

Fig. 1. The Arctic Ocean and peripheral seas. The Arctic Ocean is divided along the crest of the Lomonosov Ridge into two major Basins: the Amerasia Basin and the Eurasia Basin. (Boundaries are approximate.)

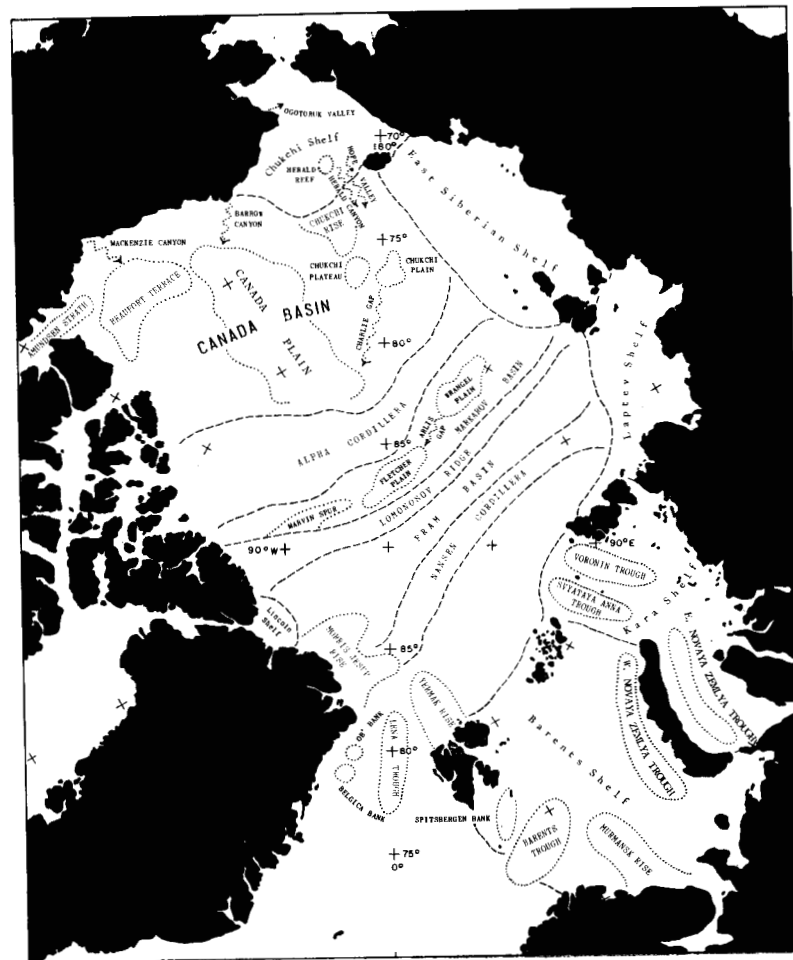


Fig. 2. Major features of the floor of the Arctic Ocean and peripheral seas. (Boundaries are approximate.)

## Commentary

# THE FLOOR OF THE ARCTIC OCEAN: GEOGRAPHIC NAMES

M. A. Beal<sup>1</sup>, F. Edvalson<sup>2</sup>, K. Hunkins<sup>3</sup>, A. Molloy<sup>1</sup>, and N. Ostenso<sup>4</sup>

**T**HE NAMING OF OCEAN FLOOR features in the Arctic seems to have been done without thought to standardization in geographic nomenclature. W. K. Lyon, Director of the Arctic Sciences and Technology Division of the U.S. Navy Electronics Laboratory, called a meeting of the authors of the present paper to arbitrate the naming of these features in the hope that it would help to stem the proliferation of new names and to standardize the names of the major features. The decisions of the meeting which was held in San Diego on 10 and 11 January 1966 were based on the following criteria:

1. Consistency with the *Undersea terms and definitions* proposed by the Advisory Committee on Undersea Features to the U.S. Board on Geographic Names (Washington, D.C.: 1964) and *Limits of Oceans and Seas*, International Hydrographic Bureau Special Publication No. 23 (Monte Carlo: 1953)
2. Common usage
3. Priority of discovery or naming
4. Association with established geographic features
5. Minimizing ambiguity

Fifty-four major features were discussed. Table 1 lists the names considered, the final suggested name, the approximate location, and the status of the name with the U.S. Board on Geographic Names and the International Hydrographic Bureau. The final suggested names represent the majority decision of the authors but it should be noted that in certain cases there was not complete unanimity. For the most part, however, it is felt that the accepted names should raise little controversy. The authors will endeavour to use the final suggested names in future publications, and it is hoped that other investigators will find them suitable for their use.

Two recommendations for changes are being made to the International Hydrographic Bureau. The I.H.B. publication, *Limits of Oceans and Seas*, shows the southern boundary of the Chukchi Sea to be along the Arctic Circle. A more logical southern boundary for this sea would be a straight line across the narrowest constriction of the Bering Strait, i.e. a line connecting Cape Prince of Wales and East Cape (Mys Dezhneva). The second recommendation is the elimination

<sup>1</sup>U.S. Navy Electronics Laboratory, San Diego, California.

<sup>2</sup>U.S. Naval Oceanographic Office, Washington, D.C.

<sup>3</sup>Lamont Geological Observatory, Palisades, New York.

<sup>4</sup>Geophysical and Polar Research Center, Madison, Wisconsin.

of the term *Beaufort Sea*, as recent studies have shown that there are no hydrographic or physiographic reasons for a unique designation of this region of the Arctic Ocean.

The location and approximate boundaries of the suggested names (Table 1) are shown in Figs. 1 and 2. Recent investigations from drifting ice stations, aeromagnetic flights, nuclear submarine voyages, and icebreaker expeditions have shown that the limits and sizes of many ocean floor features will require modification in the future. The authors also wish to emphasize that the proposed names are not the only features to be found in the Arctic Ocean and environs. They do, however, represent the major features that are now defined with sufficient certainty and clarity to warrant proper and consistent names; others will undoubtedly be added in the future as a result of further investigations.

The opinions and assertions contained herein are those of the writers personally and are not to be construed as official, or as reflecting the views of the Navy Department, the naval service at large, or of the Arctic Institute of North America.

Table 1

PREVIOUS NAME(S) (upper and lower case used for descriptive terms, Fig. 2)	ACCEPTED NAME	DESCRIPTION AND/OR LOCATION
<sup>1</sup> ARCTIC OCEAN NORTH POLAR SEA	<sup>1</sup> ARCTIC OCEAN	} <sup>1-8</sup> As shown by the International Hydrographic Bureau Special Publication No. 23.
<sup>2</sup> CHUKCHI SEA CHUKCHEE SEA	<sup>2</sup> CHUKCHI SEA (Boundary change requested of IHB)	
<sup>3</sup> EAST SIBERIAN SEA	<sup>3</sup> EAST SIBERIAN SEA	
<sup>4</sup> LAPTEV SEA	<sup>4</sup> LAPTEV SEA	
<sup>5</sup> KARA SEA	<sup>5</sup> KARA SEA	
<sup>6</sup> BARENTS SEA	<sup>6</sup> BARENTS SEA	
<sup>7</sup> LINCOLN SEA	<sup>7</sup> LINCOLN SEA	
<sup>8</sup> BEAUFORT SEA	<sup>8</sup> Deletion requested of IHB	
<sup>9</sup> ARCTIC OCEAN BASIN NORTH POLAR BASIN	<sup>9</sup> Arctic Ocean Basin	<sup>9</sup> The basin of the Arctic Ocean seaward of the edge of the Continental Shelves.
<sup>10</sup> CANADA BASIN LAURENTIAN BASIN HYPERBOREAN BASIN	<sup>10</sup> AMERASIA BASIN*	<sup>10</sup> The portion of the Arctic Ocean Basin that is bounded in part by the Chukchi and East Siberian Shelves and the crest of the Lomonosov Ridge.
<sup>11</sup> EURASIA BASIN EURASIAN BASIN ANGARA BASIN	<sup>11</sup> EURASIA BASIN*	<sup>11</sup> The portion of the Arctic Ocean Basin that is bounded in part by the Lincoln, Barents, Kara, Laptev Shelves and the crest of the Lomonosov Ridge.
<sup>12</sup> LOMONOSOV RIDGE HARRIS RIDGE	<sup>12</sup> LOMONOSOV RIDGE*	<sup>12</sup> A long, narrow ridge bisecting the Arctic Ocean Basin.
<sup>13</sup> NORTH CANADIAN BASIN CANADA BASIN CANADA DEEP	<sup>13</sup> CANADA BASIN*	<sup>13</sup> Amerasia Basin
<sup>14</sup> ALPHA RIDGE ALPHA RISE FLETCHERS RIDGE FLETCHERS RISE MENDELEEV RIDGE	<sup>14</sup> ALPHA CORDILLERA*	<sup>14</sup> Amerasia Basin
<sup>15</sup> MID-ARCTIC RIDGE MID-ATLANTIC RIDGE Extension into the Arctic Ocean	<sup>15</sup> NANSEN CORDILLERA*	<sup>15</sup> Eurasia Basin

Table 1 (Cont'd.)

PREVIOUS NAME(S) (upper and lower case used for descriptive terms, Fig. 2)	ACCEPTED NAME	DESCRIPTION AND/OR LOCATION
<sup>16</sup> MARKAROV BASIN CENTRAL ARCTIC BASIN SIBERIA BASIN	<sup>16</sup> MARKAROV BASIN*	<sup>16</sup> Basin bounded by the Alpha Cordillera and the Lomonosov Ridge.
<sup>17</sup> FRAM DEEP NANSEN BASIN EUROPEAN BASIN	<sup>17</sup> FRAM BASIN*	<sup>17</sup> Basin bounded by the Lomonosov Ridge and the Nansen Cordillera.
<sup>18</sup> CHUKCHI SHELF	<sup>18</sup> Chukchi Shelf	<sup>18</sup> The Shelf beneath the Chukchi Sea.
<sup>19</sup> OGOTORUK SEA VALLEY	<sup>19</sup> OGOTORUK VALLEY*	<sup>19</sup> Chukchi Shelf.
<sup>20</sup> HERALD SHOAL	<sup>20</sup> HERALD REEF*	<sup>20</sup> Chukchi Shelf.
<sup>21</sup> HERALD CANYON	<sup>21</sup> HERALD CANYON*	<sup>21</sup> Chukchi Shelf.
<sup>22</sup> CHUKCHI CANYON	<sup>22</sup> HOPE VALLEY*	<sup>22</sup> Chukchi Shelf.
<sup>23</sup> CHUKCHI RISE	<sup>23</sup> CHUKCHI RISE*	<sup>23</sup> Rise abutting the Chukchi Shelf, including the Chukchi Plateau.
<sup>24</sup> CHUKCHI CAP	<sup>24</sup> CHUKCHI PLATEAU*	<sup>24</sup> Canada Basin.
<sup>25</sup> CHUKCHI ABYSSAL PLAIN	<sup>25</sup> CHUKCHI PLAIN*	<sup>25</sup> Canada Basin.
<sup>26</sup> CANADA ABYSSAL PLAIN	<sup>26</sup> CANADA PLAIN*	<sup>26</sup> Canada Basin.
<sup>27</sup> CHARLIE GAP	<sup>27</sup> CHARLIE GAP*	<sup>27</sup> The Gap connecting the Chukchi Plain and the Canada Plain.
<sup>28</sup> EAST SIBERIAN SHELF	<sup>28</sup> East Siberian Shelf	<sup>28</sup> Shelf beneath the East Siberian Sea.
<sup>29</sup> WRANGEL ABYSSAL PLAIN	<sup>29</sup> WRANGEL PLAIN*	<sup>29</sup> Markarov Basin.
<sup>30</sup> SIBERIA ABYSSAL PLAIN	<sup>30</sup> FLETCHER PLAIN*	<sup>30</sup> Markarov Basin.
<sup>31</sup> ARLIS GAP	<sup>31</sup> ARLIS GAP*	<sup>31</sup> The Gap connecting the Wrangel Plain and the Fletcher Plain.
<sup>32</sup> LAPTEV SHELF	<sup>32</sup> Laptev Shelf	<sup>32</sup> Shelf beneath the Laptev Sea.
<sup>33</sup> KARA SHELF	<sup>33</sup> Kara Shelf	<sup>33</sup> Shelf beneath the Kara Sea.
<sup>34</sup> VORONIN TROUGH SEVERNAYA STRATH	<sup>34</sup> VORONIN TROUGH*	<sup>34</sup> Kara Shelf.
<sup>35</sup> USHAKOVA TROUGH ST. ANNA TROUGH SVYATAYA ANNA TROUGH	<sup>35</sup> SVYATAYA ANNA TROUGH*	<sup>35</sup> Kara Shelf.

Table 1 (Cont'd.)

PREVIOUS NAME(S) (upper and lower case used for descriptive terms, Fig. 2)	ACCEPTED NAME	DESCRIPTION AND/OR LOCATION
36EAST NOVAYA ZEMLYA TROUGH	36EAST NOVAYA ZEMLYA TROUGH*	36Kara Shelf.
37BARENTS SHELF	37Barents Shelf	37Shelf beneath the Barents Sea.
38WEST NOVAYA ZEMLYA TROUGH	38WEST NOVAYA ZEMLYA TROUGH*	38Barents Shelf.
39MURMANSK RISE	39MURMANSK RISE*	39Barents Shelf.
40BARENTS TROUGH BEAR ISLAND TROUGH	40BARENTS TROUGH*	40Barents Shelf.
41HOPEN RISE SPITSBERGEN BANK	41SPITSBERGEN BANK*	41Barents Shelf.
42LENA TROUGH	42LENA TROUGH*	42Between Greenland and Spitsbergen.
43NANSEN RISE NANSEN SWELL	43YERMAK RISE*	43Off North Coast of Spitsbergen.
44NANSEN SILL	44Delete	44Off Northeast Greenland.
45BELGICA BANK	45BELGICA BANK*	45Off Northeast Greenland.
46OB' SHOAL OB' BANK	46OB' BANK*	46Off Northeast Coast of Greenland.
47MORRIS JESUP RISE	47MORRIS JESUP RISE*	47Off Northeast Coast of Greenland.
48LINCOLN SHELF	48Lincoln Shelf	48Shelf beneath the Lincoln Sea.
49MARVIN RIDGE	49MARVIN SPUR*	49Between the Alpha Cordillera and the Lomonosov Ridge
50BEAUFORT PLATEAU	50BEAUFORT TERRACE*	50Canada Basin.
51BEAUFORT SHELF	51Delete	51Shelf beneath the Beaufort Sea.
52AMUNDSEN STRATH	57AMUNDSEN STRATH*	52Canada Basin.
53MACKENZIE SEA VALLEY MACKENZIE CANYON	58MACKENZIE CANYON*	53Canada Basin.
54BARROW CANYON BARROW SEA VALLEY	54BARROW CANYON*	54Canada Basin.

\*Name approved by the U.S. Board of Geographic Names.