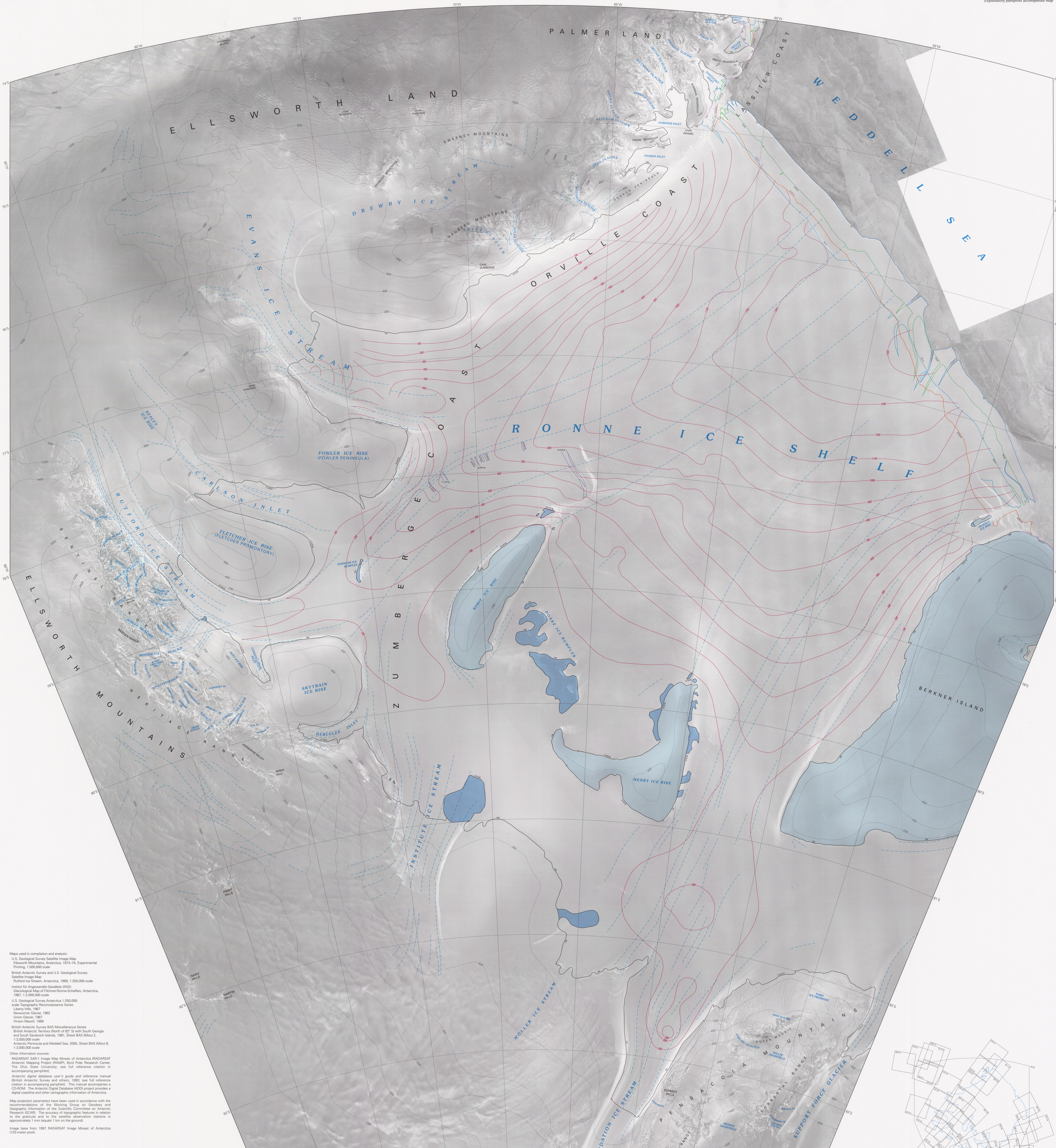
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with the
SCOTT POLAR RESEARCH INSTITUTE, UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM

GEOLOGIC INVESTIGATIONS SERIES
MAP I–2600–D
Explanatory pamphlet accompanies map



Maps used in compilation and analysis:

U.S. Geological Survey Satellite Image Map
Ellsworth Mountains, Antarctica, 1973–74, Experimental Printing, 1:500,000 scale

British Antarctic Survey and U.S. Geological Survey Satellite Image Map
Rutford Ice Stream, Antarctica, 1989, 1:250,000 scale

Institut für Angewandte Geodäsie (IfAG)
Glaciological Map of Filchner-Ronne-Schelfeis, Antarctica, 1987, 1:2,000,000 scale

U.S. Geological Survey Antarctica 1:250,000-scale Topographic Reconnaissance Series
Liberty Hills, 1967
Newcomer Glacier, 1962
Union Glacier, 1967
Vinson Massif, 1989

British Antarctic Survey BAS Miscellaneous Series
British Antarctic Territory (North of 82° S) with South Georgia and South Sandwich Islands, 1981, Sheet BAS (Misc) 2, 1:3,000,000 scale
Antarctic Peninsula and Weddell Sea, 2000, Sheet BAS (Misc) 8, 1:3,000,000 scale

Other information sources:

RADARSAT SAR-1 Image Map Mosaic of Antarctica [RADARSAT Antarctic Mapping Project (RAMP), Byrd Polar Research Center, The Ohio State University; see full reference citation in accompanying pamphlet].

Antarctic digital database user's guide and reference manual (British Antarctic Survey and others, 1993; see full reference citation in accompanying pamphlet). This manual accompanies a CD-ROM. The Antarctic Digital Database (ADD) project provides a digital coastline and other cartographic information of Antarctica.

Map projection parameters have been used in accordance with the recommendations of the Working Group on Geodesy and Geographic Information of the Scientific Committee on Antarctic Research (SCAR). The accuracy of topographic features in relation to the graticule and to the satellite observation stations is approximately 1 mm (equals 1 km on the ground).

Image base from 1997 RADARSAT Image Mosaic of Antarctica (125-meter pixel).

INDEX MAP OF SELECTED LANDSAT 1 AND 2 MSS IMAGES FROM EARLY 1970s USED FOR FEATURE ANALYSIS

Path/Row	Image No.	EDC[1] Entity No.	Date
198/117	1479-09162	1198117007331890	14 Nov 1973
223/112	2284-11265	2223112007530690	02 Nov 1975
233/116	1568-12344	1233116007404290	11 Feb 1974
235-113	1173-12433	1235113007301290	12 Jan 1973
236-112	2027-12432	2236112007504990	18 Feb 1975

[1]EROS Data Center, U.S. Geological Survey

INDEX MAP OF SELECTED LANDSAT IMAGES USED FOR FEATURE ANALYSIS: LANDSAT 4 AND 5 MSS AND TM IMAGES FROM MID-1980s TO EARLY 1990s AND LANDSAT 7 ETM+ IMAGES FROM EARLY 2000s

Path/Row	Image No.	EDC[1] Entity No.	Date
166-121	41935-07153	41661210087306 90	02 Nov 1987
166-122	41935-07160	41661220087306 90	02 Nov 1987
175-119	50356-08200	51751190085115 0	20 Feb 1985
180-119	50727-08465	51801190086067 10	26 Feb 1986
181/120	50302-08571	51811200086436 310	28 Dec 1984
183-118	05716-09052	51831180086904 610	15 Feb 1986
186-117	51313-09240	51861170087278 10	05 Oct 1987
187-116	50984-09211	51871160086314 90	10 Nov 1986
190-116	41927-09413	41901160087298 90	25 Oct 1987
190/118	50717-09483	51901180086047 10	16 Feb 1986
190/119	50717-09485	51901190086047 10	16 Feb 1986
190/120	50717-09492	51901200086047 10	16 Feb 1986
195-115	42778-10234	41951150090053 10	22 Feb 1990
199/119	50716-10443	51991190086046 10	15 Feb 1986
199/120	50716-10450	51991200086046 10	15 Feb 1986
204/116	50735-11135	52041160086065 10	06 Mar 1986
204/117	50735-11141	52041170086065 10	06 Mar 1986
204/118	50735-11144	52041180086065 10	06 Mar 1986
207-113	*	42071130086068 10	08 Mar 1988
207-113	*	72071130000535 0	22 Feb 2000
207-113	*	72071130002026 50	26 Jan 2002
207-114	*	42071140086068 10	08 Mar 1988
207/116	42062-11313	42071160086068 10	08 Mar 1988
207/118	50740-11330	52071180086070 10	11 Mar 1986
207/119	50740-11333	52071190086070 10	11 Mar 1986
210-112	008605910	52101120086059 10	28 Feb 1986
210-113	008605910	52101130086059 10	28 Feb 1986
210/114	50729-11501	52101140086059 10	28 Feb 1986
210/115	50729-11504	52101150086059 10	28 Feb 1986
210/116	42367-11571	42101160086027 10	27 Jan 1989
210/117	42371-11573	42101170086011 10	11 Jan 1989
215/114	*	72151140000013 50	13 Jan 2000
215/115	42390-12274	42151150089030 10	30 Jan 1989
215/116	42390-12281	42151160089030 10	30 Jan 1989
220-112	50719-12513	52201120086049 10	18 Feb 1986
220-113	50735-12513	52201130086065 10	06 Mar 1986
220/115	50735-12522	52201150086065 10	06 Mar 1986
221-112	42384-13033	42211120089024 10	24 Jan 1989
221-113	42384-13035	42211130089024 10	24 Jan 1989
223-112	42014-13071	42231120088020 10	20 Jan 1988
226-112	42035-13263	42261120088041 10	10 Feb 1988

[1]EROS Data Center, U.S. Geological Survey
* Image number unknown

EXPLANATION

- **Ice front**—Early 2000s MODIS and Landsat imagery; MODIS imagery acquired December 3, 2002
- **Ice front**—RADARSAT imagery, acquired between September 9 and October 20, 1997
- **Ice front**—Middle 1980s Landsat imagery; date of observation shown. Mostly from the Glaciological Map of Filchner-Ronne-Schelfeis, Antarctica (Institut für Angewandte Geodäsie (IfAG), 1987)
- **Ice front**—Early 1970s Landsat imagery; date of observation shown. Mostly from the Glaciological Map of Filchner-Ronne-Schelfeis, Antarctica (Institut für Angewandte Geodäsie (IfAG), 1987)
- **Ice wall**—Date of observation shown
- **Grounding line**—Date of observation shown. Mostly from Landsat image analysis by Swithinbank. Grounding lines dated 1986 are from the Glaciological Map of Filchner-Ronne-Schelfeis, Antarctica (Institut für Angewandte Geodäsie (IfAG), 1987); Rutford Ice Stream grounding line is from Goldstein and others (1983); grounding-line segments labelled 1997 were obtained from RADARSAT imagery acquired between September 9 and October 20, 1997; Foundation Ice Stream grounding line inferred from Oerter and others (1998)
- **Crevasses and rifts**—Date of observation shown
- **Ice rumple**—Within a grounding line and (or) ice wall
- **Ice rise**—Within a grounding line and (or) ice wall
- **Flow line**
- **Ridge line on ice**
- *1200* **Topographic contour, in meters**—Modified from RAMP digital elevation model (Byrd Polar Research Center)
- *DRISCOLL GL.* **Named outlet or valley glacier or ice stream**
- *1200* **Ice-velocity contour, in meters per year (m a^{-1})**—From Vaughan and Jonas (1996)

Graph showing scale error of polar stereographic projection with standard parallel at 71° S. Modified from Sievers and Bennat (1989).

Index map of the planned 23 coastal-change and glaciological maps of Antarctica at 1:1,000,000 scale. Ronne Ice Shelf area map is shaded. Maps published to date are indicated by letter and are described in table 2 of the accompanying pamphlet.

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COASTAL-CHANGE AND GLACIOLOGICAL MAP OF THE RONNE ICE SHELF AREA, ANTARCTICA: 1974–2002

By

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