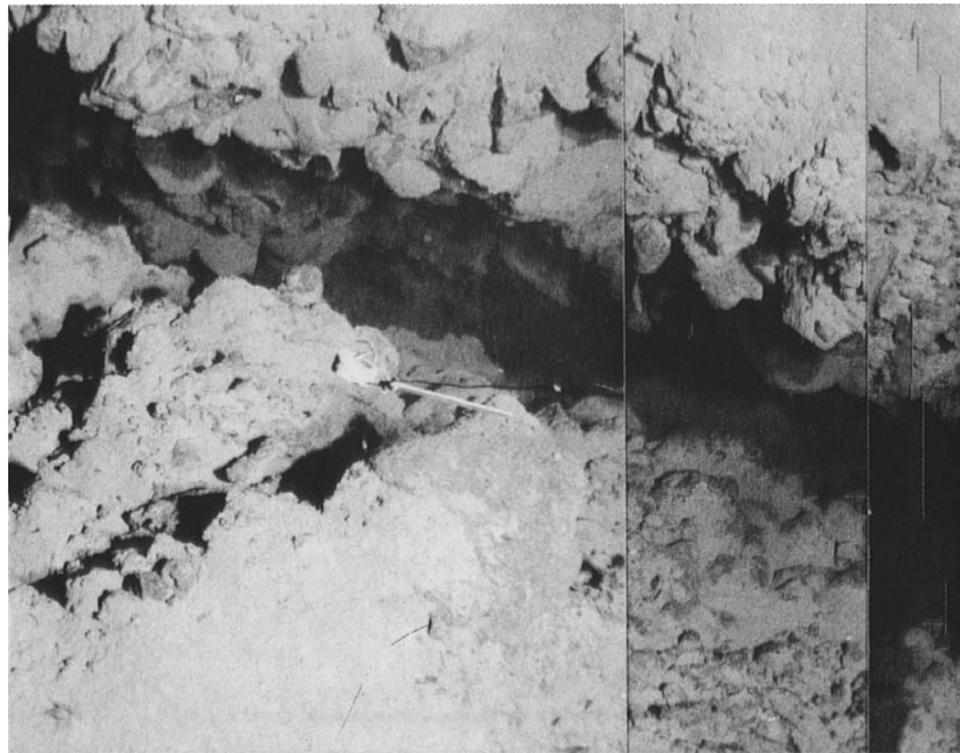


**Photographic Atlas
of the Mid-Atlantic
Ridge Rift Valley**

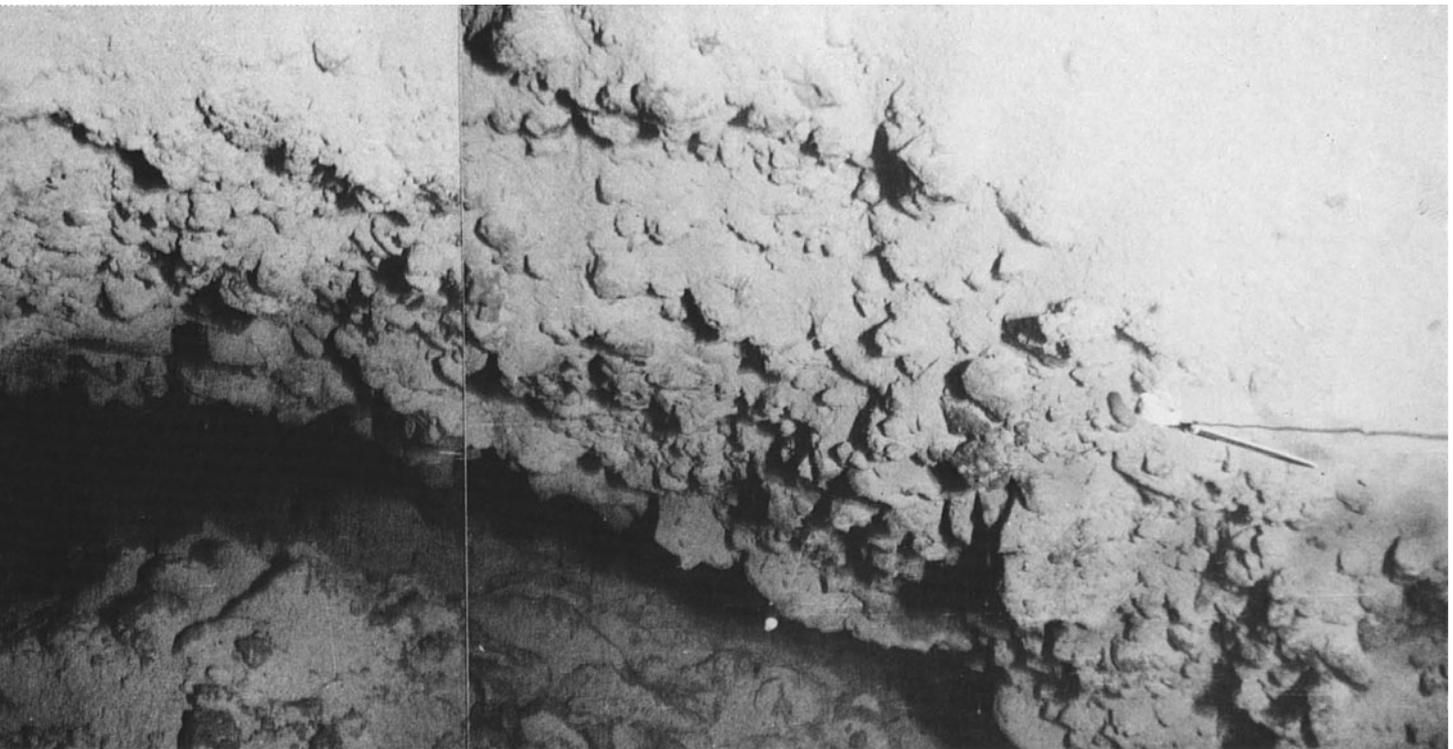
Robert D. Ballard
James G. Moore

Photographic Atlas



of the Mid-Atlantic

Ridge Rift Valley



Springer-Verlag New York Heidelberg Berlin

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Library of Congress Cataloging in Publication Data

Ballard, Robert D.

Photographic atlas of the Mid-Atlantic Ridge Rift Valley

Bibliography: p.

1. Mid-Atlantic Ridge Rift Valley—Maps, Pictorial.
2. Submarine topography—Atlantic Ocean—Maps, Pictorial.
3. Submarine Valleys. 4. Photography, Submarine.

I. Moore, James Gregory, 1930—joint author. II. Title.

G2807.M5B3 1977 912'. 19' 636 77-25187

ISBN-13:978-1-4612-9922-6

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Softcover reprint of the hardcover 1st edition 1977

9 8 7 6 5 4 3 2 1

ISBN-13:978-1-4612-9922-6 e-ISBN-13:978-1-4612-9920-2

DOI: 10.1007/978-1-4612-9920-2

Dedicated to the crews, scientists, engineers, and pilots who first demonstrated in Project FAMOUS that diving craft can safely perform detailed scientific studies of the deep ocean floor.

Foreword

The oceans are so large and our knowledge of them so limited that we sometimes think of the sea floor as a vast uniform wasteland. But modern oceanographic research is revealing that each part of the sea floor has its own characteristic features and is as distinct as the geologic and topographic provinces on land. The deep ocean floor holds the same fascination for us as unexplored mountain tops, jungles, or the surface of the moon and planets. And, since the oceans cover more than 70 percent of the earth's surface, the ocean floor holds the key to much of the history and evolution of our earth.

There are very few places in the depths of the ocean that have been explored and studied directly by man, and to which man can relate in the way he relates to the earth on land. The Mid-Atlantic Ridge rift valley, studied during Project FAMOUS, is one of these places. This location was chosen because it is typical of the zone in the central Atlantic where volcanic activity apparently creates all of the sea floor of that ocean. Consequently the region is of great importance to earth scientists. Here participating scientists systematically investigated large and small geologic features to learn their shape, properties, and origin. They used the most advanced techniques available from aircraft, surface ships, and submersibles which operated in water depths of nearly 3 kilometers. As part of these studies an extensive photographic record of bottom features was obtained. Some of these photos are reproduced in this book to give the reader a view of the sea floor and to help him understand the natural processes at work.

Robert Ballard is a geologist with extensive experience in submersible diving and James Moore, a volcanologist who has made many scuba dives in active volcanic terrain. Both were members of the American scientific diving team of the project. They, and their colleagues, have published nearly 100 papers on the scientific results of the program. However, these papers have reproduced only a few of the large volume of photographs that are now in the archives. We believe that the public at large as well as our scientific colleagues will benefit from the selected photographs in this volume.

Woods Hole
November, 1977

J. R. Heirtzler

Acknowledgments

The photographs in this atlas were obtained through the combined cooperation of the American and French scientists, engineers, technicians, crews, and pilots associated with Project FAMOUS. The authors wish to express their sincere appreciation to this international group who worked long hours at sea during the four year period of the project.

We wish to particularly thank Drs. Jean-Louis Cheminee and Gilbert Bellaiche of the Centre National de la Recherche Scientifique and Walter Brundage of the U.S. Naval Research Laboratory for their assistance in the preparation and review of this atlas. FAMOUS was funded in the United States by the National Science Foundation and the National Oceanic and Atmospheric Administration with support from the Office of Naval Research, and the Naval Oceanographic Office. Chief scientist for the American phase of Project FAMOUS was Dr. James R. Heirtzler, Woods Hole Oceanographic Institution. The French program, operating under the government agency Centre National pour L'Exploitation des Oceans, CNEXO, was directed by Mr. Claude Riffaud and Dr. Xavier Le Pichon.

We also wish to thank Susan Christiansen and Irene Fisher for the sketches they made of various pillow and tectonic forms contained within this atlas.

Robert D. Ballard
James G. Moore

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