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: Kaula Seamount

Coordinates : **A** - of midpoint or summit : Lat. 55°24'23" S , Long. 42°46'53" W

_____ kilometres in _____ direction from _____

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

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

Description (kind of feature) : Seamount

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

Shape: oval shape Dimensions: 12.3 km in SW-NE, 7.1 km in SE-NW direction (6.6 M x 3.8 M)
Total relief: 3350 to 2150 m Least depth: about 2150 m
Characterized by 3 local elevations and 1 local depression at the feature

Associated features :
Oval seamount in SW – NE direction.
relief: From the surrounding seafloor of about 3350 m in the Nortwest and 2700 m in the East to the maximum elevation of about 2150 m bsl. Steep slope in the Nortwest.
3 (three) local elevations at the feature (least depths: 2290 m, 2180 m, and the highest with an elevation of about 2150 m bsl); 1 (one) small local crater-like depression of about 50 m depth and 1000 m diameter.
Elevation is 1200 to 550 m above the surrounding seafloor.
2 (two) knolls: one with least depth 2170 mbsl in the Southwest, one with 2020 mbsl in the Northeast.

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) : William M. Kaula
The professional domain of this person: Satellite geodesy, planetary physics.
Association: to professional work: Kaula recognized that tracking satellites could provide revolutionary information on how Earth works. He contributed to the determination of absolute positions on Earth to a millimeter accuracy using the satellite positioning system. Kaula was also one of the fathers of comparative planetology: Understand the planets and you improve the understanding of Earth.
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 geophysics.

Short biography of person:

William Mason Kaula born in Sydney, Australia, on May 19, 1926; died in Los Angeles on April 1, 2000.

William M. Kaula went to Ohio State in 1952 to study geodesy and found himself to be the first and only student in a new program with one faculty member who promptly left to spend a summer in Finland, advising him to study a certain geodetic text in his absence. Kaula studied the recommended text and more and obtained his masters in Geodesy. Though he would later receive an honorary Doctor of Science from Ohio State, the master's degree was the highest formal degree he earned. Kaula took pleasure and pride in the fact that he did not have a Ph.D. when he was appointed a tenured professor at UCLA.

In 1957 Kaula went to work for the USA Army Map Service in Bethesda, Maryland, and found the freedom to study variations in the Earth's gravity field, then thought to affect inertial guidance significantly. Kaula moved to NASA in 1960 as a project scientist for a geodetic satellite. Multiple postponements in the project due to security considerations left him with time to master satellite orbital dynamics and embark on research on the implications of the gravity field for the nature of Earth's interior and applications of dynamical techniques to the evolution of natural orbits.

William M. Kaula arrived on University of California (UCLA) campus in 1963 as a professor in the Institute of Geophysics and Planetary Physics. Except for a three-year leave of absence in the mid 1980s to serve as chief of the National Geodetic Survey of the National Oceanic and Atmospheric Administration in Rockville, Maryland, he spent the next 37 years in service to UCLA. He was chair of both the former Department of Geophysics and Space Physics and the Department of Earth and Space Sciences.
At UCLA, Kaula soon learned that tracking satellites could provide revolutionary information on how Earth works. He lived to see the determination of absolute positions on Earth to a millimeter accuracy using the military Global Positioning System array of satellites.
Kaula was also one of the fathers of comparative planetology: Understand the planets and you improve the understanding of Earth.

Kaula began publishing the results of his research at a rapid pace, and his productivity and findings led to his appointment at UCLA in 1963. In 1963 Kaula developed some of the earliest expansions of the Earth's gravitational field using satellite geodesy. Kaula's research flourished after arriving at UCLA, and he quickly published two books that were to become classics—Theory of Satellite Geodesy in 1966 and Introduction to Planetary Physics in 1968. Kaula published over 250 papers on a broad range of subjects, including the gravity fields of the Earth and the terrestrial planets, their interior structures and dynamics, and their dynamical and thermal evolutions. His papers dealt with tides, chaotic dynamics, planetesimal distributions, accretion of terrestrial planets, formation of the solar system, origin of the Moon and comparative planetology.

Kaula brought great distinction to UCLA with his many appointments, honors, and awards. He often served the National Aeronautics and Space Administration (NASA) in geodynamics and planetary exploration, as a team leader for the laser altimeter on the Apollo 15, 16, and 17 missions to the Moon, and as a team member for the radar and gravity experiments on the Magellan mission to Venus, as Chair of the Lunar and Planetary Review Panel, and twice as a member of the National Research Council Space Science Board. His service to the American Geophysical Union (AGU) included the presidency of the Geodesy Section and editor of the Journal of Geophysical Research – Solid Earth. In 1987 Kaula was elected to the US National Academy of Sciences.

Awards:
The AGU rewarded Kaula with fellowship in the Union and the Whitten Medal. NASA presented him with its Medal for Exceptional Scientific Achievement. The American Astronomical Society (AAS) presented Kaula with the Brouwer Award in 1989.

Reference/s:
Schubert, G.: IN MEMORIAM William M. Kaula, Professor Emeritus of Geophysics, Los Angeles, 1926—2000. URL: http://www.universityofcalifornia.edu/senate/inmemoriam/WilliamM.Kaula_000.htm
Turcotte, D.L.: William M. Kaula, May 19, 1926 — April 1, 2000, BIOGRAPHICAL MEMOIRS National Academy of Sciences. URL: http://www.nap.edu/readingroom/books/biomems/wkaula.html

---

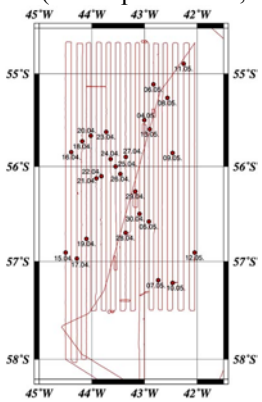
Discovery facts :

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

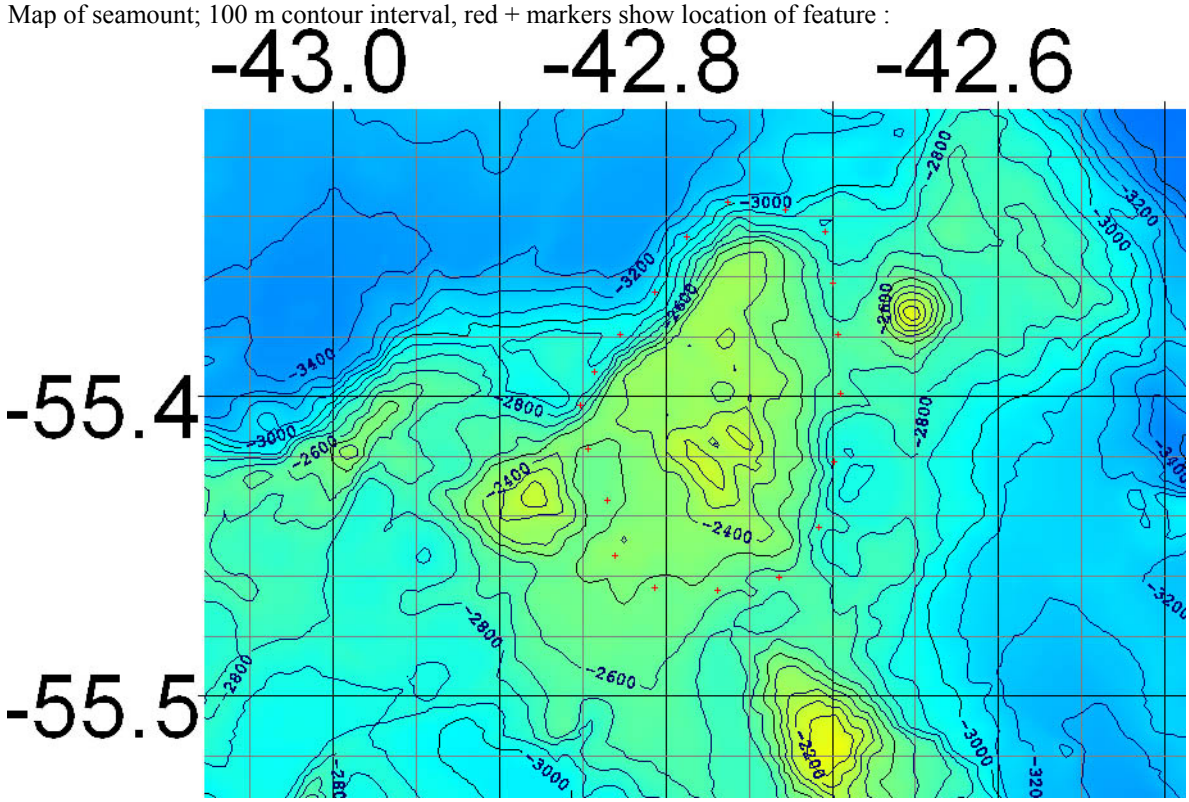
Nature and repository of other survey activities (dredge samples, cores, magnetics, gravity, photographs, etc.) : geophysics: magnetics (ship-born; partially plus helicopter-born magnetics), gravity; oceanography: XBT, CTD; geology: cores

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):

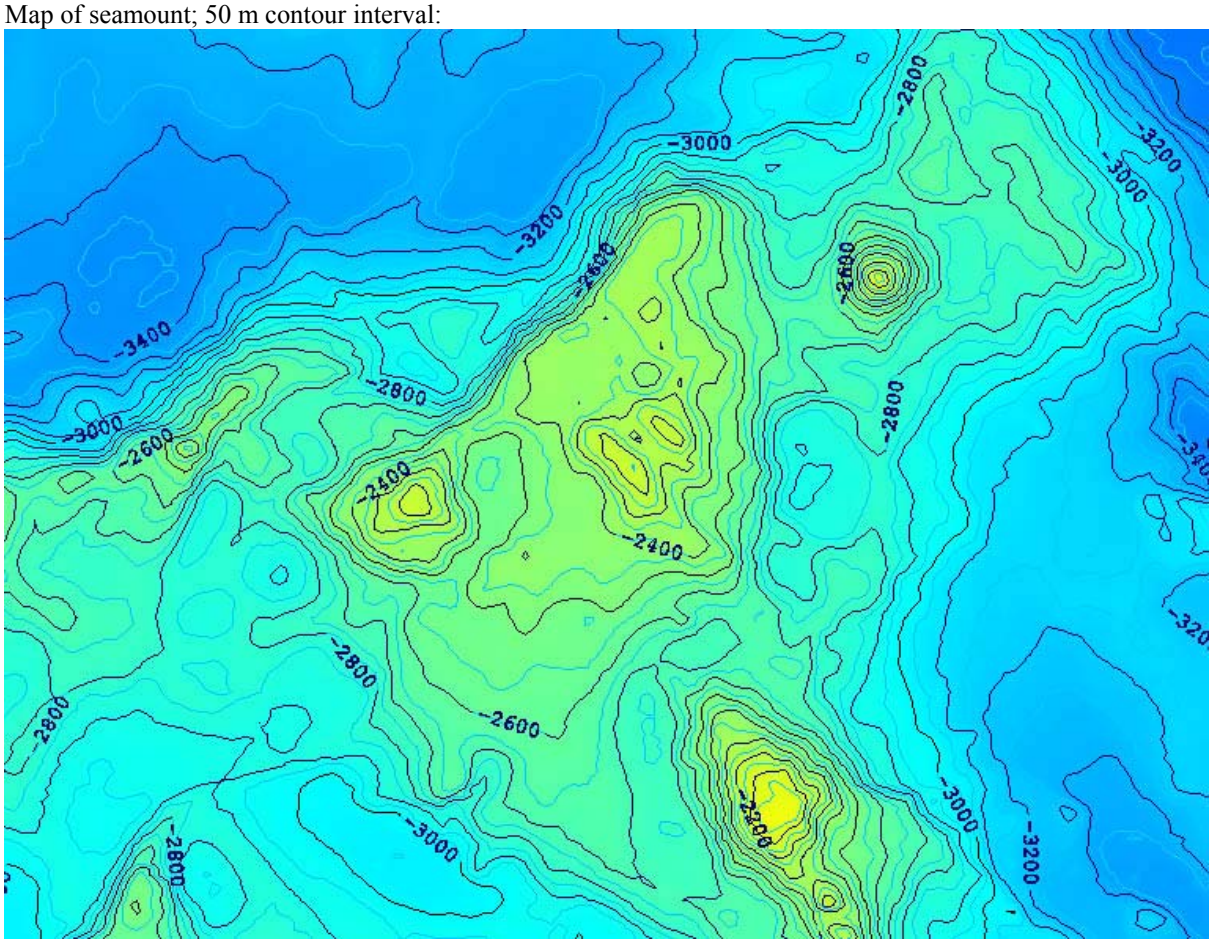


Maps etc. are produced from a DTM of about 300 m grid distance by Surfer and/or Fledermaus software (Golden Software; IVS)); higher resolutions and interpolation (e.g. Delaunay triangulation of swath data) will be processed by AWI soon.

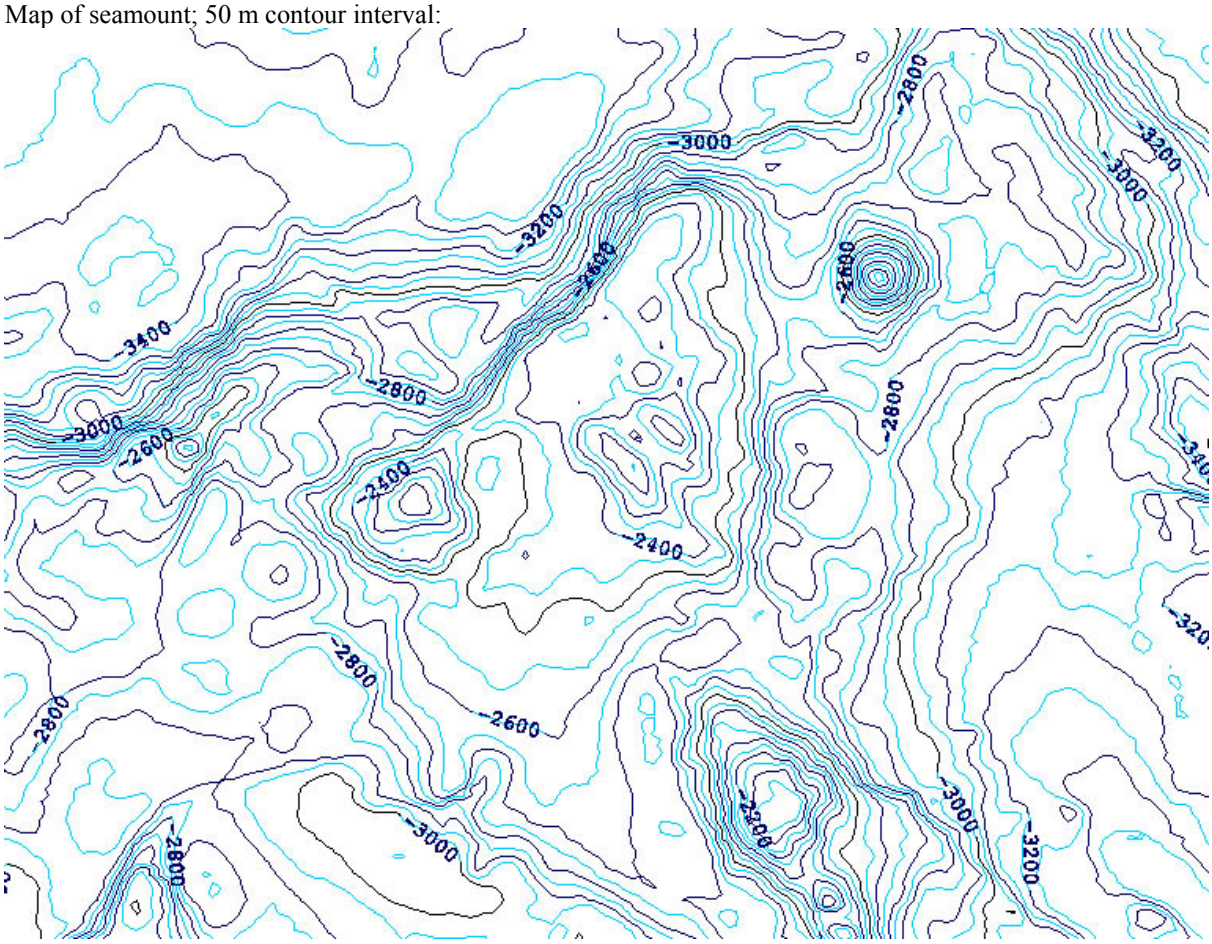
Map of seamount; 100 m contour interval, red + markers show location of feature :



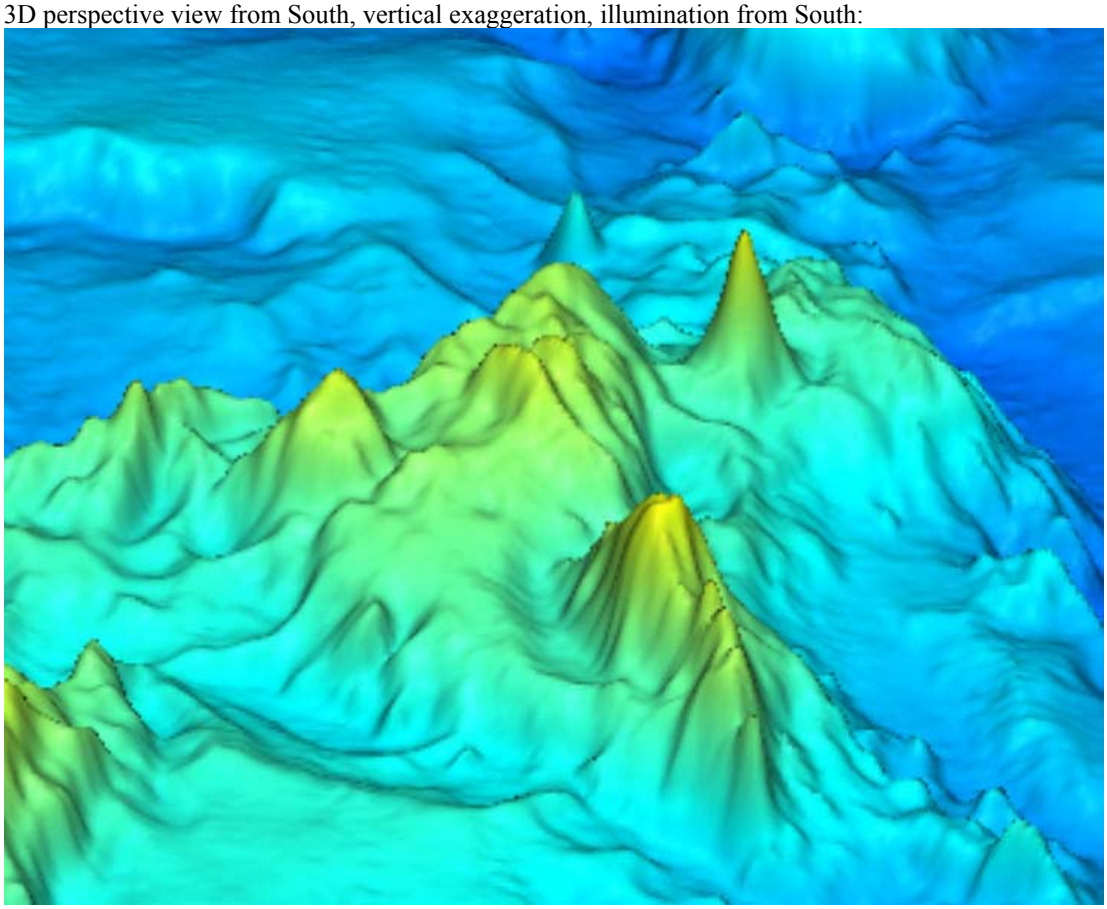
Map of seamount; 50 m contour interval:



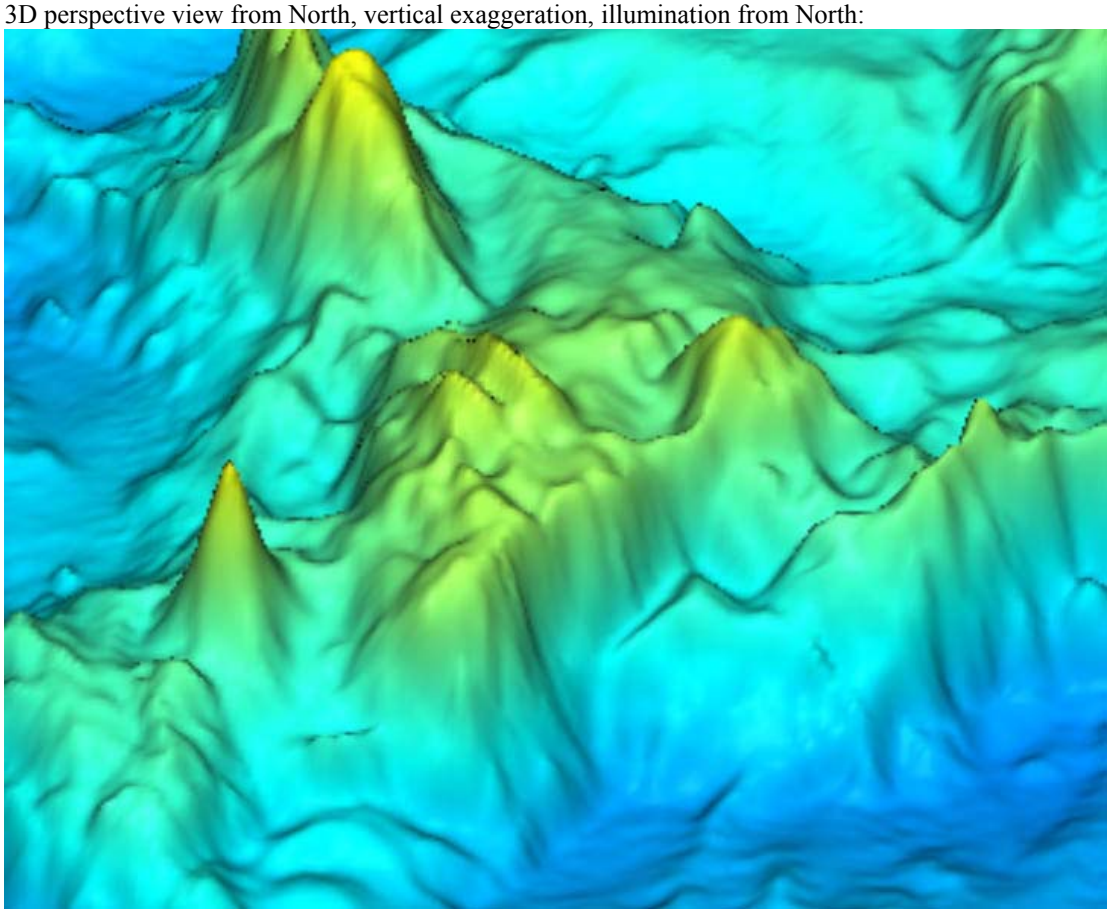
Map of seamount; 50 m contour interval:



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



3D perspective view from North, vertical exaggeration, illumination from North:



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

Concurred in by (if applicable) :

_____

Address :

_____

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

_____

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

_____