SCUFN19-6.1H

INTERNATIONAL HYDROGRAPHIC ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

IHO/IOC Form No. 1

UNDERSEA FEATURE NAME PROPOSAL

(See NOTE overleaf)

Ocean or Sea: Scotia Sea Name proposed: Eötvös Escarpment

Coordinates : **A** - of midpoint or summit : Lat. 56°23' S , Long. 42°49' W

_____ kilometres in _____ direction from _____

and/or **B** - extremities (if linear feature) :

Lat. _____ Long. _____ } to { Lat. _____ Long. _____

Coordinates of arc-shaped linear feature (20 points) (Longitude, Latitude !!):

-43.802066722, -56.3067255914
-43.726461844, -56.3195345549
-43.650856966, -56.3323435183
-43.568678314, -56.3506417952
-43.476637858, -56.3671105837
-43.394459206, -56.383578948
-43.312279792, -56.3945584231
-43.220239336, -56.4073673866
-43.108476034, -56.416516525
-43.006574536, -56.4146866125
-42.91453408, -56.405537474
-42.852077512, -56.387238773
-42.796196242, -56.3689404962
-42.733740436, -56.3451524818
-42.674571136, -56.3158747298
-42.61211533, -56.2774478394
-42.556233298, -56.2335312115
-42.503639296, -56.1969342336
-42.44118349, -56.1456983798
-42.405024304, -56.098122351

Description (kind of feature) : Escarpment

Identifying or categorizing characteristics (shape, dimensions, total relief, least depth, steepness, etc.):

Shape: arc-shaped Dimensions: Length: about 103 km (56 M) - width: about 3.6 km (1.9 M)
Total relief: 4500 to 2000 m Least depth:
Characterized by an arc-shaped steep escarpment

Associated features :
Shape: arc, bending from W-E direction into SW-NE direction
Maximum and least depth: 4000 to 2700 m at Western, 4500 to 2000 m at central, 4200 to 3600 m at Northeastern point of feature
Elevation (depth differences): 1300 m at W, 2500 m at central, 600 m at E point
Steep slope: 36 % at W, 69 % at central, 18 % at E point

In the Southern and Southeastern followed by a depression (subduction / graben-like structure), to the North and Northwest followed by an elevated province.

Chart reference :
Shown with name on chart No. : none
Shown but not named on chart No. : unknown
Not shown but within area covered by chart No. : 511 GEBCO Plotting Sheet 1,000,000

Reason for choice of name (if a person, state how associated with the feature to be named) : Lóránd Eötvös
The professional domain of this person: Experimental physics and geophysics.
Association: to professional work: Since 1886 Eötvös researched in gravitation. He invented the Eötvös balance instrument and showed that, to a high degree of accuracy, gravitational mass and inertial mass are equivalent.
The feature lies within an area which demands further geophysical research to study the geo-tectonics of the seafloor; thus it is an appropriate feature to carry a name in relation to physics and geophysics.

Short biography of person:
Lóránd Eötvös (also known / written as: Eotvos, Roland Baron von Eötvös), 1848 - 1919

Lóránd Eötvös studied at Heidelberg (Germany) where he was taught by Kirchhoff, Helmholtz and Bunsen. Then he went to Königsberg (Prussia) and studied under Franz Neumann and Friedrich Richelot.
He returned to Hungary in 1871 and received a doctorate with a thesis which studied problems of Fizeau on the relative motion of a light source. This was one of the first steps towards relativity theory.
In Hungary, Eötvös taught at the University of Budapest where he became professor of experimental physics in 1878. He published on capillarity between 1876 and 1886, then he published on gravitation for the rest of his life. He invented the Eötvös balance and showed that, to a high degree of accuracy, gravitational mass and inertial mass are equivalent. The Eötvös balance instrument was in Applied Geophysics between 1920 and 1930 for in-situ measurements. Because the instrument is very sensitive and not suitable for data mass-production, it was replaced by gravimeters. However, the Eötvös balance still is used today for special geodetic and geophysical applications.

Eötvös founded the Hungarian Society for Mathematics in 1885 and he was important in improving educational standards in Hungary. What was once the Péter Pázmány University in Budapest is now known as the Lóránd Eötvös University.

References:
Biographic sketch: http://www-groups.dcs.st-andrews.ac.uk/~history/Biographies/Eotvos.html
http://tau.fesg.tu-muenchen.de/~iapg/web/fame/seiten/eotvos.php
Eötvös Loránd University http://www.elte.hu/en/index.html

Discovery facts :
Date 14 April 2005 – 17 May 2005 by (individuals or ship) Research Vessel “Polarstern”
By means of (equipment) : Mapping of swath sonar measurement and compilation of boxed survey
Navigation used : GPS Two frequencies Trimble plus other data (gyro, inertial etc.)
Estimated positional accuracy in nautical miles : 10 m to 30 m (0.005 M to 0.016 M)

Description of survey (track spacing, line crossing, grid network, etc.) : boxed survey

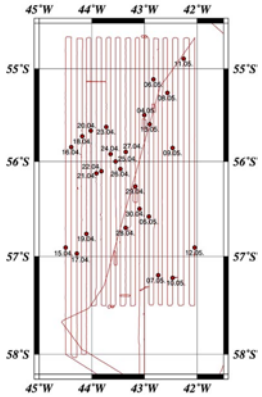
Nature and repository of other survey activities (dredge samples, cores, magnetics, gravity, photographs, etc.) : geophysics: magnetics (ship-born; partially plus helicopter-born magnetics), gravity; oceanography: XBT, CTD; geology: cores

Supporting material : enclose, if possible, a sketch map of the survey area, profiles of the features, etc., with reference to prior publication, if any :

Publication/s: not yet published.

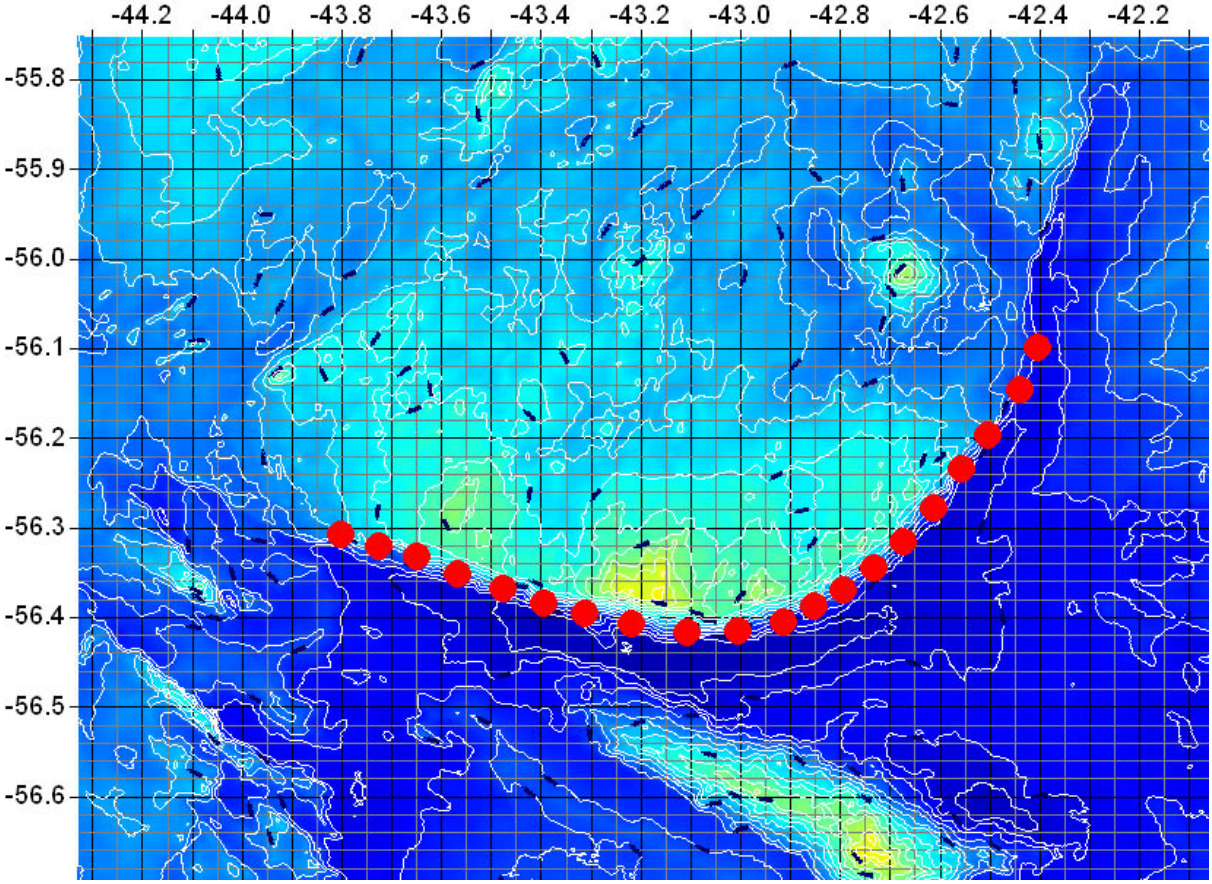
Report about the Antarctic expedition ANT XXII/4 of the research vessel "Polarstern" in 2005 will be published soon; Berichte zur Polarforschung / Reports on Polar Research, Bremerhaven, 2006.

Track plot (also separate files, file names: ANTXXII-4-Kursplot.jpg, ANTXXII-4-Profile.jpg):

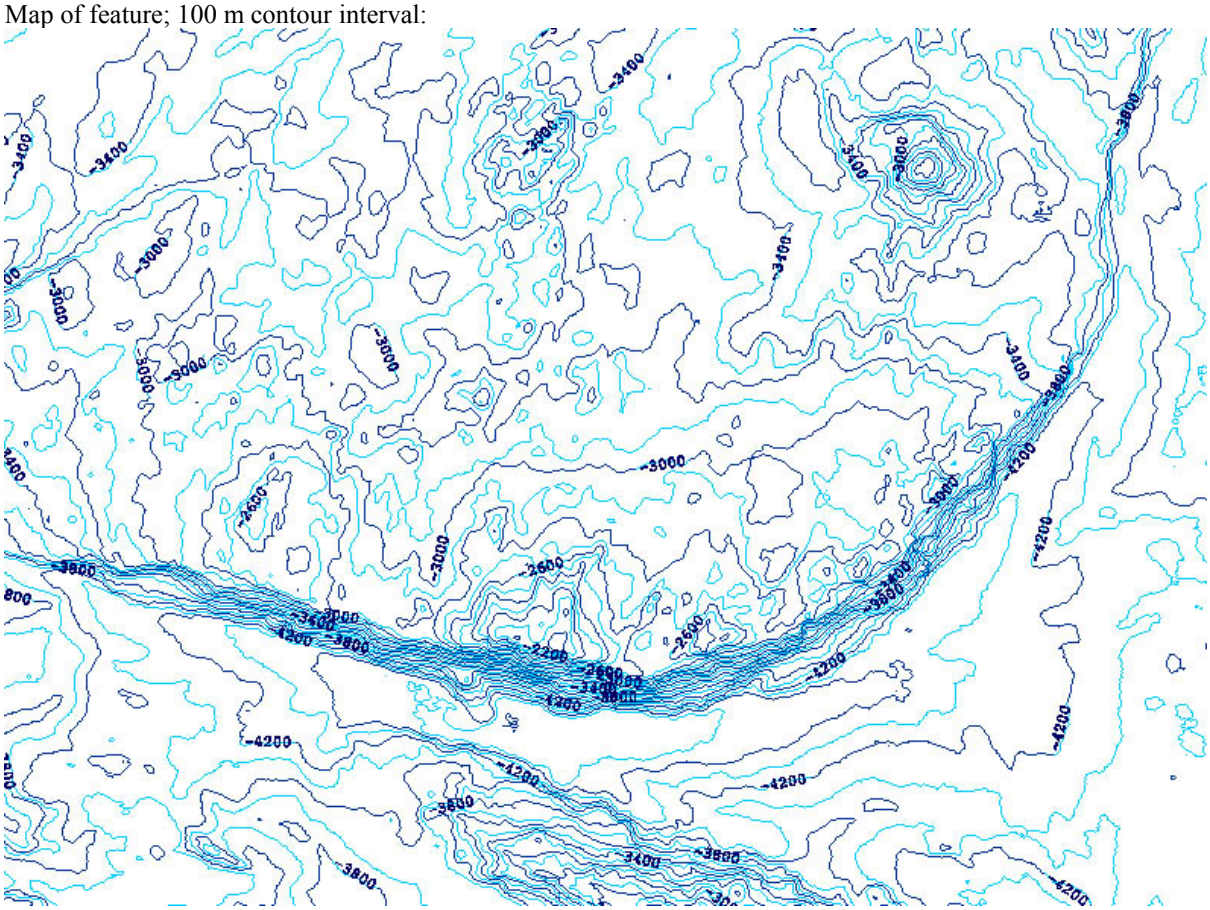


Maps etc. are produced from a DTM of about 300 m grid distance by Surfer and/or Fledermaus software (Golden Software; IVS)); higher resolutions and interpolation (e.g. Delaunay triangulation of swath data) will be processed by AWI soon.

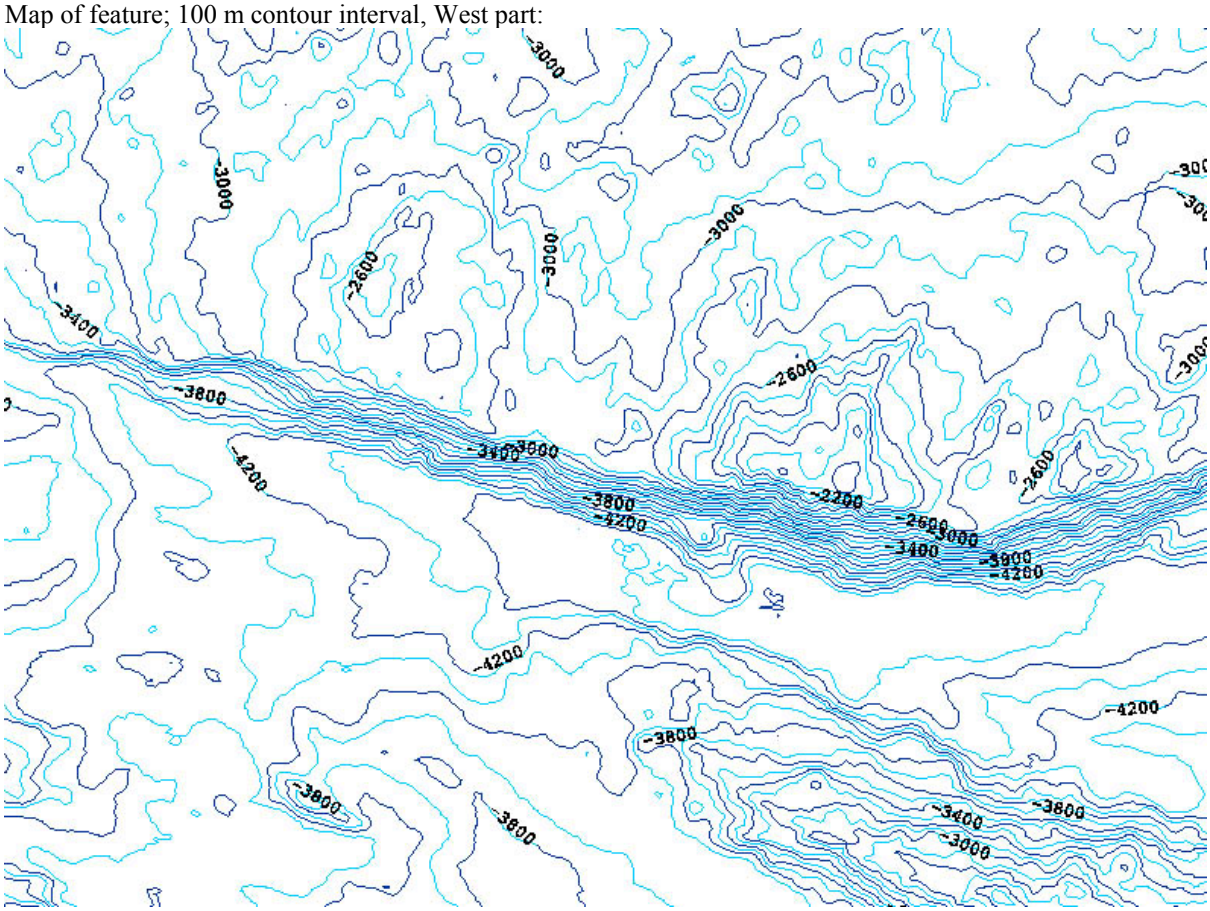
Map of feature; 200 m contour interval, red dot markers show location of feature:



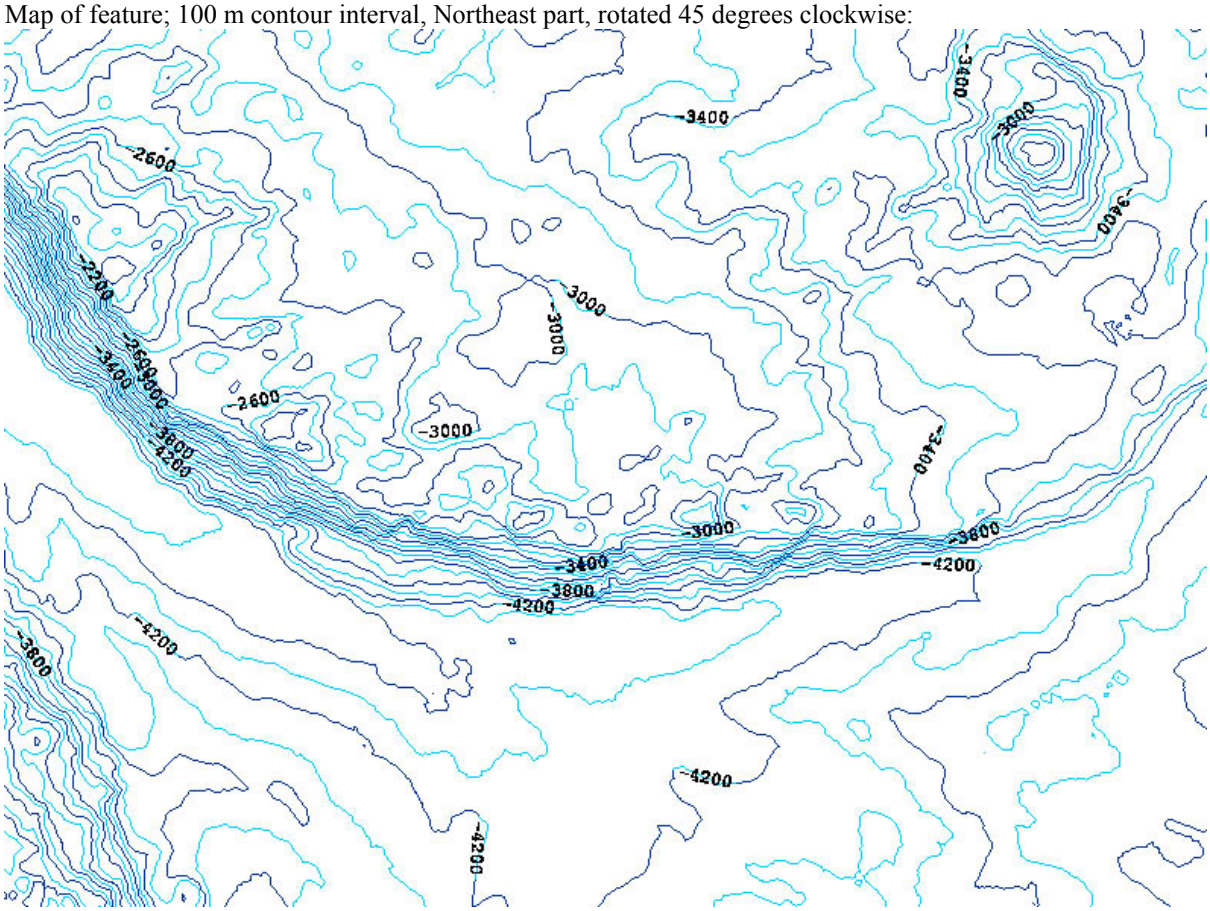
Map of feature; 100 m contour interval:



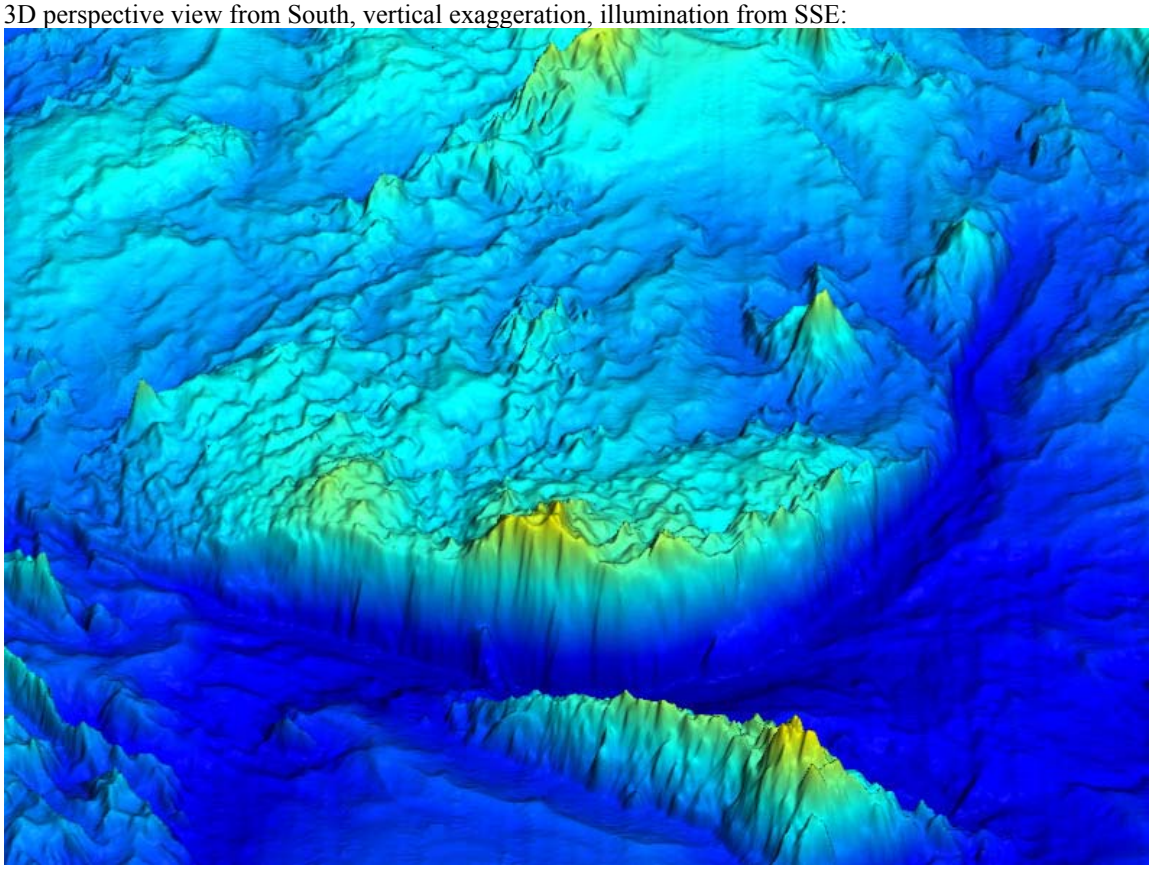
Map of feature; 100 m contour interval, West part:



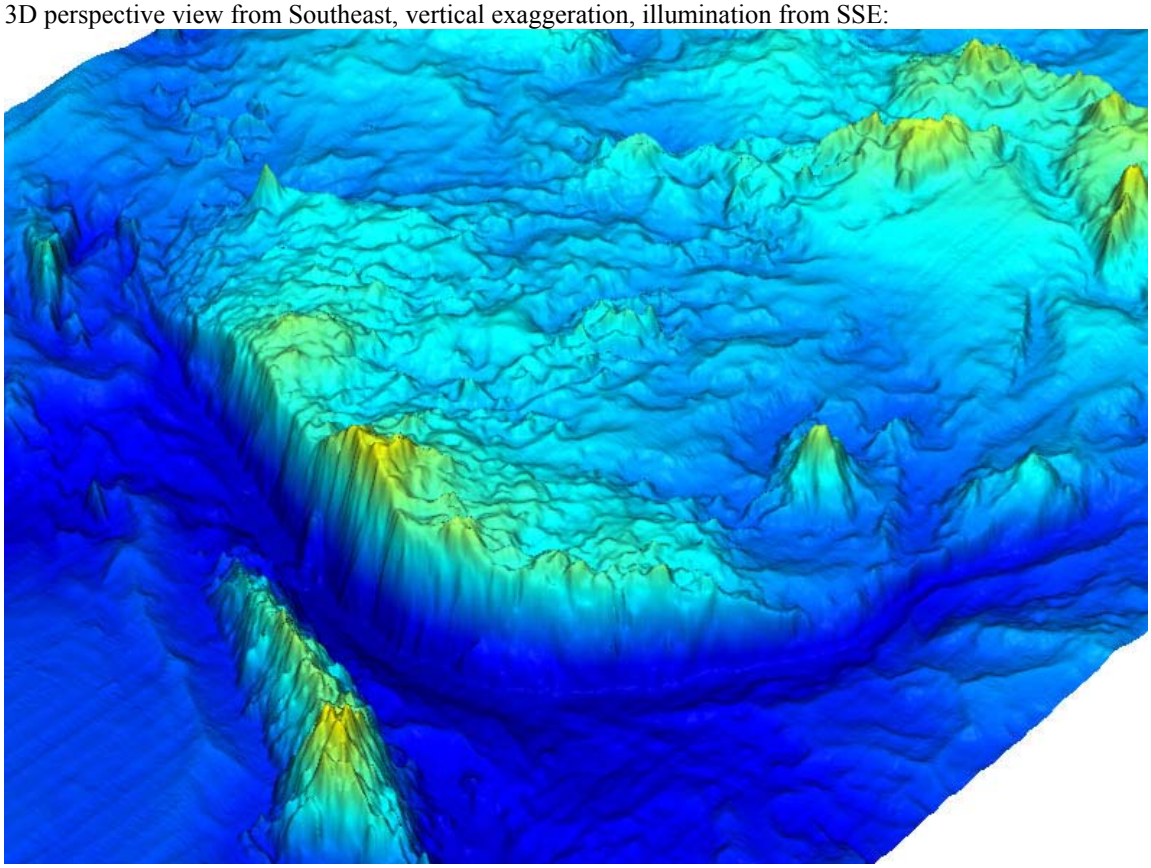
Map of feature; 100 m contour interval, Northeast part, rotated 45 degrees clockwise:



3D perspective view from South, vertical exaggeration, illumination from SSE:



3D perspective view from Southeast, vertical exaggeration, illumination from SSE:



Submitted by : Dr. Heinrich Hinze
Date : 9 May 2006
Address : AWI, Van Ronzelen Str. 2, D-27568 Bremerhaven, Germany

Concurred in by (if applicable) :

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Address :

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National Authority (if any) : Alfred Wegener Institute for Polar and Marine Research (AWI)
Address : AWI, D - 27515 Bremerhaven, Germany

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NOTE : This form should be forwarded, when completed :

a) **If the undersea feature is located in territorial waters** :-
to your "National Authority for Approval of Undersea Feature Names" or, if this does not exist or is not known, either to the International Hydrographic Bureau or to the Intergovernmental Oceanographic Commission (see addresses below);

b) **If the undersea feature is located in international waters** :-
to the International Hydrographic Bureau or to the Intergovernmental Oceanographic Commission, at the following addresses :

International Hydrographic Bureau
4, quai Antoine 1er
B.P. 445
MC 98011 MONACO CEDEX
Principality of MONACO
Fax: +377 93 10 81 40
E-mail: info@ihb.mc

Intergovernmental Oceanographic Commission
UNESCO
Place de Fontenoy
75700 PARIS
FRANCE
Fax: +33 1 45 68 58 12
E-mail : info@unesco.org

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