DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 84-573
SHEET 2 OF 2

TABLE OF OPTIMUM LANDSAT 1,2,AND 3 IMAGES

PATH-ROW	LANDSAT ID NO.	DATE	CODE	%	PATH-ROW	LANDSAT ID NO.	DATE	CODE	%	PATH-ROW	LANDSAT ID NO.	DATE	CODE	%
001-111	1137-14262	7 DEC 72	◑	90	023-115			◔	100	062-111	1180-20160	19 JAN 73	◑	95
001-112	1191-14264	30 JAN 73	●	0	023-116			⊙		062-112	1180-20162	19 JAN 73	◑	95
001-113	1191-14270	30 JAN 73	●	0	023-117			⊙		062-112	1143-20110	13 DEC 72	◑	95
001-114	1119-14273	19 NOV 72	◑	15	023-118			⊙		062-113	1540-20132	14 JAN 74	◑	40
001-115	1119-14280	19 NOV 72	●	0	023-119			◔	100	062-114	1540-20134	14 JAN 74	◕	10
001-116	1191-14282	30 JAN 73	◑	50	024-114			⊙		062-115	1540-20141	14 JAN 74	●	0
001-117	1191-14284	30 JAN 73	◑	50	024-115			⊙		062-116	1540-20143	14 JAN 74	●	0
001-118			⊙		024-116			⊙		062-117	1540-20150	14 JAN 74	●	0
001-119			⊙		024-117			⊙		062-118	1540-20152	14 JAN 74	●	0
002-111	1174-14314	13 JAN 73	◑	20	024-118			⊙		062-119	1540-20155	14 JAN 74	●	0
002-112	1174-14320	13 JAN 73	◕	10	024-119			⊙		062-119	1504-20164	9 DEC 73	●	0
002-113	1174-14323	13 JAN 73	◑	30	025-114	1575-16402	18 FEB 74	◑	80	063-111	1163-20215	2 JAN 73	◑	60
002-114	1174-14325	13 JAN 73	◕	5	025-115	2391-16304	17 FEB 76	◑	15	063-112			⊙	
002-115			⊙		025-116	2391-16311	17 FEB 76	◑	20	063-113	1217-20231	25 FEB 73	◑	50
002-116	1588-14290	3 MAR 74	◑	80	025-117			◔	100	063-114	1217-20233	25 FEB 73	◑	50
002-117			⊙		025-118	1575-16420	18 FEB 74	◑	70	063-114	1487-20203	22 NOV 73	◑	40
002-118			⊙		025-119	1575-16423	18 FEB 74	◑	70	063-115	1487-20210	22 NOV 73	◑	25
002-119			⊙		026-114	1126-16510	26 NOV 72	◑	80	063-116	1541-20201	15 JAN 74	●	0
003-111	1157-14374	27 DEC 72	◑	50	026-115	1126-16513	26 NOV 72	◑	60	063-117	1541-20204	15 JAN 74	●	0
003-112	1157-14380	27 DEC 72	●	0	026-116	1126-16515	26 NOV 72	◑	80	063-118	1541-20210	15 JAN 74	●	0
003-113	1157-14383	27 DEC 72	◕	10	026-117	1126-16522	26 NOV 72	◑	40	063-119	1541-20213	15 JAN 74	●	0
003-114	1157-14385	27 DEC 72	◑	50	026-118	2320-16384	8 DEC 75	◑	60	064-111	1128-20275	28 NOV 72	●	0
003-115	1157-14392	27 DEC 72	◑	20	026-119			⊙		064-112	1128-20281	28 NOV 72	●	0
003-116	1157-14394	27 DEC 72	◑	65	027-113	1144-16504	14 DEC 72	◑	40	064-113	1128-20284	28 NOV 72	●	0
003-117			⊙		027-114	1144-16510	14 DEC 72	◑	60	064-114	1128-20290	28 NOV 72	●	0
003-118			⊙		027-115	1144-16513	14 DEC 72	◑	95	064-114	1200-20290	8 FEB 73	●	0
003-119			⊙		027-116	1144-16515	14 DEC 72	◑	50	064-114	1542-20250	16 JAN 74	◕	5
004-111			◔	100	027-117			◔	100	064-115	1200-20293	8 FEB 73	◕	10
004-112			◔	100	027-118			⊙		064-115	1128-20293	28 NOV 72	◑	20
004-113	1177-14494	16 JAN 73	◑	20	027-119			⊙		064-116	1489-20325	24 NOV 73	◑	15
004-114	1177-14500	16 JAN 73	◕	10	028-114	1164-17021	3 JAN 73	◑	80	064-117	1489-20331	24 NOV 73	●	0
004-115	1177-14503	16 JAN 73	◑	20	028-115			⊙		064-118	1489-20334	24 NOV 73	●	0
004-116			⊙		028-116			⊙		064-119	1471-20341	6 NOV 73	●	0
004-117			⊙		028-117			⊙		065-111			⊙	
004-118	1518-14431	23 DEC 73	◕	10	028-118			⊙		065-112			⊙	
004-119	1465-14500	31 OCT 73	◕	20	028-119			⊙		065-113			⊙	
005-112	1140-14440	10 DEC 72	●	0	029-114			◔	100	065-114	1543-20305	17 JAN 74	●	0
005-113	1140-14442	10 DEC 72	◕	5	029-115	1129-17084	29 NOV 72	◑	90	065-115	1489-20322	24 NOV 73	◑	60
005-114			⊙		029-116	1129-17090	29 NOV 72	◑	60	065-116	1490-20383	25 NOV 73	◑	30
005-115	1140-14451	10 DEC 72	◑	80	029-117	1129-17093	29 NOV 72	◑	60	065-117	1490-20390	25 NOV 73	◕	5
005-116			◔	100	029-118			⊙		065-118	1490-20392	25 NOV 73	●	0
005-117			⊙		029-119			⊙		065-119	1490-20395	25 NOV 73	●	0
005-118			⊙		030-115			⊙		066-110			⊙	
005-119			⊙		030-116			⊙		066-111			⊙	
006-112	1160-14551	30 DEC 72	◕	10	030-117	1491-17181	26 NOV 73	◑	15	066-112	1220-20400	28 FEB 73	◑	25
006-113	1160-14554	30 DEC 72	◑	15	030-118			⊙		066-113	1220-20402	28 FEB 73	◑	20

EXPLANATION OF
TABLE OF OPTIMUM LANDSAT 1, 2, AND 3 IMAGES OF ANTARCTICA

1. The path and row numbers for Landsat 1, 2, and 3 nominal scene centers follow the "Extended Canadian or Worldwide Reference System (WRS)" used by the U.S. Geological Survey's EROS Data Center, Sioux Falls, South Dakota 57198 U.S.A., where all Landsat multispectral scanner (MSS) and return beam vidicon (RBV) images of Antarctica are archived.

2. Actual Landsat 1, 2, and 3 scene centers can vary up to 40 km from the latitude and longitude coordinates of the nominal scene center depending upon specific orbital path and framing; therefore, the precise area of coverage of each image can also vary.

3. Optimum Landsat 1, 2, and 3 MSS and Landsat 2 RBV images of Antarctica are evaluated on the basis of cloud cover (see explanation of CODE column below). In the inland-ice regions the optimum image was selected both on the basis of minimum cloud cover and low solar elevation angle to enhance subtle morphologic details on the ice sheet surface.

4. Usable Landsat 3 RBV images of Antarctica are few in total number and are listed by Path-Row following the tabular listing of the optimum Landsat 1, 2, and 3 MSS and Landsat 2 RBV images of Antarctica. Landsat 3 RBV images are evaluated on the basis of the amount of distinguishable ground features on an image. Only usable (some distinguishable ground features) Landsat 3 RBV image subscenes (A, B, C, D) are included.

5. Explanation of column headings:

PATH-ROW	Complete imaging of the Earth's surface between about 81° north and south latitudes with Landsat 1, 2, and 3 MSS and RBV sensors is achieved in 251 orbits. These 251 orbits are divided into 119 rows of overlapping (15 percent), successive Landsat images acquired along the orbital path. The points of intersection of the orbital paths and the rows are known as nominal scene centers. This table includes all nominal scene centers which give coverage of Antarctica beginning at the coast (defined as the boundary between the ocean and either bedrock or glacial ice) or all or parts of 17 rows from Row 103 (tip of Antarctic Peninsula) to Row 119 (about 81°S. latitude) and all 251 paths (orbits).
LANDSAT ID NO.	Each Landsat image acquired of the Earth's surface has a unique identification number. The first (left hand) number refers to the numbered Landsat series (e.g., 1, 2, or 3). The other digits to the left of the hyphen record the number of days since launch of the spacecraft. The 5 numbers to the right of the hyphen record the time of acquisition of the image to the nearest 10 seconds in Greenwich Mean Time (GMT). For example, Landsat image 1191-14264 (001-112) of the King Peninsula, West Antarctica, was acquired by Landsat 1, 191 days after the 23 July 1972 launch (30 January 1973) at 14 hr, 26 min, 40s GMT. Landsat 3 RBV subscenes are indicated as A, B, C, or D and encompass slightly more than one overlapping quadrant (A, NW; B, NE; C, SW; D, SE) of an MSS nominal scene.
DATE	Date of acquisition of the Landsat image
CODE (MSS)	Evaluation of image usability for glaciological, geological, and cartographic applications. Symbols defined as follows:
●	Excellent image (0% to≤5% cloud cover)
◕	Good image (>5% to≤10% cloud cover)
◑	Fair to poor image (>10% ≤100% cloud cover)
◔	Unusable image (100% cloud cover)
⊙	No image available
CODE (RBV)	Evaluation of image usability for glaciological, geological, and cartographic applications.
G	Good image (Ground features clearly visible and identifiable)
M	Marginal image (Ground features difficult to see and identify, but there is some information present).
% (MSS)	Direct evaluation of cloud-cover percentage from either Landsat 1, 2, and 3 MSS band 7 or Landsat 2 RBV band 3 70-mm positive or negative film (1:3,369,000-scale) transparencies (archival rolls) at the National Aeronautics and Space Administration's Goddard Space Flight Center, Greenbelt, Maryland, and from MSS band 7 or RBV band 3 (1:1,000,000-scale) paper prints from the U.S. Geological Survey's EROS Data Center. Landsat MSS band 7 or RBV band 3 images were used for cloud-cover evaluation because of maximum discrimination between clouds and snow. If an MSS band 7 image was unavailable, then an MSS band 6 image was used, and so forth.
% (RBV)	Direct evaluation of usable percentage of Landsat 3 RBV subscene from either 1:500,000-scale paper prints or positive or negative film transparencies or 1:3,369,000-scale 70-mm positive or negative film transparencies (archival rolls) at the U.S. Geological Survey's EROS Data Center, Sioux Falls, South Dakota. The percentage given refers to that part of the Landsat 3 RBV image in which surface features are visible. Obscuration of surface features can be caused by one or more of the following factors: clouds, overexposure of image, electronic-processing artifacts, etc.

Information on cost and available formats of Landsat imagery of Antarctica may be obtained from NOAA Landsat Customer Services, EROS Data Center, Sioux Falls, South Dakota 57198 U.S.A. (Telephone Number 605-594-6151).

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.

INDEX MAP AND TABLE SHOWING OPTIMUM LANDSAT 1, 2, AND 3 IMAGES OF ANTARCTICA

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