

DATE	GMT OF FIRST MOTION	TYPE	OBSERVABLE ON						REMARKS
			ONSET	OF	SHORT	PER	LONG	PER	
			NS	EW	Z	NS	EW	Z	
31 DEC 70	05 41 18.0	I	-	*	U	-	-	-	
07 JAN 71	03 00 08.4	I	*	E	U	-	-	-	
08 JAN 71	20 53 32.1	I	S	*	U	-	-	-	
10 JAN 71	07 33 07	I	*	*	*	*	*	*	U*
19 JAN 71	03 23 09.0	I	S	E	*	*	*	*	
20 JAN 71	04 51 26.0	I	N	-	U	*	*	*	U
25 JAN 71	16 18 50.5	I	*	*	U	S	E	U	
29 JAN 71	22 09 10.7	I	*	*	D	N	W	D	
01 FEB 71	05 29 24.4	I	*	*	D	*	*	*	
04 FEB 71	15 52 50	E	*	*	*	*	*	*	U
05 FEB 71	07 40 41	E	*	-	*	*	*	*	U
07 FEB 71	02 40 00.0	I	*	E	U	*	*	*	
07 FEB 71	02 52 38.5	I	N	W	U	*	*	*	
07 FEB 71	03 03 44.3	I	N	W	U	*	*	*	
08 FEB 71	21 18 28	I	-	-	-	*	*	D	
09 FEB 71	14 07 12.4	I	S	E	U	S	E	U	
18 FEB 71	19 30 09.6	E	S	*	D	-	-	-	
21 FEB 71	10 45 41.4	I	S	E	D	S	*	D	
03 MAR 71	00 59 10.7	I	*	*	U	-	-	-	
3 MAR 71	14 58 15	E	*	*	*	*	*	*	
5 MAR 71	17 19 14.3	I	N	E	U	-	-	-	
13 MAR 71	23 58 43.5	I	*	E	U	*	*	U	
19 MAR 71	06 18 15.4	I	S	W	D	-	-	-	
23 MAR 71	09 34 50.9	I	S	W	U	S	W	U	
23 MAR 71	21 22 11.4	I	S	W	U	*	*	*	
30 MAR 71	11 41 16.8	I	*	*	D	*	*	D	
01 APR 71	05 06 30.4	I	*	*	D	-	-	-	
05 APR 71	09 14 34.0	I	N	W	D	*	*	D	
08 APR 71	08 05 23.9	I	N	W	D	*	*	D	
20 APR 71	14 38 04.0	I	S	*	D	*	*	*	
02 MAY 71	06 19 01.4	I	S	E	U	S	E	U	
04 MAY 71	02 24 05.0	I	S	W	U	S	W	U	
08 MAY 71	01 01 55.2	I	N	E	D	-	*	U	
09 MAY 71	08 37 28.4	I	*	*	D	*	*	U	
12 MAY 71	06 37 10.2	E	*	*	D	*	*	D	
17 MAY 71	11 11 44.5	I	N	E	U	S	E	U	
18 MAY 71	06 23 35.1	I	S	*	D	*	*	D	
18 MAY 71	22 55 52.4	I	S	*	D	*	*	*	
20 MAY 71	02 45 50.5	I	S	E	U	-	-	-	
20 MAY 71	18 29 54.1	I	S	*	D	-	-	-	
21 MAY 71	19 07 00.0	I	S	E	D	*	*	D	
22 MAY 71	16 56 25.6	E	*	*	D	*	*	*	
23 MAY 71	06 25 36.5	I	*	*	*	-	-	-	
23 MAY 71	09 31 09.2	I	*	E	E	*	-	E	
25 MAY 71	05 55 18.5	I	N	E	D	N	-	D	
25 MAY 71	20 35 05.0	I	S	W	U	-	-	-	
26 MAY 71	00 19 30.4	I	S	E	U	-	-	-	
28 MAY 71	14 17 53.5	I	N	E	U	-	E	U	

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- Akita, Japan, Jn. of Mining College, Ser. A, Min. Geol. Vol. IV, no. 3.
- Ankara, Turkey, Wkly. Seis. Readings, Nos. 19-20/69; 24/69.
- Antarctic, U. S. Dept. Commerce, April-Jn., 1970; Jul-Sept., 1970.
- Apia, Western Samoa, N.Z., Mag. Results for 1962-63.
- Astrida, Central Africa, Seis. Sta. De Butare, Sept-Oct., 1967.
- Athens, Greece, Seis. Prel. Bull., Feb-Dec., 1968; Feb-Dec., 1969; Jan-Dec., 1970.
- Barcelona, Spain, Boletin, N° 51 (1962); No. 52 (1963); No. 53 (1964).
- Bergen, Norway, Seis. Bull. 1961-1965; Obs. 1965-66 "The Mag. Stas. at Dombås, Nr. 8; Stas. (Tromsø, Kirkenes, Berger, Jan Mayen Is., Kongsberg, Lillehammer); "A Travel Time Study for Fennoscandia"; The Dip of Moho Under the Norsar"; Sc. Rpt. No. 1. - "Spectral Analysis and Statistical Properties of Microseisms at Norsar"; Seis. Noise Structure at the Norwegian Seis. Array; Sc. Rpt. No. 4, 1 Dec. 69.
- Berkeley, Calif., Univ. of Calif., Seis. Bull. Vol. 36, No. 3, pp. 136-147; Vol. 37, Nos. 1-2, pp. 1-243; Vol. 38, No. 1, pp. 1-161; Vol. 39, Nos. 1-2, pp. 1-203; Vol. 40, No. 1, pp. 1-117.
- Bucharest, Romania, Prov. Seis. Bull. Jan., May, Sept., Oct., 1967; Seria Geo. 1-Tomul 6,7,13, 1968-69; Seria Geo. 2-Tomul 6-7, 1969; Tomul 12, No. 2, 1968; Tome 13, No. 2, 1969; Tomul 8, 1970; Tomul 14, No. 1, 1970; Microseis. Bull., Dec., 1967.
- Canberra City, Australia, Vol. 15, No. 12, Dec., 1967; Vol. 16, Nos. 1-9, Jan-Sept., 1968; Vol. 17, Nos. 1-12, Jan-Dec., 1969; Vol. 18, Nos. 1-2, Jan-Feb., 1970; Vol. 18, Nos. 3-11, Mar-Nov., 1970; Bull. 99, "Upper Devonian Ostracoda and Eridostraca from the Bonaparte Gulf Basin, N.W. Australia.
- Caracas, Venezuela, Bol. Seis. Mensual, Apr., 1967; Sept-Nov., 1967; Apr.-Dec., 1968; Jan-Dec., 1969; Feb-Jul., 1970.
- Christchurch, New Zealand, Gphys. Obs. Ionosphere Data for Mar-Dec., 1969; May, 1967; Jan-Aug., 1970. Amberly Obs. Gphys. Div., Magnetic Results for 1964.
- Cine, Turkey, Wkly. Seis. Readings, 03/68; 17-52/68; 1-41/69. Vol. 10-12, Oct-Dec., 1968.
- Ciudad, Mexico, Univ. Nac., Seis. Serv., Sept.-Nov., 1967; Jan-Dec., 1968; Jan-Dec., 1969; Feb-May, 1970, pp. 1-88.
- Cleveland, Ohio, John Carroll Univ., Seis. Bull., Jan-Dec., 1966; Jan-Dec., 1967; Jan-Dec., 1968; Jan-Dec., 1969.
- Coimbra, Portugal, Memóriase Notícias, No. 61-62, 66; Obs. Meteo. Mag. e Seis., Vol. c11, 1964; Vol. CIV, 1965.

- Copenhagen, Denmark (Proviantgarden) No. 14, Jan-Jul., 1963;
 No. 46, Jan. 1963-Jun., 1964.
- Del Commune, Central Africa, Bull. Prel., Feb-Mar., 1967.
- De Ksara, Liban (Libya) Annee, Cahier 2-4, Apr-Dec., 1968;
 Jan-Mar., 1969.
- Dublin, Ireland, Srs. D. Gphys. Bull., 24-27; Proc. Royal
 Irish ACA., Vol. 64, Section B, No. 17.
- Edinburgh, Scotland, Seis. Centre Bull., Vol. No. 11, 9/64;
 Vol. 1, No. 12, Oct., 1964; Vol. 1, No. 2, Jul-Dec.,
 1964; Regn. Cat. of Earthquakes, Vol. 3, No. 2, Jul-
 Dec., 1966.
- Erlangen, Germany, Seis. Bulletin, 67.
- Erzurum, Turkey, Wkly. Seis. Readings, 21-22/69; 24-26/69;
 28-30/69.
- Fayetteville, Arkansas, Seis. Bull., Vol. XV, No. 1-4, Jan-
 Dec., 1966; No. Vol. XVIII, XVII, XVI; Vol. No. 2, XVI-
 XVII; Vol. 3, XVI; Vol. 4, XVI.
- Helgoland, Univ. Kiel, Mitteilung, Nr. 1, 1966-68; Sietel,
 1963.
- Honduras, S. America, Anuario Esta Distico, 1966.
- Honolulu, Hawaii, Contrib. of the Hawaii Inst. of Geophysics,
 Univ. of Hawaii for year 1968.
- Istanbul, Turkey, Wkly. Seis. Readings, 19-52/68; 1-42/69;
 27-31/70.
- Jerusalem, Israel, Jers. Seis. Bull., Jan-Dec., 1967; Jan-
 May, 1968.
- Kandilli, Turkey, Prel. Seis. Readings, 37-41/70; 49/70 B;
 17/70 A; 20/70 C; 17/10/70 A; 19/70 A.
- Kastamonu, Turkey, Wkly. Seis. Readings, 18-48/68; 1-41/69.
- København, Denmark, Paper No. 7, Meddelelse No. 45, "A
 Refraction Profile Through the Skagerrak from Northern
 Jutland to Southern Norway".
- Kyoto, Japan, Bull. Disaster Res. Inst., Vol. 16, Pt. #3-4,
 Feb-Mar., 1967; Vol. 17, Pt. #3-4, Mar., 1968; Vol. 18,
 Pt. #1, Jul., 1968; Ann. Rpt. Hydrological No. 1, 1967;
 Spec. Contributions, No. 9, Dec., 1969.
- Lamont-Doherty Geol. Obs., Palisades, N. Y., Cat. Data Jan-
 Dec., 1965; Jan., 1966-30 Jun., 1968; Jul., 1968-Dec.,
 1969; Jan., 1970; July 1969-Jn., 1970.
- La Paz, Bolivia, Seis. Bull. Apr-Dec., 1966; Jan-Dec., 1967;
 Jan-Mar., 1968; Feb-Dec., 1970.
- Lisbon, Portugal, Bull. Seis. Annee XXIII, No. 1, Jan-Feb.,
 1968; XXIII, Nov-Dec., 1968; XXIV, No. 1-2 Jan-Apr;
 Sept-Oct., No. 5, 69; Annee XXIV, 1969, No. 4-6, Jul-
 Dec.; Annee XXV 1970, No. 1, Jan-Feb.
- Ljubljana, Yugoslavia, Prel. Seis. Bull., IV, VI, VII, IX,
 X-XII, 1967; IV-VI, VII-IX, 1968; Vol. II-IX, 1969;
 X-XII, 1969, X-XII, 1968; I-III, 1970; I-III, 1969.
- Lwiro, Centrale Africa, Bull. Prel. Jul-Nov., 1967; Jan-
 Dec., 1968; Jan-Dec., 1969; Jan-Nov., 1970; Seis. Bull.
 Vol. 12, No. 2, Jul-Dec., 1964; Vol. 13, Nos. 1-2, Jan-
 Dec., 1965; Vol. 16, No. 2, Jul-Dec., 1968; Vol. 17,
 No. 1, Jan-Jn., 1969; Dec., 1970; Jan-Mar., 1971.
- Manila, Philippines, Weather Bureau, Nov-Dec., 1967; Jan-
 Dec., 1968; Jan., 1969.

- Matsushiro, Japan, Seis. Bull., Jan-Jn., 1963; May-Aug., 1970
 Montreal, Canada, Bull. of Gphys., Nos. 23-27, Jn-Nov., 1968;
 Apr-Nov., 1969; Apr-Nov., 1970.
 Morgantown, West Virginia, Seis. Rpt. XXIV Jan-Jn., 1968; XXXV
 Jul-Dec., 1968; XXXVI-XXXVII Jan-Dec., 1969; XXXIX Jan-
 Dec., 1970.
 Moscow, Russia, Seis. & Gravity 6 Month Cat. Data Jul-Dec.,
 1967; Jan-Dec., 1968; Jan-Jn., 1970; Seis. Bull. Nos. 1-4,
 Jan-Dec., 1967; Jul-Dec., 1966; Jan-Jn., 1968; Materials
 of Seis. Sta., Jan-Dec., 1966; Cat. of Publ. by WDC B-1,
 Jul-Dec., 1967; Jan-Dec. Issue 19-23 Jan., 1969-Jun.,
 1970; Parameters & Amplitude of Phase Charateristics,
 1966; Results of Researches on Int'l Gphy. Projects;
 Magnetotelluric Methods Structure Studies of the Earth's
 Crust and Upper Mantle, No. 4, 1969.
 Munich, Germany, Seis. Berecht, Ser. C., Nr. 2, Jahr, 1967;
 Ser. C, Nr. 3 Jahr, 1968.
 Nagano-Ken, Japan, Seis. Bull., Dec., 1963; Jan-Dec., 1964;
 Jan-Dec., 1968; Jan-Dec., 1969; Data of Strain Seis. &
 Water Tube Tiltmeter (Nov., 1965-Feb., 1970; Apr., 1968-
 Feb., 1970).
 Ottawa, Canada, Dom. Obs. Seis. Bull. Jan-Dec., 1967-1; Jan-
 Dec., 1968; No. 60, Jan-Dec., 1969; Gravity Map Series, No. 88,
 1969; Seis. Ser. 1968-4, 1968-5, 1969-3; Contrib. No.
 263; No. 58-Timmins-Senneterre Mining Area; No. 87
 Devon Is. & S. Ellesmere Is; A Symposium on Processes
 in the Focal Region, Vol. XXXVII, no. 7; Time & Latitude
 Bull. A-53/60, Oct., 1967-Sept., 1969; Canadian Earth-
 quakes, 1964-2; Contb. No. 294.
 Padova, Italy, Univ. Di Padova, Publ. Nuova Series (N. 101-144,
 1965-68).
 Pasadena, California, Prel. Bull. No. 185, Feb-Mar., 1968; Prov.
 Rds., Jul., 1968-Aug., 1970.
 Penas, Bolivia, Prel. Seis. Rds., Aug-Dec., 1970; Jan-Feb.,
 1971.
 Praha, Czechoslovakia, Seis. Bull. Jan-Dec., 1964; Jan-Jn., 1965.
 Quezon City, Philippines, Weather Bureau, Feb-Dec., 1969; Jan-
 Feb., 1970.
 Raman, Turkey, Wkly. Seis. Rds., 28-31/69; 31, 34, 38/69.
 Riverview, Australia, Coll. Obs., Seis. Bull. Jan-Dec., 1967.
 Rome, Italy, Bull. Seis. Def., Oct-Dec., 1966; Jan-Dec., 1967;
 Jan-Dec., 1968; Jan-May, 1969.
 Salt Lake City, Utah, Univ. of Utah, Seis. Bull. 90-91, Jan-Jn.,
 1966.
 San Miguel, Argentina, Obs. defiscia Cosmica, Apr., 1968.
 Santo Domingo, Repb. Dominicana, Boletin trimstral, Jan-Sept.,
 1970.
 Sapporo, Japan, Jn. of Fac. Sc., Vol. III, Nos. 2-4, Dec., 1968-
 Dec., 1970, Ser. VII (Gphys).
 Seattle, Washington, Univ. of Wash., Seis. Bull. No. 14, 1959;
 Seis. Sta. Mo. Rpt. Jan-Dec., 1969; Jan-Sept., 1970.
 Sendai, Japan, Gphys. Vol. 19, Suppl. 5th Ser., Feb., 1968;
 Vol. 19, No. 2, 5th Ser., Dec., 1967.

- Strasbourg, France, Bull. Men., Jan-Aug., 1967, pp. 1-3287; Sept.-Oct., 1967, pp. 1-481; Nov-Dec., 1967, pp. 1-260; Bull. Seis., Nov-Dec., 1967, pp. 506-599; Jan-Dec., 1968, pp. 1-167; Jan-Aug., 1969, pp. 1-90; Sept-Oct., 1969, pp. 1-108; Nov.-Dec., 1969, pp. 109-125; Jan-Sept., 1970, pp. 1-280.
- Stuttgart, Germany, Seis. Bull., 1967-68.
- Taiwan, China, Seis. Bull. Jul-Dec., 1967, Vol. 14, Nos. 3-4; Jan-Dec., 1968, Vol. 15, Nos. 1-4; Jan-Mar., 1969, Vol. 16, No. 1.
- Tegucigalpa, D.C. Honduras, Comercio, Importacion Tomo I-III, 1967.
- Tokyo, Japan, Seis. Bull., Jan., 1966-Oct., 1970; Tsukuba Sta. Seis. Bull. Sept., 1967-Oct., 1969; Prog. Rpt., Mar., 1970; Bull. Intern'l Inst. Seis. Vol. 5 & 6; Jn. of Geol. & Geomag., Vols. 20-21-22, Nos. 1-4, 1968-1970; Statistical Data for Earthquakes and Seis. Data for Spec. Earthquakes, Meteo Res. Inst.; Papers in Meteo & Gphys., Vol. XIX, Nos. 3-4, Oct-Dec., 1968; New Series, Vol. 9, No. 2; Records of Oceanographic Works in Japan; Bull. Intern'l. Inst. Seis. & Earthquake Eng., Vol. 5, 1968.
- Trieste, Italy, Estra tto da, Bull. della SocAdria di Sc., Vol. VI, No. 2, 1968; Vol. XI, 43-44, Sett-Dic, 1969; Sett, 1970; Bull. di Geofisica, Vol. X, 40, Dec., 1968; Vol. 41-42, Marzo-Giugno, 1969; Vol. XII, 45-46, Marzo-Giugno, 1970; Obs. Sperimental, Contr. N. 156 bis/11; 183-184; 188 bis; 156 bis-1.
- Uppsala, Sweden, Ser. Rpt. Nr. 9, 1968; VLF-Strahlung Der Atmos. Rpt. No. 10, 1969; Rpts. Nos. 15, 19, 21, 1970; Meddelande No. 101; Meteo Inst. Rpts. Nos. 13-14, 1969; Rpts. #13 Part A Obs. Methods and Error Sources, Temp. & Precipitation Records in Sweden since the 1850's; Rpt. #14 Stockholmstraktens Nederbörd.
- Urbana, Illinois (Ill. State Geol. Surv.) Radiographic Exposure Guide for Mud, Sandstone, Limestone and Shale, Circ. 443, 1969.
- U.S. Coast & Geodetic Survey, Seis. Bull. MSI Nos. 307-315, Jul 1966-Mar., 1967; 319A, Jul-Sept., 1968; 322A, Oct-Dec., 1967; 325A, 328A, 331A, 334A, Jan-Dec., 1968; 337A, 343A, 346A, Jan-Dec., 1969; 349A, 358A, Jan-Dec., 1970.
- Vedurstofa Islands, Seis. Bull., 1963.
- Wakayama City, Univ. of Tokyo, Japan Seis. Bull., Jan-Dec., 1965.
- Wellington, New Zealand, Seis. Rpt. E-145, 1964; Mag. Results for 1963; Rpt. Mag. Secular Var. at Scott Base & Hallett Sta., Bull. S-151, 1968; Bull. 199, Apr., 1966; Bull. S-161, pp. 1153-1155, Jn., 1969; Nat. Vol. 222, No. 5199; Bull. S-166, vol. 75, 2, 1/10/70; Bull. S-165, 18, pp. 329-330, 1969; Seis. Obs. 1970; Bull. S-162, vol. 224, no. 5216, pp. 255-256, 10/18/69.
- Zurich, Switzerland, Jahresbericht 1963.



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