



HOLME BAY COAST FRAMNES MOUNTAINS

The Framnes Mountains are a group of mountains which include Mt Henderson, Casey, Masson and David Ranges and adjacent peaks and nunataks.

They were discovered in February 1931 by BANZARE (British, Australian and New Zealand Antarctic Research Expeditions) under Sir Douglas Mawson, who named the individual ranges and mountains. Norwegian whalers also sighted the coast the same season.

The first landing in the area was made by Dr.P.G. Law when he selected the site for the ANARE (Australian National Antarctic Research Expeditions) scientific station Mawson at Horseshoe Harbour in February 1954. Mawson station has been occupied continuously by Australia since that date.

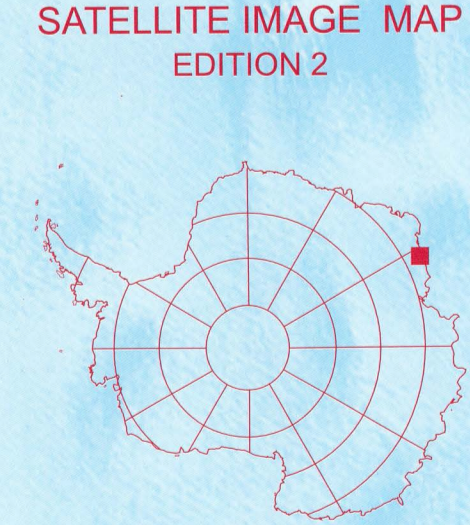
The area was first mapped by Norwegian cartographers from aerial photography taken by the Lars Christensen Expedition in 1936/37. They named the mountains the Framnesfjella after a hill near Sandefjord, Norway.

In the late 1950's, glaciological surveys were conducted by ANARE in the region between Fischer Nunatak and the Casey Range. Ice in the area was found to be approximately 500 to 600 metres thick, with a surface flow rate of 15 to 35 metres per year. At Mawson, the annual ice loss due to melt and evaporation is in the vicinity of 0.6 metres. The annual accumulation of ice, which is highly variable due to the strong winds, is in the order of 30 to 40 cm (water equivalent). The snowline, at the end of summer, is often situated at an elevation of about 800 metres above sea level.

The Framnes Mountains are formed mostly from a brown, homogeneous rock called charnockite, composed predominantly of the minerals potassium feldspar, quartz and pyroxene. This rock is similar to granite, and was intruded as a molten mass into older metamorphosed sedimentary rocks approximately 960 million years ago. At that time, the rocks that we now see exposed at the surface were at a depth of some 20 km. Pods of the older metamorphosed sedimentary rocks occur within the charnockite, and can be up to several kilometres across. They are easily distinguished from the charnockite by their prominent layering and varied mineral composition. For example, the prominent Painted Peak is formed from interlayered, metamorphosed arkosic, metapelitic (mudstone), calcisilicate and granitic gneiss. These rocks were metamorphosed and deformed before the charnockite intruded, most probably in the period 1200-1000 million years ago. Cordierite, sillimanite, spinel, garnet and biotite are common minerals in these metamorphosed sedimentary rocks that form most of the Casey Range.

The geology of this section of Antarctica has strong similarities with that of the Eastern Ghats province in India, which lay adjacent to the Mawson Coast before these Gondwana fragments dispersed.

AUSTRALIAN ANTARCTIC TERRITORY Framnes Mountains MAC. ROBERTSON LAND ANTARCTICA



SCALE 1 : 100 000
1 cm to 1 kilometre

PROJECTION : Transverse Mercator
GRID : Universal Transverse Mercator, grid zone 41
HORIZONTAL DATUM : WGS 84
MAGNETIC VARIATION : 65.3° west in February 1997 and moves westerly by about 0.1° each year
NOMENCLATURE : Names have been approved by the Antarctic Names Committee of Australia

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REFUGES
 MT HENDERSON
 RUMDOODLE
 FANG PEAK
 (Note: The point of the symbol indicates the location of the refuge)

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SPOT XS	246-491
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SPOT XS	246-490
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SPOT XS
Scenes acquired 13 March 1988
WRS co-ordinates: 246-490, 246-491
Spatial resolution 20m

Landsat Thematic Mapper
Scenes acquired 14 November 1989,
21 January 1992
WRS co-ordinates: 135-108, 137-107
Spatial resolution 30m

Processed by the Australian Centre for Remote Sensing (ACRES)