09.1986	870	-1678	-808	3291	18	9.34
			FXD	01.10.1986	30.09.1987	988	-1278	-290	3143	55	9.31
			FXD	01.10.1987	30.09.1988	899	-1396	-497	3230	39	9.09
			FXD	01.10.1988	30.09.1989	949	-1261	-312	3170	50	9.09
			FXD	01.10.1989	30.09.1990	855	-1423	-568	3283	32	9.09
			FXD	01.10.1990	30.09.1991	912	-1991	-1079	>3630	8	9.09
			FXD	01.10.1991	30.09.1992	947	-1805	-858	3268	22	9.09
			FXD	01.10.1992	30.09.1993	895	-1367	-472	3225	37	9.09
			FXD	01.10.1993	30.09.1994	1031	-2059	-1028	>3630	22	9.09
			FXD	01.10.1994	30.09.1995	979	-1377	-398	3226	39	9.09
			FXD	01.10.1995	30.09.1996	486	-899	-413	3225	40	9.09
			FXD	01.10.1996	30.09.1997	928	-1415	-487	3220	41	9.07
			FXD	01.10.1997	30.09.1998	807	-1810	-1003	3280	30	9.07
			FXD	01.10.1998	30.09.1999	1116	-1224	-108	3097	56	8.68
			FXD	01.10.1999	30.09.2000	1079	-1366	-287	3123	48	8.68
	BOLIVIA										
5	CHACALTAYA	BO5180	FXD	01.09.1999	31.08.2000	107	-590	-852	>5383	0	0.04
6	ZONGO	BO5150	COM	01.09.1999	01.09.2000			77	5213	66	1.96
	CANADA										
7	BABY GLACIER	CA205	COM	1989	1990			-313			0.61
			COM	1990	1991			-143			0.61
			COM	1991	1992			-71			0.61
			COM		1993			-594			0.61
			COM		1994			-153			0.61
			COM		1995			-353			0.61
			COM		1996			165			0.61
			COM		1997			-126			0.61
			COM		1998			-21			0.61
			COM		1999			-925			0.61
			COM		2000			-560			0.61
	ECUADOR										
8	ANTIZANA15ALPHA	EC1	FXD	1999	2000			394	4980	80	0.35

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
	FRANCE										
9	ARGENTIERE	FR00002	STR	21.10.1975	17.09.1976			-1232			
			STR	17.09.1976	19.09.1977			635			
			STR	19.09.1977	11.09.1978			1107			
			STR	11.09.1978	16.10.1979			17			
			STR	16.10.1979	07.10.1980			783			
			STR	07.10.1980	30.09.1981			-336			
			STR	30.09.1981	10.09.1982			-186			
			STR	10.09.1982	05.09.1983			-241			
			STR	05.09.1983	14.09.1984			81			
			STR	14.09.1984	10.09.1985			615			
			STR	10.09.1985	26.09.1986			-1029			
			STR	26.09.1986	09.09.1987			258			
			STR	09.09.1987	20.09.1988			-748			
			STR	20.09.1988	07.09.1989			-737			
			STR	07.09.1989	14.09.1990			-1341			
			STR	14.09.1990	12.09.1991			-1290			
			STR	12.09.1991	09.09.1992			-974			
			STR	09.09.1992	09.09.1993			-170			
			STR	09.09.1993	06.09.1994			-892			
			STR	06.09.1994	05.09.1995			692			
			STR	05.09.1995	10.09.1996			-399			
			STR	10.09.1996	10.10.1997			-628			
			STR	10.10.1997	10.09.1998			-1419			
			STR	10.09.1998	08.09.1999			-319			
			STR	08.09.1999	04.10.2000			-1308			
10	GEBROULAZ	FR00009	STR	1994	1995			500			
			STR	1995	1996			-500			
			STR	1996	1997			-210			
			STR	1997	1998			-1540			
			STR	1998	1999			-290			
			STR	1999	2000			-170			
	ITALY										
11	CIARDONEY	IT81	COM	07.10.1999	05.09.2000	760	-1990	-1230	>3150	0	0.83
12	FONTANA BIANCA	IT713	FXD	1983	1984	1375	-980	395	3325		0.686
			FXD	1984	1985	1640	-2282	-600	3178		0.686
			FXD	1985	1986	1475	-1582	-107	3312		0.686
			FXD	1986	1987	924	-1390	-466	3395		0.686
			FXD	1987	1988	1064	-2160	-1096			0.686
	NORWAY										
13	BREIDALBLIKKBREA	NO			1963	1110	-2320	-1210	1635		3.6
					1964	1920	-1680	240	1450		3.6
					1965	1720	-2280	-560	1525		3.6
					1966	1520	-3170	-1650	>1660	0	3.6
					1967	3400	-2320	1170	1355		3.6
					1968	3550	-2680	870	1360		3.6
14	GRAAFJELLSBREA	NO			1964	1940	-1620	320	1385		8.9
					1965	2010	-2290	-280	1490		8.9
					1966	1580	-2930	-1350	>1660	0	8.9
					1967	3460	-2140	1320	1355		8.9
					1968	3390	-2820	570	1380		8.9
					1974	2110	-1530	580	1370		8.9
					1975	2530	-2280	250	1420		8.9
	SPAIN										
15	MALADETA	ES9020	FXD	26.05.1992	01.09.1992	1682	-2009	-327	3090	26	0.5
			FXD	12.05.1993	27.11.1993	2132	-2164	-32	3066	35	0.5
			FXD	15.06.1994	18.08.1994	1975	-1624	351	3028	49	0.42
			FXD	04.06.1995	26.08.1995	1976	-2619	-643	3075	31	0.42

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
			FXD	08.06.1996	26.09.1996	2585	-2415	207	3049	41	0.42
			FXD	25.06.1997	11.09.1997	1865	-1354	512	3025	50	0.42
			FXD	19.06.1998	15.10.1998	1967	-2922	-955	3100	22	0.42
			FXD	29.06.1999	28.10.1999	1197	-1961	-764	3104	20	0.42
			FXD	15.06.2000	08.08.2000	1706	-2606	-900	3138	9	0.42
	SWEDEN										
16	STORGLACIAEREN	SE788	FXD		15.09.2000	1620	-1040	580	1405	53	3.13
17	TARFALAGL	SE791			2000	1970	-780	1190			1.00
	U.S.A.										
18	COLUMBIA (2057)	US2057			1984			210			
					1985			-310			
			FXD	20.09.1985	20.09.1986			-200		61	0.9
			FXD	20.09.1986	20.09.1987			-630		50	0.9
			FXD	19.09.1987	19.09.1988			140			0.9
			FXD	20.09.1988	20.09.1989			-90		67	0.9
			FXD	19.09.1989	19.09.1990			-60		67	0.9
			FXD	30.09.1990	02.10.1991			380			
			FXD	02.10.1991	03.10.1992			-1850			
			FXD	03.10.1992	03.10.1993			-900			
			FXD	03.10.1993	01.10.1994			-960			
			FXD	01.10.1994	01.10.1995			-450			
			FXD	28.09.1995	28.09.1996			-620			
			FXD	28.09.1996	30.09.1997			350			
			FXD	30.09.1997	01.10.1998			-1460			
			FXD	01.10.1998	28.09.1999			1750			0.9
			FXD	28.09.1999	02.10.2000			400			
19	DANIELS	US2052			1984			110			
					1985			-510			
			FXD	22.09.1985	22.09.1986			-360		60	0.5
			FXD	22.09.1986	22.09.1987			-870		40	0.5
			FXD	21.09.1987	21.09.1988			-150		60	0.5
			FXD	22.09.1988	22.09.1989			-370		60	0.5
			FXD	21.09.1989	21.09.1990			-680		50	0.5
			FXD	27.09.1990	28.09.1991			-70			
			FXD	28.09.1991	29.09.1992			-1700			
			FXD	29.09.1992	29.09.1993			-830			
			FXD	29.09.1993	29.09.1994			-450			
			FXD	29.09.1994	27.09.1995			240			
			FXD	26.09.1995	26.09.1996			450			
			FXD	26.09.1996	27.09.1997			880			
			FXD	27.09.1997	01.10.1998			-1820			
			FXD	01.10.1998	30.09.1999			1520			0.4
			FXD	30.09.1999	30.09.2000			-250			
20	EASTON	US2008			1990			-580			
			FXD	29.09.1990	30.09.1991			410			
			FXD	30.09.1991	01.10.1992			-1670			
			FXD	01.10.1992	01.10.1993			-1010			
			FXD	01.10.1993	01.10.1994			-920			
			FXD	01.10.1994	03.10.1995			-310			
			FXD	28.09.1995	28.09.1996			220			
			FXD	28.09.1996	28.09.1997			530			
			FXD	28.09.1997	28.09.1998			-1870			
			FXD	28.09.1998	01.10.1999			1610			
			FXD	01.10.1999	28.09.2000			-100			2.9
21	FOSS	US2053			1984			510			
					1985			-690			
			FXD	23.09.1985	23.09.1986			120		71	0.7
			FXD	23.09.1986	23.09.1987			-380		57	0.7
			FXD	22.09.1987	22.09.1988			230		71	0.7
			FXD	23.09.1988	23.09.1989			90		64	0.7

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
			FXD	22.09.1989	22.09.1990			-270		57	0.7
			FXD	27.09.1990	28.09.1991			300			
			FXD	28.09.1991	29.09.1992			-1920			
			FXD	29.09.1992	29.09.1993			-730			
			FXD	29.09.1993	29.09.1994			-680			
			FXD	29.09.1994	27.09.1995			310			
			FXD	26.09.1995	26.09.1996			340			
			FXD	26.09.1996	26.09.1997			500			
			FXD	26.09.1997	01.10.1998			-1950			
			FXD	01.10.1998	30.09.1999			1560			0.4
			FXD	30.09.1999	30.09.2000			-100			
22	ICE WORM	US2054			1984			860			
					1985			-750			
			FXD	22.09.1985	22.09.1986			-450		50	0.2
			FXD	22.09.1986	22.09.1987			-1390		30	0.2
			FXD	21.09.1987	21.09.1988			-240		65	0.2
			FXD	22.09.1988	22.09.1989			-670		50	0.2
			FXD	21.09.1989	21.09.1990			-920		40	0.2
			FXD	27.09.1990	28.09.1991			630			
			FXD	28.09.1991	29.09.1992			-2230			
			FXD	29.09.1992	29.09.1993			-1020			
			FXD	29.09.1993	29.09.1994			-1230			
			FXD	29.09.1994	29.09.1995			470			
			FXD	26.09.1995	26.09.1996			570			
			FXD	26.09.1996	26.09.1997			760			
			FXD	26.09.1997	01.10.1998			-1640			
			FXD	01.10.1998	30.09.1999			2150			0.1
			FXD	30.09.1999	30.09.2000			-330			
23	LEMON CREEK	US		1952	1953			-560			
				1953	1954			-180			
				1954	1955			1120			
				1955	1956			-640			
				1956	1957			0			
				1957	1958			-580			
				1958	1959			-900			
				1959	1960			-820			
				1960	1961			-240			
				1961	1962			-690			
				1962	1963			170			
				1963	1964			1040			
				1964	1965			80			
				1965	1966			-490			
				1966	1967			-600			
				1967	1968			-220			
				1968	1969			210			
				1969	1970			-90			
				1970	1971			-400			
				1971	1972			-650			
				1972	1973			-520			
				1973	1974			-370			
				1974	1975			290			
				1975	1976			-250			
				1976	1977			-480			
				1977	1978			-800			
				1978	1979			-630			
				1979	1980			-270			
				1980	1981			-810			
				1981	1982			-430			
				1982	1983			-1620			
				1983	1984			-250			
				1984	1985			330			

NR	GLACIER NAME	PSFG NR	SYS	FROM D M Y	TO D M Y	BW MM	BS MM	BN/BA MM	ELA M	AAR %	AREA KM²
				1985	1986			-510			
				1986	1987			-840			
				1987	1988			110			
				1988	1989			-1240			
				1989	1990			-1110			
				1990	1991			-380			
				1991	1992			-660			
				1992	1993			-980			
				1993	1994			-760			
				1994	1995			-1310			
				1995	1996			-1580			
				1996	1997			-1810			
				1997	1998			-1460			
				1998	1999			200			
				1999	2000			650			
24	LOWER CURTIS	US2055			1984			390			
					1985			-160			
			FXD	26.09.1985	26.09.1986			-220		62	0.8
			FXD	27.09.1986	27.09.1987			-560		50	0.8
			FXD	25.09.1987	25.09.1988			-60		69	0.8
			FXD	26.09.1988	26.09.1989			-290		56	0.8
			FXD	26.09.1989	26.09.1990			-510		50	0.8
			FXD	01.10.1990	03.10.1991			40			
			FXD	03.10.1991	30.09.1992			-1760			
			FXD	30.09.1992	30.09.1993			-480			
			FXD	30.09.1993	30.09.1994			-550			
			FXD	30.09.1994	30.09.1995			-210			
			FXD	30.09.1995	30.09.1996			-180			
			FXD	30.09.1996	30.09.1997			270			
			FXD	30.09.1997	29.09.1998			-1380			
			FXD	29.09.1998	27.09.1999			1550			
			FXD	27.09.1999	26.09.2000			-250			0.8
25	LYNCH	US2056			1984			330			
					1985			-220			
			FXD	23.09.1985	23.09.1986			-70		69	0.8
			FXD	23.09.1986	23.09.1987			-300		62	0.8
			FXD	22.09.1987	22.09.1988			170		75	0.8
			FXD	23.09.1988	23.09.1989			30		69	0.8
			FXD	22.09.1989	22.09.1990			-120		62	0.8
			FXD	27.09.1990	28.09.1991			360			
			FXD	28.09.1991	29.09.1992			-1380			
			FXD	29.09.1992	29.09.1993			-620			
			FXD	29.09.1993	29.09.1994			-400			
			FXD	29.09.1994	27.09.1995			180			
			FXD	26.09.1995	26.09.1996			530			
			FXD	26.09.1996	26.09.1997			620			
			FXD	26.09.1997	01.10.1998			-1970			
			FXD	01.10.1998	30.09.1999			1450			0.7
			FXD	30.09.1999	30.09.2000			-240			
26	RAINBOW	US2003			1984			580			
					1985			40			
			FXD	28.09.1985	28.09.1986			200		70	1.7
			FXD	28.09.1986	28.09.1987			-260		62	1.7
			FXD	27.09.1987	27.09.1988			430		75	1.7
			FXD	28.09.1988	28.09.1989			-240		59	1.7
			FXD	28.09.1989	28.09.1990			-460		56	1.7
			FXD	02.10.1990	03.10.1991			440			
			FXD	03.10.1991	01.10.1992			-1650			
			FXD	01.10.1992	03.10.1993			-800			
			FXD	03.10.1993	01.10.1994			-720			
			FXD	01.10.1994	01.10.1995			-200			

NR	GLACIER NAME	PSFG NR	SYS	FROM	TO	BW	BS	BN/BA	ELA	AAR	AREA
				D M Y	D M Y	MM	MM	MM	M	%	KM²
			FXD	29.09.1995	29.09.1996			120			
			FXD	29.09.1996	28.09.1997			510			
			FXD	28.09.1997	27.09.1998			-1490			
			FXD	27.09.1998	28.09.1999			1840			
			FXD	28.09.1999	28.09.2000			150			1.6
27	SHOLES	US			1990			-320			
					1991			480			
					1992			-1880			
					1993			-960			
					1994			-880			
					1995			-250			
					1996			60			
					1997			420			
					1998			-1560			
					1999			1760			
					2000			-80			
28	YAWNING	US2050			1984			90			
					1985			-230			
			FXD	25.09.1985	25.09.1986			-100			
			FXD	25.09.1986	25.09.1987			-470			0.2
			FXD	24.09.1987	24.09.1988			-60			
			FXD	25.09.1988	25.09.1989			-190			
			FXD	25.09.1989	25.09.1990			-320			
			FXD	28.09.1990	28.09.1991			230			
			FXD		1992			-2060			
			FXD	04.10.1992	04.10.1993			-660			
			FXD	04.10.1993	04.10.1994			-620			
			FXD	04.10.1994	28.09.1995			-260			
			FXD	28.09.1995	28.09.1996			340			
			FXD	28.09.1996	30.09.1997			500			
			FXD	30.09.1997	29.09.1998			-2030			
			FXD	29.09.1998	02.10.1999			1630			
			FXD	02.10.1999	02.10.2000			-180			0.3

WORLD GLACIER MONITORING SERVICE

MASS BALANCE VERSUS ALTITUDE FOR SELECTED GLACIERS

TABLE CCC

NR	Record number
GLACIER NAME	15 alphabetic or numeric digits
PSFG NUMBER	5 digits identifying glacier with alphabetic prefix denoting country
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 metres above sea level
AREA	Area of altitude band and in square kilometres
BW	Mean specific winter balance in mm water equivalent
BS	Mean specific summer balance in mm water equivalent
BN/BA	Mean specific net balance or annual balance in mm water equivalent
SUMMARY	Total and mean specific values computed from data for the individual altitude intervals

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
	ANTARCTICA									
1.1	BAHIA DEL DIABLO	AQ	2002		562	638				-50
					488	562				130
					412	488				50
					338	412				-300
					262	338				-750
					188	262				-750
					112	188				-1550
					38	112				-2800
					38	638	14.3			-510
1.2	BAHIA DEL DIABLO	AQ	2003		562	638				75
					488	562				250
					412	488				140
					338	412				-50
					262	338				-300
					188	262				-225
					112	188				-750
					38	112				-1300
					38	638	14.3			-150
1.3	BAHIA DEL DIABLO	AQ	2004		562	638				125
					488	562				300
					412	488				150
					338	412				-25
					262	338				-250
					188	262				-300
					112	188				-700
					38	112				-1400
					38	638	14.3			-110
1.4	BAHIA DEL DIABLO	AQ	2005		562	638				50
					488	562				225
					412	488				100
					338	412				-100
					262	338				-350
					188	262				-450
					112	188				-900
					38	112				-1700
					38	638	14.3			-230
	ARGENTINA									
2.1	MARTIAL ESTE	AR	2002	STR	1170	1180				81
					1160	1170				78
					1150	1160				38
					1140	1150				36
					1130	1140				31
					1120	1130				30
					1110	1120				25
					1100	1110				-9
					1090	1100				-47
					1080	1090				-101
					1070	1080				-184
					1060	1070				-262
					1050	1060				-331
					1040	1050				-367
					1030	1040				-391
					1020	1030				-398
					1010	1020				-398
					1000	1010				-400
					990	1000				-405

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					980	990				-415
					970	980				-424
					970	1180	0.093	581	-1263	-682
2.2	MARTIAL ESTE	AR	2003	STR	1170	1180				-849
					1160	1170				-860
					1150	1160				-869
					1140	1150				-870
					1130	1140				-881
					1120	1130				-900
					1110	1120				-908
					1100	1110				-969
					1090	1100				-1062
					1080	1090				-1194
					1070	1080				-1343
					1060	1070				-1476
					1050	1060				-1530
					1040	1050				-1595
					1030	1040				-1597
					1020	1030				-1598
					1010	1020				-1605
					1000	1010				-1638
					990	1000				-1771
					980	990				-1800
					980	1180	0.093	675	-877	-202
2.3	MARTIAL ESTE	AR	2004	STR	1150	1180	0.006			-951
					1100	1150	0.023			-987
					1050	1100	0.04			-1322
					1000	1050	0.023			-1698
					980	1000	0.001			-1819
					980	1180	0.093	720	-1976	-1318
2.4	MARTIAL ESTE	AR	2005	STR	1150	1180	0.006			-3
					1100	1150	0.023			-227
					1050	1100	0.04			-1050
					1000	1050	0.023			-1807
					980	1000	0.001			-2040
					980	1180	0.093			-991
	AUSTRIA									
3.1	GOLDBERG KEES	AT0802B	2001	FXD	3050	3100	0.011	1450	-1470	-20
					3000	3050	0.053	1531	-1309	222
					2950	3000	0.093	1648	-1359	289
					2900	2950	0.113	1653	-1829	-176
					2850	2900	0.074	1712	-2396	-685
					2800	2850	0.044	1648	-2477	-830
					2750	2800	0.031	2025	-2251	-227
					2700	2750	0.148	2210	-2055	156
					2650	2700	0.475	1730	-2160	-430
					2600	2650	0.176	1700	-2434	-734
					2550	2600	0.029	1829	-2693	-864
					2500	2550	0.024	1824	-2116	-292
					2450	2500	0.071	1954	-2028	-75
					2400	2450	0.12	1827	-2759	-933
					2350	2400	0.033	2149	-3512	-1363
					2350	3100	1.494	1788	-2176	-388
3.2	GOLDBERG KEES	AT0802B	2002	FXD	3050	3100	0.011	1882	-2283	-401
					3000	3050	0.053	1710	-1989	-279
					2950	3000	0.093	1777	-1840	-63

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2900	2950	0.113	1836	-1972	-136
					2850	2900	0.074	1969	-2552	-582
					2800	2850	0.044	1937	-2786	-849
					2750	2800	0.031	2165	-2509	-343
					2700	2750	0.148	2051	-2170	-119
					2650	2700	0.475	1793	-2585	-792
					2600	2650	0.176	1803	-2764	-961
					2550	2600	0.029	1988	-2217	-229
					2500	2550	0.024	1865	-1795	70
					2450	2500	0.071	1948	-2183	-235
					2400	2450	0.12	1883	-3024	-1141
					2350	2400	0.033	1648	-3490	-1842
					2350	3100	1.494	1857	-2468	-612
3.3	GOLDBERG KEES	AT0802B	2003	FXD	3050	3100	0.011	1859	-3070	-1210
					3000	3050	0.053	1727	-2955	-1228
					2950	3000	0.093	1742	-3105	-1364
					2900	2950	0.113	1634	-3471	-1837
					2850	2900	0.074	1657	-4203	-2547
					2800	2850	0.044	1749	-4515	-2766
					2750	2800	0.031	1638	-3076	-1438
					2700	2750	0.148	1848	-2633	-785
					2650	2700	0.475	1632	-3594	-1963
					2600	2650	0.176	1722	-3722	-2000
					2550	2600	0.029	1428	-2437	-1009
					2500	2550	0.024	1817	-2402	-586
					2450	2500	0.071	2034	-3002	-968
					2400	2450	0.12	2026	-4544	-2518
					2350	2400	0.033	1800	-5317	-3517
					2350	3100	1.494	1734	-3540	-1806
3.4	GOLDBERG KEES	AT0802B	2004	FXD	3050	3100	0.011	1465	-725	740
					3000	3050	0.053	1659	-925	735
					2950	3000	0.093	1521	-698	823
					2900	2950	0.112	1373	-1382	-9
					2850	2900	0.072	1313	-1611	-298
					2800	2850	0.037	1563	-1722	-158
					2750	2800	0.026	2076	-1487	589
					2700	2750	0.146	2053	-1131	922
					2650	2700	0.469	1693	-1706	-13
					2600	2650	0.171	1732	-1833	-101
					2550	2600	0.025	1939	-2191	-252
					2500	2550	0.021	2378	-2185	194
					2450	2500	0.066	2284	-1971	313
					2400	2450	0.111	1862	-2175	-314
					2350	2400	0.012	1969	-2779	-809
					2350	3100	1.425	1737	-1600	137
3.5	GOLDBERG KEES	AT0802B	2005	FXD	3050	3100	0.011	1413	-450	963
					3000	3050	0.053	1559	-701	858
					2950	3000	0.093	1534	-879	655
					2900	2950	0.112	1338	-935	403
					2850	2900	0.072	1213	-1301	-88
					2800	2850	0.037	1357	-1392	-34
					2750	2800	0.026	1679	-1068	611
					2700	2750	0.146	1608	-931	677
					2650	2700	0.469	1283	-1792	-509
					2600	2650	0.171	1419	-2184	-765
					2550	2600	0.025	1659	-2293	-634
					2500	2550	0.021	1618	-1999	-381
					2450	2500	0.066	1439	-1865	-426

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2400	2450	0.111	1303	-2990	-1687
					2350	2400	0.012	1299	-3770	-2470
					2350	3100	1.425	1391	-1651	-260
4.1	HINTEREIS FERNER	AT209	2001	FXD	3700	3750	0.004			130
					3650	3700	0.021			120
					3600	3650	0.032			130
					3550	3600	0.021			120
					3500	3550	0.022			150
					3450	3500	0.09			340
					3400	3450	0.132			500
					3350	3400	0.266			600
					3300	3350	0.427			870
					3250	3300	0.42			590
					3200	3250	0.506			500
					3150	3200	0.597			440
					3100	3150	0.784			460
					3050	3100	0.753			290
					3000	3050	0.585			150
					2950	3000	0.543			80
					2900	2950	0.547			-130
					2850	2900	0.504			-360
					2800	2850	0.31			-770
					2750	2800	0.447			-1110
					2700	2750	0.321			-2060
					2650	2700	0.241			-2370
					2600	2650	0.216			-2680
					2550	2600	0.11			-3820
					2500	2550	0.056			-4310
					2450	2500	0.008			-4750
					2450	3750	7.963			-173
4.2	HINTEREIS FERNER	AT209	2002	FXD	3700	3750	0.003			130
					3650	3700	0.021			70
					3600	3650	0.032			180
					3550	3600	0.019			280
					3500	3550	0.017			300
					3450	3500	0.08			360
					3400	3450	0.132			430
					3350	3400	0.266			490
					3300	3350	0.427			690
					3250	3300	0.42			570
					3200	3250	0.506			450
					3150	3200	0.597			420
					3100	3150	0.784			350
					3050	3100	0.753			130
					3000	3050	0.585			-140
					2950	3000	0.536			-450
					2900	2950	0.538			-890
					2850	2900	0.502			-1320
					2800	2850	0.296			-1840
					2750	2800	0.441			-2260
					2700	2750	0.321			-3160
					2650	2700	0.241			-3780
					2600	2650	0.216			-4260
					2550	2600	0.11			-4840
					2500	2550	0.056			-5440
					2450	2500	0.007			-6250
					2450	3750	7.906			-647

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
4.3	HINTEREIS FERNER	AT209	2003	FXD	3700	3750	0.003			-250
					3650	3700	0.021			-250
					3600	3650	0.032			-250
					3550	3600	0.019			-250
					3500	3550	0.015			-480
					3450	3500	0.072			-420
					3400	3450	0.131			-450
					3350	3400	0.26			-420
					3300	3350	0.422			-290
					3250	3300	0.42			-400
					3200	3250	0.506			-560
					3150	3200	0.595			-550
					3100	3150	0.778			-620
					3050	3100	0.741			-760
					3000	3050	0.584			-1100
					2950	3000	0.534			-1740
					2900	2950	0.524			-2260
					2850	2900	0.486			-2780
					2800	2850	0.284			-3250
					2750	2800	0.441			-3770
					2700	2750	0.321			-4680
					2650	2700	0.241			-5430
					2600	2650	0.216			-6200
					2550	2600	0.11			-6700
					2500	2550	0.056			-7080
					2450	2500	0.005			-7250
					2450	3750	7.817			-1814
4.4	HINTEREIS FERNER	AT209	2004	FXD	3700	3750	0.006			125
					3650	3700	0.024			125
					3600	3650	0.028			125
					3550	3600	0.02			125
					3500	3550	0.022			26
					3450	3500	0.082			51
					3400	3450	0.131			126
					3350	3400	0.26			280
					3300	3350	0.393			408
					3250	3300	0.426			147
					3200	3250	0.502			155
					3150	3200	0.651			147
					3100	3150	0.718			32
					3050	3100	0.659			-187
					3000	3050	0.511			-406
					2950	3000	0.513			-614
					2900	2950	0.506			-830
					2850	2900	0.482			-826
					2800	2850	0.263			-1190
					2750	2800	0.412			-1667
					2700	2750	0.28			-2294
					2650	2700	0.221			-3039
					2600	2650	0.23			-3524
					2550	2600	0.128			-4126
					2500	2550	0.061			-4679
					2450	2500	0.024			-5054
					2400	2450	0.001			-5250
					2400	3750	7.554			-877
4.5	HINTEREIS FERNER	AT209	2005	FXD	3700	3750	0.006			-250
					3650	3700	0.024			-250
					3600	3650	0.028			-250
					3550	3600	0.02			-250

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					3500	3550	0.022			-243
					3450	3500	0.081			-152
					3400	3450	0.131			60
					3350	3400	0.259			321
					3300	3350	0.388			343
					3250	3300	0.424			107
					3200	3250	0.469			-33
					3150	3200	0.607			-33
					3100	3150	0.702			-101
					3050	3100	0.701			-272
					3000	3050	0.545			-676
					2950	3000	0.502			-1028
					2900	2950	0.502			-1378
					2850	2900	0.473			-1664
					2800	2850	0.253			-1938
					2750	2800	0.412			-2420
					2700	2750	0.279			-3369
					2650	2700	0.22			-4164
					2600	2650	0.218			-4653
					2550	2600	0.127			-5120
					2500	2550	0.058			-6084
					2450	2500	0.019			-7275
					2450	3750	7.47			-1061
5.1	JAMTAL F.	AT106	2001	FXD	3100	3200	0.014	1400	-1060	340
					3000	3100	0.298	1400	-970	430
					2900	3000	0.843	1450	-920	530
					2800	2900	0.78	1350	-1130	220
					2700	2800	0.753	1490	-1620	-130
					2600	2700	0.566	1430	-2070	-640
					2500	2600	0.344	1370	-2580	-1210
					2400	2500	0.056	1260	-3050	-1790
					2400	3200	3.654			-62
5.2	JAMTAL F.	AT106	2002		3100	3200	0.014	1500	-1060	120
					3000	3100	0.298	1470	-1150	320
					2900	3000	0.843	1600	-1370	230
					2800	2900	0.78	1520	-1920	-400
					2700	2800	0.753	1550	-2310	-760
					2600	2700	0.566	1550	-3030	-1480
					2500	2600	0.33	1400	-3580	-2180
					2400	2500	0.036	1400	-4120	-2720
					2400	3200	3.62			-671
5.3	JAMTAL F.	AT106	2003	FXD	3100	3200	0.014	1100	-1670	-570
					3000	3100	0.298	1100	-1960	-860
					2900	3000	0.782	1320	-2520	-1200
					2800	2900	0.728	1260	-3180	-1920
					2700	2800	0.747	1400	-3980	-2580
					2600	2700	0.554	1340	-4560	-3220
					2500	2600	0.314	1270	-5340	-4070
					2400	2500	0.021	1330	-6990	-5660
					2400	3200	3.458			-2229
5.4	JAMTAL F.	AT106	2004	FXD	3100	3200	0.014	1250	-1130	120
					3000	3100	0.298	1250	-1040	210
					2900	3000	0.782	1250	-1090	160
					2800	2900	0.728	1280	-1320	-40
					2700	2800	0.747	1390	-1610	-220
					2600	2700	0.554	1480	-2060	-580
					2500	2600	0.314	1340	-2700	-1360

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2400	2500	0.021	1150	-3160	-2010
					2400	3200	3.458			-228
5.5	JAMTAL F.	AT106	2005	FXD	3100	3200	0.011	850	-850	0
					3000	3100	0.261	910	-920	-10
					2900	3000	0.766	980	-1090	-110
					2800	2900	0.714	840	-1360	-520
					2700	2800	0.712	900	-1820	-920
					2600	2700	0.595	880	-2460	-1580
					2500	2600	0.366	780	-3290	-2510
					2400	2500	0.115	740	-4480	-3740
					2400	3200	3.54			-975
6.1	KESSELWAND F.	AT226	2001	FXD	3450	3500	0.023			500
					3400	3450	0.025			790
					3350	3400	0.044			840
					3300	3350	0.29			1270
					3250	3300	0.607			1130
					3200	3250	0.841			880
					3150	3200	0.743			700
					3100	3150	0.56			430
					3050	3100	0.436			120
					3000	3050	0.16			-340
					2950	3000	0.116			-770
					2900	2950	0.067			-1120
					2850	2900	0.064			-2210
					2800	2850	0.053			-2840
					2750	2800	0.013			-3250
					2750	3500	4.042			525
6.2	KESSELWAND F.	AT226	2002		3450	3500	0.023			230
					3400	3450	0.025			240
					3350	3400	0.044			150
					3300	3350	0.29			600
					3250	3300	0.607			540
					3200	3250	0.841			430
					3150	3200	0.743			340
					3100	3150	0.56			20
					3050	3100	0.436			-440
					3000	3050	0.16			-1040
					2950	3000	0.116			-1360
					2900	2950	0.067			-1480
					2850	2900	0.064			-2480
					2800	2850	0.051			-3670
					2750	2800	0.01			-4250
					2750	3500	4.037			17
6.3	KESSELWAND F.	AT226	2003	FXD	3450	3500	0.023			-750
					3400	3450	0.025			-750
					3350	3400	0.044			-660
					3300	3350	0.29			-420
					3250	3300	0.607			-610
					3200	3250	0.833			-800
					3150	3200	0.743			-920
					3100	3150	0.56			-1810
					3050	3100	0.426			-3050
					3000	3050	0.143			-4150
					2950	3000	0.099			-4580
					2900	2950	0.044			-5050
					2850	2900	0.051			-5600

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2800	2850	0.05			-6280
					2800	3500	3.938			-1546
6.4	KESSELWAND F.	AT226	2004	FXD	3450	3500	0.021			-138
					3400	3450	0.027			-134
					3350	3400	0.046			-2
					3300	3350	0.258			277
					3250	3300	0.606			392
					3200	3250	0.831			236
					3150	3200	0.702			98
					3100	3150	0.517			-170
					3050	3100	0.407			-676
					3000	3050	0.171			-1274
					2950	3000	0.111			-1647
					2900	2950	0.071			-1886
					2850	2900	0.03			-2456
					2800	2850	0.074			-3016
					2750	2800	0.033			-3250
					2750	3500	3.905			-189
6.5	KESSELWAND F.	AT226	2005	FXD	3450	3500	0.021			100
					3400	3450	0.026			-102
					3350	3400	0.046			-195
					3300	3350	0.258			419
					3250	3300	0.522			553
					3200	3250	0.831			355
					3150	3200	0.786			191
					3100	3150	0.517			-56
					3050	3100	0.407			-369
					3000	3050	0.171			-868
					2950	3000	0.111			-1440
					2900	2950	0.071			-1776
					2850	2900	0.027			-2725
					2800	2850	0.077			-3288
					2750	2800	0.032			-3748
					2700	2750	0.001			-3750
					2700	3500	3.9			-59
7.1	KLEINFLEISS K.	AT801	2001	FXD	3050	3100	0.001	1853	-1011	842
					3000	3050	0.038	1890	-998	892
					2950	3000	0.102	1633	-1237	396
					2900	2950	0.13	1779	-1701	78
					2850	2900	0.251	2002	-1534	469
					2800	2850	0.244	1783	-2222	-438
					2750	2800	0.119	1085	-2457	-1372
					2700	2750	0.016	283	-2071	-1789
					2650	2700	0.015	939	-2863	-1924
					2600	2650	0.019	1405	-3418	-2013
					2550	2600	0.01	1548	-3608	-2059
					2550	3100	0.945	1691	-1887	-195
7.2	KLEINFLEISS K.	AT801	2002	FXD	3050	3100	0.001	1414	-1515	-101
					3000	3050	0.038	1330	-1612	-282
					2950	3000	0.102	1276	-1608	-332
					2900	2950	0.13	1322	-1626	-303
					2850	2900	0.251	1669	-1986	-317
					2800	2850	0.244	1307	-2334	-1028
					2750	2800	0.119	949	-2524	-1575
					2700	2750	0.016	349	-2293	-1944
					2650	2700	0.015	716	-3386	-2671
					2600	2650	0.019	1273	-4292	-3018

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					2550	2600	0.01	1456	-4648	-3192
					2550	3100	0.945	1332	-2140	-808
7.3	KLEINFLEISS K.	AT801	2003	FXD	3050	3100	0.001	1516	-2702	-1186
					3000	3050	0.038	1491	-2784	-1293
					2950	3000	0.102	1576	-2840	-1264
					2900	2950	0.13	1664	-2636	-972
					2850	2900	0.251	1861	-2588	-727
					2800	2850	0.244	1611	-3391	-1780
					2750	2800	0.119	1233	-3998	-2765
					2700	2750	0.014	602	-3825	-3223
					2700	3100	0.898	1614	-3056	-1442
7.4	KLEINFLEISS K.	AT801	2004	FXD	3050	3100	0.001	1090	-92	998
					3000	3050	0.038	1102	-270	832
					2950	3000	0.102	1427	-1115	312
					2900	2950	0.130	1485	-1237	248
					2850	2900	0.243	1739	-1146	593
					2800	2850	0.240	1402	-1335	68
					2750	2800	0.110	840	-2076	-1236
					2700	2750	0.008	208	-1681	-1473
					2700	3100	0.872	1417	-1291	125
7.5	KLEINFLEISS K.	AT801	2005	FXD	3050	3100	0.001	1233	-1	1232
					3000	3050	0.038	1212	-262	950
					2950	3000	0.102	1122	-771	351
					2900	2950	0.130	1268	-1012	256
					2850	2900	0.243	1351	-853	498
					2800	2850	0.240	1060	-1494	-434
					2750	2800	0.110	758	-2591	-1833
					2700	2750	0.008	513	-2777	-2264
					2700	3100	0.872	1143	-1254	-111
8.1	PASTERZEN K.	AT704	2005	FXD	3500	3600	0.003			160
					3400	3500	0.191			242
					3300	3400	0.704			358
					3200	3300	1.679			416
					3100	3200	2.868			544
					3000	3100	3.089			634
					2900	3000	2.383			259
					2800	2900	1.372			-661
					2700	2800	0.853			-1536
					2600	2700	0.583			-2000
					2500	2600	0.434			-3081
					2400	2500	0.543			-4491
					2300	2400	1.138			-4921
					2200	2300	1.242			-4413
					2100	2200	0.62			-4513
					2000	2100	0.007			-1801
					2000	3600	17.71			-899
9.1	VERNAGT FERNER	AT211	2001	FXD	3600	3650	0.002			602
					3550	3600	0.007			650
					3500	3550	0.015			568
					3450	3500	0.139			581
					3400	3450	0.203			419
					3350	3400	0.256			286
					3300	3350	0.398			388
					3250	3300	0.864			489
					3200	3250	0.965			235
					3150	3200	1.169			63

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
					3100	3150	1.276			-19
					3050	3100	1.115			-349
					3000	3050	0.969			-613
					2950	3000	0.592			-1244
					2900	2950	0.42			-1693
					2850	2900	0.177			-1981
					2800	2850	0.087			-2541
					2750	2800	0.016			-3100
					2750	3650	8.668	1139	-1363	-224
9.2	VERNAGT FERNER	AT211	2002	FXD	3600	3650	0.002			702
					3550	3600	0.007			700
					3500	3550	0.015			697
					3450	3500	0.139			349
					3400	3450	0.201			421
					3350	3400	0.256			337
					3300	3350	0.397			387
					3250	3300	0.863			386
					3200	3250	0.965			295
					3150	3200	1.169			154
					3100	3150	1.276			14
					3050	3100	1.116			-263
					3000	3050	0.970			-690
					2950	3000	0.592			-1453
					2900	2950	0.42			-2128
					2850	2900	0.177			-2614
					2800	2850	0.087			-3227
					2750	2800	0.016			-3600
					2750	3650	8.668	1013	-1279	-266
9.3	VERNAGT FERNER	AT211	2003	FXD	3550	3600	0.008			-200
					3500	3550	0.013			-190
					3450	3500	0.151			-259
					3400	3450	0.193			-407
					3350	3400	0.233			-559
					3300	3350	0.427			-724
					3250	3300	0.885			-1003
					3200	3250	0.956			-1308
					3150	3200	1.16			-1693
					3100	3150	1.252			-2288
					3050	3100	1.079			-2724
					3000	3050	0.936			-3072
					2950	3000	0.566			-3564
					2900	2950	0.413			-3946
					2850	2900	0.163			-4406
					2800	2850	0.08			-4974
					2750	2800	0.02			-5200
					2750	3600	8.535	986	-3119	-2133
9.4	VERNAGT FERNER	AT211	2004	FXD	3600	3650	0.002			1
					3550	3600	0.006			13
					3500	3550	0.014			34
					3450	3500	0.157			244
					3400	3450	0.186			101
					3350	3400	0.21			87
					3300	3350	0.374			127
					3250	3300	0.855			214
					3200	3250	0.928			22
					3150	3200	1.139			-50
					3100	3150	1.248			-137
					3050	3100	1.072			-477

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					3000	3050	0.933			-847
					2950	3000	0.566			-1386
					2900	2950	0.415			-1939
					2850	2900	0.171			-2435
					2800	2850	0.075			-2823
					2750	2800	0.009			-3040
					2750	3650	8.359	891	-1298	-407
9.5	VERNAGT FERNER	AT211	2005	FXD	3600	3650	0.002			9
					3550	3600	0.007			57
					3500	3550	0.014			73
					3450	3500	0.158			242
					3400	3450	0.186			102
					3350	3400	0.211			80
					3300	3350	0.376			99
					3250	3300	0.854			177
					3200	3250	0.927			3
					3150	3200	1.139			-105
					3100	3150	1.248			-215
					3050	3100	1.071			-552
					3000	3050	0.932			-988
					2950	3000	0.565			-1711
					2900	2950	0.415			-2377
					2850	2900	0.17			-2854
					2800	2850	0.075			-3575
					2750	2800	0.008			-3377
					2750	3650	8.357	621	-1144	-523
10.1	WURTEN K.	AT804	2001	FXD	3100	3150	0.004	1144	-908	236
					3050	3100	0.032	1432	-1151	281
					3000	3050	0.074	1636	-1414	222
					2950	3000	0.099	1604	-1657	-53
					2900	2950	0.081	1749	-1961	-212
					2850	2900	0.105	1778	-2137	-359
					2800	2850	0.092	1559	-2113	-554
					2750	2800	0.03	1731	-2339	-609
					2700	2750	0.072	2057	-1807	250
					2650	2700	0.162	2055	-1982	74
					2600	2650	0.127	1935	-2585	-651
					2550	2600	0.069	1689	-3064	-1375
					2500	2550	0.026	1706	-3270	-1565
					2500	3150	0.972	1790	-2090	-300
10.2	WURTEN K.	AT804	2002	FXD	3100	3150	0.004	2172	-2027	145
					3050	3100	0.032	2002	-1877	125
					3000	3050	0.074	1478	-1468	10
					2950	3000	0.099	1472	-1529	-57
					2900	2950	0.081	1430	-1688	-258
					2850	2900	0.105	1342	-1965	-623
					2800	2850	0.092	1169	-2367	-1199
					2750	2800	0.03	1020	-2484	-1465
					2700	2750	0.072	1527	-2194	-667
					2650	2700	0.162	1692	-2594	-902
					2600	2650	0.127	1230	-3186	-1957
					2550	2600	0.069	963	-3545	-2582
					2500	2550	0.026	1237	-4208	-2971
					2500	3150	0.972	1399	-2365	-966
10.3	WURTEN K.	AT804	2003	FXD	3100	3150	0.004	1283	-915	368
					3050	3100	0.032	1399	-1325	74
					3000	3050	0.074	1552	-2329	-777

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2950	3000	0.099	1747	-3221	-1474
					2900	2950	0.081	1788	-3613	-1826
					2850	2900	0.105	1626	-3721	-2095
					2800	2850	0.092	1503	-3865	-2363
					2750	2800	0.03	1540	-4130	-2590
					2700	2750	0.072	2193	-3312	-1119
					2650	2700	0.162	2087	-3933	-1847
					2600	2650	0.127	1576	-5236	-3660
					2550	2600	0.069	1411	-5741	-4330
					2500	2550	0.026	2042	-6344	-4302
					2500	3150	0.972	1732	-3909	-2177
10.4	WURTEN K.	AT804	2004	FXD	3100	3150	0.003	1346	-852	494
					3050	3100	0.032	1463	-1090	373
					3000	3050	0.073	1580	-1403	177
					2950	3000	0.096	1429	-1469	-40
					2900	2950	0.065	1366	-1584	-218
					2850	2900	0.081	1437	-1758	-321
					2800	2850	0.079	1507	-1893	-386
					2750	2800	0.008	1895	-2167	-273
					2700	2750	0.045	1765	-1664	101
					2650	2700	0.157	1763	-1776	-13
					2600	2650	0.123	1381	-2217	-836
					2550	2600	0.056	1074	-2716	-1743
					2500	2550	0.006	1213	-2913	-1700
					2500	3150	0.824	1501	-1814	-313
10.5	WURTEN K.	AT804	2005	FXD	3100	3150	0.003	1183	-753	429
					3050	3100	0.032	1286	-1068	218
					3000	3050	0.073	1294	-1274	20
					2950	3000	0.096	1244	-1286	-42
					2900	2950	0.065	1224	-1404	-180
					2850	2900	0.081	1188	-1320	-132
					2800	2850	0.079	904	-1256	-352
					2750	2800	0.008	656	-1118	-462
					2700	2750	0.045	1405	-1288	117
					2650	2700	0.157	1406	-1647	-241
					2600	2650	0.123	1073	-2459	-1387
					2550	2600	0.056	883	-2788	-1905
					2500	2550	0.006	1264	-3239	-1976
					2500	3150	0.824	1194	-1642	-448
	BOLIVIA									
11.1	CHARQUINI SUR	BO	2003	FXD	5300	5350	0.0025			158
					5250	5300	0.0119			166
					5200	5250	0.0469			151
					5150	5200	0.0741			5
					5100	5150	0.1183			-830
					5050	5100	0.074			-1827
					5000	5050	0.0613			-1884
					4950	5000	0.0051			-1855
					4950	5350	0.3941			-884
11.2	CHARQUINI SUR	BO	2004	FXD	5300	5350	0.002			-1190
					5250	5300	0.0155			-1126
					5200	5250	0.0467			-1130
					5150	5200	0.0774			-1251
					5100	5150	0.1171			-1382
					5050	5100	0.0729			-1556
					5000	5050	0.0616			-2202

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					4950	5000	0.0035			-2607
					4950	5350	0.3967			-1486
11.3	CHARQUINI SUR	BO	2005	FXD	5200	5250	0.0644			-753
					5150	5200	0.0774			-2077
					5100	5150	0.1163			-2492
					5050	5100	0.0701			-2964
					4950	5050	0.0537			-4608
					4950	5350	0.3819			-2499
12.1	ZONGO	BO5150	2001	COM	5900	6000	0.0357			1367
					5800	5900	0.078			1376
					5700	5800	0.139			1362
					5600	5700	0.234			1568
					5500	5600	0.262			1691
					5400	5500	0.234			1284
					5300	5400	0.179			872
					5200	5300	0.159			466
					5100	5200	0.244			56
					5000	5100	0.286			-478
					4900	5000	0.101			-4715
					4900	6000	1.9517			557
12.2	ZONGO	BO5150	2002	COM	5900	6000	0.0357			927
					5800	5900	0.078			924
					5700	5800	0.139			925
					5600	5700	0.234			932
					5500	5600	0.262			825
					5400	5500	0.234			549
					5300	5400	0.179			283
					5200	5300	0.159			12
					5100	5200	0.245			-262
					5000	5100	0.287			-1459
					4900	5000	0.095			-5044
					4900	6000	1.9477			-58
12.3	ZONGO	BO5150	2003	COM	5900	6000	0.0357			919
					5800	5900	0.078			916
					5700	5800	0.139			903
					5600	5700	0.234			709
					5500	5600	0.262			501
					5400	5500	0.234			445
					5300	5400	0.179			399
					5200	5300	0.159			352
					5100	5200	0.2426			294
					5000	5100	0.2842			-2017
					4900	5000	0.0826			-5117
					4900	6000	1.9301			-86
12.4	ZONGO	BO5150	2004	COM	5900	6000	0.0357			806
					5800	5900	0.078			787
					5700	5800	0.139			773
					5600	5700	0.234			730
					5500	5600	0.262			718
					5400	5500	0.234			139
					5300	5400	0.179			-440
					5200	5300	0.159			-1074
					5100	5200	0.2405			-1604
					5000	5100	0.282			-2157
					4900	5000	0.076			-4545
					4900	6000	1.9192			-521

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
12.5	ZONGO	BO5150	2005	COM	5900	6000	0.0357			528
					5800	5900	0.078			532
					5700	5800	0.139			516
					5600	5700	0.234			467
					5500	5600	0.262			345
					5400	5500	0.234			-645
					5300	5400	0.179			-1633
					5200	5300	0.159			-2431
					5100	5200	0.223			-3763
					5000	5100	0.275			-4087
					4900	5000	0.067			-7149
					4900	6000	1.8857			-1559
	C.I.S.									
13.1	DJANKUAT	SU3010	2001	STR	3600	3760	0.047	2100	-1710	390
					3500	3600	0.359	3390	-1840	1550
					3400	3500	0.346	2450	-1690	760
					3300	3400	0.355	2380	-2100	280
					3200	3300	0.439	2600	-2740	-140
					3100	3200	0.359	2300	-3190	-890
					3000	3100	0.282	2130	-3990	-1860
					2900	3000	0.277	2030	-4930	-2900
					2800	2900	0.187	1760	-5330	-3570
					2700	2800	0.086	1490	-5040	-3550
					2700	3760	2.737	2420	-3040	-620
13.2	DJANKUAT	SU3010	2002	STR	3600	3760	0.047	2370	-900	1470
					3500	3600	0.359	3690	-1280	2410
					3400	3500	0.346	3030	-1600	1430
					3300	3400	0.355	3210	-1790	1420
					3200	3300	0.439	3390	-2300	1090
					3100	3200	0.359	3040	-2580	460
					3000	3100	0.282	2360	-3050	-690
					2900	3000	0.277	2050	-4060	-2010
					2800	2900	0.187	1870	-4360	-2490
					2700	2800	0.086	1570	-4240	-2670
					2700	3760	2.737	2900	-2470	430
13.3	DJANKUAT	SU3010	2003	STR	3600	3760	0.047	2810	-720	2090
					3500	3600	0.359	3750	-1070	2680
					3400	3500	0.346	2710	-1380	1330
					3300	3400	0.355	2950	-1610	1340
					3200	3300	0.439	2920	-2050	870
					3100	3200	0.359	2600	-2430	170
					3000	3100	0.282	2230	-3150	-920
					2900	3000	0.277	1700	-4110	-2410
					2800	2900	0.187	1470	-4400	-2930
					2700	2800	0.086	1310	-4200	-2890
					2700	3760	2.737	2630	-2350	280
13.4	DJANKUAT	SU3010	2004	STR	3600	3760	0.047	2550	-800	1750
					3500	3600	0.359	4150	-1130	3020
					3400	3500	0.346	3120	-1450	1670
					3300	3400	0.355	3370	-1880	1490
					3200	3300	0.439	3770	-2290	1480
					3100	3200	0.359	3240	-2550	690
					3000	3100	0.282	2790	-2940	-150
					2900	3000	0.277	2690	-4310	-1620
					2800	2900	0.187	2120	-4880	-2760

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					2700	2800	0.086	1830	-4220	-2390
					2700	3760	2.737	3220	-2490	730
13.5	DJANKUAT	SU3010	2005	STR	3600	3760	0.047	2230	-1460	770
					3500	3600	0.359	3570	-1500	2070
					3400	3500	0.346	3330	-1750	1580
					3300	3400	0.355	3110	-2040	1070
					3200	3300	0.439	3320	-2340	980
					3100	3200	0.359	3260	-2770	490
					3000	3100	0.282	3230	-3450	-220
					2900	3000	0.277	2860	-4500	-1640
					2800	2900	0.187	2130	-4940	-2810
					2700	2800	0.086	1620	-4570	-2950
					2700	3760	2.737	3120	-2730	390
14.1	GARABASHI	SU3031	2001	STR	4600	5000		130	-10	120
					4500	4600		210	-140	70
					4400	4500		250	-220	30
					4300	4400		280	-280	0
					4200	4300		380	-340	40
					4100	4200		630	-430	200
					4000	4100		1420	-550	870
					3900	4000		1730	-1150	580
					3800	3900		1370	-2170	-800
					3700	3800		1240	-2670	-1430
					3600	3700		1270	-3220	-1950
					3500	3600		1400	-3680	-2280
					3400	3500		1290	-4190	-2900
					3300	3400		1040	-4580	-3540
					3300	5000		1120	-1870	-750
14.2	GARABASHI	SU3031	2002	STR	4600	5000		370	0	370
					4500	4600		420	-60	360
					4400	4500		440	-170	270
					4300	4400		460	-210	250
					4200	4300		630	-250	380
					4100	4200		880	-270	610
					4000	4100		1370	-330	1040
					3900	4000		2130	-580	1550
					3800	3900		1650	-1060	590
					3700	3800		1460	-1580	-120
					3600	3700		1480	-1990	-510
					3500	3600		1690	-2320	-630
					3400	3500		1630	-2680	-1050
					3300	3400		1420	-2980	-1560
					3300	5000		1370	-1110	260
14.3	GARABASHI	SU3031	2003	STR	4600	5000		200	0	200
					4500	4600		260	-30	230
					4400	4500		340	-130	210
					4300	4400		360	-160	200
					4200	4300		490	-200	290
					4100	4200		800	-260	540
					4000	4100		1500	-330	1170
					3900	4000		2400	-630	1770
					3800	3900		1560	-1300	260
					3700	3800		1360	-1690	-330
					3600	3700		1330	-2060	-730
					3500	3600		1570	-2380	-810
					3400	3500		1530	-2740	-1210

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					3300	3400		1300	-2980	-1680
					3300	5000		1330	-1170	160
14.4	GARABASHI	SU3031	2004	STR	4600	5000		270	0	270
					4500	4600		380	-60	320
					4400	4500		400	-110	290
					4300	4400		450	-160	290
					4200	4300		730	-190	540
					4100	4200		1100	-220	880
					4000	4100		1580	-300	1280
					3900	4000		1970	-600	1370
					3800	3900		1650	-1110	540
					3700	3800		1480	-1370	110
					3600	3700		1260	-1990	-730
					3500	3600		1430	-2380	-950
					3400	3500		1440	-2760	-1320
					3300	3400		1290	-3030	-1740
					3300	5000		1330	-1080	250
14.5	GARABASHI	SU3031	2005	STR	4600	5000		270	0	270
					4500	4600		330	-60	270
					4400	4500		370	-110	260
					4300	4400		440	-160	280
					4200	4300		640	-180	460
					4100	4200		900	-230	670
					4000	4100		1440	-300	1140
					3900	4000		2120	-640	1480
					3800	3900		1720	-1110	610
					3700	3800		1560	-1560	0
					3600	3700		1400	-2130	-730
					3500	3600		1530	-2600	-1070
					3400	3500		1500	-2980	-1480
					3300	3400		1310	-3240	-1930
					3300	5000		1350	-1150	200
15.1	MALIY AKTRU	SU7100	2001	STR	3600	3714				490
					3500	3614				620
					3400	3514				780
					3300	3414				740
					3200	3314				60
					3100	3214				-650
					3000	3114				-1100
					2900	3014				-1550
					2800	2914				-2120
					2700	2814				-2510
					2600	2714				-2760
					2500	2614				-3140
					2400	2514				-3650
					2300	2414				-4080
					2200	2314				-4550
					2200	3714		630	-820	-190
15.2	MALIY AKTRU	SU7100	2004	STR	3600	3700				460
					3500	3600				650
					3400	3500				780
					3300	3400				760
					3200	3300				60
					3100	3200				-550
					3000	3100				-1010
					2900	3000				-1440
					2800	2900				-2030

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2700	2800				-2360
					2600	2700				-2680
					2500	2600				-3060
					2400	2500				-3590
					2300	2400				-4030
					2200	2300				-4680
					2200	3700		650	-800	-150
15.3	MALIY AKTRU	SU7100	2005	STR	3600	3700				540
					3500	3600				840
					3400	3500				960
					3300	3400				950
					3200	3300				370
					3100	3200				-280
					3000	3100				-480
					2900	3000				-870
					2800	2900				-1490
					2700	2800				-1800
					2600	2700				-2070
					2500	2600				-2430
					2400	2500				-2850
					2300	2400				-3410
					2200	2300				-4050
					2200	3700		710	-550	160
16.1	TS.TUYUKSUYSKIY	SU5075	2001	STR	4100	4220	0.107	379	-35	344
					4060	4100	0.24	426	2	428
					3940	4060	0.25	491	8	499
					3880	3940	0.199	573	43	530
					3860	3880	0.065	640	-225	414
					3840	3860	0.084	687	-480	207
					3820	3840	0.054	712	-633	79
					3800	3820	0.113	754	-1062	-308
					3780	3800	0.147	768	-1367	-605
					3760	3780	0.184	720	-1571	-851
					3740	3760	0.199	710	-1768	-1058
					3720	3740	0.163	695	-1912	-1217
					3700	3720	0.134	686	-2004	-1318
					3680	3700	0.072	691	-2051	-1360
					3660	3680	0.05	731	-2026	-1295
					3640	3660	0.053	758	-2115	-1357
					3620	3640	0.047	812	-2250	-1438
					3600	3620	0.069	815	-2322	-1507
					3580	3600	0.054	765	-2402	-1637
					3560	3580	0.098	721	-2515	-1794
					3540	3560	0.056	669	-2522	-1853
					3520	3540	0.05	682	-2591	-1909
					3500	3520	0.036	715	-2622	-1907
					3480	3500	0.01	701	-2566	-1865
					3480	4220	2.534	643	-1198	-555
16.2	TS.TUYUKSUYSKIY	SU5075	2002	STR	4100	4220	0.107	540	-167	707
					4060	4100	0.24	600	129	729
					3940	4060	0.25	700	101	801
					3880	3940	0.199	840	109	949
					3860	3880	0.065	920	-128	792
					3840	3860	0.084	950	-314	636
					3820	3840	0.054	960	-230	730
					3800	3820	0.113	960	-1127	-167
					3780	3800	0.147	920	-1272	-352
					3760	3780	0.184	780	-1330	-550

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					3740	3760	0.199	740	-1490	-750
					3720	3740	0.163	710	-1610	-900
					3700	3720	0.134	690	-1840	-1150
					3680	3700	0.072	690	-1940	-1250
					3660	3680	0.05	710	-2060	-1350
					3640	3660	0.059	740	-2140	-1400
					3620	3640	0.047	740	-2240	-1500
					3600	3620	0.069	690	-2190	-1500
					3580	3600	0.054	660	-2210	-1550
					3560	3580	0.098	620	-2220	-1600
					3540	3560	0.056	620	-2270	-1650
					3520	3540	0.05	640	-2390	-1750
					3500	3520	0.036	660	-2660	-2000
					3480	3500	0.01	680	-2880	-2200
					3480	4220	2.534	740	-1042	-302
16.3	TS.TUYUKSUYSKIY	SU5075	2003	STR	4100	4220	0.107	320	804	1124
					4060	4100	0.24	360	782	1142
					3940	4060	0.25	410	747	1157
					3880	3940	0.199	480	734	1214
					3860	3880	0.065	550	598	1148
					3840	3860	0.084	580	477	1057
					3820	3840	0.054	620	540	1160
					3800	3820	0.113	650	204	854
					3780	3800	0.147	660	189	849
					3760	3780	0.184	665	120	785
					3740	3760	0.199	625	-1024	-399
					3720	3740	0.163	600	-872	-272
					3700	3720	0.134	665	-1060	-395
					3680	3700	0.072	660	-1158	-498
					3660	3680	0.05	600	-1200	-600
					3640	3660	0.053	620	-1250	-630
					3620	3640	0.047	645	-1325	-680
					3600	3620	0.069	660	-1380	-720
					3580	3600	0.054	640	-1360	-720
					3560	3580	0.098	610	-1380	-770
					3540	3560	0.056	570	-1370	-800
					3520	3540	0.05	560	-1440	-880
					3500	3520	0.036	600	-1570	-970
					3480	3500	0.01	610	-1660	-1050
					3480	4220	2.534	556	-197	359
16.4	TS.TUYUKSUYSKIY	SU5075	2004	STR	4100	4219	0.114	270	371	641
					4000	4100	0.329	500	220	720
					3900	4000	0.249	630	276	906
					3800	3900	0.353	750	-151	599
					3700	3800	0.82	680	-835	-155
					3600	3700	0.319	590	1107	-517
					3500	3600	0.292	570	-1330	-860
					3450	3500	0.078	660	-1850	-1190
					3450	4219	2.626	580	-518	62
16.5	TS.TUYUKSUYSKIY	SU5075	2005	STR	4100	4219	0.188	331	959	690
					4000	4100	0.317	612	138	750
					3900	4000	0.24	770	200	970
					3800	3900	0.348	819	-379	440
					3700	3800	0.805	828	-1358	-530
					3600	3700	0.317	780	-2630	-1498
					3500	3600	0.266	711	-3680	-2330
					3450	3500	0.043	673	-2737	-2014
					3450	4219	2.525	735	-1075	-340

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
	CANADA									
17.1	HELM	CA855	2004	STR	2100	2200	0.036			-770
					2000	2100	0.182			-950
					1900	2000	0.443			-2210
					1800	1900	0.093			-3450
					1700	1800	0.002			-4650
					1700	2200	0.756			-1995
17.2	HELM	CA855	2005	STR	2100	2200	0.036			-1500
					2000	2100	0.182			-1720
					1900	2000	0.443			-2980
					1800	1900	0.093			-4220
					1700	1800	0.002			-5400
					1700	2200	0.756			-2765
18.1	PEYTO	CA1640	2001		3100	3200				1630
					3000	3100				1450
					2900	3000				1345
					2800	2900				895
					2700	2800				80
					2600	2700				-950
					2500	2600				-1825
					2400	2500				-3210
					2300	2400				-4225
					2200	2300				-4450
					2100	2200				-4240
					2100	3200				-920
18.2	PEYTO	CA1640	2002		3100	3200				690
					3000	3100				590
					2900	3000				450
					2800	2900				320
					2700	2800				130
					2600	2700				-120
					2500	2600				-560
					2400	2500				-1190
					2300	2400				-1400
					2200	2300				-2050
					2100	2200				-3090
					2100	3200	11.45			-500
18.3	PEYTO	CA1640	2003		3100	3200				-610
					3000	3100				-660
					2900	3000				-640
					2800	2900				-820
					2700	2800				-920
					2600	2700				-1010
					2500	2600				-1240
					2400	2500				-1640
					2300	2400				-2070
					2200	2300				-3310
					2100	2200				-4230
					2100	3200	11.45			-1370
18.4	PEYTO	CA1640	2004	STR	3100	3200	0.014			1230
					3000	3100	0.112			1120
					2900	3000	0.536			1000
					2800	2900	1.399			830
					2700	2800	1.907			670
					2600	2700	2.139			120
					2500	2600	2.139			-1150

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					2400	2500	1.687			-1710
					2300	2400	0.569			-2165
					2200	2300	0.441			-3340
					2100	2200	0.508			-3100
					2100	3200	11.45			-550
18.5	PEYTO	CA1640	2005	STR	3100	3200	0.014			820
					3000	3100	0.112			700
					2900	3000	0.536			590
					2800	2900	1.399			480
					2700	2800	1.907			330
					2600	2700	2.139			-650
					2500	2600	2.139			-1170
					2400	2500	1.687			-1570
					2300	2400	0.569			-1980
					2200	2300	0.441			-2710
					2100	2200	0.508			-4100
					2100	3200	11.45			-810
19.1	PLACE	CA1660	2004	STR	2500	2600	0.023			-680
					2400	2500	0.098			-950
					2300	2400	0.516			-1225
					2200	2300	0.272			-1570
					2100	2200	0.429			-1940
					2000	2100	1.038			-2470
					1900	2000	0.661			-2890
					1800	1900	0.138			-3930
					1800	2600	3.174			-2210
19.2	PLACE	CA1660	2005	STR	2500	2600	0.023			680
					2400	2500	0.098			200
					2300	2400	0.516			-280
					2200	2300	0.272			-710
					2100	2200	0.429			-960
					2000	2100	1.038			-1300
					1900	2000	0.661			-2160
					1800	1900	0.138			-4500
					1800	2600	3.174			-1295
20.1	WHITE	CA2340	2001	COM	1700	1799	0.15			237
					1600	1699	0.46			237
					1500	1599	1.76			237
					1400	1499	4.25			216
					1300	1399	6.25			162
					1200	1299	5.85			82
					1100	1199	5.16			-19
					1000	1099	3.59			-138
					900	999	2.66			-272
					800	899	2.02			-416
					700	799	1.41			-567
					600	699	1.49			-722
					500	599	0.98			-875
					400	499	0.8			-1024
					300	399	1.1			-1165
					200	299	0.92			-1294
					100	199	0.52			-1405
					0	99	0.02			-1437
					0	1799	39.38			-151
20.2	WHITE	CA2340	2002	COM	1700	1799	0.15			118
					1600	1699	0.46			118

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					1500	1599	1.76			119
					1400	1499	4.25			180
					1300	1399	6.25			242
					1200	1299	5.85			266
					1100	1199	5.16			253
					1000	1099	3.59			204
					900	999	2.66			120
					800	899	2.02			2
					700	799	1.41			-150
					600	699	1.49			-334
					500	599	0.98			-550
					400	499	0.8			-797
					300	399	1.1			-1074
					200	299	0.92			-1381
					100	199	0.52			-1708
					0	99	0.02			-1817
					0	1799	39.38			32
20.3	WHITE	CA2340	2003	COM	1700	1799	0.15			582
					1600	1699	0.46			582
					1500	1599	1.76			582
					1400	1499	4.25			539
					1300	1399	6.25			428
					1200	1299	5.85			267
					1100	1199	5.16			66
					1000	1099	3.59			-162
					900	999	2.66			-407
					800	899	2.02			-658
					700	799	1.41			-901
					600	699	1.49			-1128
					500	599	0.98			-1325
					400	499	0.8			-1482
					300	399	1.1			-1587
					200	299	0.92			-1628
					100	199	0.52			-1598
					0	99	0.02			-1574
					0	1799	39.38			-106
20.4	WHITE	CA2340	2004	COM	1700	1799	0.15			235
					1600	1699	0.46			235
					1500	1599	1.76			236
					1400	1499	4.25			287
					1300	1399	6.25			324
					1200	1299	5.85			313
					1100	1199	5.16			260
					1000	1099	3.59			168
					900	999	2.66			42
					800	899	2.02			-114
					700	799	1.41			-294
					600	699	1.49			-496
					500	599	0.98			-713
					400	499	0.8			-943
					300	399	1.1			-1179
					200	299	0.92			-1418
					100	199	0.52			-1651
					0	99	0.02			-1724
					0	1799	39.38			37
20.5	WHITE	CA2340	2005	COM	1700	1799	0.15			401
					1600	1699	0.46			401
					1500	1599	1.76			400

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1400	1499	4.25			309
					1300	1399	6.25			129
					1200	1299	5.85			-102
					1100	1199	5.16			-373
					1000	1099	3.59			-674
					900	999	2.66			-995
					800	899	2.02			-1327
					700	799	1.41			-1658
					600	699	1.49			-1980
					500	599	0.98			-2282
					400	499	0.8			-2555
					300	399	1.1			-2788
					200	299	0.92			-2971
					100	199	0.52			-3093
					0	99	0.02			-3117
					0	1799	39.38			-612
	CHINA									
21.1	URUMQIHE E-BR.	CN1	2004	FXD	4150	4267	0.12			270
					4100	4150	0.081			135
					4050	4100	0.095			-220
					4000	4050	0.169			-580
					3950	4000	0.16			-750
					3900	3950	0.205			-840
					3850	3800	0.065			-2170
					3800	3850	0.088			-1750
					3742	3900	0.118			-1170
					3742	4267	1.101			-706
21.2	URUMQIHE E-BR.	CN1	2005	FXD	4150	4267	0.12			234
					4100	4150	0.081			332
					4050	4100	0.095			229
					4000	4050	0.169			-180
					3950	4000	0.16			-340
					3900	3950	0.205			-630
					3850	3800	0.065			-2730
					3800	3850	0.088			-2100
					3742	3900	0.118			-990
					3742	4267	1.101	89	-525	-480
22.1	URUMQIHE W-BR.	CN2	2001	FXD	4400	4486	0.035			261
					4350	4400	0.039			360
					4300	4350	0.039			416
					4250	4300	0.036			37
					4200	4250	0.035			320
					4150	4200	0.039			240
					4100	4150	0.052			-296
					4050	4100	0.109			-878
					4000	4050	0.095			-952
					3950	4000	0.067			-1710
					3900	3950	0.045			-2250
					3850	3900	0.024			-3280
					3825	3850	0.012			-3100
					3825	4486	0.607	92	-1251	-1159
22.2	URUMQIHE W-BR.	CN2	2004	FXD	4400	4486	0.03			380
					4350	4400	0.034			370
					4300	4350	0.045			350
					4250	4300	0.036			330
					4200	4250	0.035			275
					4150	4200	0.037			150

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					4100	4100	0.053			-300
					4050	4050	0.112			-963
					4000	4150	0.088			-1380
					3950	4000	0.067			-1920
					3900	3950	0.041			-2765
					3850	3900	0.005			-3300
					3825	3850	0.024			-3120
					3825	4486	0.607	-37	-1353	-844
22.3	URUMQIHE W-BR.	CN2	2005	FXD	4400	4486	0.03			135
					4350	4400	0.034			160
					4300	4350	0.045			210
					4250	4300	0.036			220
					4200	4250	0.035			214
					4150	4200	0.037			184
					4100	4100	0.053			150
					4050	4050	0.112			96
					4000	4150	0.088			-560
					3950	4000	0.067			-1040
					3900	3950	0.041			-1780
					3850	3900	0.005			-3500
					3825	3850	0.024			-2010
					3825	4486	0.607	152	-980	-503
	ECUADOR									
23.1	ANTIZANA15ALPHA	EC1	2001	FXD	5600	5760	0.038			940
					5500	5600	0.024			695
					5400	5500	0.029			540
					5300	5400	0.034			460
					5200	5300	0.034			380
					5100	5200	0.06			190
					5000	5100	0.039			-441
					4960	5000	0.021			-3060
					4910	4960	0.031			-3287
					4880	4910	0.017			-3547
					4860	4880	0.008			-4876
					4830	4860	0.006			-4962
					4830	5760	0.34			-598
23.2	ANTIZANA15ALPHA	EC1	2002	FXD	5600	5760	0.038			1015
					5500	5600	0.024			815
					5400	5500	0.029			500
					5300	5400	0.034			375
					5200	5300	0.034			230
					5100	5200	0.06			115
					5000	5100	0.026			-1286
					4960	5000	0.016			-4410
					4910	4960	0.027			-4907
					4880	4910	0.015			-4999
					4860	4880	0.004			-2497
					4830	4860	0.007			-3069
					4830	5760	0.313			-769
23.3	ANTIZANA15ALPHA	EC1	2003	FXD	5600	5760	0.038			810
					5500	5600	0.024			810
					5400	5500	0.029			810
					5300	5400	0.034			675
					5200	5300	0.034			338
					5100	5200	0.06			-1380
					5000	5100	0.024			-2558
					4960	5000	0.015			-5703

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					4910	4960	0.026			-6497
					4880	4910	0.014			-5934
					4860	4880	0.003			-6330
					4830	4860	0.005			-6633
					4830	5760	0.303			-1363
23.4	ANTIZANA15ALPHA	EC1	2004	FXD	5600	5760	0.038			957
					5500	5600	0.024			892
					5400	5500	0.029			661
					5300	5400	0.034			370
					5200	5300	0.034			250
					5100	5200	0.06			82
					5000	5100	0.022			-2004
					4960	5000	0.02			-3435
					4910	4960	0.022			-4147
					4880	4910	0.01			-4171
					4860	4880	0.005			-4323
					4830	4860	0.001			-5420
					4830	5760	0.298			-572
23.5	ANTIZANA15ALPHA	EC1	2005	FXD	5600	5760	0.038			878
					5500	5600	0.024			878
					5400	5500	0.029			878
					5300	5400	0.034			780
					5200	5300	0.034			520
					5100	5200	0.06			-1177
					5000	5100	0.02			-2360
					4960	5000	0.021			-4003
					4910	4960	0.022			-4259
					4880	4910	0.009			-4670
					4860	4880	0.003			-4838
					4830	4860	0			-6580
					4830	5760	0.294			-789
	INDIA									
24.1	CHHOTA SHIGRI	IN	2003		5400	6250	1.425			1000
					5250	5400	1.788			534
					5100	5250	3.122			68
					5050	5100	1.163			-887
					5000	5050	1.237			-887
					4950	5000	1.219			-1842
					4900	4950	1.008			-2044
					4850	4900	0.613			-2836
					4800	4850	0.65			-3457
					4750	4800	0.93			-3552
					4700	4750	0.501			-3903
					4650	4700	0.495			-4230
					4600	4650	0.306			-4457
					4550	4600	0.309			-4687
					4500	4550	0.188			-4732
					4450	4500	0.248			-4849
					4400	4450	0.155			-4961
					4350	4400	0.116			-4653
					4300	4350	0.094			-3848
					4050	4300	0.153			-3320
					4050	6250	15.72			-1416
24.2	CHHOTA SHIGRI	IN	2004		5400	6250	1.425			600
					5250	5400	1.788			312
					5100	5250	3.122			24
					5050	5100	1.163			-277

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					5000	5050	1.237			-1384
					4950	5000	1.219			-1064
					4900	4950	1.008			-1384
					4850	4900	0.613			-2037
					4800	4850	0.65			-2351
					4750	4800	0.93			-2795
					4700	4750	0.501			-3679
					4650	4700	0.495			-3951
					4600	4650	0.306			-4235
					4550	4600	0.309			-4325
					4500	4550	0.188			-4642
					4450	4500	0.248			-4784
					4400	4450	0.155			-5112
					4350	4400	0.116			-4724
					4300	4350	0.094			-3512
					4050	4300	0.153			-3357
					4050	6250	15.72			-1227
24.3	CHHOTA SHIGRI	IN	2005		5400	6250	1.425			1900
					5250	5400	1.788			1096
					5200	5250	0.953			694
					5150	5200	1.123			691
					5100	5150	1.047			659
					5050	5100	1.163			464
					5000	5050	1.237			545
					4950	5000	1.219			545
					4900	4950	1.008			282
					4850	4900	0.613			-108
					4800	4850	0.65			-887
					4750	4800	0.93			-636
					4700	4750	0.501			-1499
					4650	4700	0.495			-1885
					4600	4650	0.306			-1963
					4550	4600	0.309			-2032
					4500	4550	0.188			-2442
					4450	4500	0.248			-2636
					4400	4450	0.155			-3209
					4350	4400	0.116			-3502
					4300	4350	0.094			-2063
					4050	4300	0.153			-2187
					4050	6250	15.72			144
	ITALY									
25.1	CALDERONE	IT1006	2001	COM	2750	2830	0.011			58
					2630	2700	0.038			-680
					2630	2830	0.05			-511
25.2	CALDERONE	IT1006	2002	COM	2750	2830	0.008			-2165
					2630	2700	0.025			-1746
					2630	2830	0.033			-1847
25.3	CALDERONE	IT1006	2003	COM	2750	2830	0.007			106
					2630	2700	0.027			-357
					2630	2830	0.033			-264
25.4	CALDERONE	IT1006	2004	COM	2750	2830	0.007			206
					2630	2700	0.027			263
					2630	2830	0.033			252
25.5	CALDERONE	IT1006	2005	COM	2750	2830	0.007			983

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					2630	2700	0.027			-494
					2630	2830	0.033			-194
26.1	CARESER	IT701	2002	FXD	3300	3350	0			379
					3250	3300	0.032			55
					3200	3250	0.064			-196
					3150	3200	0.188			-629
					3100	3150	0.512			-717
					3050	3100	0.904			-912
					3000	3050	0.506			-1396
					2950	3000	0.351			-1818
					2900	2950	0.192			-2095
					2850	2900	0.078			-2317
					2850	3350	2.829			-1149
26.2	CARESER	IT701	2003	FXD	3300	3350	0			-2508
					3250	3300	0.032			-2668
					3200	3250	0.064			-2882
					3150	3200	0.188			-3126
					3100	3150	0.512			-3045
					3050	3100	0.904			-3008
					3000	3050	0.506			-3451
					2950	3000	0.351			-3906
					2900	2950	0.192			-4208
					2850	2900	0.078			-4044
					2850	3350	2.829			-3317
26.3	CARESER	IT701	2004	FXD	3300	3350	0			-758
					3250	3300	0.032			-1028
					3200	3250	0.064			-1267
					3150	3200	0.188			-1464
					3100	3150	0.512			-1310
					3050	3100	0.904			-1315
					3000	3050	0.506			-1751
					2950	3000	0.351			-2071
					2900	2950	0.192			-1928
					2850	2900	0.078			-2359
					2850	3350	2.829			-1562
26.4	CARESER	IT701	2005	FXD	3300	3350	0			-357
					3250	3300	0.032			-742
					3200	3250	0.064			-1087
					3150	3200	0.188			-1545
					3100	3150	0.512			-1758
					3050	3100	0.904			-1739
					3000	3050	0.506			-2124
					2950	3000	0.351			-2594
					2900	2950	0.192			-3080
					2850	2900	0.078			-3024
					2850	3350	2.829			-2005
27.1	CIARDONEY	IT81	2001	COM	3120	3160	0.182	2240	-1740	500
					3080	3120	0.178	2235	-1735	500
					3020	3080	0.225	1941	-1708	233
					2910	3020	0.155	1819	-1818	1
					2850	2910	0.093	1923	-2183	-260
					2850	3160	0.833	2000	-1840	160
27.2	CIARDONEY	IT81	2002	COM	3120	3160	0.182	1104	-972	132
					3080	3120	0.178	920	-689	231
					3020	3080	0.225	439	-437	2

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2910	3020	0.155	420	-1290	-870
					2850	2910	0.093	390	-1652	-1262
					2850	3160	0.833	590	-990	-400
27.3	CIARDONEY	IT81	2003	COM	3120	3160	0.182	1390	-3630	-2240
					3080	3120	0.178	1300	-3730	-2430
					3020	3080	0.225	780	-3760	-2980
					2910	3020	0.155	550	-3900	-3350
					2850	2910	0.093	390	-3960	-3570
					2850	3160	0.833	810	-3810	-3000
27.4	CIARDONEY	IT81	2004	COM	3120	3160	0.182	1562	-1910	-348
					3080	3120	0.178	1377	-2070	-693
					3020	3080	0.225	1195	-2330	-1135
					2910	3020	0.155	1011	-2170	-1159
					2850	2910	0.093	920	-2490	-1570
					2850	3160	0.833	1170	-2230	-1060
27.5	CIARDONEY	IT81	2005	COM	3120	3160	0.182	987	-2400	-1413
					3080	3120	0.178	859	-2710	-1851
					3020	3080	0.225	768	-2960	-2192
					2910	3020	0.155	731	-3250	-2519
					2850	2910	0.093	622	-3340	-2718
					2850	3160	0.833	770	-3000	-2230
28.1	FONTANA BIANCA	IT713	2001	FXD	3350	3400	0.003	1704	-1504	200
					3300	3350	0.052	1843	-1601	242
					3250	3300	0.069	2135	-1690	445
					3200	3250	0.121	2234	-1545	689
					3150	3200	0.128	2338	-1673	666
					3100	3150	0.100	2318	-2067	250
					3050	3100	0.067	2282	-2122	161
					3000	3050	0.046	2059	-1980	79
					2950	3000	0.014	1898	-2384	-486
					2900	2950	0.011	2130	-2420	-289
					2850	2900	0.002	2400	-2150	250
					2850	3400	0.613	2206	-1811	395
28.2	FONTANA BIANCA	IT713	2002	FXD	3350	3400	0.003	700	-985	-285
					3300	3350	0.052	677	-867	-190
					3250	3300	0.069	664	-913	-249
					3200	3250	0.121	766	-1022	-255
					3150	3200	0.128	758	-1061	-303
					3100	3150	0.100	748	-1270	-522
					3050	3100	0.067	990	-1500	-510
					3000	3050	0.046	1025	-1926	-901
					2950	3000	0.014	641	-2392	-1751
					2900	2950	0.011	809	-2111	-1302
					2850	2900	0.002	846	-1846	-1000
					2850	3400	0.613	784	-1219	-435
28.3	FONTANA BIANCA	IT713	2003	FXD	3350	3400	0.003	950	-3092	-2142
					3300	3350	0.052	1017	-3594	-2577
					3250	3300	0.069	1134	-3989	-2856
					3200	3250	0.121	1184	-3914	-2730
					3150	3200	0.128	1123	-3836	-2713
					3100	3150	0.100	1086	-4189	-3103
					3050	3100	0.067	1113	-4471	-3358
					3000	3050	0.046	1094	-4615	-3521
					2950	3000	0.014	1038	-4964	-3926
					2900	2950	0.011	1048	-4269	-3222

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					2850	2900	0.002	1466	-4266	-2800
					2850	3400	0.613	1115	-4065	-2950
28.4	FONTANA BIANCA	IT713	2004	FXD	3350	3400	0.001	700	-1900	-1200
					3300	3350	0.044	903	-1858	-954
					3250	3300	0.056	921	-1675	-754
					3200	3250	0.115	896	-1616	-720
					3150	3200	0.126	1051	-1967	-916
					3100	3150	0.092	1091	-2342	-1251
					3050	3100	0.059	997	-2182	-1185
					3000	3050	0.039	956	-2233	-1277
					2950	3000	0.009	813	-2482	-1669
					2900	2950	0.008	1018	-2544	-1525
					2850	2900	0	1300	-2700	-1400
					2850	3400	0.55	983	-1977	-994
28.5	FONTANA BIANCA	IT713	2005	FXD	3350	3400	0.001	600	-1696	-1097
					3300	3350	0.044	616	-1660	-1045
					3250	3300	0.056	687	-1786	-1099
					3200	3250	0.112	754	-2032	-1278
					3150	3200	0.124	729	-2185	-1456
					3100	3150	0.091	731	-2351	-1620
					3050	3100	0.058	866	-2690	-1824
					3000	3050	0.036	828	-2788	-1959
					2950	3000	0.008	725	-3074	-2349
					2900	2950	0.008	845	-2963	-2118
					2850	2900	0	899	-2699	-1801
					2850	3400	0.538	744	-2215	-1471
29.1	MALAVALLE	IT875	2002		3450	3500	0.024			724
					3400	3450	0.064			699
					3350	3400	0.116			657
					3300	3350	0.155			617
					3250	3300	0.282			575
					3200	3250	0.352			538
					3150	3200	0.765			500
					3100	3150	0.417			402
					3050	3100	0.675			260
					3000	3050	0.564			-440
					2950	3000	0.617			-1006
					2900	2950	0.769			-1336
					2850	2900	0.69			-1760
					2800	2850	0.491			-2051
					2750	2800	0.399			-2313
					2700	2750	0.385			-2711
					2650	2700	0.156			-3119
					2600	2650	0.225			-3505
					2550	2600	0.053			-3790
					2550	3500	7.198			-909
29.2	MALAVALLE	IT875	2003		3450	3500	0.024			678
					3400	3450	0.064			624
					3350	3400	0.116			513
					3300	3350	0.155			406
					3250	3300	0.282			299
					3200	3250	0.352			190
					3150	3200	0.765			99
					3100	3150	0.417			-96
					3050	3100	0.675			-404
					3000	3050	0.564			-1600
					2950	3000	0.617			-2166

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2900	2950	0.769			-2318
					2850	2900	0.69			-2270
					2800	2850	0.491			-2607
					2750	2800	0.399			-2877
					2700	2750	0.385			-3011
					2650	2700	0.156			-3134
					2600	2650	0.225			-3250
					2550	2600	0.053			-3339
					2550	3500	7.198			-1461
29.3	MALAVALLE	IT875	2004		3450	3500	0.024			1640
					3400	3450	0.064			1615
					3350	3400	0.116			1600
					3300	3350	0.155			1375
					3250	3300	0.282			1181
					3200	3250	0.352			966
					3150	3200	0.765			727
					3100	3150	0.417			564
					3050	3100	0.675			470
					3000	3050	0.564			350
					2950	3000	0.617			-50
					2900	2950	0.769			-500
					2850	2900	0.69			-837
					2800	2850	0.491			-1347
					2750	2800	0.399			-1658
					2700	2750	0.385			-1968
					2650	2700	0.156			-2154
					2600	2650	0.225			-2192
					2550	2600	0.053			-2330
					2550	3500	7.198			-208
29.4	MALAVALLE	IT875	2005		3450	3500	0.024	2119	-28	2091
					3400	3450	0.064	2119	-28	2091
					3350	3400	0.116	2067	-45	2022
					3300	3350	0.155	1941	-76	1865
					3250	3300	0.282	1829	-202	1627
					3200	3250	0.352	1692	-372	1321
					3150	3200	0.765	1619	-663	956
					3100	3150	0.417	1549	-1006	543
					3050	3100	0.675	1435	-1342	-92
					3000	3050	0.564	1290	-1675	-385
					2950	3000	0.617	1048	-1928	-880
					2900	2950	0.769	731	-2111	-1380
					2850	2900	0.69	712	-2590	-1878
					2800	2850	0.491	441	-2801	-2360
					2750	2800	0.399	175	-2992	-2817
					2700	2750	0.385	-161	-3078	-3239
					2650	2700	0.156	-426	-3190	-3616
					2600	2650	0.225	-769	-3166	-3935
					2550	2600	0.053	-948	-3241	-4189
					2550	3500	7.198	967	-1767	-800
30.1	PENDENTE	IT876	2001		3100	3150	0.005			1045
					3050	3100	0.013			850
					3000	3050	0.016			1031
					2950	3000	0.036			909
					2900	2950	0.112			872
					2850	2900	0.194			552
					2800	2850	0.142			317
					2750	2800	0.235			-128
					2700	2750	0.22			-519

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2650	2700	0.087			-910
					2600	2650	0.007			-1087
					2600	3150	1.067			48
30.2	PENDENTE	IT876	2002		3100	3150	0.005			-640
					3050	3100	0.013			-640
					3000	3050	0.016			-633
					2950	3000	0.036			-600
					2900	2950	0.112			-582
					2850	2900	0.194			-765
					2800	2850	0.142			-1157
					2750	2800	0.235			-1388
					2700	2750	0.22			-1892
					2650	2700	0.087			-2288
					2600	2650	0.007			-2554
					2600	3150	1.067			-1294
30.3	PENDENTE	IT876	2003		3100	3150	0.005			-1
					3050	3100	0.013			-3
					3000	3050	0.016			-75
					2950	3000	0.036			-446
					2900	2950	0.112			-1044
					2850	2900	0.194			-1746
					2800	2850	0.142			-2030
					2750	2800	0.235			-2420
					2700	2750	0.22			-2648
					2650	2700	0.087			-3217
					2600	2650	0.007			-3892
					2600	3150	1.067			-2078
30.4	PENDENTE	IT876	2004		3100	3150	0.005			0
					3050	3100	0.013			116
					3000	3050	0.016			110
					2950	3000	0.036			89
					2900	2950	0.112			-59
					2850	2900	0.194			-269
					2800	2850	0.142			-437
					2750	2800	0.235			-496
					2700	2750	0.22			-657
					2650	2700	0.087			-723
					2600	2650	0.007			-856
					2600	3150	1.067			-427
30.5	PENDENTE	IT876	2005		3000	3050	0.016			38
					2950	3000	0.036			38
					2900	2950	0.112			2
					2850	2900	0.194			-77
					2800	2850	0.142			-852
					2750	2800	0.235			-1421
					2700	2750	0.22			-1680
					2650	2700	0.087			-2091
					2600	2650	0.007			-2114
					2600	3050	1.049	1563	-2526	-963
	NEW ZEALAND									
31.1	BREWSTER	NZ	2005	COM	2400	2500	0.003	4000	-1150	2850
					2300	2400	0.068	4000	-1223	2777
					2200	2300	0.145	3993	-1366	2627
					2100	2200	0.19	3500	-1556	1944

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2000	2100	0.249	3500	-1631	1869
					1900	2000	1.046	3126	-1768	1358
					1800	1900	0.582	2484	-1935	549
					1700	1800	0.234	1834	-2712	-878
					1600	1700	0.026	1192	-2951	-1758
					1600	2500	2.542	2979	-1838	1141
	NORWAY									
32.1	AALFOTBREEN	NO36204	2001		1350	1382	0.233	1850	-3550	-1700
					1300	1350	0.982	1900	-3600	-1700
					1250	1300	0.796	1900	-3700	-1800
					1200	1250	0.729	1900	-3800	-1900
					1150	1200	0.608	1850	-3950	-2100
					1100	1150	0.485	1800	-4200	-2400
					1050	1100	0.316	1800	-4550	-2750
					1000	1050	0.202	1700	-4950	-3250
					950	1000	0.114	1700	-5450	-3750
					903	950	0.031	1750	-6000	-4250
					903	1382	4.497	1858	-3951	-2093
32.2	AALFOTBREEN	NO36204	2002		1350	1382	0.233	4150	-4800	-650
					1300	1350	0.982	4050	-4900	-850
					1250	1300	0.796	3950	-5000	-1050
					1200	1250	0.729	3800	-5150	-1350
					1150	1200	0.608	3650	-5350	-1700
					1100	1150	0.485	3500	-5650	-2150
					1050	1100	0.316	3400	-6000	-2600
					1000	1050	0.202	3300	-6400	-3100
					950	1000	0.114	3200	-6850	-3650
					903	950	0.031	3100	-7300	-4200
					903	1382	4.497	3776	-5306	-1530
32.3	AALFOTBREEN	NO36204	2003		1350	1382	0.233	2700	-4550	-1850
					1300	1350	0.982	2650	-4600	-1950
					1250	1300	0.796	2600	-4700	-2100
					1200	1250	0.729	2500	-4850	-2350
					1150	1200	0.608	2450	-5050	-2600
					1100	1150	0.485	2400	-5400	-3000
					1050	1100	0.316	2350	-5750	-3400
					1000	1050	0.202	2350	-6200	-3850
					950	1000	0.114	2400	-6650	-4250
					903	950	0.031	2500	-7150	-4650
					903	1382	4.497	2523	-5025	-2502
32.4	AALFOTBREEN	NO36204	2004		1350	1382	0.233	3750	-2650	1100
					1300	1350	0.982	3650	-2850	800
					1250	1300	0.796	3500	-3100	400
					1200	1250	0.729	3350	-3350	0
					1150	1200	0.608	3200	-3650	-450
					1100	1150	0.485	3050	-3900	-850
					1050	1100	0.316	2900	-4200	-1300
					1000	1050	0.202	2750	-4550	-1800
					950	1000	0.114	2550	-4850	-2300
					903	950	0.031	2400	-5200	-2800
					903	1382	4.497	3325	-3425	-100
32.5	AALFOTBREEN	NO36204	2005		1350	1382	0.233	5450	-4150	1300
					1300	1350	0.982	5600	-4200	1400
					1250	1300	0.796	5550	-4250	1300
					1200	1250	0.729	4900	-4300	600
					1150	1200	0.608	4550	-4350	200

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1100	1150	0.485	4350	-4400	-50
					1050	1100	0.316	4250	-4500	-250
					1000	1050	0.202	4200	-4600	-400
					950	1000	0.114	4150	-4700	-550
					903	950	0.031	4100	-4800	-700
					903	1382	4.497	4988	-4320	668
33.1	AUSTDALSBREEN	NO37323	2002		1700	1757	0.16	1800	-2400	-600
					1650	1700	0.13	1900	-2530	-630
					1600	1650	0.38	2100	-2660	-560
					1550	1600	2.45	2300	-2790	-490
					1500	1550	2.54	2400	-2900	-500
					1450	1500	1.92	2250	-3150	-900
					1400	1450	1.36	1850	-3900	-2050
					1350	1400	1.01	1450	-4700	-3250
					1300	1350	0.79	1000	-5100	-4100
					1250	1300	0.69	550	-5500	-4950
					1200	1250	0.44	250	-6000	-5750
					1200	1757	11.84	1910	-3920	-2010
33.2	AUSTDALSBREEN	NO37323	2003		1700	1757	0.16	1500	-2900	-1400
					1650	1700	0.13	1700	-2900	-1200
					1600	1650	0.38	1800	-2950	-1150
					1550	1600	2.45	1900	-2950	-1050
					1500	1550	2.54	1900	-3050	-1150
					1450	1500	1.92	1800	-3500	-1700
					1400	1450	1.36	1300	-3800	-2500
					1350	1400	1.01	1200	-4400	-3200
					1300	1350	0.79	1050	-4600	-3550
					1250	1300	0.69	1000	-5000	-4000
					1200	1250	0.44	950	-5700	-4750
					1200	1757	11.84	1600	-3940	-2340
33.3	AUSTDALSBREEN	NO37323	2004		1700	1757	0.16	1400	-1450	-50
					1650	1700	0.13	1700	-1500	200
					1600	1650	0.38	1800	-1570	230
					1550	1600	2.45	1900	-1630	270
					1500	1550	2.54	1900	-1700	200
					1450	1500	1.92	1700	-1900	-200
					1400	1450	1.36	1450	-2400	-950
					1350	1400	1.01	1200	3000	-1800
					1300	1350	0.79	1050	-3750	-2700
					1250	1300	0.69	1000	-4500	-3500
					1200	1250	0.44	950	-5250	-4300
					1200	1757	11.84	1600	-2560	-960
33.4	AUSTDALSBREEN	NO37323	2005		1700	1757	0.16	2600	-2100	500
					1650	1700	0.13	3000	-2100	900
					1600	1650	0.38	3250	-2100	1150
					1550	1600	2.45	3350	-2070	1280
					1500	1550	2.54	3300	-2050	1250
					1450	1500	1.92	3000	-2050	950
					1400	1450	1.36	2700	-2150	550
					1350	1400	1.01	2250	-2400	-150
					1300	1350	0.79	2000	-2700	-700
					1250	1300	0.69	1750	-3250	-1500
					1200	1250	0.44	1500	-4000	-2500
					1200	1757	11.84	2850	-2660	190
34.1	BREIDALBLIKKBREA	NO	2003		1600	1659	0.66	2200	-3700	-1500
					1550	1600	0.61	2100	-3900	-1800

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1500	1550	0.45	2050	-4100	-2050
					1450	1500	0.43	2050	-4350	-2300
					1400	1450	0.39	2050	-4550	-2500
					1350	1400	0.36	2050	-4800	-2750
					1300	1350	0.4	2050	-5000	-2950
					1236	1300	0.31	2000	-5300	-3300
					1236	1659	3.61	2080	-4350	-2260
34.2	BREIDALBLIKKBREA	NO	2004		1600	1659	0.66	2400	-2250	150
					1550	1600	0.61	2300	-2500	-200
					1500	1550	0.45	2250	-2850	-600
					1450	1500	0.43	2200	-3300	-1100
					1400	1450	0.39	2150	-3650	-1500
					1350	1400	0.36	2100	-3900	-1800
					1300	1350	0.4	2050	-4000	-1950
					1236	1300	0.31	2050	-4050	-2000
					1236	1659	3.61	2210	-3160	-940
34.3	BREIDALBLIKKBREA	NO	2005		1600	1659	0.66	3200	-2500	700
					1550	1600	0.61	3250	-2800	450
					1500	1550	0.45	3250	-3100	150
					1450	1500	0.43	3250	-3400	-150
					1400	1450	0.39	3200	-3700	-500
					1350	1400	0.36	3050	-3950	-900
					1300	1350	0.4	2800	-4200	-1400
					1236	1300	0.31	2350	-4500	-2150
					1236	1659	3.61	3090	-3370	-280
35.1	ENGABREEN	NO67011	2001		1500	1594	0.12	1520	-1700	-180
					1400	1500	2.51	1710	-1750	-40
					1300	1400	9.35	1530	-1900	-370
					1200	1300	8.55	1330	-2200	-870
					1100	1200	7.6	1100	-2500	-1400
					1000	1100	4.66	820	-2900	-2080
					900	1000	2.46	300	-3700	-3400
					800	900	0.94	-180	-4350	-4530
					700	800	0.5	-670	-4950	-5620
					600	700	0.37	-1120	-5500	-6620
					500	600	0.27	-1590	-6000	-7590
					400	500	0.21	-2050	-6500	-8550
					300	400	0.17	-2450	-7000	-9450
					200	300	0.22	-2900	-7600	-10500
					40	200	0.1	-3550	-8300	-11850
					40	1594	38.03	1049	-2579	-1530
35.2	ENGABREEN	NO67011	2002		1500	1575	0.13	3000	-2350	650
					1400	1500	2.94	3500	-2350	1150
					1300	1400	10.52	3650	-2500	1150
					1200	1300	8.68	3300	-2900	400
					1100	1200	7.47	3000	-3400	-400
					1000	1100	4.52	2350	-4000	-1650
					900	1000	2.38	1750	-4900	-3150
					800	900	0.87	1000	-5900	-4900
					700	800	0.54	500	-6800	-6300
					600	700	0.38	0	-7600	-7600
					500	600	0.28	-400	-8400	-8800
					400	500	0.2	-700	-9200	-9900
					300	400	0.17	-1000	-10000	-11000
					200	300	0.26	-1500	-11000	-12500
					10	200	0.21	-2100	-12200	-14300
					10	1575	39.55	2903	-3460	-557

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
35.3	ENGABREEN	NO67011	2003		1500	1575	0.13	2500	-2100	400
					1400	1500	2.94	2800	-2200	600
					1300	1400	10.52	2800	-2350	450
					1200	1300	8.68	2750	-2500	250
					1100	1200	7.47	2600	-2800	-200
					1000	1100	4.52	2300	-3300	-1000
					900	1000	2.38	1500	-4200	-2700
					800	900	0.87	700	-4900	-4200
					700	800	0.54	400	-5600	-5200
					600	700	0.38	0	-6400	-6400
					500	600	0.28	-300	-7200	-7500
					400	500	0.2	-450	-8000	-8450
					300	400	0.17	-600	-8800	-9400
					200	300	0.26	-750	-9500	-10250
					10	200	0.21	-950	-10700	-11650
					10	1575	39.55	2413	-2997	-584
35.4	ENGABREEN	NO67011	2004		1500	1575	0.13	3000	-1200	1800
					1400	1500	2.94	4000	-1300	2700
					1300	1400	10.52	3700	-1400	2300
					1200	1300	8.68	3000	-1700	1300
					1100	1200	7.47	2800	-2050	750
					1000	1100	4.52	2600	-2500	100
					900	1000	2.38	2000	-3100	-1100
					800	900	0.87	1500	-3800	-2300
					700	800	0.54	1000	-4500	-3500
					600	700	0.38	500	-5200	-4700
					500	600	0.28	0	-5800	-5800
					400	500	0.2	-500	-6400	-6900
					300	400	0.17	-1100	-7000	-8100
					200	300	0.26	-1700	-7700	-9400
					10	200	0.21	-2500	-8400	-10900
					10	1575	39.55	2916	-2099	817
35.5	ENGABREEN	NO67011	2005		1500	1575	0.13	4000	-1520	2480
					1400	1500	2.94	4700	-1600	3100
					1300	1400	10.52	4100	-1700	2400
					1200	1300	8.68	3500	-1900	1600
					1100	1200	7.47	3100	-2200	900
					1000	1100	4.52	2700	-2800	-100
					900	1000	2.38	2300	-3900	-1600
					800	900	0.87	1900	-4800	-2900
					700	800	0.54	1500	-5500	-4000
					600	700	0.38	1050	-6000	-4950
					500	600	0.28	550	-6500	-5950
					400	500	0.2	50	-7000	-6950
					300	400	0.17	-450	-7500	-7950
					200	300	0.26	-950	-8000	-8950
					10	200	0.21	-1800	-9000	-10800
					10	1575	39.55	3313	-2416	897
36.1	GRAAFJELLSBREA	NO	2003		1600	1659	0.68	2400	-3550	-1150
					1550	1600	2.21	2250	-3700	-1450
					1500	1550	2.03	2050	-3900	-1850
					1450	1500	1.28	1850	-4050	-2200
					1400	1450	0.7	1700	-4200	-2500
					1350	1400	0.54	1600	-4400	-2800
					1300	1350	0.44	1500	-4600	-3100
					1250	1300	0.38	1350	-4750	-3400
					1200	1250	0.16	1200	-4950	-3750

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1150	1200	0.18	1050	-5150	-4100
					1100	1150	0.23	900	-5350	-4450
					1051	1100	0.11	700	-5600	-4900
					1051	1659	8.94	1900	-4070	-2170
36.2	GRAAFJELLSBREA	NO	2004		1600	1659	0.68	2500	-2200	300
					1550	1600	2.21	2400	-2350	50
					1500	1550	2.03	2300	-2550	-250
					1450	1500	1.28	2150	-2800	-650
					1400	1450	0.7	1950	-3000	-1050
					1350	1400	0.54	1700	-3250	-1550
					1300	1350	0.44	1400	-3550	-2150
					1250	1300	0.38	1150	-3850	-2700
					1200	1250	0.16	900	-4150	-3250
					1150	1200	0.18	700	-4500	-3800
					1100	1150	0.23	550	-4850	-4300
					1051	1100	0.11	450	-5250	-4800
					1051	1659	8.94	2040	-2850	-820
36.3	GRAAFJELLSBREA	NO	2005		1600	1659	0.68	3750	-2350	1400
					1550	1600	2.21	3550	-2550	1000
					1500	1550	2.03	3400	-2800	600
					1450	1500	1.28	3200	-3050	150
					1400	1450	0.7	3000	-3350	-350
					1350	1400	0.54	2800	-3650	-850
					1300	1350	0.44	2600	-3950	-1350
					1250	1300	0.38	2350	-4250	-1900
					1200	1250	0.16	2100	-4650	-2550
					1150	1200	0.18	1900	-5100	-3200
					1100	1150	0.23	1600	-5650	-4050
					1051	1100	0.11	1350	-6300	-4950
					1051	1659	8.94	3160	-3150	10
37.1	GRAASUBREEN	NO547	2001		2250	2290	0.044	880	-150	730
					2200	2250	0.166	850	-260	590
					2150	2200	0.263	870	-400	470
					2100	2150	0.337	740	-560	180
					2050	2100	0.373	750	-720	30
					2000	2050	0.418	750	-880	-130
					1950	2000	0.358	850	-1050	-200
					1900	1950	0.143	890	-1270	-380
					1830	1900	0.153	850	-1450	-600
					1830	2290	2.253	804	-780	24
37.2	GRAASUBREEN	NO547	2002		2250	2290	0.044	350	-700	-350
					2200	2250	0.166	500	-1050	-550
					2150	2200	0.263	720	-1550	-830
					2100	2150	0.337	490	-2000	-1510
					2050	2100	0.373	570	-2200	-1630
					2000	2050	0.418	730	-2300	-1570
					1950	2000	0.358	640	-2350	-1710
					1900	1950	0.143	620	-2400	-1780
					1830	1900	0.153	930	-2400	-1470
					1830	2290	2.253	634	-2049	-1415
37.3	GRAASUBREEN	NO547	2003		2250	2290	0.044	245	-900	-655
					2200	2250	0.166	248	-1120	-872
					2150	2200	0.263	377	-1300	-923
					2100	2150	0.337	327	-1600	-1273
					2050	2100	0.373	359	-1880	-1521
					2000	2050	0.418	476	-2050	-1574

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1950	2000	0.358	536	-2200	-1664
					1900	1950	0.143	619	-2300	-1681
					1830	1900	0.153	850	-2400	-1550
					1830	2290	2.253	445	-1840	-1394
37.4	GRAASUBREEN	NO547	2004		2250	2290	0.044	348	-250	98
					2200	2250	0.166	378	-350	28
					2150	2200	0.263	350	-520	-170
					2100	2150	0.337	301	-720	-419
					2050	2100	0.373	371	-940	-569
					2000	2050	0.418	435	-1180	-745
					1950	2000	0.358	607	-1320	-713
					1900	1950	0.143	778	-1390	-612
					1830	1900	0.153	995	-1430	-435
					1830	2290	2.253	476	-968	-492
37.5	GRAASUBREEN	NO547	2005		2250	2290	0.044	1320	-900	420
					2200	2250	0.166	1280	-1220	60
					2150	2200	0.263	850	-880	-30
					2100	2150	0.337	720	-1380	-660
					2050	2100	0.373	950	-1320	-380
					2000	2050	0.418	800	-1450	-650
					1950	2000	0.358	590	-1400	-800
					1900	1950	0.143	810	-1500	-690
					1830	1900	0.153	820	-1550	-730
					1830	2290	2.253	833	-1326	-493
38.1	HANSBREEN	NO12419	2001	FXD	450	500	6.71	900	-1240	-340
					400	450	7.39	960	-1360	-400
					350	400	8.1	750	-1510	-760
					300	350	8.56	710	-2090	-1380
					250	300	8.25	700	-1950	-1250
					200	250	6.58	890	-1800	-910
					150	200	5.13	670	-2310	-1640
					100	150	3.82	690	-2750	-2060
					0	100	2.22	480	-3470	-2990
					0	500	56.76	776	-1876	-1100
38.2	HANSBREEN	NO12419	2002	FXD	450	500	6.71	1260	-1250	10
					400	450	7.39	1550	-1220	330
					350	400	8.1	1000	-1270	-270
					300	350	8.56	770	-1650	-880
					250	300	8.25	770	-1650	-880
					200	250	6.58	1060	-1590	-530
					150	200	5.13	550	-1970	-1420
					100	150	3.82	840	-1960	-1120
					0	100	2.22	380	-2580	-2200
					0	500	56.76	965	-1572	-606
38.3	HANSBREEN	NO12419	2003	FXD	450	500	6.71	1030	-990	40
					400	450	7.39	1160	-540	620
					350	400	8.1	720	-760	-40
					300	350	8.56	540	-1330	-790
					250	300	8.25	520	-1540	-1020
					200	250	6.58	600	-1550	-950
					150	200	5.13	560	-1670	-1110
					100	150	3.82	350	-1770	-1420
					0	100	2.22	320	-2240	-1920
					0	500	56.76	689	-1258	-569
38.4	HANSBREEN	NO12419	2004	FXD	450	500	6.71	1060	-1150	-90

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					400	450	7.39	1220	-1130	90
					350	400	8.1	1000	-1390	-390
					300	350	8.56	720	-1590	-870
					250	300	8.25	720	-1820	-1100
					200	250	6.58	1050	-1490	-440
					150	200	5.13	640	-1720	-1080
					100	150	3.82	1000	-1240	-240
					0	100	2.22	480	-2180	-1700
					0	500	56.76	906	-1483	-577
38.5	HANSBREEN	NO12419	2005	FXD	450	500	6.71	1500	-660	840
					400	450	7.39	1710	-710	1000
					350	400	8.1	1140	-1050	90
					300	350	8.56	940	-1440	-500
					250	300	8.25	1140	-790	350
					200	250	6.58	1560	-1020	540
					150	200	5.13	1140	-2770	-1630
					100	150	3.82	830	-1730	-900
					0	100	2.22	550	-1190	-640
					0	500	56.76	1231	-1184	47
39.1	HANSEBREEN	NO36206	2002		1300	1327	0.18	3700	-4800	-1100
					1250	1300	0.5	3900	-4900	-1000
					1200	1250	0.45	4000	-5050	-1050
					1150	1200	0.51	3600	-5250	-1650
					1100	1150	0.62	3200	-5550	-2350
					1050	1100	0.4	3200	-5900	-2700
					1000	1050	0.23	3100	-6250	-3150
					950	1000	0.13	3000	-6700	-3700
					930	950	0.03	2900	-7050	-4150
					930	1327	3.06	3510	-5440	-1930
39.2	HANSEBREEN	NO36206	2003		1300	1327	0.18	2500	-4300	-1800
					1250	1300	0.5	2550	-4500	-1950
					1200	1250	0.45	2600	-4750	-2150
					1150	1200	0.51	2500	-5000	-2500
					1100	1150	0.62	2400	-5300	-2900
					1050	1100	0.4	2350	-5600	-3250
					1000	1050	0.23	2300	-5900	-3600
					950	1000	0.13	2250	-6250	-4000
					930	950	0.03	2200	-6500	-4300
					930	1327	3.06	2450	-5120	-2670
39.3	HANSEBREEN	NO36206	2004		1300	1327	0.18	3300	-2700	600
					1250	1300	0.5	3250	-2850	400
					1200	1250	0.45	3100	-3050	50
					1150	1200	0.51	2900	-3250	-350
					1100	1150	0.62	2700	-3500	-800
					1050	1100	0.4	2600	-3800	-1200
					1000	1050	0.23	2500	-4100	-1600
					950	1000	0.13	2450	-4450	-2000
					930	950	0.03	2450	-4700	-2250
					930	1327	3.06	2870	-3380	-500
39.4	HANSEBREEN	NO36206	2005		1300	1327	0.18	5000	-4200	800
					1250	1300	0.5	5050	-4250	800
					1200	1250	0.45	4900	-4350	550
					1150	1200	0.51	4650	-4450	200
					1100	1150	0.62	4350	-4600	-250
					1050	1100	0.4	4000	-4850	-850
					1000	1050	0.23	3800	-5250	-1450

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					950	1000	0.13	3800	-5800	-2000
					930	950	0.03	3800	-6150	-2350
					930	1327	3.06	4520	-4610	-90
40.1	HARDANGERJOEKULEN	NO22303	2001		1850	1865	0.088	1250	-1100	150
					1800	1850	3.933	1400	-1147	253
					1750	1800	4.033	1450	-1345	105
					1700	1750	3.46	1220	-1545	-325
					1650	1700	1.938	920	-1745	-825
					1600	1650	0.747	730	-2100	-1370
					1550	1600	0.592	550	-2500	-1950
					1500	1550	0.568	400	-2900	-2500
					1450	1500	0.295	200	-3300	-3100
					1400	1450	0.19	-30	-3700	-3730
					1350	1400	0.101	-300	-4100	-4400
					1300	1350	0.098	-550	-4500	-5050
					1250	1300	0.27	-700	-5000	-5700
					1200	1250	0.363	-800	-5500	-6300
					1150	1200	0.282	-900	-6000	-6900
					1100	1150	0.106	-950	-6600	-7550
					1020	1100	0.053	-1000	-7300	-8300
					1020	1865	17.117	1031	-1876	-845
40.2	HARDANGERJOEKULEN	NO22303	2002		1850	1865	0.088	1800	-2450	-650
					1800	1850	3.933	2750	-2500	250
					1750	1800	4.033	2800	-2600	200
					1700	1750	3.46	2400	-2700	-300
					1650	1700	1.938	2200	-2850	-650
					1600	1650	0.747	2050	-3250	-1200
					1550	1600	0.592	1840	-3800	-1960
					1500	1550	0.568	1550	-4350	-2800
					1450	1500	0.295	1500	-4700	-3200
					1400	1450	0.19	1500	-5050	-3550
					1350	1400	0.101	1400	-5300	-3900
					1300	1350	0.098	1400	-5650	-4250
					1250	1300	0.27	1500	-6000	-4500
					1200	1250	0.363	1500	-6400	-4900
					1150	1200	0.282	1450	-6800	-5350
					1100	1150	0.106	1200	-7200	-6000
					1020	1100	0.053	1000	-7600	-6600
					1020	1865	17.117	2388	-3097	-708
40.3	HARDANGERJOEKULEN	NO22303	2003		1850	1865	0.088	1300	-2200	-900
					1800	1850	3.933	1700	-2300	-600
					1750	1800	4.033	1850	-2400	-550
					1700	1750	3.46	1500	-2500	-1000
					1650	1700	1.938	1300	-2500	-1200
					1600	1650	0.747	1000	-2600	-1600
					1550	1600	0.592	500	-2700	-2200
					1500	1550	0.568	100	-2800	-2700
					1450	1500	0.295	0	-3200	-3200
					1400	1450	0.19	-100	-3600	-3700
					1350	1400	0.101	-100	-4000	-4100
					1300	1350	0.098	-150	-4500	-4650
					1250	1300	0.27	-200	-5000	-5200
					1200	1250	0.363	-200	-5500	-5700
					1150	1200	0.282	-250	-6000	-6250
					1100	1150	0.106	-300	-6500	-6800
					1020	1100	0.053	-400	-7100	-7500
					1020	1865	17.117	1331	-2694	-1364

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
40.4	HARDANGERJOEKULEN	NO22303	2004		1850	1865	0.088	1600	-1150	450
					1800	1850	3.933	2150	-1200	950
					1750	1800	4.033	2250	-1350	900
					1700	1750	3.46	2150	-1500	650
					1650	1700	1.938	1750	-1700	50
					1600	1650	0.747	1550	-2000	-450
					1550	1600	0.592	1400	-2300	-900
					1500	1550	0.568	1100	-2600	-1500
					1450	1500	0.295	1000	-2950	-1950
					1400	1450	0.19	900	-3300	-2400
					1350	1400	0.101	800	-3750	-2950
					1300	1350	0.098	700	-4150	-3450
					1250	1300	0.27	600	-4550	-3950
					1200	1250	0.363	550	-5000	-4450
					1150	1200	0.282	500	-5450	-4950
					1100	1150	0.106	450	-5950	-5500
					1020	1100	0.053	200	-6500	-6300
					1020	1865	17.117	1886	-1806	80
40.5	HARDANGERJOEKULEN	NO22303	2005		1850	1865	0.088	2500	-1450	1050
					1800	1850	3.933	2950	-1500	1450
					1750	1800	4.033	3150	-1600	1550
					1700	1750	3.46	3000	-1700	1300
					1650	1700	1.938	2900	-1900	1000
					1600	1650	0.747	2500	-2200	300
					1550	1600	0.592	2350	-2500	-150
					1500	1550	0.568	2150	-2850	-700
					1450	1500	0.295	2000	-3250	-1250
					1400	1450	0.19	1900	-3650	-1750
					1350	1400	0.101	1800	-4100	-2300
					1300	1350	0.098	1700	-4550	-2850
					1250	1300	0.27	1500	-5000	-3500
					1200	1250	0.363	1400	-5500	-4100
					1150	1200	0.282	1300	-6000	-4700
					1100	1150	0.106	1200	-6500	-5300
					1020	1100	0.053	1000	-7000	-6000
					1020	1865	17.117	2791	-2068	723
41.1	HELLSTUGUBREEN	NO511	2001		2150	2210	0.02	1230	-330	900
					2100	2150	0.091	1200	-420	780
					2050	2150	0.281	1100	-480	620
					2000	2050	0.183	950	-590	360
					1950	2000	0.378	1020	-760	260
					1900	1950	0.612	1030	-970	60
					1850	1900	0.347	940	-1150	-210
					1800	1850	0.328	810	-1300	-490
					1750	1800	0.133	700	-1500	-800
					1700	1750	0.104	620	-1700	-1080
					1650	1700	0.169	520	-1930	-1410
					1600	1650	0.126	420	-2200	-1780
					1550	1600	0.16	250	-2550	-2300
					1500	1550	0.078	40	-2960	-2920
					1480	1500	0.017	-120	-3170	-3290
					1480	2210	3.028	847	-1211	-364
41.2	HELLSTUGUBREEN	NO511	2002		2150	2210	0.02	1000	-500	500
					2100	2150	0.091	1060	-800	260
					2050	2150	0.281	1160	-1100	60
					2000	2050	0.183	1200	-1400	-200
					1950	2000	0.378	1160	-1750	-590
					1900	1950	0.612	1070	-2050	-980

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					1850	1900	0.347	1020	-2350	-1330
					1800	1850	0.328	910	-2600	-1690
					1750	1800	0.133	770	-2900	-2130
					1700	1750	0.104	790	-3150	-2360
					1650	1700	0.169	810	-3500	-2690
					1600	1650	0.126	660	-3900	-3240
					1550	1600	0.16	460	-4350	-3890
					1500	1550	0.078	160	-4750	-4590
					1480	1500	0.017	-20	-5000	-5020
					1480	2210	3.028	957	-2372	-1415
41.3	HELLSTUGUBREEN	NO511	2003		2100	2200	0.02	724	-1300	-576
					2050	2100	0.252	786	-1400	-614
					2000	2050	0.173	922	-1500	-578
					1950	2000	0.351	833	-1700	-867
					1900	1950	0.599	730	-1900	-1170
					1850	1900	0.351	715	-2100	-1385
					1800	1850	0.326	825	-2300	-1475
					1750	1800	0.141	622	-2500	-1878
					1700	1750	0.098	677	-2700	-2023
					1650	1700	0.163	736	-2950	-2214
					1600	1650	0.13	601	-3300	-2699
					1550	1600	0.173	330	-3600	-3270
					1500	1550	0.093	128	-3800	-3672
					1465	1500	0.027	100	-4000	-3900
					1465	2200	2.897	706	-2234	-1528
41.4	HELLSTUGUBREEN	NO511	2004		2150	2210	0.02	1100	-470	630
					2100	2150	0.091	1050	-540	510
					2050	2150	0.281	900	-690	210
					2000	2050	0.183	1100	-790	310
					1950	2000	0.378	900	-940	-40
					1900	1950	0.612	722	-1120	-398
					1850	1900	0.347	590	-1320	-730
					1800	1850	0.328	597	-1640	-1043
					1750	1800	0.133	568	-1900	-1332
					1700	1750	0.104	526	-2150	-1624
					1650	1700	0.169	411	-2400	-1989
					1600	1650	0.126	204	-2740	-2536
					1550	1600	0.16	-34	-3180	-3214
					1500	1550	0.078	-70	-3600	-3670
					1480	1500	0.017	-200	-3900	-4100
					1480	2210	3.028	649	-1492	-843
41.5	HELLSTUGUBREEN	NO511	2005		2150	2210	0.02	1300	-650	650
					2100	2150	0.091	1338	-780	558
					2050	2150	0.281	1469	-830	639
					2000	2050	0.183	2293	-1000	1293
					1950	2000	0.378	1572	-1150	422
					1900	1950	0.612	1252	-1300	-48
					1850	1900	0.347	1371	-1500	-129
					1800	1850	0.328	1341	-1750	-409
					1750	1800	0.133	1260	-1950	-690
					1700	1750	0.104	1449	-2180	-731
					1650	1700	0.169	1135	-2450	-1315
					1600	1650	0.126	1188	-2750	-1562
					1550	1600	0.16	586	-3200	-2614
					1500	1550	0.078	588	-3600	-3012
					1480	1500	0.017	472	-4000	-3528
					1480	2210	3.028	1343	-1630	-287

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	TO	AREA KM²	BW MM	BS MM	BN/BA MM
42.1	LANGFJORDJOEKUL	NO85008	2002		1000	1050	0.55	2750	-3000	-250
					900	1000	0.81	2550	-3200	-650
					800	900	0.61	2350	-3450	-1100
					700	800	0.56	2150	-3750	-1600
					600	700	0.39	1950	-4100	-2150
					500	600	0.35	1700	-4500	-2800
					400	500	0.25	1300	-5000	-3700
					280	400	0.14	850	-5650	-4800
					280	1050	3.65	2190	-3730	-1540
42.2	LANGFJORDJOEKUL	NO85008	2003		1000	1050	0.55	2800	-2900	-100
					900	1000	0.81	2850	-3000	-150
					800	900	0.61	2650	-3250	-600
					700	800	0.56	2450	-3500	-1050
					600	700	0.39	2200	-3850	-1650
					500	600	0.35	1950	-4200	-2250
					400	500	0.25	1600	-4650	-3050
					280	400	0.14	1200	-5300	-4100
					280	1050	3.65	2440	-3510	-1070
42.3	LANGFJORDJOEKUL	NO85008	2004		1000	1050	0.55	1900	-2450	-550
					900	1000	0.81	2000	-2750	-750
					800	900	0.61	2000	-3150	-1150
					700	800	0.56	1850	-3650	-1800
					600	700	0.39	1550	-4200	-2650
					500	600	0.35	1100	-4850	-3750
					400	500	0.25	800	-5600	-4800
					280	400	0.14	600	-6650	-6050
					280	1050	3.65	1690	-3610	-1920
42.4	LANGFJORDJOEKUL	NO85008	2005		1000	1050	0.55	2200	-1750	450
					900	1000	0.81	2150	-2100	50
					800	900	0.61	2050	-2650	-600
					700	800	0.56	1900	-3200	-1300
					600	700	0.39	1750	-3800	-2050
					500	600	0.35	1500	-4500	-3050
					400	500	0.25	1200	-5500	-4300
					280	400	0.14	800	-6800	-6000
					280	1050	3.65	1800	-3140	-1250
43.1	NIGARDSBREEN	NO31014	2001		1900	1960	0.38	2050	-1000	1050
					1800	1900	3.92	2100	-1150	950
					1700	1800	9.39	2050	-1350	700
					1600	1700	12.88	1950	-1600	350
					1500	1600	9.18	1850	-1900	-50
					1400	1500	5.82	1750	-2200	-450
					1300	1400	2.28	1500	-2550	-1050
					1200	1300	0.9	1100	-2950	-1850
					1100	1200	0.45	650	-3450	-2800
					1000	1100	0.58	200	-4050	-3850
					900	1000	0.47	-150	-4750	-4900
					800	900	0.44	-500	-5650	-6150
					700	800	0.33	-800	-6550	-7350
					600	700	0.39	-1050	-7500	-8550
					500	600	0.24	-1251	-8550	-9801
					400	500	0.12	-1400	-9550	-10950
					320	400	0.05	-1450	-10550	-12000
					320	1960	47.82	1754	-1972	-219
43.2	NIGARDSBREEN	NO31014	2002		1900	1960	0.38	2750	-2050	700
					1800	1900	3.92	2950	-2300	650

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1700	1800	9.39	2800	-2600	200
					1600	1700	12.88	2600	-2950	-350
					1500	1600	9.18	2400	-3300	-900
					1400	1500	5.82	2250	-3700	-1450
					1300	1400	2.28	2050	-4050	-2000
					1200	1300	0.9	1850	-4500	-2650
					1100	1200	0.45	1600	-4950	-3350
					1000	1100	0.58	1250	-5500	-4250
					900	1000	0.47	800	-6050	-5250
					800	900	0.44	350	-6650	-6300
					700	800	0.33	-50	-7350	-7400
					600	700	0.39	-450	-8000	-8450
					500	600	0.24	-750	-8700	-9450
					400	500	0.12	-900	-9400	-10300
					320	400	0.05	-950	-10000	-10950
					320	1960	47.82	2411	-3299	-888
43.3	NIGARDSBREEN	NO31014	2003		1900	1960	0.38	1850	-1950	-100
					1800	1900	3.92	1950	-2050	-100
					1700	1800	9.39	1800	-2200	-400
					1600	1700	12.88	1700	-2400	-700
					1500	1600	9.18	1550	-2650	-1100
					1400	1500	5.82	1400	-2950	-1550
					1300	1400	2.28	1300	-3300	-2000
					1200	1300	0.9	1150	-3700	-2550
					1100	1200	0.45	1000	-4100	-3100
					1000	1100	0.58	900	-4550	-3650
					900	1000	0.47	700	-5050	-4350
					800	900	0.44	450	-5600	-5150
					700	800	0.33	200	-6250	-6050
					600	700	0.39	-150	-6950	-7100
					500	600	0.24	-500	-7750	-8250
					400	500	0.12	-900	-8650	-9550
					320	400	0.05	-1300	-9650	-10950
					320	1960	47.82	1563	-2722	-1159
43.4	NIGARDSBREEN	NO31014	2004		1900	1960	0.38	2000	-650	1350
					1800	1900	3.92	2200	-850	1350
					1700	1800	9.39	2200	-1200	1000
					1600	1700	12.88	2150	-1550	600
					1500	1600	9.18	2050	-1950	100
					1400	1500	5.82	1900	-2400	-500
					1300	1400	2.28	1750	-2900	-1150
					1200	1300	0.9	1450	-3550	-2100
					1100	1200	0.45	1150	-4250	-3100
					1000	1100	0.58	800	-5000	-4200
					900	1000	0.47	500	-5750	-5250
					800	900	0.44	300	-6550	-6250
					700	800	0.33	150	-7350	-7200
					600	700	0.39	50	-8150	-8100
					500	600	0.24	-50	-8950	-9000
					400	500	0.12	-100	-9750	-9850
					320	400	0.05	-150	-10500	-10650
					320	1960	47.82	1972	-2014	-43
43.5	NIGARDSBREEN	NO31014	2005		1900	1960	0.38	3200	-700	2500
					1800	1900	3.92	3450	-850	2600
					1700	1800	9.39	3350	-1050	2300
					1600	1700	12.88	3050	-1250	1800
					1500	1600	9.18	2650	-1550	1100
					1400	1500	5.82	2350	-1950	400

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1300	1400	2.28	2150	-2500	-350
					1200	1300	0.9	2000	-3050	-1050
					1100	1200	0.45	1900	-3700	-1800
					1000	1100	0.58	1750	-4350	-2600
					900	1000	0.47	1500	-5100	-3600
					800	900	0.44	1250	-5850	-4600
					700	800	0.33	950	-6600	-5650
					600	700	0.39	600	-7400	-6800
					500	600	0.24	200	-8250	-8050
					400	500	0.12	-150	-9100	-9250
					320	400	0.05	-500	-10000	-10500
					320	1960	47.82	2799	-1702	1098
44.1	RUNDVASSBREEN	NO	2002		1500	1537	0.09	3400	-2400	1000
					1450	1500	0.2	3350	-2350	1000
					1400	1450	0.75	3200	-2300	900
					1350	1400	1.62	2950	-2300	650
					1300	1350	1.92	2550	-2500	50
					1250	1300	1.69	2220	-3400	-1180
					1200	1250	0.7	1950	-3500	-1550
					1150	1200	1.09	1700	-3600	-1900
					1100	1150	2.58	1450	-3850	-2400
					1050	1100	0.59	1200	-4000	-2800
					1000	1050	0.12	1000	-4300	-3300
					950	1000	0.1	800	-4600	-3800
					900	950	0.06	700	-4750	-4050
					850	900	0.05	600	-4800	-4200
					788	850	0.03	550	-4850	-4300
					788	1537	11.6	2140	-3190	-1050
44.2	RUNDVASSBREEN	NO	2003		1500	1537	0.09	3600	-1900	1700
					1450	1500	0.2	3200	-1850	1350
					1400	1450	0.75	2800	-1850	950
					1350	1400	1.62	2450	-2100	350
					1300	1350	1.92	2150	-2850	-700
					1250	1300	1.69	1900	-3000	-1100
					1200	1250	0.7	1700	-3100	-1400
					1150	1200	1.09	1500	-3200	-1700
					1100	1150	2.58	1350	-3400	-2050
					1050	1100	0.59	1250	-3750	-2500
					1000	1050	0.12	1150	-4150	-3000
					950	1000	0.1	1100	-4600	-3500
					900	950	0.06	1050	-4850	-3800
					850	900	0.05	1000	-4950	-3950
					788	850	0.03	950	-5000	-4050
					788	1537	11.6	1880	-2950	-1070
44.3	RUNDVASSBREEN	NO	2004		1500	1537	0.09	4000	-400	3600
					1450	1500	0.2	3700	-900	2800
					1400	1450	0.75	3300	-1400	1900
					1350	1400	1.62	2800	-1850	950
					1300	1350	1.92	2300	-2050	250
					1250	1300	1.69	2000	-1850	150
					1200	1250	0.7	1700	-2100	-400
					1150	1200	1.09	1500	-2400	-900
					1100	1150	2.58	1200	-2600	-1400
					1050	1100	0.59	1000	-2900	-1900
					1000	1050	0.12	800	-3100	-2300
					950	1000	0.1	600	-3400	-2800
					900	950	0.06	400	-3500	-3100
					850	900	0.05	300	-3600	-3300

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					788	850	0.03	200	-3700	-3500
					788	1537	11.6	1950	-2160	-210
45.1	STORBREEN	NO541	2001		2050	2100	0.04	1750	-420	1330
					2000	2050	0.15	1670	-550	1120
					1950	2000	0.23	1600	-650	950
					1900	1950	0.36	1500	-800	700
					1850	1900	0.57	1250	-1030	220
					1800	1850	0.92	980	-1270	-290
					1750	1800	0.75	1050	-1490	-440
					1700	1750	0.64	910	-1720	-810
					1650	1700	0.4	990	-1930	-940
					1600	1650	0.49	930	-2210	-1280
					1550	1600	0.35	810	-2510	-1700
					1500	1550	0.21	650	-2890	-2240
					1450	1500	0.18	450	-3230	-2780
					1390	1450	0.06	440	-3500	-3060
					1390	2100	5.35	1045	-1615	-570
45.2	STORBREEN	NO541	2002		2050	2100	0.04	1500	-1500	0
					2000	2050	0.15	1400	-1600	-200
					1950	2000	0.23	1300	-1700	-400
					1900	1950	0.36	1234	-1850	-616
					1850	1900	0.57	1246	-2100	-854
					1800	1850	0.92	1107	-2400	-1293
					1750	1800	0.75	1123	-2900	-1777
					1700	1750	0.64	1085	-3300	-2215
					1650	1700	0.4	1036	-3500	-2464
					1600	1650	0.49	1007	-3650	-2643
					1550	1600	0.35	902	-3800	-2898
					1500	1550	0.21	754	-3900	-3146
					1450	1500	0.18	642	-4050	-3408
					1390	1450	0.06	593	-4200	-3607
					1390	2100	5.35	1086	-2872	-1786
45.3	STORBREEN	NO541	2003		2050	2100	0.04	1750	-1500	250
					2000	2050	0.15	1650	-1650	0
					1950	2000	0.23	1600	-1800	-200
					1900	1950	0.36	1500	-1950	-450
					1850	1900	0.57	1450	-2150	-700
					1800	1850	0.92	893	-2400	-1507
					1750	1800	0.75	1034	-2650	-1616
					1700	1750	0.64	894	-2800	-1906
					1650	1700	0.4	1250	-3000	-1750
					1600	1650	0.49	1120	-3250	-2130
					1550	1600	0.35	965	-3450	-2485
					1500	1550	0.21	787	-3600	-2813
					1450	1500	0.18	682	-3800	-3118
					1390	1450	0.06	682	-4000	-3318
					1390	2100	5.35	1110	-2676	-1566
45.4	STORBREEN	NO541	2004		2050	2100	0.04	1456	-420	1036
					2000	2050	0.15	1456	-530	926
					1950	2000	0.23	1456	-680	776
					1900	1950	0.36	1298	-850	448
					1850	1900	0.57	1254	-1000	254
					1800	1850	0.92	911	-1240	-329
					1750	1800	0.75	1050	-1500	-450
					1700	1750	0.64	800	-1720	-920
					1650	1700	0.4	1112	-1950	-838
					1600	1650	0.49	942	-2200	-1258

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1550	1600	0.35	789	-2450	-1661
					1500	1550	0.21	569	-2700	-2131
					1450	1500	0.18	582	-2980	-2398
					1390	1450	0.06	696	-3250	-2554
					1390	2100	5.35	1006	-1591	-585
45.5	STORBREEN	NO541	2005		2050	2100	0.04	2141	-400	1741
					2000	2050	0.15	2141	-500	1641
					1950	2000	0.23	2141	-700	1441
					1900	1950	0.36	2141	-900	1241
					1850	1900	0.57	2341	-1150	1191
					1800	1850	0.92	1825	-1550	275
					1750	1800	0.75	1664	-1850	-186
					1700	1750	0.64	1630	-2100	-470
					1650	1700	0.4	2079	-2330	-251
					1600	1650	0.49	1840	-2600	-760
					1550	1600	0.35	1530	-2880	-1350
					1500	1550	0.21	1274	-3250	-1976
					1450	1500	0.18	1155	-3450	-2295
					1390	1450	0.06	1155	-3600	-2445
					1390	2100	5.35	1830	-1892	-63
46.1	STORGLOMBREEN	NO67313	2002		1500	1580	0.18	2200	-2700	-500
					1400	1500	0.58	2300	-2800	-500
					1300	1400	2.89	2400	-2900	-500
					1200	1300	15.02	2750	-3050	-300
					1100	1200	26.23	2750	-3200	-450
					1000	1100	8.91	1950	-3500	-1550
					900	1000	5.16	880	-4500	-3620
					800	900	1.91	440	-5500	-5060
					700	800	0.95	290	-6500	-6210
					600	700	0.38	200	-7500	-7300
					520	600	0.22	150	-8400	-8250
					520	1580	62.4	2330	-3580	-1250
46.2	STORGLOMBREEN	NO67313	2003		1500	1580	0.18	2450	-2500	-50
					1400	1500	0.58	2550	-2550	0
					1300	1400	2.89	2600	-2650	-50
					1200	1300	15.02	2550	-2700	-150
					1100	1200	26.23	2450	-2900	450
					1000	1100	8.91	2050	-3200	-1150
					900	1000	5.16	900	-4200	-3300
					800	900	1.91	440	-5500	-5060
					700	800	0.95	290	-6500	-6210
					600	700	0.38	200	-7500	-7300
					520	600	0.22	150	-8400	-8250
					520	1580	62.4	2180	-3280	-1100
46.3	STORGLOMBREEN	NO67313	2004		1500	1580	0.18	2600	-1300	1300
					1400	1500	0.58	2700	-1300	1400
					1300	1400	2.89	2800	-1300	1500
					1200	1300	15.02	2800	-1500	1300
					1100	1200	26.23	2500	-1700	800
					1000	1100	8.91	1900	-2200	-300
					900	1000	5.16	900	-3300	-2400
					800	900	1.91	500	-4500	-4000
					700	800	0.95	400	-5500	-5100
					600	700	0.38	300	-6500	-6200
					520	600	0.22	200	-7500	-7300
					520	1580	62.4	2260	-2140	110

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
46.4	STORGLOMBREEN	NO67313	2005		1500	1580	0.18	3500	-1550	1950
					1400	1500	0.58	3800	-1600	2200
					1300	1400	2.89	3900	-1700	2200
					1200	1300	15.02	3600	-1750	1850
					1100	1200	26.23	2900	-1900	1000
					1000	1100	8.91	2200	-2300	-100
					900	1000	5.16	1000	-3600	-2600
					800	900	1.91	600	-5300	-4700
					700	800	0.95	500	-6900	-6400
					600	700	0.38	400	-8000	-7600
					520	600	0.22	300	-9000	-8700
					520	1580	62.4	2740	-2410	330
47.1	WALDEMARBREEN	NO15403	2001	FXD	400	450				-270
					350	400				-357
					300	350				-642
					250	300				-839
					200	250				-1022
					150	200				-1130
					150	450	2.66	360	-1127	-767
47.2	WALDEMARBREEN	NO15403	2002	FXD	400	450				142
					350	400				-192
					300	350				-369
					250	300				-602
					200	250				-793
					150	200				-1156
					150	450		632	-1146	-514
47.3	WALDEMARBREEN	NO15403	2003	FXD	400	450				81
					350	400				-410
					300	350				-624
					250	300				-668
					200	250				-979
					150	200				-1162
					150	450	2.62	454	-1181	-727
47.4	WALDEMARBREEN	NO15403	2004	FXD	400	450				135
					350	400				-360
					300	350				-446
					250	300				-969
					200	250				-1202
					150	200				-1566
					150	450		496	-1137	-641
47.5	WALDEMARBREEN	NO15403	2005	FXD	400	450				-100
					350	400				-384
					300	350				-459
					250	300				-780
					200	250				-1175
					150	200				-1658
					150	450	2.59	434	-1156	-722
	PERU									
48.1	ARTESONRAJU	PE3	2005	FXD	5075	5600	1.61			288
					5015	5075	0.24			196
					5000	5015	0.07			-71
					4975	5000	0.11			-264
					4950	4975	0.09			-500
					4925	4950	0.08			-775
					4900	4925	0.09			-1022

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					4875	4900	0.10			-1240
					4850	4875	0.12			-1300
					4825	4850	0.18			-1528
					4800	4825	0.17			-1900
					4775	4800	0.16			-2175
					4750	4775	0.13			-2477
					4725	4750	0.09			-2644
					4700	4725	0.01			-4000
					4700	5600	3.25			-1548
49.1	YANAMAREY	PE4	2005	FXD	4900	5150	0.132			2076
					4875	4900	0.090			-2478
					4850	4875	0.026			-4385
					4825	4850	0.024			-6833
					4800	4825	0.028			-8321
					4775	4800	0.029			-11000
					4750	4775	0.024			-11833
					4725	4750	0.026			-13346
					4700	4725	0.016			-14813
					4675	4700	0.010			-17100
					4650	4675	0.006			-21500
					4641	4650	0.001			-15000
					4641	5150	0.412			-1962
	SPAIN									
50.1	MALADETA	ES9020	2001	FXD	3125	3190	0.113	3007	-1578	1429
					3050	3125	0.113	2250	-1233	1017
					2950	3050	0.106	2623	-2972	-349
					2875	2950	0.034	1624	-2434	-810
					2775	2875	0.01	1628	-3788	-2160
					2775	3190	0.377	2448	-1945	502
50.2	MALADETA	ES9020	2002	FXD	3125	3190	0.112	2610	-2470	140
					3050	3125	0.112	1098	-1812	-714
					2950	3050	0.103	2089	-3357	-1268
					2875	2950	0.032	1717	-3742	-2025
					2775	2875	0.008	1807	-4687	-2880
					2775	3190	0.366	1776	-2587	-811
50.3	MALADETA	ES9020	2003	FXD	3125	3190	0.111	3349	-3358	-9
					3050	3125	0.111	3819	-4827	-1008
					2950	3050	0.098	2256	-3984	-1728
					2875	2950	0.028	1668	-4031	-2363
					2775	2875	0.005	1330	-5200	-3870
					2775	3190	0.355	3103	-4205	-1102
50.4	MALADETA	ES9020	2004	FXD	3125	3190	0.11	3338	-3338	0
					3050	3125	0.11	1971	-3969	-1998
					2950	3050	0.094	2508	-4146	-1638
					2875	2950	0.027	2041	-5011	-2970
					2775	2875	0.004	1890	-5490	-3600
					2775	3190	0.345	2446	-3962	-1516
50.5	MALADETA	ES9020	2005	FXD	3125	3190	0.016	2651	-2651	0
					3050	3125	0.016	1720	-3583	-1863
					2950	3050	0.089	1074	-3095	-2021
					2875	2950	0.025	1383	-3642	-2259
					2775	2875	0.003	954	-4554	-3600
					2775	3190	0.328	1759	-3238	-1479

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
	SWEDEN									
51.1	MARMAGLACIAEREN	SE799	2001		1780	1800	0.001	2000	-250	1750
					1760	1780	0.005	1730	-270	1460
					1740	1760	0.018	1720	-350	1370
					1720	1740	0.029	1680	-420	1260
					1700	1720	0.042	1670	-500	1170
					1680	1700	0.104	1560	-580	980
					1660	1680	0.204	1430	-660	780
					1640	1660	0.192	1070	-740	330
					1620	1640	0.326	810	-820	-10
					1600	1620	0.312	710	-890	-170
					1580	1600	0.19	710	-970	-260
					1560	1580	0.228	680	-1050	-370
					1540	1560	0.346	630	-1130	-480
					1520	1540	0.364	620	-1200	-580
					1500	1520	0.186	620	-1280	-660
					1480	1500	0.197	600	-1360	-760
					1460	1480	0.251	570	-1440	-880
					1440	1460	0.217	590	-1520	-930
					1420	1440	0.159	630	-1600	-970
					1400	1420	0.15	670	-1680	-1010
					1380	1400	0.146	680	-1760	-1080
					1360	1380	0.144	750	-1830	-1090
					1340	1360	0.098	750	-1910	-1160
					1320	1340	0.051	650	-1970	-1310
					1320	1800	3.957	770	-1180	-410
51.2	MARMAGLACIAEREN	SE799	2002		1780	1800	0.001	2400	-700	1700
					1760	1780	0.004	2850	-800	2050
					1740	1760	0.018	2970	-880	2090
					1720	1740	0.03	2980	-960	2020
					1700	1720	0.042	2850	-1050	1800
					1680	1700	0.105	2660	-1140	420
					1660	1680	0.205	2570	-1220	350
					1640	1660	0.193	1580	-1310	270
					1620	1640	0.315	920	-1400	-480
					1600	1620	0.322	780	-1500	-720
					1580	1600	0.192	890	-1590	-700
					1560	1580	0.228	850	-1680	-830
					1540	1560	0.346	860	-1770	-910
					1520	1540	0.365	890	-1840	-950
					1500	1520	0.186	1080	-1940	-860
					1480	1500	0.198	920	-2030	-1110
					1460	1480	0.252	760	-2120	-1360
					1440	1460	0.217	830	-2210	-1380
					1420	1440	0.159	930	-2300	-1370
					1400	1420	0.15	1000	-2400	-1400
					1380	1400	0.146	1170	-2490	-1320
					1360	1380	0.144	1570	-2580	-1010
					1340	1360	0.097	1680	-2660	-980
					1320	1340	0.051	1810	-2700	-890
					1320	1800	3.965	1170	-1830	-660
51.3	MARMAGLACIAEREN	SE799	2003		1780	1800	0.001	2750	-1070	1680
					1760	1780	0.004	2750	-1170	1580
					1740	1760	0.018	2640	-1270	1370
					1720	1740	0.03	2590	-1370	1220
					1700	1720	0.042	2450	-1470	970
					1680	1700	0.105	2280	-1570	710
					1660	1680	0.205	1940	-1670	260
					1640	1660	0.193	1260	-1780	-510

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					1620	1640	0.315	730	-1880	-1150
					1600	1620	0.322	590	-1980	-1390
					1580	1600	0.192	690	-2080	-1390
					1560	1580	0.228	770	-2180	-1410
					1540	1560	0.346	780	-2280	-1500
					1520	1540	0.365	780	-2380	-1600
					1500	1520	0.186	810	-2480	-1670
					1480	1500	0.198	750	-2580	-1830
					1460	1480	0.253	680	-2680	-2000
					1440	1460	0.217	630	-2780	-2150
					1420	1440	0.159	750	-2880	-2130
					1400	1420	0.151	750	-2990	-2240
					1380	1400	0.146	830	-3090	-2250
					1360	1380	0.144	1010	-3190	-2180
					1340	1360	0.097	1250	-3290	-2040
					1320	1340	0.051	1250	-3390	-2140
					1320	1800	3.965	930	-2350	-1420
51.4	MARMAGLACIAEREN	SE799	2004		1780	1800	0.001	2540	-1410	1130
					1760	1780	0.004	3000	-1380	1620
					1740	1760	0.018	2970	-1320	1650
					1720	1740	0.03	2900	-1300	1610
					1700	1720	0.042	2850	-1310	1540
					1680	1700	0.104	2670	-1370	1300
					1660	1680	0.206	2430	-1310	1120
					1640	1660	0.192	1740	-1350	390
					1620	1640	0.315	1130	-1440	-300
					1600	1620	0.322	1030	-1590	-560
					1580	1600	0.191	1090	-1780	-680
					1560	1580	0.229	1040	-1890	-850
					1540	1560	0.345	1030	-1980	-950
					1520	1540	0.365	1090	-2020	-920
					1500	1520	0.186	1180	-1870	-690
					1480	1500	0.198	1070	-1890	-810
					1460	1480	0.252	930	-1990	-1070
					1440	1460	0.218	1000	-2100	-1110
					1420	1440	0.16	1080	-2210	-1130
					1400	1420	0.15	1100	-2300	-1200
					1380	1400	0.147	1210	-2380	-1180
					1360	1380	0.144	1390	-2450	-1060
					1340	1360	0.097	1540	-2520	-970
					1320	1340	0.051	1650	-2530	-890
					1320	1800	3.965	1290	-1870	-580
51.5	MARMAGLACIAEREN	SE799	2005		1780	1800	0.001	1490	-1360	130
					1760	1780	0.004	1640	-1350	280
					1740	1760	0.018	1590	-1300	290
					1720	1740	0.03	1560	-1280	280
					1700	1720	0.042	1570	-1290	280
					1680	1700	0.104	1630	-1300	340
					1660	1680	0.206	1650	-1240	420
					1640	1660	0.192	1450	-1280	170
					1620	1640	0.315	1120	-1390	-280
					1600	1620	0.322	970	-1570	-600
					1580	1600	0.191	1000	-1680	-680
					1560	1580	0.229	990	-1720	-720
					1540	1560	0.345	980	-1700	-710
					1520	1540	0.365	1070	-1740	-670
					1500	1520	0.186	1180	-1980	-800
					1480	1500	0.198	1020	-2150	-1130
					1460	1480	0.252	860	-2300	-1440

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1440	1460	0.218	910	-2420	-1520
					1420	1440	0.16	970	-2520	-1550
					1400	1420	0.15	1030	-2600	-1570
					1380	1400	0.147	1070	-2660	-1590
					1360	1380	0.144	1140	-2710	-1580
					1340	1360	0.097	1170	-2770	-1600
					1320	1340	0.051	1220	-2790	-1580
					1320	1800	3.965	1110	-1900	-790
52.1	RABOTS GLACIAER	SE785	2001		1900	1950	0.005	700	-200	500
					1850	1900	0.014	700	-200	500
					1800	1850	0.01	660	-200	460
					1750	1800	0.022	620	-200	420
					1700	1750	0.048	630	-300	330
					1650	1700	0.067	700	-300	400
					1600	1650	0.123	730	-300	430
					1550	1600	0.203	740	-470	270
					1500	1550	0.415	650	-680	-30
					1450	1500	0.407	540	-860	-320
					1400	1450	0.277	630	-1070	-440
					1350	1400	0.636	570	-1290	-720
					1300	1350	0.377	480	-1480	-1000
					1250	1300	0.544	450	-1690	-1240
					1200	1250	0.398	390	-1890	-1500
					1150	1200	0.22	310	-2100	-1790
					1100	1150	0.129	230	-2300	-2070
					1050	1100	0.044	210	-2460	-2250
					1050	1950	3.938	520	-1280	-760
52.2	RABOTS GLACIAER	SE785	2002		1920	1940	0.003	2250	-750	1500
					1900	1920	0.003	2250	-750	1500
					1880	1900	0.004	2250	-750	1500
					1860	1880	0.004	2250	-750	1500
					1840	1860	0.004	2250	-750	1500
					1820	1840	0.004	2250	-750	1500
					1800	1820	0.005	2250	-750	1500
					1780	1800	0.004	2250	-750	1500
					1760	1780	0.008	2250	-750	1500
					1740	1760	0.015	2250	-750	1500
					1720	1740	0.013	2250	-1250	1500
					1700	1720	0.02	2250	-1250	1500
					1680	1700	0.018	2250	-1250	1500
					1660	1680	0.027	2250	-1250	1500
					1640	1660	0.035	2250	-1250	1500
					1620	1640	0.037	2250	-1250	1500
					1600	1620	0.052	1831	-1750	581
					1580	1600	0.064	1715	-1750	465
					1560	1580	0.088	1568	-1750	318
					1540	1560	0.103	1506	-1750	256
					1520	1540	0.174	1481	-1750	231
					1500	1520	0.206	1317	-1750	67
					1480	1500	0.17	1236	-1750	-514
					1460	1480	0.158	1253	-1750	-497
					1440	1460	0.158	1286	-1750	-464
					1420	1440	0.132	1287	-1750	-463
					1400	1420	0.101	1307	-1750	-443
					1380	1400	0.175	1288	-2250	-962
					1360	1380	0.261	1275	-2250	-975
					1340	1360	0.265	1259	-2250	-991
					1320	1340	0.143	995	-2250	-1255
					1300	1320	0.128	1079	-2250	-1171

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					1280	1300	0.211	1064	-2392	-1328
					1260	1280	0.22	1018	-2750	-1732
					1240	1260	0.197	1008	-2750	-1742
					1220	1240	0.175	801	-2750	-1949
					1200	1220	0.128	636	-2750	-2114
					1180	1200	0.092	473	-3250	-2777
					1160	1180	0.038	325	-3250	-2925
					1140	1160	0.031	274	-3250	-2976
					1120	1140	0.048	266	-3250	-2984
					1100	1120	0.042	286	-3250	-2964
					1080	1100	0.039	269	-3250	-2981
					1080	1940	3.802	1190	-2070	-879
52.3	RABOTS GLACIAER	SE785	2003		1900	1950	0.005	1250	-590	660
					1850	1900	0.014	1250	-740	510
					1800	1850	0.01	1250	-900	350
					1750	1800	0.022	1150	-1050	100
					1700	1750	0.048	1220	-1210	10
					1650	1700	0.067	1260	-1360	-100
					1600	1650	0.123	1200	-1520	-310
					1550	1600	0.203	1180	-1670	-490
					1500	1550	0.415	1190	-1830	-640
					1450	1500	0.407	1030	-1980	-960
					1400	1450	0.277	820	-2140	-1310
					1350	1400	0.636	850	-2290	-1440
					1300	1350	0.377	700	-2450	-1750
					1250	1300	0.544	760	-2600	-1840
					1200	1250	0.399	580	-2760	-2180
					1150	1200	0.22	260	-2920	-2660
					1100	1150	0.129	250	-3070	-2820
					1050	1100	0.044	250	-3230	-2980
					1050	1950	3.938	830	-2270	-1440
52.4	RABOTS GLACIAER	SE785	2005		1920	1940	0.003	1680	270	1950
					1900	1920	0.004	1720	210	1930
					1880	1900	0.005	1700	120	1820
					1860	1880	0.006	1630	20	1650
					1840	1860	0.005	1610	-70	1540
					1820	1840	0.004	1600	-170	1430
					1800	1820	0.004	1700	-270	1440
					1780	1800	0.005	1980	-370	1620
					1760	1780	0.011	2050	-460	1590
					1740	1760	0.015	1900	-560	1340
					1720	1740	0.018	1830	-650	1180
					1700	1720	0.02	1750	-750	1010
					1680	1700	0.023	1740	-840	900
					1660	1680	0.027	1690	-940	740
					1640	1660	0.037	1720	-1040	690
					1620	1640	0.046	1760	-1130	630
					1600	1620	0.058	1770	-1230	540
					1580	1600	0.069	1830	-1320	510
					1560	1580	0.084	1790	-1420	370
					1540	1560	0.1	1890	-1510	370
					1520	1540	0.156	1870	-1610	260
					1500	1520	0.216	1660	-1700	-40
					1480	1500	0.189	1500	-1800	-300
					1460	1480	0.15	1370	-1900	-520
					1440	1460	0.127	1200	-1990	-790
					1420	1440	0.115	1150	-2090	-940
					1400	1420	0.102	1210	-2190	-980
					1380	1400	0.227	1290	-2290	-1000

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1360	1380	0.272	1230	-2380	-1150
					1340	1360	0.243	1170	-2470	-1300
					1320	1340	0.142	930	-2570	-1640
					1300	1320	0.131	900	-2670	-1760
					1280	1300	0.218	970	-2770	-1800
					1260	1280	0.227	860	-2860	-2000
					1240	1260	0.198	790	-2950	-2160
					1220	1240	0.17	700	-3050	-2340
					1200	1220	0.129	520	-3140	-2630
					1180	1200	0.092	530	-3240	-2720
					1160	1180	0.091	400	-3340	-2930
					1140	1160	0.067	220	-3430	-3220
					1120	1140	0.053	100	-3530	-3430
					1100	1120	0.045	20	-3620	-3610
					1080	1100	0.034	-50	-3720	-3770
					1060	1080	0.01	-120	-3790	-3920
					1060	1940	3.946	1150	-2320	-1170
53.1	RIUKOJIETNA	SE790	2001		1440	1460	0.502	460	-1910	-1440
					1420	1440	0.522	570	-2000	-1430
					1400	1420	0.37	570	-2090	-1520
					1380	1400	0.41	610	-2180	-1570
					1360	1380	0.435	620	-2270	-1660
					1340	1360	0.426	630	-2370	-1740
					1320	1340	0.527	630	-2460	-1830
					1300	1320	0.33	630	-2550	-1930
					1280	1300	0.221	610	-2640	-2030
					1260	1280	0.154	600	-2730	-2130
					1240	1260	0.092	630	-2830	-2200
					1220	1240	0.06	630	-2920	-2290
					1200	1220	0.062	630	-3010	-2390
					1180	1200	0.055	630	-3100	-2480
					1160	1180	0.045	630	-3190	-2570
					1140	1160	0.029	630	-3290	-2660
					1140	1460	4.246	590	-2320	-1730
53.2	RIUKOJIETNA	SE790	2002		1440	1460	0.516	1200	-2530	-1330
					1420	1440	0.676	1310	-2690	-1370
					1400	1420	0.387	1420	-2840	-1410
					1380	1400	0.42	1430	-2990	-1560
					1360	1380	0.444	1430	-3140	-1710
					1340	1360	0.428	1450	-3290	-1840
					1320	1340	0.512	1400	-3440	-2040
					1300	1320	0.391	1390	-3590	-2200
					1280	1300	0.259	1410	-3740	-2330
					1260	1280	0.189	1380	-3890	-2510
					1240	1260	0.133	1440	-4040	-2610
					1220	1240	0.094	1490	-4190	-2700
					1200	1220	0.065	1500	-4340	-2840
					1180	1200	0.06	1710	-4490	-2790
					1160	1180	0.045	1730	-4650	-2910
					1140	1160	0.029	1800	-4800	-2990
					1140	1460	4.648	1390	-3220	-1830
53.3	RIUKOJIETNA	SE790	2003		1440	1460	0.498	1000	-2750	-1740
					1420	1440	0.511	1220	-2810	-1580
					1400	1420	0.367	1250	-2870	-1610
					1380	1400	0.411	1290	-2930	-1630
					1360	1380	0.43	1300	-2990	-1690
					1340	1360	0.423	1240	-3040	-1800
					1320	1340	0.487	1200	-3100	-1900

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1300	1320	0.352	1240	-3160	-1920
					1280	1300	0.224	1210	-3220	-2010
					1260	1280	0.149	1250	-3280	-2030
					1240	1260	0.088	1310	-3340	-2030
					1220	1240	0.061	1330	-3400	-2070
					1200	1220	0.059	1350	-3460	-2110
					1180	1200	0.054	1450	-3520	-2070
					1160	1180	0.045	1580	-3580	-2000
					1140	1160	0.009	1630	-3640	-2010
					1140	1460	4.168	1230	-3010	-1780
53.4	RIUKOJIETNA	SE790	2005		1440	1460	0.516	1280	-1460	-180
					1420	1440	0.675	1330	-1500	-170
					1400	1420	0.383	1340	-1550	-210
					1380	1400	0.41	1370	-1600	-230
					1360	1380	0.433	1390	-1650	-260
					1340	1360	0.428	1360	-1700	-340
					1320	1340	0.51	1380	-1740	-360
					1300	1320	0.393	1310	-1790	-480
					1280	1300	0.264	1280	-1840	-560
					1260	1280	0.189	1260	-1880	-630
					1240	1260	0.13	1260	-1930	-670
					1220	1240	0.098	1260	-1980	-710
					1200	1220	0.064	1300	-2030	-730
					1180	1200	0.06	1310	-2070	-770
					1160	1180	0.054	1310	-2120	-810
					1140	1160	0.029	1310	-2170	-850
					1120	1140	0.016	1330	-2210	-880
					1120	1460	4.651	1330	-1680	-350
54.1	STORGLACIAEREN	SE788	2001		1700	1720	0.053	2080	-1380	700
					1680	1700	0.061	2400	-1070	1320
					1660	1680	0.088	2430	-1030	1390
					1640	1660	0.129	2430	-1000	1440
					1620	1640	0.162	2290	-980	1310
					1600	1620	0.135	1870	-1070	800
					1580	1600	0.141	1580	-1210	370
					1560	1580	0.103	1410	-1330	70
					1540	1560	0.102	1390	-1420	30
					1520	1540	0.108	1470	-1470	0
					1500	1520	0.229	1360	-1470	-110
					1480	1500	0.149	1090	-1440	-350
					1460	1480	0.082	830	-1630	-800
					1440	1460	0.067	870	-1770	-890
					1420	1440	0.079	990	-1890	-890
					1400	1420	0.118	950	-2060	-1110
					1380	1400	0.255	650	-2230	-1580
					1360	1380	0.32	610	-2190	-1590
					1340	1360	0.271	470	-2310	-1840
					1320	1340	0.15	440	-2360	-1920
					1300	1320	0.096	710	-2520	-1810
					1280	1300	0.081	780	-2720	-1940
					1260	1280	0.083	470	-2950	-2480
					1240	1260	0.065	580	-2920	-2340
					1220	1240	0.053	660	-2960	-2300
					1200	1220	0.036	630	-3060	-2430
					1180	1200	0.017	760	-3100	-2340
					1160	1180	0.008	1060	-3100	-2040
					1140	1160	0.003	1480	-3100	-1620
					1140	1720	3.242	1140	-1840	-700

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
54.2	STORGLACIAEREN	SE788	2002		1720	1740	0.007	4680	-1070	3610
					1700	1720	0.041	3770	-1130	2640
					1680	1700	0.069	3440	-1160	2280
					1660	1680	0.103	3550	-1160	2390
					1640	1660	0.148	3590	-1100	2480
					1620	1640	0.151	3330	-1130	2200
					1600	1620	0.122	2740	-1210	1530
					1580	1600	0.13	2160	-1260	910
					1560	1580	0.084	2050	-1360	690
					1540	1560	0.094	1970	-1460	500
					1520	1540	0.106	2100	-1550	550
					1500	1520	0.225	2190	-1540	650
					1480	1500	0.152	1460	-1760	-300
					1460	1480	0.086	1170	-2060	-890
					1440	1460	0.068	1490	-2300	-810
					1420	1440	0.072	1720	-2550	-840
					1400	1420	0.118	1520	-2840	-1330
					1380	1400	0.252	1100	-3230	-2120
					1360	1380	0.325	1040	-3630	-2590
					1340	1360	0.265	830	-3750	-2920
					1320	1340	0.152	860	-4000	-3130
					1300	1320	0.095	1100	-4200	-3100
					1280	1300	0.083	920	-4250	-3320
					1260	1280	0.084	680	-4340	-3660
					1240	1260	0.063	960	-4370	-3410
					1220	1240	0.516	900	-4440	-3540
					1200	1220	0.037	930	-4580	-3660
					1180	1200	0.018	1170	-4680	-3500
					1160	1180	0.007	1590	-4720	-3130
					1140	1160	0.003	1930	-4740	-2810
					1140	1740	3.212	1750	-2580	-830
54.3	STORGLACIAEREN	SE788	2003		1720	1740	0.007	1630	-1630	2260
					1700	1720	0.041	1710	-1710	1690
					1680	1700	0.069	1730	-1730	1430
					1660	1680	0.103	1690	-1690	1240
					1640	1660	0.148	1640	-1640	1080
					1620	1640	0.151	1590	-1590	730
					1600	1620	0.122	1610	-1610	460
					1580	1600	0.13	1710	-1710	100
					1560	1580	0.084	1830	-1830	-150
					1540	1560	0.094	1900	-1900	-320
					1520	1540	0.106	1900	-1900	-250
					1500	1520	0.225	1770	-1770	-100
					1480	1500	0.152	1870	-1870	-730
					1460	1480	0.086	2060	-2060	-1160
					1440	1460	0.068	2200	-2200	-1240
					1420	1440	0.072	2330	-2330	-1220
					1400	1420	0.118	2560	-2560	-1390
					1380	1400	0.252	2800	-2800	-1800
					1360	1380	0.325	2870	-2870	-2040
					1340	1360	0.265	2920	-2920	-2220
					1320	1340	0.152	3090	-3090	-2480
					1300	1320	0.095	3310	-3310	-2410
					1280	1300	0.083	3400	-3400	-2570
					1260	1280	0.084	3480	-3480	-2990
					1240	1260	0.063	3660	-3660	-2910
					1220	1240	0.516	3810	-3810	-3010
					1200	1220	0.037	4070	-4070	-3250
					1180	1200	0.018	4430	-4430	-3450
					1160	1180	0.007	4620	-4620	-3520

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
					1140	1160	0.003	4700	-4700	-3490
					1140	1740	3.212	1380	-2480	-1040
54.4	STORGLACIAEREN	SE788	2004		1720	1740				2720
					1700	1720				1760
					1680	1700				1410
					1660	1680				1780
					1640	1660				1780
					1620	1640				1460
					1600	1620				1020
					1580	1600				710
					1560	1580				400
					1540	1560				400
					1520	1540				420
					1500	1520				670
					1480	1500				-190
					1460	1480				-670
					1440	1460				-560
					1420	1440				-250
					1400	1420				-320
					1380	1400				-700
					1360	1380				-790
					1340	1360				-990
					1320	1340				-1210
					1300	1320				-1120
					1280	1300				-1210
					1260	1280				-1800
					1240	1260				-1680
					1220	1240				-1750
					1200	1220				-1930
					1180	1200				-1840
					1160	1180				-1440
					1140	1160				-1300
					1140	1740				-120
55.1	TARFALAGL	SE791	2001		1750	1800	0.01	800	-300	500
					1700	1750	0.046	870	-300	570
					1650	1700	0.075	860	-300	560
					1600	1650	0.124	740	-420	320
					1550	1600	0.156	710	-800	-90
					1500	1550	0.183	750	-1200	-450
					1450	1500	0.216	840	-1600	-760
					1400	1450	0.182	820	-1980	-1160
					1350	1400	0.009	900	-2210	-1310
					1350	1800	1.002	790	-1160	-370
55.2	TARFALAGL	SE791	2004		1780	1800	0.001	270	-2210	-1940
					1760	1780	0.006	330	-2200	-1870
					1740	1760	0.005	450	-2190	-1740
					1720	1740	0.017	810	-2180	-1370
					1700	1720	0.026	1090	-2160	-1070
					1680	1700	0.028	1240	-2150	-910
					1660	1680	0.031	1670	-2140	-480
					1640	1660	0.036	1890	-2130	-240
					1620	1640	0.045	1900	-2120	-220
					1600	1620	0.06	1910	-2110	-200
					1580	1600	0.06	1870	-2100	-230
					1560	1580	0.062	1770	-2090	-320
					1540	1560	0.068	1770	-2080	-310
					1520	1540	0.07	1800	-2060	-260
					1500	1520	0.082	1780	-2050	-280

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					1480	1500	0.083	1710	-2040	-330
					1460	1480	0.087	1690	-2030	-340
					1440	1460	0.082	1610	-2020	-410
					1420	1440	0.08	1480	-2010	-530
					1400	1420	0.065	1430	-2000	-570
					1380	1400	0.009	1660	-1990	-330
					1380	1800	1.006	1660	-2070	-410
55.3	TARFALAGL	SE791	2005		1780	1800	0.001	1090	-1140	-50
					1760	1780	0.006	1090	-1200	-110
					1740	1760	0.005	1120	-1300	-180
					1720	1740	0.017	1220	-1390	-170
					1700	1720	0.026	1290	-1490	-200
					1680	1700	0.028	1360	-1580	-220
					1660	1680	0.031	1400	-1670	-270
					1640	1660	0.036	1400	-1770	-370
					1620	1640	0.045	1330	-1860	-530
					1600	1620	0.06	1280	-1950	-670
					1580	1600	0.06	1300	-2050	-750
					1560	1580	0.062	1350	-2140	-780
					1540	1560	0.068	1400	-2240	-830
					1520	1540	0.07	1420	-2330	-910
					1500	1520	0.082	1420	-2420	-1000
					1480	1500	0.083	1440	-2520	-1080
					1460	1480	0.087	1450	-2610	-1170
					1440	1460	0.082	1420	-2710	-1290
					1420	1440	0.08	1360	-2800	-1440
					1400	1420	0.065	1310	-2890	-1580
					1380	1400	0.009	1290	-2960	-1670
					1380	1800	1.006	1370	-2300	-920
	SWITZERLAND									
56.1	BASODINO	CH104	2001	FXD	3000	3100	0.48			1540
					2900	3000	0.56			1120
					2800	2900	0.55			580
					2700	2800	0.45			-160
					2600	2700	0.24			-1100
					2600	3100	2.28	3015	-2423	591
56.2	BASODINO	CH104	2002		3000	3100				500
					2900	3000				300
					2800	2900				-200
					2700	2800				-1400
					2600	2700				-2000
					2600	3100	2.28	1676	-2031	-356
56.3	BASODINO	CH104	2003		3000	3100				-1000
					2900	3000				-1400
					2800	2900				-2100
					2700	2800				-3000
					2600	2700				-3700
					2600	3100	2.28	1601	-3643	-2043
56.4	BASODINO	CH104	2004		3000	3100				200
					2900	3000				-90
					2800	2900				-700
					2700	2800				-960
					2600	2700				-1440
					2600	3100		1702		-490

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE		AREA	BW	BS	BN/BA
					FROM	TO	KM²	MM	MM	MM
56.5	BASODINO	CH104	2005		3000	3100				-100
					2900	3000				-800
					2800	2900				-1400
					2700	2800				-1900
					2600	2700				-2300
					2600	3100		1369		-1172
57.1	GRIES	CH3	2001	FXD	3300	3400	0.01			3070
					3200	3300	0.206			2390
					3100	3200	0.692			1710
					3000	3100	1.6			1040
					2900	3000	0.994			360
					2800	2900	0.658			-320
					2700	2800	0.457			-1000
					2600	2700	0.619			-1670
					2500	2600	0.805			-2350
					2400	2500	0.153			-3030
					2400	3400	6.194	2130		-50
57.2	GRIES	CH3	2002		3300	3400				2630
					3200	3300				1930
					3100	3200				1230
					3000	3100				530
					2900	3000				-170
					2800	2900				-880
					2700	2800				-1580
					2600	2700				-2280
					2500	2600				-2980
					2400	2500				-3680
					2400	3400		1010		-600
57.3	GRIES	CH3	2003		3300	3400				-1270
					3200	3300				-1300
					3100	3200				-1450
					3000	3100				-1700
					2900	3000				-2080
					2800	2900				-2570
					2700	2800				-3180
					2600	2700				-3900
					2500	2600				-4730
					2400	2500				-5690
					2400	3400		1700		-2630
57.4	GRIES	CH3	2004		3300	3400				-330
					3200	3300				-450
					3100	3200				-490
					3000	3100				-610
					2900	3000				-850
					2800	2900				-1220
					2700	2800				-1700
					2600	2700				-2310
					2500	2600				-3050
					2400	2500				-3900
					2400	3400		1370		-1330
57.5	GRIES	CH3	2005		3300	3400				1180
					3200	3300				580
					3100	3200				-20
					3000	3100				-610
					2900	3000				-1200
					2800	2900				-1790

NR	GLACIER NAME	PSFG NR	YEAR	SYS	ALTITUDE FROM	ALTITUDE TO	AREA KM²	BW MM	BS MM	BN/BA MM
					2700	2800				-2370
					2600	2700				-2940
					2500	2600				-3510
					2400	2500				-4080
					2400	3400		1190		-1670
58.1	SILVRETTA	CH90	2001	FXD	3000	3100	0.178			2660
					2900	3000	0.596			1970
					2800	2900	0.623			1290
					2700	2800	0.77			610
					2600	2700	0.451			-70
					2500	2600	0.37			-750
					2400	2500	0.021			-1440
					2400	3100	3.009			860
58.2	SILVRETTA	CH90	2002		3000	3100				2526
					2900	3000				1477
					2800	2900				428
					2700	2800				-622
					2600	2700				-1671
					2500	2600				-2720
					2400	2500				-3769
					2400	3100	3.009			-240
58.3	SILVRETTA	CH90	2003		3000	3100				220
					2900	3000				-499
					2800	2900				-1217
					2700	2800				-1936
					2600	2700				-2654
					2500	2600				-3373
					2400	2500				-4092
					2400	3100	3.009			-1674
58.4	SILVRETTA	CH90	2004		3000	3100				1196
					2900	3000				781
					2800	2900				365
					2700	2800				-50
					2600	2700				-466
					2500	2600				-881
					2400	2500				-1296
					2400	3100		1713		119
58.5	SILVRETTA	CH90	2005		3000	3100				339
					2900	3000				351
					2800	2900				182
					2700	2800				-810
					2600	2700				-1767
					2500	2600				-2369
					2400	2500				-2840
					2400	3100		1264		-651

Notes

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 from ‘reference year’ to ‘survey year’ in which the changes take place
ALTITUDE	Altitude interval in metres above sea level
AREA SY	Area of altitude interval for ‘survey year’ (square kilometres)
AREA CHANGE	Change in area of altitude interval for period of change (thousand square metres)
VOLUME CHANGE	Change in volume of altitude interval for period of change (thousand cubic metres)
THICKNESS CHANGE	Change in thickness of altitude interval for period of change (millimetres)

NR	GLACIER NAME	PERIOD		ALTITUDE		AREA	AREA	VOLUME	THICKNESS
		FROM	TO	FROM	TO	SY	CHANGE	CHANGE	CHANGE
	BOLIVIA								
1.1	CHACALTAYA	1999	2000	5350	5360		0	-0.326	-693
	BO5180			5325	5350		0	-2.193	-693
				5300	5325		-1	-1.873	-482
				5275	5300		0	-1.426	-482
				5250	5275		-1	-2.22	-482
				5225	5250		-2	-8.988	-750
				5200	5225		0	-10.964	-1019
				5175	5200		-1	-9.25	-1029
				5150	5175		0	-7.831	-1253
				5140	5150		0	-1.419	-1325
				5140	5360	0.046	-5	-5	-1698
1.2	CHACALTAYA	2000	2001	5140	5360	0.044	-4	-0.524	-11
	BO5180								
1.3	CHACALTAYA	2001	2002	5140	5360	0.042	-2	-64.627	-1350
	BO5180								
1.4	CHACALTAYA	2002	2003	5140	5360	0.036	-6	-45.987	-1042
	BO5180								
1.5	CHACALTAYA	2003	2004	5140	5360	0.027	-8	-39.825	-902
	BO5180								
1.6	CHACALTAYA	2004	2005	5140	5360	0.01	-17	-50.437	-2635
	BO5180								
2.1	CHARQUINI SUR	2002	2003	5300	5350	0.0025			383
	BO			5250	5300	0.0119			383
				5200	5250	0.0051			383
				5150	5200	0.0741			19
				5100	5150	0.1183			-903
				5050	5100	0.074			-1991
				5000	5050	0.0613			-2053
				4950	5000	0.0051			-2053
				4950	5350	0.3523			
2.2	CHARQUINI SUR	2003	2004	5300	5350	0.002	0	-3	-1228
	BO			5250	5300	0.0155	4	-14.61	-1228
				5200	5250	0.0467	0	-6.26	-1228
				5150	5200	0.0774	3	-101.2	-1366
				5100	5150	0.1171	-1	-178.5	-1509
				5050	5100	0.0729	-1	-125.65	-1698
				5000	5050	0.0616	0	-147.12	-2400
				4950	5000	0.0035	-2	-14.57	-2858
				4950	5350	0.3967	4		
2.3	CHARQUINI SUR	2004	2005	5200	5350	0.0644	0	-63.1	-983
	BO			5150	5200	0.0774	0	-86.76	-1121
				5100	5150	0.1163	-2	-382	-3263
				5050	5100	0.0701	-6	-98.12	-1346
				4950	5050	0.0537	-14	-64.64	-993
				4950	5350	0.3819	-1		
3.1	ZONGO	1999	2000	5900	6000	0.0357			2825
	BO5150			5800	5900	0.078			2825
				5700	5800	0.139			2825
				5600	5700	0.234			2565
				5500	5600	0.262			2305
				5400	5500	0.234			1707

NR	GLACIER NAME	PERIOD		ALTITUDE		AREA	AREA	VOLUME	THICKNESS
		FROM	TO	FROM	TO	SY	CHANGE	CHANGE	CHANGE
				5300	5400	0.179			988
				5200	5300	0.161			270
				5100	5200	0.252			-196
				5000	5100	0.285			-714
				4900	5000	0.107			-6188
				4900	6000	1.9667			
3.2	ZONGO	2000	2001	5900	6000	0.0357	0		2450
	BO5150			5800	5900	0.078	0		2450
				5700	5800	0.139	0		2450
				5600	5700	0.234	0		
				5500	5600	0.262	0		
				5400	5500	0.234	0		
				5300	5400	0.179	0		2190
				5200	5300	0.159	-2		1167
				5100	5200	0.244	-8		145
				5000	5100	0.286	-1		-517
				4900	5000	0.101	-6		-5140
				4900	6000	1.9517	-1		
3.3	ZONGO	2001	2002	5900	6000	0.0357	0		1892
	BO5150			5800	5900	0.078	0		1892
				5700	5800	0.139	0		1892
				5600	5700	0.234	0		1898
				5500	5600	0.262	0		1613
				5400	5500	0.234	0		1380
				5300	5400	0.179	0		705
				5200	5300	0.159	0		27
				5100	5200	0.245	1		-284
				5000	5100	0.287	1		-1590
				4900	5000	0.095	-6		-5526
				4900	6000	1.9477	-1		
3.4	ZONGO	2002	2003	5900	6000	0.0357	0		2568
	BO5150			5800	5900	0.078	0		2568
				5700	5800	0.139	0		2568
				5600	5700	0.234	0		1886
				5500	5600	0.262	0		1204
				5400	5500	0.234	0		1125
				5300	5400	0.179	0		1000
				5200	5300	0.159	0		872
				5100	5200	0.2426	-3		745
				5000	5100	0.2842	-3		-2196
				4900	5000	0.0826	-7		-5575
				4900	6000	1.9301	-17		
3.5	ZONGO	2003	2004	5900	6000	0.0357	0		2000
	BO5150			5800	5900	0.078	0		2000
				5700	5800	0.139	0		2000
				5600	5700	0.234	0		1812
				5500	5600	0.262	0		1785
				5400	5500	0.234	0		340
				5300	5400	0.179	0		-483
				5200	5300	0.159	0		-1174
				5100	5200	0.2405	-2		-1746
				5000	5100	0.282	-2		-2349
				4900	5000	0.076	-6		-4966
				4900	6000	1.9192	-10		
3.6	ZONGO	2004	2005	5900	6000	0.0357	0		1345
	BO5150			5800	5900	0.078	0		1345

NR	GLACIER NAME	PERIOD		ALTITUDE		AREA	AREA	VOLUME	THICKNESS
		FROM	TO	FROM	TO	SY	CHANGE	CHANGE	CHANGE
				5700	5800	0.139	0		1345
				5600	5700	0.234	0		1212
				5500	5600	0.262	0		1080
				5400	5500	0.234	0		142
				5300	5400	0.179	0		-796
				5200	5300	0.159	0		-2672
				5100	5200	0.223	-16	-1564	-3989
				5000	5100	0.275	-5	-728	-4438
				4900	5000	0.067	-10	-878	-7322
				4900	6000	1.8857	-33		
	C.I.S.								
4.1	TS.TUYUKSUYSKIY	1998	2006	4150	4200	0.06	10		
	SU5075			4100	4150	0.1295	1		
				4050	4100	0.184	0		
				4000	4050	0.133	0		
				3950	4000	0.126	0		
				3900	3950	0.1145	1		
				3850	3900	0.1375	-3		
				3800	3850	0.2105	3		
				3750	3800	0.4105	35	-874	-2225
				3700	3750	0.3985	-39	-680	-1628
				3650	3700	0.217	20	-799	-3852
				3600	3650	0.108	-2	-626	-5743
				3550	3600	0.117	-34	-1266	-9416
				3500	3550	0.133	2	-1385	-10473
				3450	3500	0.0525	-15	-772	-12846
				3450	4200	2.532	-22		
	INDIA								
5.1	BARA SHIGRI	2000	2004	6400	6500	0.1145			
	IN			6300	6400	0.422			
				6200	6300	0.2718			
				6100	6200	0.4077			
				6000	6100	1.2232		-3232	-2642
				5900	6000	2.6181		-4816	-1840
				5800	5900	4.8357		-26721	-5526
				5700	5800	5.8586		-21782	-3718
				5600	5700	9.7644		-39275	-4022
				5500	5600	12.911		-51826	-4014
				5400	5500	13.062		-71847	-5500
				5300	5400	13.770		-92256	-6700
				5200	5300	12.654		-115671	-9141
				5100	5200	11.087		-108650	-9799
				5000	5100	9.6141		-96216	-10008
				4800	4900	5.3937		-57352	-10633
				4700	4800	4.6068		-42102	-9139
				4600	4700	3.2619		-29290	-8979
				4500	4600	2.9901		-24660	-8247
				4400	4500	2.0888		-17781	-8513
				4200	4300	1.4521		-16188	-11148
				4000	4100	0.9085		-6931	-7629
				3900	6500	131.1		-958833	-7382
	ITALY								
6.1	CALDERONE	2000	2001	2750	2830	0.011	-2	1	58
	IT1006			2630	2750	0.038	0	-26	-680
				2630	2830	0.050	2	-26	-511

NR	GLACIER NAME	PERIOD		ALTITUDE		AREA	AREA	VOLUME	THICKNESS
		FROM	TO	FROM	TO	SY	CHANGE	CHANGE	CHANGE
6.2	CALDERONE	2001	2002	2750	2830	0.008	-4	-17	-2165
	IT1006			2630	2750	0.025	-13	-44	-1746
				2630	2830	0.033	-17	-61	-1847
6.3	CALDERONE	2002	2003	2750	2830	0.007	-1	1	106
	IT1006			2630	2750	0.027	-2	-10	-357
				2630	2830	0.033	0	-9	-264
6.4	CALDERONE	2003	2004	2750	2830	0.007	0	1	206
	IT1006			2630	2750	0.027	0	7	263
				2630	2830	0.033	0	8	252
6.5	CALDERONE	2004	2005	2750	2830	0.007	0	7	983
	IT1006			2630	2750	0.027	0	-13	-494
				2630	2830	0.033	0	-6	-194
	KENYA								
7.1	CESAR KE4	1993	2004	4640	4780	0.016	-2	324	18000
8.1	DARWIN KE6	1993	2004	4655	4785	0.012	-11	545	23700
9.1	DIAMOND KE10	1993	2004	4995	5150	0.003	0	14	4700
10.1	FOREL KE11	1993	2004	4860	4920	0.012	-3	50	3300
11.1	GREGORY KE9	1993	2004	4740	4850	0.012	-23	410	14900
12.1	HEIM KE12	1993	2004	4750	4780	0.005	-10	233	15500
13.1	JOSEPH KE3	1993	2004		4752	0	-6	104	17400
14.1	KRAPF KE1	1993	2004	4640	4802	0.014	-7	268	12800
15.1	LEWIS KE8	1993	2004	4640	4895	0.139	-64	2761	13600
16.1	NORTHEY KE13	1993	2004	4730	4820	0.003	-6	186	20700
17.1	TYNDALL KE5	1993	2004	4550	4790	0.051	-14	852	13100
	NORWAY								
18.1	HANSBREEN NO12419	1990	2000	0	510				-9600
18.2	HANSBREEN NO12419	2000	2005	0	510				-7000

NR	GLACIER NAME	PERIOD FROM	PERIOD TO	ALTITUDE FROM	ALTITUDE TO	AREA SY	AREA CHANGE	VOLUME CHANGE	THICKNESS CHANGE
	POLAND								
19.1	POD BULA PL111	1978	1979	1650	1687	0.003	0		
19.2	POD BULA PL111	1979	1980	1650	1687	0.0029	-0.1		
19.3	POD BULA PL111	1980	1981	1650	1687	0.0006	-2.3		
19.4	POD BULA PL111	1981	1982	1650	1687	0.0008	0.2		
19.5	POD BULA PL111	1982	1983	1650	1687	0.0012	0.4		
19.6	POD BULA PL111	1983	1984	1650	1687	0.0011	-0.1		
19.7	POD BULA PL111	1984	1985	1650	1687	0.0005	-0.6		
19.8	POD BULA PL111	1985	1986	1650	1687	0.0016	1.1		
19.9	POD BULA PL 111	1986	1987	1650	1687	0.0016	0		
19.10	POD BULA PL111	1987	1988	1650	1687	0.0022	0.6		
19.11	POD BULA PL111	1988	1989	1650	1687	0.0020	-0.2		
19.12	POD BULA PL111	1989	1990	1650	1687	0.0005	-1.5		
19.13	POD BULA PL111	1990	1991	1650	1687	0.0025	2		
19.14	POD BULA PL111	1991	1992	1650	1687	0.0016	-0.9		
19.15	POD BULA PL111	1992	1993	1650	1687	0.0010	-0.6		
19.16	POD BULA PL111	1993	1994	1650	1687	0.0010	0		
19.17	POD BULA PL111	1994	1995	1650	1687	0.0019	0.9		
19.18	POD BULA PL111	1995	1996	1650	1687	0.0007	-1.2		
19.19	POD BULA PL111	1996	1997	1650	1687	0.0002	-0.5		
19.20	POD BULA PL111	1997	1998	1650	1687	0.0009	0.7		

NR	GLACIER NAME	PERIOD FROM	PERIOD TO	ALTITUDE FROM	ALTITUDE TO	AREA SY	AREA CHANGE	VOLUME CHANGE	THICKNESS CHANGE
19.21	POD BULA PL111	1998	1999	1650	1687	0.0003	-0.6		
19.22	POD BULA PL111	1999	2000	1650	1687	0.0006	0.3		
19.23	POD BULA PL111	2000	2001	1650	1687	0.0005	-0.1		
19.24	POD BULA PL111	2001	2002	1650	1687	0	-0.5		
19.25	POD BULA PL111	2002	2003	1650	1687	0	0		
19.26	POD BULA PL111	2003	2004	1650	1687	0.0019	1.9		
19.27	POD BULA PL111	2004	2005	1650	1687	0.0022	0.3		
	SPAIN								
20.1	MALADETA	1994	2001	3075	3170	0.1807	-6		1410
	ES9020			3050	3075	0.0457	-4		-1600
				3025	3050	0.0443	2		-2810
				3000	3025	0.0248	-9		-4370
				2975	3000	0.0203	-2		-5300
				2950	2975	0.0166	-4		-4680
				2925	2950	0.0136	-6		-6240
				2900	2925	0.0113	-2		-10000
				2875	2900	0.0096	-2		-12800
				2850	2875	0.0055	-3		-13420
				2825	2850	0.0032	-3		-13750
				2800	2825	0.0015	-2		-11000
				2775	2800	0	-1		-5000
				2775	3170	0.377	-41	-1326	
20.2	MALADETA	2001	2002	3075	3170	0.1786	-2		738
	ES9020			3050	3075	0.0453	0		68
				3025	3050	0.0401	-4		310
				3000	3025	0.0291	4		-640
				2975	3000	0.0187	-2		-1110
				2950	2975	0.0147	-2		-2790
				2925	2950	0.0122	-1		-2630
				2900	2925	0.0105	-1		-1430
				2875	2900	0.0089	-1		-1510
				2850	2875	0.0049	-1		-1590
				2825	2850	0.0025	-1		-1890
				2800	2825	0.0004	-1		-3770
				2775	2800	0	0		
				2775	3170	0.3658	-11	-289	
20.3	MALADETA	2002	2003	3075	3170	0.1786	0		-220
	ES9020			3050	3075	0.0442	-1		-1120
				3025	3050	0.0402	0		-3360
				3000	3025	0.0279	-1		-860
				2975	3000	0.0157	-3		-2500
				2950	2975	0.0144	0		-2500
				2925	2950	0.011	-1		-2580
				2900	2925	0.01	0		-2500
				2875	2900	0.0074	-2		-2840

NR	GLACIER NAME	PERIOD FROM	PERIOD TO	ALTITUDE FROM	ALTITUDE TO	AREA SY	AREA CHANGE	VOLUME CHANGE	THICKNESS CHANGE
				2850	2875	0.0037	-1		-3960
				2825	2850	0.0015	-1		-4650
				2800	2825	0.0003	0		-3440
				2775	2800	0	0		
				2775	3170	0.3549	-11	-168	
20.4	MALADETA	2003	2004	3075	3170	0.1743	-4		
	ES9020			3050	3075	0.0449	1		-3930
				3025	3050	0.0429	3		-2190
				3000	3025	0.02	-8		-1130
				2975	3000	0.0169	1		-900
				2950	2975	0.0145	0		-980
				2925	2950	0.0105	0		-1130
				2900	2925	0.0093	-1		-1590
				2875	2900	0.0073	0		-1970
				2850	2875	0.0035	0		-2570
				2825	2850	0.001	0		-2720
				2800	2825	0	0		-2720
				2775	2800	0	0		
				2775	3170	0.3452	-10	-327	
20.5	MALADETA	2004	2005	3075	3170	0.1692	-5		
	ES9020			3050	3075	0.0424	-3		1600
				3025	3050	0.0373	-6		-2290
				3000	3025	0.0212	1		-3210
				2975	3000	0.017	0		-3210
				2950	2975	0.0134	-1		-1721
				2925	2950	0.0095	-1		-2980
				2900	2925	0.0089	0		-3210
				2875	2900	0.0066	-1		-4020
				2850	2875	0.0025	-1		-4930
				2825	2850	0.0001	-1		-5510
				2800	2825	0	0		
				2775	2800	0	0		
				2775	3170	0.3283	-17	-133	
	SWITZERLAND								
21.1	ALLALIN CH11	1932	2004	2630	4190	9.68		-108000	
22.1	BASODINO CH104	1929	2002	2530	3230	2.201		-61000	
23.1	CLARIDENFIRN CH141	1936	2003			5.127		-40000	
24.1	CORBASSIERE CH38	1877	2003	2200	4310	15.996		-421000	
25.1	GIETRO CH37	1934	2003	2530	3830	5.549		-68000	
26.1	GORNER CH14	1931	2003	2160	4610	38.247		-1694000	
27.1	GRIES CH3	1884	2003	2395	3370	5.264		-621000	
28.1	GROSSER ALETSCH CH5	1880	1999	1560	4160	83.015		-4858000	

NR	GLACIER NAME	PERIOD FROM	PERIOD TO	ALTITUDE FROM	ALTITUDE TO	AREA SY	AREA CHANGE	VOLUME CHANGE	THICKNESS CHANGE
29.1	HOHLAUB CH	1879	2004			2.256		-94000	
30.1	KESSJEN CH12	1879	2004	2868	3240	0.195		-37000	
31.1	LIMMERN CH78	1876	1977	2100	3400	2.415		-129000	
32.1	PLATTALVA CH114	1947	1977	2500	3100	0.864		-5000	
33.1	RHONE CH1	1874	2000	2190	3620	16.45		-588000	
34.1	SCHWARZBERG CH10	1879	2004	2659	3650	5.332		-136000	
35.1	SEEWJINEN CH	1956	2004			1.538		-21000	
36.1	SILVRETTA CH90	1893	2003	2463	3160	2.893		-85000	
37.1	TRIFT (GADMEN) CH55	1861	2003	1651	3505	15.335		-680000	
38.1	UNT.GRINDELWALD CH58	1861	2004	1090	4100	20.6		-1560000	
39.1	UNTERAAR CH51	1880	2003	1930	4090	22.727		-1729000	
	TANZANIA								
40.1	KILIMANJARO TZ	1880	1912			12.058	-7942		
40.2	KILIMANJARO TZ	1912	1953			6.675	-5905		
40.3	KILIMANJARO TZ	1953	1976			4.171	-2504		
40.4	KILIMANJARO TZ	1976	1989			3.304	-867		
40.5	KILIMANJARO TZ	1989	2000			2.6	-704		
40.6	KILIMANJARO TZ	2000	2003			2.51	-90		
	U.S.A.								
41.1	GULKANA US200	1974	1993	1165	2460				-6000
41.2	GULKANA US200	1993	1999	1165	2460				-5800

WORLD GLACIER MONITORING SERVICE

ALPHABETIC INDEX

GLACIER NAME	15 alphabetic or numeric digits, names arranged in alphabetic order
PSFG NUMBER	5 digits identifying glacier with alphabetic prefix denoting country
WGMS ID	5 digits, identifying glacier in the WGMS-data base
DATA TABLE AND RECORD NUMBER	Table and record number where data are located

A = General information on the observed glacier
B = Variations in the position of glacier fronts: 2000–2005
BB = Variations in the position of glacier fronts: addenda from earlier years
C = Mass balance summary data: 2000–2005
CC = Mass balance summary data: addenda from earlier years
CCC = Mass balance versus altitude for selected glaciers
D = Changes in area, volume and thickness
F = Index measurements or special events – see Chapter 4

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
AALFOTBREEN	NO36204	317	A.479			C.59		CCC.32		
ADAMS	NZ	2923	A.421	B.350	BB.68					
ADI KAILASH	IN	3051	A.274	B.208						
AEU. PIRCHLKAR	AT229	504	A.14	B.12						
AGNELLO MER.	IT29	684	A.288	B.220						
ALBA	ES9010	967	A.539		BB.83					
ALFOMBRALES E	CO0013B	2693	A.154		BB.4					
ALLALIN	CH11	394	A.579	B.484					D.21	
ALLISON	HM1350	2902	A.206		BB.46					
ALMER/SALISBURY	NZ	1548	A.422	B.351						
ALPEINER F.	AT307	497	A.15	B.13						
ALPETLI (KANDER)	CH109	439	A.580	B.485						
ALTA (VEDRETTA)	IT730	632	A.289	B.221						
AMMERTEN	CH111	435	A.581	B.486						
AMOLA	IT644	638	A.290	B.222						
ANDOLLA SETT.	IT336	617	A.291	B.223						
ANDY	NZ	1590	A.423	B.352						
ANETO	ES9030	943	A.540	B.455	BB.84					
ANTELAO INFERIORE (OCC.)	IT967	642	A.292	B.224						
ANTELAO SUP.	IT966	643	A.293	B.225						
ANTIZANA 15 ALPHA	EC1	1624	A.197	B.154	BB.45	C.32	CC.8	CCC.23		
ANZAC PEAK	HM1020	2914	A.207		BB.47					
AOUILLE	IT138	1239	A.294	B.226						
ARGENTIERE	FR00002	354	A.198	B.155		C.33	CC.9			
AROLLA (BAS)	CH27	377	A.582	B.487						
ARTESONRAJU	PE3	3292	A.522	B.439		C.81		CCC.48		
ASHBURTON	NZ	1570	A.424	B.353						
AURONA	IT338	616	A.295	B.227						
AUSTDALSBREEN	NO37323	321	A.480			C.60		CCC.33		
AUSTERDALSBREEN	NO31220	288	A.481	B.408						
AUSTRE BROEGGERBREEN	NO15504	292	A.482			C.61				
AXIUS	NZ	2283	A.425	B.354						
AZUFRADO E	CO0005B	2696	A.155		BB.5					
AZUFRADO W	CO0005A	2697	A.156		BB.6					
AZUFRE	AR	2851	A.2	B.1						
BABY	CA205	1	A.143			C.22	CC.7			
BACHFALLEN F.	AT304	500	A.16	B.14						
BAERENKOPF K.	AT702	567	A.17	B.15						
BAHIA DEL DIABLO	AQ	2665	A.1			C.1		CCC.1		
BALAITUS SE	ES1030	954	A.541		BB.85					
BALFOUR	NZ	1604	A.426	B.355						
BARA SHIGRI	IN	2920	A.275						D.5	
BARRANCS	ES9040	941	A.542	B.456	BB.86					
BASEI	IT64	611	A.296	B.228						
BASODINO	CH104	463	A.583	B.488		C.89		CCC.56	D.22	
BAUDISSIN	HM105	2874	A.208		BB.48					
BEAS KUND	IN	3053	A.276	B.209						
BELLA TOLA	CH21	383	A.584	B.489						
BELVEDERE (MACUGNAGA)	IT325	618	A.297	B.229						F
BERGLAS F.	AT308	496	A.18	B.16						
BERGSETBREEN	NO31013	2290	A.483	B.409						
BERING	US	3336	A.694							F
BESSANESE	IT40	1297	A.298	B.230						
BHAGIRATHI KHARAK	IN	3050	A.277	B.210						
BIELTAL F.	AT0105A	481	A.20	B.18						
BIELTAL F. MITTE	AT	2674	A.21	B.19						
BIELTAL F. W	AT0105B	1452	A.19	B.17						
BIFERTEN	CH77	422	A.585	B.490						
BIS	CH0107	388	A.586							F
BLAAMANNSISEN	NO	2306	A.484							F
BLACK RAPIDS	US222	80	A.695							F

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
BLAGNIPUJOKULL	IS	3130	A.222	B.164	BB.62					
BLANC	FR00031	351	A.199	B.156						
BLUEMLISALP	CH64	436	A.587	B.491						
BOEDALSBREEN	NO37219	2291	A.485	B.410						
BOEVERBREEN	NO548	2298	A.486	B.411						
BOEYABREEN	NO33014	2297	A.487	B.412						
BONDHUSBREEN	NO20408	318	A.488	B.413						
BOSSONS	FR00004	355	A.200	B.157						
BOTNABREEN	NO20515	2292	A.489	B.414						
BOULDER	US2005	1364	A.696	B.594						
BOVEYRE	CH41	459	A.588	B.492						
BRECHA LATOUR	ES1020	953	A.543		BB.87					
BREIDALBLIKKBREA	NO	2671	A.490	B.415		C.62	CC.13	CCC.34		
BREIDAMJOK. E.B	IS1126B	3062	A.223	B.165		C.38				
BREIDAMJOK. W.A	IS1125A	3063	A.224	B.166						
BREIDAMJOK. W.C	IS1125C	3065	A.225	B.167						
BRENEY	CH36	368	A.589	B.493						
BRENNDALSBREEN	NO37109	2293	A.491	B.416						
BRENNKOGL K.	AT727	528	A.22	B.20						
BRENVA	IT219	615	A.299	B.231						
BRESCIANA	CH103	465	A.590	B.494						
BREWSTER	NZ	1597	A.427	B.356		C.58		CCC.31		
BRIKSDALSBREEN	NO37110	314	A.492	B.417	BB.72					
BROGGI	PE3	220	A.523	B.440	BB.74					
BROWN	HM111	2886	A.209	B.162	BB.49					
BRUARJOKULL	IS2400	3067	A.226			C.39				
BRUNEGG	CH20	384	A.591	B.495						
BRUNNI	CH72	427	A.592	B.496						
BUARBREEN	NO21307	315	A.493	B.418						F
BUTLER	NZ	1544	A.428	B.357						
CALDERAS	CH95	403	A.593	B.497						
CALDERONE	IT1006	1107	A.300	B.232		C.50		CCC.25	D.6	
CAMBRENA	CH99	399	A.594	B.498						
CAMERON	NZ	1565	A.429	B.358						
CARE ALTO OR.	IT632	1148	A.301	B.233						
CARESER	IT701	635	A.302	B.234		C.51		CCC.26		
CASPOGGIO	IT435	628	A.303	B.235						
CASSANDRA OR.	IT411	1185	A.304	B.236						
CASTELLI OCC.	IT494	1163	A.305	B.237						
CASTELLI OR.	IT493	1162	A.306	B.238						
CAVAGNOLI	CH119	464	A.595	B.499						
CENTRAL	CO32	2713	A.157		BB.7					
CERRO CON-CAVO (7)	CO	2742	A.158	B.141	BB.8					
CERRO CON-CAVO (8)	CO	2743	A.159	B.142	BB.9					
CERRO TOTI (B)	CO	2744	A.160		BB.10					
CERRO TOTI (C)	CO	2745	A.161		BB.11					
CESAR	KE4	694	A.410	B.339					D.7	
CEVEDALE FORCOLA	IT731	663	A.307	B.239						
CEVEDALE PRINCIPALE	IT732	662	A.308	B.240						
CHACALTAYA	BO5180	1505	A.129	B.127	BB.1	C.13	CC.5		D.1	F
CHALLENGER	HM1130	2876	A.210		BB.50					
CHARQUINI SUR	BO	2667	A.130			C.14		CCC.11	D.2	
CHAVANNES	IT204	1257	A.309	B.241						
CHEILLON	CH29	375	A.596	B.500						
CHHOTA SHIGRI	IN	2921	A.278			C.48		CCC.24		F
CHIPA	IN	3048	A.279	B.211						
CIAMARELLA	IT43	1298	A.310	B.242						
CIARDONEY	IT81	1264	A.311	B.243		C.52	CC.11	CCC.27		
CLARIDENFIRN	CH141	2660	A.597						D.23	
CLASSEN	NZ	1579	A.430	B.359						
CLOT DE HOUNT	ES3010	960	A.544	B.457	BB.88					

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
COL DELLA MARE I	IT0506A	1167	A.312	B.244						
COLIN CAMPBELL	NZ	1571	A.431	B.360						
COLLALTO	IT927	647	A.313	B.245						
COLLERIN D'ARNAS	IT42	2349	A.314	B.246						
COLUMBIA (2057)	US2057	76	A.697	B.595		C.93	CC.18			
COMPTON 1	HM112	2883	A.211		BB.51					
COOK	GS	2870	A.534	B.450	BB.78					
CORBASSIERE	CH38	366	A.598	B.501					D.24	
CORNISELLO MER.	IT646	1151	A.315	B.247						
CORNO	CH120	468	A.599	B.502						
CORNO DI SALARNO	IT603	2560	A.316	B.248						
CORONAS	ES9080	970	A.545	B.458	BB.89					
COUPE DE MONEY	IT109	1271	A.317	B.249						
CREGUENA N	ES0907A	969	A.546		BB.90					
CREGUENA S	ES0907B	971	A.547		BB.91					
CRODA ROSSA	IT828	654	A.318	B.250						
CROSLINA	CH121	1681	A.600	B.503						
CROW	NZ	1564	A.432	B.361						
DAMMA	CH70	429	A.601	B.504						
DANIELS	US2052	83	A.698	B.596		C.94	CC.19			
DART	NZ	898	A.433	B.362						
DARWIN	KE6	696	A.411	B.340					D.8	
DAUNKOGEL F.	AT0310A	604	A.23	B.21						
DE LOS TRES	AR	1675	A.3	B.2						
DEMING	US2009	1368	A.699	B.597						
DESA S	CO	2683	A.162		BB.12					
DESA SE	CO	2684	A.163		BB.13					
DESA WSW	CO	2685	A.164		BB.14					
DEVON ICE CAP	CA0431	39	A.144			C.23				
DIAMOND	KE10	692	A.412	B.341					D.9	
DIEM F.	AT220	513	A.24	B.22						
DISGRAZIA	IT419	2503	A.319	B.251						
DISPUTE	NZ	2286	A.434	B.363						
DJANKUAT	SU3010	726	A.132	B.129		C.16		CCC.13		F
DONNE	NZ	1585	A.435	B.364						
DORFER K.	AT509	577	A.25	B.23						
DOSDE OR.	IT473	625	A.320	B.252						
DOSEGU	IT512	668	A.321	B.253						
DOUGLAS (KAR.)	NZ	1601	A.436	B.365						
DOWNES 1	HM1150	2879	A.212		BB.52					
DUNGEL	CH112	1678	A.602	B.505						
DYNGJUJOKULL	IS2600	3068	A.227			C.40				
DZASSET	IT113	2372	A.322	B.254						
DZHELO	SU7106	1081	A.133	B.130						
EALEY 1	HM1170	2881	A.213		BB.53					
EASTON	US2008	1367	A.700	B.598		C.95	CC.20			
ECHAURREN NORTE	CL0001B	1344	A.149			C.28				
EIGER	CH59	442	A.603	B.506						
EISKAR G.	AT1301	1632	A.26	B.24						
EL MAYOR	CO	2686	A.165		BB.15					
EL OSO	CO	2687	A.166		BB.16					
EL VENADO	CO	2688	A.167		BB.17					
EMMONS	US2022	203	A.701			C.96				
EN DARREY	CH30	374	A.604	B.507						
ENGABREEN	NO67011	298	A.494	B.419		C.63		CCC.35		
EVANS	NZ	1611	A.437	B.366						
EYJABAKKAJOKULL	IS2300	3069	A.228			C.41				
FAABERGSTOELSB.	NO31015	289	A.495	B.420						
FALLJOKULL	IS1021	3071	A.229	B.168						
FEE NORTH	CH13	392	A.605	B.508						
FELLARIA OCC.	IT439	627	A.323	B.255						

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER					
FERNAU F.	AT312	601	A.27	B.25				
FERPECLE	CH25	379	A.606	B.509				
FIESCHER	CH4	471	A.607	B.510				
FINDELEN	CH16	389	A.608	B.511	C.90			
FIRNALPELI	CH75	424	A.609	B.512				
FITZGERALD (GOD)	NZ	2278	A.438	B.367				
FJALLS.FITJAR	IS1024B	3072	A.230	B.169				
FJALLSJ. BRMFJ	IS1024A	3073	A.231	B.170				
FJALLSJ.G-SEL	IS1024C	3074	A.232	B.171				
FLAAJOKULL	IS1930A	3078	A.233	B.172				
FOND OCCID.	IT146	2380	A.324	B.256				
FOND OR.	IT145	1243	A.325	B.257				
FONTANA BIANCA	IT713	1507	A.326		C.53	CC.12	CCC.28	
FOREL	KE11	691	A.413	B.342				D.10
FORNI	IT507	670	A.327	B.258				
FORNO	CH102	396	A.610	B.513				
FOSS	US2053	84	A.702	B.599	C.97	CC.21		
FOURNEAUX	IT27	1294	A.328	B.259				
FOX	NZ	1536	A.439	B.368				
FRADUSTA	IT950	2273	A.329	B.260				
FRANZ JOSEF	NZ	899	A.440	B.369				
FREIGER F.	AT320	595	A.28	B.26				
FREIWAND K.	AT706	564	A.29	B.27				
FRESHFIELD	NZ	2966	A.441	B.370				
FROSNITZ K.	AT507	579	A.30	B.28				
FURTSCHAGL K.	AT406	585	A.31	B.29				
GAISKAR F.	AT325	530	A.32	B.30				
GAISSBERG F.	AT225	508	A.33	B.31				
GAJAP-YANACARCO	PE9	223	A.524	B.441				
GAKONA	US215	1663	A.703					
GAMCHI	CH61	440	A.611	B.514				
GARABASHI	SU3031	761	A.134		C.17		CCC.14	
GAULI	CH52	449	A.612	B.515				
GEBROULAZ	FR00009	352	A.201	B.158	C.34	CC.10		
GEITLANDSJOKULL	IS	3128	A.234	B.173				
GELTEN	CH113	1679	A.613	B.516				
GEPATSCH F.	AT202	522	A.34	B.32				
GI. NO. 30	IN	3052	A.280	B.212				
GIETRO	CH37	367	A.614	B.517				D.25
GIGANTE CENTR.	IT929	646	A.330	B.261				
GIGANTE OCC.	IT930	645	A.331	B.262				
GIGJOKULL	IS112	3079	A.235	B.174				
GLAERNISCH	CH80	418	A.615	B.518				
GLJUFURARJOKULL	IS103	3080	A.236	B.175				
GODLEY	NZ	1581	A.442	B.371				
GOESSNITZ K.	AT1201	532	A.35	B.33				
GOLDBERG KEES	AT0802B	1305	A.36	B.34	C.4		CCC.3	
GOLETTA	IT148	683	A.332	B.263				
GORNER	CH14	391	A.616	B.519				D.26
GR.GOSAU G.	AT1101	536	A.37	B.35				
GRAAFJELLSBREA	NO	2672	A.496	B.421	C.64	CC.14	CCC.36	
GRAASUBREEN	NO547	299	A.497		C.65		CCC.37	
GRAN PILASTRO	IT893	652	A.333	B.264				
GRAND CROUX CENTR.	IT111	1273	A.334	B.265				
GRAND DESERT	CH31	373	A.617	B.520				
GRAND PLAN NEVE	CH45	455	A.618	B.521				
GRANDES MURAILLES	IT260	622	A.335	B.266				
GREGORY	KE9	693	A.414	B.343				D.11
GREY & MAUD	NZ	1580	A.443	B.372				
GRIES	CH3	359	A.619	B.522	C.91		CCC.57	D.27
GRIESS (KLAUSEN)	CH74	425	A.620	B.523				

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
GRIESSEN (OBWA.)	CH76	423	A.621	B.524						
GROSSELEND K.	AT1001	542	A.38	B.36						
GROSSER ALETSCH	CH5	360	A.622	B.525					D.28	
GRUENAU F.	AT315	599	A.39	B.37						
GRUETTA ORIENT.	IT232	2418	A.336	B.267						
GUALI	CO3	2700	A.168		BB.18					
GULKANA	US200	90	A.704			C.98			D.41	
GUNN	NZ	1560	A.444	B.373						
GURGLER F.	AT222	511	A.40	B.38						
GUSLAR F.	AT210	490	A.41	B.39						
GUSSFELDT	AR	2848	A.4	B.3						
HABACH KEES	AT504	1310	A.42	B.40						
HAGAFELLSJOK. E	IS306	3081	A.237	B.176						
HAGAFELLSJOK. W	IS204	3082	A.238	B.177						
HALLSTAETTER G.	AT1102	535	A.43	B.41						
HAMAGURI YUKI	JP1	897	A.409			C.57				F
HAMTAH	IN	3044	A.281	B.213		C.49				
HANSBREEN	NO12419	306	A.498	B.422	BB.73	C.66		CCC.38	D.18	
HANSEBREEN	NO36206	322	A.499			C.67		CCC.39		
HARBARDSBREEN	NO30704	2320	A.500			C.68				
HARDANGERJOEKULEN	NO22303	304	A.501			C.69		CCC.40		
HARKER	GS	2868	A.535	B.451	BB.79					
HEANEY	GS	2871	A.536	B.452	BB.80					
HEIM	KE12	690	A.415	B.344					D.12	
HEINABERGSJOKULL	IS	3135	A.239	B.178	BB.63					
HELLSTUGUBREEN	NO511	300	A.502	B.423		C.70		CCC.41		
HELM	CA855	45	A.145			C.24		CCC.17		
HINTEREIS FERNER	AT209	491	A.44	B.42		C.5	CC.1	CCC.4		
HOCHALM K.	AT1005	538	A.45	B.43						
HOCHJOCH F.	AT208	492	A.46	B.44						
HOCHMOOS F.	AT309	495	A.47	B.45						
HODGES	GS	2872	A.537	B.453	BB.81					
HOFSJOKULL E	IS0510B	3088	A.240			C.42				
HOFSJOKULL N	IS0510A	3089	A.241			C.43				
HOFSJOKULL SW	IS0510C	3090	A.242			C.44				
HOHLAUB	CH	3332	A.623						D.29	
HOHSAND SETT. (SABBIONE SETT.)	IT357	631	A.337	B.268						
HOJALARGA 1	CO	2758	A.169		BB.19					
HOOKER	NZ	1576	A.445	B.374						
HORACE WALKER	NZ	1600	A.446	B.375						
HORCONES INFERIOR	AR5006	919	A.5	B.4						F
HORN K. (SCHOB.)	AT1202	531	A.48	B.46						
HORN K. (ZILLER)	AT402	589	A.49	B.47						
HRUTARJOKULL	IS923	3091	A.243	B.179						
HUBBARD	US1290	87	A.705							F
HUEFI	CH73	426	A.624	B.526						
HYLLGLACIAEREN	SE780	344	A.565	B.472						
HYRNINGSJOKULL	IS100	3092	A.244	B.180						
ICE WORM	US2054	82	A.706	B.600		C.99	CC.22			
INFIERNO E	ES2020	957	A.548	B.459	BB.92					
INFIERNO W	ES0201A	955	A.549	B.460	BB.93					
INFIERNO WW	ES0201B	956	A.550		BB.94					
INN. PIRCHLKAR	AT228	505	A.50	B.48						
IRENEBREEN	NO15402	2669	A.503	B.424		C.71				
ISFALLSGLAC.	SE787	333	A.566	B.473						
IVORY	NZ	900	A.447	B.376						
JACKA	HM0113A	2905	A.214		BB.54					
JAMTAL F.	AT106	480	A.51	B.49		C.6	CC.2	CCC.5		
JHULANG (KHARSA)	IN	3046	A.282	B.214						
JOBRI	IN	3054	A.283	B.215						
JOKULKROKUR	IS7	3094	A.245	B.181						

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
JOSEPH	KE3	689	A.416	B.345					D.13	
JUMEAUX	IT280	2441	A.338	B.269						
KAELBERSPITZ K.	AT1003	540	A.52	B.50						
KAHUTEA	NZ	1569	A.448	B.377						
KALDALONSJOKULL	IS102	3095	A.246	B.182						
KALSER BAERENKOPF K.	AT	2676	A.53	B.51						
KALTWASSER	CH7	363	A.625	B.527						
KARLINGER K.	AT701	568	A.54	B.52						
KEHLEN	CH68	431	A.626	B.528						
KESSELWAND F.	AT226	507	A.55	B.53		C.7	CC.3	CCC.6		
KESSJEN	CH12	393	A.627	B.529					D.30	
KILIMANJARO	TZ	3043	A.693						D.40	
KIRKJUJOKULL	IS	3129	A.247	B.183	BB.64					
KJENNDALSBREEN	NO37223	2294	A.504	B.425						
KLEINEISER K.	AT717	555	A.57	B.55						
KLEINELEND K.	AT1002	541	A.58	B.56						
KLEINFLEISS K.	AT801	547	A.56	B.54		C.8		CCC.7		
KLOSTERTALER M	AT0102B	485	A.59	B.57						
KLOSTERTALER N	AT0102A	486	A.60	B.58						
KOELDUKVISLARJ.	IS2700	3096	A.248			C.45				
KOLKA	SU	3323	A.135							F
KONGSVEGEN	NO15510	1456	A.505			C.72				
KOPPANGSBREEN	NO	2309	A.506	B.426						
KORUMDU	SU7103	793	A.136	B.131						
KOTLUJOKULL	IS	3132	A.249	B.184	BB.65					
KRAPF	KE1	688	A.417	B.346					D.14	
KRIMMLER K.	AT0501A	584	A.61	B.59						
KRIMMLER K. EAST	AT0501B	1309	A.62	B.60						
KVIARJOKULL	IS822	3098	A.250	B.185						
KVISLAJOKULL	IS	3131	A.251	B.186						
LA CABANA	CO7	2701	A.170		BB.20					
LA CONEJERA	CO33	2721	A.171		BB.21					
LA LISA	CO4	2702	A.172		BB.22					
LA MARE (VEDRETTA DE)	IT699	636	A.339	B.270						
LA PAUL	ES7020	948	A.551	B.461	BB.95					
LA PEROUSE	NZ	1605	A.449	B.378						
LA PLAZUELA	CO6	2705	A.173		BB.23					
LAEMMERN	CH63	437	A.628	B.530						
LAENGENTALER F.	AT305	499	A.63	B.61						
LAGOL	IT657	1154	A.340	B.271						
LAGUNA AZUL	CO26	2723	A.174		BB.24					
LAGUNILLAS	CO8	2706	A.175		BB.25					
LAMBERT	NZ	1612	A.450	B.379						
LANA	IT913	650	A.341	B.272						
LANDECK K.	AT604	569	A.64	B.62						
LANG	CH18	386	A.629	B.531						
LANGFJORDJOEKUL	NO85008	323	A.507	B.427		C.73		CCC.42		
LANGJOKULL SOUTHERN DOME	IS	3101	A.252			C.46				
LANGTALER F.	AT223	510	A.65	B.63						
LAPATE NO. 51	CN27	842	A.150	B.138	BB.3					
LARAIN F.	AT107	479	A.66	B.64						
LARES	IT634	1149	A.342	B.273						
LAS FRONDELLAS	ES1010	952	A.552	B.462	BB.96					
LAUSON	IT116	1275	A.343	B.274						
LAVACCIU	IT129	1285	A.344	B.275						
LAVASSEY	IT144	1242	A.345	B.276						
LAVAZ	CH82	416	A.630	B.532						
LAWRENCE	NZ	2275	A.451	B.380						
LEEB-LORNTY	NZ	2288	A.452	B.381	BB.69					
LEIRBREEN	NO548	301	A.508	B.428						
LEIRUFJ. JOKULL	IS200	3102	A.253	B.187						

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
LEMON CREEK	US	3334	A.707			C.100	CC.23			
LENGUA-SI 1	CO	2727	A.176		BB.26					
LENGUA-SI 2	CO	2728	A.177	B.143	BB.27					
LENGUA-SI 4 CEN.	CO	2729	A.178	B.144	BB.28					
LENGUA-SI 4 DER.	CO	2730	A.179	B.145	BB.29					
LENGUA-SI 4 IZQ.	CO	2731	A.180	B.146	BB.30					
LENGUA-SI 5	CO	2732	A.181		BB.31					
LENGUA-SI 6	CO	2733	A.182		BB.32					
LENGUA-SI 7	CO	2734	A.183		BB.33					
LENGUA-SI 8	CO	2735	A.184	B.147	BB.34					
LENGUA-SI 8 DER.	CO	2736	A.185		BB.35					
LENGUA-SI N	CO	2737	A.186	B.148						
LENGUA-SI P NORTE	CO	2738	A.187	B.149						
LENTA	CH84	414	A.631	B.533						
LEONERA ALTA	CO9	2707	A.188		BB.36					
LEVIY AKTRU	SU7102	794	A.137	B.132		C.18				
LEVIY KARAGEMSK	SU7107	1084	A.138	B.133						
LEWIS	KE8	695	A.418	B.347					D.15	
LIESENSER F.	AT306	498	A.67	B.65						
LIMMERN	CH78	421	A.632	B.534					D.31	
LISCHANA	CH98	400	A.633	B.535						
LITZNERGL.	AT101	607	A.68	B.66						
LLARDANA	ES7010	947	A.553	B.463	BB.97					
LLOSAS	ES9090	939	A.554		BB.98					
LOBBIA	IT637	1150	A.346	B.277						
LOCCE SETT.	IT321	2462	A.347	B.278						
LODMUNDARLOEKUL	IS108	3103	A.254	B.188	BB.66					
LOS GEMELOS	ES7040	950	A.555	B.464	BB.99					
LOWER CURTIS	US2055	77	A.708	B.601		C.101	CC.24			
LUNGA (VEDRETTA)	IT733	661	A.348	B.279		C.54				
LYELL	NZ	1567	A.453	B.382						
LYNCH	US2056	81	A.709	B.602		C.102	CC.25			
LYS	IT304	620	A.349	B.280						
M. BLANC DU CRETON	IT279	2440	A.350	B.281						
MALADETA	ES9020	942	A.556	B.465	BB.100	C.83	CC.15	CCC.50	D.20	
MALAVALLE	IT875	672	A.351	B.282		C.55		CCC.29		F
MALIY AKTRU	SU7100	795	A.139	B.134		C.19		CCC.15		
MANDRONE	IT639	664	A.352	B.283						
MARBORECILINDRO	ES5010	964	A.557	B.466						
MARION	NZ	1591	A.454	B.383						
MARMADUKE DIXON	NZ	1541	A.455	B.384						
MARMAGLACIAEREN	SE799	1461	A.567			C.84		CCC.51		
MARMOLADA CENTR.	IT941	676	A.353	B.284						
MAROVIN	IT541	2547	A.354	B.285						
MARTELOT	IT49	1301	A.355	B.286						
MARTIAL	AR131	917	A.6	B.5		C.2				
MARTIAL ESTE	AR	2000	A.7			C.3		CCC.2		
MARY-POWELL	HM1140	2878	A.215		BB.55					
MARZELL F.	AT218	515	A.69	B.67						
MATHAIAS	NZ	2997	A.456	B.385	BB.70					
MAURER K. (GLO.)	AT714	558	A.70	B.68						
MAURER K. (VEN.)	AT510	576	A.71	B.69						
MEOLA	IN	3047	A.284	B.216						
MER DE GLACE	FR00003	353	A.202	B.159						
MIDTDALSBREEN	NO4302	2295	A.510	B.429		C.75				
MIDTRE LOVENBREEN	NO15506	291	A.509			C.74				
MIEGUSZOWIECKIE	PL140	903	A.531	B.447						
MIKKAJEKNA	SE766	338	A.568	B.474						
MITTERKAR F.	AT214	487	A.72	B.70						
MOIRY	CH24	380	A.634	B.536						
MOLINOS	CO2	2708	A.189		BB.37					

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER					
MOMING	CH23	381	A.635	B.537				
MONCIAIR	IT132	1237	A.356	B.287				
MONCORVE	IT131	1236	A.357	B.288				
MONEY	IT110	1272	A.358	B.289				
MONT DURAND	CH35	369	A.636	B.538				
MONT FORT	CH32	372	A.637	B.539				
MONT MINE	CH26	378	A.638	B.540				
MONTE GIOVE	IT347	2477	A.359	B.290				
MORSARJOKULL	IS318	3104	A.255	B.189				
MORTERATSCH	CH94	1673	A.639	B.541				
MT DIXON	HM1010	2916	A.216		BB.56			
MT OLSEN	HM1040	2917	A.217		BB.57			
MUELLER	NZ	1575	A.457	B.386				
MULAJOKULL S.	IS0311A	3105	A.256	B.190				
MULINET MERID.	IT47	2351	A.360	B.291				
MULINET SETT.	IT48	1300	A.361	B.292				
MURCHISON	NZ	1578	A.458	B.387				
MUTMAL F.	AT227	506	A.73	B.71				
MUTT	CH2	472	A.640	B.542				
NARDIS OCC.	IT640	639	A.362	B.293				
NARES	HM1120	2875	A.218		BB.58			
NAUTHAGAJOKULL	IS210	3107	A.257	B.191				
NEREIDAS	CO14	2709	A.190		BB.38			
NEVES OR.	IT902	651	A.363	B.294				
NIEDERJOCH F.	AT217	516	A.74	B.72				
NIGARDSBREEN	NO31014	290	A.511	B.430		C.76	CCC.43	
NIKARCHU	IN	3049	A.285	B.217				
NISCLI	IT633	677	A.364	B.295				
NISQUALLY	US2027	201	A.710			C.103		
NO. 125 (VODOPADNIY)	SU7105	780	A.140	B.135		C.20		
NOISY CREEK	US2078	1666	A.711			C.104		
NORTH KLAWATTI	US2076	1664	A.712			C.105		
NORTHEY	KE13	698	A.419	B.348				D.16
OB.GRINDELWALD	CH57	444	A.641	B.543				
OBERAAR	CH50	451	A.642	B.544				
OBERALETSCH	CH6	361	A.643	B.545				
OBERSULZBACH K.	AT502	583	A.75	B.73				
OCHSENTALERGL.	AT103	483	A.76	B.74				
OEDENWINKEL K.	AT712	559	A.77	B.75				
OLDUFELLSJOKULL	IS114	3108	A.258	B.192				
OSAND MER. (SABBIONE MER.)	IT356	1178	A.365	B.296				
OSSOUE	FR	2867	A.203	B.160		C.35		
OTEMMA	CH34	370	A.644	B.546				
PA3	CO	2767	A.191	B.150	BB.39			
PAB	CO	2768	A.192	B.151	BB.40			
PALON DELLA MARE LOBO OR.	IT0506C	2534	A.366	B.297				
PALUE	CH100	398	A.645	B.547				
PANEYROSSE	CH44	456	A.646	B.548				
PARADIES	CH86	412	A.647	B.549				
PARADISINO	CH101	397	A.648	B.550				
PARK PASS	NZ	1559	A.459	B.388				
PARTEJEKNA	SE763	327	A.569	B.475				
PASO BELLAVISTA (A)	CO	2769	A.193	B.152	BB.41			
PASTERZEN K.	AT704	566	A.78	B.76		C.9	CCC.8	
PASTORURI	PE8	224	A.525	B.442	BB.75			
PENDENTE	IT876	675	A.367	B.298		C.56	CCC.30	
PENON	AR	2850	A.8	B.6				
PERDIDO INF.	ES0502B	966	A.558	B.467	BB.101			
PERDIDO SUP.	ES0502A	965	A.559	B.468	BB.102			
PEYTO	CA1640	57	A.146			C.25	CCC.18	
PFAFFEN F.	AT324	591	A.79	B.77				

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
PINDARI	IN	3045	A.286	B.218						
PIODE	IT312	619	A.368	B.299						
PISGANA OCC.	IT577	666	A.369	B.300						
PIZOL	CH81	417	A.649	B.551						
PIZZO FERRE	IT365	1181	A.370	B.301						
PIZZO SCALINO	IT443	1187	A.371	B.302						
PLACE	CA1660	41	A.147			C.26		CCC.19		
PLATTALVA	CH114	420	A.650	B.552					D.32	
PLATTES DES CHAMOIS	IT172	1249	A.372	B.303						
POD BULA	PL111	1617	A.532	B.448					D.19	F
POD CUBRYNA	PL180	902	A.533	B.449						
PORCHABELLA	CH88	410	A.651	B.553						
POSETS	ES7030	949	A.560	B.469	BB.103					
PRA FIORITO	IT658	1124	A.373	B.304						
PRAEGRAT K.	AT603	570	A.80	B.78						
PRAPIO	CH48	453	A.652	B.554						
PRAVIY KARAGEMSKIY	SU7109	1085	A.141	B.136						
PRE DE BAR	IT235	681	A.374	B.305						
PREDAROSSA	IT408	1182	A.375	B.306						
PRESANELLA	IT678	637	A.376	B.307						
PUCAJIRCA	PE	3322	A.526							F
PULPITO DEL DIABLO	CO	2776	A.194	B.153	BB.42					
PUNTA ZARRA	ES2040	959	A.561	B.470	BB.104					
PUNTEGLIAS	CH83	415	A.653	B.555						
QUAIRA BIANCA	IT889	686	A.377	B.308						
RABOTS GLACIAER	SE785	334	A.570	B.476		C.85		CCC.52		
RAETZLI	CH65	434	A.654	B.556						
RAINBOW	US2003	79	A.713	B.603		C.106	CC.26			
RAMSAY	NZ	1568	A.460	B.389						
RASICA ORIENT.	IT399	2499	A.378	B.309						
RED	US	3336	A.714							F
REISCHEK	NZ	1566	A.461	B.390						
REMBESDALSKAAKI	NO22303	2296	A.512	B.431						
RETTENBACH F.	AT212	488	A.81	B.79						
REYKJAFJARDARJ.	IS300	3109	A.259	B.193						F
RHONE	CH1	473	A.655	B.557					D.33	
RIED	CH17	387	A.656	B.558						
RIFFL K. N	AT718	554	A.82	B.80						
RIUKOJIETNA	SE790	342	A.571	B.477		C.86		CCC.53		
RJUPNABREKKUJOKULL	IS	3136	A.260	B.194						
ROFENKAR F.	AT215	518	A.83	B.81						
ROSEG	CH92	406	A.657	B.559						
ROSIM	IT754	610	A.379	B.310						
ROSOLE	IT506	1166	A.380	B.311						
ROSS	GS	2869	A.538	B.454	BB.82					
ROSSA (VEDR.)	IT697	674	A.381	B.312						
ROSSBODEN	CH105	462	A.658	B.560						
ROSSO DESTRO	IT920	648	A.382	B.313						
ROTER KNOPF K.	AT	3297	A.84	B.82						
ROTFIRN NORD	CH69	430	A.659	B.561						
ROTMOOS F.	AT224	509	A.85	B.83						
RUNDVASSBREEN	NO	2670	A.513			C.77		CCC.44		
RUOTESJEKNA	SE767	337	A.572	B.478						
RUTOR	IT189	612	A.383	B.314						
SAINT SORLIN	FR00015	356	A.204	B.161		C.36				
SALAJEKNA	SE759	341	A.573	B.479						
SALE	NZ	1614	A.462	B.391						
SALEINA	CH42	458	A.660	B.562						
SALENCAS	ES9060	940	A.562		BB.105					
SANDALEE	US2079	1667	A.715			C.107				
SANKT ANNA	CH67	432	A.661	B.563						

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
SARA UMGA	IN	3055	A.287	B.219						
SARDONA	CH91	407	A.662	B.564						
SARENNES	FR00029	357	A.205			C.37				
SATUJOKULL	IS530	3110	A.261	B.195						
SCALETTA	CH115	1680	A.663	B.565						
SCERSCEN INFERIORE	IT432	1186	A.384	B.315						
SCERSCEN SUP. (LOBO OR.)	IT433	2511	A.385	B.316						
SCHALF F.	AT219	514	A.86	B.84						
SCHAUFEL F.	AT311	602	A.87	B.85						
SCHLADMINGER G.	AT1103	534	A.88	B.86						
SCHLATEN K.	AT506	580	A.89	B.87						
SCHLEGEIS K.	AT405	586	A.90	B.88						
SCHMIEDINGER K.	AT726	548	A.91	B.89						
SCHNEEGLOCKEN	AT109	525	A.92	B.90						
SCHNEELOCH G.	AT1104	533	A.93	B.91						
SCHWARZ	CH62	438	A.664	B.566						
SCHWARZBERG	CH10	395	A.665	B.567					D.34	
SCHWARZENBERG F.	AT303	501	A.94	B.92						
SCHWARZENSTEIN	AT403	588	A.95	B.93						
SCHWARZKARL K.	AT716	556	A.96	B.94						
SCHWARZKOEPFL K.	AT710	560	A.97	B.95						
SE KASKASATJ GL	SE789	329	A.574	B.480						
SEA	IT46	1299	A.386	B.317						
SECTOR NORTE	CO	2690	A.195		BB.43					
SEEWJINEN	CH	3333	A.666						D.35	
SESVENNA	CH97	401	A.667	B.568						
SEX ROUGE	CH47	454	A.668	B.569						
SEXEGERTEN F.	AT204	520	A.98	B.96						
SFORZELLINA	IT516	667	A.387	B.318						
SHALLAP	PE3	3293	A.527	B.443						
SHOLES	US	3295	A.716			C.108	CC.27			
SHULLCON	PE1	3294	A.528	B.444						
SIDUJOK. E M177	IS0015B	3112	A.262	B.196						
SIEGE	NZ	1616	A.463	B.392						
SILVER	US2077	1665	A.717			C.109				
SILVRETTA	CH90	408	A.669	B.570		C.92		CCC.58	D.36	
SIMILAUN F.	AT	3296	A.99	B.97						
SIMMING F.	AT318	596	A.100	B.98						
SIMONY K.	AT511	575	A.101	B.99						
SISSONE	IT422	2506	A.388	B.319						
SKALAFELLSJOKUL	IS1728A	3115	A.263	B.197						
SKEIDARARJ. E1	IS0117A	3116	A.264	B.198						
SKEIDARARJ. E2	IS0117B	3117	A.265	B.199						
SKEIDARARJ. E3	IS0117C	3118	A.266	B.200						F
SKEIDARARJ. W	IS116	3119	A.267	B.201						
SKEIDARARJOKULL M	IS	3134	A.268	B.202	BB.67					
SLETTJOKULL	IS	3133	A.269	B.203						
SNOW WHITE	NZ	1588	A.464	B.393						
SNOWBALL	NZ	1589	A.465	B.394						
SOCHES TSANTELEINA	IT147	1244	A.389	B.320						
SOLHEIMAJOK. W	IS0113A	3122	A.270	B.204						
SONNBLICK KEES	AT0601A	573	A.102	B.100		C.10				
SOUTH CAMERON	NZ	3019	A.466	B.395						
SOUTH CASCADE	US2013	205	A.718			C.110				
SPIEGEL F.	AT221	512	A.103	B.101						
ST. JAMES	NZ	2274	A.467	B.396						
STEGHOLTBREEN	NO31021	313	A.514	B.432						
STEIN	CH53	448	A.670	B.571						
STEINDALSBREEN	NO	2310	A.515	B.433						
STEINLIMMI	CH54	447	A.671	B.572						
STEPHENSON 1	HM110	2888	A.219	B.163	BB.59					

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
STORBREEN	NO541	302	A.516	B.434		C.78		CCC.45		
STORGJUVBREEN	NO	2308	A.517	B.435						
STORGLACIAEREN	SE788	332	A.575	B.481		C.87	CC.16	CCC.54		
STORGLOMBREEN	NO67313	297	A.518			C.79		CCC.46		
STRAUCHON	NZ	1599	A.468	B.397						
STYGGEDALSBREEN	NO30720	303	A.519	B.436						
SULZ	CH79	419	A.672	B.573						
SULZENAU F.	AT0314A	600	A.104	B.102						
SULZTAL F.	AT301	503	A.105	B.103						
SUOTTASJEKNA	SE768	336	A.576	B.482						
SUPPHELLEBREEN	NO33014	287	A.520	B.437						F
SURETTA	CH87	411	A.673	B.574						
SURETTA MERID.	IT371	2488	A.390	B.321						
SUSITNA	US206	183	A.719							
SVINAFELLSJ.	IS0520A	3124	A.271	B.205						
TAPOU	ES0302A	961	A.563		BB.106					
TARFALAGL	SE791	326	A.577			C.88	CC.17	CCC.55		
TASCHACH F.	AT205	519	A.106	B.104						
TASMAN	NZ	1074	A.469	B.398						
TAUFKAR F.	AT216	517	A.107	B.105						
TEMPESTADES	ES9050	968	A.564	B.471	BB.107					
TESSA	IT829	653	A.391	B.322						
TEWAEWAE	NZ	2276	A.470	B.399	BB.71					
THURNEYSON	NZ	1554	A.471	B.400						
TIATSCHA	CH96	402	A.674	B.575						
TIEFEN	CH66	433	A.675	B.576						
TORRENT	IT155	2384	A.392	B.323						
TOTENFELD	AT110	524	A.108	B.106						
TOTENKOPF K.	AT	2680	A.109	B.107						
TOULES	IT221	614	A.393	B.324						
TRAVIGNOLO	IT947	1514	A.394	B.325						
TRESERO LINGUA MER.	IT0511B	2537	A.395	B.326						
TRIBOLAZIONE	IT112	1274	A.396	B.327						
TRIDENTE	CO12	2711	A.196		BB.44					
TRIEBENKARLAS F.	AT323	592	A.110	B.108						
TRIENT	CH43	457	A.676	B.577						
TRIFT (GADMEN)	CH55	446	A.677	B.578					D.37	
TS.TUYUKSUYSKIY	SU5075	817	A.142	B.137		C.21		CCC.16	D.4	
TSANFLEURON	CH33	371	A.678	B.579						
TSCHIERVA	CH93	405	A.679	B.580						
TSCHINGEL	CH60	441	A.680	B.581						
TSEUDET	CH40	364	A.681	B.582						
TSIDJIORE NOUVE	CH28	376	A.682	B.583						
TUCKETT	IT650	2570	A.397	B.328						
TUNGNAARJOKULL	IS2214	3126	A.272	B.206		C.47				
TUPUNGATO 01	AR	2852	A.9	B.7						
TUPUNGATO 02	AR	2853	A.10	B.8						
TUPUNGATO 03	AR	2854	A.11	B.9						
TUPUNGATO 04	AR	2855	A.12	B.10						
TURTMANN (WEST)	CH19	385	A.683	B.584						
TYNDALL	KE5	697	A.420	B.349					D.17	
TZA DE TZAN	IT259	623	A.398	B.329						
UMBAL K.	AT512	574	A.111	B.109						
UNT. GRINDELWALD	CH58	443	A.684	B.585					D.38	
UNT. RIFFL KEES	AT0713B	605	A.112	B.110						
UNTERAAR	CH51	450	A.685	B.586					D.39	
UNTERSULZBACH K.	AT503	582	A.113	B.111						
URUASHRAJU	PE5	221	A.529	B.445	BB.76					
URUMQIHE E-BR.	CN1	1511	A.151	B.139		C.29		CCC.21		
URUMQIHE S NO. 1	CN10	853	A.152			C.30				
URUMQIHE W-BR.	CN2	1512	A.153	B.140		C.31		CCC.22		

GLACIER NAME	PSFG NR	WGMS ID	DATA TABLE AND RECORD NUMBER							
VACAS	AR	2849	A.13	B.11						
VAHSEL	HM106	2903	A.220		BB.60					
VAL TORTA	CH118	466	A.686	B.587						
VALLE DEL VENTO	IT919	649	A.399	B.330						
VALLEGGIA	CH117	467	A.687	B.588						
VALSOREY	CH39	365	A.688	B.589						
VALTOURNANCHE	IT289	621	A.400	B.331						
VARTASJEKNA	SE765	339	A.578	B.483						
VENEROCOLO	IT581	665	A.401	B.332						
VENEZIA (VEDR.)	IT698	673	A.402	B.333						
VENTINA	IT416	629	A.403	B.334						
VERBORGENBERG F.	AT322	593	A.114	B.112						
VERMUNTGL.	AT104	482	A.115	B.113						
VERNAGT FERNER	AT211	489	A.116	B.114		C.11	CC.4	CCC.9		
VERRA (GRANDE DI)	IT297	1206	A.404	B.335						
VERSTANKLA	CH89	409	A.689	B.590						
VICTORIA	NZ	3034	A.472	B.401						
VILTRAGEN K.	AT505	581	A.117	B.115						
VIRKISJOKULL	IS721	3127	A.273	B.207						
VORAB	CH85	413	A.690	B.591						
W.GRUEBL F.	AT316	598	A.118	B.116						
W.TRIPP K.	AT1004	539	A.119	B.117						
WALDEMARBREEN	NO15403	2307	A.521	B.438		C.80		CCC.47		
WALLENBUR	CH71	428	A.691	B.592						
WASSERFALLWINKL	AT705	565	A.120	B.118						
WATSON	US2051	89	A.720	B.604						
WAXEGG K.	AT401	590	A.121	B.119						
WEISSEE F.	AT201	523	A.122	B.120						
WEST FORK	US205	184	A.721							
WESTLICHER GRUEBLER F. W	AT	2681	A.123	B.121						
WHATAROA	NZ	2285	A.473	B.402						
WHITBOURNE	NZ	1583	A.474	B.403						
WHITE	CA2340	0	A.148			C.27		CCC.20		
WHITE	NZ	3037	A.475	B.404						
WHYMPER	NZ	1609	A.476	B.405						
WIELINGER K.	AT725	549	A.124	B.122						
WILDGERLOS	AT404	587	A.125	B.123						
WILKINSON	NZ	1615	A.477	B.406						
WINKL K.	AT1006	537	A.126	B.124						
WINSTON 1	HM109	2891	A.221		BB.61					
WOLVERINE	US411	94	A.722			C.111				
WURTEN K.	AT804	545	A.127	B.125		C.12		CCC.10		
YANAMAREY	PE4	226	A.530	B.446	BB.77	C.82		CCC.49		
YAWNING	US2050	75	A.723	B.605		C.112	CC.28			
ZAI DI DENTRO	IT749	1515	A.405	B.336						
ZAI DI FUORI	IT751	609	A.406	B.337						
ZAI DI MEZZO	IT750	1127	A.407	B.338						
ZEBRU (VEDRETTA DE)	IT0490	1160	A.408							F
ZETTALUNITZ K.	AT508	578	A.128	B.126						
ZINAL	CH22	382	A.692	B.593						
ZONGO	BO5150	1503	A.131	B.128	BB.2	C.15	CC.6	CCC.12	D.3	
ZORA	NZ	1593	A.478	B.407						

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