

American Journal of Science

Established in 1818 by Benjamin Silliman
AN INTERNATIONAL EARTH SCIENCE JOURNAL

EDITORS

MARK T. BRANDON
NEW HAVEN, CONNECTICUT

DANNY M. RYE
NEW HAVEN, CONNECTICUT

C. PAGE CHAMBERLAIN
STANFORD, CALIFORNIA

ASSOCIATE EDITORS

TO SERVE UNTIL JANUARY 1, 2021

PHILIP D. GINGERICH
ANN ARBOR, MICHIGAN

KATE MAHER
STANFORD, CALIFORNIA

NOAH PLANAVSKY
NEW HAVEN, CONNECTICUT

ZACHARY SHARP
ALBUQUERQUE, NEW MEXICO

ANDREAS LUTTGE
BREMEN, GERMANY

ANDREAS MULCH
FRANKFURT, GERMANY

CHRISTOPHER POULSEN
ANN ARBOR, MICHIGAN

JOHN W. VALLEY
MADISON, WISCONSIN

MICHAEL VELBEL
EAST LANSING, MICHIGAN

TO SERVE UNTIL JANUARY 1, 2022

RUTH E. BLAKE
NEW HAVEN, CONNECTICUT

DARREL S. COWAN
SEATTLE, WASHINGTON

MARK GHIORSO
SEATTLE, WASHINGTON

PETER REINERS
TUCSON, ARIZONA

SEAN WILLETT
ZURICH, SWITZERLAND

DONALD E. CANFIELD
ODENSE, DENMARK

DAVID A.D. EVANS
NEW HAVEN, CONNECTICUT

FRANK J. PAZZAGLIA
BETHLEHEM, PENNSYLVANIA

FRIEDHELM VON BLANCKENBURG
POTSDAM, GERMANY

MATTHEW WINNICK
AMHERST, MASSACHUSETTS

TO SERVE UNTIL JANUARY 1, 2023

ETHAN F. BAXTER
BOSTON, MASSACHUSETTS

GRANT GARVEN
MEDFORD, MASSACHUSETTS

MICHAEL HREN
STORRS, CONNECTICUT

JEFFREY J. PARK
NEW HAVEN, CONNECTICUT

BARB DUTROW
BATON ROUGE, LOUISIANA

JOHN I. GARVER
SCHENECTADY, NEW YORK

DANIEL IBARRA
BERKELEY, CALIFORNIA

JONATHAN PAYNE
STANFORD, CALIFORNIA

BRAD SAGEMAN
EVANSTON, ILLINOIS

TO SERVE UNTIL JANUARY 1, 2024

JAY J. AGUE
NEW HAVEN, CONNECTICUT

WILLIAM H. CASEY
DAVIS, CALIFORNIA

NADJA DRABON
STANFORD, CALIFORNIA

CIN-TY LEE
HOUSTON, TEXAS

RICHARD J. WALKER
COLLEGE PARK, MARYLAND

SIMON WILDE
PERTH, AUSTRALIA

EDWARD W. BOLTON
NEW HAVEN, CONNECTICUT

PETER CAWOOD
MELBOURNE, AUSTRALIA

KIMBERLY LAU
LARAMIE, WYOMING

TIMOTHY W. LYONS
RIVERSIDE, CALIFORNIA

JOSHUA WEST
LOS ANGELES, CALIFORNIA

ROBERT WINTSCH
BLOOMINGTON, INDIANA