

# Bharati

National Centre for Antarctic & Ocean Research

69°24'24.4"S 76°11'42.9"E

Type: Station

Operational period: Year-round

## Location

Bharati is located in Larsemann Hills on a small promontory between Thala Fjord and Quilty bay, east of Stornes Peninsula.

## Biodiversity and natural environment

Promontory, ice-free ground, petrels and penguins, seals occasionally.

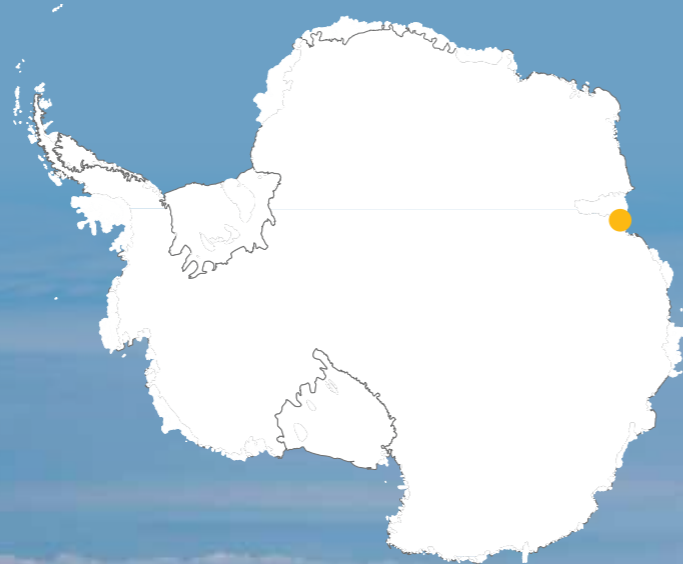
## History and facilities

About 2500 km east of Maitri, the new Indian research base Bharati is located between Thala Fjord & Quilty bay, east of Stornes Peninsula in Antarctica. A modular, three story structure with total floor area of 2900m<sup>2</sup> over a small footprint of 1650m<sup>2</sup> was commissioned on 18 March 2012 to facilitate year-round scientific research activities. The station consists of one main building, fuel farm, fuel station, sea water pump house, a summer camp and a number of smaller containerized modules. The main building offers regulated power supply, automated heating and air conditioning with hot and cold running water, flush toilets, sauna, cold storage, aesthetically designed living, dining, lounge and laboratory space. The communication is through dedicated satellite channels providing connectivity for voice, video and data with the India mainland.

## General research and databases

Earth, life and atmospheric sciences.

CLIMATE	
Climate zone	Coastal Antarctica
Permafrost	None
Mean annual wind speed (km/h)	22
Max wind speed (km/h)	122
Dominant wind direction	E
Sea Ice Break Up	February
Snow free period	January, February, December
Total annual precipitation (mm)	287
Precipitation type	Snow
Mean annual temperature (°C)	-10.2
Mean temperature in February (°C)	-4.6
Mean temperature in July (°C)	-17.6
ENVIRONMENT	
Region	Continental Antarctica
Antarctic Environmental Domain: D – East Antarctic Coastal Geologic	
Antarctic Conservation Biogeographic Region: 7 East Antarctica	
Altitude of facility (m)	35
Type of surface facility built on	Ice-free ground
Long term monitoring	Yes
Waste management	Yes
Hazard(ous) management	Yes
Fuel spill response capability	Yes



## Features in the facility area

Bird colonies, Bluff, Clear air zone, Coast, Fjord, Hill, Lake, Other Biological, Rock, Sea, Sea ice, Shoreline, Snow.

FACILITIES INFRASTRUCTURE	
Area under roof (m <sup>2</sup> )	2900
Area scientific laboratories (m <sup>2</sup> )	270
Type of scientific laboratories: Biology, Chemistry, Geology	
Conference room (capacity)	70
Logistic area (m <sup>2</sup> )	332
Number of beds	47
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel
Power supply (V)	220
Power supply (hours per day)	24
Hydroponics facilities	No
Number of staff on station (peak/summer season)	24
Number of scientists on station (peak/summer season)	22
Number of staff on station (off peak/winter season)	18
Number of scientists on station (off peak/winter season)	5
Max number of personnel at a time (staff, scientists and others)	47
Specific device/Scientific equipment: Digital Fluxgate; Proton Precision; Induction Coil magnetometers; Automatic Weather Station; GSV-4004B GISTM receiver	
Scientific services possible: Weather services	
Long-term monitoring/observations: Weather; Magnetic observations for electromagnetic changes in the near-Earth environment; Ionospheric Total Electron Content; Environmental radiation monitoring	
MEDICAL FACILITIES	
Area of medical facility (m <sup>2</sup> )	54
Staff with basic medical training or doctor (Summer)	2

## Main science disciplines

Atmospheric chemistry and physics, Climate change, Environmental sciences, Geology, Geomorphology, Geophysics, Glaciology, Human biology, Isotopic chemistry, Mapping, Paleolimnology, Sedimentology.

Staff with basic medical training or doctor (Winter)	2
Capability: Basic, Surgery	
Equipment: Anaesthesia, Biochemistry	
Distance to hospital (km)	
Closest emergency facility in Antarctica (km)	
Closest emergency facility external (km)	
Medical research capabilities	No
Medical screening requirements	No
VEHICLES AT FACILITY	
Sea transportation:	
Land transportation: Snowmobiles	
WORKSHOP FACILITIES	
Mechanical, Wood workshop	
COMMUNICATIONS	
Computer, E-mail, Internet, Printer, Satellite phone, Telephone, VHF	
TRANSPORT AND FREIGHT	
Access	Air, Sea
Transport to facility: Airplane, Helicopter, Ship, Skidoo, Walking	
Number of airstrips	0
Length (m) of longest runway	
Width (m) of longest runway	
Number of flight visits per year	7
Period of flight visits per year: January, February, November, December	
Helipad	Yes
Number of ship visits per year	1
Period of ship visits per year: January, February	
Ship landing facilities: None	



# Maitri

 National Centre for Antarctic & Ocean Research

70°46'00.6"S 11°43'50.8"E

Type: Station

Operational period: Year-round

## Location

Maitri station is situated on an ice free, rocky area on the Schirmacher Oasis in the central Dronning Maud Land region of East Antarctica.

## Biodiversity and natural environment

Ice-free ground; petrels, skua and penguins are occasionally seen.

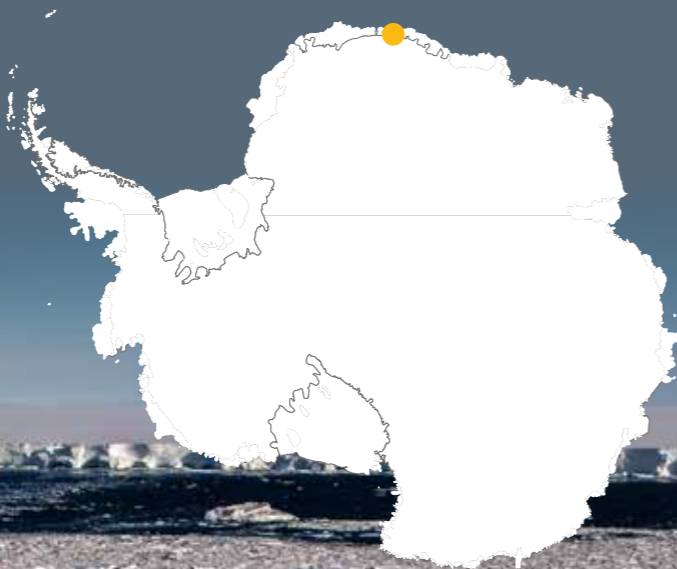
## History and facilities

Since 1983 the Indian scientific endeavors in Antarctica have been sustained on a year-round basis, from the Indian permanent stations "Dakshin Gangotri" (1983-1989) and "Maitri" (1989 – present). In the year 1986, an ice free, rocky area on the Schirmacher Oasis was selected to build the second research station "Maitri". It is an inland station at an elevation of about 117 m and about 100 km from the sea with an intervening ice shelf in between. Dakshin Gangotri station was decommissioned in 1990.

## General research and databases

The infrastructure available at the station has enabled the scientists to conduct research in various disciplines such as Atmospheric Sciences & Meteorology, Earth Sciences including Glaciology, Human Biology, Medicine, Biology and Environmental Sciences.

CLIMATE	
Climate zone	Coastal Antarctica
Permafrost	Continuous
Mean annual wind speed (km/h)	31.5
Max wind speed (km/h)	204
Dominant wind direction	SE
Sea Ice Break Up	February, March
Snow free period	January, February, December
Total annual precipitation (mm)	
Precipitation type	Snow
Mean annual temperature (°C)	-9.7
Mean temperature in February (°C)	-3
Mean temperature in July (°C)	-16.8
ENVIRONMENT	
Region	Continental Antarctica
Antarctic Environmental Domain: D – East Antarctic Coastal Geologic	
Antarctic Conservation Biogeographic Region: 6 Dronning Maud Land	
Altitude of facility (m)	117
Type of surface facility built on	Ice-free ground
Long term monitoring	Yes
Waste management	Yes
Hazard(ous) management	Yes
Fuel spill response capability	Yes



## FACILITIES INFRASTRUCTURE

Area under roof (m <sup>2</sup> )	1030
Area scientific laboratories (m <sup>2</sup> )	105
Type of scientific laboratories: Geology, Geophysics	
Conference room (capacity)	
Logistic area (m <sup>2</sup> )	449
Number of beds	65
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel
Power supply (V)	220
Power supply (hours per day)	24
Hydroponics facilities	No
Number of staff on station (peak/summer season)	20
Number of scientists on station (peak/summer season)	25
Number of staff on station (off peak/winter season)	18
Number of scientists on station (off peak/winter season)	7
Max number of personnel at a time (staff, scientists and others)	65
Specific device/Scientific equipment: Imaging Riometer, Ionosonde, Digital Fluxgate, Proton Precision, Induction Coil magnetometers, Automatic Weather Station, Movable Atmospheric RADAR for Antarctica, Digital Broadband Seismograph	
Scientific services possible: Weather Services	
Long-term monitoring/observations: Weather, Magnetic observations for electromagnetic changes in the near-Earth environment, Ionospheric Total Electron Content, Seismicity, Wind Profile	
<b>MEDICAL FACILITIES</b>	Yes
Area of medical facility (m <sup>2</sup> )	22

## Features in the facility area

Bird colonies, Clear air zone, Hill, Ice cap or glacier, Ice shelf, Ice tongue, Lake, Melt streams, Moraine, Mountain, Other Biological, Permanent snowpatches, Rock, Snow, Valley.

## Main science disciplines

Atmospheric chemistry and physics, Climate change, Environmental sciences, Geodesy, Geology, Geomorphology, Geophysics, Glaciology, Isotopic chemistry, Mapping, Paleolimnology, Sedimentology.



Staff with basic medical training or doctor (Summer)	2
Staff with basic medical training or doctor (Winter)	2
Capability: Basic, Surgery	
Equipment: Anaesthesia, Biochemistry, Diagnostic ultrasound	
Distance to hospital (km)	
Closest emergency facility in Antarctica (km)	3.5
Closest emergency facility external (km)	
Medical research capabilities	No
Medical screening requirements	No
<b>VEHICLES AT FACILITY</b>	
Sea transportation:	
Land transportation: Snowmobiles	
<b>WORKSHOP FACILITIES</b>	
Mechanical, Wood workshop	
<b>COMMUNICATIONS</b>	
Computer, E-mail, Internet, Printer, Satellite phone, Scanner, Telephone, VHF.	
<b>TRANSPORT AND FREIGHT</b>	
Access	Air, Land
Transport to facility: 4WD, Airplane, Helicopter, Ship, Skidoo, Walking	
Number of airstrips	0
Length (m) of longest runway	
Width (m) of longest runway	
Number of flight visits per year	10
Period of flight visits per year: January, February, November, December	
Helipad	Yes
Number of ship visits per year	1
Period of ship visits per year: February, March	
Ship landing facilities: Ice pier	

