

**UNDERSEA FEATURE NAME PROPOSAL**

(See NOTE overleaf)

Ocean or Sea: Scotia Sea

Name proposed: Krarup Knoll

Coordinates : A - of midpoint or summit : Lat. 55°51'54" S , Long. 42°23'26" W

\_\_\_\_\_ kilometres in \_\_\_\_\_ direction from \_\_\_\_\_

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

Lat. \_\_\_\_\_ } to { Lat. \_\_\_\_\_  
Long. \_\_\_\_\_ } Long. \_\_\_\_\_

Description (kind of feature) : Knoll

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

Shape: circular, conical shaped                      Dimensions: 7.5 km diameter ( 4.1 M)  
Total relief: 3900 to 2860 m                      Least depth: 2860 m

Associated features :

Shape: circular conical shape of feature, accompanied by 3 (three) side-elevation at Southwest (top: 3160 m bsl), and Noth (3200 m and 3280 m bsl, resp.)

Maximum and least depth: 3950 in the East (the subduction / graben-like depression) and about 3500 m in the West the knoll reaches at its top 2860 m. Due to the side-elevations, the hole structure measures about 13.8 km (7.5 M) in SW – N direction. To the West there is a kind of moat, to the East the deeper depression.

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) : Torben Krarup

The professional domain of this person: Physical geodesy, least-squares collocation

Association: to professional work: Since 1969 Krarup was working on physical geodesy.

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:

Dr. h.c. Torben Krarup - Born March 2, 1919 in Odder (Denmark); retired from academic activities at about 1990

Krarup studied first mathematics and physics and then geodesy in Copenhagen, finishing 1952. At the Danish Geodetic Institute he was instrumental in geodetic computations, having actively participated in the construction of the computer built at the Geodetic Institute around 1960. So he was a pioneer also in this field. Since about 1969, Krarup is generally recognized as the authority on physical geodesy. The name of "least-squares collocation" is inseparably connected with him.

Scientific papers:

Torben Krarup is an important geodesists of the 20th century. His writings are mathematically well founded and scientifically relevant. Among them there are the booklet "A Contribution to the Mathematical Foundation of Physical Geodesy" from 1969, the unpublished "Molodenskij letters" from 1973, the final version of "Integrated Geodesy" from 1978, "Foundation of a Theory of Elasticity for Geodetic Networks" from 1974, and numerous trend setting papers on the theory of adjustment.

Awards:

The Levallois Medal, by the International Association of Geodesy (IAG), in recognition of distinguished service to the Association and the science of geodesy in general, XXII IUGG/IAG general Assembly, Birmingham, UK, July, 1999.

Reference inter alia:

<http://www.gfy.ku.dk/~iag/HB2000/part2/levallois.htm>

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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

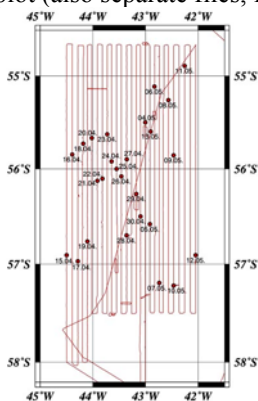
Nature and repository of other survey activities (dredge samples, cores, magnetics, gravity, photographs, etc.) : geophysics: magnetics (ship-born; partially plus helicopter-born magnetics), gravity; oceanography: XBT, CTD; geology: cores

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.

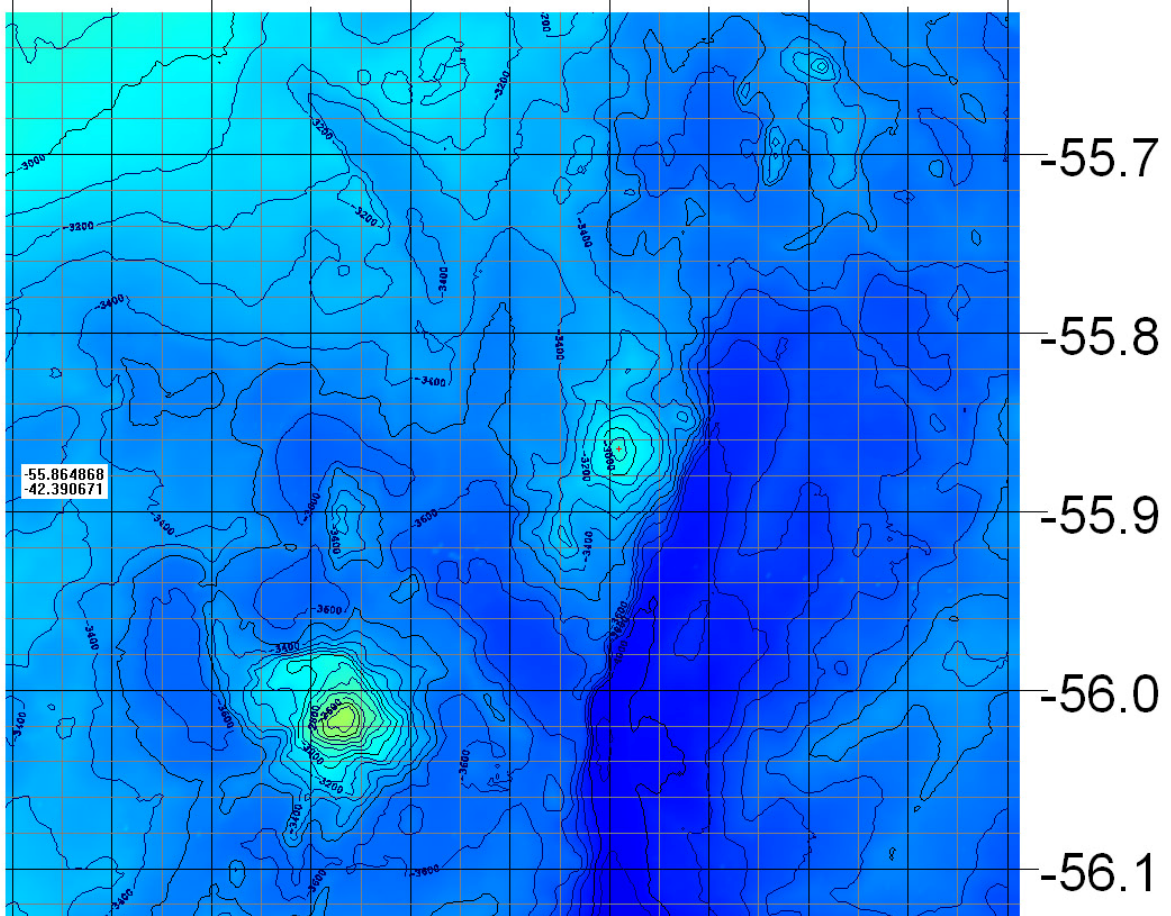
Track plot (also separate files, file names: ANTXXII-4-Kursplot.jpg, ANTXXII-4-Profile.jpg):



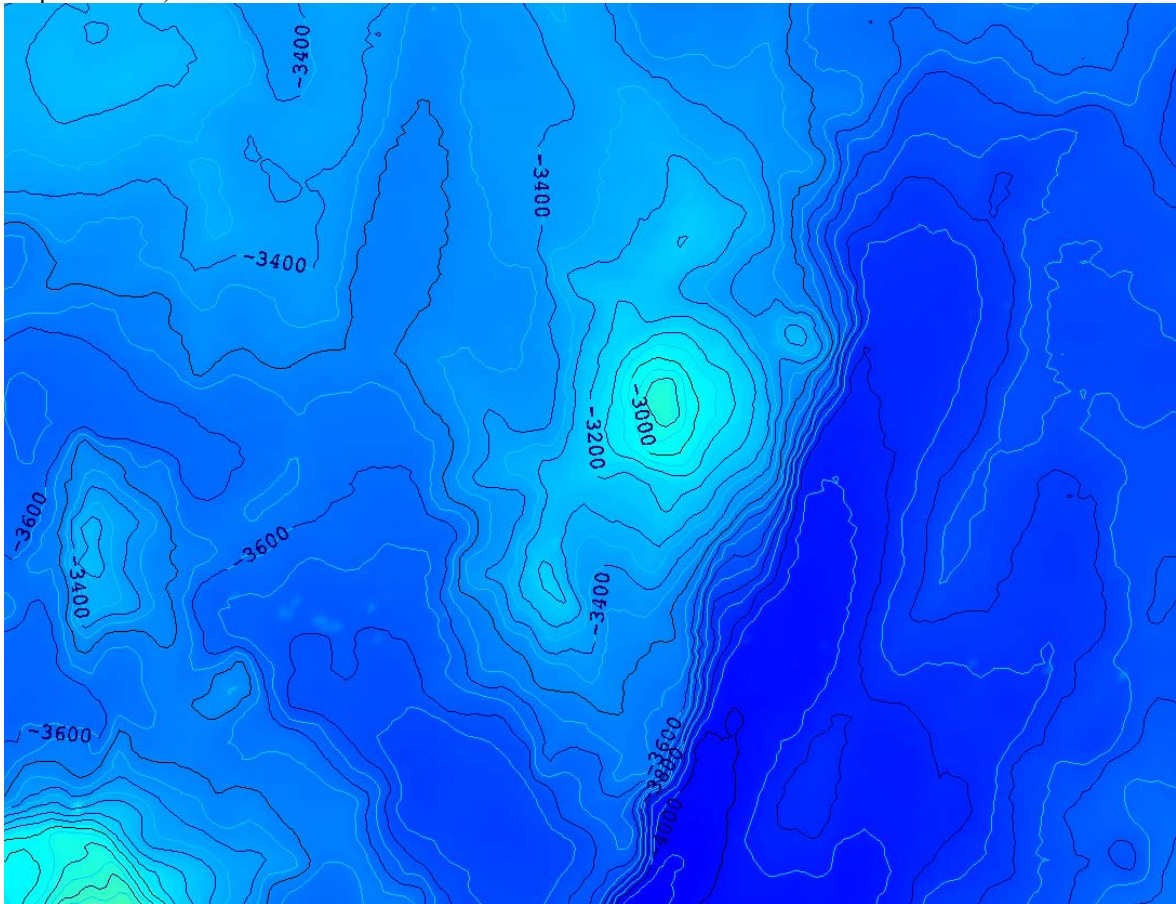
Maps etc. are produced from a DTM of about 300 m grid distance by Surfer and/or Fledermaus software (Golden Software; IVS)); higher resolutions and interpolation (e.g. Delaunay triangulation of swath data) will be processed by AWI soon.

Map of feature; 100 m contour interval, red + marker shows location of feature:

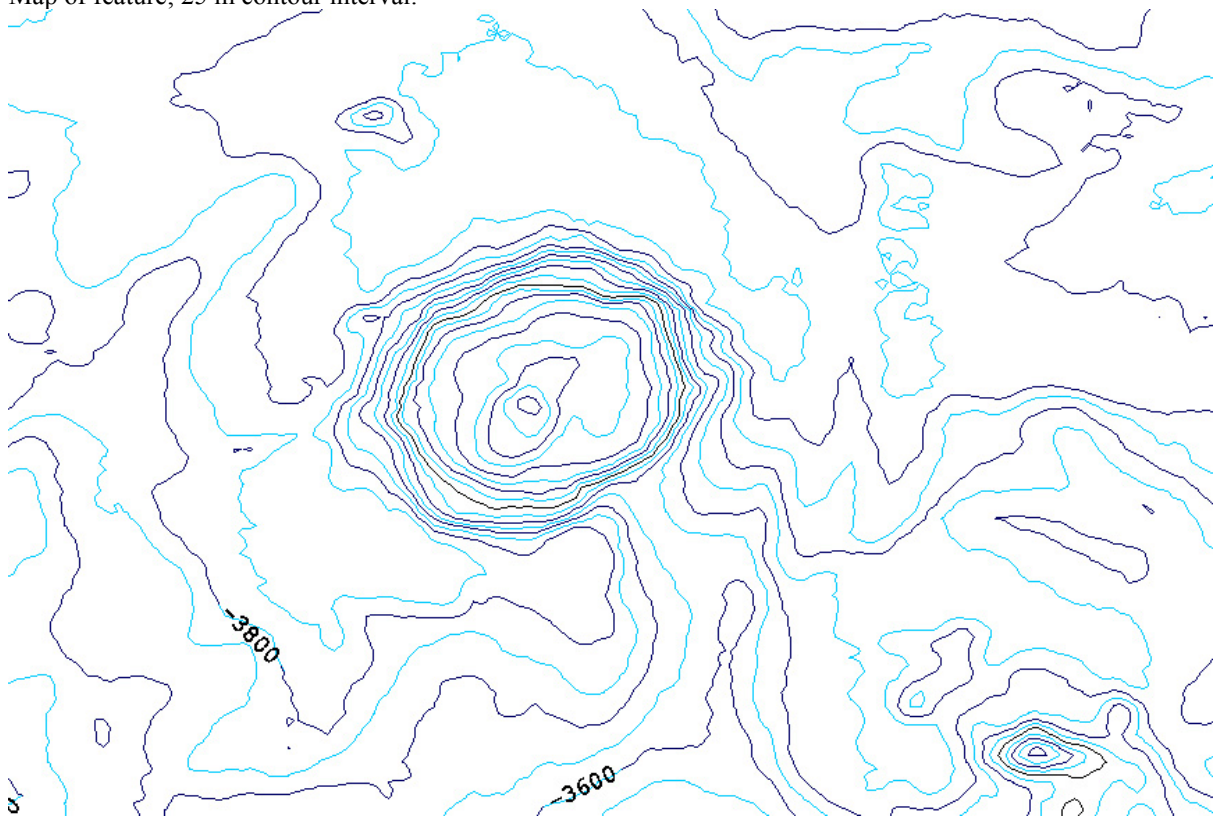
-43.0 -42.8 -42.6 -42.4 -42.2 -42.0



Map of feature; 50 m contour interval:

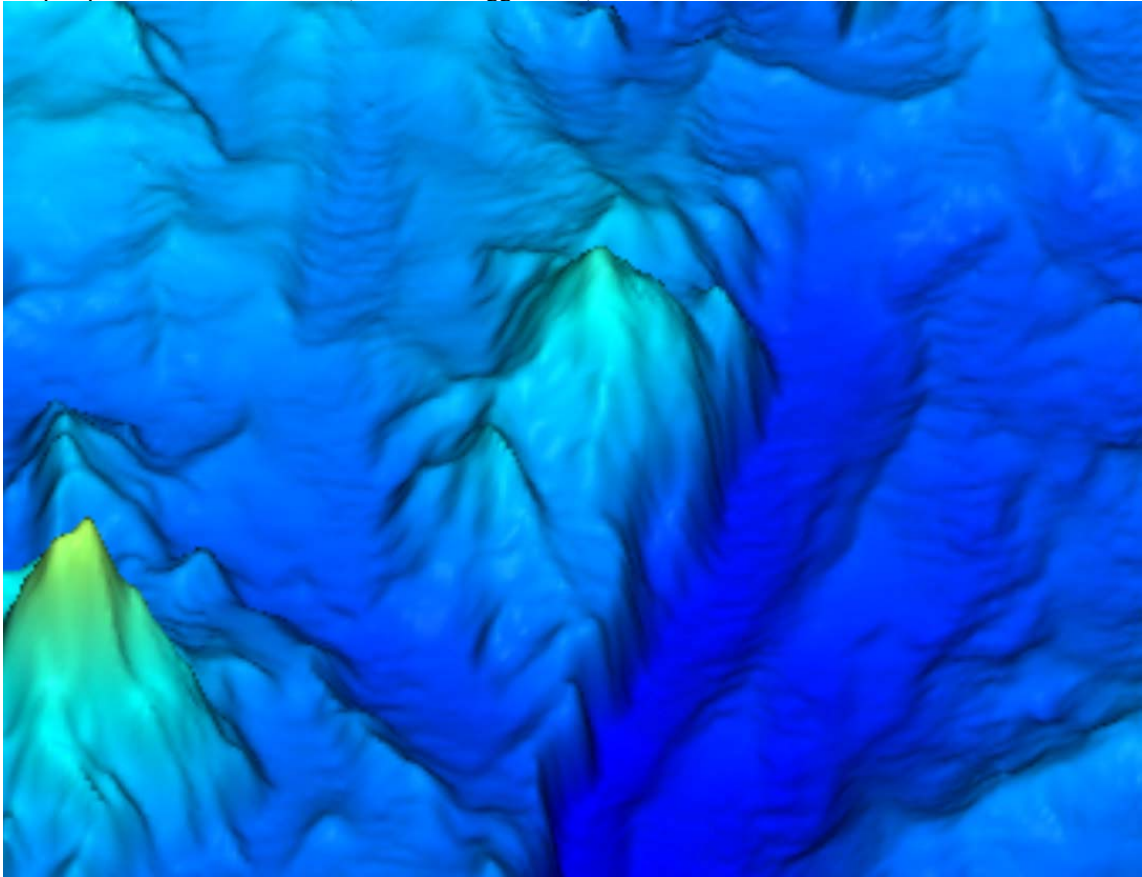


Map of feature; 25 m contour interval:

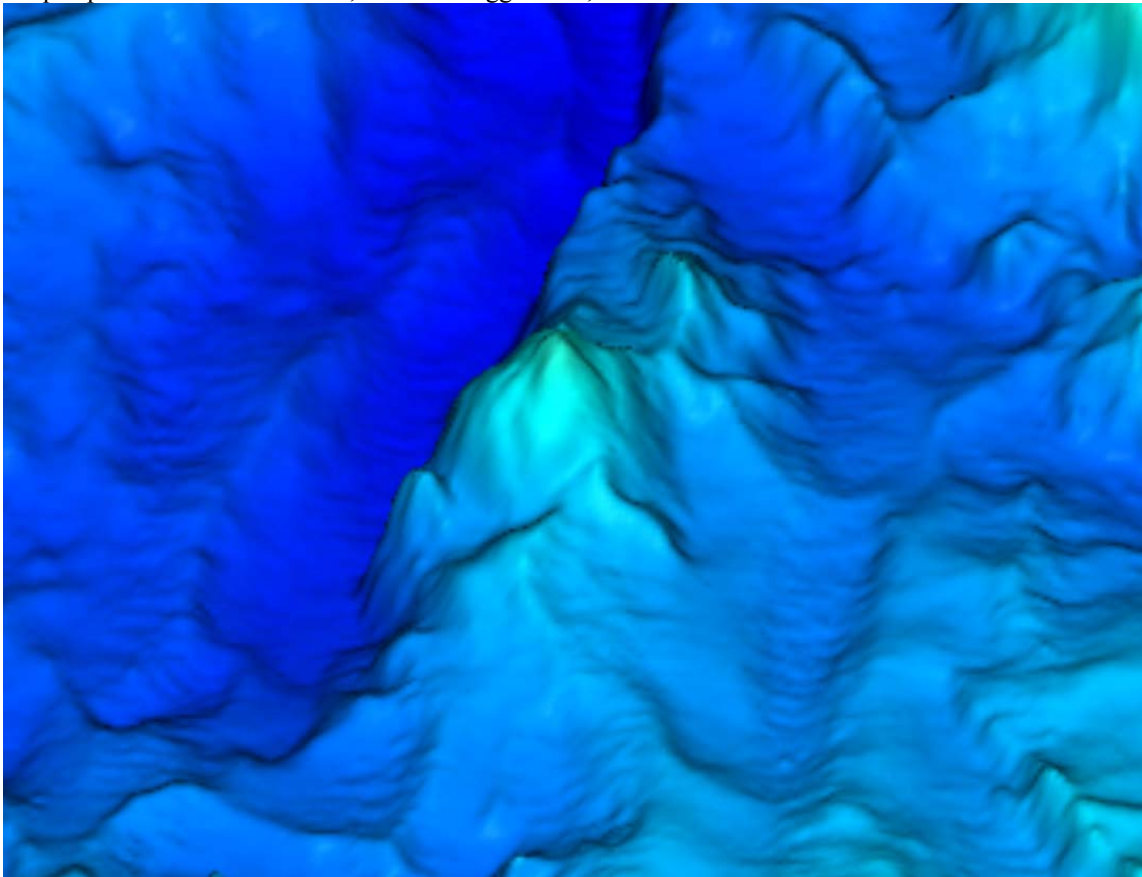




3D perspective view from South, vertical exaggeration, illumination from S:



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



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 1<sup>er</sup>  
B.P. 445  
MC 98011 MONACO CEDEX  
Principality of MONACO  
Fax: +377 93 10 81 40  
E-mail: [info@ihb.mc](mailto: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](mailto:info@unesco.org)

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