

9 DEC 1971

SVEUČILIŠTE U ZAGREBU — PRIRODOSLOVNO-MATEMATIČKI FAKULTET
GEOFIZIČKI ZAVOD

UNIVERSITY OF ZAGREB — FACULTY OF SCIENCES
GEOPHYSICAL INSTITUTE

IZVJEŠĆE O POTRESIMA

SEISMOLOGICAL BULLETIN

Godina: 1969
Year:

Yugoslavia (Croatia)
Geofizicki Zavod Zagreb.

Seismological
Bulletin

ZAGR

1952 - 1989 + duplicates
(1946/1947 previously input)



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Geophysical Institute
Z A G R E B
Y u g o s l a v i a

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REGISTRACIJE SEIZMOGRAFA
Records of Seismographs

(lat. = 45°49'N, long. = 15°59'E, H=155 m)
Horizontal seismograph, Wiechert M = 1000 kg
Vertical " " M = 1300 kg
Horizontal " " M = 80 kg

Date	Phase	M G T h m s	Per. sec.	A m p l i t u d e			D° D km	Remarks
				NE	NW	Z		
J A N U A R Y 1969								
5	ePKP ePP ePKS e e	13 45 50,3 48 06,8 49 15,6 31,3 44,4					130 14450	Dilat.Solomon Islands; 8,0 S,158,9 E, H=13: 26:39,9.
6	ePKP ePKS eS	15 58 21,8 16 02 07,0 09 41,6					134 14900	Dilat.Santa Cruz Islands region; USCGS:10,5 S,164,5 E, H=15:39:00,9.
6	eP eP ⁿ e eS _n eS ⁿ	22 04 36,4 47,5 05 28,1 35,8 51,1					4,4 490	Italy;BCIS:44,0 N, 10,8 E, H=22:03:25; USCGS:44,1 N,10,7 E, H=22:03:24,7.
7	eS eS ⁿ	00 54 15,0 55 08,6					7,9 880	Greece; 38,5 N,20,1 E, H=00:50:45,8.
10	eP eP _b ⁿ eS _n e _n	16 18 28,4 38,2 19 16,8 18,3					3,6 400	Northern Italy;USCGS: 44,6 N,12,0 E,H=16: 17:31,1.
13	eS _n e _n	05 51 12,5 20,5					9,9 1100	Greece; USCGS: 38,2 N, 22,6 E, H=05:46:41,1.
14	eP _n e e e e iS _n	23 15 25,0 36,3 41,5 16 08,1 17 14,3 49,9					14 1550	Turkey;damage at Kas and Kalkan; USCGS: 36,2 N,29,2 E,H=23: 12:07,9.

Address: University of Zagreb - Faculty of Sciences

G E O P H Y S I C A L I N S T I T U T E

41103 ZAGREB - Grič 3 - Yugoslavia

Tisak: Kućna tiskara Sveučilišta u Zagrebu, Trg M. Tita 14

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
	e	18	07,3							
	e		28,9							
	e	19	25,1							
	M	20	26,0	8,8	-172					
16	eP	19 18	37,6							
	e		51,1							
19	eP _n	07 13	43,7				80			Compr.Hokkaido,Japan;
	e		49,0				8900			USCGS:45,0 N,143,2 E,
	e	14	21,6							H=07:02:04,4.
	e		52,2							
	eS _n	23 15,5								
	e	24	06,6							
	e		33,9							
	e	25	20,2							
19	ePKP	19 10	08,6				143			New Hebrides Islands;
	e		12 19,3				15900			14,9 S,167,2 E, H=18:
	e		13 22,8							50:52,1.
	e		41,5							
20	eP _n	06 00	16,6				2,5			Adriatic Sea; BCIS:43
	i		33,1				280			1/4 N,15 1/4 E,H=05:59:
	e		39,9							40.
	e	01	12,6							
	e		17,4							
20	eP _n	14 32	(oo)							Interrupt.Trace.Komendor-
										sky Islands region.
24	ePKP	02 51	46,5				155			Dilat.Fiji Islands re-
	i		55,4				17200			gion; USCGS:21,9 S,
	e		52 09,9							179,6 W,H=02:33:03,5.
	e	03 01	37,5							
27	eP	08 36	05,7							
	i		06,5							
	i		06,7							
	i		08,6							
29	ePKP	18 04	21,9							Compr.Tonga Islands,
	e		25,1							region.
	e		26,8							

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
30	eP	10 43	29,1						105	Talau Islands;USCGS:
	eP		55,9						11700	4,8 N,127,4 E,H=10:29:
	eP _n		44 (oo)							40,4. Interrupt.
	ePKP		47 49,2							
	e		50 16,8							
	ePPP		44,7							
	eSKS		54 27,6							
	eSKKS		55 38,6							
	M ₁	11 30			26	-255				
	M ₂		32 30,3		30		+340			
31	ePKP	01 01	53,3						101	North of Halmahera;
	eSKS		08 44,0						11200	USCGS: 4,2 N,128,1 E,
										H=00:44:13,3.
31	e	13 17	13,7							
	e		17,2							
	e		21,8							
31	ePKP	15 18	50,9						150	Tonga Islands.
	ePKP2		19 (oo)						16660	Interrupt.
31	eS	15 37	48,7							BCIS: 39,0 N,20 1/4 E,
	e		38 48,1							USCGS: 39,1 N,20,2 E.
F E B R U A R Y 1 9 6 9										
3	e	20 22	33,5							
3	eP _n	21 55	32,0						100	Talau Islands;USCGS:
	ePKP		59 28,0						11100	4,9 N,127,4 E,H=21:41:
	ePPP	22 02	06,6							41,9.
	eSKS		06 17,2							
	eSKKS		07 10,5							
	ePS		08 41,4							
9	eP _n	23 09	05,7						2,3	Hungary;BCIS: 47,3 N,
	eP _b		08,0						260	18,2 E, H=23:08:26.
	i		16,8							
	e		20,4							
	i		27,1							
	i		31,3							
	iS _n		33,7							
	eS _b		38,4							
	iS		39,7							

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
10	ePKF e i e e	23	16	42.2 53,1 17 08,5 19 16,8 26 27,5					155 17200	Dilat.South of Fiji Islands;USCGS: 22,7 S, 188,6 E, H=22:58:05,8, h = 673 km.
11	eP eS	04	12	51,1 13 25,3						
11	eP e e e e	22	17	09,4 19,4 19 (oo) 33 50,5 39 26,8 41 24,8						Compr.Kirgiz-Sinkiang border region felt. Interrupt. USCGS: 41,4 N,79,2 E, H=22:08:54,7.
15	eP eS eS ^b	08	55	48,4 56 49,3 55,4					3,6 400	Italy;BCIS: 43,9 N, 11,6 E, H=08:54:42.
21	eS	18	44	10,9						Greece.
23	eP e e e	00	54	08,1 24,0 55 (oo) 01 09 29,0						Celebes;USCGS: 3,1 S, 118,9 E, H=00:36:56,6. Interrupt.
23	eP e i i iS	18	42	30,4 31,2 32,7 33,3 36,4					0,45 50	
26	eP eP e eS	01	29	31,5 46,7 30 26,7 58,2					5,85 650	BCIS: 48,3 N,9,0 E, H=01:28:01.
28	eP m eS M	02	45	29,0 46 04,0 49 38,2 55 46,5	2,8	36			22 2440	Compr. (Wiechert 80 kg). BCIS: 36,2 N,10,5 W, H=02:40:33.
28	eP e	04	30	32,0 35,8	18		3345		22 2440	Rep.BCIS: H=04:25:35.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
M A R C H 1969										
3	eP e e e M	01	01	38,9 48,0 02 43,8 03 (oo) 04 34,5 05 46,8						Turkey; USCGS:40,1 N,27,4 E,H=00:59: 40,1. Interrupt.
3	eP e	15	01	27,9	4,3	+54				Off east coast of Kamchatka
4	eP e eS	13	00	41,8 42,5 46,1						
5	eS e	14	46	31,2 49,5						Turkey;BCIS:40,1 N, 27,5 E, H=14:41:16.
5	eP e e	19	40	51,5 53,4 43 41,4					12 4700	Hindu Kush region; USCGS:36,4 N,70,7 E, H=19:33:23,0, h=208 km. North Atlantic Ocean.
6	eP e	19	28	46,6						North Atlantic Ocean.
7	eP i i	11	39	09,4 12,8 15,8						Dilat.
8	eP iS i	19	17	43,8 49,5 50,9						
19	eSKS e	14	21	38,8 46,0					81	Ryukyu Islands; USCGS:28,8 N,128,2 E, H=13:59:22,7,H=136 km.
20	eP e eSKS	16	32	32,9 41,0 43 09,4					97 10800	Philippine Islands region; USCGS: 8,7 N, 127,3 E, H=16:18:50,4
23	eP e e eS e e	21	11	27,3 31,2 44,4 13 35,8 49,4 14 07,3 17,6					11,3 1260	Turkey;USCGS:39,2 N, 28,5 E, H=21:08:42,6. 1100 houses destroyed in Demirei,Gordes, Sindirgi and surround- ing villages.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
	e M ₁ M ₂			24,2 15 19,4 32,2	5,4 15					
24	eS e	02 05		21,1 55,4						Turkey.
25	eP e e e is e	08 43		07,7 10,5 11,4 15,1 27,7 31,9						Yugoslavia, Našice felt.
25	e e	10 15		19,5 21,6						
25	e	11 00		13,7						
25	eP _n e eS e L	13 24		14,1 23,4 26 40,5 27 12,3 28 21,0	8,8	148		11,2 1240		Turkey, USCGS: 39,2 N, 28,4 E, H=14:18:50,8.
25	e e	14 24		10,6 25 11,3						Turkey.
25	e	16 19		16,2						Turkey.
27	eP _n e e	12 55		26,0 59 05,0 13 06 32,4				100 11100		Talud Islands; USCGS: 4,8 N, 127,5 E, H=12:41: 35,9.
28	eP _n e e e e L ₁ M ₂	01 51		19,7 53 (oo) 54 25,0 32,8 55 06,8 47,3 56 36,2	12	-451			81	Dilat. Turkey. Interrupt. USCGS: 38,6 N, 28,4 E, H=01:48:30,4. 53 killed and heavy dama- ge at Alasehir, Sarigol and Kiraz.
28	e e	10 06		17,1 38,7						Turkey.
29	eP _n	01 45		11,1						Trace. Tyrrhenian Sea.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
29	eP _u e e eS _n	09 23		27,3 29,6 25 08,9 29 39,6						39 4300 Dilat. Ethiopia; BCIS: 12,0 N, 41,3 E, H=09: 16:00.24 killed and 165 injured at Sardo.
29	eP _n eP _c	11 12		27,4 15 09,1						39 4300 Rep. BCIS: H=11:04:58.
29	eP _n eP _c	13 57		48,5 59 30,2						49 5400 Carlsberg Ridge; USCGS: 10,4 N, 56,8 E, H=13:48: 57,6.
31	e	00 22		(oo)						Interrupt. Trace.
31	eP _n e ePP eS _n e	07 20		58,6 21 09,2 28,4 25 17,5 19,2						24 2700 Dilat. Red Sea; BCIS: 27,7 N, 33,9 E, H=07: 15:51.
31	eP _n e eS _n	19 36		51,1 54,1 46 20,4						81 9000 Sea of Japan. Dilat. USCGS: 38,3N, 134,6E, H=19:25:27,2.
A P R I L 1969										
2	eP _n eS _n	01 39		50,4 41 18,4						7,2 800 Tyrrhenian Sea; BCIS: 38,9 N, 15,3 E, H=01: 38;01, h=275 km. Greece.
2	e e	05 00		48,1 01 21,5						
3	eP e e e e	22 13		50,3 14 08,9 20,3 25,1 40,1 16 19,5						3,8 -117 Albania; BCIS: 40,7 N, 20,0 E, H=22:12:53,6.
4	eP _n	08 57		33,3						Aleutian Islands.
5	eP eSSS	02 26		09,2 35 14,4						39 4300 Ethiopia; BCIS: 12,1 N, 41,6 E, H=02:18:48.
6	eP _n e e(S)	03 52		09,1 23,1 55 23,8						10,8 1200 Turkey; BCIS: 38,5 N, 26,5 E, H=03:49:33.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
8	eP _n	15	50	19,2					5,4 Albania; BCIS: 40,6 N, 600 19,8 E, H=15:48:50.	
	eP _n			31,5						
	eS _n	51	23,0							
	eS _n			58,6						
9	eS _n	52	14,4							
	eP _n	14	54	57,8				Dilat.		
	eS _n	55	00,2							
9	e	16	31	(oo)				Interrupt.Trace.Greece.		
11	eP _n	19	28	20,2						
	eS _n			22,8						
12	eP _n	00	19	32,9						
	eS _n			36,3						
12	eP _n	20	40	19,1				6,3 Carpathians; BCIS: 45,3 710 N, 25,1 E, H=20:38:41.		
	eS _n			41 43,6						
	eS _n			42 11,4						
14	eP _n	05	13	49,4				Trace.Greece.		
16	eP _n	04	57	31,9				14,4 Dodecanese Islands; 1600 USCGS: 35,2 N, 27,9 E, H=04:54:06,3.		
	eS _n	05	01	07,0						
16	e	21	24	59,7				Trace.		
16	e	21	45	50,1				Trace.		
16	eP _n	22	59	08,7				14,8 Dodecanese Islands; 1640 USCGS: 35,3 N, 27,9 E, H=22:55:37,2.		
	eS _n	23	02	35,6						
16	eP _n	23	24	23,2				14,4 Dodecanese Islands; 1600 USCGS: 35,3 N, 27,8 E, H=23;21:04,9.Interrupt.		
	eS _n			25 48,3						
	e			28 (oo)						
17	eP _n	00	58	(oo)				14,0 Interrupt.Mediterranean 1550 Sea.		
	eS _n	01	01	43,3						
17	e	08	44	22,0				Trace.		
17	eP _n	09	13	50,0				4,9 Italy; BCIS: 41,5 N, 540 13,7 E, H=09:12:33.		
	eS _n			14 05,6						
	eS _n			52,7						

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
21	eP _n	07	31	49,2				82 9100	Compr.Kyushu, Japan; USCGS: 32,2 N, 131,9 E, H=07:19:27,5.	
	eS _n			42 13,5						
21	eP _n	20	39	29,6				11,2 1240	Aegean Sea; BCIS: 39,4 N, 25,2 E, H=20:36:45.	
	eS _n			50,0						
	eS _n			41 39,4						
	eS _n			42 08,3						
22	eP _n	22	43	20,0				48,5 5400	Arabian Sea; USCGS: 13,0 N, 58,2 E, H=22: 34:38,4.	
	eS _n			28,9						
	ePP			45 20,7						
25	e	07	53	16,2				Trace.		
30	eP _n	20	23	40,7				Turkey; BCIS: 39,1 N, 28,7 E, H=20:20:30.		
	eS _n			26 14,8						
	eS _n			38,7						
	e			57,1						
M A Y 1969										
1	eP _n	18	05	40,4					Dodecanese Islands.	
1	eFKP	19	24	48,0				160 17800	Dilat.Tonga Islands; USCGS: 16,8 S, 174,7 W, H=19:05:24,7, h=205 km.	
	e			25 05,0						
1	eP _n	20	10	12,5				14,5 1610	Dodecanese Islands; USCGS: 35,3 N, 27,6 E H=20:06:40,9.	
	eS _n			12 51,5						
2	eP _n	17	08	39,0						
	i			58,9						
4	eFKP	12	56	15,8					New Hebrides Islands.	
5	eP _n	05	39	17,3				22 2440	Compr.Atlantic Ocean; BCIS: 36,0 N, 10,3 W, H=05:34:25.	
	i			23,4						
	e			31,9						
	iPP			35,1						
	e			46,0						
	i			55,3						

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
8	eP iS i	08	51	(oo) 05,4 06,0						Interrupt.
10	eP _b eP _s eS _g	21	12	11,6 24,5 13 28,3 34,7				5,6 620		Albania;Tirana:41°10'N, 20°18'E;BCIS: H=21:10:33.
13	e	11	22	29,0						
14	eP _n e	10	08	33,3 12 11,0				13,5 1500		Dodecanese Islands; USCGS: 35,3 N,27,8 E, H=10:05:15,8.
14	eP _n eS _n	19	45	16,1 28,9 55 28,5				82 9100		Compr.Aegeion Islands; USCGS: 51,3 N,179,9 W, H=19:32:54,2.
15	eP̄ eS̄	05	00	44,9 01 (oo)						Interrupt.
16	eP̄ e	04	27	35,2 43,5						
16	eP _n eS e	07	28	54,4 30 14,4 31 08,7 23,1				7,7 850		Greece;BCIS: 38,8 N, 21,6 E, H=07:26:58.
17	e	13	35	18,1						Trace.
31	e eS	17	02	11,9 19,1						
J U N E 1969										
1	eP̄ e i iS̄	23	21	(oo) 09,6 14,0 20,1 24,4				1,71 190		Interrupt.Austria;BCIS: 47,0 N,14,2 E,H=23:20:29.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
2	eP̄ e e iS̄	03	58	(oo) 08,8 20,1 24,4					1,71 190	Interrupt.Rep.BCIS: H=03:57:29.
7	eP _n eS _n e	15	33	26,5 34 59,4 36 11,0					8,7 970	Ionian Sea;BCIS:37,9 N, 20,2 E, H=15:31:12.
7	eP eS	21	23	35,4 42,4						Yugoslavia,Rijeka IV.
8	e	01	34	46,2						Trace.Rijeka felt.
12	eS e	09	58	22,0 45,9						Ionian Sea.
12	eP _n eS _n M _n	15	16	36,5 19 16,4 22 40,4	9,6				12,6 1400	Crete;BCIS:34,6 N, 25,0 E; H=15:13:33.
13	eP _n eS _n	09	00	26,9 10 14,6					77 8550	Compr.Kurile Islands; USCGS: 49,4 N,155,5 E, H=08:48:29,5.
14	e	03	45	27,3						Trace.Solomon Islands.
14	eP _n	13	51	15,4						Mediterranean Sea.
16	eS _n	04	57	37,2						Ionian Sea.
16	eP _n eS _b	16	08	27,5 10 35,4					8,1 900	Ionian Sea; BCIS:38,0 N,20,3 E, H=16:06:25.
17	eP _n eS _n	05	21	(oo) 22 34,7					8,6 950	Interrupt.Rep.BCIS: H=05:18:46.
17	eP _n	23	29	35,5						Caucasus
18	e	00	18	16,6						Macquarie Islands.
21	eS _n	15	44	42,1						Trace.Bulgaria.
24	eP̄ eS̄ e	13	26	44,9 27 42,3 43,9					4,3 480	Italy;BCIS:44,8 N,10,2 E, H=13:25:20.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
J U L Y 1969										
2	eP _n eP _b eS _n eS _b	07	57	11,7 15,5 07,8 27,2					5,2 580	Central Italy; minor damage at Civitavecchia and Tolfa; USCGS: 42,3 N, 12,1 E, H=07:55:45,5. Trace. Southern Italy. Trace. Gulf of Corinth.
2	eS	10	34	19,4						
3	eP _n	09	44	23,9						
8	eP _n eP _b eS _n e e M ₁ M ₂	08	11	22,5 31,7 12 40,0 54,4 13 13,2 14 53,0 15 10,1	4,4 3,9	-57	-43			
16	eP _n e eS _n	08	28	44,4 49,6 38 27,4					76 8440	Off east coast of Kamchatka. USCGS: H=03:16:53; 52,2 N, 159,0 E, h=69 km, M=6 1/2 (PAS).
18	eP _n e eS _n ePFS M ₁ M ₂	05	36	10,0 19,1 37 17,3 45 25,9 46 21,3 06 05 59,4 10 21,8	17 14		535		71,5 7940	Dilat. Northeastern China; reported heavy damage in China; felt at Oita, Kyushu (Japan). USCGS: H=05:24:48,0; 38,3 N, 119,4 E, h=N, M=7 (PAS).
19	eP _n e	05	12	18,7 39,1						Trace. USCGS: H=04:54:54,1, 17,3 S; 72,5 W; h=54 km. Near coast of Peru. M=5,7 (PAS).
20	eP _n e	15	54 (00) 56 46,8						8,1 900	Interrupt. Ionian Sea; BCIS: 38,0 N, 20,5 E, H=15:51:57, h=55 km ± 30 km. USCGS: H=15:51:54,1; 37,9 N, 20,2 E, h=19 km.
25	eP _n ePFP eS _n	23	01	43,4 04 44,6 11 14,2					79 8800	Dilat. Eastern China; slight damage at Hong-Kong; 3000 reported killed in China. USCGS: H=22:49:41,3; 21,6 N, 111,9 E, h=N.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
A U G U S T 1969										
1	e e	03	43	31,9 33,3						Yugoslavia, Samobor IV.
8	eP _n e eS _n e	06	38	29,8 40 21,5 41 10,9 22,6					45,5 4500	Hindu Kush; USCGS: 35,4 N, 70,9 E, H=06:30:57,1, h=198 km. BCIS: H=06:31:10; 36,5 N, 70,5 E, h=320 km.
8	e e	21	03	17,3 08 53,6						Banda Sea. USCGS: H=20:44:21,0; 6,1 S, 129,7 E, h=196 km; M=6 (PAS).
9	eS _n	09	22	44,3						Northern Italy. BCIS: H=09:21:03; 44,0 N, 12,0 E.
9	eP _n e e	16	26	41,7 53,4 27 15,0					4,1 460	BCIS: 42,3 N, 19,2 E, H=16:25:36, h=50 km. Near the border of Albania-Yugoslavia. Felt VI ^c on the region of Titograd. M=5 (Beograd).
9	eP _n eS	17	02	22,1 03 21,3					4,1 460	Rep. BCIS: H=17:01:04. M=4,2 (Beograd).
10	eP	21	17	26,3						Trace. Northern Italy. USCGS: H=21:16:24,7, 44,0 N, 12,1 E, h=33 km.
11	eP _n eP _b eS _n e	13	56	14,2 22,3 57 09,1 18,4					3,6 400	Central Italy; BCIS: 43,2 N, 12,2 E, H=13:55:09.
11	eP _n e eS _n	21	38	51,3 39 50,6 48 59,9					80 8900	Compr. Aurile Islands; USCGS: 43,4 N, 147,9 E, H=21:26:37,6.
12	eP _n eSKS	00	06	54,2 17 33,7					100 11100	Molucca Sea. USCGS: H=23:52:56,9; 1,7 N, 126,5 E, H=34 km.

Date	Phase	M G T h m s	Per. sec.	A m p l i t u d e			D° D km	Remarks
				NE	NW	Z		
12	eP eS	05 15 41,8 25 48,8					81 Compr.Kurile Islands.USCGS; 9000 H=05:03:26,9,43,6 N,148,0 E, h=N.	
12	eP _n	11 33 36,5					Kurile Islands.USCGS: H=11: 21:21,6; 43,9 N,148,7 E, h=29 km.	
12	eP _n	13 30 23,3					Trace.Kurile Islands. USCGS: H=13:18:18,2; 43,5 N, 148,0 E, h=N.	
13	eP _n	04 08 14,6					Trace.Greece.USCGS: H=04: 06:03,8; h=N, BCIS: 04:06: 02; 38,4 N,21,7 E.	
14	eP _n eS _n eSKS	14 31 17,2 31,3 41 28,0 34,4					81 Compr.Kurile Islands; 9000 USCGS: 43,1 N,147,5 E, H=14:19:01,6.M=6,5(PAS).	
14	e	21 56 47,7					Trace.Turkey.USCGS: H=21: 51:04,1; 39,6 N,27,8 E, h=21 km.	
17	eP _n	20 28 19,9					Gulf of California.USCGS: H=20:14:58,9; 25,0 N,109,5 W, h=N,M=6 1/2(PAL).	
19	eP _n eS _n	09 02 08,3 12 23,2					81 Kurile Islands.USCGS:H=08: 9000 49:54,8; 43,8 N,148,2 E, h=39 km; M=6 1/2(PAL).	
20	eP _n e _n	08 02 07,4 19,3					81 Kurile Islands.USCGS: H=07: 9000 50:05,5; 47,9 N,153,6 E, h= 73 km,M=6 (PAS).	
26	eP _n e _n eS _n eS _b	02 16 55,9 17 12,5 18 06,5 17,4					5,44 Albania; BCIS: 41,5 N,20,5 605 E, H=02:15:33.,V-VI° at Debar.	
26	eP _n e	11 34 (oo) 11,9					Interrupt.Trace.	
30	eP _n eS _n	07 23 54,4 34 26,2					81 Kurile Islands;USCGS:43,7 N, 9000 147,8 E,H=07:11:39,5.	

Date	Phase	M G T h m s	Per. sec.	A m p l i t u d e			D° D km	Remarks
				NE	NW	Z		
30	e	09 19 (oo)					Interrupt.Trace.Kurile Isl.	
31	e	13 18 09,4					Trace.Southern Sumatra.	
S E P T E M B E R 1969								
6	eP eP e eS _n	14 35 38,5 52,5 37 20,4 39 46,8					23 Atlantic O.,BCIS:36,9 N, 2560 12,0 W, H=14:30:35.	
6	eP	15 12 36,6					Solomon Islands.USCGS: H=14:49:55,9; 8,85,157,8 E, h=15 km,M=6,1 (PAS).	
6	e	17 30 43,3					Rep.Solomon Islands.	
7	eP eS	15 20 19,5 38,5					17,1 Yugoslavia;BCIS: 44,6 N, 190 17,4E, H=15:19:49. Banja Luka region.	
9	eP eL _n	05 28 (oo) 58 11,3					82 Interrupt.Honshu,Japan; 9100 10 injured and minor da- mage at Gifu prefecture. USCGS: H=05:15:37,7; 35,7N 137,0 E,h=29 km, M=6(PAS).	
12	eP _n e _n eS _n	09 09 20,5 28,4 19 41,7					81,5 Aleution Islands; USCGS: 9050 51,2 N,179,2 W,H=08:57: 07,3, h=48 km,M=6,2(PAS).	
14	eP _n e _n	16 23 21,7 24 13,3					43 China;BCIS: 39,6 N,75,0 4780 E, H=16:15:25.	
17	eP _n eSKS	18 53 17,9 19 03 32,4					83 Kyushu,Japan;USCGS: 31,1 9200 N,131,3 E, H=18:40:45,8.	
18	eP _n i iS	02 22 38,9 40,0 42,8					Felt at Zagreb.	

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D ^o D km	Remarks
						NE	NW	Z		
20	eP _n e eFP eS _c S	05	15	15,1 18,1 16 33,3 25 50,3					32 3560	North Atlantic Ocean; USCGS: 58,3 N, 32,2 W, H=05:08:57,6.
22	eP _n e	13	57	49,6 58 28,0					58 6440	Central Mid-Atlantic Ridge. USCGS: H=13:47:52,2 5,0 N; 32,6 W, h=N.
24	eP _n e	04	05	10,3 19,9					31 3440	Atlantic Ocean; BCIS: 52,8 N, 32 W, H=03:58:55.
24	eP _n e eFP eS _n	18	13	20,8 39,1 15 48,4 21 33,1					59 6560	Compr. North Atlantic Ridge; USCGS: 15,2 N, 45,8 W, H=18:03:19,0; M=6,2(PAS).
25	eS _n	11	49	30,5						Trace. Ionian Sea. BCIS: H=11:45:39; 37,2 N, 20 1/2 E.
26	eP _n e	07	04	13,9 18,2					18 2000	USSR; BCIS: 46,0 N, 42,4 E, H=07:00:00. M=5,8 (Uppsala).
26	eP e eS e e	23	41	55,3 42 14,6 40,6 48,1 55,5 57,7						
28	eP eS _n e	22	57	31,5 23 00 27,6 01 17,8					14,4 1600	Mediterranean Sea; BCIS: 34,3 N, 25,1, H=22:54:09.
29	e	10	39	09,8						Trace. Norwegian Sea. USCGS: H=10:27:49,1; 55,1 N, 6,6 E, h=6 km.
29	eP e eS _n	20	15	31,8 36,2 25 16,9					78 8670	Republic of South Africa. USCGS: H=20:03:32,8; 32,9 S, 19,7 E, h=N, M=6,1(BRK).

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D ^o D km	Remarks
						NE	NW	Z		
O C T O B E R 1969										
1	eP _n e(FKP) e(SKS)	05	19	32,3 23 19,1 30 35,8					100 11100	Peru; 80 killed, 300 inju- red; USCGS: 11,9 S, 75,1 W, H=05:05:43,2.
2	eP _n	22	18	19,6						Aleutian Islands.
2	eS _n e	23	17	29,5 18 50,7					9,0 1000	Greece; USCGS: 38,5 N, 22,5 E, H=23:13:41,1.
7	e eS _n	05	13	11,0 15 (oo)					13,5 1500	Turkey. Interrupt.
7	e e e	21	13	21,3 33,8 14 (oo)						Interrupt.
9	eS	03	34	49,7						Trace. Italy.
9	eP iS	07	39	(oo) 18,7					1,17 130	Interrupt. Yugoslavia; BCIS: 45,8 N, 14,1 E, H=07: 38:38.
12	eP e e e(S)	13	36	(oo) 08,0 11,0 37 50,5					6,6 730	Interrupt. Greece; BCIS: 39,8 N, 20,7 E, H=13:34: 20.
13	eP e iP i iS M ₁ M ₂	01	04	12,7 20,8 42,7 56,1 05 38,4 06 46,4 47,4					6,6 730	Dilat. Rep. BCIS: H=01:02: 32.
13	ePKP e	07	15	11,8 29 39,1	4,2	-132			150 16670	Dilat. New Hebrides Islands.
14	eP e	07	06	43,8 19 (oo)					34,5 3830	Compr. Novaya Zemlya.
16	e	22	58	14,0						Trace.
17	e	01	36	19,7						

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
20	eP _n	13	23	48,3						Venezuela.
21	e	19	27	04,6						
26	eP i iS	15	37	13,0 17,1 34,8					1,21 140	Compr.Yugoslavia; 1 dead, 200 injured and heavy property damage at Banja Luka; BCIS: 44,9 N, 17,3 E, H=15:36:50; USCGS: 44,9 N, 17,3 E, H=15:36:51,8.
26	eP eS	15	50	44,3 51 (oo)						Interrupt.
26	e	22	26	10,7						
27	eP eS	00	24	13,2 34,1						
27	iP iP ⁿ iS ⁿ i	02	55	54,4 57,0 56 16,5 57 08,7	2,5			+167	1,08 120	Dilat.Yugoslavia; BCIS: 44,9 N, 16,8 E, H=02:55: 36; USCGS: 45,0 N, 17,0 E, H=02:55:35,4.
27	eP e	04	27	38,6 54,8						
27	iP iS	08	11	20,4 42,6					1,26 140	Compr.Yugoslavia; 14 dead 1100 injured and heavy property damage at Banja Luka; felt at Beograd, Budapest, Trieste, Zagreb, USCGS: 44,9 N, 17,2 E, H=08:10:58,3; BCIS: 44,8 N, 17,2 E, H=08:10:56.
27	eP eS	08	44	32,5 46 40,1					7,7 850	Greece-Albania border region.
27	eP iS i	08	54	(oo) 21,8 25,6						Interrupt; Yugoslavia; USCGS: 44,9 N, 17,0 E, H=08:53:42,7.
27	iP iP ⁿ iS ⁿ	11	08	17,4 19,4 37,7					1,26 140	Yugoslavia; USCGS: 45,2 N, 16,8 E, H=11:08:00,6.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
27	e e	12	46	30,8 53,1						
27	eP i i	21	24	15,5 35,1 38,5						
28	e e	01	42	51,4 43 19,9						
29	e e	15	30	47,6 41 08,0						
29	e e	18	18	21,2 19 14,4						Yugoslavia, Vrgorac III.
30	e	22	52	23,3 32,2						
31	e	07	47	35,9						
31	eP _n	11	45	24,6						Compr.Aleution Islands.
N O V E M B E R 1969										
1	e e	11	21	54,4 27 26,0						Japan; Southern Honshu. USCGS: H=11:20:50,5; 35,5 N, 135,3 E.
3	e e i	16	46	15,7 30,0 42,4						Solomon Islands. USCGS: H= 16:55:19,5; 5,89; 154,0 E.
4	eP eS	03	25	18,6 41,5					1,53 170	Yugoslavia; BCIS: 45,2 N, 17,9 E, H=03:24:51.
4	eP e	12	09	(oo) 24,6						Interrupt.
4	e	23	02	(oo)						Interrupt.
5	e	00	01	28,2						
7	e e	01	47	(oo) 36,7						Interrupt.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D ^o D km	Remarks
						NE	NW	Z		
7	eP _n ePP e(S)	18	41	23,6					40 4440	Compr. Iran; BCIS: 28,0 N, 60,1 E, H=18:34:07, h= 105 km ± 18 km.
9	e	09	30	24,7						
12	eP _n	19	21	17,1						Aleutian Islands.
14	e e	06	50	(oo) 23,0						Interrupt.
14	e	07	58	11,3						
16	e	14	17	47,1						Yugoslavia, Vrpolje III.
18	eP _n eS	07	33	20,5 37,3					1,26 140	Yugoslavia; BCIS: 45,1 N, 18,0 E, H=07:32:56.
21	eP i i i eS	02	17	50,6 56,0 57,5 18 08,5 36,9 27 51,6						Off W Coast of Northern Sumatra. USCGS: H=02:05: 35,3, 2,6 N; 94,6 E, MAG = 7,5 (PAS).
22	eP i i e eS	23	21	08,7 13,8 19,0 23 39,8 30 43,6						Near Coast of Kamchatka. USCGS: H=23:09:37,2; 57,8 N, 163,5 E, MAG = 7,1 (PAS).
24	e	21	50	(oo)						Interrupt. Trace.
25	eP e eS e	16	46	(oo) 05,8 15,6 20,4					1,26 140	Interrupt. Yugoslavia; BCIS: 44,7 N, 17,1 E, H= 16:45:36.
27	e e	12	35	34,6 35,2						Trace.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D ^o D km	Remarks
						NE	NW	Z		
D E C E M B E R 1969										
4	eP e e	03	06	17,4 29,3 30,7						Yugoslavia, Banja Luka V ^o .
4	e	05	57	(oo)						Interrupt. Trace.
5	eP e	04	51	36,1 55,1						
10	eP e iS	02	45	(oo) 06,9 19,0						Interrupt.
14	e e	03	00	30,2 06 39,9						
14	eP e e	18	46	21,7 32,7 53 44,3						Dilat. Carlsberg Ridge. USCGS: H=18:37:52,9; 8,2 N, 58,5 E.
16	eP e eS	18	21	25,6 31,4 22 22,0						
18	eP e eS	13	43	22,3 28,1 53 (oo)						Sakhalin Islands. USCGS: H=13:32:05,2; 46,3 N, 142,5 E, MAG=6,5 (PAS). Interrupt.
20	e e	16	47	19,1 28,4						Trace.
25	eP e e e eS	21	43	34,8 39,6 47,4 44 16,0 45 25,3 52 45,5						Dilat. Leeward Islands. USCGS: H=21:32:27,3; 15,8 N; 59,7 W, MAG=7,0 (PAS).
25	e	22	11	52,1						Rep.
25	eP e eS	22	42	13,5 16,0 51 20,3						Rep.

Date	Phase	M h	G m	T s	Per. sec.	A m p l i t u d e			D° D km	Remarks
						NE	NW	Z		
25	e	23	10	24,4						Rep.
26	eP	22	04	33,6					5,0	Albania;BCIS: 40,75 N, 19,75 E, H=22:02:32.
	e			41,4					620	
	e		05	21,6						
	e			33,1						
31	e			06 (oo)						Interrupt.
	eP	13	18	55,5					1,31	Compr.Yugoslavia;BCIS: 44,8 N,17,2 E,H=13:18:32.
	i		19	03,1					145	
	i			09,4						
iS			14,8							
31	eP	19	14	30,0						Ryukyu Island. Interrupt. H=09:01:56,1, 28,5 N;129,1 E, MAG=6,2 (PAS).
	eS			25 (oo)						

MAKROSEIZMIČKI IZVJEŠTAJ
IZ S.R. HRVATSKE
MACROSEISMICAL REPORT
FROM S. R. CROATIA

Br. No.	Dan Date	Sr.evr.vr. M E T	Kotar District	Mjesto Locality	M.C.S. Sc.	Bilješke-Remarks
V E L J A Č A - F E B R U A R Y 1969						
1	23	19 42 30	Karlovac	Ozalj	III	Not felt at: Krapina.
O Ž U J A K - M A R C H 1969						
2	25	09 43 08	Osijek	Lurđevac Čaglin Našice	IV-V III IV	Not felt at: Drenje, Velika.
L I P A N J - J U N E 1969						
3	7	22 23 35	Rijeka	Kraljevica	IV	
8	8	02 34 46	Rijeka	Kraljevica Opatija	IV III	
K O L O V O Z - A U G U S T 1969						
4	1	04 43 32	Zagreb	Samobor	IV	Not felt at: Brežice.
R U J A N - S E P T E M B E R 1969						
5	18	03 22 39	Varaždin	Vel.Trговиšće	IV-V	
L I S T O P A D - O C T O B E R 1969						
6	26	16 37 13	Osijek	Valpovo Sl.Brod N.Gradiška Bakovo D.Miholjac Našice Beli Manastir Orahovica Valpovo Vukovar Sisak Dvor Petrinja	III V-VI V IV-V IV-V V III-IV IV-V IV IV VI VI VI	Not felt at: Novigrad, Krk, Pula, Umag, Split, Dubrovnik.

Br. No.	Dan Date	Sr.evr.vr. M E T	Kotar District	Mjesto Locality	M.C.S. Sc.	Bilješke-Remarks
	26		Bjelovar	Kutina	IV-V	
				Zuruevac	IV-V	
				Grubišno		
				Polje	IV	
				Novska	VI-VIII	
				Ivanićgrad	V	
				Čazma	IV	
				Vrbovec	VI	
				Pakrac	VI	
				Križevci	IV	
				Virovitica	IV-V	
			Zagreb	Zagreb	IV	
				Donja Stubica	III	
				Zlatar		
				Bistrica	IV-V	
				Zaprešić	IV-V	
				Zelina	IV-V	
				Zabok	III	
				Samobor	IV	
				Dugo Selo	IV	
			Karlovac	Vojnić	IV	
				Vrbovsko	III	
				Vrginmost	IV-V	
				D.Lapac	IV	
				Ogulin	IV	
			Varaždin	Ivanec	III	
				Novi Marof	IV-V	
				Krapina	IV	
				Čakovec	IV	
				Varaždin	IV	
				Ludbreg	IV	
				Ivanec	IV	
			Rijeka	Rijeka	III	
				Pag	IV	
				Grižane	III	
			Pula	Pazin	II	
			Split	Benkovac	III	
				Sinj	III	
				Vis	III	
	7 27	03 55 54	Sisak	Sisak	III	
			Split	Sinj	III	
	8 27	09 11 20	Osijek	Valpovo	IV	
				Slakovci	V	
				Sl.Brod	V-VI	
				N.Gradiška	V	

Br. No.	Dan Date	Sr.evr.vr. M E T	Kotar District	Kotar Locality	M.C.S. Sc.	Bilješke-Remarks
	27		Osijek	Lakovo	V	
				D.Miholjac	IV-V	
				Našice	V	
				Beli Manastir	IV	
				Zupanja	IV-V	
				Orahovica	IV-V	
				Valpovo	IV	
				Vukovar	IV	
			Sisak	Sisak	VI	
				Dvor	VI	
				Petrinja	VI	
			Bjelovar	Kutina	V	
				Zuruevac	IV-V	
				Grubišno Polje	IV	
				Gola	IV-V	
				Novska	VI-VIII	
				Ivanić-grad	V	
				Čazma	IV	
				Vrbovec	VI	
				Pakrac	VI	
				Križevci	IV	
				Daruvar	IV-V	
			Zagreb	Zagreb	IV	
				Donja Stubica	III	
				Dugo Selo	IV	
				Zlatar Bistrica	IV-V	
				Zaprešić	IV-V	
				Zelina	IV-V	
				Velika Gorica	IV	
				Zabok	III-IV	
			Karlovac	Vojnić	IV	
				Vrbovsko	III	
				Vrginmost	IV-V	
				Donji Lapac	IV	
				Ogulin	IV	
			Varaždin	Ivanec	IV	
				Novi Marof	IV-V	
				Krapina	IV	
				Čakovec	IV	
				Varaždin	IV	
				Ludbreg	IV	
			Rijeka	Rijeka	III	
				Pag	IV	
				Grižane	III	

Br. No.	Dan Date	Sr.evr.vr. MET	Kotar District	Kotar Locality	M.C.S. Sc.	Bilješke Remarks
9	29	19 18 21	Pula	Pazin	II	
			Split	Benkovac	III	
				Sinj	IV	
				Zadar	III	
			Split	Vrgorac	III	
S T U D E N I - N O V E M B E R 1969						
10	16	15 17 47	Osijek	Vrpolje D.Miholjac Čaglin	III III	Not felt at: Čaglin, Pleternica.
P R O S I N A C - D E C E M B E R 1969						
11	31	14 18 56	Osijek	Vinkovci	III	Not felt at: Vukovar, Walpovo, Čazma, V.Gorica, Dugo Selo, Vrginmost, Gračac, Otočac, Ogulin, Drniš, Zadar.
				Orahovica	II	
				N.Gradiška	IV	
			Sisak	Petrinja	IV-V	
				Dvor n/u	V	
			Bjelovar	Ivanićgrad	IV	
				Daruvar	IV	
				Novska	IV	
Zagreb	Zagreb	II				
Karlovac	Vojnić	III				
	Vrbovsko	II				
	Split	Donji Miholjac	II			