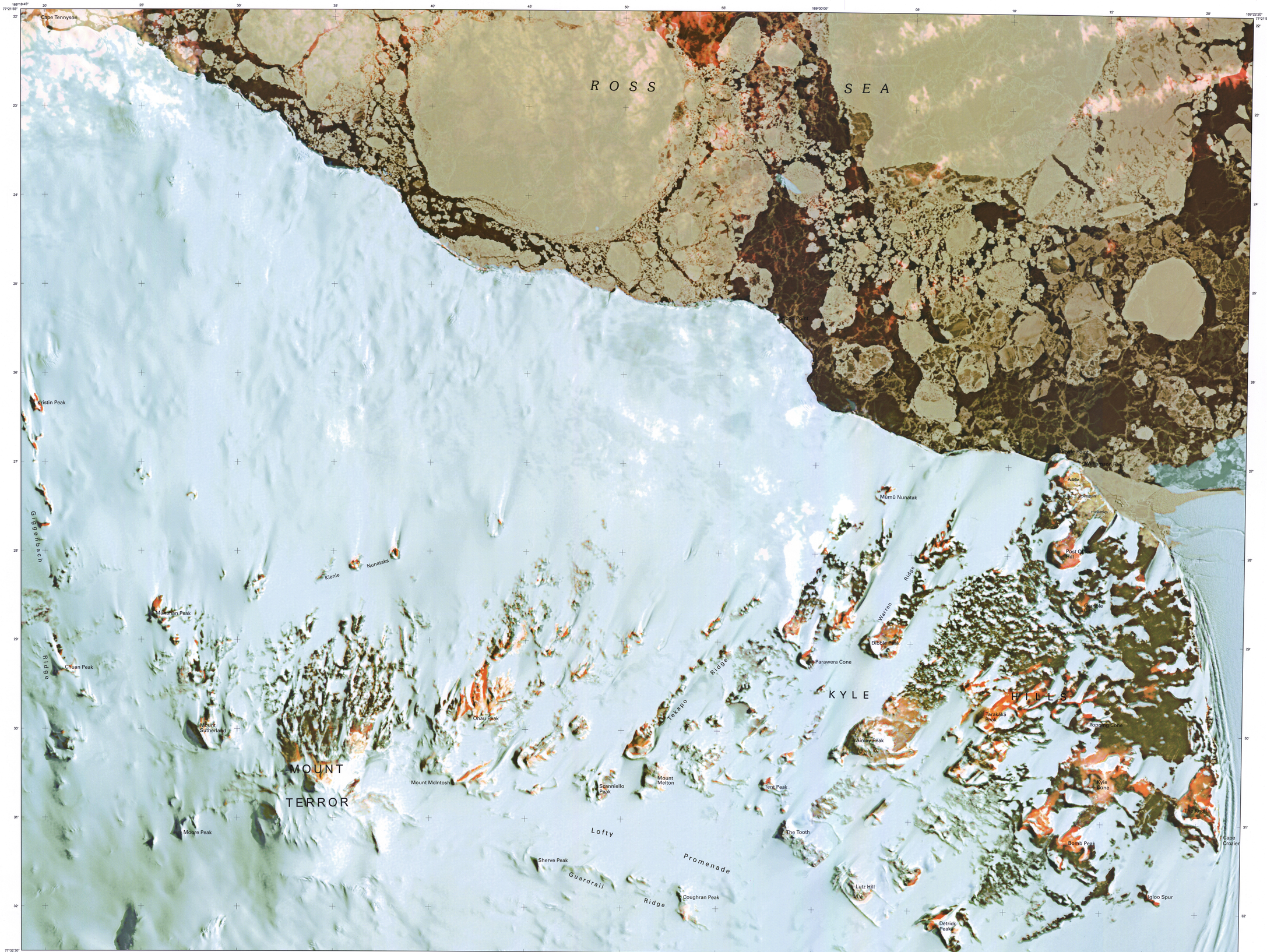
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

CAPE CROZIER

ANTARCTICA
SATELLITE IMAGE MAP



SPOT Panchromatic component © CNES 1994

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Fred Alberts, advisor, Advisory Committee on Antarctic Names, US Board on Geographic Names.

SCALE 1:25 000

1 0 1 MILES
1 .5 0 1 2 KILOMETERS

Lambert conformal conic projection
Standard parallels 76°40'S and 79°20'S
International Terrestrial Reference Frame 1996

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—2002

DATA EXPLANATION

The satellite images were recorded by the Landsat thematic mapper in the multispectral mode and are composed of spectral bands 2 (525-605 nanometers, green-yellow), 4 (775-900 nanometers, near-infrared) and 7 (2090-2350 nanometers, middle-infrared) and by SPOT high-resolution visible recorded in the panchromatic mode.

The imagery was controlled using geodetic control points identified on aerial photographs held in the U.S. Antarctic Resource Center and supplemented by the field collection of coordinates for clearly identifiable topographic or geologic features. Satellite platform modeling was used during the geocorrections of the satellites data to ensure uniform error distribution through the scenes. The Landsat thematic mapper imagery was resampled in 15-meter cells, and the scenes were mosaicked, tone matched, and filtered using a 21x21 adaptive filter to which 85 percent of the unfiltered data were added back. The SPOT panchromatic imagery was resampled in 5-meter cells, the geocorrected SPOT scenes were tone balanced, mosaicked, and filtered ¨sing a 55x55 adaptive filter to which 50 percent of the unfiltered data were added back. The geocorrected Landsat thematic mapper data were then registered to the geocorrected SPOT panchromatic data for each map quadrangle separately, both data sets were merged using the Chavez filter method, and the resulting image was tone enhanced.

Merged bands 7, 4, and 2 are shown in red, green, and blue on the map. The two merged satellites data sets were acquired at two different times and dates, and the sun had two different azimuths and (or) elevations, creating often two different shadows for the same relief.

SATELLITE IMAGE INDEX

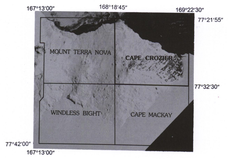
LANDSAT TM
Path 56 / Row 115
of 04 Jan. 1986
Sun elevation: 25°
Sun azimuth: 80°
Root mean square
error 24 meters

SPOT HRV P
K41/J553
Of 16 Nov.1994
Sun elevation: 22°
Sun azimuth: 76°
Root mean square
error: 8.4 meters

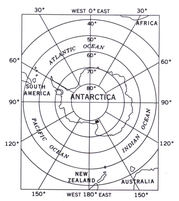
OBLIQUE PHOTOGRAPH

Right oblique photograph, 17 Jan. 1967
(U.S. Antarctic Resource Center)

IMAGE MAP INDEX



LOCATION DIAGRAM



At the image map location, this diagram and the image map are oriented in opposite directions.

Technical information related to this image map and access to the digital data can be obtained from the Antarctic Resource Center, Mail Stop 515, U.S. Geological Survey National Center, Reston, VA 20192

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FOR SALE BY THE U.S. GEOLOGICAL SURVEY P.O. BOX 25286, DENVER, COLORADO, 80225

CAPE CROZIER, ANTARCTICA
SATELLITE IMAGE MAP