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BATHYMETRIC ATLAS OF THE NORTHCENTRAL PACIFIC OCEAN, (U)
MAR 71 H W MENARD, T E CHASE

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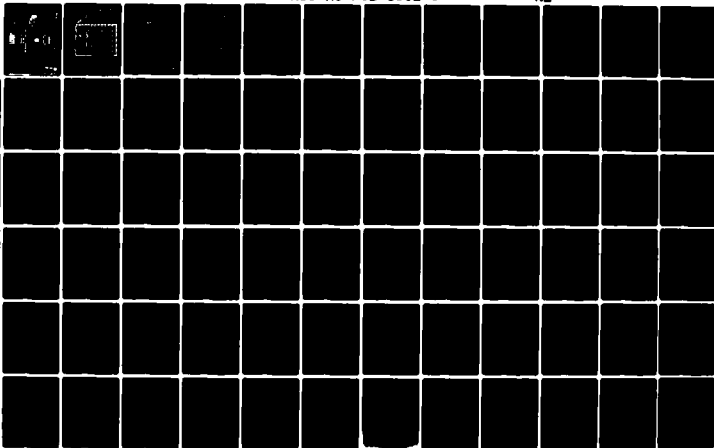
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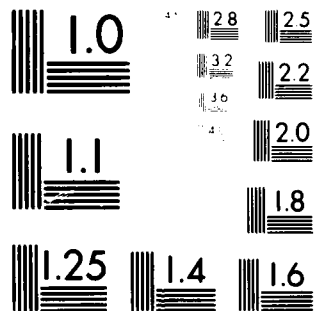
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MICROCOPY RESOLUTION TEST CHART
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BATHYMETRIC ATLAS OF THE NORTHCENTRAL PACIFIC OCEAN

COMPILED BY
SCRIPPS INSTITUTION OF OCEANOGRAPHY
UNDER CONTRACT TO THE
U.S. NAVAL OCEANOGRAPHIC OFFICE
1971

MERCATOR PROJECTION
CONTOUR INTERVAL = 200 FATHOMS; 100 FATHOM DASHED
20 FATHOM INTERVAL WHERE APPLICABLE
CONTOURS UNCORRECTED FOR SPEED OF SOUND IN SEAWATER

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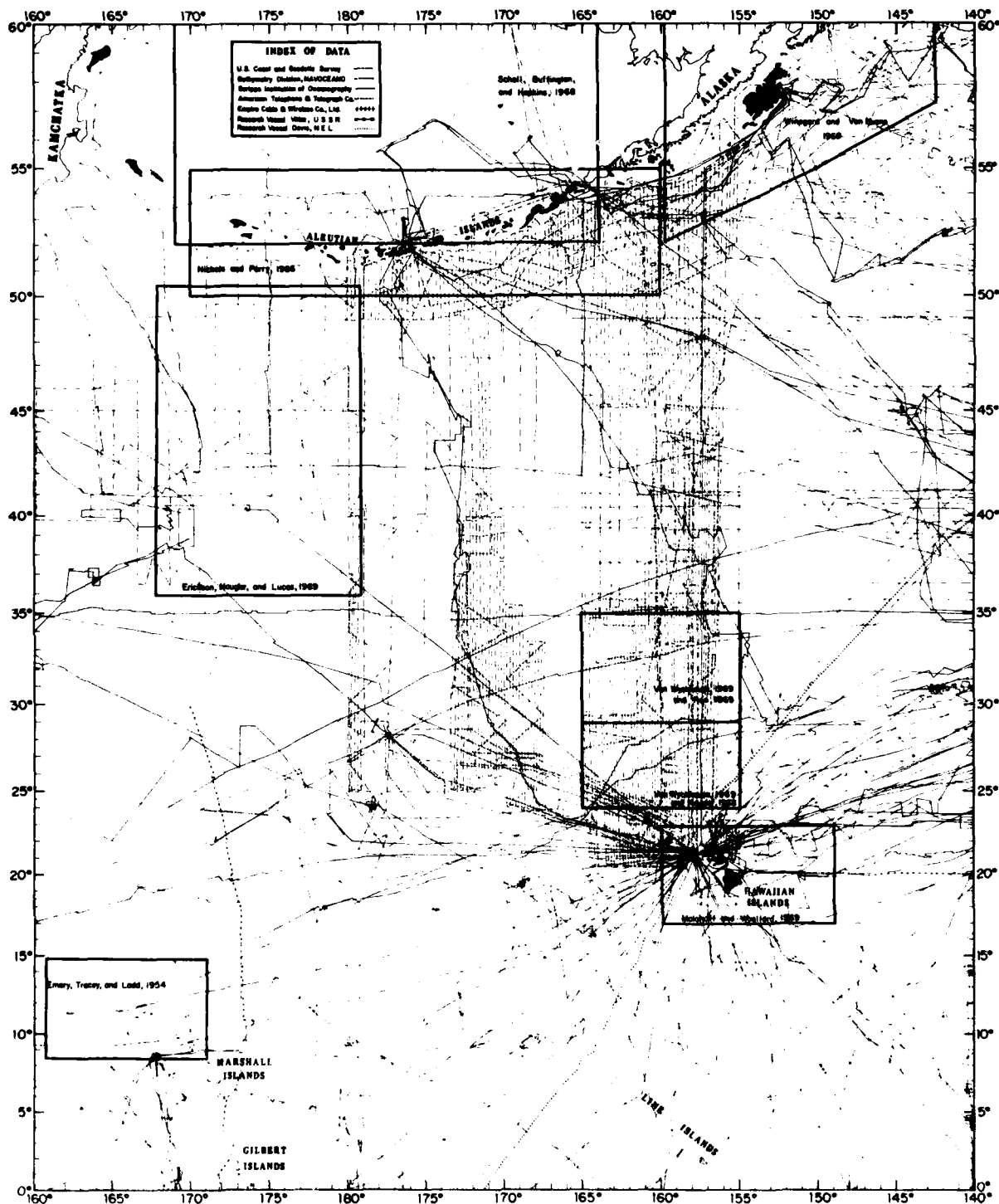
U.S. NAVAL OCEANOGRAPHIC OFFICE
PUBLISHED AT WASHINGTON, D.C.

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BATHYMETRIC ATLAS OF THE NORTHCENTRAL PACIFIC OCEAN

INTRODUCTION

The U.S. Naval Oceanographic Office is indebted to Dr. H.W. Menard and T.E. Chase for the general direction and supervision of the North Pacific bathymetric charting project.

This atlas is designed to fill the need of naval planners and of scientists working in the many fields of ocean science (geology, geophysics, biology, oceanography) for reliable bathymetric detail in a convenient size for quick reference. It is one of a series of three bathymetric atlases covering the North Pacific Ocean at a scale of approximately 1:4,000,000:

H.O. Pub. No. 1301-S—Northwestern Pacific (1970)

1302-S—Northcentral Pacific (1971)

1303-S—Northeastern Pacific (1971)*

This series is also published in a larger size at a scale of approximately 1:2,400,000 as H.O. Pubs. 1301, 1302, and 1303.

This atlas is an interpretation of the sea floor relief based upon the most accurate sounding data and contour charts available. The contour interval (200 fathoms) was selected to show the greatest detail consistent over most of the area, with the chart scale, quantity of available soundings, and the navigational precision. However these charts are not designed for and should not be used for navigation. In addition to the basic contour interval of 200 fathoms, the 100-fathom contour is shown as a dashed line, and 20-fathom contours are included in some regions having wide continental shelves and where data are sufficient to show this amount of detail. The contours represent depths uncorrected for variations in the velocity of sound in sea water from the assumed mean velocity of 4800 ft/sec (800 fm/sec).

The scale of the charts is approximately 1:4,000,000 and they are reductions of charts contoured at a scale of about 1:1,000,000. Names of undersea features on the charts conform to recommendations by the U.S. Board of Geographic Names. The outlines of islands and other land areas were taken from current Naval Oceanographic Office nautical charts of various scales.

The locations of the individual charts are shown on the index of charts using the numbering system employed by the Naval Oceanographic Office in its Bottom Contour Chart (BC) series.

The charts in this atlas were compiled by the Scripps Institution of Oceanography under contract N62306-69-A-0072-0002 with the U.S. Naval Oceanographic Office.

* Scheduled; not yet issued at the time of this printing.

SOURCES OF DATA

The index of data chart shows the most important sources of data used. The black-bordered areas indicate regions where the bottom topography has been studied in some detail by marine geologists at various oceanographic institutions and agencies. Liberal use was made of their published bathymetric data and interpretations.

The original echograms and adjusted navigational plots of numerous expeditions conducted by Scripps Institution of Oceanography were a major source of data for many of the bathymetric charts.

The U.S. Naval Oceanographic Office supplied plots of sounding lines for each chart and microfilm copies of original analog records and navigational tracks.

The Pacific Oceanographic Laboratory of the Environmental Sciences Service Administration provided U.S. Coast and Geodetic Survey data from Operation SEAMAP in addition to numerous other survey and transit tracks throughout the region.

Charts published by the Maritime Safety Agency, Japan and the State Geologic Committee, Academy of Sciences, USSR provided some detail in areas where available soundings were sparse.

Special charts prepared by the Naval Oceanographic Office for the PARKA (Pacific Acoustic Research Kaneohe-Alaska) experiments as well as bathymetric data collected during the experiment were used.

Nautical charts published by Naval Oceanographic Office, U.S. Coast and Geodetic Survey and the British Admiralty provided nearshore details around islands and reefs in the Central Pacific. Some of the principal published sources of information which were consulted are listed at the end of this introduction.

Echo sounding equipment used to gather data for the charts included the Edo Corporation Sonar Sounding Set AN/UQN-1B; Westrex Corporation Mark V, X, and XV Precision Depth Recorders (PDR); Thomas Giff Company Depth Recorder (GDR); Alden Electronic and Impulse Recording Equipment Company, Inc., Precision Graphic Recorder (PGR); Alpine Geophysical Associates, Inc., Precision Echo Sounder Recorder (PESR); and Kelvin-Hughes Echo Sounder.

EVALUATION OF DATA

All available data were evaluated for navigational precision and depth reliability. When original fathograms, or copies could be examined, record quality and sufficiency of annotation were also included in the evaluation. From this evaluation high quality tracks were selected to form the framework or control to which the track data of poorer quality and random soundings were referenced. Only when the original data were available for examination, and proved to be of the highest quality, were they digitized for the computer data bank.

Some data in contoured chart form, in the areas indicated on the index of data chart, were adapted to the scale and contour interval of the new charts. Conversions to uncorrected fathoms were made when applicable utilizing Matthews' Tables. The charts were compiled by standard cartographic techniques using the Naval Oceanographic Office H.O. 3000 series mylar plotting sheets as base charts. Stable base materials were used throughout the compilation. Coastline configurations were taken from current Naval Oceanographic Office nautical charts of various scales. All data evaluation, selection, contouring and editing was done by marine geologists. Final drafting, data preparation, and data digitizing was accomplished by geological and computer technicians.

Generally accepted structural and tectonic theories were applied in delineating bathymetric features and in extrapolating where sounding data were insufficient for detailed portrayal.

The charts are marked "do not use for navigation" because the dangers to navigation are not completely annotated.

In addition to the small scale track chart on page 1, tracks are shown as a subdued grey over print on each contour chart. The sounding lines used in contouring are classified as PRIMARY or SECONDARY data sources. The sounding lines which provided the most precisely located and accurately measured water depths are classified as PRIMARY data. SECONDARY data represent random tracks with poorer quality, less reliable records and less precise navigational positioning. Dashed sections of the tracks indicate reduced reliability in data quality. A third category of depth data was used in areas lacking adequate sounding lines. This category includes soundings from nautical charts, both domestic and foreign, and interpolation from published contour charts. Not all of the tracks are shown in some of the black-bordered regions indicated on the index of data.

A few border discrepancies between charts 2002N, 2003N and 2009N in this atlas and the adjoining charts 2102N, 2103N and 2109N in H.O. Pub. No. 1301 resulted from the use of new data in this atlas which were unavailable at the time the earlier atlas was compiled.

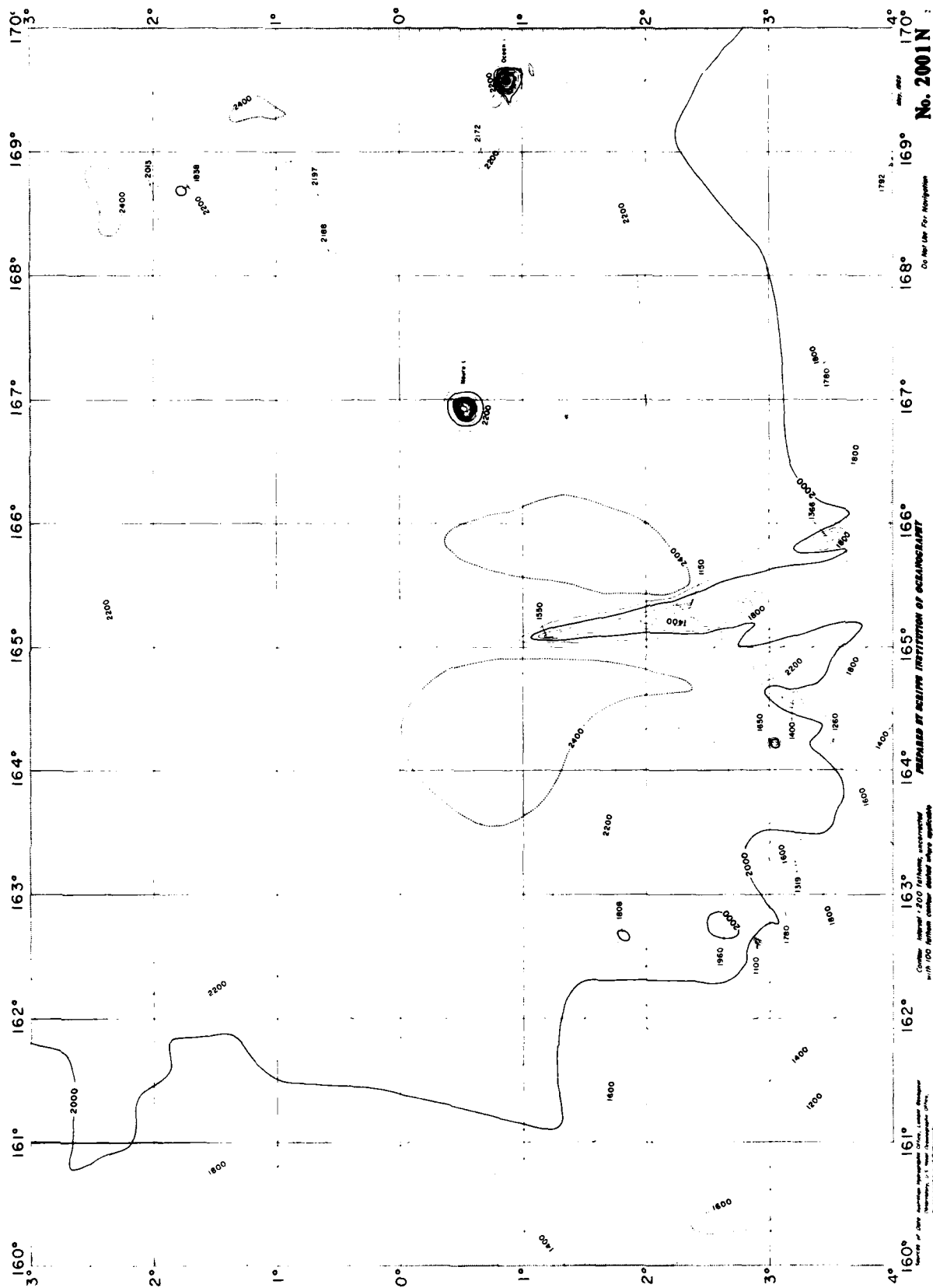
CONCLUSIONS

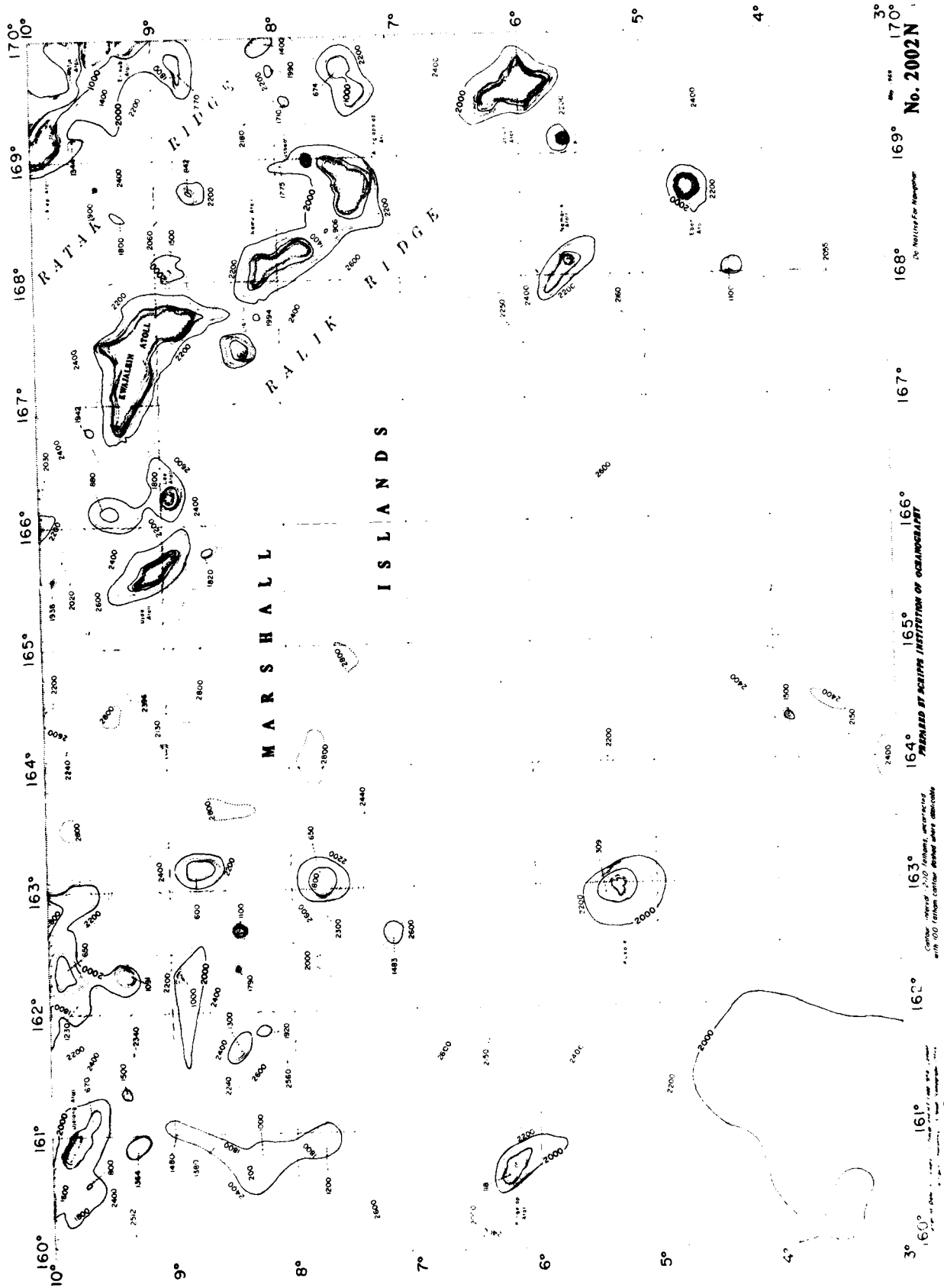
These charts show many previously uncharted seamounts and trends of other primary structural features such as trenches and ridges, and the approximate limits of some large physiographic provinces.

The charts presented here do not represent the final definitive configuration of the seafloor. Many precise and detailed surveys will be needed throughout the world's oceans to give such complete coverage. However, the scale and contour interval used is sufficient to give as complete a sea floor portrayal as is commensurate with the available data and current knowledge of submarine geologic structures and processes.

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No. 2002N

168° 169° 170°

167°

166°

165°

164°

163°

162°

161°

160°

159°

158°

157°

156°

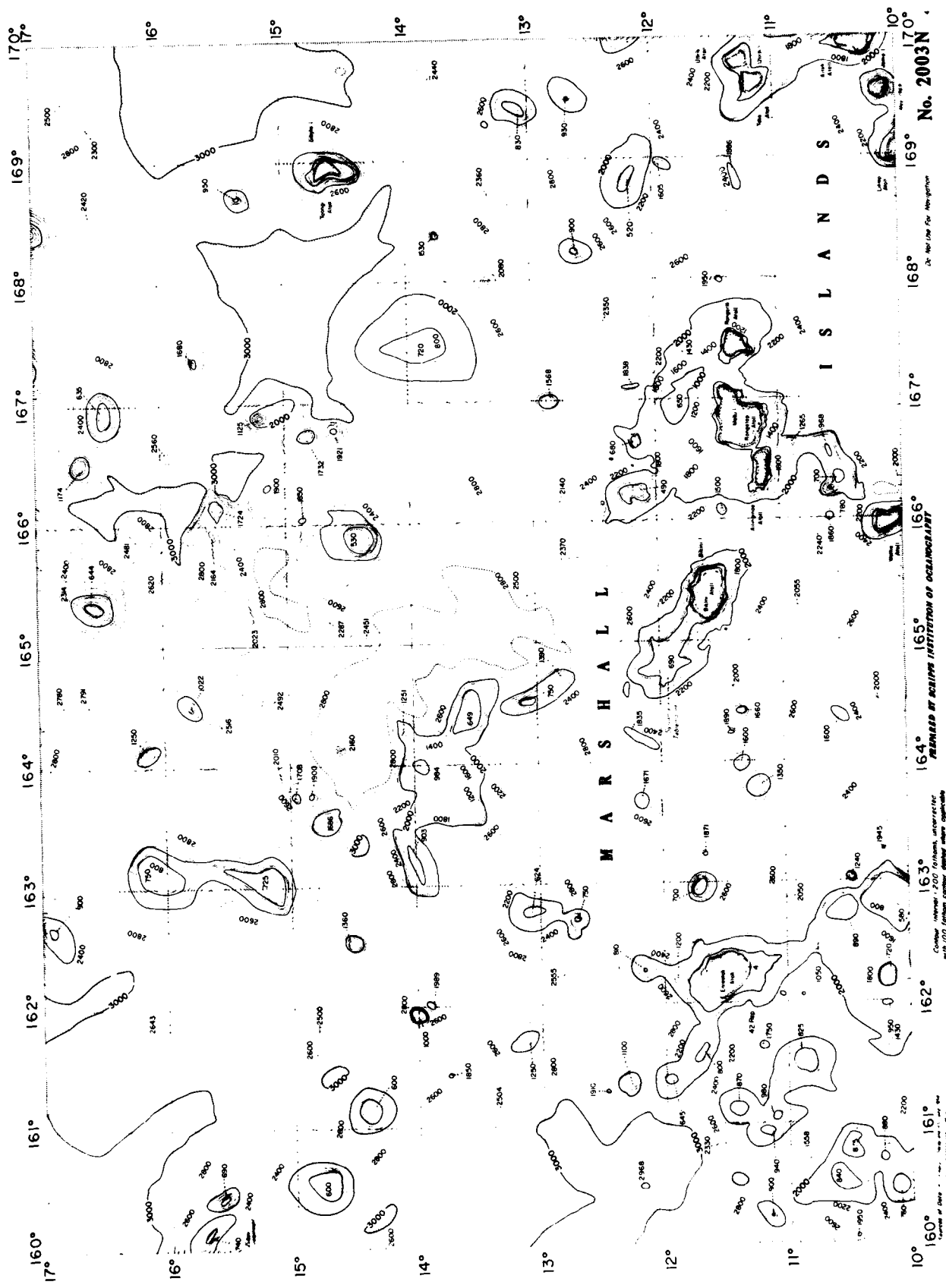
155°

154°

153°

152°

151°



170° 169° 168° 167° 166° 165° 164° 163° 162° 161° 160°

17° 16° 15° 14° 13° 12° 11° 10°

MARSHALL ISLANDS

LINE ISLANDS

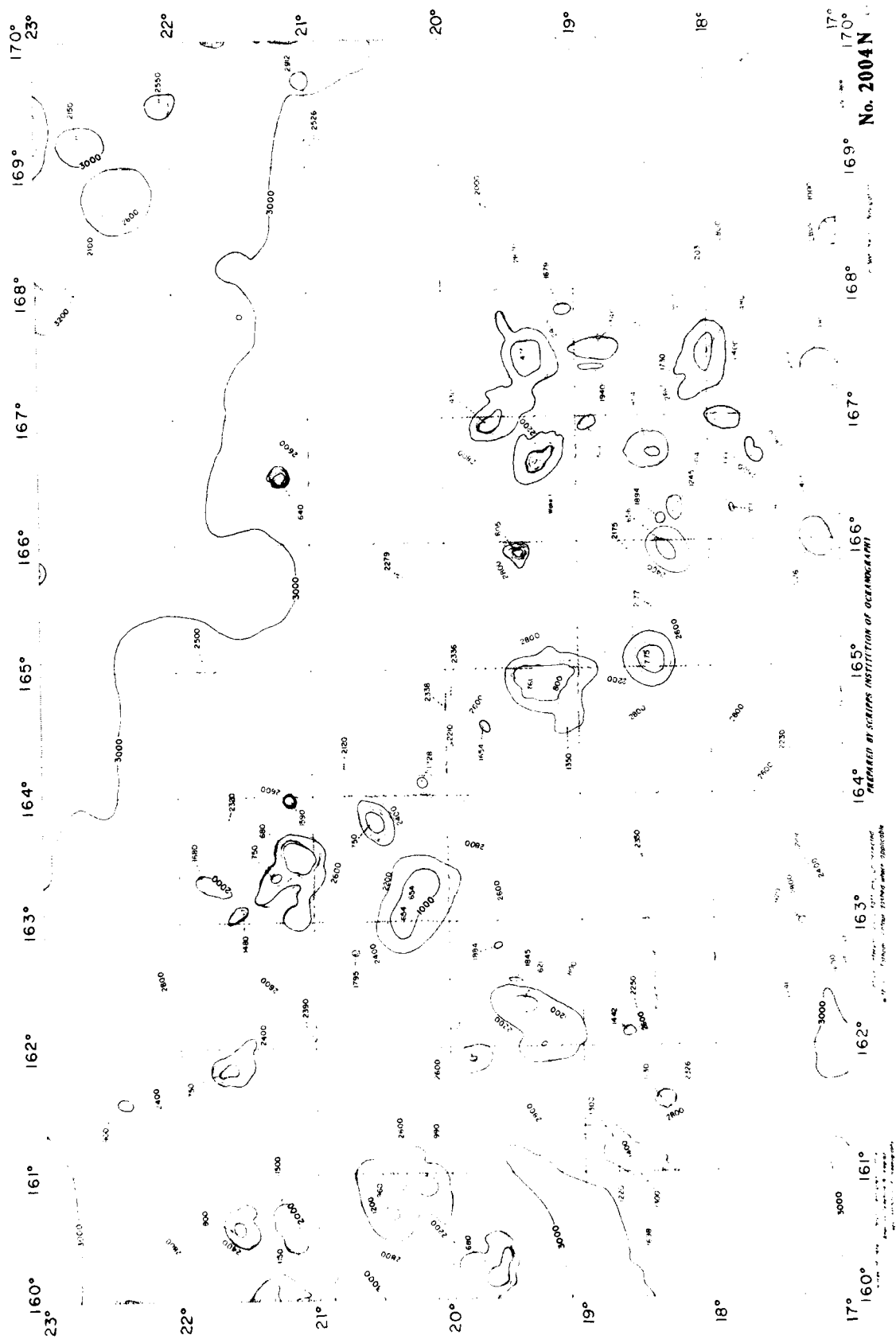
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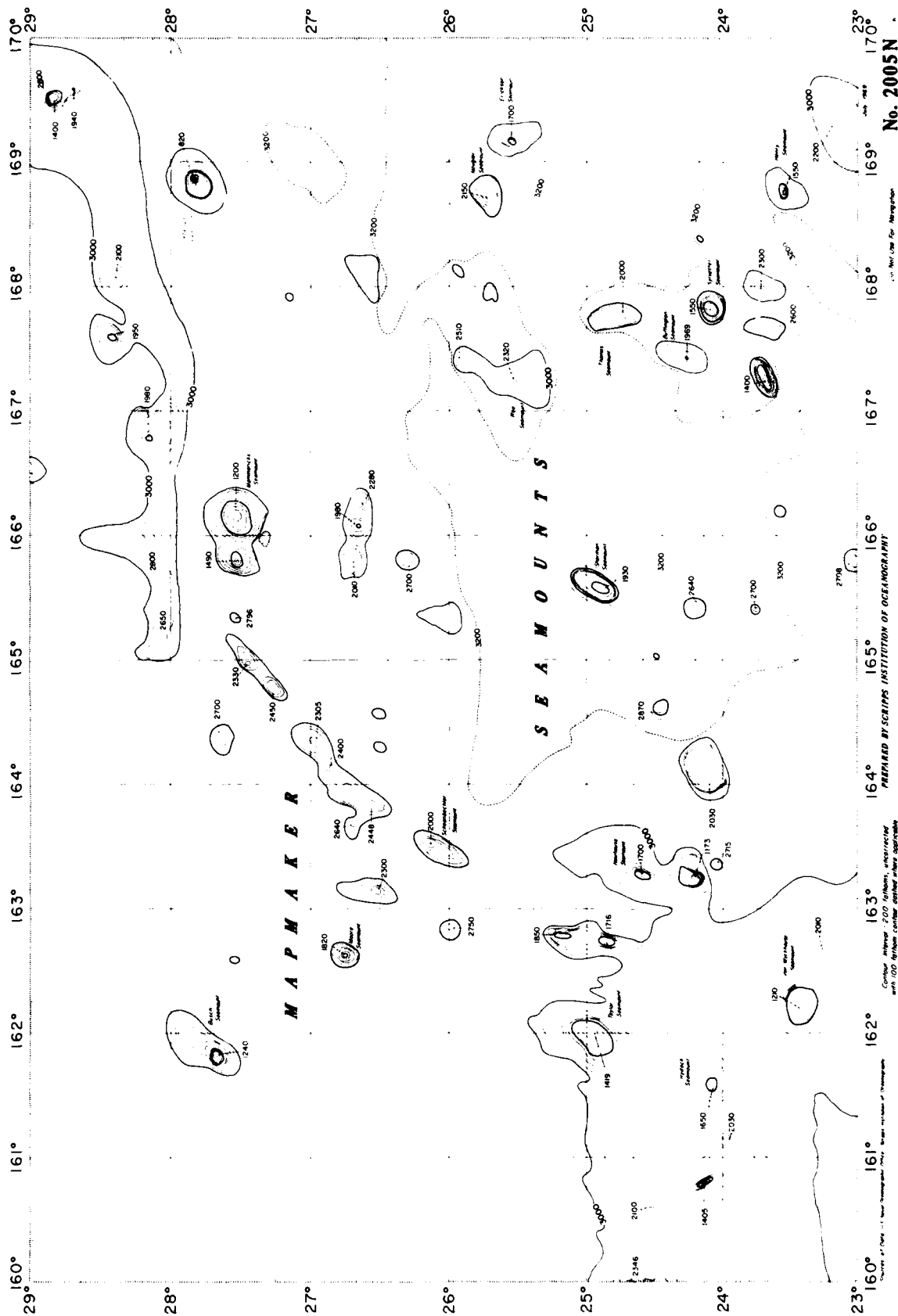
REPRODUCED BY NAVAL INSTITUTE OF OCEANOGRAPHY

Scale: 1:100,000

Contour interval: 200 fathoms, uncorrected

with 100 fathom contour depth shown



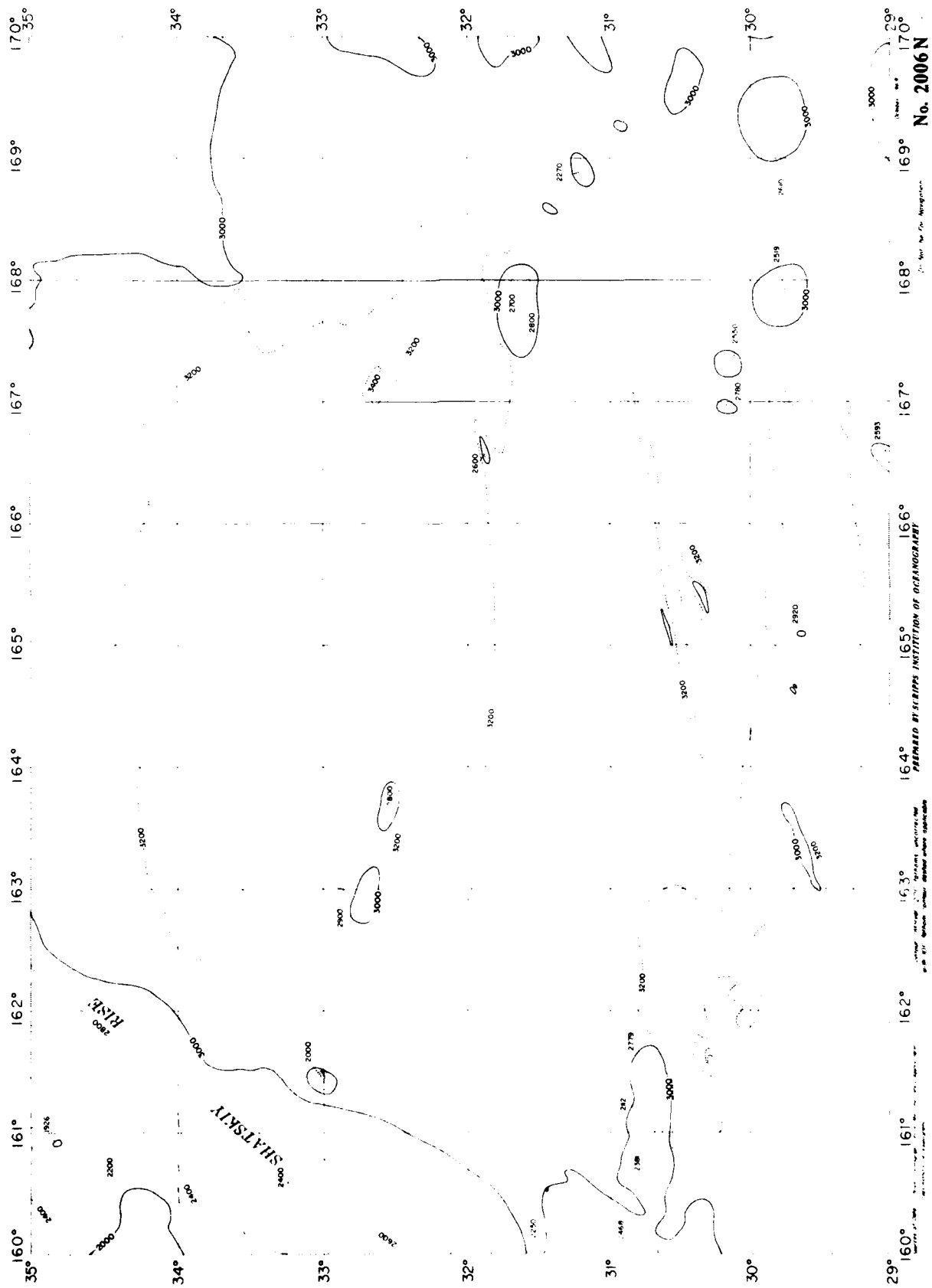


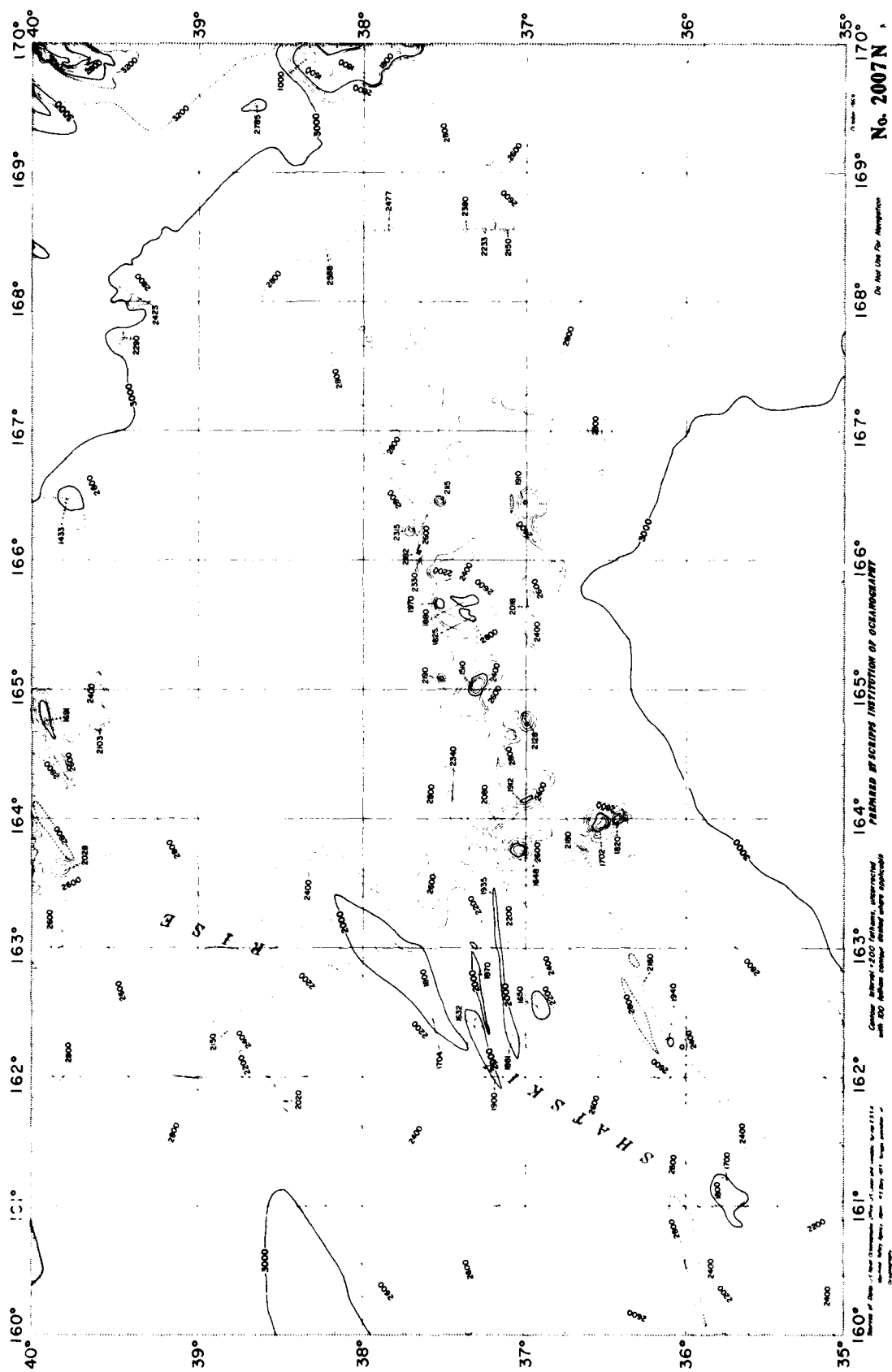
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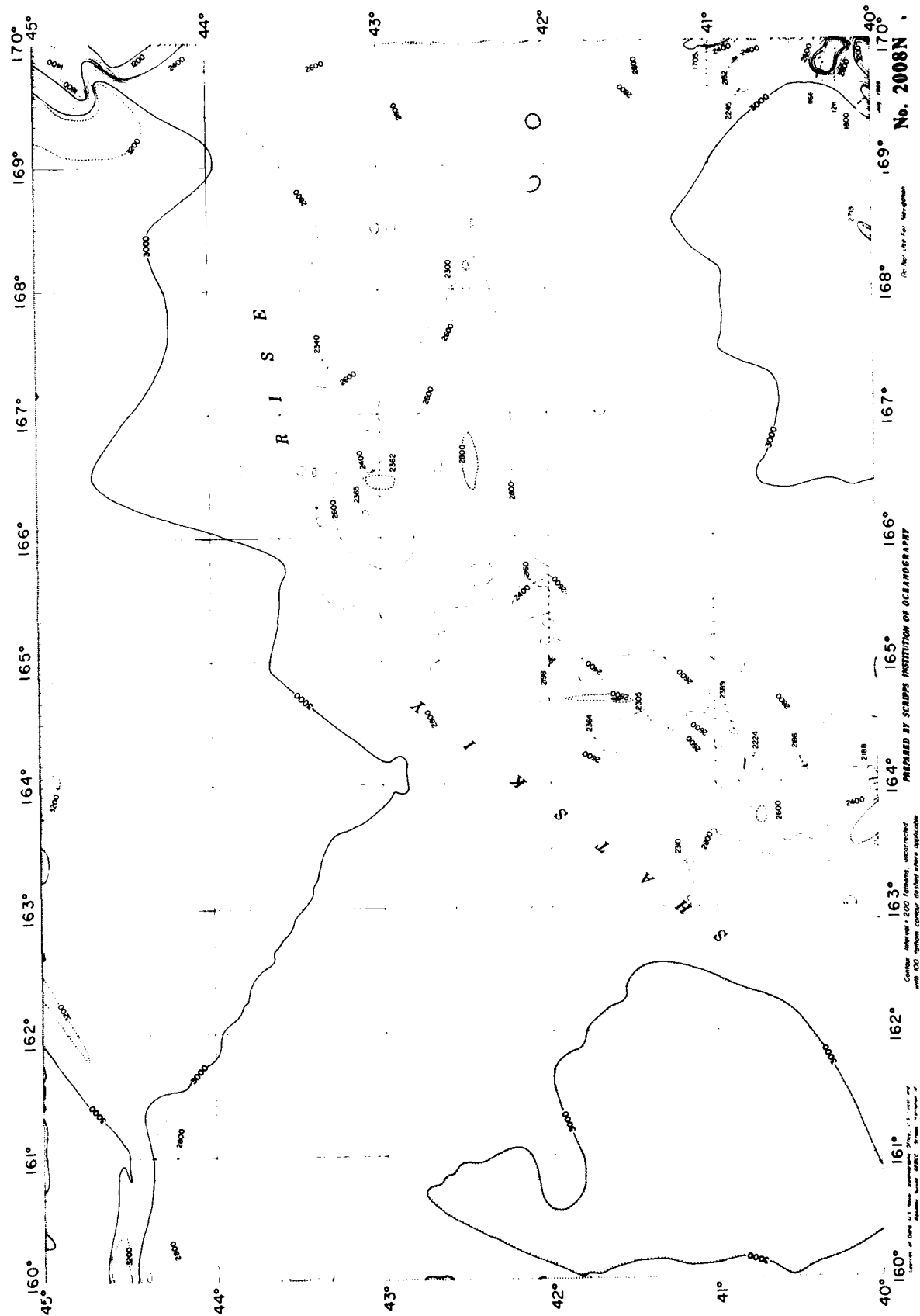
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Contours Interval 200 fathoms, uncorrected
with 100 fathom contour shaded where appropriate

Source of Data: U.S. Navy Hydrographic Survey, 1950-1955



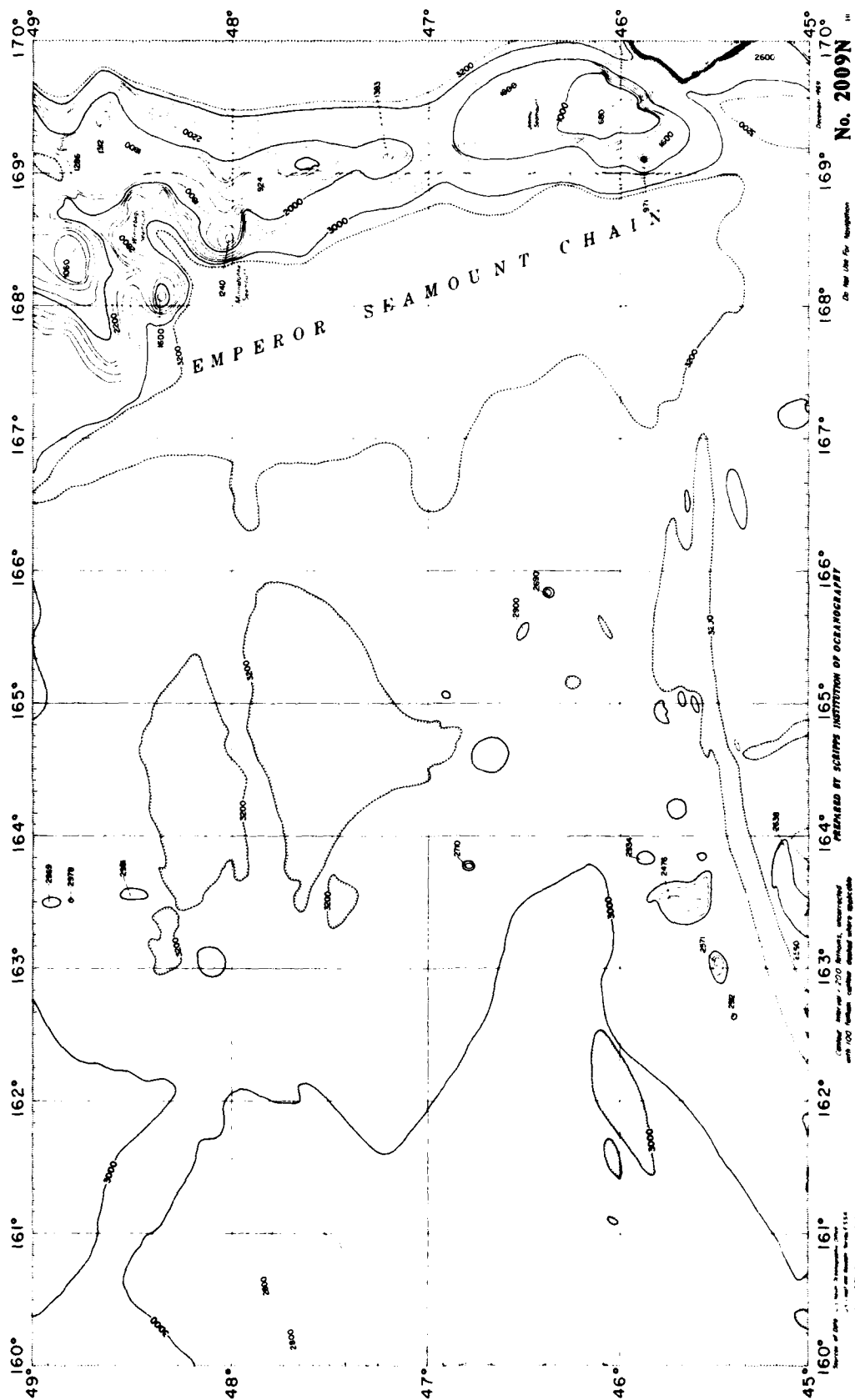


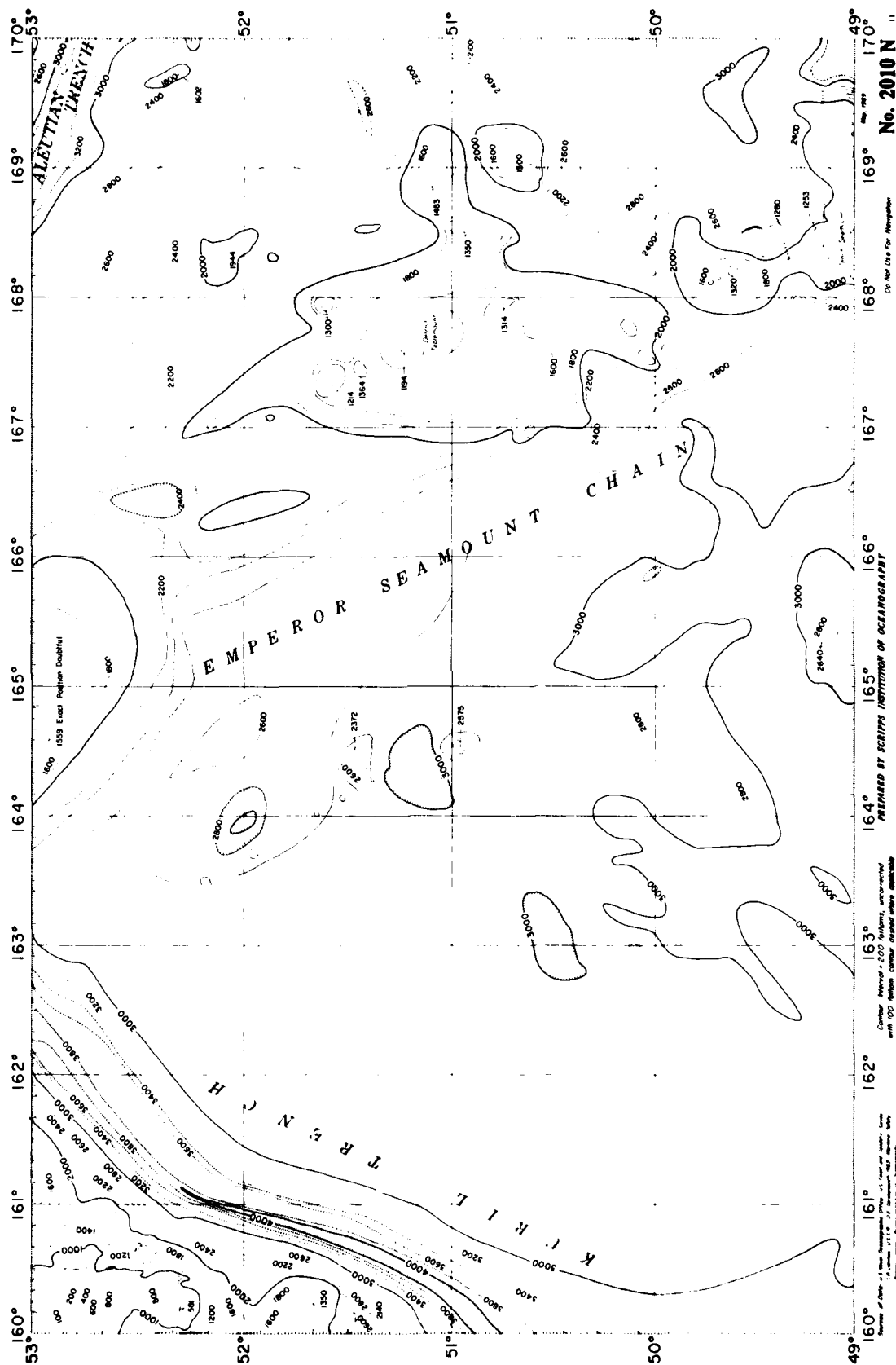


PREPARED BY SCRIPPS INSTITUTION OF OCEANOGRAPHY

Contour interval: 200 fathoms, uncorrected
with 100 fathom contour dashed where applicable

Source of data: U.S. Navy Hydrographic Survey, 1951-52
Hydrographic Survey, 1951-52
Hydrographic Survey, 1951-52





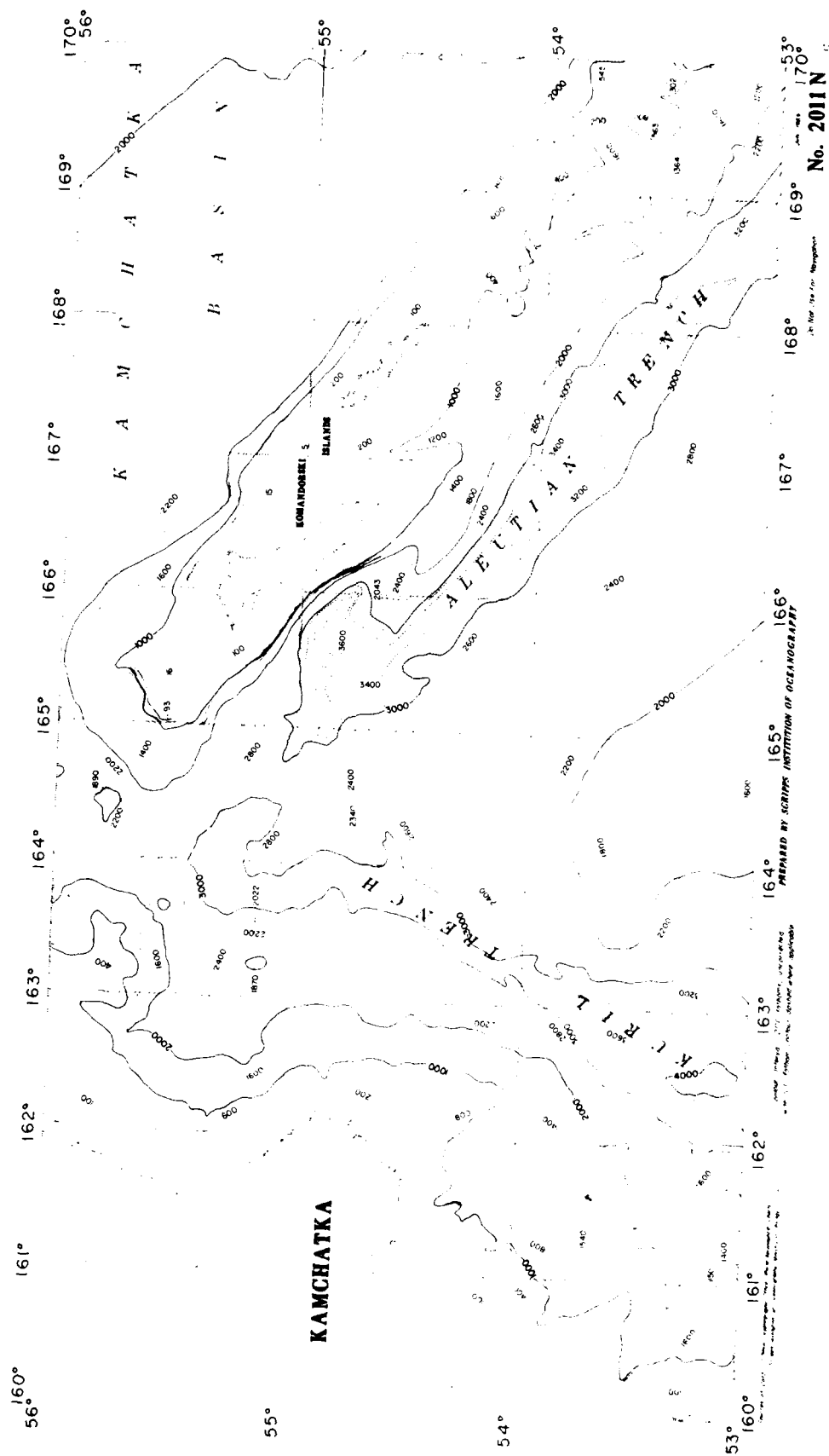
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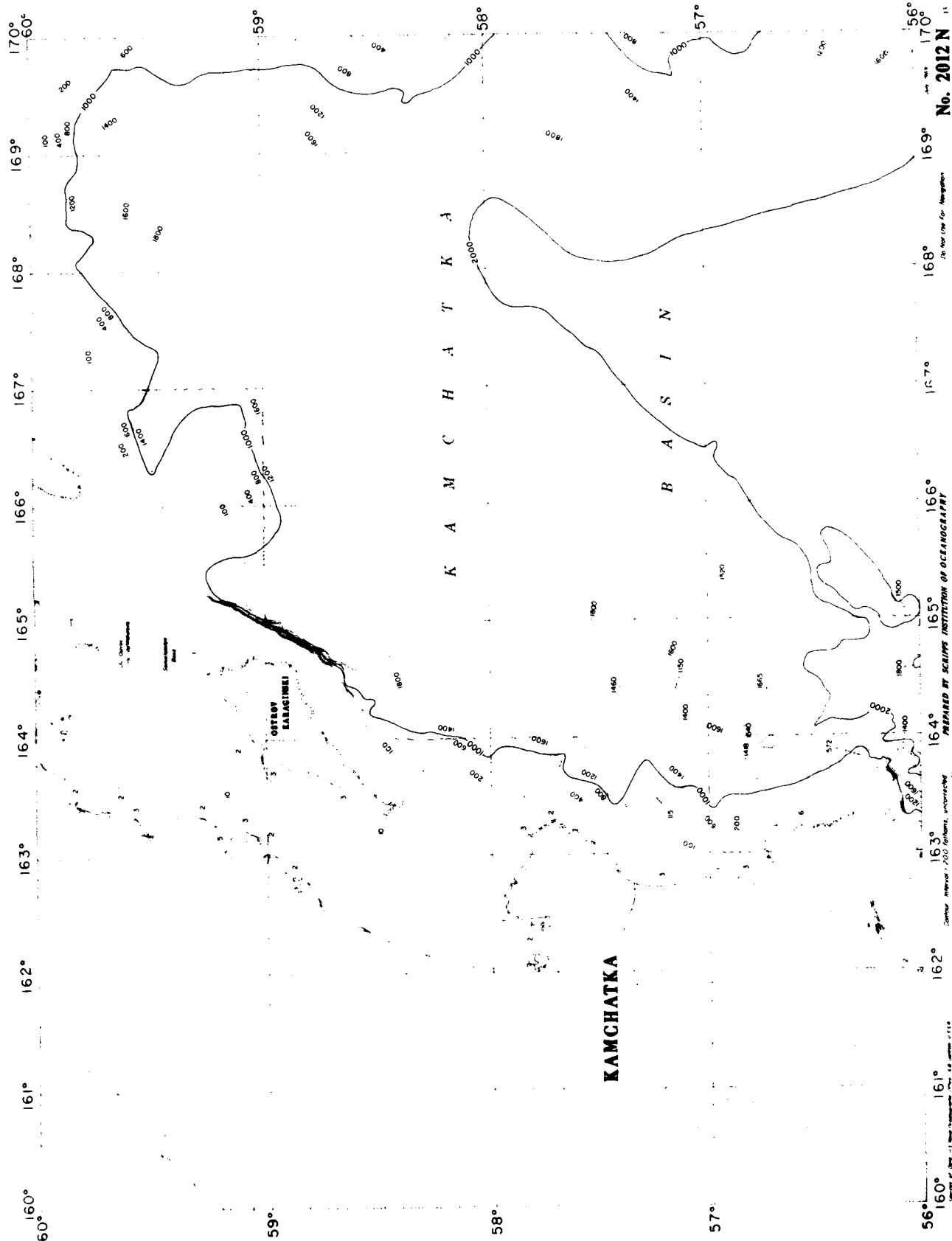
U.S. Navy Hydrographic

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Chart Number 2010 N, uncorrected
and 100 fathoms contour depth values corrected

Number of sheets 12, of which 11 are in this volume
Scale 1:100,000 (1 inch = 1.6 miles)
Date of issue 1953





No. 2012 N

For Use Only For Navigation

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Chart Interval: 200 Fathoms, uncorrected
with 500 Fathoms contour shaded where available

Chart of the Pacific Ocean, 1:50,000 scale, 1914

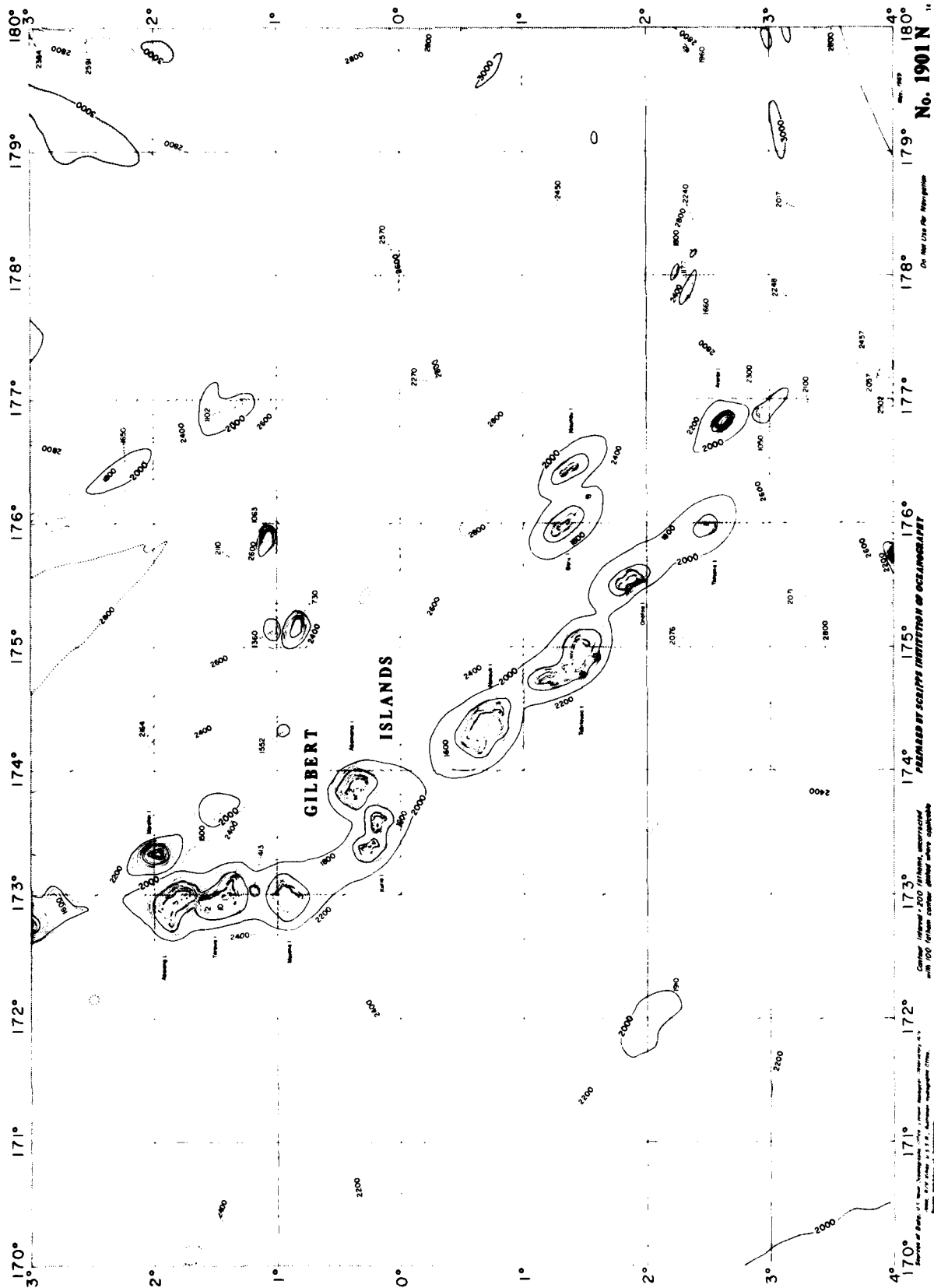
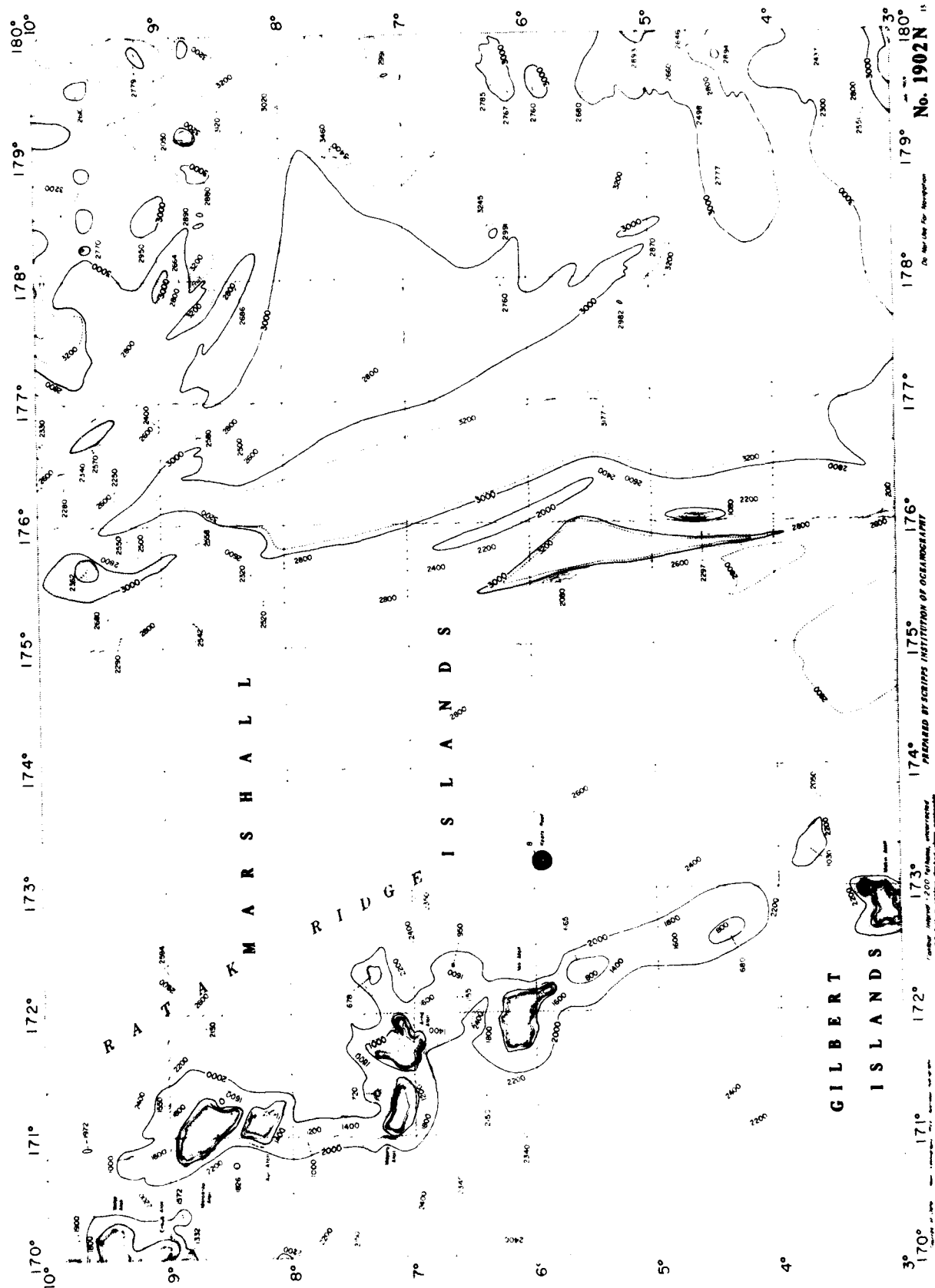


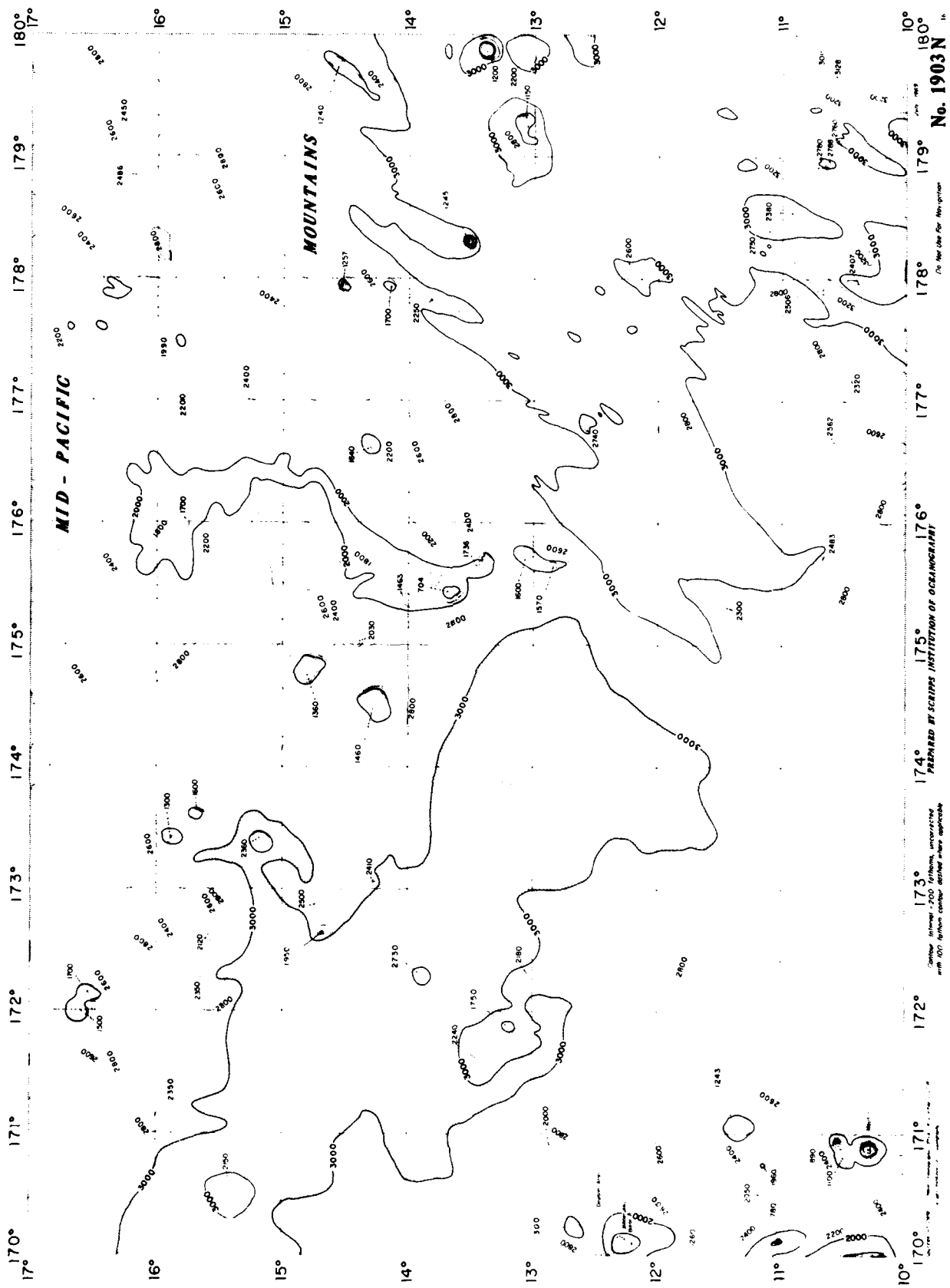
Chart revised 200 (1940), uncorrected
with 100 fathom contour shaded where applicable

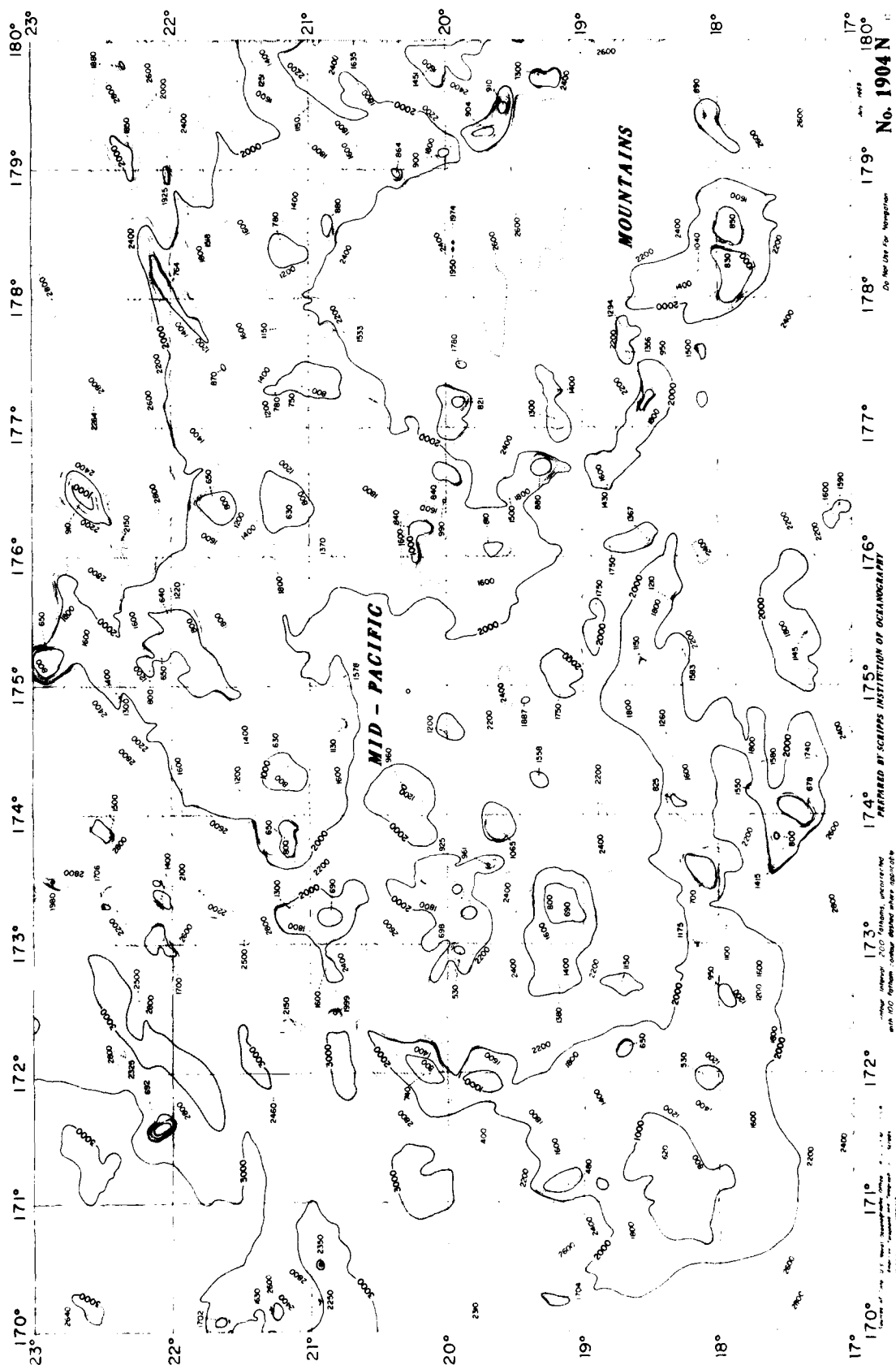
174° 175° 176°
PLANNED BY SCRIPPS INSTITUTION OF OCEANOGRAPHY

178° 179° 180°
On the Use of Navigation

No. 1901 N



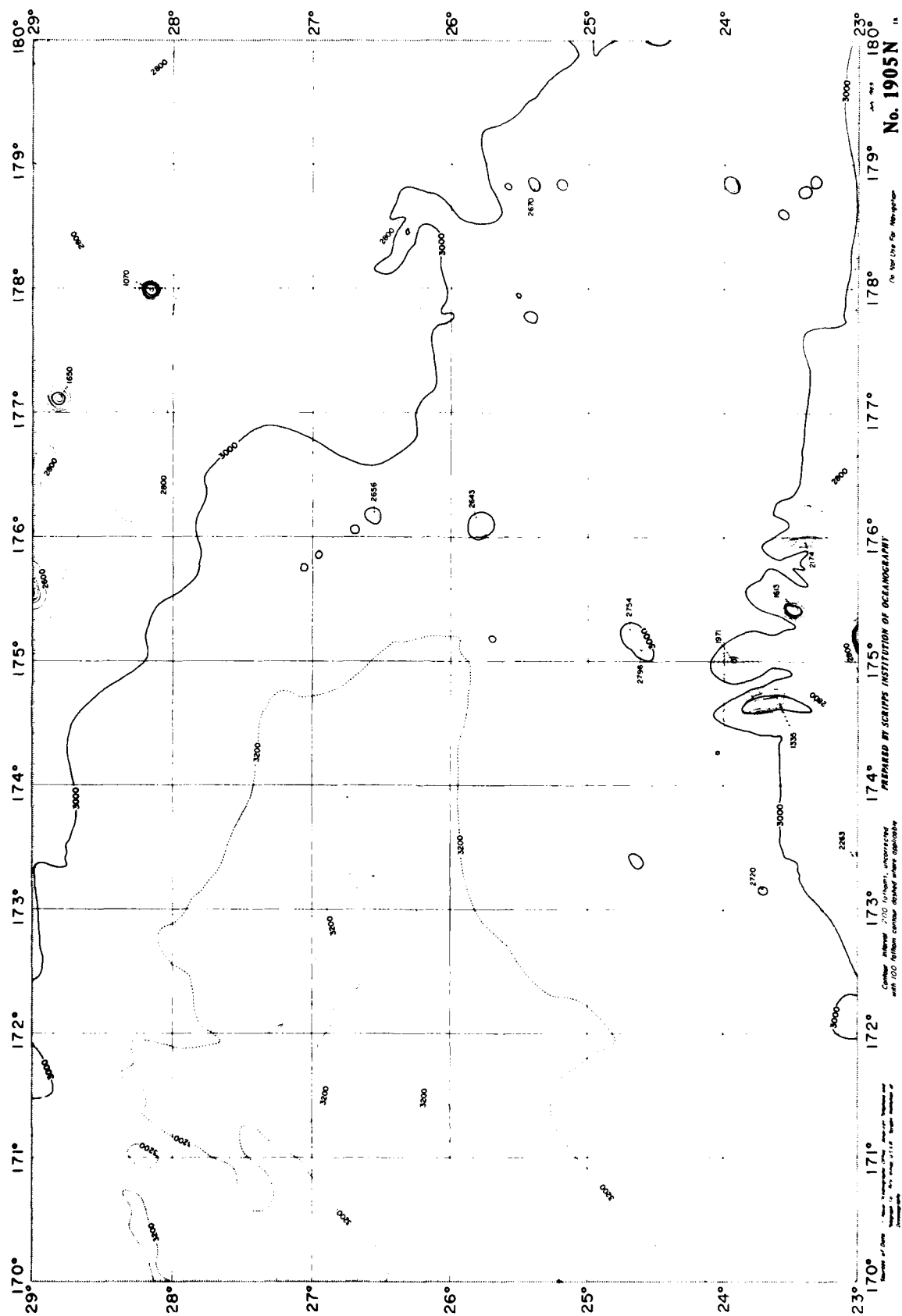


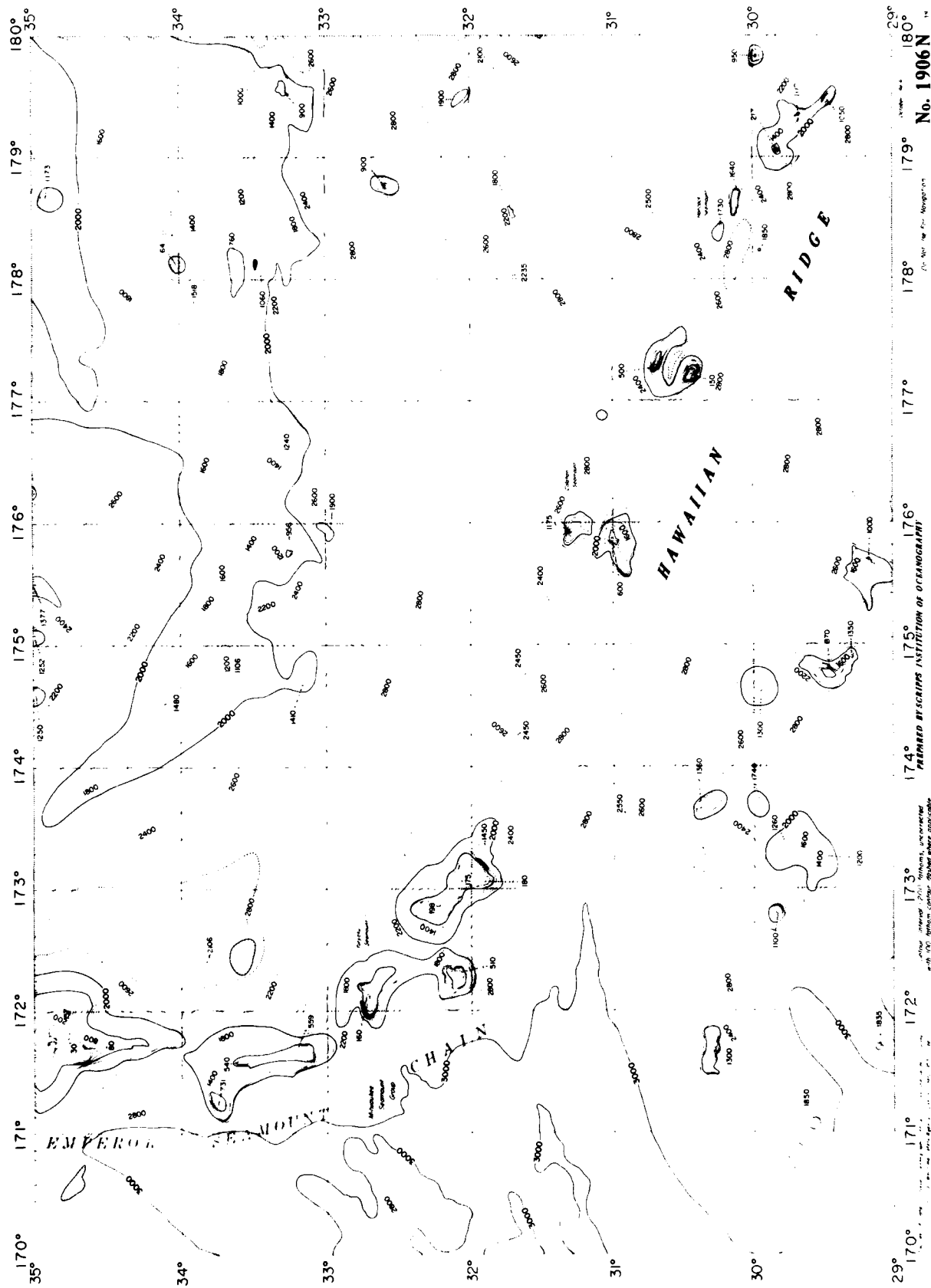


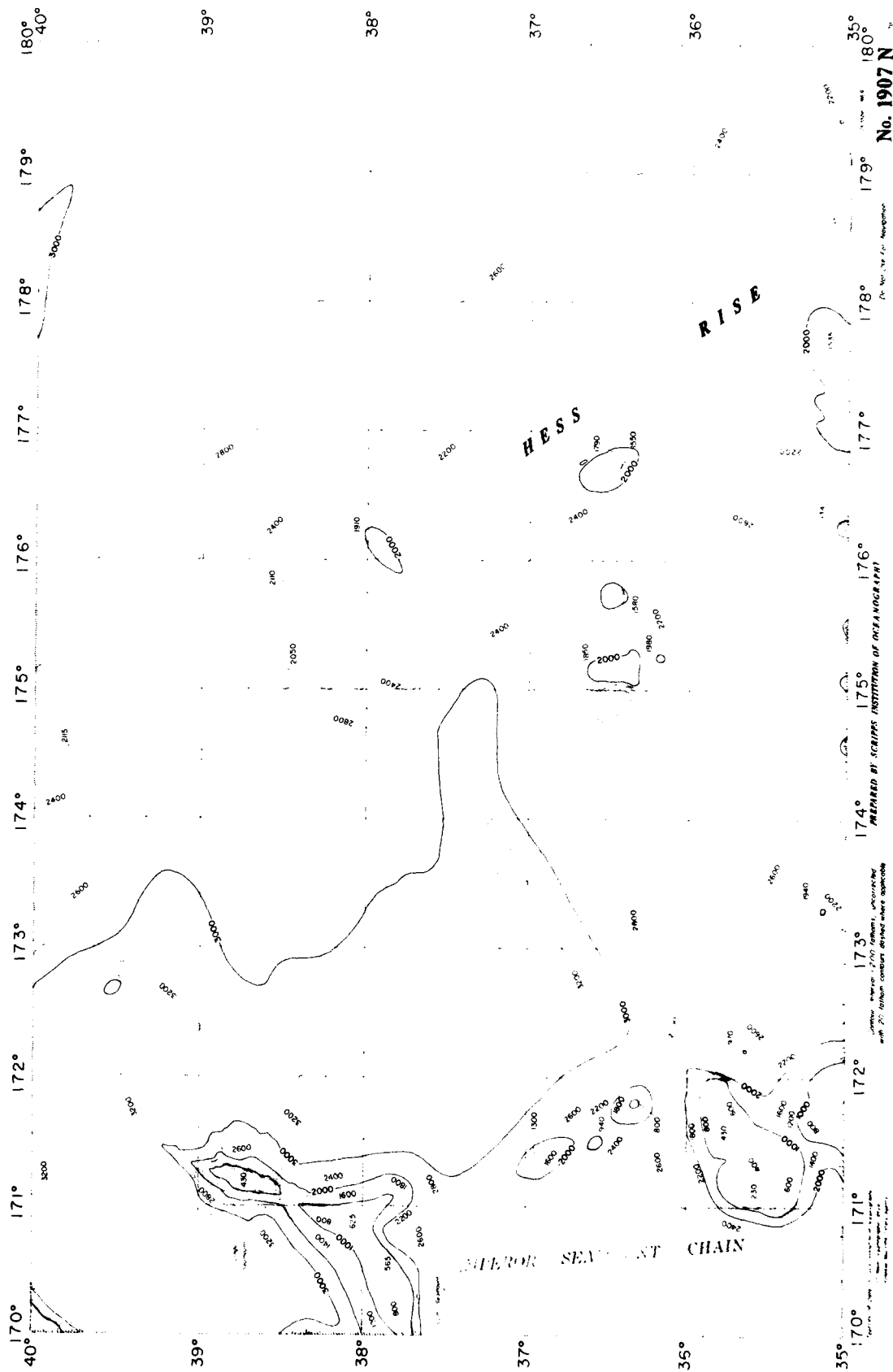
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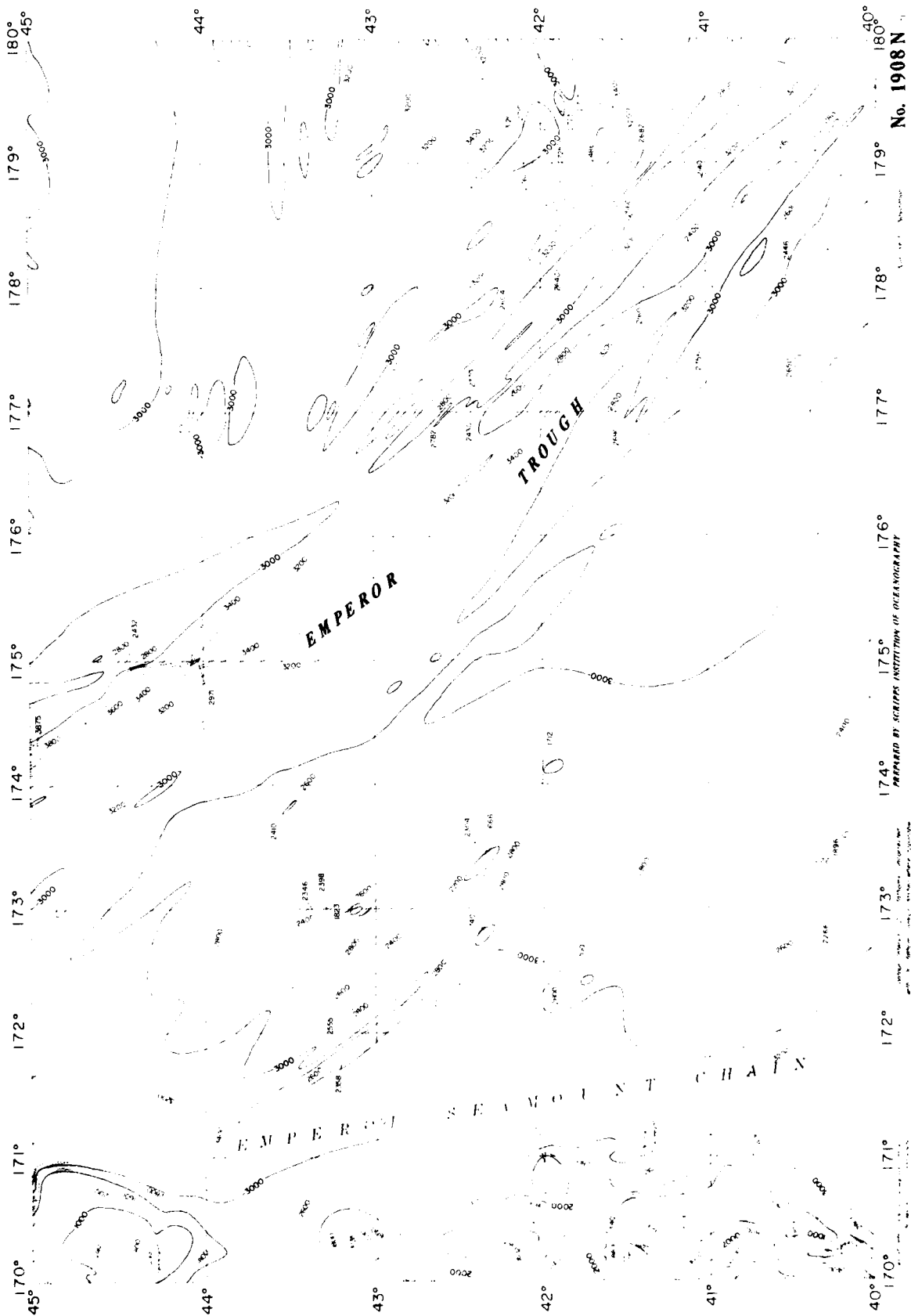
23° 22° 21° 20° 19° 18° 17°

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No. 1904 N

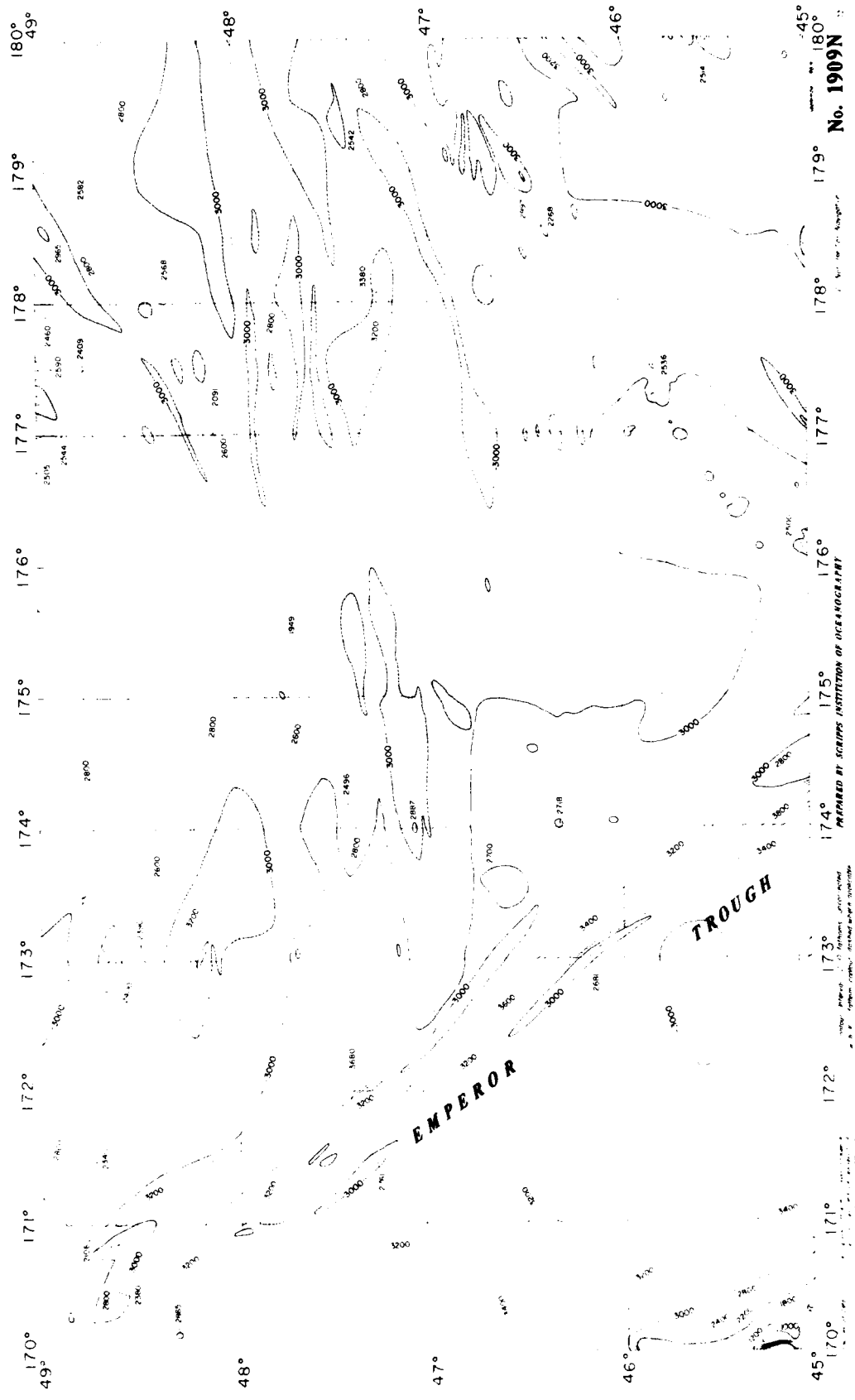








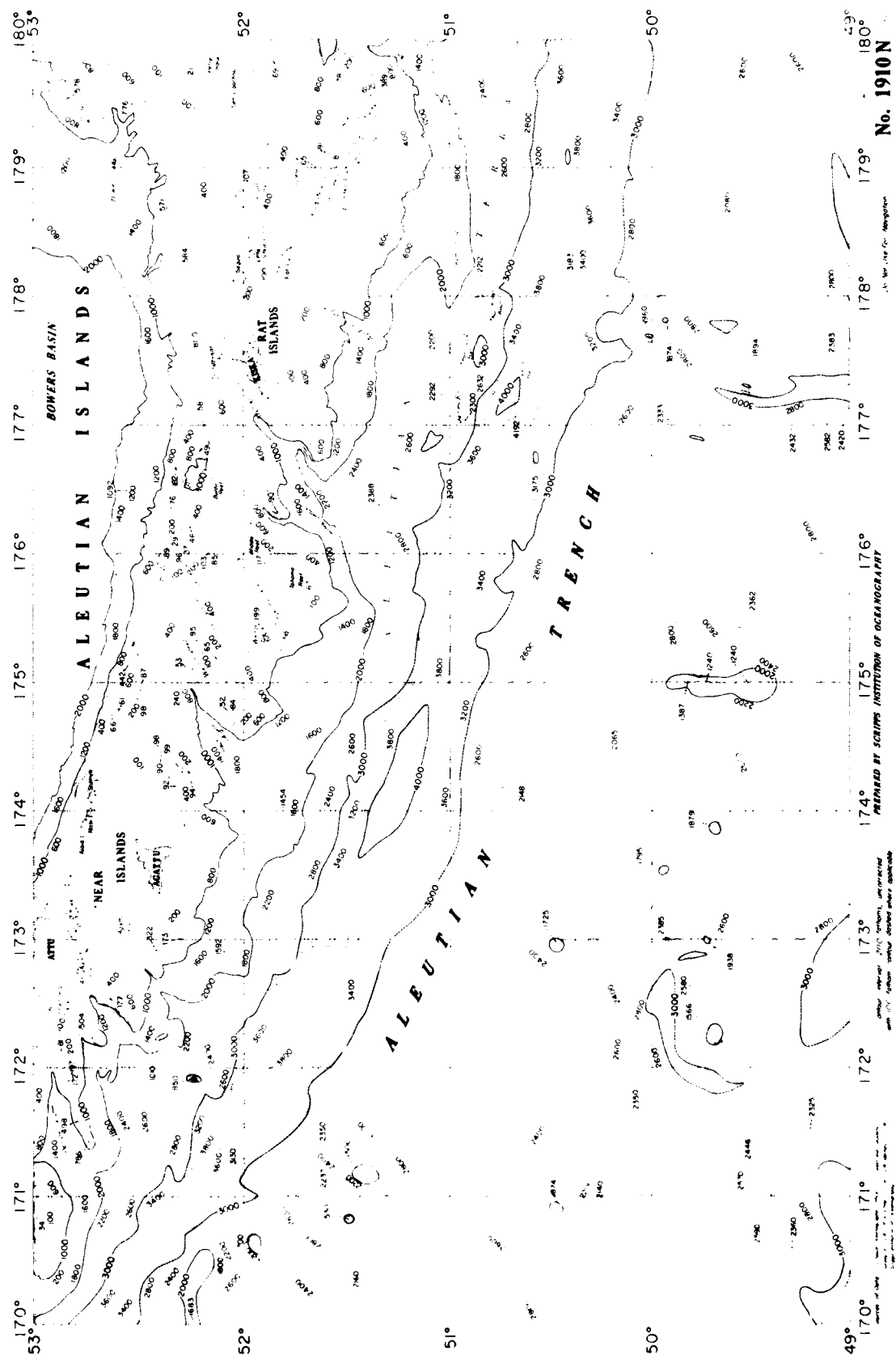
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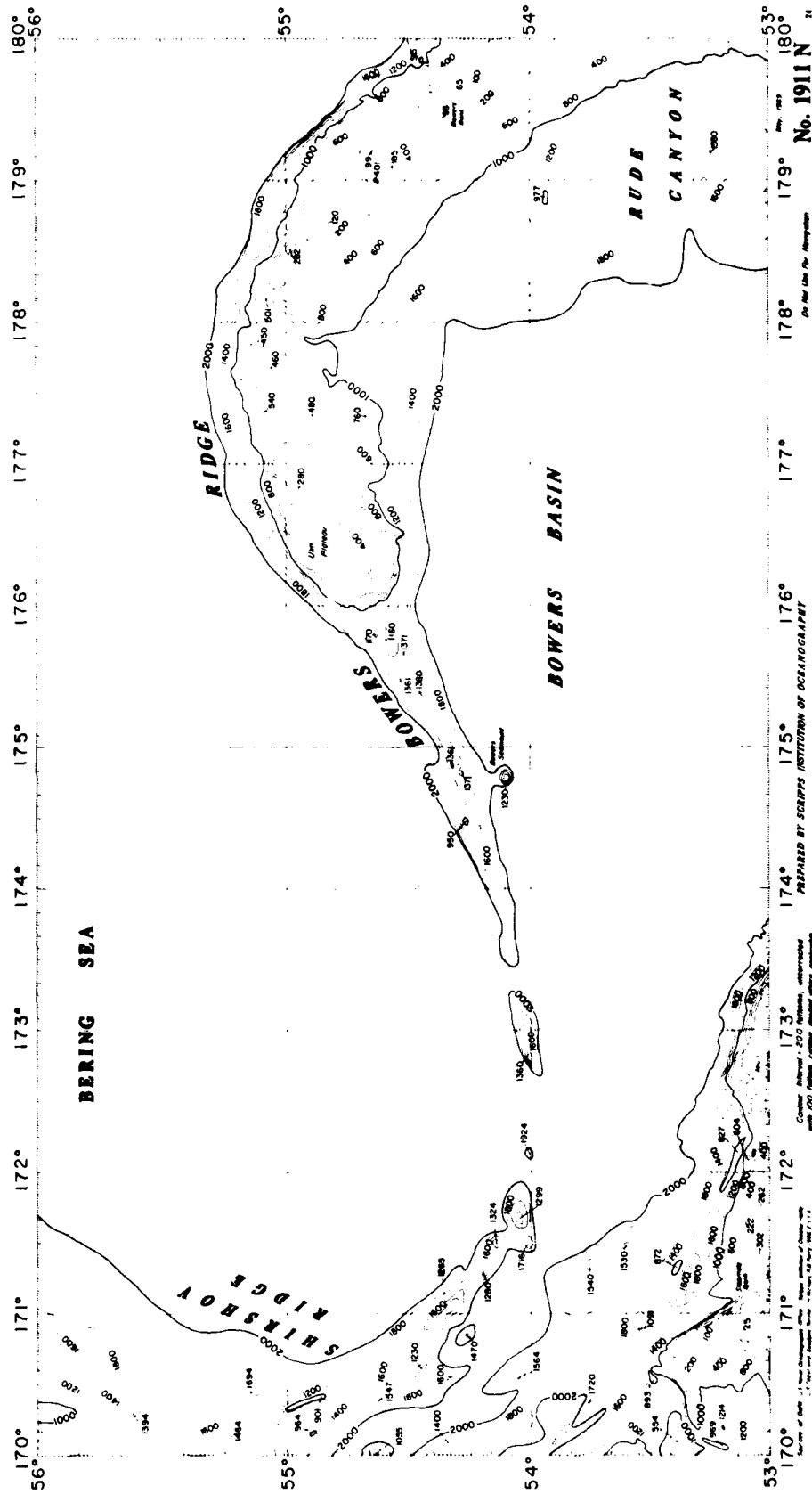
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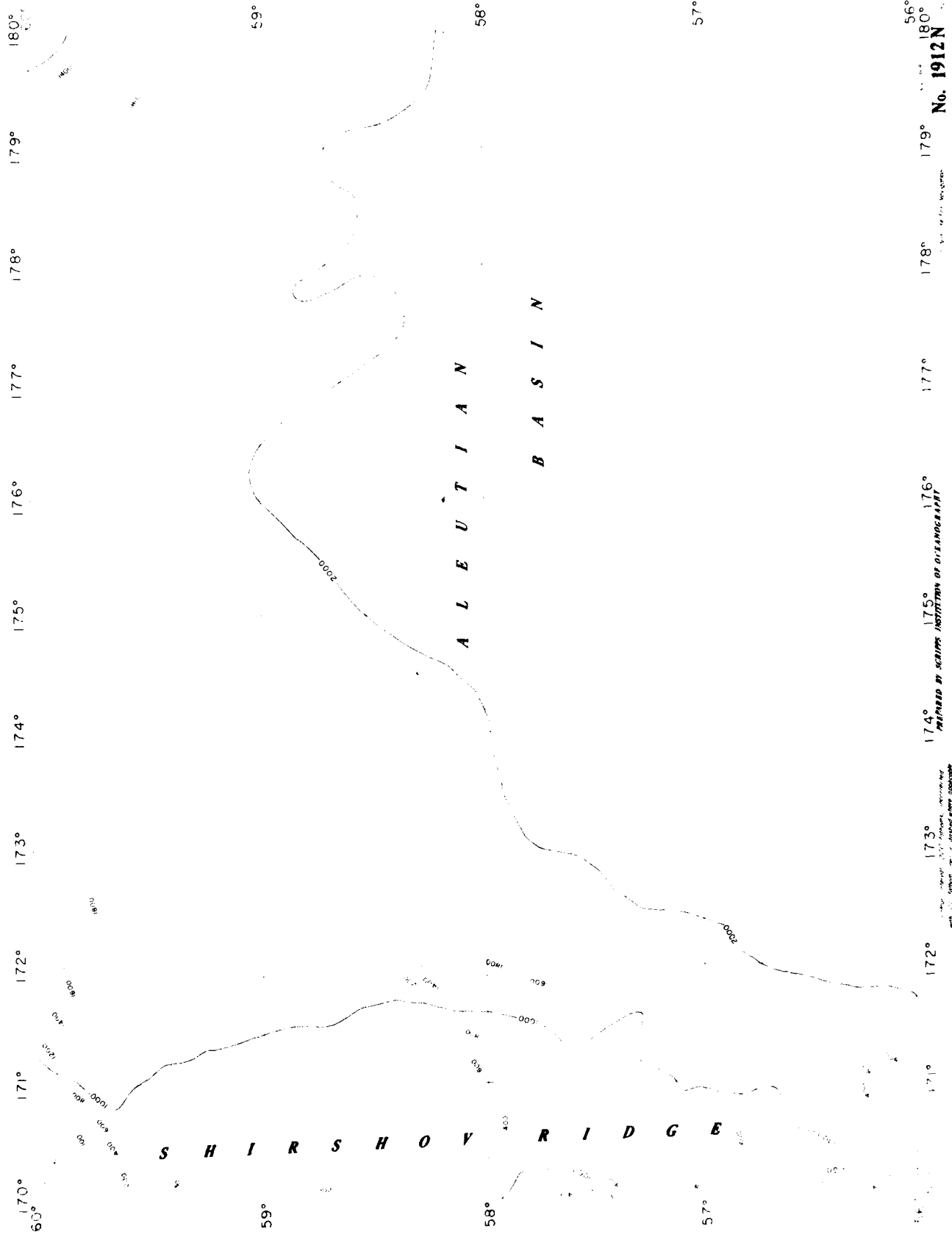


No. 1910N

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Scale in miles and kilometers





No. 1912N

178° 179° 180°

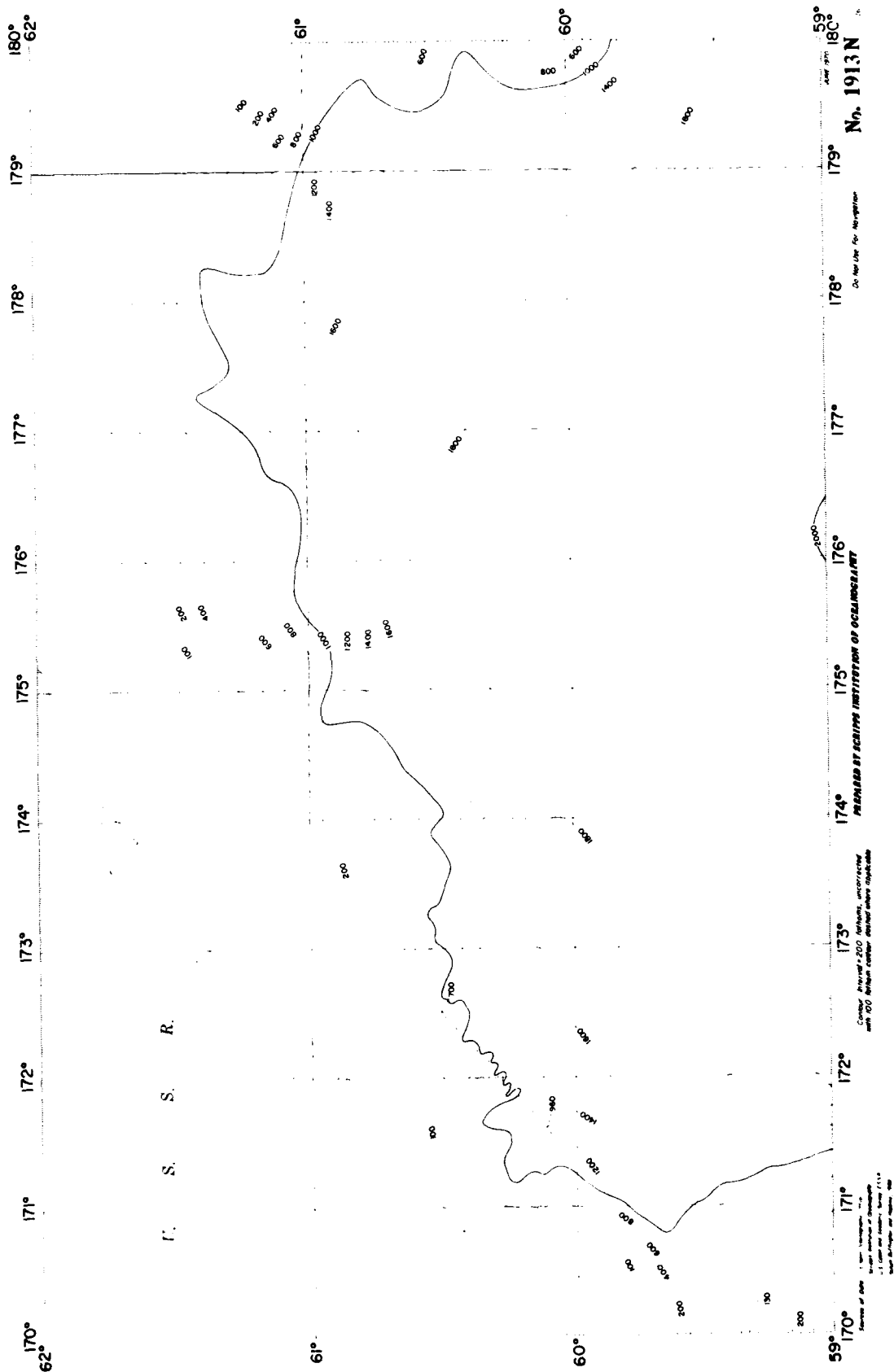
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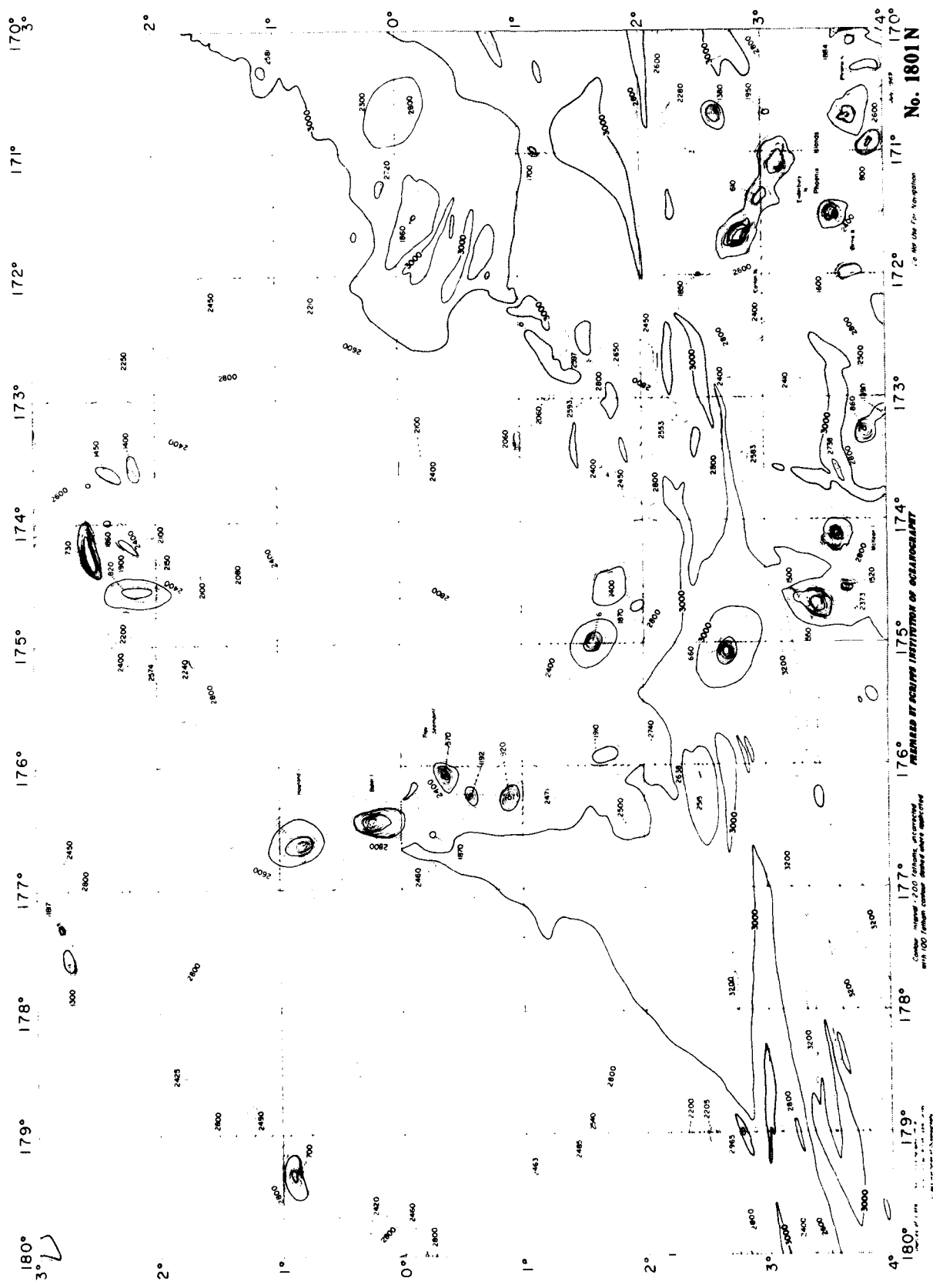
174° 175° 176°
PREPARED BY SCIENTIFIC INSTITUTION OF OCEANOGRAPHY

173°
172°

171°

170°

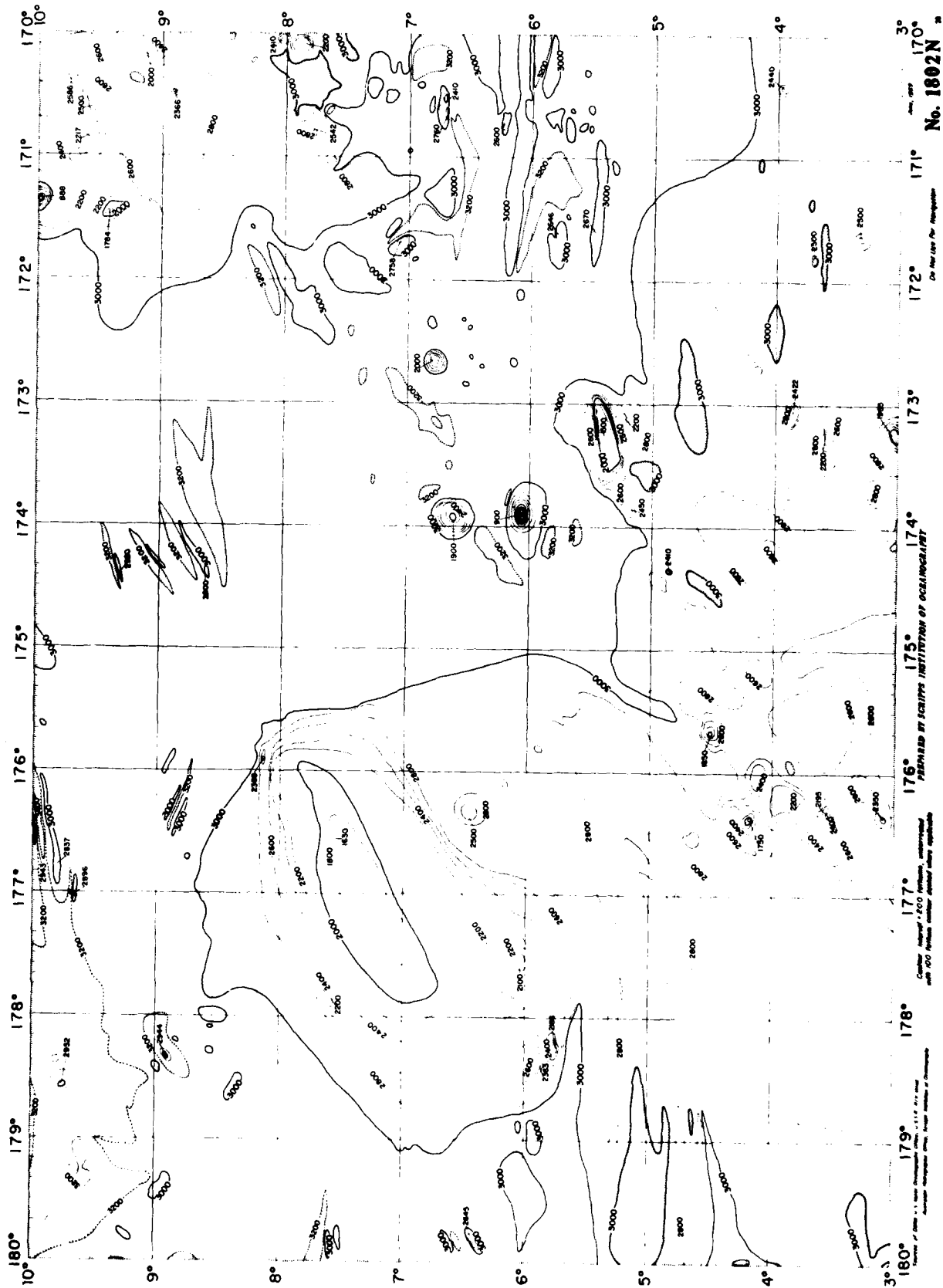




No. 1801N

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Chart prepared 200 fathoms, corrected with 100 fathoms contour depth selective



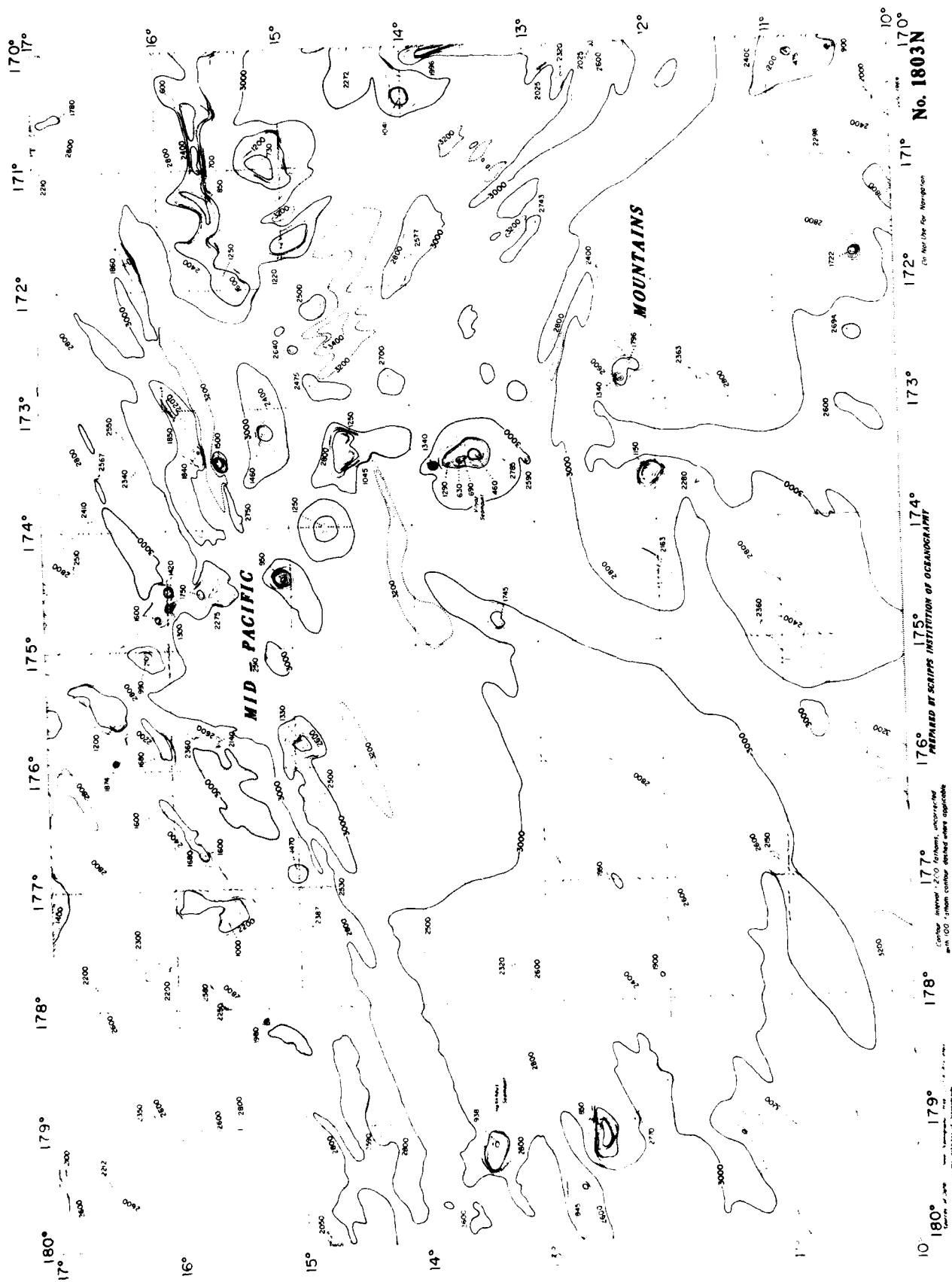
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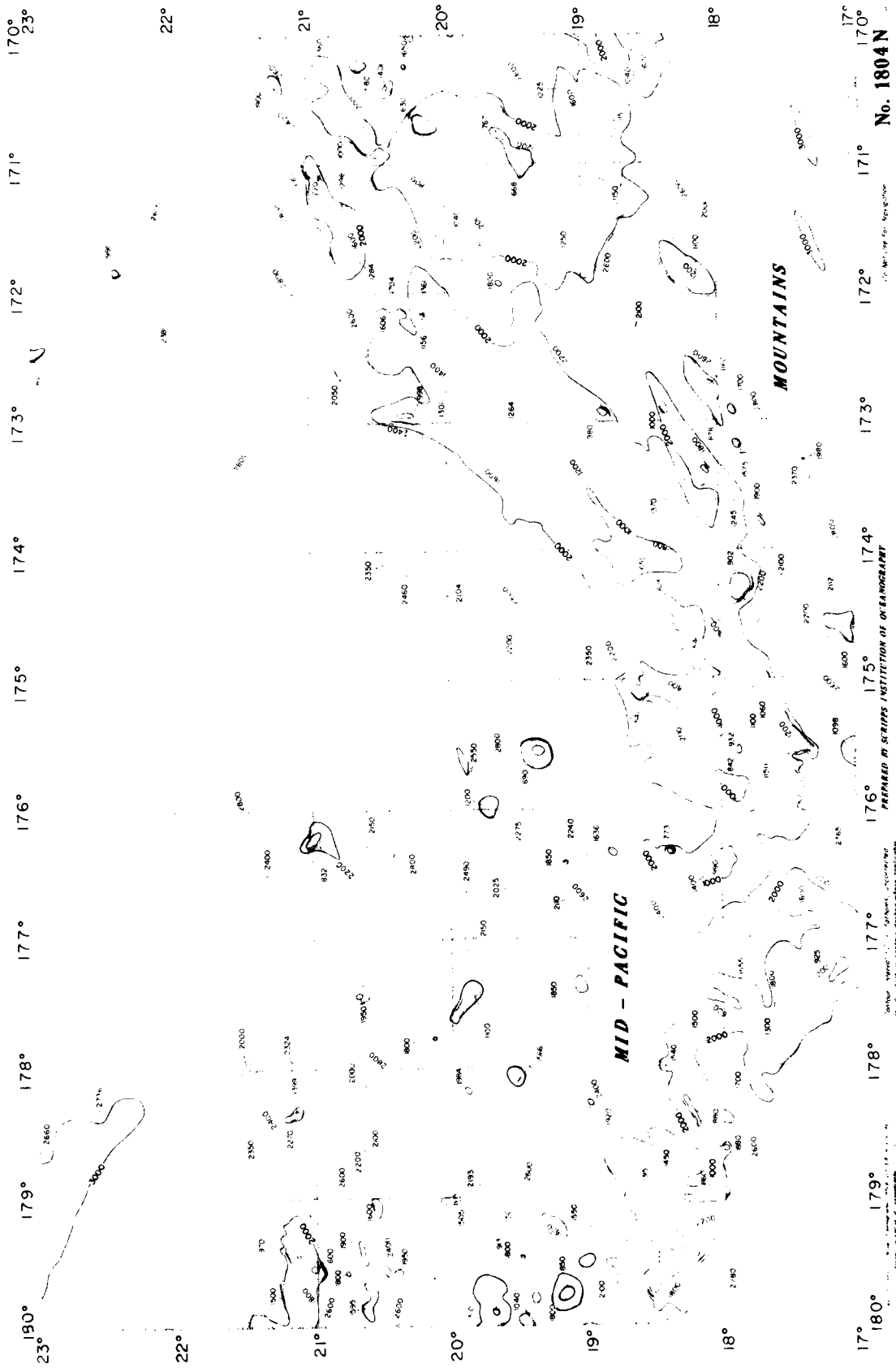
Do Not Use For Navigation

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Scale: 1 inch = 100 miles

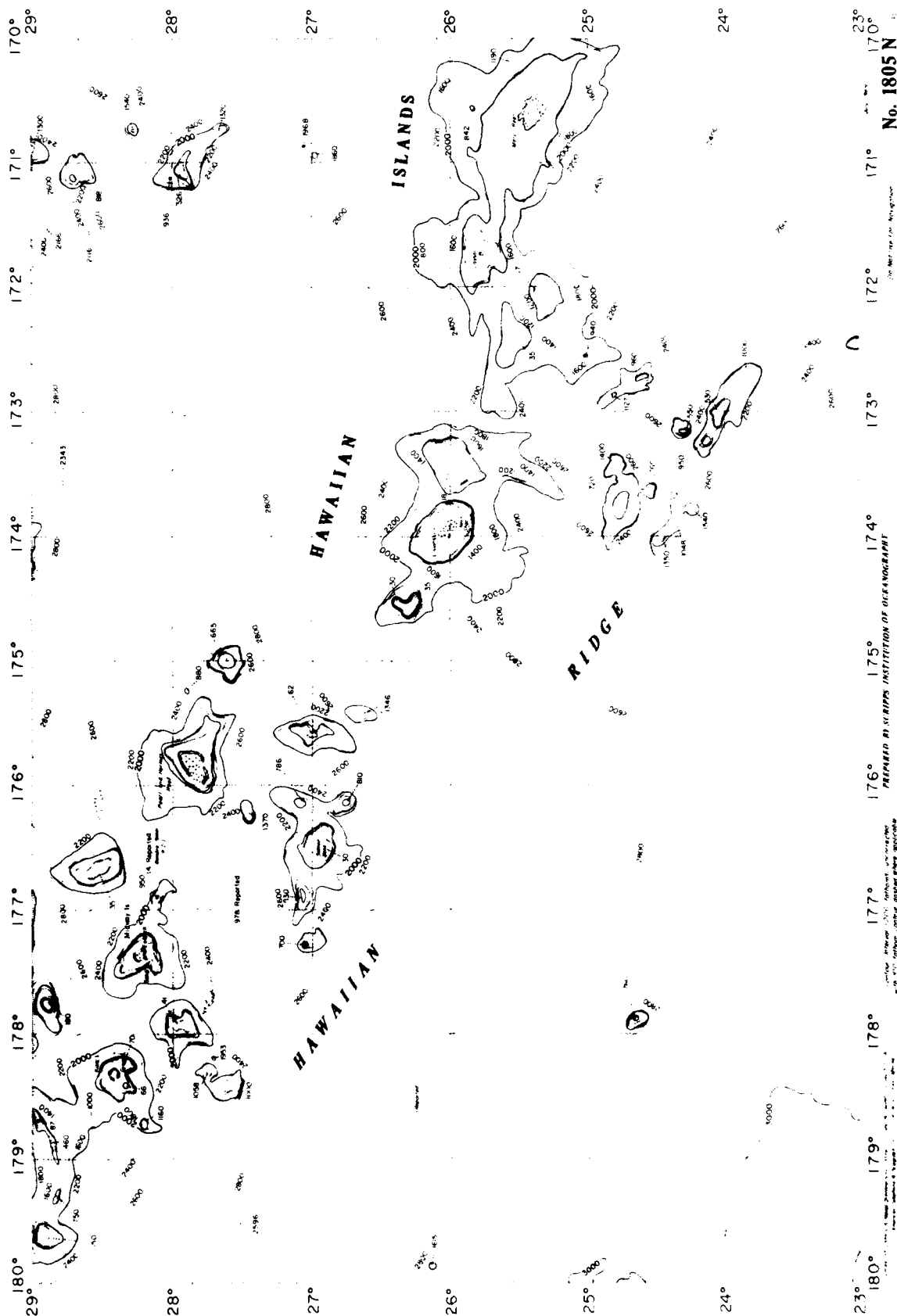
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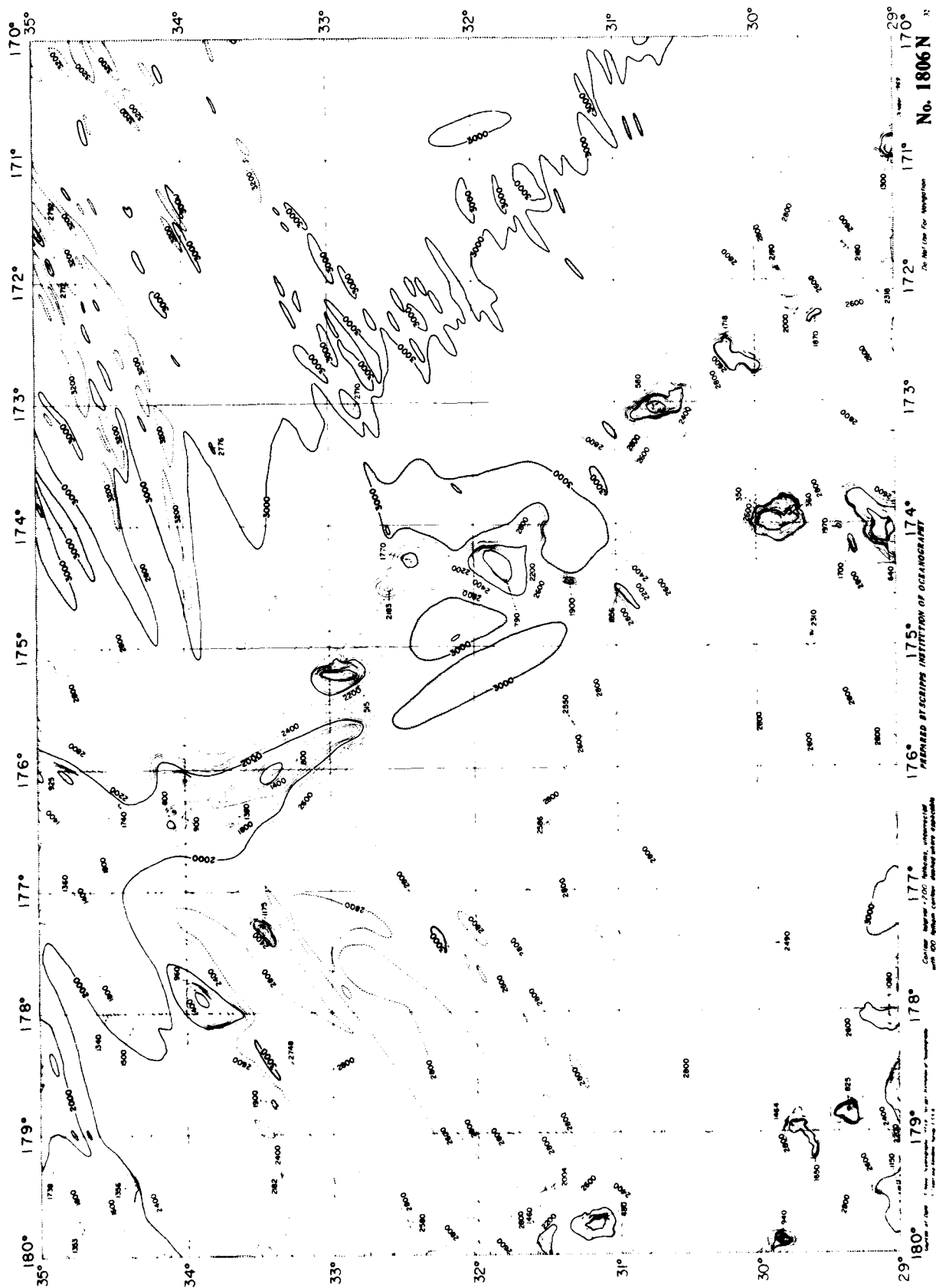




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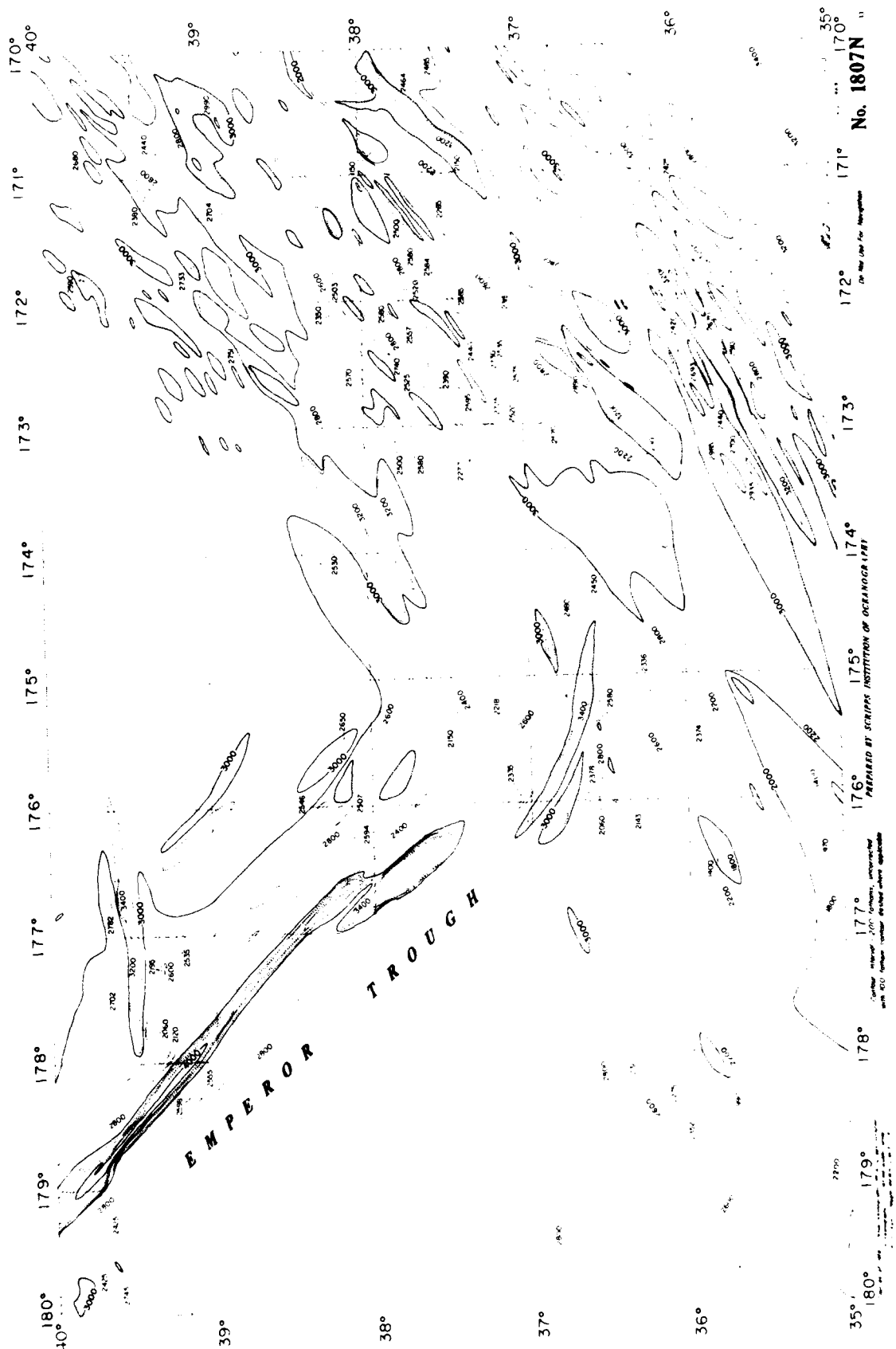


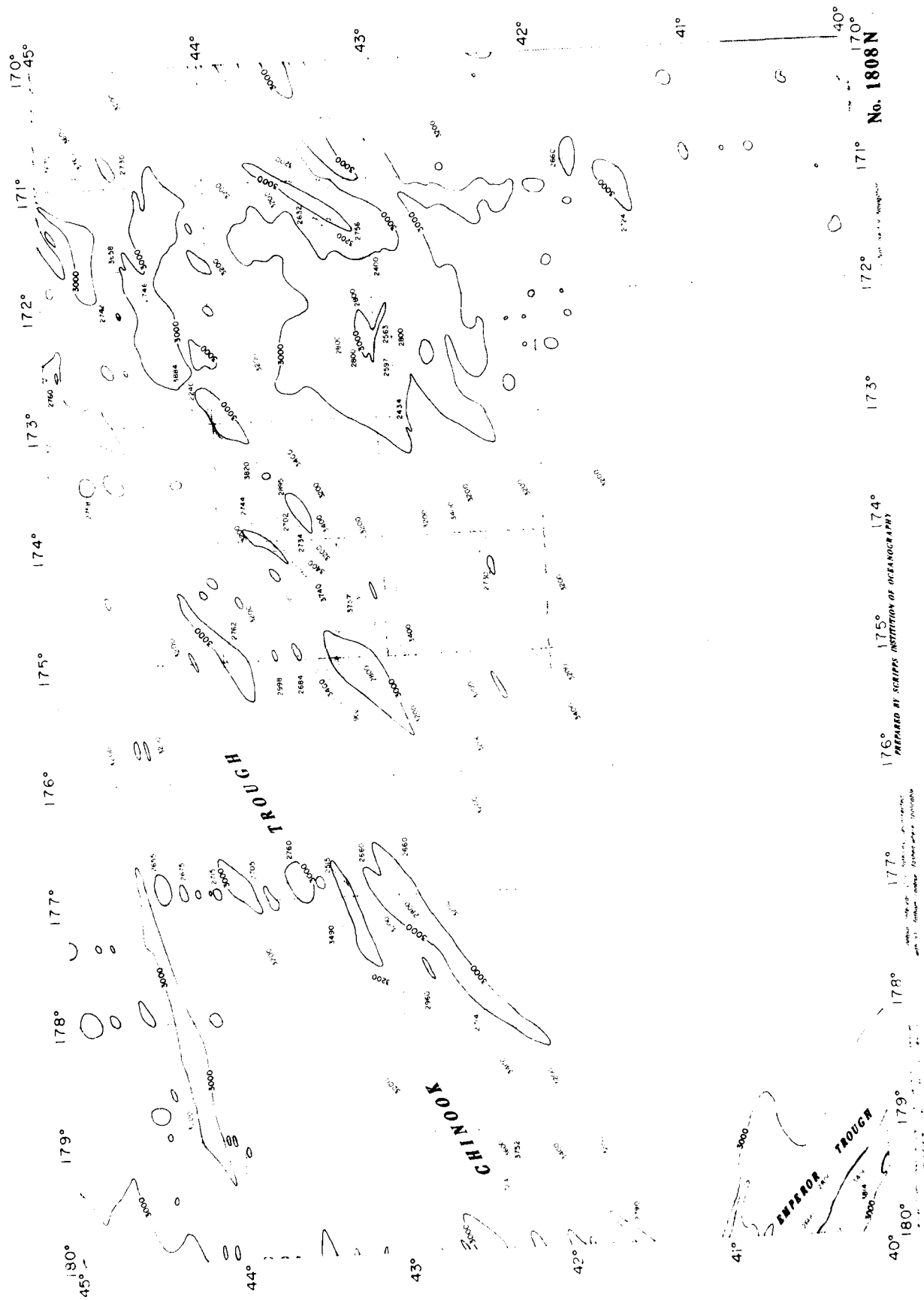
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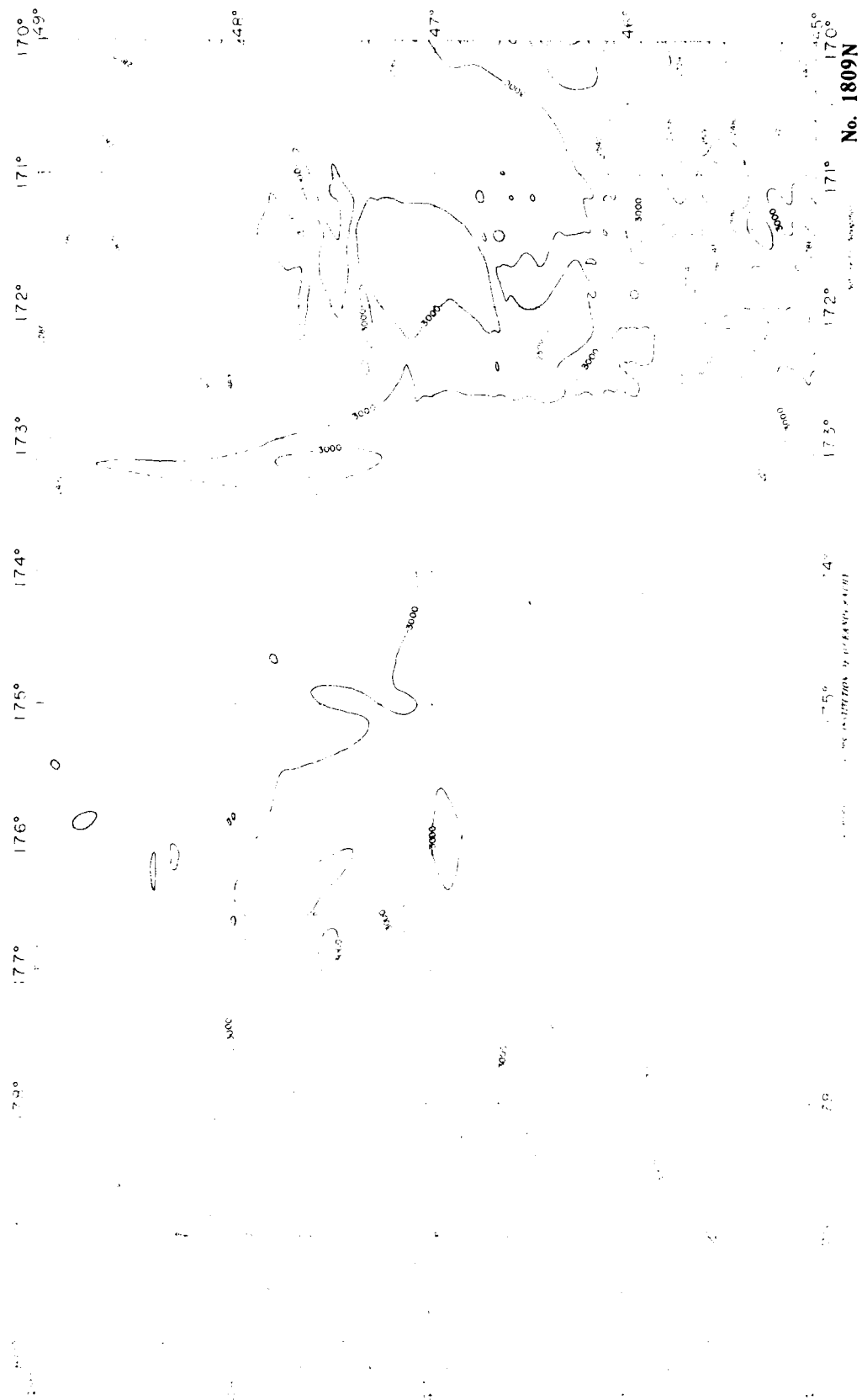
The War Line For Navigation

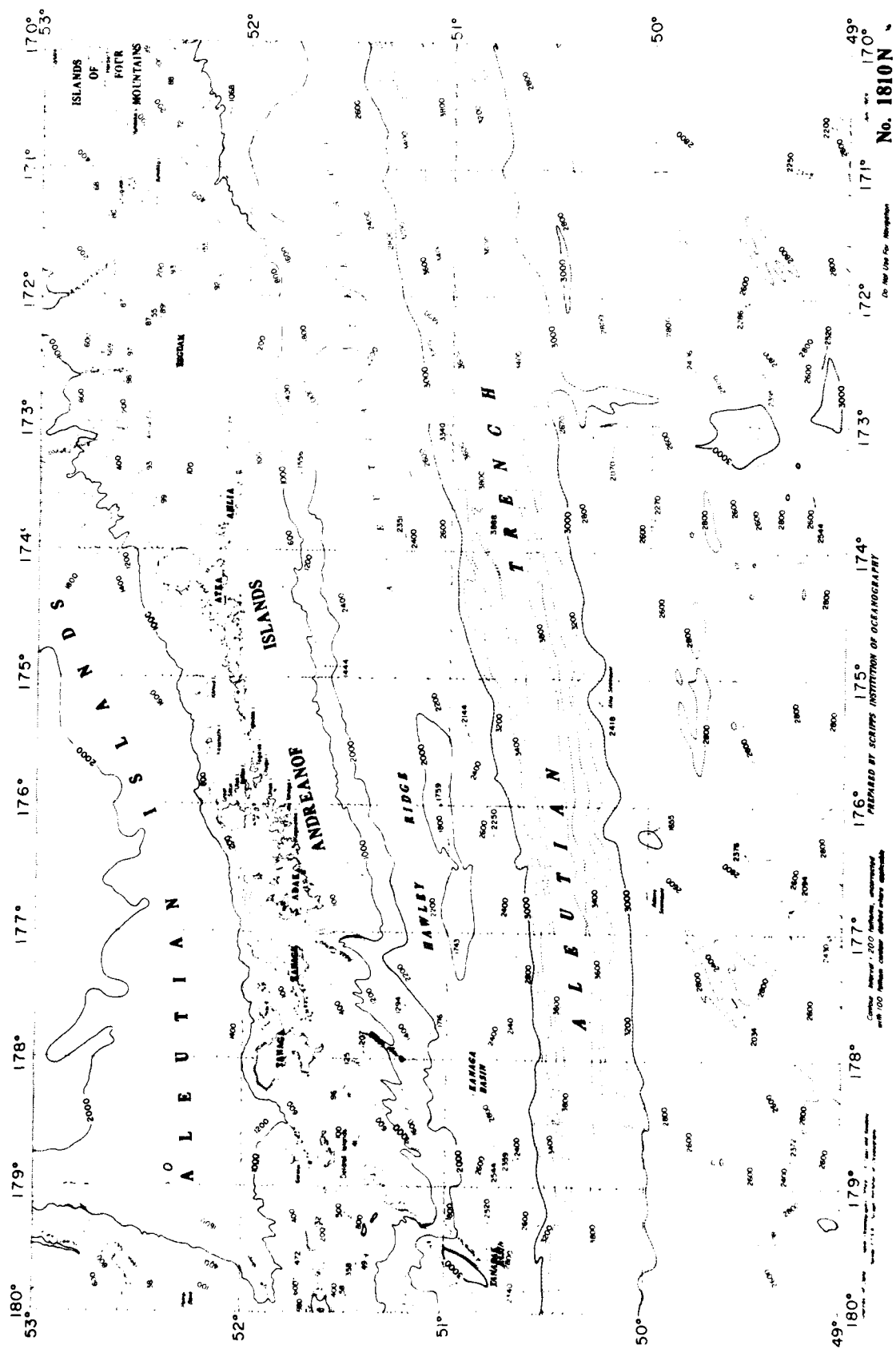
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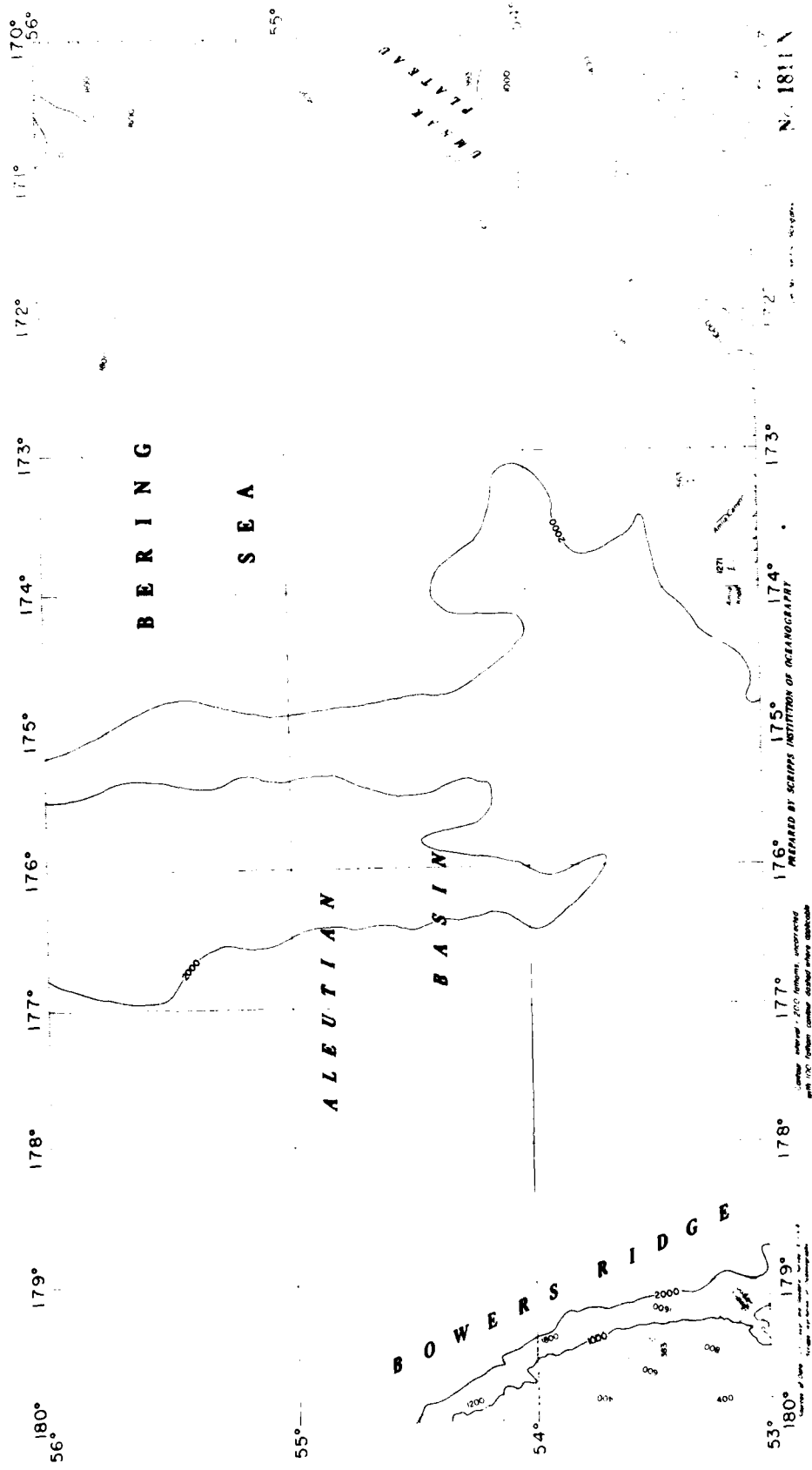
Charting depth 1000 fathoms, international
with 600 fathom center dashed where applicable

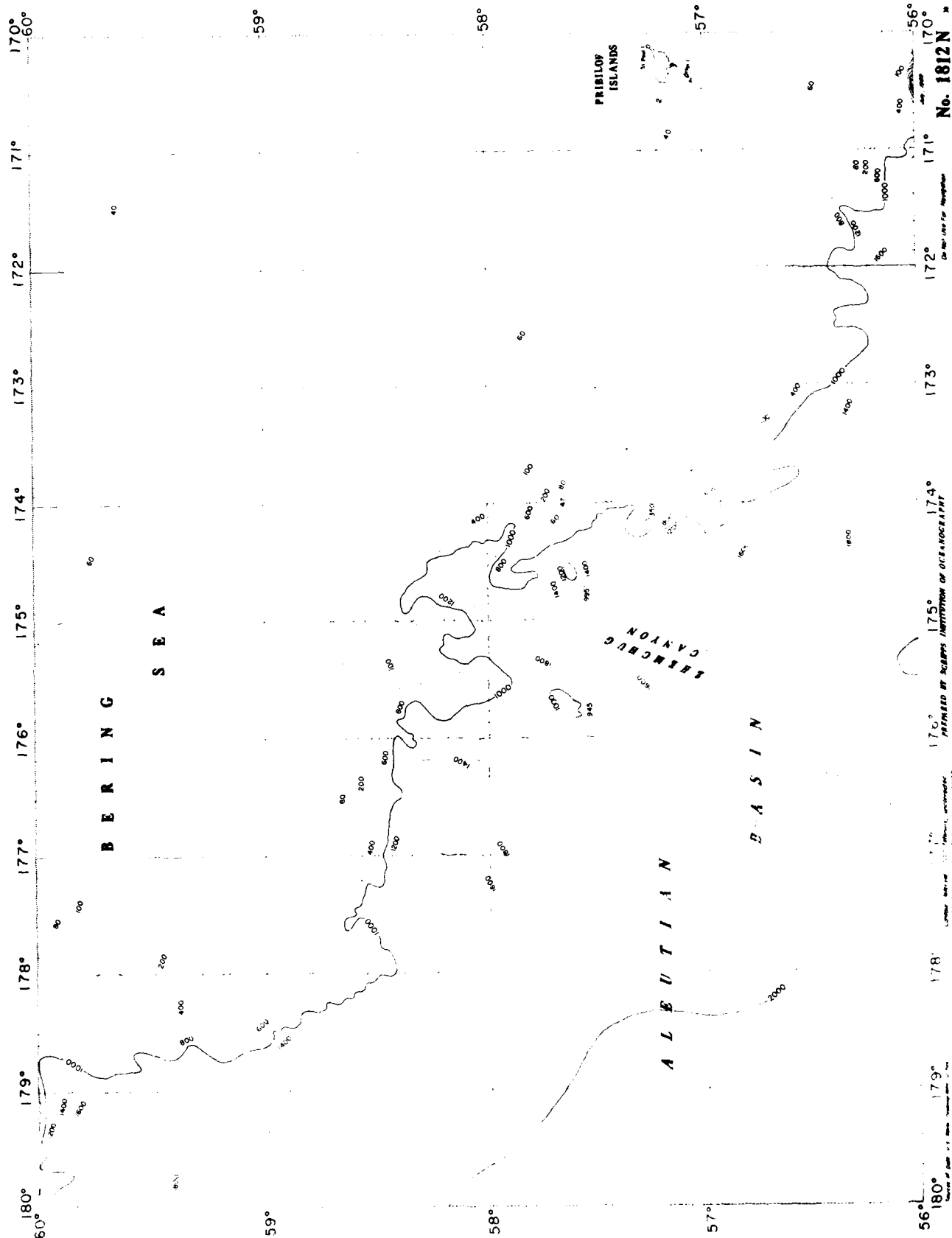












170°
62°

171°

172°

173°

174°

175°

176°

177°

178°

179°

180°
62°

—61°

61°

SAINT
MATTHEW
ISLAND

PANDELE

—60°

60°

60

40

59°
180°
179°

59°
170°
No. 1813 N

172°
171°
Do Not Use For Navigation

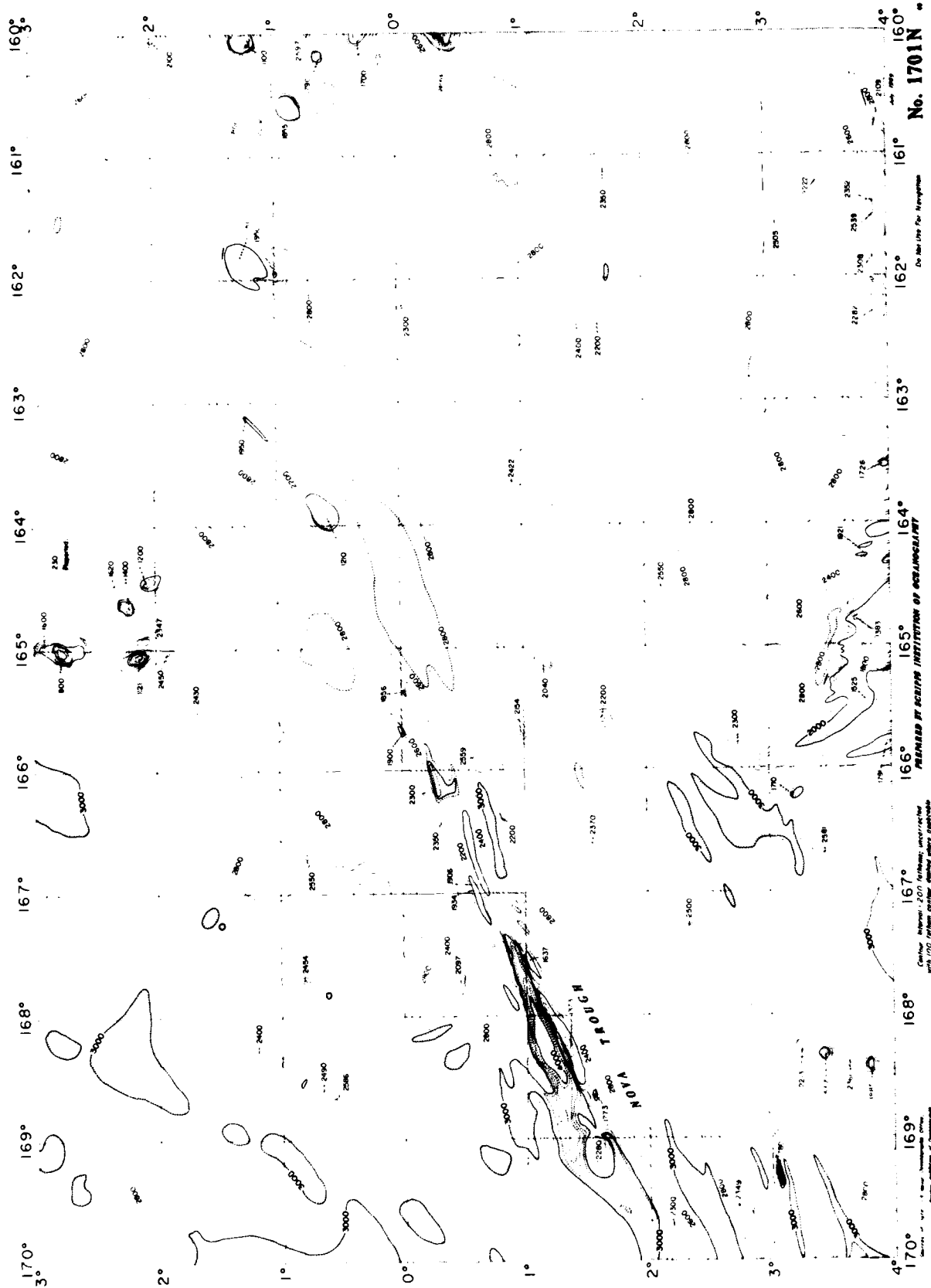
173°

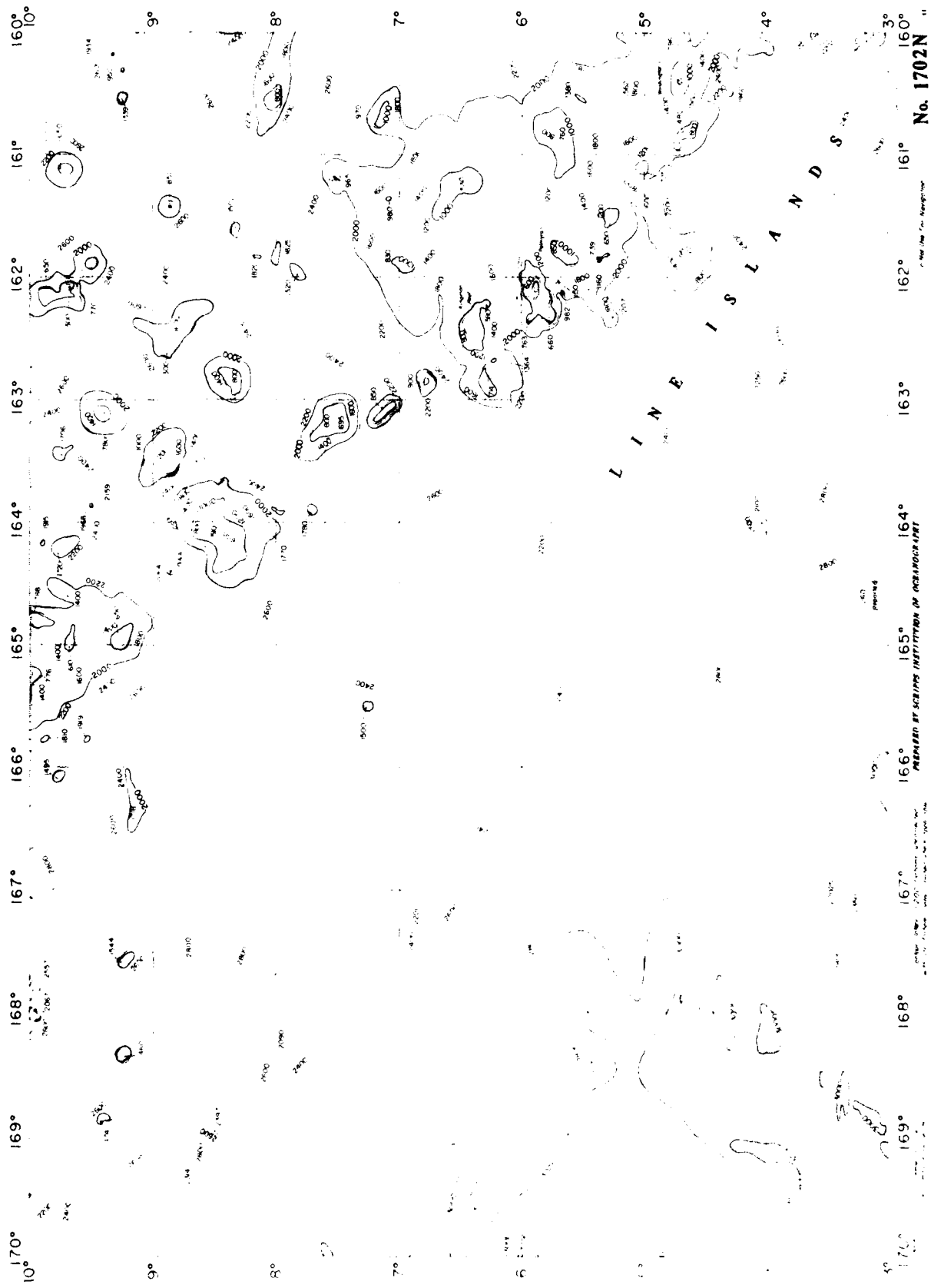
174°
175°
176°
177°
178°
179°
180°
PREPARED BY SCIENCE INSTITUTION OF OCEANOGRAPHY

Scale: 1:200,000
with 100 meters contour interval

178°

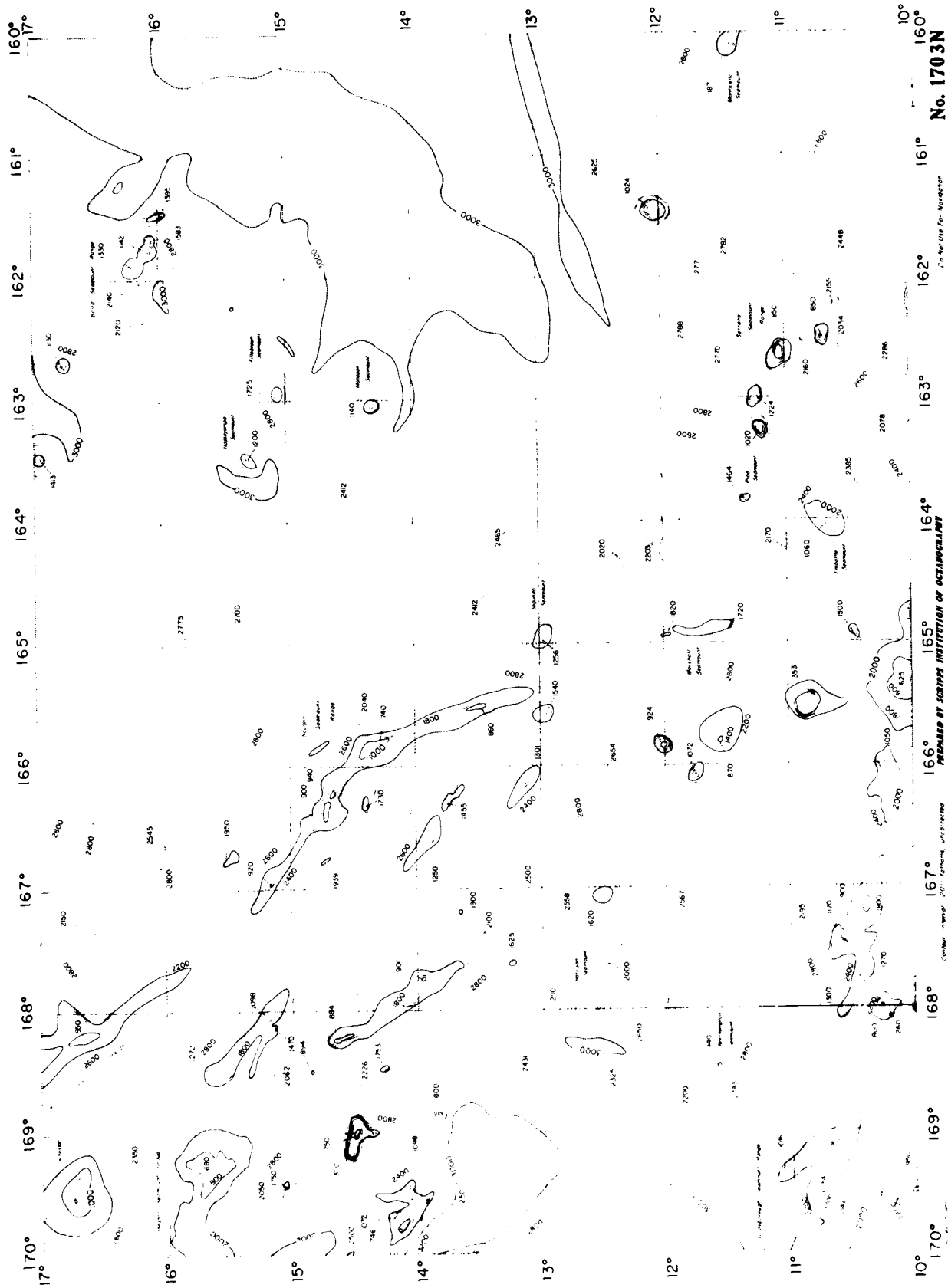
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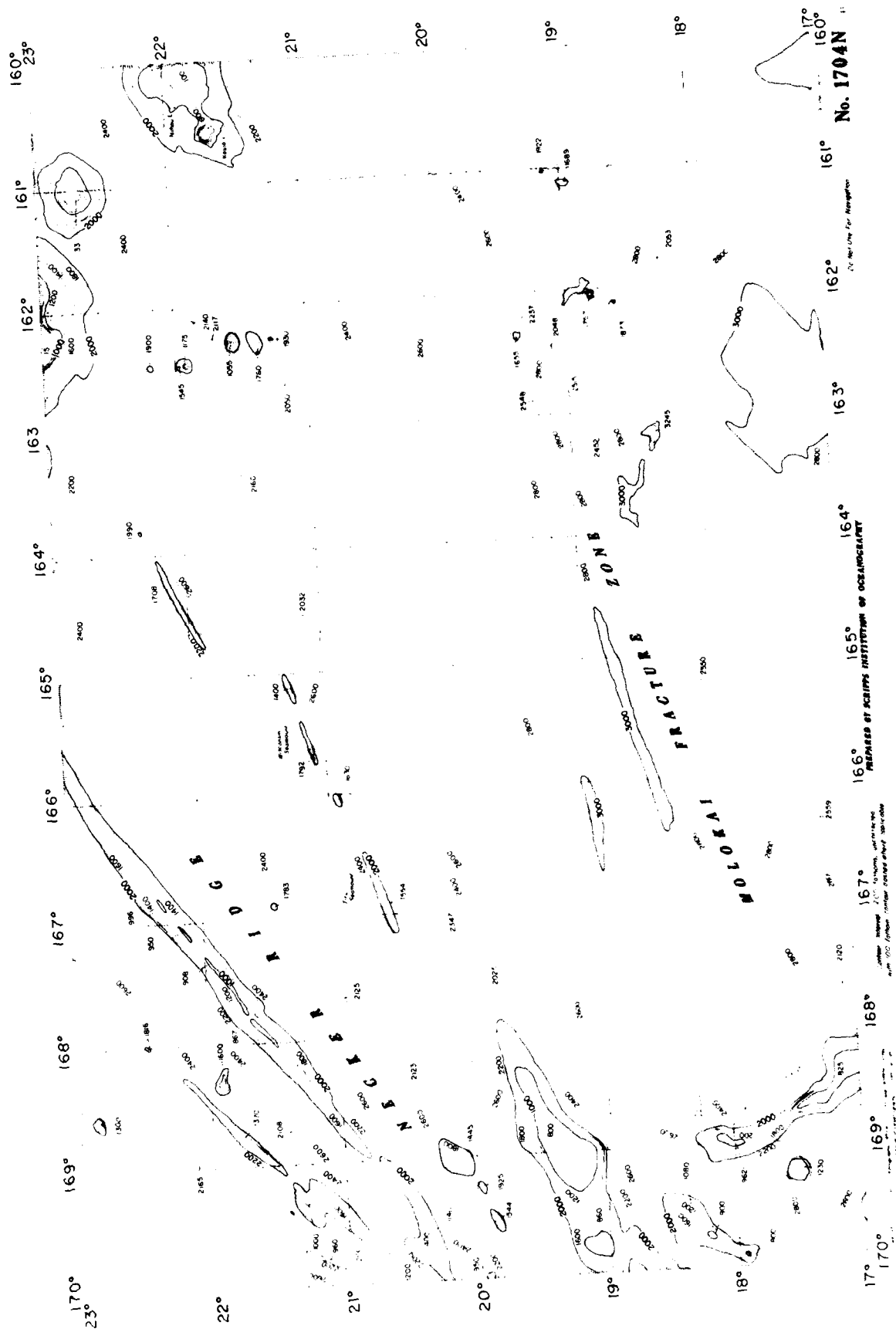


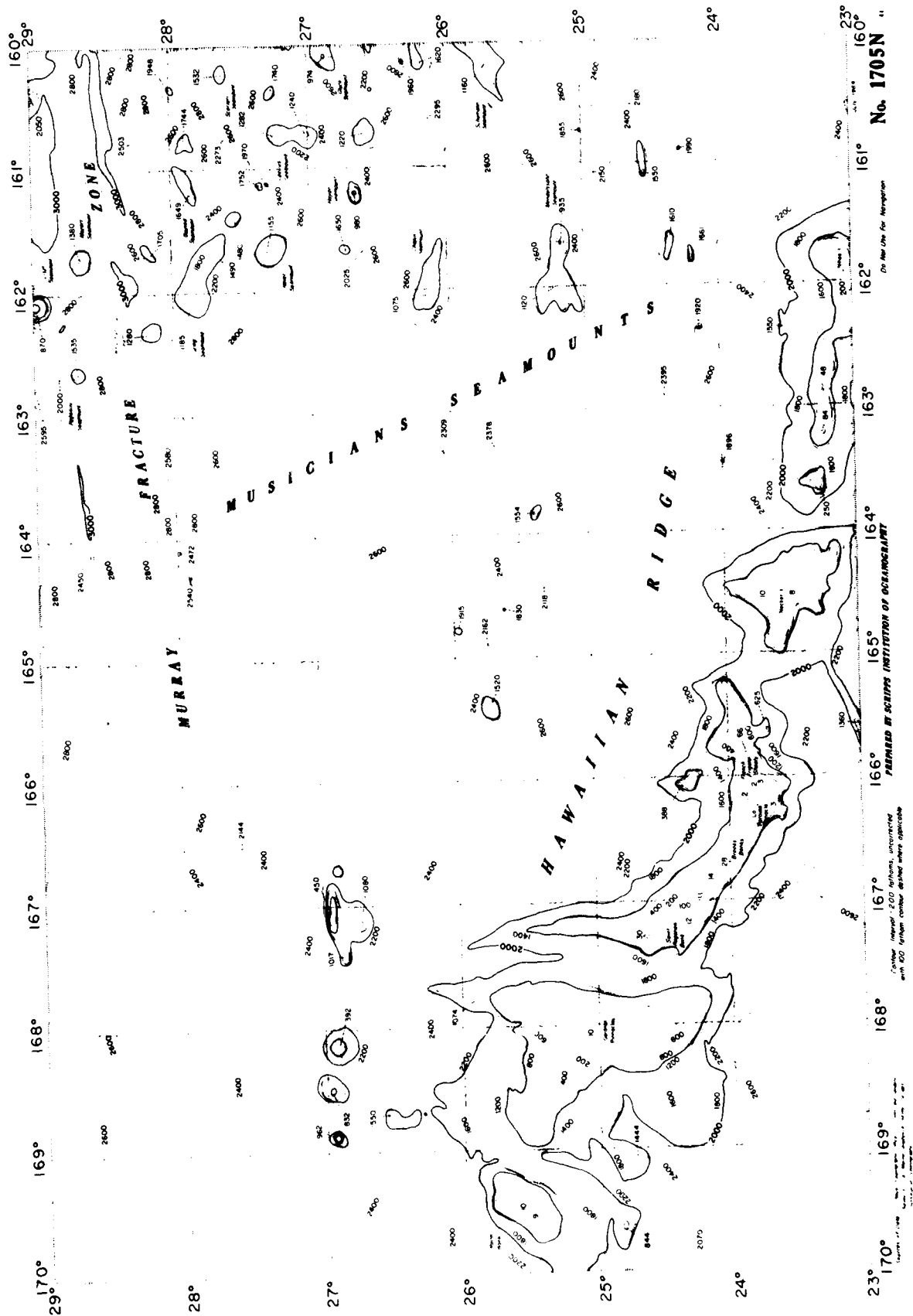


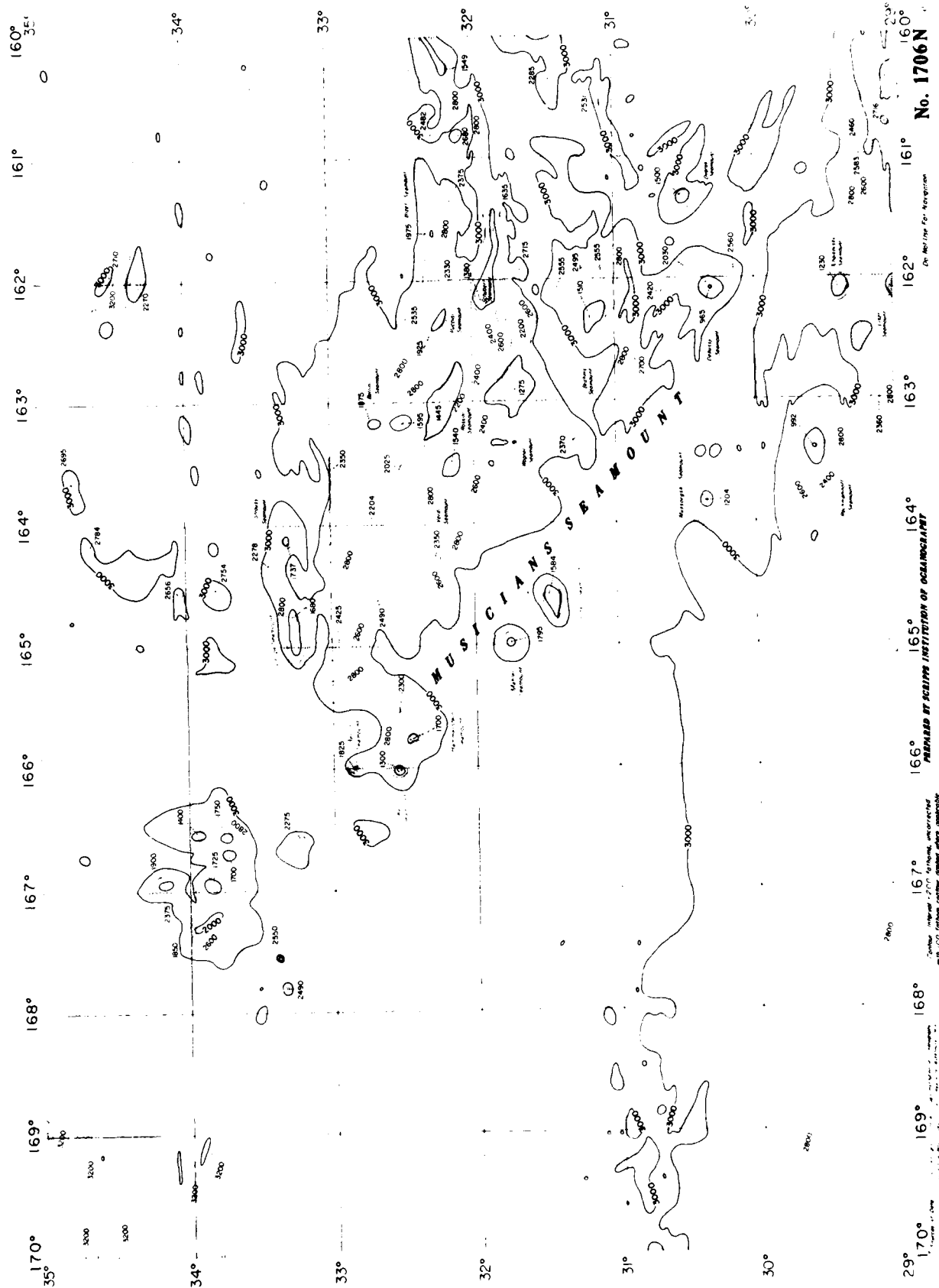
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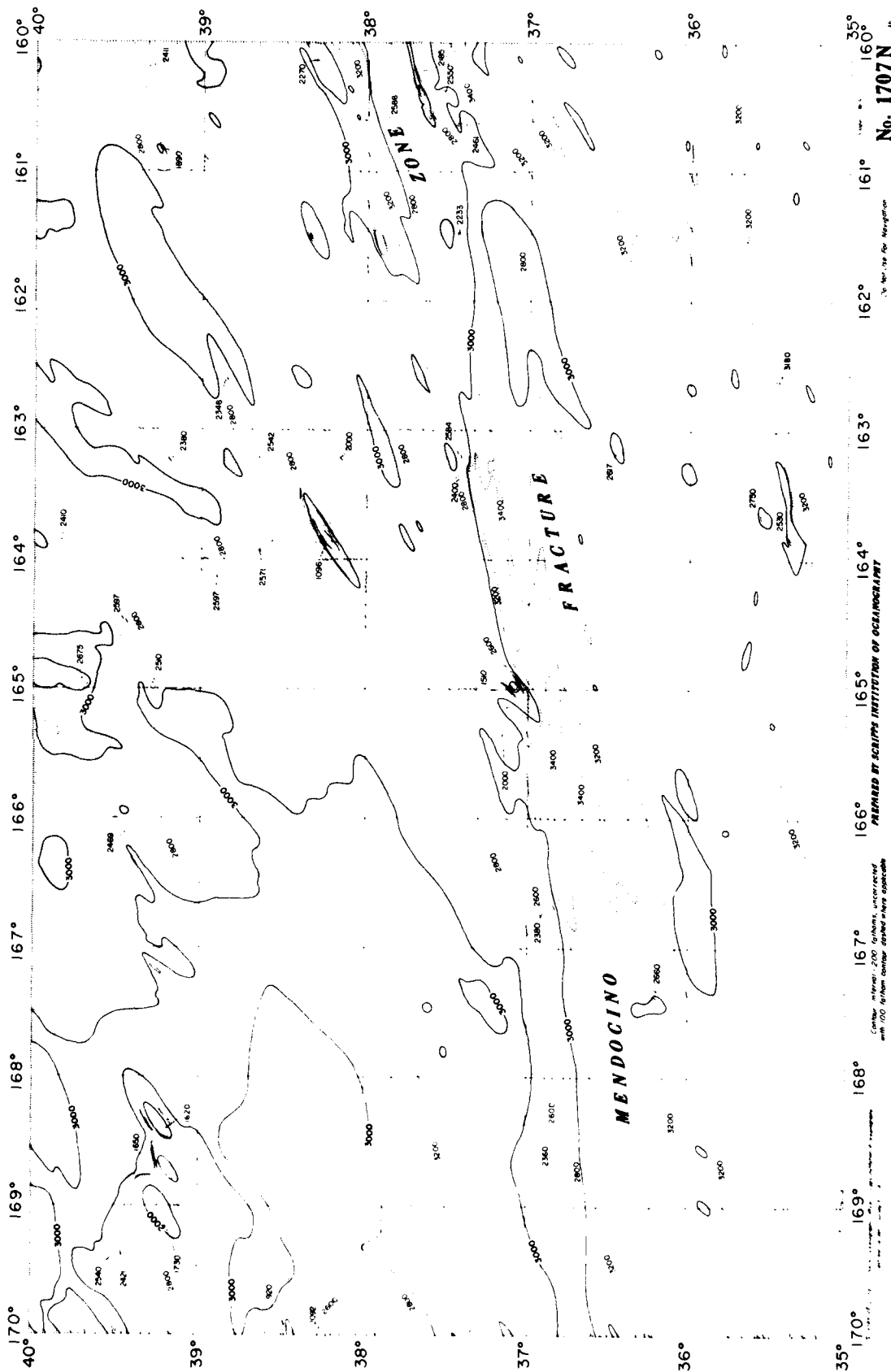
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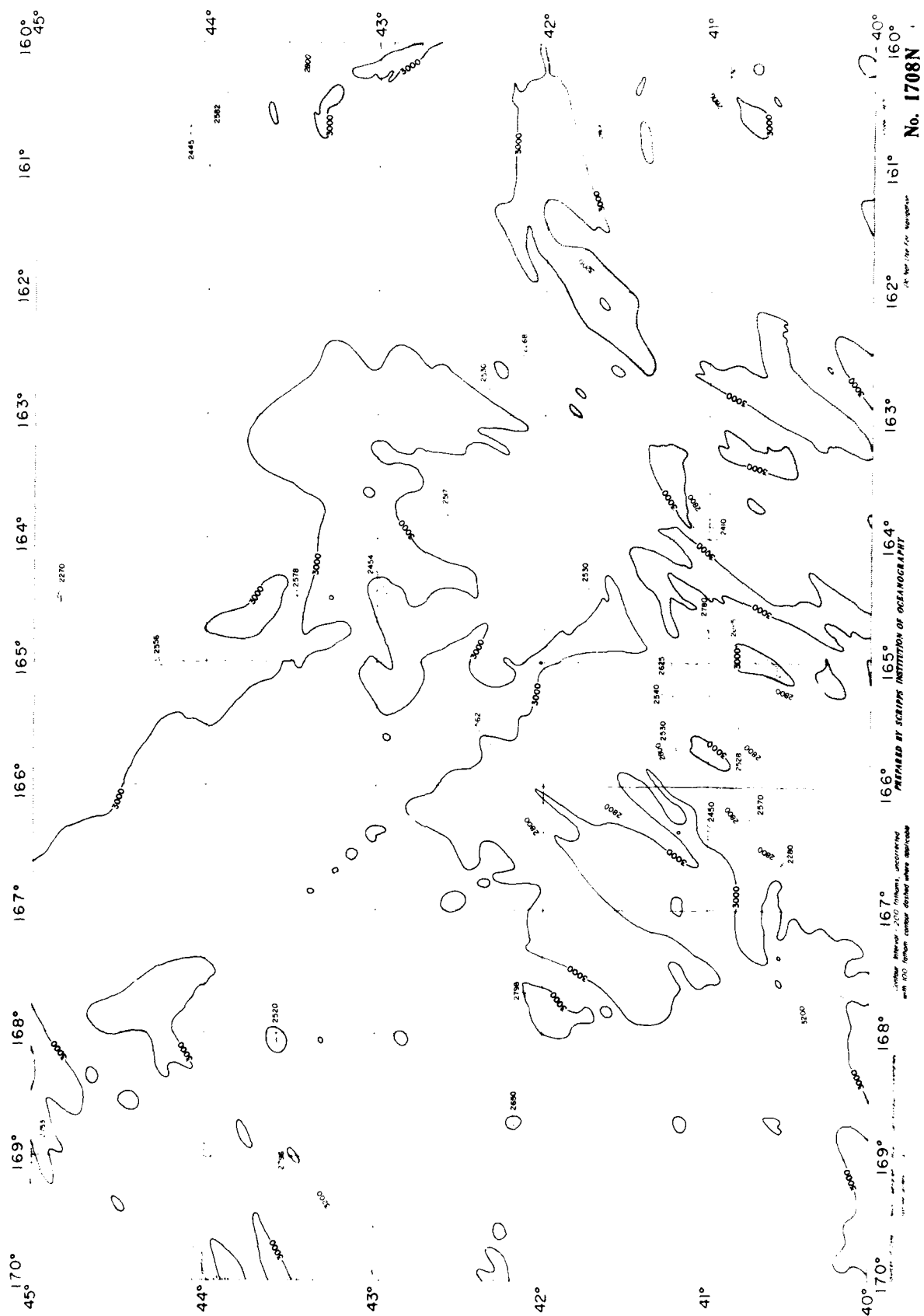
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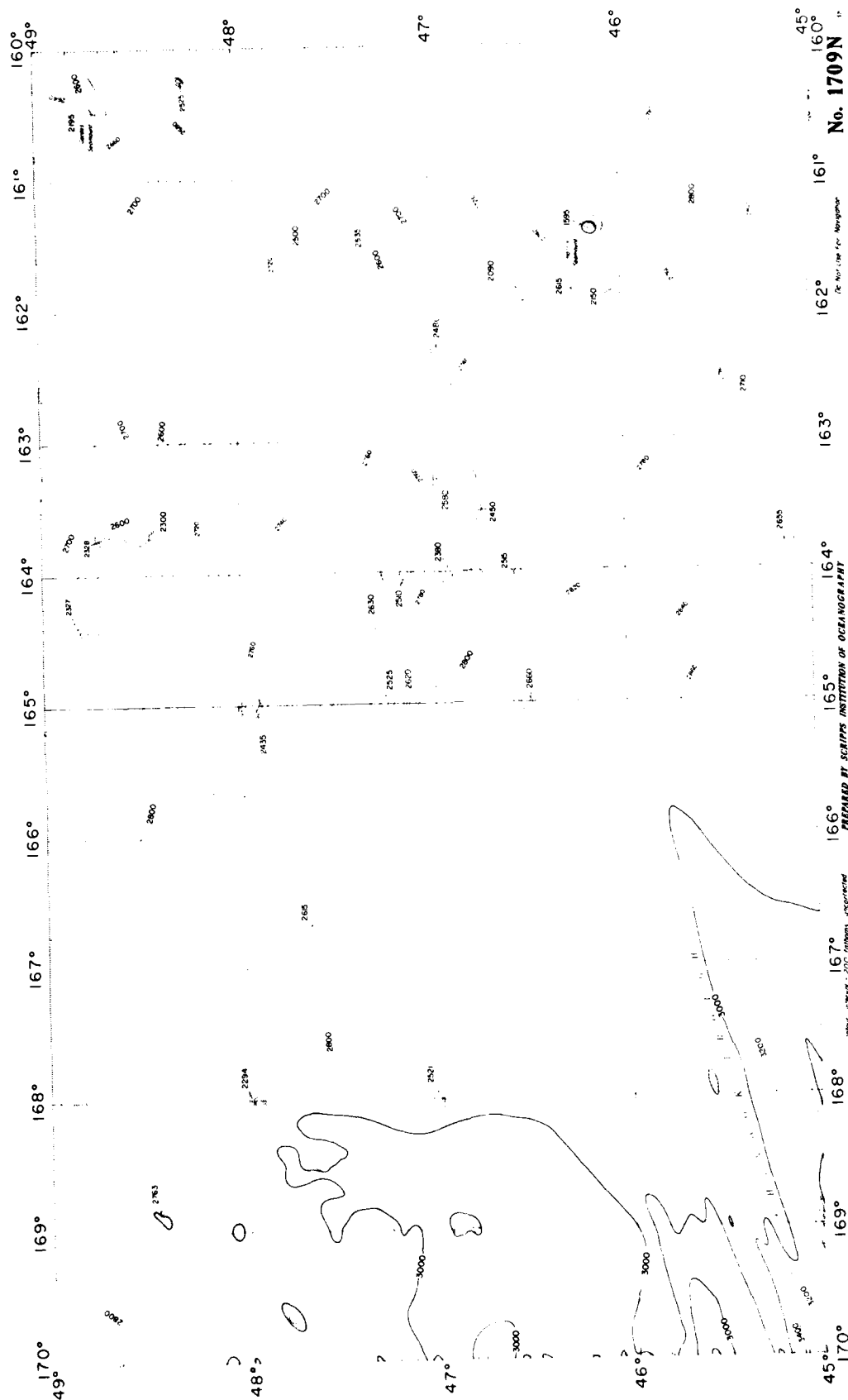


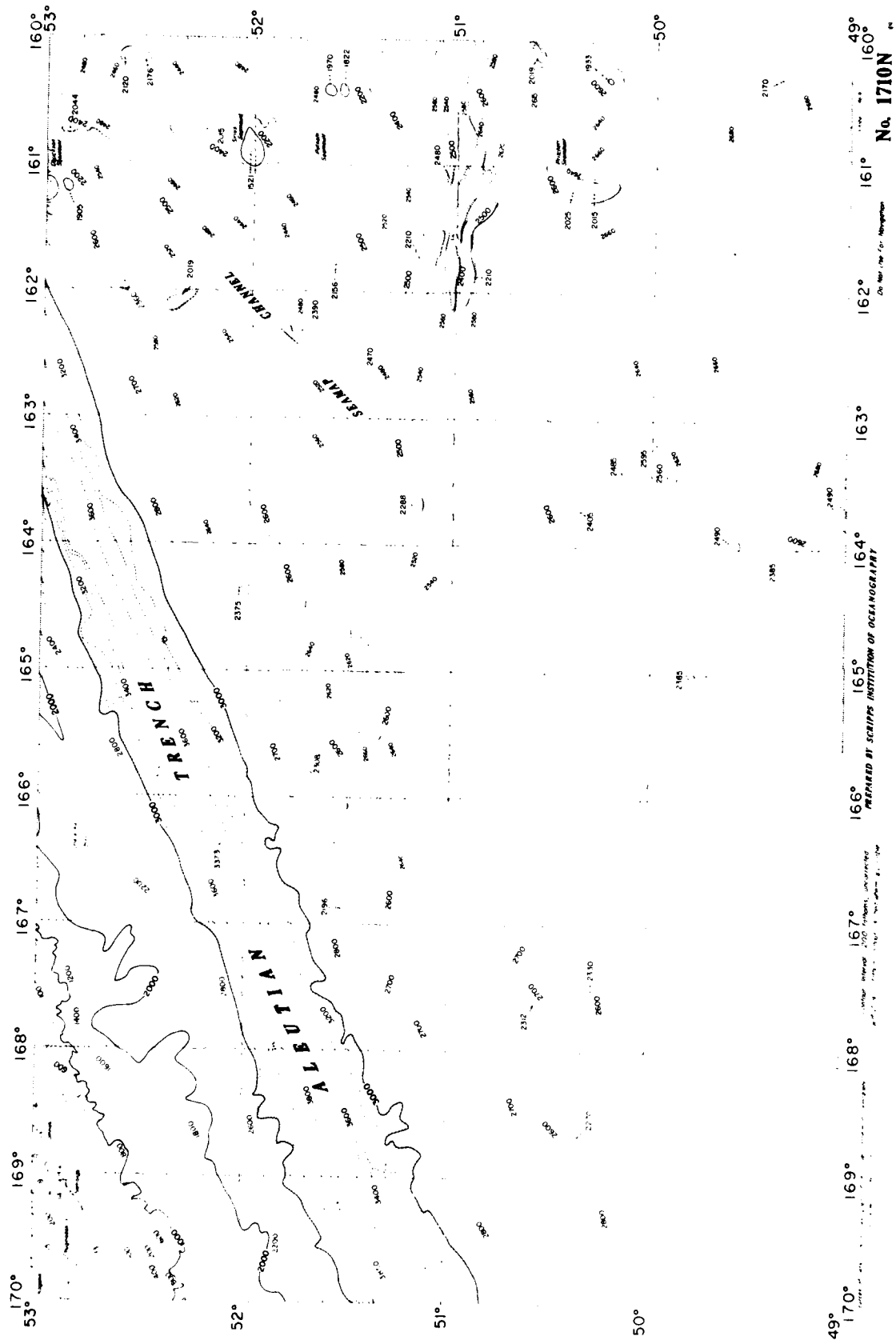
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with 100 fathom contour dashed where applicable

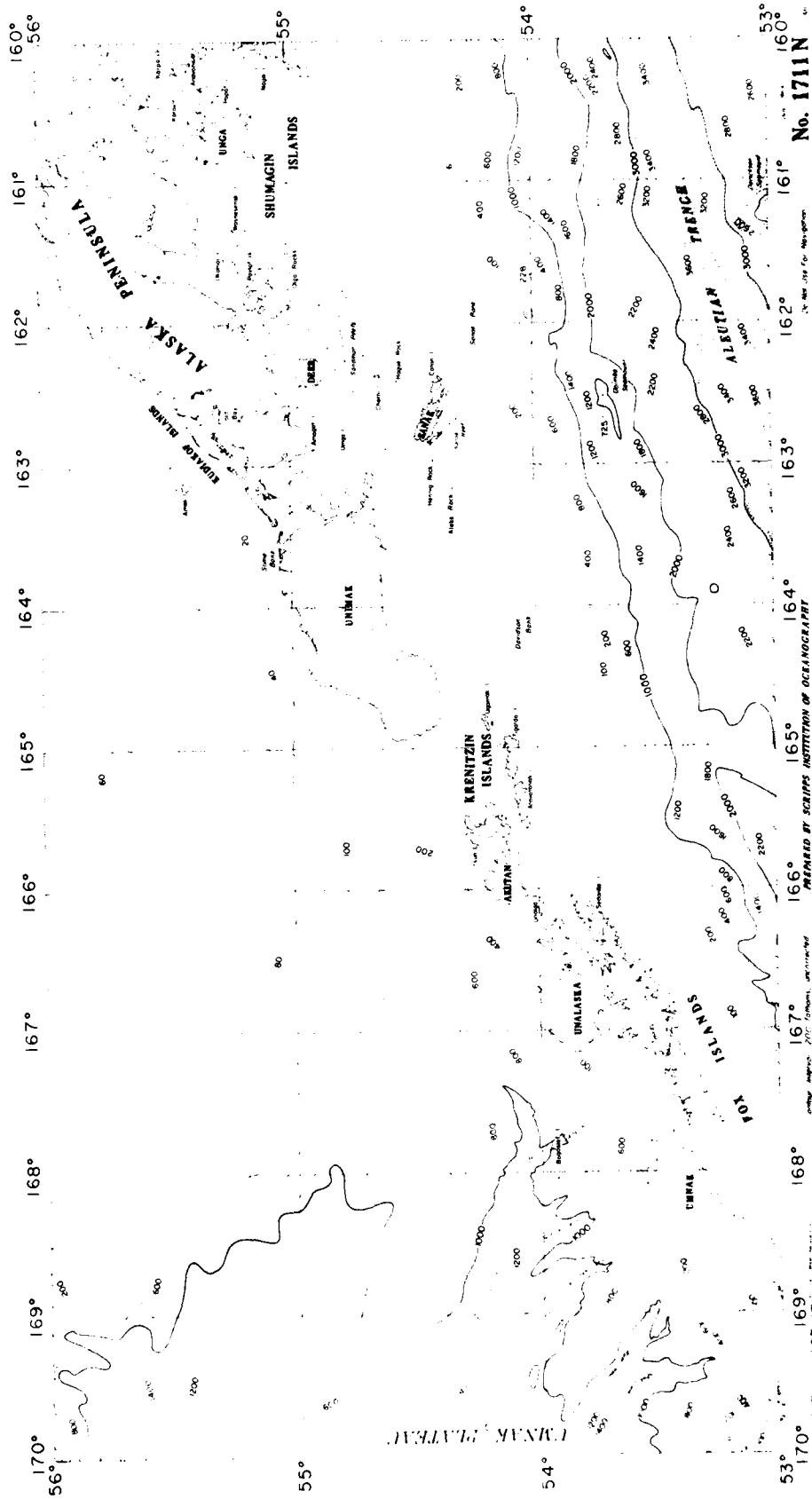
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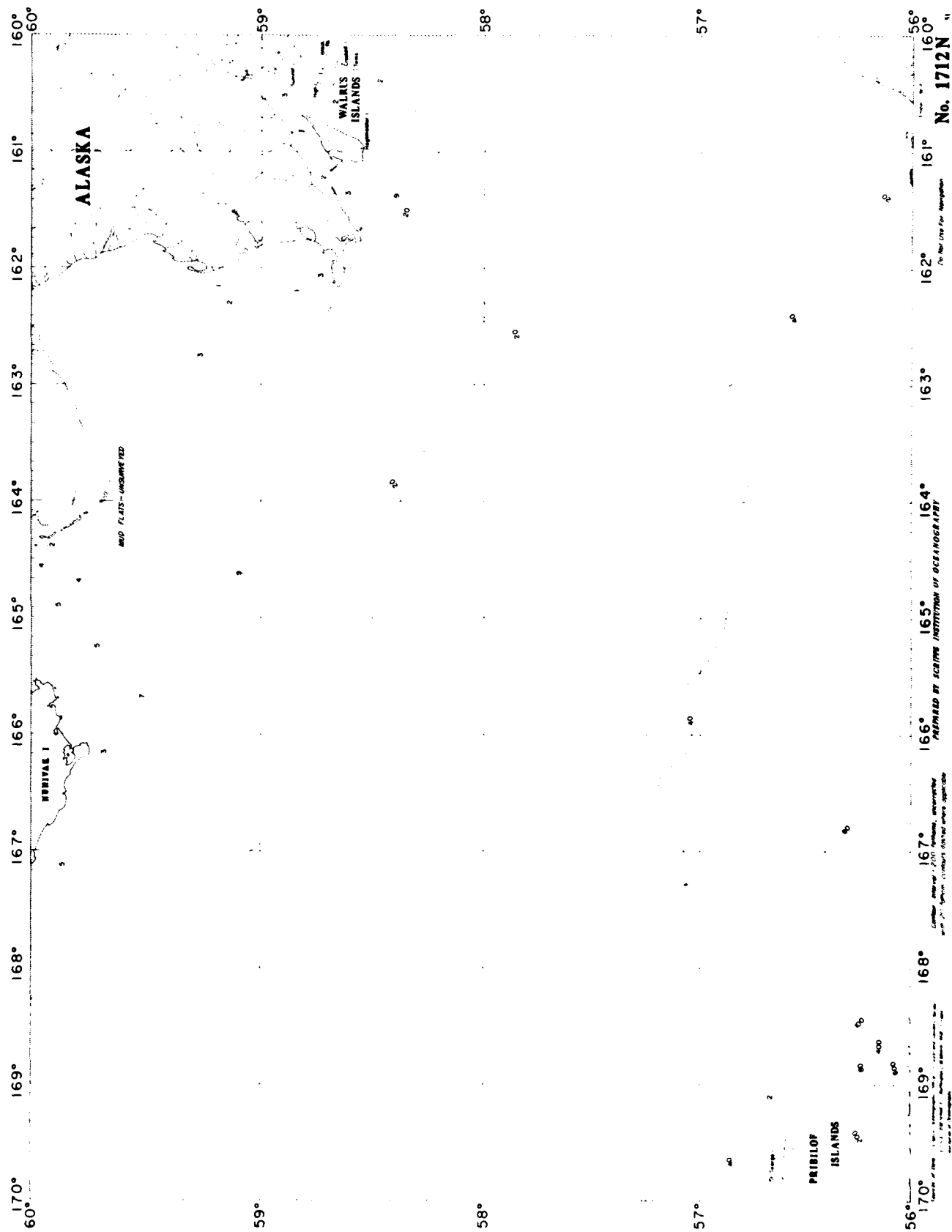
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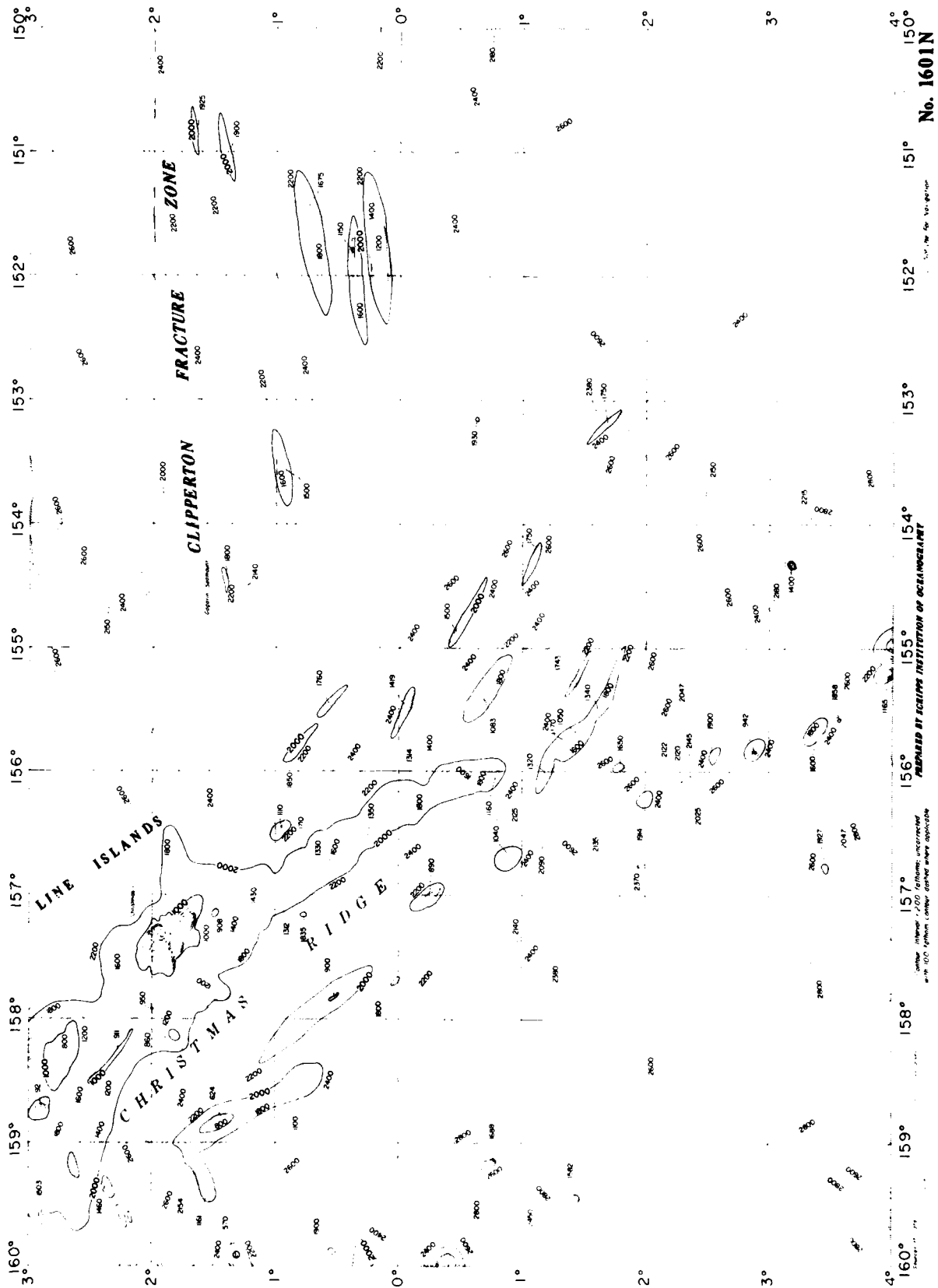








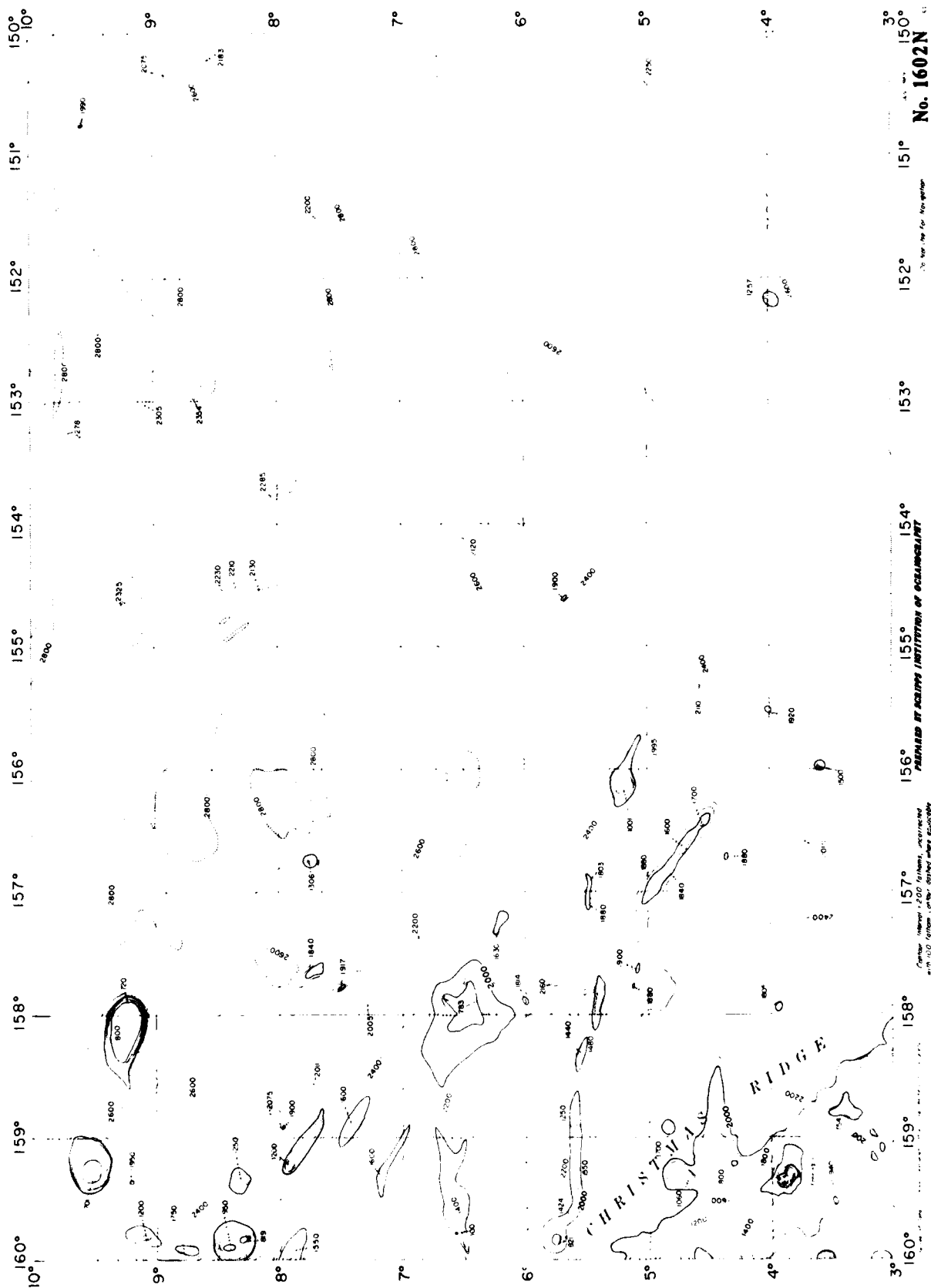


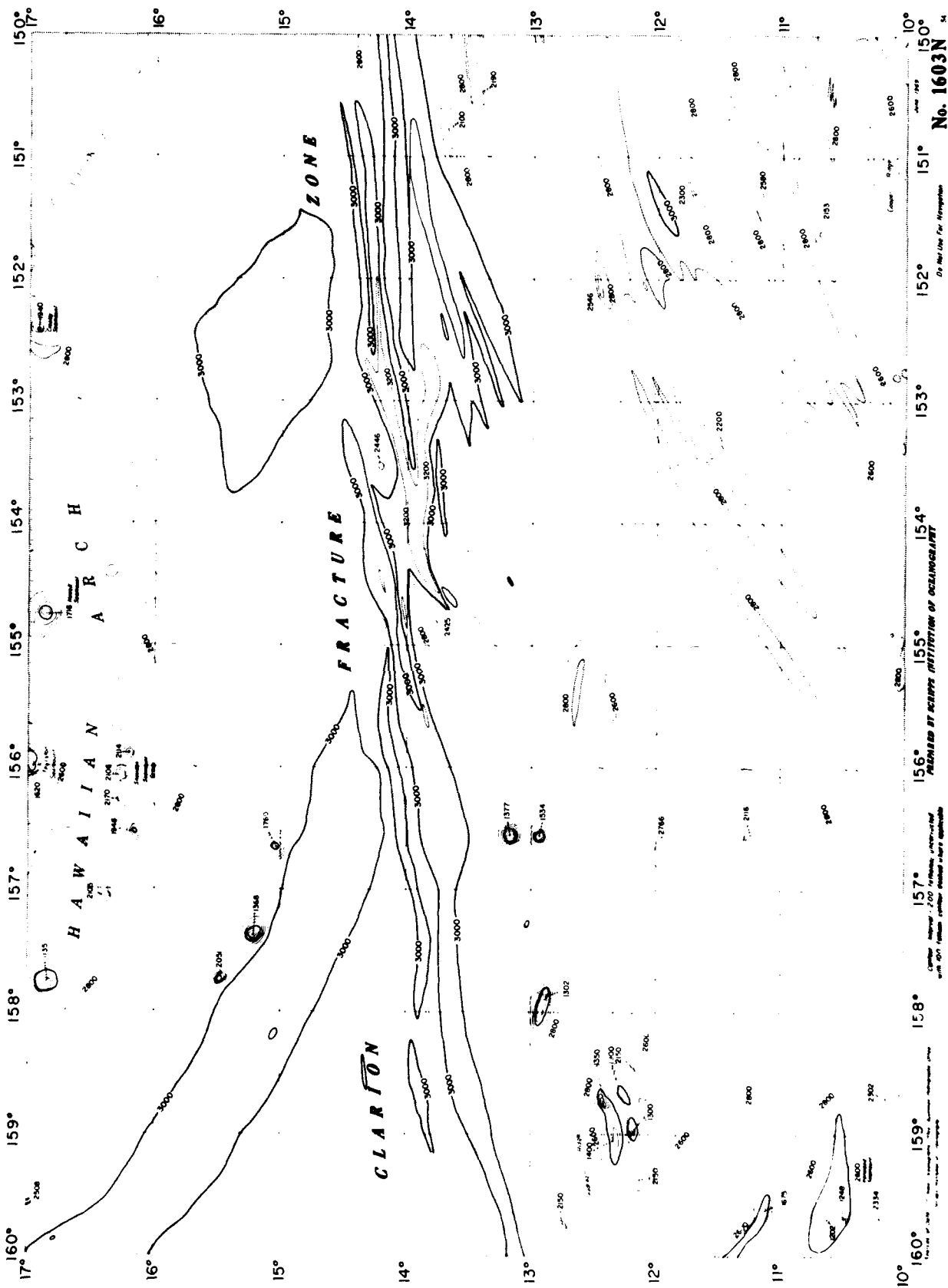


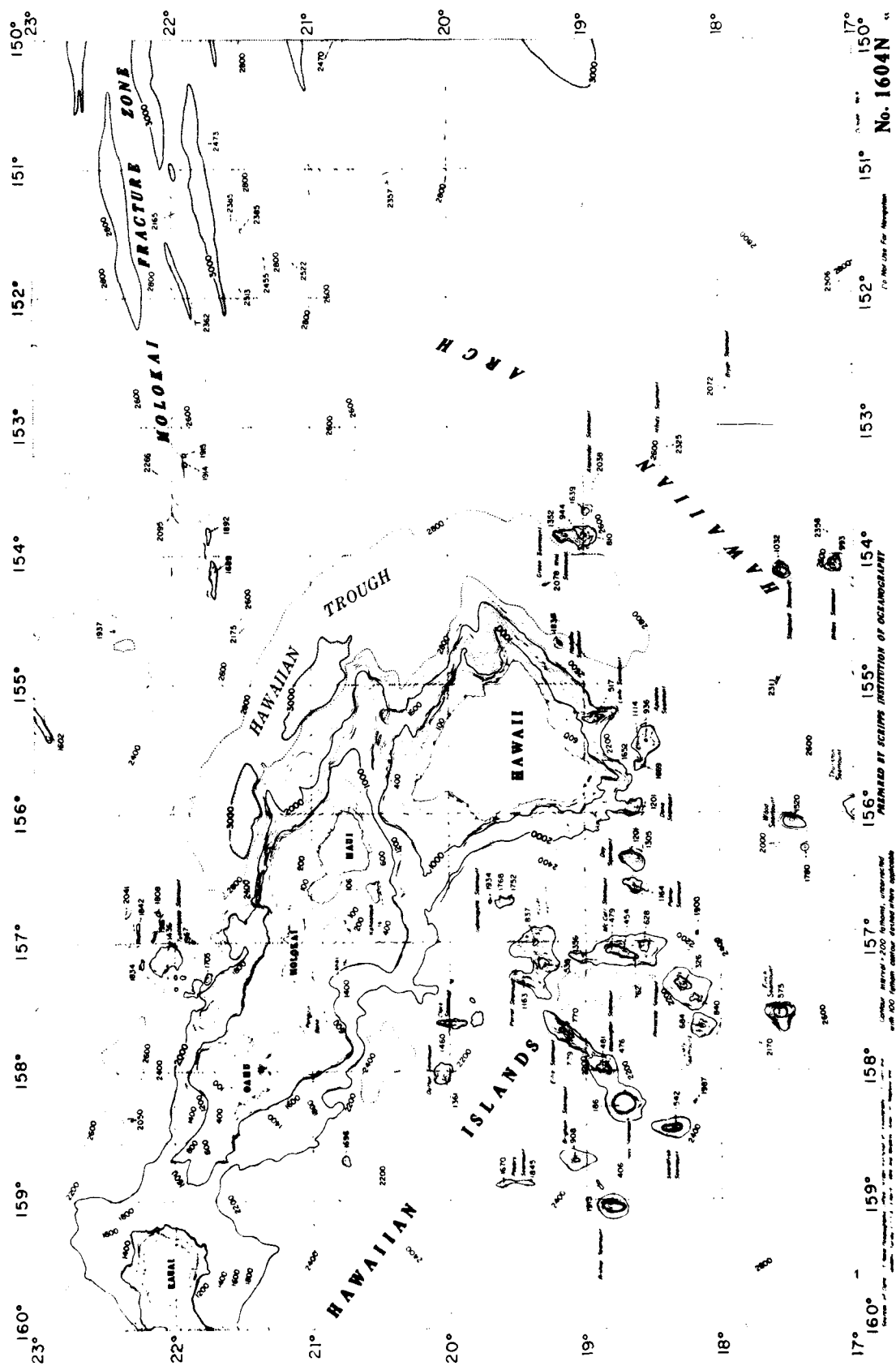
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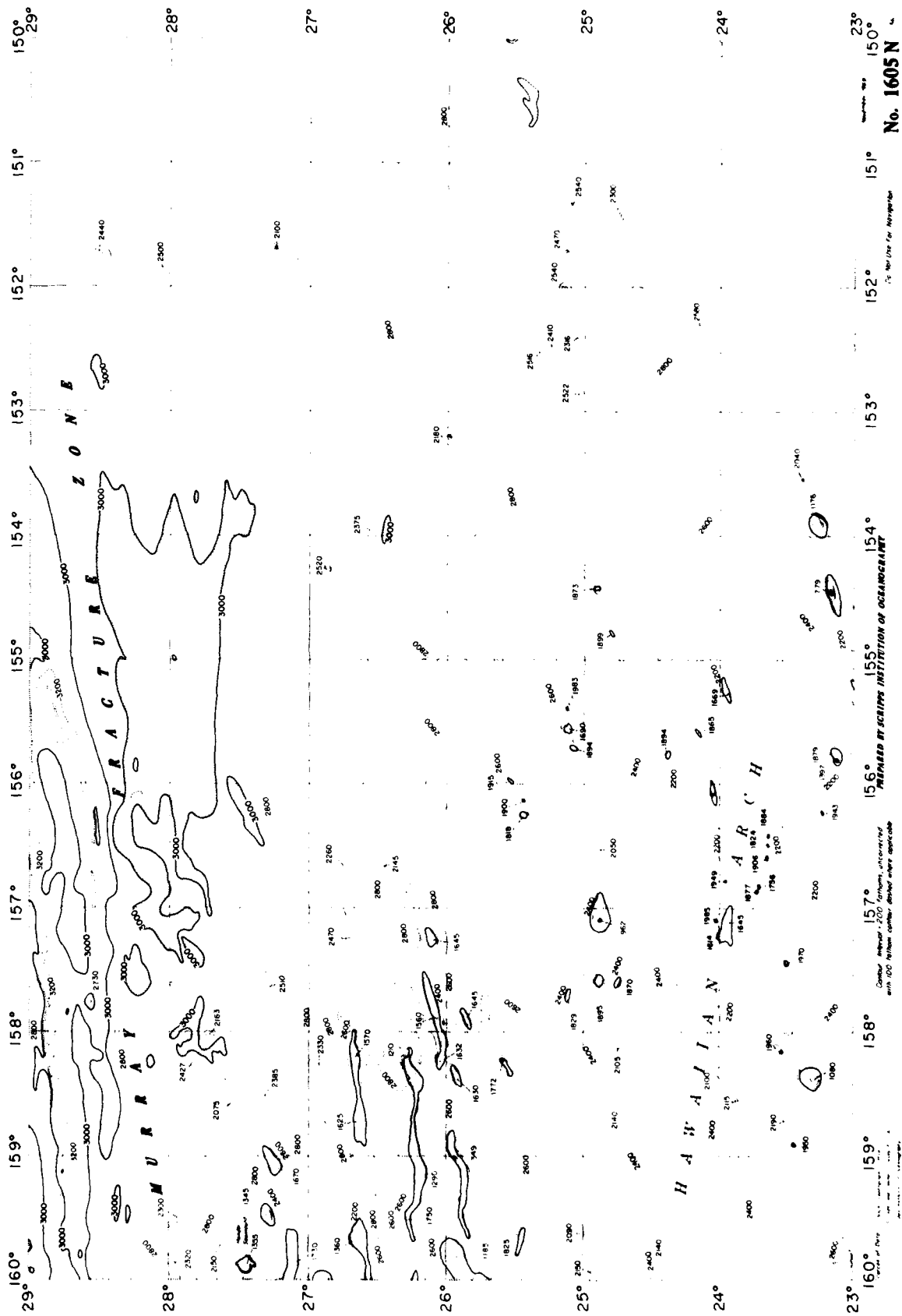
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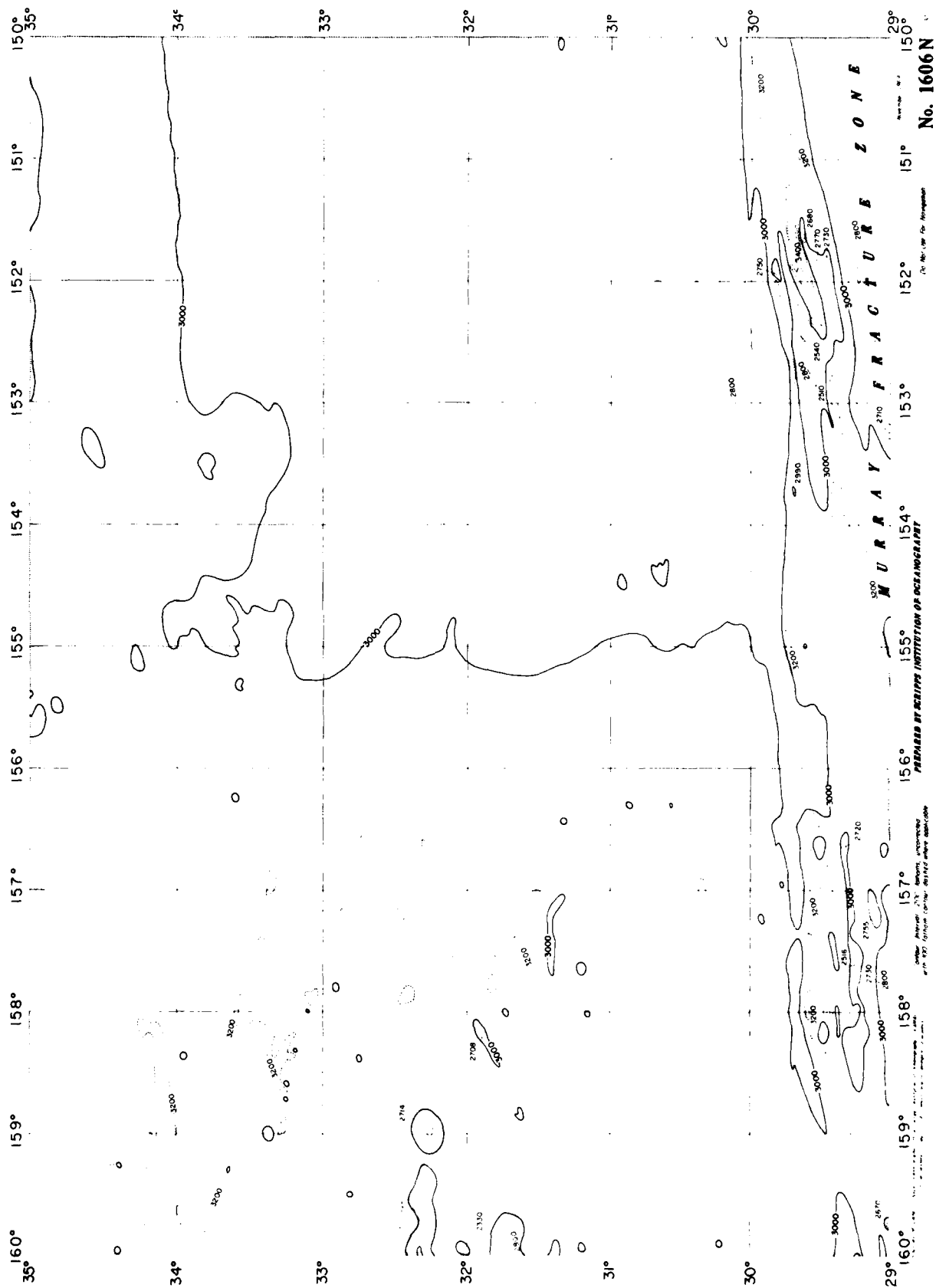
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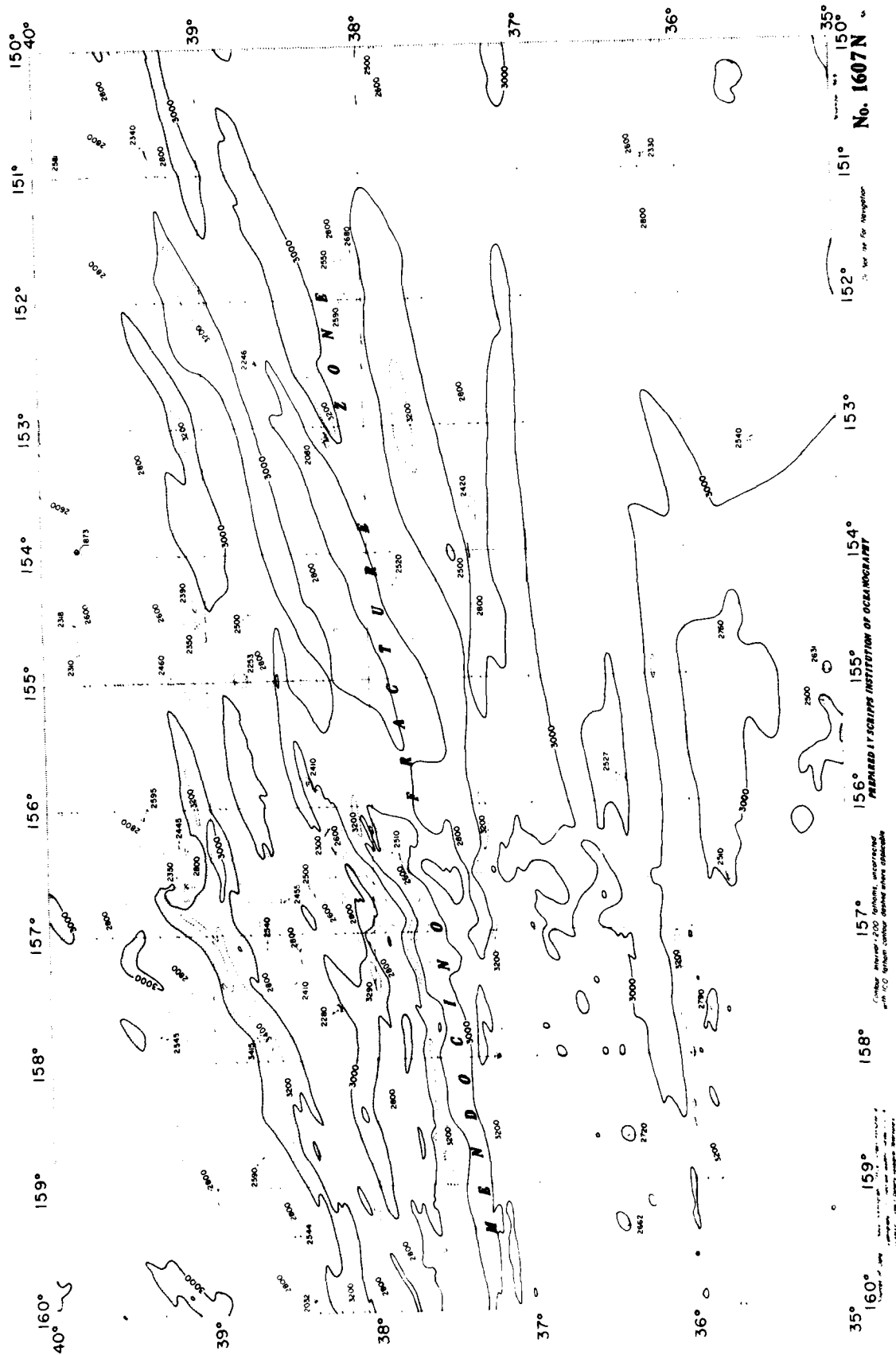


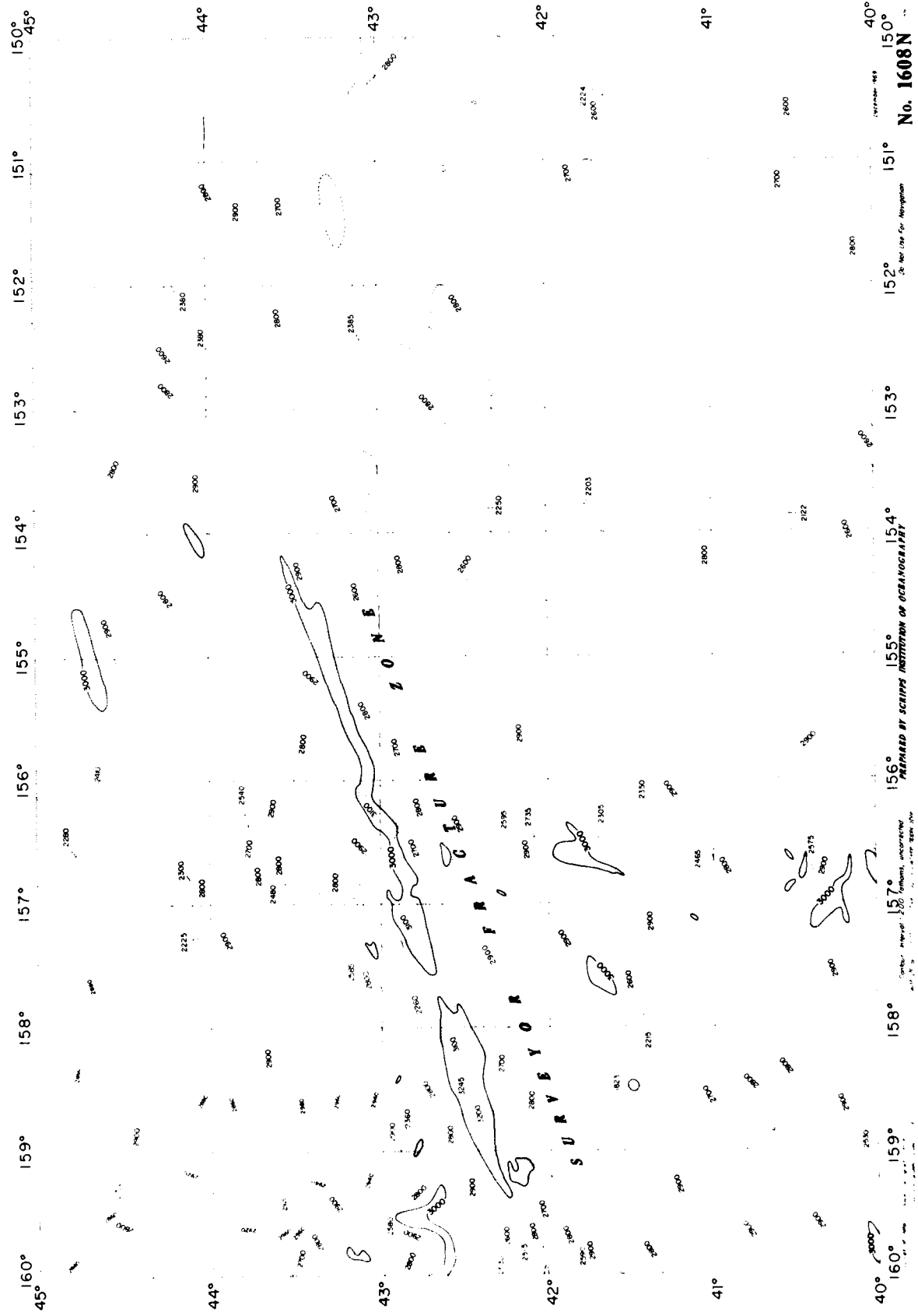


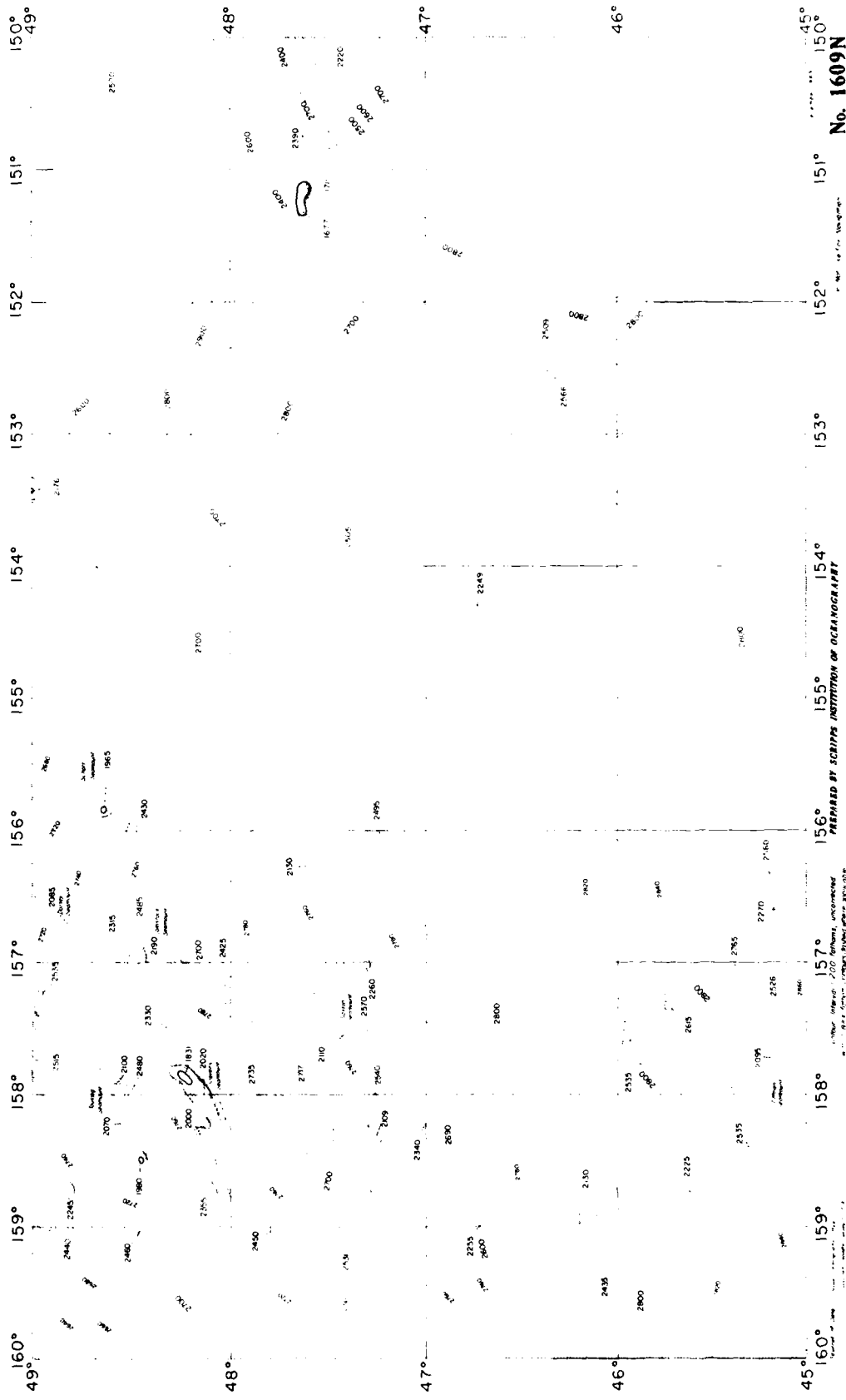






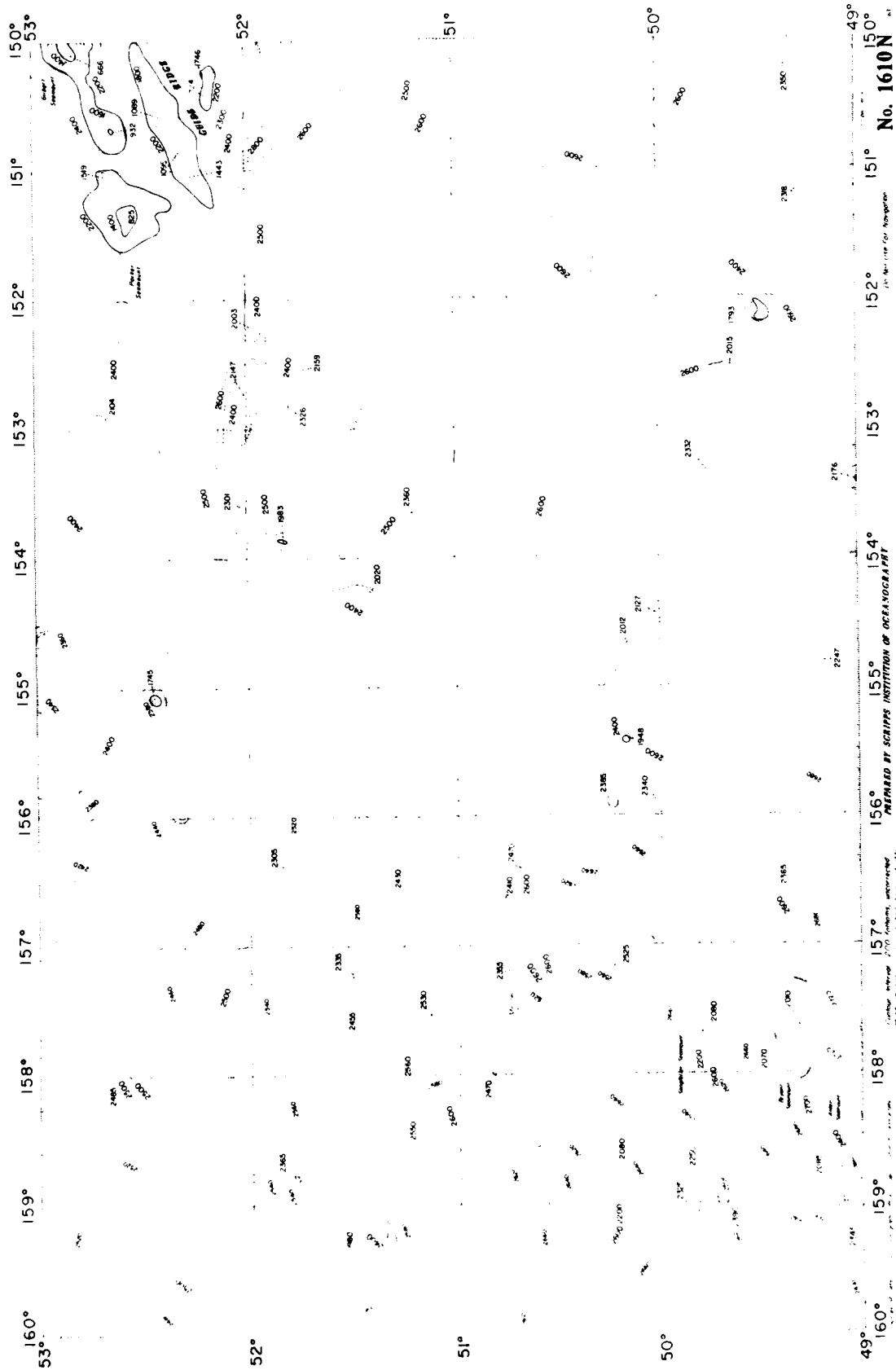


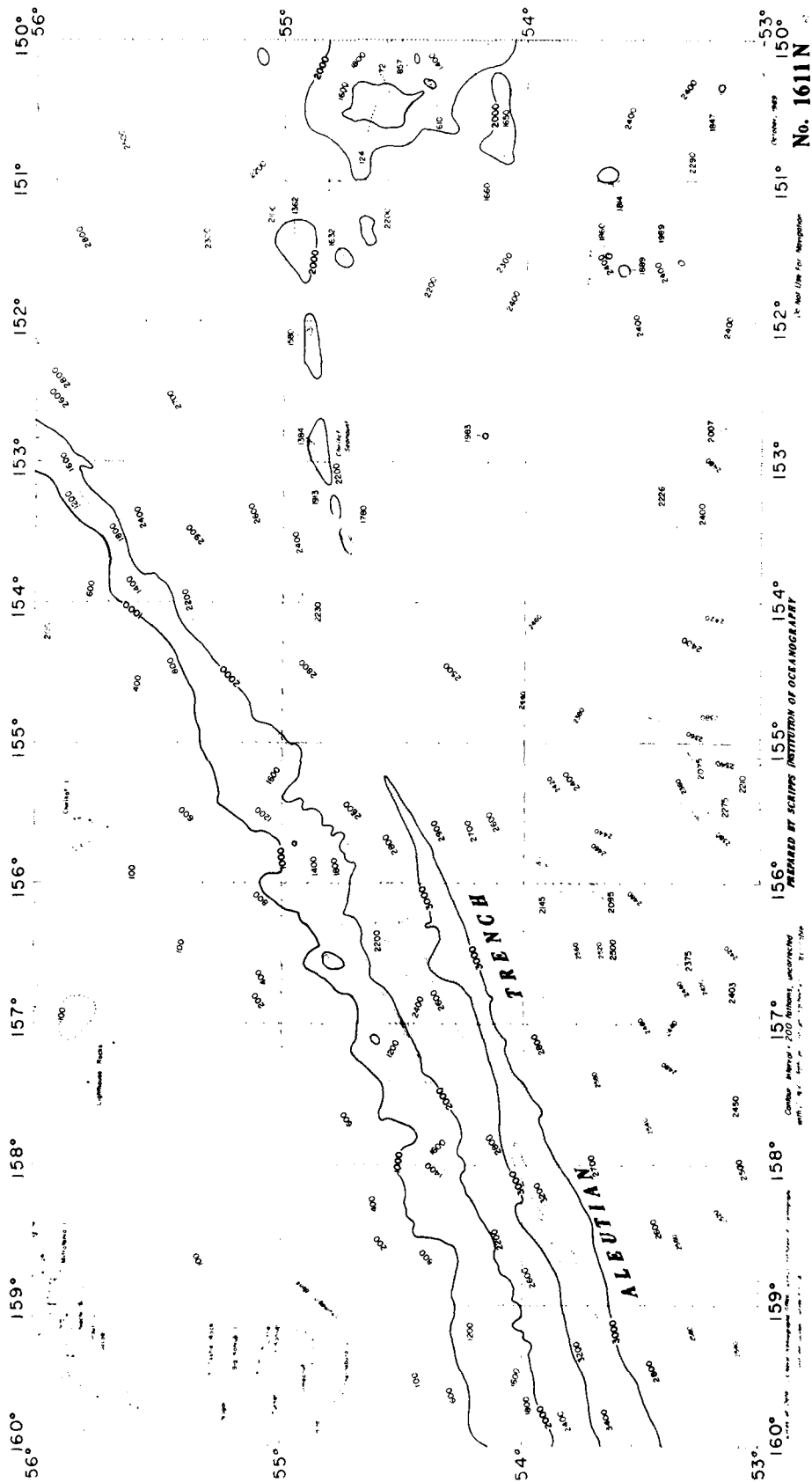




No. 1609N

PREPARED BY SCRIPTS INSTITUTION OF OCEANOGRAPHY





160° 159° 158° 157° 156° 155° 154° 153° 152° 151° 150° 60°

59° 58° 57° 56°

KENAI PENINSULA

PENINSULA

ALASKA

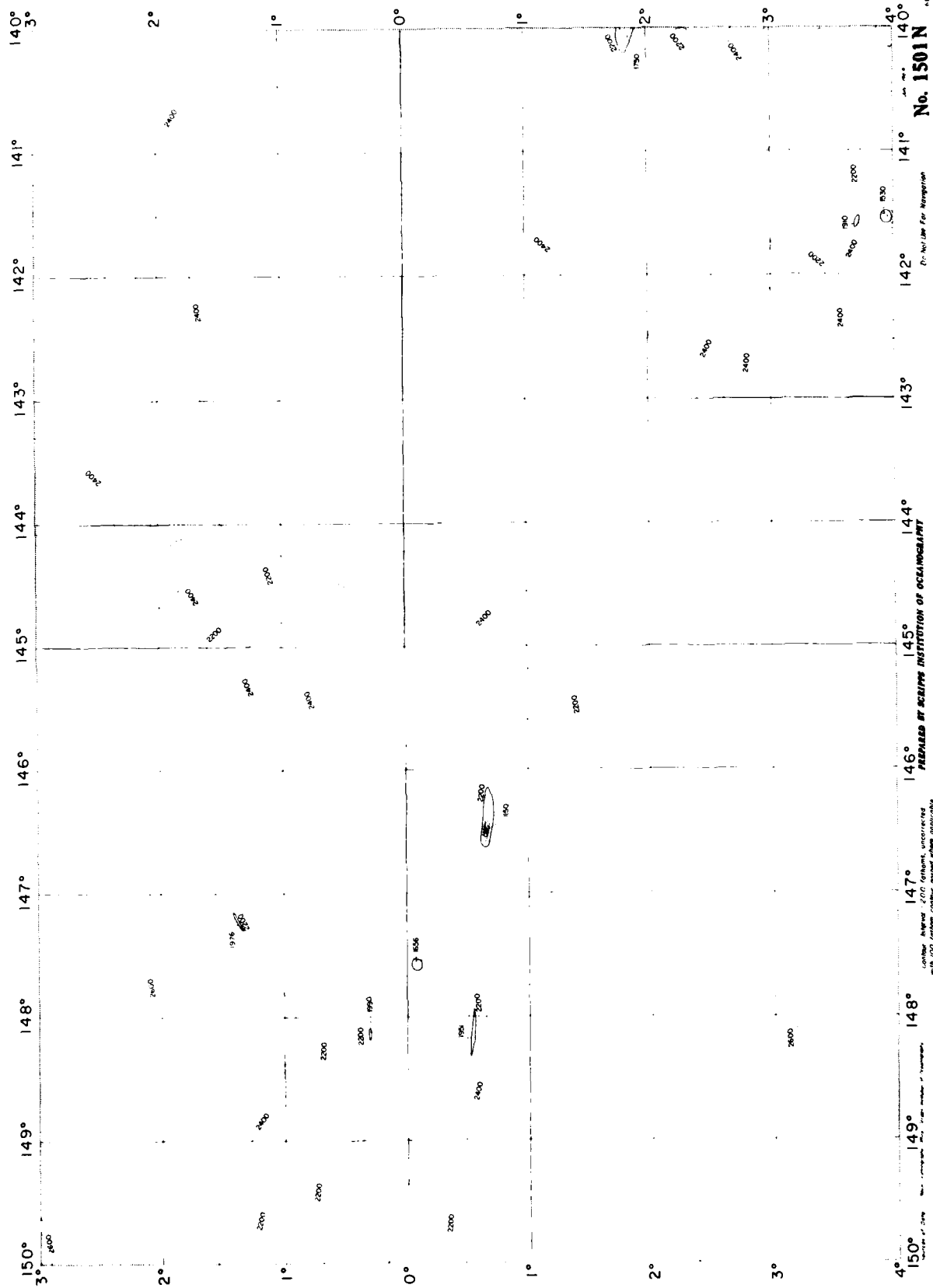
KODIAK ISLAND

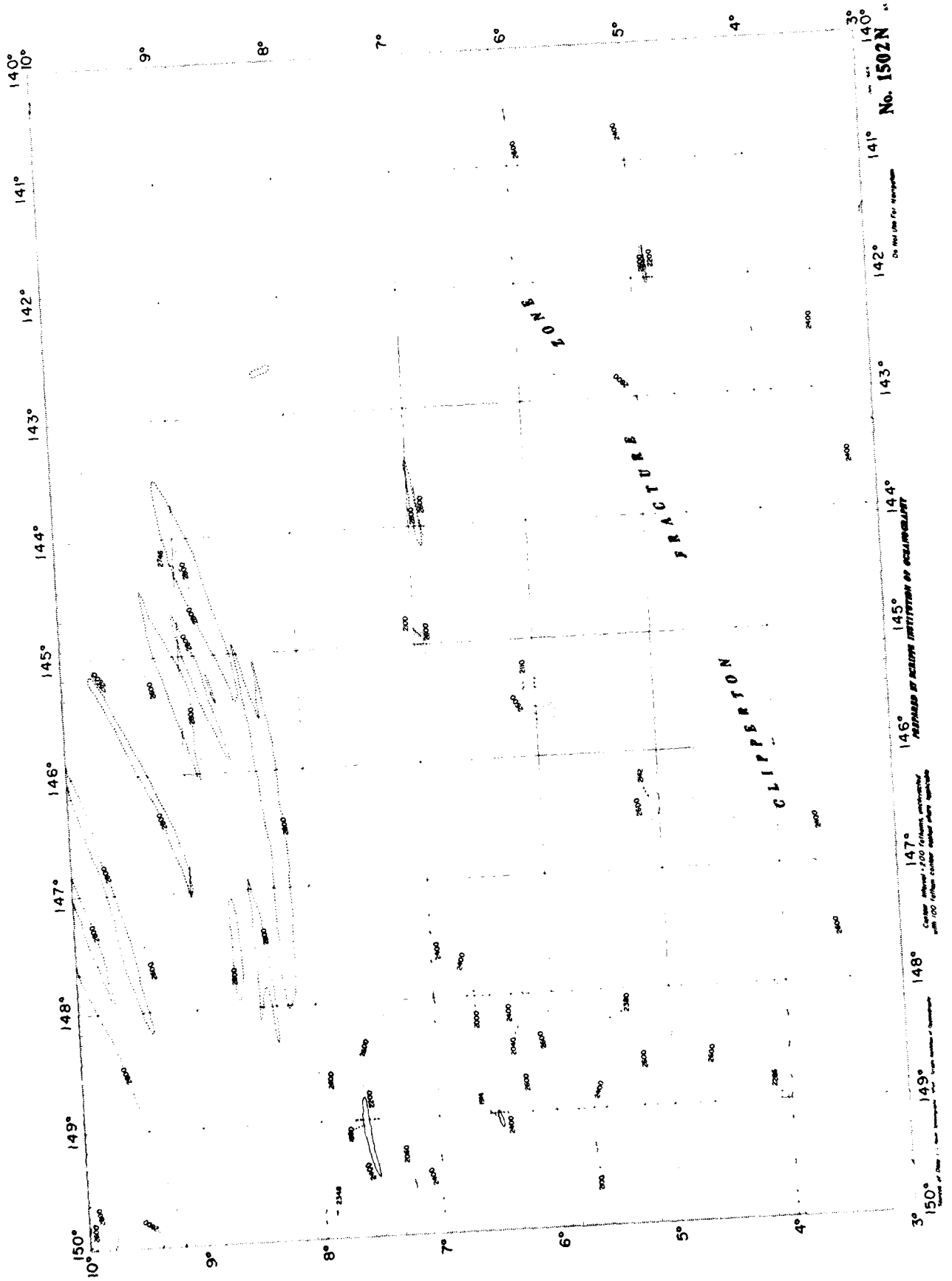
ADAMS ISLAND

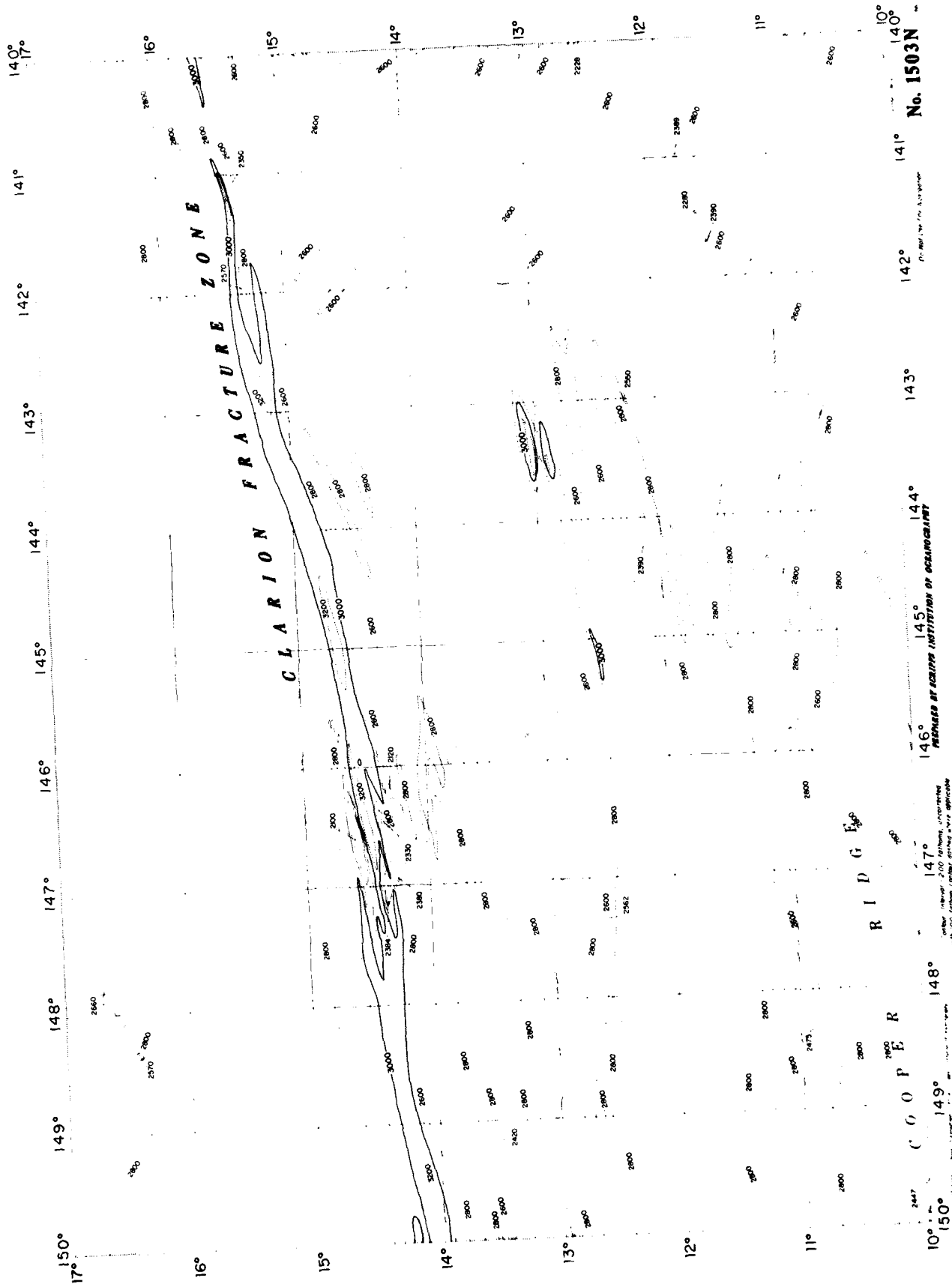
159° 158° 157° 156° 155° 154° 153° 152° 151° 150° 56° 57° 58° 59° No. 1612 N

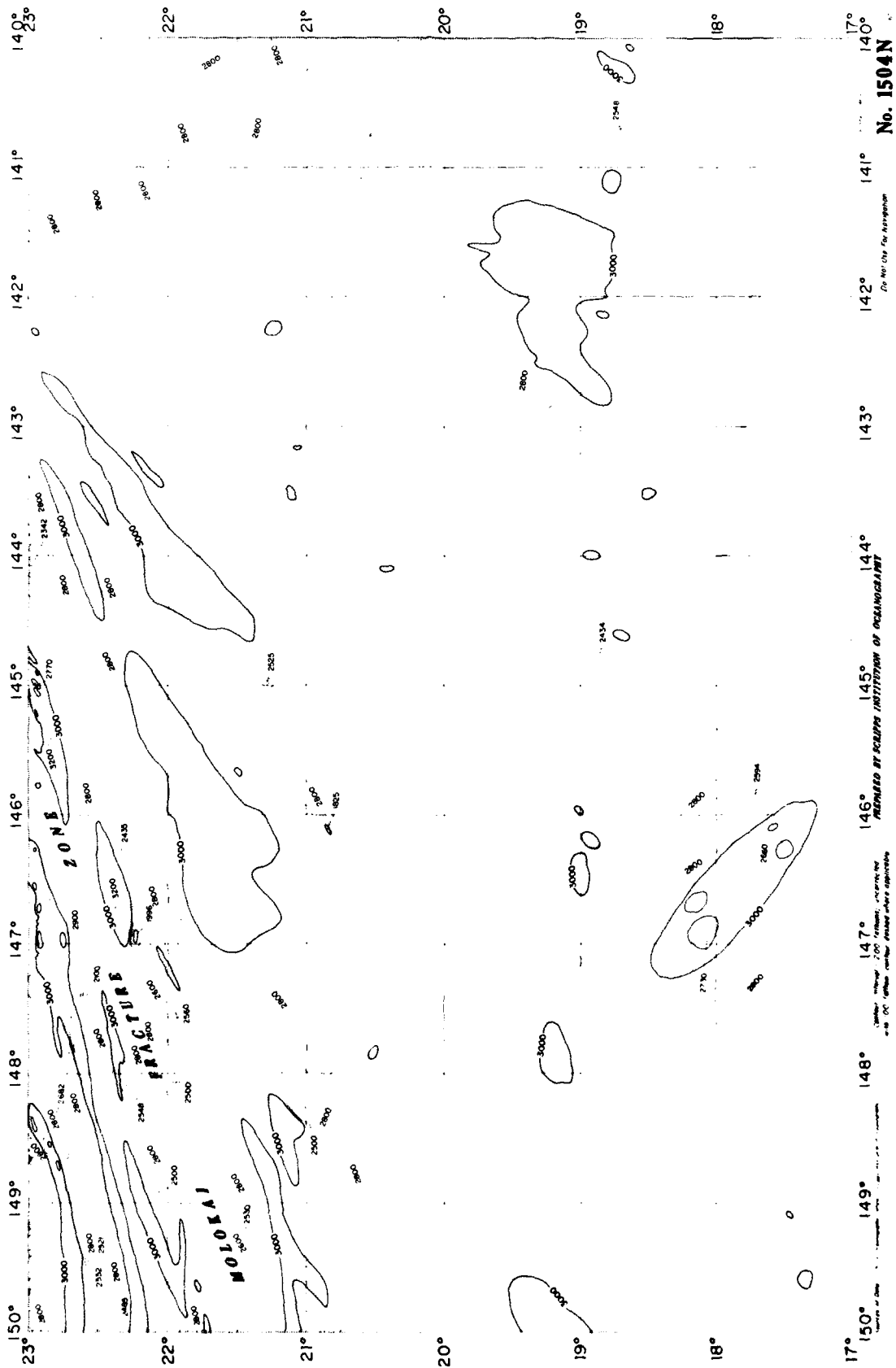
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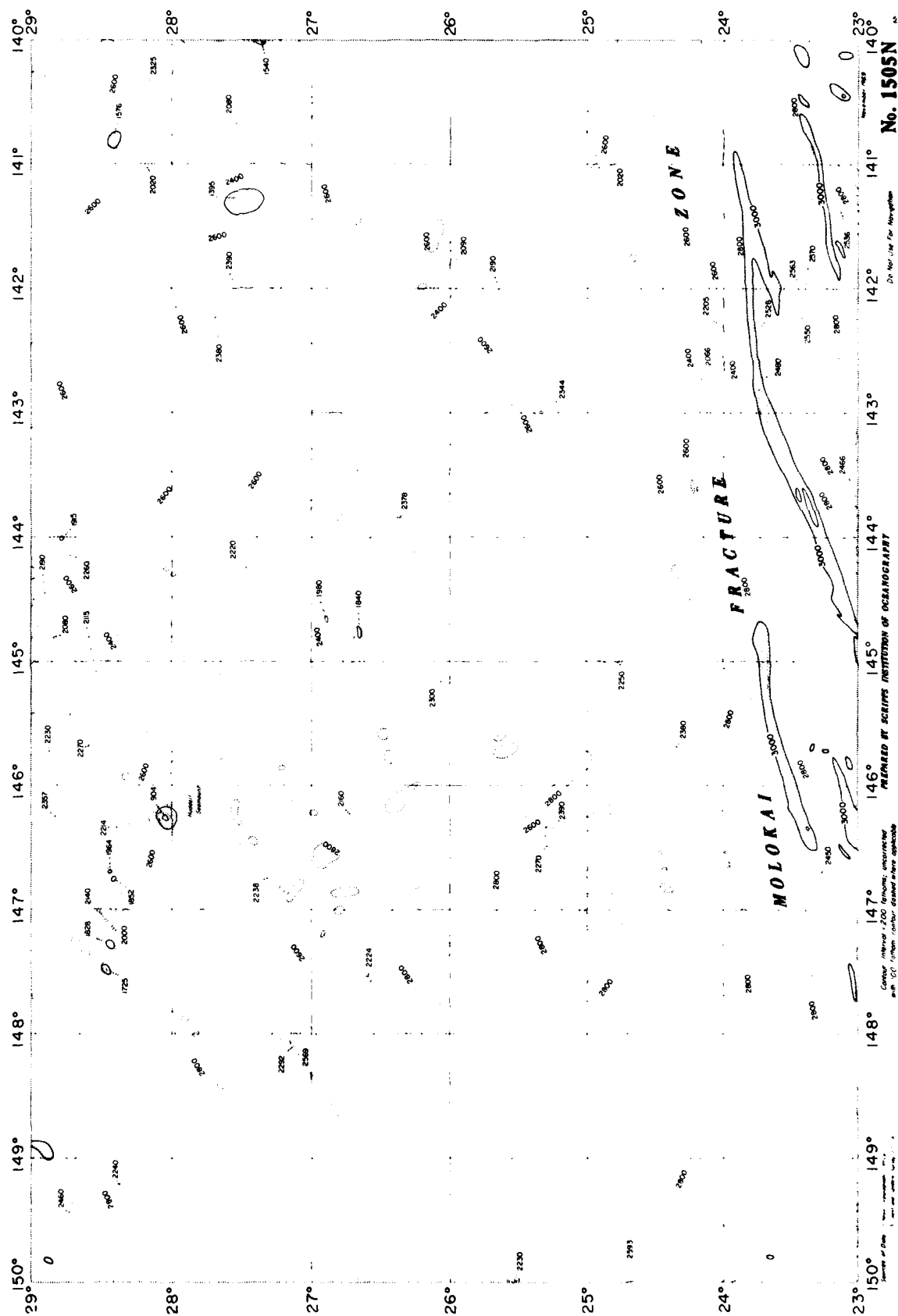
Scale 1:50,000











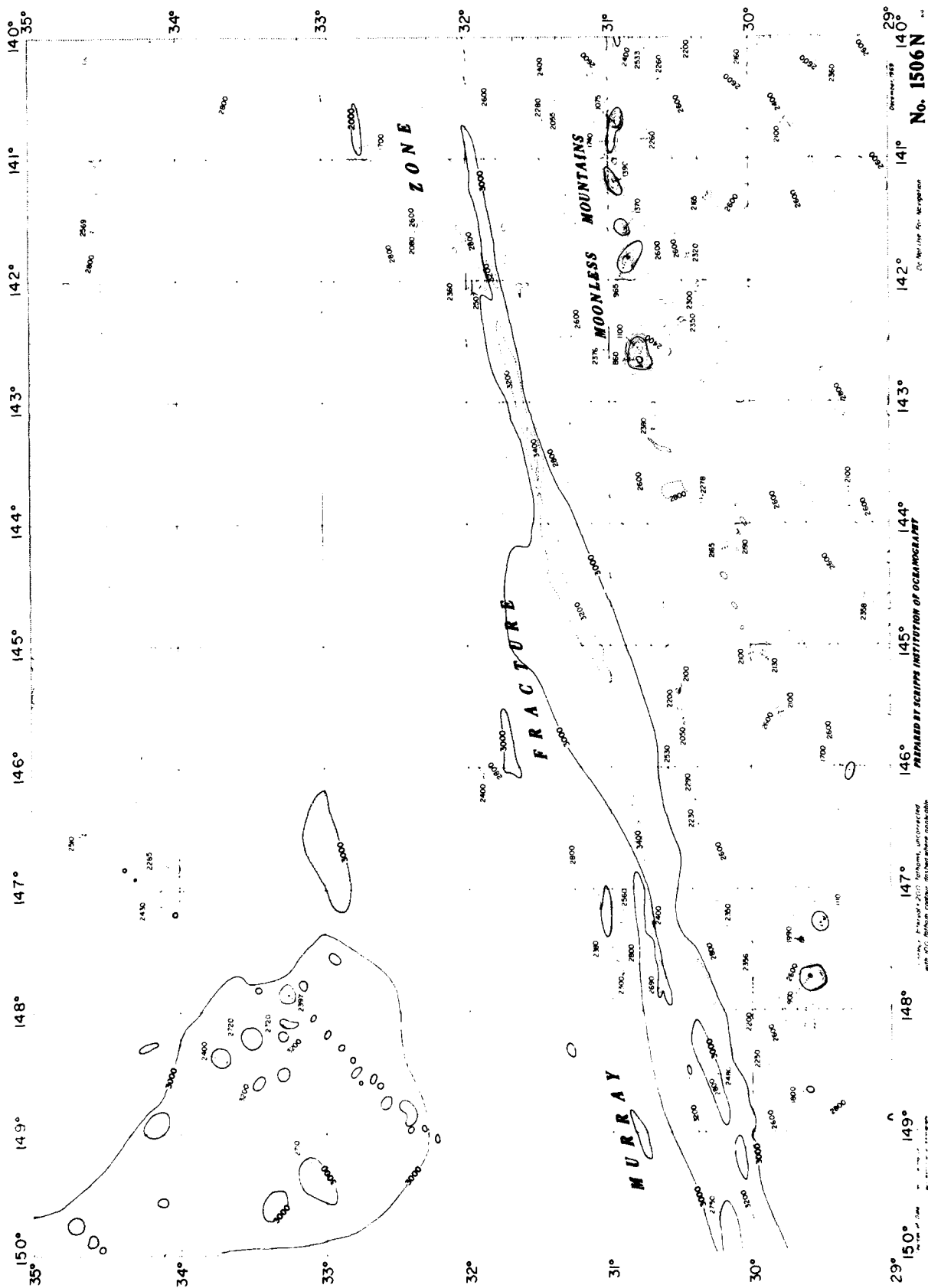
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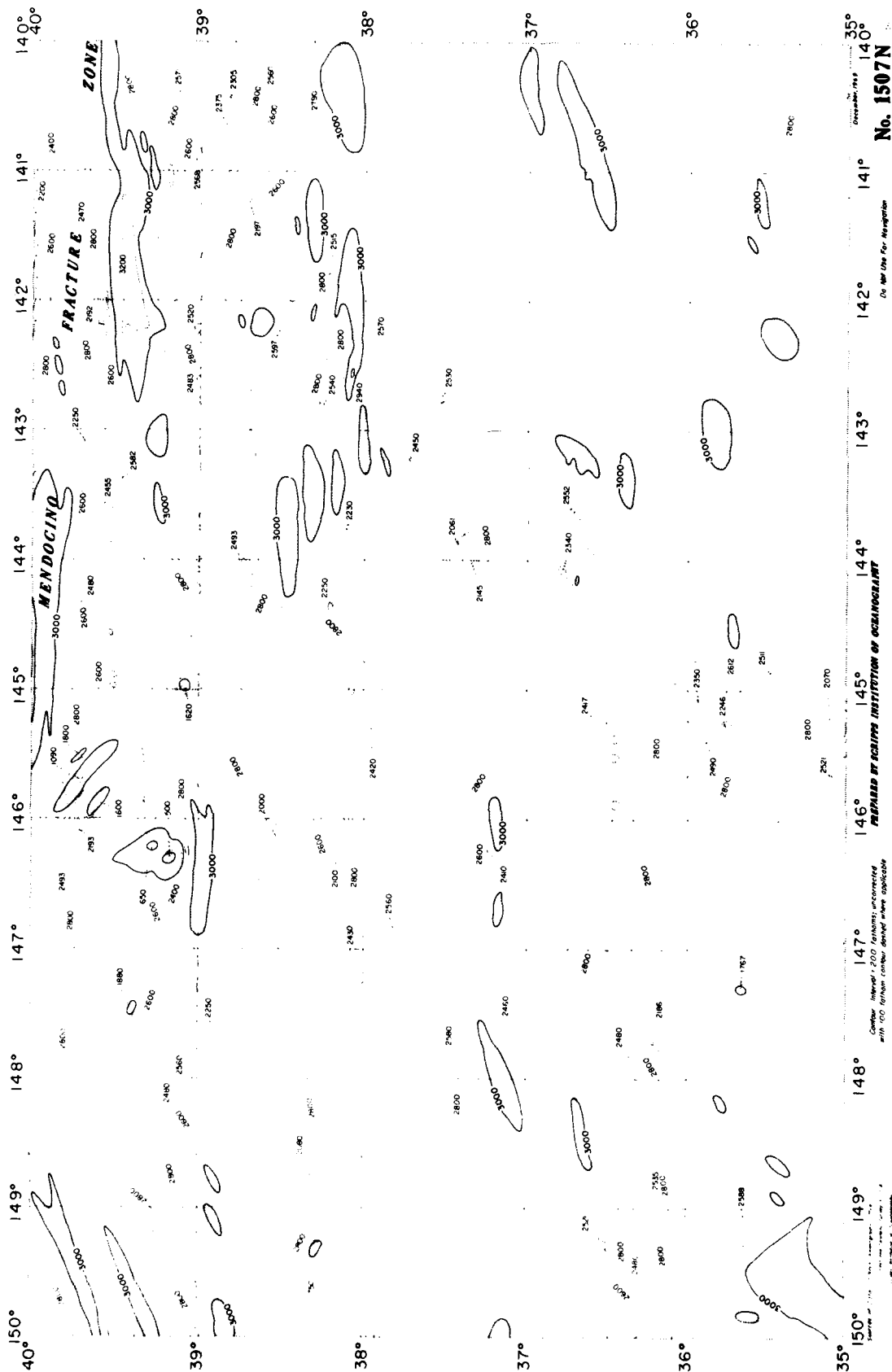
Do Not Use For Navigation

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Contour Interval - 200 fathoms; uncorrected
with 50' fathom contour dashed where applicable

Source of Data
1. Survey of the
2. Survey of the
3. Survey of the





140°
45°

141°

142°

143°

144°

145°

146°

147°

44°

43°

42°

41°

ZONE

41°

No. 1508N

141°

142°

143°

144°

145°

146°

147°

148°

149°

150°

FRACTURE

MENDOCINO

PREPARED BY GEOPHYSICAL INSTITUTION OF OREGON STATE

145°

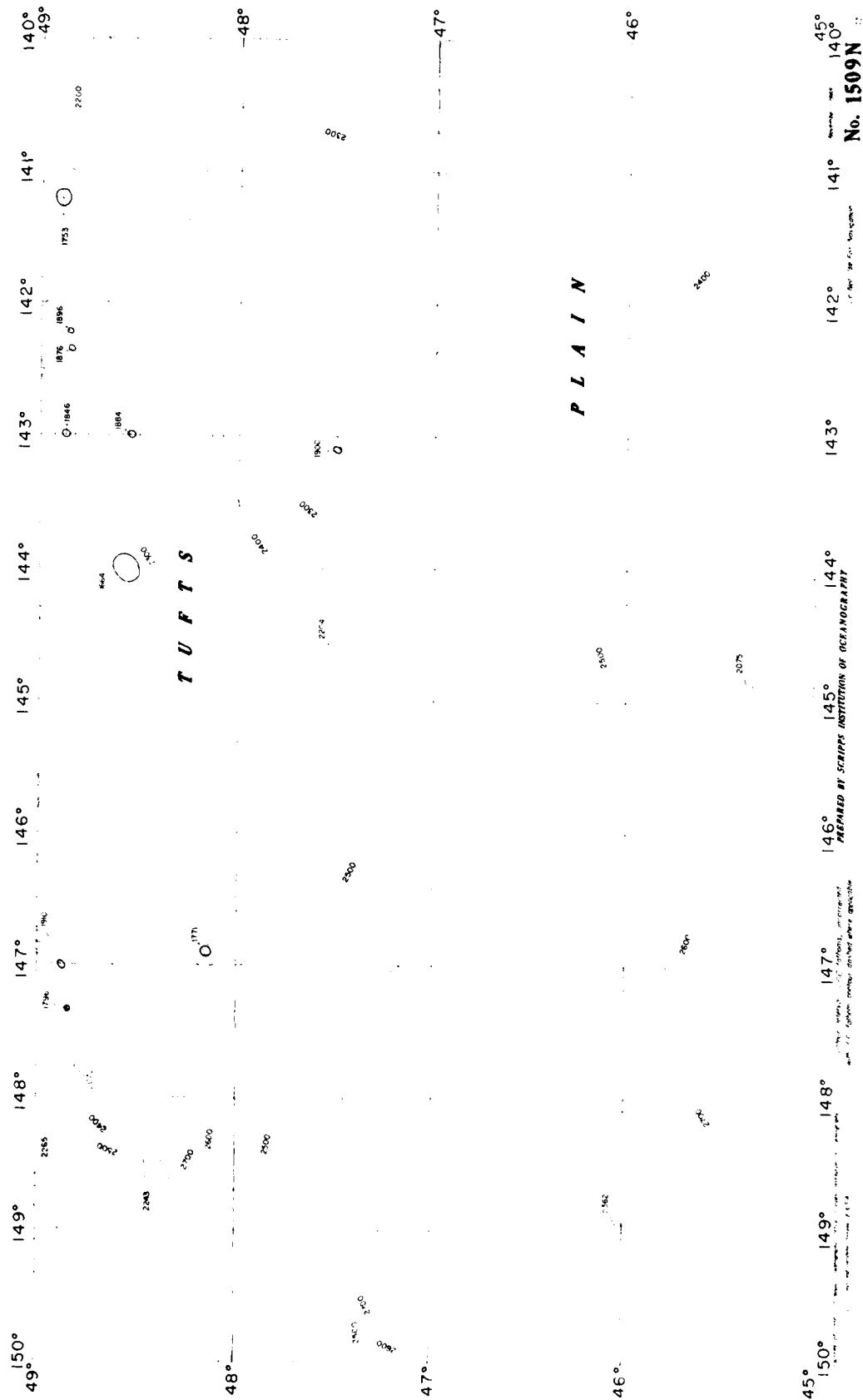
146°

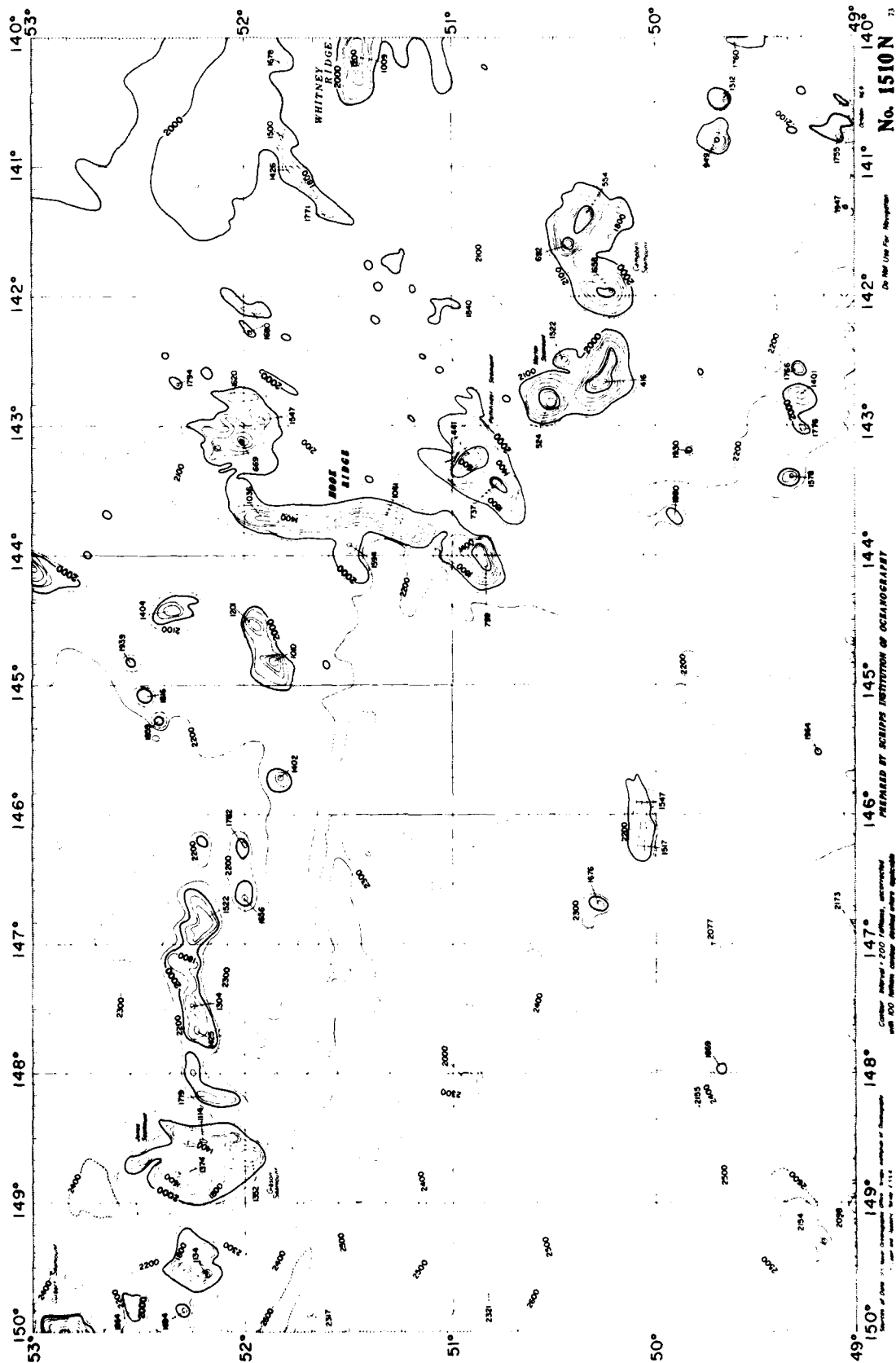
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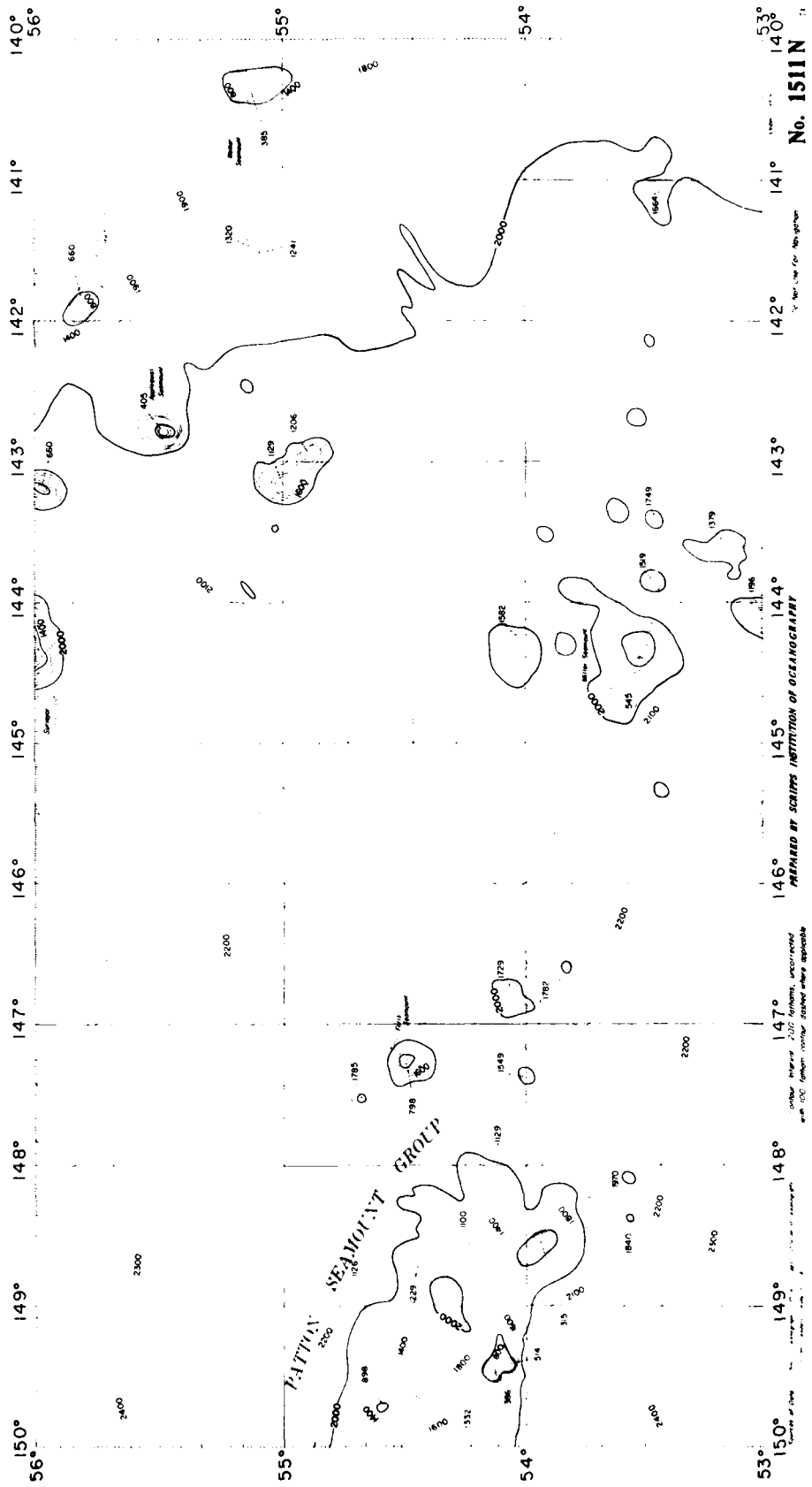
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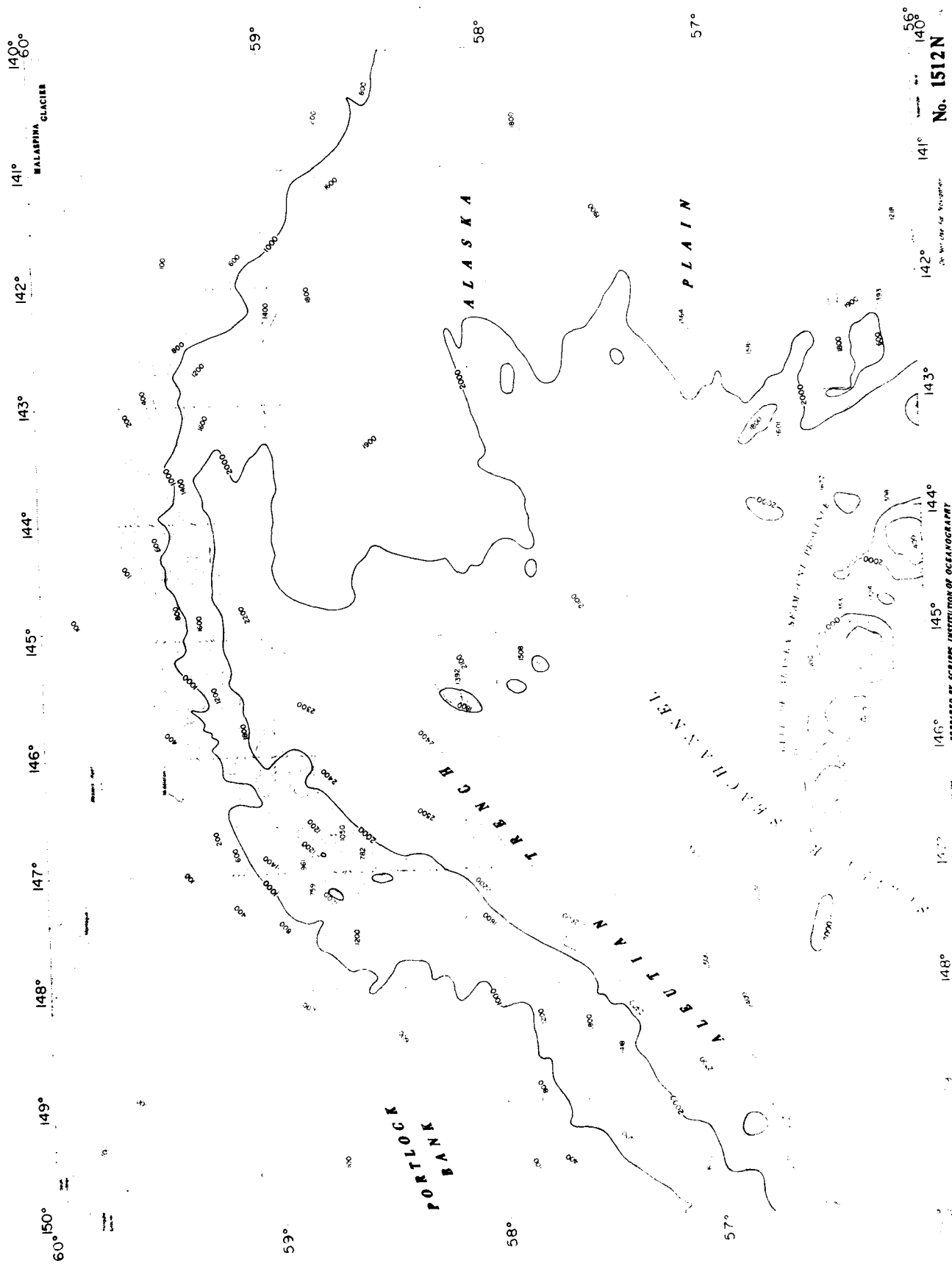
149°

150°









No. 1512N

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with 100 fathoms contour interval

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13. ABSTRACT		
This atlas contains 74 bathymetric charts covering the Northcentral Pacific Ocean between 4°S and 62°N latitude and between 160°E and 140°W longitude. Sea floor relief is shown by means of 200 fathom contours based on a mean sound velocity of 4800 feet/second. Where sufficient data permits, the 100 and 20 fathom contours are shown. Principal sounding lines used in compilation and analysis of the sea floor relief are indicated by a subdued grey overprint on each chart. The scale of the charts is approximately 1:4,500,000. The data analysis and the smooth contouring of the charts at a scale of 1:1,000,000 was performed at Scripps Institution of Oceanography, LaJolla, California under U. S. NAVOCEANO Contract No. N62306-69-A-0072.0002. Dr. H. W. Menard was general director of the project which was conducted under the supervision of T. E. Chase. Funds for this project were provided by the Long Range Propagation Project, Office of Naval Research.		

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Bathymetric Charts						
North Pacific Ocean						
Northcentral Pacific Ocean						
Sea Floor Relief						

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