

**NORTHERN FOOTHILLS AND INEXPRESSIBLE ISLAND AREA,
VICTORIA LAND, ANTARCTICA 1:50,000**

(Satellite Image Map)

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The Satellite image map of the Northern Foothills and the Inexpressible Island area is at a scale of 1:50,000. The map details an area of coastal hills on the northwestern side of Terra Nova Bay (northern Victoria Land, East Antarctica), that lies to the East of the Browning Pass and the Nansen Ice Sheet and forms a peninsular continuation of the Deep Freeze Range. Mount Abbott (1,016 m a.s.l.) is the highest point in the Northern Foothills. The map covers an area of approximately 850 km², from 163° 33' 10" E, 74° 33' 47" S to 164° 15' 10", E 74° 57' 59" S. The Italian base "Terra Nova Bay" is situated along the northern coast of the Northern Foothills (164° 07' 23" E, 74° 41' 42" S), on a peninsula lying in a South-North direction to the East of Tethys Bay.

The map has been made by the digital integration of a SPOT1 XS Multi-spectral image mosaic and stereo-compilation reduction of U.S. Navy aerial photographs Trimetrogon Antarctica (TMA). The satellite image mosaic used for the map has been constructed from the digital data of two multi-spectral images, recorded on December 19, 1988, by the French Centre National d'Etudes Spatiales (CNES) Système Probatoire Pour l'Observation de la Terre satellite (SPOT) 1. Contour lines and spot elevations have been constructed from the photogrammetric processing of 28 black and white TMA vertical aerial photographs, acquired on January 10, 1957 (TMA 365; photo scale 1:25,000), November 6, 1985 (TMA 2851 and 2852; photo scale 1:50,000) and November 23, 1993 (TMA 3036; photo scale 1:50,000).

The satellite image was printed in false colour, assigning red to band 3, green to band 2 and blue to band 1. The albedo of snow, firn and ice generally decreases, going from the visible wavelengths to those of near infrared. This spectral response is shown in the satellite image in false colour. It enables glacial areas where snow accumulation occurs (white in the image), to be differentiated from ablation areas that are composed of ice (blue in the image) and from rock and deposit outcrops (dark brown in the image).

Cartographic editing included the drawing of: contour lines at 50 m intervals (blue in the glacial area and brown elsewhere); 30 m elevation contours; bathymetric contours (every 50 m) re-drawn from I.I. Marina (2000); over-snow routes; the location of relative elevations and photogrammetric elevations; construction and human activity (building, aircraft runway, radio mast, aerodrome, automatic weather station, historic monument)

and Adélie penguin rookeries. Special attention was paid to the presentation of some coastal features (ice front, ice wall, rock wall and beach) and the fast ice limit. The meteorological data (wind and temperature) recorded at the Automatic Weather Station “Eneide” (90 m a.s.l., 164° 06’, 74° 42’ S, ID Argos 7353) are also provided (METEO, PNRA, IT).