

UNCLASSIFIED

AD 404 587

*Reproduced
by the*

DEFENSE DOCUMENTATION CENTER

FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

63.3-4

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

CATALOGED BY ASTIA

AS AD NO. 404587

~~404587~~

BULLETIN No. 4

VESIAC Monthly Bulletin of
VELA UNIFORM Research Publications

Prepared by the VESIAC Library Staff

REC'D
MAY 24 1963
TSM A

15 May 1963

404 587

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

VELA UNIFORM DOCUMENTS

IN REPORT FORM

Air Force Cambridge Research Laboratory

Contract AF 19(604)-6642

Differentiation of Earthquakes and Underground Nuclear Explosions on the Basis of Amplitude Characteristics, by D. E. Willis, J. Denoyer, H. Pollack, IST, Univ. of Mich., 1963.

(Also supported by Contract AF 19(604)-8809)

(Also supported by Contract AF 49(638)-1170)

VESIAC No. 4992 VU

Contract AF 19(604)-7376

Surface Wave Studies of the Pacific Crust and Mantle, by M. Ewing, J. Brune, J. Kuo, Lamont Geological Observatory, 1962.

VESIAC No. 4978 WU

Surface Wave Radiation Patterns for Underground Nuclear Explosions and Small Magnitude Earthquakes, by J. N. Brune, P. W. Pomeroy, 1963.

(Also supported by Contract AF 19(604)-8485)

VESIAC No. 5035 VU

Contract AF 19(604)-7383

Model Studies of Seismic Energy Distribution Around Different Types of Source, by B. F. Howell, Jr., P. M. Iavin, J. H. Pfluke, Penn State Univ. No date.

VESIAC No. 5038 WU

Contract AF 19(604)-8368

Advanced Ocean-Bottom Seismometer - Semi-Annual Technical Report No. 4, by P. J. Farrell, Texas Instruments, Inc., March 1963.

VESIAC No. 4904 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFCRL (cont.)

Contract AF 19(604)-8485

Surface Wave Radiation Patterns for Underground Nuclear Explosions and Small Magnitude Earthquakes, by J. N. Brune, P. W. Pomeroy, Lamont Geological Observatory, 1963.

(Also supported by Contract AF 19(604)-7376)
VESIAC No. 5035 VU

Contract AF 19(604)-8809

Differentiation of Earthquakes and Underground Nuclear Explosions on the Basis of Amplitude Characteristics, by D. E. Willis, J. DeNoyer, H. Pollack, J. T. Wilson, IST, Univ. of Mich. 1963.

(Also supported by Contract AF 19(604)-6642)
(Also supported by Contract AF 49(638)-1170)
VESIAC No. 4992 VU

Contract AF 19(628)-230

Weather-Seismic-Noise Correlation Study - Semi-Annual Report 1 June to 30 November 1962, by J. C. Bradford, United ElectroDynamics Inc. Dec. 1962.

VESIAC No. 4157 VU

Contract AF 61(052)-509

Semi-Annual Summary Report No. 3, from January to June, 1962, by C. L. Pekeris, Weizmann Institute of Science, Israel, July 1962.

VESIAC No. 5032 VU

Air Force Office of Scientific Research

Contract AF 19(638)-1689

Model Studies of Explosion - Generated Seismic Waves - Semi-Annual Technical Report No. 1, by C. Kisslinger, St. Louis Univ. March 1963.

VESIAC No. 5008 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFSOR (cont.)

Contract AF 49(638)-1078

A Consideration of H. A. Lang's "A First Estimate of Initial Surface Motions Produced by an Underground Explosion", by H. N. Pollack, IST, University of Michigan, April 1963.

(Also supported by Contract AF 49(638)-911)

(Also supported by Contract AF 49(638)-1170)

VESIAC No. 4944 VU

Contract AF 49(638)-1084

Study of a Three-Dimensional Seismic Detection System - Technical Summary Report, by J. E. Woodburn, Century Geophysical Corp. Oct. 1962.

VESIAC No. 5007 VU

Contract AF 49(638)-1170

Energy Spectra for Underground Explosions and Earthquakes, by G. E. Frantti, IST, University of Michigan, undated, received April 1963.

(Also supported by Contract AF 49(638)-911)

VESIAC No. 4893 VU

A Consideration of H. A. Lang's "A First Estimate of Initial Surface Motions Produced by an Underground Explosion", by H. N. Pollack, IST, University of Michigan, April 1963.

(Also supported by Contract AF 49(638)-911)

(Also supported by Contract AF 49(638)-1078)

VESIAC No. 4944 VU

Differentiation of Earthquakes and Underground Nuclear Explosions on the Basis of Amplitude Characteristics, by D. E. Willis, J. DeNoyer, H. Pollack, J. T. Wilson, IST, University of Michigan, 1963.

(Also supported by Contract AF 19(604)-6642)

(Also supported by Contract AF 19(604)-8809)

VESIAC No. 4992 VU

Grant AF-AFSR-25-63

Source-Mechanism from Spectra of Long-Period Surface Waves 2. The Kamchatka Earthquake of November 4, 1952, by A. Ben-Menahem, M. N. Toksoz, Calif. Institute of Tech. Undated, Received April 1963.

VESIAC No. 4948 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFOSR (cont.)

Contract AF-AFOSR-61-137

Critical Areas in the Soviet Union for Nuclear Test Detection, by E. Herrin, J. Taggart, Dallas Seism. Observatory, Feb. 1963.
(OFFICIAL USE ONLY)
VESIAC No. 4902 VU

Contract AF-AFOSR-62-355

Source Wave Forms of Three Earthquakes, by H. Benioff, California Inst. of Technology, Paper presented at 59th Annual Meeting of SSA, Univ. of California, Berkeley, 8-10 April 1963.
VESIAC No. 4895 VU

Source Wave Forms of Three Earthquakes, by H. Benioff, California Inst. of Technology, undated - received 22 April 1963.
VESIAC No. 4945 VU

Air Force Technical Applications Center

No Contract

Briefing Outline of Itek Corporation Participation in VELA UNIFORM Program, by Staff, Itek, Corp. Feb. 1963.
VESIAC No. 4942 VU

Project VT/036

Contract - none

Blue Mountains Seismological Observatory, by B. B. Leichter, Geo-Tech. Corp., Paper presented at 59th Annual Meeting of SSA, Univ. of Calif., Berkeley, 8-10 April 1963. Feb. 1963.
VESIAC No. 4899 VU

Project VT/053

Contract - none

Summary of Station Data AFTAC VELA-UNIFORM Teams in Canada, 6 July - 8 Dec. 1962, by Staff, AFTAC, 1962.
(Also supported by Project VT/074)
(OFFICIAL USE ONLY)
VESIAC No. 5021 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFTAC (cont.)

Project VT/066
Contract AF 49(638)-911

Energy Spectra for Underground Explosions and Earthquakes, by G. E. Frantti, IST, University of Michigan, undated, received April 1963.
(Also supported by AF 49(638)-1170)
VESIAC No. 4893 VU

A Consideration of H. A. Lang's "A First Estimate of Initial Surface Motions Produced by an Underground Explosion", by H. N. Pollack, IST, University of Michigan, April 1963.
(Also supported by Contract AF 49(638)-1078)
(Also supported by Contract AF 49(638)-1170)
VESIAC No. 4944 VU

Comparison of Seismic Waves Generated by Different Types of Source, by D. E. Willis, IST, University of Michigan, 1963.
VESIAC No. 4991 VU

Project VT/070
Contract AF 33(657)-7747

Tonto Forest Seismological Observatory Semi-Annual Report, 1 Jan. to 1 June, 1962, by Staff, United ElectroDynamics, Inc., June 1962.
VESIAC No. 4983 VU

Project VT/074
Contract AF 33(600)-41694

Long-Range Seismic Measurements Program Seismological Bulletin No. 10, by Staff, GeoTech. Corp., April 1963.
VESIAC No. 4963 VU

Summary of Station Data AFTAC VELA-UNIFORM Teams in Canada, 6 July - 8 December, 1962, by Staff, AFTAC, 1962.
(OFFICIAL USE ONLY)
(Also supported by Contract VT/053)
VESIAC 5021 VU

Long-Range Seismic Measurements Program Seismological Bulletin No. 11, by Staff, GeoTech. Corp., Nov. 1962.
VESIAC No. 5031 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFTAC (cont.)

Project VT/1133
Contract AF 33(600)-43368

Analysis and Evaluation of Seismic Data for On-Site Inspection -
Project VELA - Final Report, by L. B. Luhrs, L. L. Davis, Roland
F. Beers, Inc., February 1963.
VESIAC No. 4950 VU

Project VT/1139
Contract AF 33(600)-43369

Deep-Well Variable-Reluctance Seismometer, by R. M. Shappee, Geo-
Tech. Corp., Paper presented at 59th Annual Meeting of SSA, Univ.
of California, Berkeley, 8-10 April 1963, February 1963.
VESIAC No. 4898 VU

Project VT/1157
No Contract

Influence of Stress History on Solid State Characteristics of Rocks
- Progress Report on ARPA Project 7.9, by C. H. Roach, U.S. Geolo-
gical Survey, April 1963.
VESIAC No. 4979 VU

Project VT/2037 Project 8.4
Contract AF 33(657)-7427

Long Range Seismic Measurements - Project 8.4, by Madison, United
Electrodynamics, DATDC Report No. 60, 16 April 1963.
VESIAC No. C200 VU

Project 8.4

Long Range Seismic Measurements Project 8.4, ROANOKE, by Staff,
GeoTechnical Corp. Technical Report No. 63-28, March 1963.
VESIAC No. C198 VU

Long Range Seismic Measurements Project 8.4, PEBA, Staff, Geo-
Technical Corp., Tech. Rept. No. 62-20.
VESIAC No. C201 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFTAC (cont.)

Long Range Seismic Measurements Project 8.4, ALLEGHENY, by Staff, GeoTechnical Corp. Technical Report No. 62-21, March 1963.
VESIAC No. C199 VU

Long Range Seismic Measurements, Project 8.4, HAYMAKER, Final Report, by Staff, GeoTechnical Corporation, March 1963.
VESIAC No. 4960 VU

U. S. Army

No Contract

AEC Participation in the Program for Detection of High Altitude Nuclear Tests, by A. W. Betts, Presented before the Joint Committee on Atomic Energy, March 1963.
VESIAC No. 4909 VU

Statement Before the Joint Committee on Atomic Energy, by A. W. Betts, U. S. Army, March 1963.
VESIAC No. 4914 VU

Rome Air Development Center

Contract AF 30(602)-2546

Theoretical and Simulation Studies for the Production, Propagation, And Detection of EM Signals from Underground Nuclear Explosions (U), by R. C. O'Rourke, Edgerton, Germeshausen & Grier, Inc. RADC-TDR-63-77, 10 February 1963.
(CONFIDENTIAL)
VESIAC No. C202 VU

Office of the Secretary of Defense

Contract SD-82-G-1

Extended Program of Crustal Structure Research, by A. L. Hales, Univ. of Witwatersrand, April 1962.
VESIAC No. 4971 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

Advanced Research Projects Agency

No Contract

Travel Times to Short Distances from Blasts in Central California,
by D. Tocher, University of California, Paper presented at 59th
Annual Meeting of SSA, Univ. of California, Berkeley, 8-10 April
1963.

VESIAC No. 4897 VU

Statement Before the Joint Committee on Atomic Energy, by F. Press,
California Institute of Technology, March 1963.

VESIAC No. 4907 VU

Detection of High Altitude Nuclear Tests, by A. W. Schardt, Advanced
Research Projects Agency, Presented before the Joint Committee on
Atomic Energy, March 1963.

VESIAC No. 4908 VU

Introduction to VELA UNIFORM Research Directed Towards Improving
the Identification of Underground Nuclear Explosions, by C. C.
Bates, Advanced Research Projects Agency, Presented before the
Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4910 VU

Radio Propagation Detection Techniques, by E. T. Pierce, Stanford
Research Institute, Presented before the Joint Committee on Atomic
Energy, March 1963.

VESIAC No. 4911 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

ARPA (cont.)

Satellite-Based Detection, by J. A. Poulson, Advanced Research Projects Agency, Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4912 VU

Identification of Earthquakes and Underground Nuclear Explosions by Near Zone Diagnostic Aids, by J. DeNoyer, Institute for Defense Analysis, Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4913 VU

Verification from On-Site Inspection, by T. A. George, Advanced Research Projects Agency, Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4915 VU

Review of Ground Based Detection Program, by D. E. Chandler, Advanced Research Projects Agency, Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4916 VU

Unattended Seismograph Units, by J. H. Hamilton, Geotech. Corp. Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4917 VU

The VELA Program, by J. P. Ruina, Advanced Research Projects Agency, Presented before the Joint Committee on Atomic Energy, March 1963.

VESIAC No. 4918 VU

Hearings Before the Joint Committee on Atomic Energy Held 5-7 March 1963, by Staff, Advanced Research Projects Agency, March 1963.

VESIAC No. 4919 VU

World-Wide Standard Station Seismic Measurements, TENDRAC, by Staff, U. S. Coast & Geodetic Survey, February 1963.

VESIAC No. 4943 VU

Department of Defense

VELA UNIFORM-STORAX Series-DOD Participation in TOYAH Event, March 1963.
Staff, Department of Defense.

(CONFIDENTIAL)

VESIAC No. C196 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

VELA UNIFORM DOCUMENTS

PUBLISHED IN JOURNALS

Air Force Cambridge Research Laboratory

Contract AF 19(604)-7376

Free Spheroidal Vibrations of the Earth at Very Long Periods, Part I, by L. E. Alsop, Seismological Society of America, Bulletin of, V. 53, No. 3, pp. 483-502, April 1963.
VESIAC No. 4920 VU

Free Spheroidal Vibrations of the Earth at Very Long Periods, Part II, by L. E. Alsop, Seismological Society of America, Bulletin of, V. 53, No. 3, pp. 503-516, April 1963.
VESIAC No. 4921 VU

Additional Evidence Relating to "A Worldwide Storm of Microseisms with Periods of About 27 Seconds", by J. Oliver, Seismological Society of America, Bulletin of, V. 53, No. 3, pp. 681-686, April 1963.
VESIAC No. 4930 VU

Contract AF 19(604)-7399

Pn Velocity and Other Seismic Studies from the Data of Recent Southeast Missouri Earthquakes, by W. Stauder, (S.J.) G. Bollinger, Seismological Society of America, Bulletin of, V. 53, No. 3, pp. 661-680, April 1963.
VESIAC No. 4929 VU

Air Force Office of Scientific Research

Contract AF 49(638)-1078

Signal Enhancement Through an Ensemble Presentation, by P. L. Jackson, Seismological Society of America, Bulletin of, V. 53, No. 3, pp. 585-592, April 1963.
VESIAC No. 4926 VU

INSTITUTE OF SCIENCE AND TECHNOLOGY

THE UNIVERSITY OF MICHIGAN

AFOSR (cont.)

No Contract

Improved Accuracy in the Location of Epicenters for Explosions
and Earthquakes, by W. J. Best, Office of Aerospace Research -
Research Review, V. 11, No. 5, p. 5, 1963.
VESIAC No. 4964 VU