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Preliminary Seismological Bulletin, Janvier 1962

7	e	X	Z,CG	07	19	33,6	..	7	e	X	Z	21	37	03,0
	e	X	Z E			46,7	..		e	X	ZNE,CG			20,7
7	Yougoslavia Near Makarska						..	8	Near south coast of Domini-					
	H = 10 03 12 (B.C.I.S)						..		can Republic. 18°5N, 70°5 W					
	43°15'N, 17°07'E						..		M=6½ '(Pas.), 6¼ - 6½(Berk.)					
	i	P	Z,CG	10	05	27,2	..		=6 (Pal.)					
	e	PP	N,CG			36,3	..		i	P	ZZ',CG	01	12	58,7 D
	e	X	N			47,7	..		e	(S)N'E',CG		23	17,-	
	e	S	N,CG	07		15,4	..							
	e	X	N',CG	08		06,2	..	10	e	X	Z,CG	02	13	13,2
	e	X	N',			22,0	..		e	X	N			49,7
	Δ = 1040 Km						..		e	X	Z		14	04,7
7	e	X	ZNE	13	53	(01,-)	..	10	e	X	Z	08	07	23,9
7	ei	X	Z,CG	14	26	31,9	..	10	e	X	Z	12	38	18,6
7	i	X	Z,CG	14	27	22,8	..		i	P	CG			19.-
7	i	X	E	14	27	58,2	..	10	e	X	Z,CG	12	46	57,6
	e	X	ZN,CG			58,8	..	11	ei	X	NE	02	02	03,4
7	e	P	Z,CG	15	07	23,0	..	11	Yougoslavia Near Makarska					
	e	X	N		08	26,4	..		43°18 N, 17°02 E					
	e	(S)	N,CG			58,3	..		H = 05 05 03 (BCIS)					
7	Yougoslaviè aftershock (BCIS)						..		ei	P	Z,CG	05	07	16,4
	e	(P)	ZN,CG	18	11	34,4	..		i	X	E,CG			21,1
							..		i	X	N,CG			33,3

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Cont'										
					12	e	(S) NE,CG	10	59	59,9
11	e	S Z'N',CG	05	09 (05,5)	12	e	(P) Z,CG	11	36	01,6
	e	L N',CG		09 59						
		T = 4,8 Sec			12	ei	(P) Z	20	51	29,9
	e	L Z',E'		10 56,-		e	(S) NN'ZZ'		53	(28,1)
					12		CG lamp burned between		12.00	
11		Aftershock H=05 42 20 (BCIS)					and 7.40			
	e	P		05 44 33,-						
		Dist by precedent			13	e	(L) N'	01	00	10,-
11		Aftershock H=05 50 06								
	e	P Z,CG	05	52 (17,5)	13	e	X Z	04	52	21,8
	e	(S) E,CG		54 24,4		e	S Z'NN'E			56,4
	e	X Z,CG		55 00,0						
					13	e	X E,CG	13	06	22,3
11	e	P Z,CG	10	04 51,1		e	X N			25,9
	e	X NZE		05 19,9						
	e	X z,CG		57,9	13	e	X Z	17	12	36,1
	e	S Z',CG		07 25,-		e	X Z,CG	13		29,4
						e	X N			40,4
11	e	X ZNE,CG	17	36 43,4						
					15	e	P Z	00	55	(39,6)
11	e	X ZNE,CG	21	37,1 -		e	S E		56	15,9
12	e	(P) Z,CG	00	10 43,8	15	e	X CG	07	00	06,5
	e	S ZNE,CG		12 47,-						
					15		No record on HES between			
12	e	(S) NE,CG	03	10 (29)			03 24 and 07 05			

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16	e	(Sg)	ZNE	02	28	55,6	19	e	(Sg)	E	17	27	55,5
16	i	(P)	Z	11	55	47,70	19	e	X	Z,CG	28	01,5	
16	i	PG	Z,CG	20	56	32,7 C	19	Greece 38°5 N , 22°0 E					
	i	Sg	E,CG		57	21,6		(Athenes)					
								H = 19 38 00 (BCIS)					
17	e	X	Z,CG	17	12	44,2		e	P	Z,CG	19	39	31,6
								e	X	N	40	35,8	
17	e	X	Z CG	17	44	52,4		e	X	N',CG	41	20,-	
	i		E										
	i	X	Z			53,2 D	19	e	X	Z,CG	20	28	17,5
								e	(S)	ZNE,CG	29	18,3	
17	e	X	ZE,CG	20	20	59,8	19	After shock of 19 ^h 38 ^m					
								H = 22 18 22 (BCIS)					
17	e	X	ZNE,CG	22	12	56,7		e	P	Z,CG	22	19	51,7
								e	X	ZNE,CG	20	53,7	
18	i	X	NE,CG	08	51	01,1		e	X	N',CG	21	23,-	
18	e	X	E,CG	16	00	04,5							
	ei	X	Z			06,0	20	e	P	Z,CG	01	46	30,3
								i	Pg	Z,CG			31,3
18	e	(P)	Z	22	58	30,9		i	Sg	ZNE,CG			40,8
	i	X	Z,CG			50,3							
	e	(S)	Z,CG		59	32,5	20	e	P	Z,CG	02	44	29,8
								e	S	Z,CG		45	03,3
19	e	X	Z,CG	14	32	53,9	20	e	P	Z,CG	03	35	48,3
19	e	X	Z,CG	15	30	25,5	20	e	X	ZNE,CG	15	10	02,6
	e	X	Z,CG		31	20,8							

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21	Yougoslavia Aftershock of 11	23	e	X	ZNE	20	20	(09,7)
	Janvier. H=02 51 32 (BCIS)							
	e P Z,CG 02 53 44,8	24	e	X	ZNE,CG	01	49	26,3
	e X ZN,CG 56 34,3							
21	e X ZNE,CG 19 47 (57)	24	e	X	Z	02	43	29,7
22	e X Z,CG 12 30 49,7	24	CG lamp burned between 9 ⁰⁰ and 7.30 at 25 th Janvier.					
22	ei (L) ZNE,CG 15 04 43,8 D	24	i	X	Z	09	49	24,8
22	e (S) ZNE,CG 15 12 43,6		e	Sg	NE			52,2
22	e X Z,CG 17 19 29,-	24	i	P	Z	10	39	09,5
23	e (P) Z 06 31 22,7		e	X	N			35,4
	e (S) NE,CG 32 06,5		e	S	NE			49,4
23	e X E,CG 14 11 50,3	24	i	X	Z	14	22	21,6
	e X Z 50,8	24	e	X	Z	14	41	03,6
23	i X Z,CG 16 11 59,4		i	X	ZNE	19	15	00,2
23	Adriatic 44 ⁰ .1 N, 12 ⁰ .8 E	24	e	X	Z	20	04	31,6
	H = 17 31 37 (BCIS)		i	(Pg)	Z	21	01	52,9
	e (P) Z,CG 17 34 28,7		i	(Sg)	NE	02		12,8
	e (S) Z CG 38 30,-	24	i	X	ZNE	23	03	15,1
	E 40,-							



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25	i	Pg	Z	03	48	53,1	..	27	e	X	Z,E	19	53	54,5
	i	Sg	ZNE		49	12,9	..							
25	ei	X	ZN	14	16	17,8	..	27	i	X	E,Z	23	47	55,8
25	e	X	E	19	58	16,2	..	28	ei	X	Z,E	01	44	42,8
26	ei	P	ZN	05	34	36,6 D	..	28	i	X	Z,E	03	43	18,4
26	East of Crete 35°5 N, 22°5 E						..	28	e	P	Z	05	59	49,4
	h about 50 Km.						..		i	P	Z			57,50
	H = 08 17 44 (BCIS)						..	28	No record on SP between					
	i	Pn	Z'ZN'E'	08	19	32,1 CNE	..		12 01 and 15 41.					
	ii	X	N			33,5 S	..	28	i	Pg	Z,E	18	29	59,10
	e	S	Z'N'E'	21	(05,1)		..		i	Sg	Z,E		30	04,1
	e	L	E'			39,5	..	28	i	X	Z,E	21	57	48,5
	e	L	E'			56,-	..	29	Felt at İzmit					
	e	M	Z'	23	02,-		..		i	Pg	Z	00	57	40,5
	T = 9,9 Sec						..		i	(Sg)	Z,E			49,8
26	e	P(g)	Z	23	02	54,4	..		e	L	Z'			50,7
	i	Sg	ZNE		03	13,7	..	29	Felt at İzmit					
26	e	X	Z	23	05	17,1	..		i	Pg	Z,E	01	28	27,3
27	e	X	E	01	47	56,4	..		i	(Sg)	EE'			37,1
27	No record on N-S Comp. between						..	29	i	Pg	ZE	07	06	20,4
	07 15 and 07 15 at 28 th Janv.						..		i	Sg	ZE			56,8

Saadettin Kesili
Burhan Özçiçek



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 ::::::::::::::

Istanbul 41°02'6"N, 28°59'1"E

1	ei	X	Z,CG	17	59	24,3
2	i	P _b	Z,CG	02	49	43,0
	i	Pg	ZE,CG			48,9
	i	Sg	E,CG	50	22,5	
	i	X	Z			23,3
	1	R	CG			57,3
2	e	P	Z,CG	10	39	43,0
	e	S	ZE,CG	40	21,6	
2	e	X	Z	12	47	47,8
			E			48,3
2	e	X	E,CG	13	36	49,5
			Z			49,9
2	e	X	ZE,CG	17	53	50,7
3	e	X	Z	00	55	11,4
	e	X	CG	56	27	
3	ei	(P)	Z	14	58	18,5
	e	X	E,CG			19,1
3	e	X	E	17	54	18,2
3	i	X	Z,CG	19	38	20,6

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3	e	X	E,CG	20	31	29,0	
						41,1	
3	i	Pg	Z,CG	22	46	39,2	CE
	i	Sg	ZE,CG		47	15,0	
	i	X	E			19,9	
	i	Rg	CG			22,2	C Δ = 160 Km.
4	i	Pg	Z,CG	11	48	(15,4)	Strong micro.dist.
	i	Sg	E,CG			35,9	C
5	ei	P	Z,CG	23	07	47,6	C
6	i	P	Z,CG	08	00	53,1	D
	i	(pP)	ZE,CG		01	(53,8)	
6	e	(P)	Z,CG	15	08	21,8	
7	i	Pb	Z,CG	07	35	02,4	C
	i	Pg	NE,CG			03,3	E
	i	Sg	ZE,CG			16,7	
7	i	Pb	ZN,CG	19	35	31,1	
	i	Pg	ZNE,CG			32,2	D
	i	Sg	E,CG			44,6	
8	i	Pg	ZN,CG	16	24	39,5	DS
	i	Sg	NE,CG			53,9	

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8	i	Pg	Z,CG	19	19	10,7
	i	Sg	E			23,7
8	ei	P	ZE,CG	19	52	02,8 CN
8	i	Pg	Z	22	32	(21,9)
	i	X	Z,CG			28,0
	i	Sg	NE			28,2
9	e	X	ZN,CG	00	44	33,8
	i	X	E			34,4
9	i	Pg	Z	05	06	43,4
	i	Sg	ZNE		07	00,4
9	e	X	Z,CG	20	34	37,3
	e	X	E,CG			51,5
	i	X	Z			52,8
9	e	X	E	21	53	32,3
	i	X	ZN,CG			33,0 D
9	i	X	Z	23	44	45,8
	i	X	EN			46,1
	i	X	CG			46,5 D
10	i	X	ZE,CG	00	41	00,0
	i	X	N			00,4

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10	i	(PKP)	ZNE	12	10	25,3	
	e	X	CG			27,0	
	i	X	Z,CG	12		39,8	
	e	X	CG	13		36,0	
10	i	P	Z,CG	17	03	20,0	C
	i		NE			20,1	
10	e	P	ZE,CG	18	03	32,3	
	e	PP	CG			36,8	
	e	S	N,CG	05		38,0	
	e	LQ	EZ	06		08,-	
		IR	N,CG			31,-	
10	No record both SP and LP between 18 <u>57</u> and 07 <u>15</u>						
11	i	Pg	CG	02	53	36,0	C?
	e	Sg	CG			40,5	
11	e	X	NE	15	57	30,5	
12	i	Pg	ZNE,CG	02	54	10,9	D SE Felt at Izmit.
	i	Sg	ZNE,CG			22,0	
light spots are very dim on both SP and LP between 03 25 and 07 15							
12	e	X	E	22	07	11,5	
	i	X	N			11,7	
12	e	X	Z	22	29	18,0	
	e	S	NE,CG	30		26,7	

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12	e	X	NE,CG	23	42	07,7
13	i	X	N	01	05	06,3
			E			06,4

13 light spots are very dim on both SP and LP between 02 10 - 07 15

13	i	X	CG	02	11	21,5 D
----	---	---	----	----	----	--------

13	e	Pg	CG	02	35	21,2
	i	Sg	CG			56,0 D

13	i	X	CG	02	54	00,4 D
----	---	---	----	----	----	--------

13	e	X	CG	11	12	43,0
----	---	---	----	----	----	------

13	e	X	CG	14	05	34,0
		X	CG			58,0

14 Adjustments between 11 OT and 14 ±2

14	i	(Pg)	Z,CG	00	32	32,6
	i	Sg	NE,CG			51,7

14	e	P	Z'	06	51	(32)
	e	(PP)	Z',CG		56	19
	e	SKS	Z'N'E',CG	07	03	23
	e	PS	{ Z' N'E'	06	15	
						23
		L	CG	32	--	
		M	CG	46	-	

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14 Very strong micro.disturbances between 07^h and 15.II.06^h

14 i X CG 11 56 02,5 C

15 i Pg CG 05 17 52,6 C
 e Sg CG 18 (18)

15 i Pg Z,CG 18 09 08,2
 i Sg NE,CG 22,2

15 e X $\left\{ \begin{array}{l} \text{CG} \\ \text{Z} \end{array} \right.$ 21 13 52
 53,5

15 e P ZNE,CG 22 57 (59,2)

16 i (P) EN 20 29 35,1

17 e X Z,CG 04 03 30,2

17 (i) P ZE,CG 18 40 (00,7) D ?
 e (S) N 41 17,8 Felt at Mersin
 Z 19,8

18 e (P) Z 10 09 54,3
 Z 54,5

e (S,L) N 11 15,-

18 e (P) Z 16 38 47,4 C ?

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19	i	Pg	Z,CG	00	55	49,1	C	N ? E
	i	Sg	ZN,CG			58,6		
	ii	Sg	E			58,7		
20	ei	P	Z,Z',CG	16	17	40,9	C	$\Delta = 8500$
	i	P	SZ, SN			42,-		
	e	X	Z,CG			57,0		
	e	X	Z			58,8		
	e	PP	SN,SZ	20		36		
	e	PPPP	SN,SZ	23		44		
	e	S	SN	27		34		
	e	PS	SN	28		24		
	e	PPS	SN	28		35		
	e	SS	SZ,SN	33		-		
	e	SSS	SZ	37		14		
		LR	SZ,SN	43		-		
20	i }		Z	22	12	25,5	D	
	i }	P	CG			25,4		$\Delta = 6300$ Km.
	i	P	BZ			25,5	D E	
	e	P	(SZ)	22	12	24		
	e	PcP	SZ,SN	13		18		
	e	PP	SN	14		32		
	i	S	SN	20		18		
	e	S	SE	20		18		
	e	PS	SN			36		
	e	PPS	SE			55		
	e	SS	SN	24		14		
	e	SSS	SN	26		19		
	e	LR	SN,SE	29		-		
	e	LR	SZ	34		1		

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20	i	X	N	22	14	10,6 N
			Z			10,7 D
	e	X	E,CG			11,0
			CG		15	22,8 E
20	i	X	ZN	23	43	11,8 D
			E			11,9 E
21	e	(Pg)	N	01	20	48,5
		(Sg)	NE			57,3
21	i	(P)	NE	19	19	15,2
21	i	X	ZNE	21	55	18,9
22	No record on SP from 14 <u>23</u> till 23.II.1962 07 <u>15</u>					
24	i	X	E	19	11	49,7
	e	X	N,CG			50,3
25	i	X	ZN,CG	02	11	17,6
	ei	X	E			17,9
25	i	P	Z	02	16	18,8 C
	e	X	N			21,6
	e	S	N E			17 02,4
25	i	(Sg)	ZNE	22	01	19,4
26	i	X	Z	02	17	22,4

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26	e	X	E	20	44	12,8	
26	e	X	E	21	44	34,5	
27	e	P	Z	03	08	13,7	
	e	X	N		09	02,9	
	e	X	Z,CG			06,0	
	e	X	E			14,2	
27	e	X	ZE,CG	05	59	36,4	
	e	X	E			39,2	
27	e	X	Z',CG	11	20	-	
27	e	X	E,CG	11	51	32,9	
27	e	P	Z	12	05	13,4	
27	e	L	Z'	13	01	-	
	e	L	Z'		(37)		
27	i	(P)	Z	21	10	34,6	
	e	X	Z,CG		11	17,2	
	e	X	N			19,5	
27	i	P	CG			23,0	D Deep.
	i	P	Z'N'E'	21	35	23,7	D NW
	i	P	ZNE			23,7	D NW
	i	(SP)	N	36		19,9	
			CG			20,0	

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Cont'

27	i	X	E,CG			20,7
	e	S	CG			36 (39)
28	i	Pg	ZNE,CG	08 09		35,5 D SE
	i	X	N			36,2
	i	Sg	NE,CG			53,6
28	e	X	Z,CG	13 19		33,8
			NE			34,4
28	i	X	N	15 58		11,3
			E			11,7
			Z,CG			12,4
28	e	P	E	22 15		50,5
			N			50,7

Sadettin Kesili

ADDITIF:

22	i	X	BN	08 55	13,5	27	LM	SNSE		52,5	
			BZBE		14,7		LM	SN		55,0	
27	e	P	SZSN	13 01	12		LM	SN		56,0	
	e	PcP	SZ		21		eX	SNSE	14 01		
	e	SS	SN		11 10					$T_E=200$ Sec	
	e	PPS	SZ		12 13					$\Delta=8700$ Km.	
	e	X	SZ		15 19						
	e	SSS	SN		18 15						
	e	(PKKS)	SZ		23 18	20	i	X	Z,CG	18 55	17,8
		G	SESN		32 --			N			17,9
		L(R)	SESESN		39 --			E			18,1
		LM	SZSN		44,5						
		LM	SNSE		48,5						
		LM	SNSE		50,5						



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 Istanbul 41°02'6 N, 28°59'1 E

1	e	P	Z	09	52	(16,0)	
1	ei	P	ZNE	11	59	20,2	
1	i	Pg	ZN	15	39	18,2	
	i	Sg	ZNE			26.5	
1	e	(X)	SNSE	18	52	-	
	e	X	SZ			53.0	
1	i	(P)	{ ZN	19	00	02,4	
			{ E			02,7	
1	e	L	SZ	22	50	-	
1	e	(L)	SZ	23	48	-	
2	e	PKP	SZ	00	00	53	Samoa islands
	e	PP	SZSN	03	27		14°0S, 172°5E
	e	X	SN	04	08		M=6 (Pas.)
	e	PKS ₂	SZ			23	T _E [~] = 120 Sec.
	e	X	SZ	05	22		T _n [~] = 130 Sec.
	e	PPP	SZ	06	03		Δ = 153 000 Km.
	e	SKKS	SZ	10	24		
	e	SKSP	SN	13	32		
	e	PS	SZSN			42	

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Cont'

2	e	PPS	SNSZ	00	15	35	
	e	(P _c -SPKP)	SZ		16	46	
	e	(PKPPKP)	SZSN		18	12	
	e	SS	SZSNSE		21	50	
	e	SSS	SZSNSE		26	55	
		G	SNSE		37	-	
	L	R	SZ		45	-	
	L	M	SZ		56	-	
	W	Z	SNSE	01	31	-	
	W	M	SESN		38	-	
2	i	Pg	ZNE	00	54	35,3	C NE
	i	Sg	{ Z			43,6	
			{ NE			43,7	
2	i	Pg	{ Z	02	08	09,9	Near east coast
			{ E			10,2	of Mindanao P.I.
			{ N			10,4	Δ=10500 Km.
	i	Sg	ZNE			18,3	
3	i	P	BZ	12	27	49,1	C
	i	P	SZ			51	C
	i	X	BZ			51,0	
	e	X	SZ	31	15		
	e	PP	SZ			32	

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Cont'

3	e	PS	SNSZ	12	40	10	
	e	SS	SZ		42	(20)	
	e	L	SNSE		59	-	
3	e	X	BZ	13	36	47,2	
	ei	(P)	EN		37	00,6	
	i	"	N			02,8	
	e	X	BNBE			15,8	
	e	X	BZ			17,8	
4	i	(Pg)	EN	13	11	18,6	
	i	Sg	NE			27,1	
4	i	Sg	NE	13	12	41,8	
4	e	X	N	17	35	24,6	
4	e	Pg	Z	18	52	(41,1)	$\Delta=190$ Km.
	i	Pg	BZBN			41,4	C ?
	i	X	NE			42,5	
	i	Sg	BE			07,8	
	i	(Rg)	NEBN	53		07,9	
	i	(SgSg)	BZ			09,1	
	ei	Pg	BZ			21,5	
5	e	P	NE	05	50	(31,9)	
	e	Sg	NE		51	16,5	
	e	Sg	BN			25,0	
5	e	(P)	E	19	30	46,4	

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5	e	X	NE	21	24	38,9
	e	X	SZ	23	11	22
	e	X	SN		14	(26)
	e	X	SZ		20	05
	e	L	SZ		34	-
6	e	X	{ E	03	07	20,3
			{ N			20,4
6	e	P	NE	06	06	(03)
	i	P	BZSZ			03,6 C
	i	X	BZ			18,4
	i	(pP)	BN			20,5
		PPP	SZ		09	43
	e	PPPP	SZ		10	17
	e	S	SE	06	14	22
	e	X	SN			30
	e	PS	SZSE			35
	e	PPS	SZ			53
	e	L	SN		23	-
6	i		BZ	15	51	36,1
	e	Pg	N			36,6
	e		E			36,9
	i	Sg	BN			52,8
			E			53,0
	i	SgSg	N			53,6
6	e	Pg	NE	16	21	36,8
	i	Sg	EN			53,0
6	e	X	{ E	20	01	25,7
			{ N			26,3

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6	e	P	N	20	27	(42,6)	
	e	(S)	E		28	59,3	
6	e	X	N	23	58	00,2	
			E			00,6	
7	e	X	N	00	46	32,2	
7	i	Pg	BZBE	03	46	35,6	
	i	X	E			36,2	
	e	X	N			36,8	
	i	} Sg	NE			57,4	
	i		BE			57,5	
7	i	P	{ Z' N BZ SZ	11	13	20,0	
							20,0 D
							20,- D
	e	P	SNSE			20,- (N E) ?	
	i	{	NE			23,0	
			BN			23,6	
	e	X	SZ	15	40		
	e	(S)	NE DEBZ	22	(52,4)		
7	ei	} P	BZBNBE Z'	11	17	30,0	
	i		SZ SNSE			30,- D NE	
7	i	P	BZ	11	30	09,0	
			SZ			09,-	
7	i	Pg	Z	19	47	10,9	
	i	Sg	NE			19,4	

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8	L	M	SZSN	22	04	-	
8	i	Pg	BZ, Z	22	52	(48,5)	
	i	Sg	BN, NE		53	(31,5)	
9	e	LM	SZSN	18	15	56	
10	i	X	Z N E	12	54	32,9 33,2 33,5	
10	e	X	Z	14	22	36,5	
	i	X	ZNE			48,9	
11	e	LM	SZ	08	25	-	
11	e	P	SZ	15	35	59	
	e	PP	SZ		39	09	
	e	S	SNSZ		46	11	
	e	PS	SN		46	53	
	e	PPS	SNSZ		47	14	
	e	SS	SN		51,3		
	e	SSS	SN		54,9		
		LR	SN	16	00	-	
		LM	SNSZ	16	04	-	
11	e	P	ZBZ	18	23	35,2	
	e	S	ZE		24	09,2	
11	ei	P	BZ	19	32	03,4 D	h=70 Km.
	i	P	Z			03,4 D	Δ=10100 Km.
	i	P	SZ			03,- C	

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Cont'				
11	i	pP	BZBN	21,2
	e	pP	SZ	25,-
	e	sP	{ SE SZ	(34,-)
	i	pP	SZSN	35:40
	i	pPP	SZ	46
	i	sPP	SZSN	36 21
	e	PPPP	SZ	39 09
	e	pPPPP	SZ	30
	e	SKS	E, SE, SN	42 39
	e	SKKS	SN	47
	ei	S	{ BN N, SZ SN SE	53
	ei	ScS	SN SE	43 13
	i	(sS)	SZ SE	37
	e	SP	SN SZ	44 13
	i	SPP	SZ SE	26
	e	PPS	SE SZ	40
	e	(PKKP)	SZ SE	48 55
	e	SS	SZ SN SE	49 33
	e	sSS	SZ SE	57
	e	SSS	SZ SN	52 48
	e	SSSS	SN SE	56 10
	e	(sSSSS)	SE SN	57 13
11	ei	P	Z, BZ	20 44 25,6
	i	S	NE BN BE	45 09,8
11	i	X	ZNE	22 13 40,4
12	e	X	NE	01 21 41,6
12	e	LM	SZ	10 29 -

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12	e	P	BZ, Z	11	54	08,6	D ?	$\Delta=11200$ Km.
	e	P	SE			09,-		Columbia
	i	P	SZ			09	- C	$M=6\frac{3}{4}$ (Berk.)
	e	X	SZ		55	27		(Presse)
	e	X	SZ		57	40		
	e	X	SZ		58	03		
	e	PP	SZ SE SN			16		
	e	PP	Z			16,8		
	i	PP	Z			17,6		
	ei	SKS	SN SE	12	04	44		
	e	SKKS	SN SE		05	12		
	e	S	SN			47		
	ei	PS	SN SZ SE		07	18		
	i	(PKKP)	SE		09	58		
	e	SS	SE SN		12	17		
	e	PSPS	SZ		13	03		
	e	PKKS	SZ SN SE		14	28		
	e	P _c PPKP	SN SE		14	58		
		G	SN		22	-		
	ei	X	SN		26	32		
	ei	X	SE		27	20		
		LR	SZ SN SE		28	-		
		W	SZ	13	42			
12	e	X	Z	14	43	15,6		
13	i	X	ZNE	03	04	32,0		
13	ei	(P)	E	21	00	46,6		
14	i	Sg	ZNE	05	30	44,9		
14	e	X	{ E	18	00	32,6		
			{ ZN			33,3		
14	e	X	NE	19	04	23,6		
			Z			23,9		
14	e	(P)	Z	21	56	37,4		

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15	e	LM	SZ	01	22	-	
15	e	LM	SZ	02	40	-	
15	e	X	SZ	05	26	-	
15	e	(L)	SZ SN	15	06	-	
	e	X	SZ SN		15		
16	e	L	SZ	20	45		
16	e	X	SZ	21	13		
17	i	X	ZNE	00	05	57,6	
	i	X	ZNE		06	02,0	
17	e	X	SN	18	37	-	
		L(R)	SZ SN		48	-	
17	e	P	{ ZN	19	34	20,7	
	i	Pg	{ BZ BN E				
	i	Sg	ZNE			21,0	
			BZ BN				
			ZNE			35,8	
17	i	P	ZZ' BZ BN	20	58	42,8 C	$\Delta = 7700 L$
			SZ			43 -	
	ii	P	SN SZ			47.	CN
	i	X	BZ			47,5	
	ii	P	ZE			47,6	DW
	i	P _c P	BZ		59	04,0	
			SZ			05,-	
	e	PP	SZ SE	21	01	13	
	e	PPP	SN		02	57	
	e	P _c S	SE		03	15	
	e	P _a	SZ			15	
	e	(PPPP)	SE			47	
	i		SE SZ SN		07	52	
	i	S	Z'			54	
	i		N			56,8	

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Cont'							
17	e	X	E'	21	08	19,-	
	i	X	ZE			20,8	
	i	PS	SZ			30	
	i	S _o S	SE			43	
	i	PPS	SZ			47	
	e	X	E			50,1	
	e	X	Z	09		17,6	
	e	X	Z			26,2	
	e	X	Z	10		17,6	
	i	SS	SZ	12		15	
	e	SSSS	SZ	15		40	
		G	SE SN	17,7			
	i	PKKP	SZ	17		45	
		LR	SE SN SE	20		-	
		LR	SE SN	29		-	
17	i	X	ZNE	23	40	40,5	
18	i	X	ZNE	00	40	58,7	
18	i	X	NE	01	10	52,4	
18	i	X	ZNE	01	40	27,3	
18	i	X	ZNE	02	43	50,9	
18	e		BZ	03	25	45,6	$\Delta \cong 13500$
	e	PKP	SZ			47	
	e	(PKS)	SZ	29		15	
	e	PPP	SZ	30		00	
	e	PPPP	SZ	31		58	
	e	PPS	SZ	38		40	
		LR	SZ	04	04	-	
		LM	SE		10	-	
		LM	SZ SN		12	-	
18	e	(P)	Z	04	04	20,5	

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18	i		BZ BN BE	15	32	18,3	C NE	
	e	Pn	ZZ' E'E'		32	18,3	C E	$\Delta = 770$
	i		SZ SN SE				18 - C NE	
	i	(PnPn)	SZ Z'			26,0		
	e	Sn	SN SE		33	39		
	e	Li	N			46		
	i	(Lg ₁)	SZ		34	17		
	e	X	Z'		34	17,4		
	i	X	Z'			18,0	T=4,8 Sec	
	e	Lg ₂	N'			21,4		
	e	X	ZNE			41,6		
	e	X	ZNE			55,4		
	e	L	Z'E'		35	12,7	T _Z =10,8 Sec	
							A _{max} =375 μ	
							T _E =9,6 Sec	
							A _{max} =330 μ	
18	i	Pg	Z	19	11	18,8		
	i	(Sg)	ZNE			23,7		
18	i	LM	SZ SN	20	53	-		
20	e		N	16	40	41,9		
	i	Pg	Z			42,1		
	e		N		41	01,7		
	i	Sg	E			02,4		
20	e	X	ZE	19	24	23,1		
	i	X	E			23,9		
	i	X	N			24,5		
21	e	X	Z	00	10	10,0		
	i	X	Z			11,1	D	
21	e	X	Z	10	16	59,0		
	i	X	Z		17	02,8		
	i	X	Z			09,3		

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21	ei	X	ZNE	19	01	17,4	
21	i	(P)	Z	21	25	43,7	
21	i	PKP	Z	23	09	47,4	C
	i	PKP	SZ			47,-	D $h \approx 550$ Km.
	i	PKP	ZN			47,9	D
	i	pPKP	Z	11	55,9		$\Delta \approx 15700$ Km.
	i	pPKP	SZ			56	
	e	PP	SZ	13	(00)		
	e	PKS	SZ			22	
	e	pPP	SZ	15	19		
	e	PPP	SZ	16	23		
	e	SKKKS	SZ SN SE	19	44		
	e	SKKP	SZ SN	21	00		
	e	X	SN	23	20		
	e	(PS)	SZ	23	25		
	i	PSKS	SN SE	23	39		
	e	PSKS	SZ	23	40		
	e	SPP	SZ	24	44		
	e	X	SN	29	16		
	e	X	SE	29	27		
	e	SS	SZ	31	(20)		
	e	sSS	SZ SN	35	11		
	e	SSS	SZ	37	-		
22	ei	PKP	BZ	00	31	41,0	C
	i	PKP	SZ			41,-	D
	i	PKP	Z			41,4	D
	i	P	BZ	00	33	47,0	
	i	}	ZZ'		33	47,1	C
	i		P	SZ			47
	i	X	BZ	35	58,3		
	e	X	ZE	37	05,2		
	e	X	SZ			09	
	e	X	E'	41	13		
	i	X	SZ SN SE			15	

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Cont'

22	i	X	SN	00	41	41	
	e	X	E'			43	
	e	X	N			44,7	
	e	X	N'			58	
	i	X	SZ	42	54		
	e	X	N	45	26		
	ei	X	SN			28	
	e	X	SN	46	24		
	e	X	SN	51	05		
22	e	L	SZ	13	17	-	
		F	SZ		26		
22	e	P	BZ	15	27	32,4	$\Delta = 12\ 000\ \text{Km.}$
	e	P	SZ			33,-	
	i	(PKP)	Z	31	48,4		
	i	X	{ BZ	32	03,6		
			{ SZ			06,-	
	e		NZ' BZ	32	10,9		
	i	PP	SZ SN SE			11,-	
	e	X	Z			15,-	
	e	PPP	SZ	34	20		
	e	PPPP	SZ SN	36	11		
	e	SKS	SZ SN SE	38	13		
	e	SKKS	SZ SN	39	09		
	e	PS	SZ SN SE	41	36		
	e	X	N	42	00		
	e	X	SZ SN SE			04	
	e	PPS	SZ SN SE			32	
	e	SSP	SE	47	40		
	e	PSPS	SE			58	
	e	SS	SZ SN	48	10		
	e	(SKKS ₂)	SE	50	09		
	e	(PKPPKP)	SE	51	32		
	e	SSS	SZ	52	09		
		G	SE	56	-		
	e	LR	SE SN	16	03	-	
		LR	SZ		07	-	
	e	LR	SE SN	11	-		

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22	e	X	EN	16	29	06,7	
23	i	X	ZN	06	36	34,3	
	i	X	E			34,6	
23	i	(Pg)	Z	10	01	35,6	
	i	(Sg)	ZE			39,0	
23	e	(P)	{ E	19	07	33,5	
			Z			34,0	
	e	X	E		09	15,5	
23	e	Pg	Z BZ	19	57	21,0	
	i	P	ZE			21,6	
	i	Sg	BN BE			40,6	
	i	Sg	E			41,1	
24	e	X	Z	00	53	59,-	
24	i	P	Z	07	01	48,6	
	i	X	BN		02	39,8	
	i	Sg	ZE BZ		02	41,4	
24	i	P	BZ	13	18	00,2	C
	ei	P	Z			00,4	
	e	X	Z BZ	19	00	00,8	
	e	(S)	SZ	28	14		
	e	X	SZ	29	25		
		SS	SZ SN	35	35		
		LR	SZ SN	53	-		
24	e	X	E	18	05	13,0	
24	e	X	EN	19	01	26,2	
24	e	X	Z	20	09	18,8	
24	e	X	E	23	40	26,4	
25	e	(P)	ZNE	05	28	47,7	
25	e	X	Z	06	39	09,0	
25	ei	X	ZE	19	12	57,0	
	e	S	ZE		13	23,4	
25	i	(P)	ZE	19	34	46,5	
	e	(PKP/P)	BZ	20	59	04,4	
25	e	(PKP/P)	Z			05,4	

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25	i	(P)	ZE	21	07	12,1	
25	i	P	ZE BZ BE BN	21	41	00,4	CE
	i	X	BZ			03,4	
	e		BZ BE BN	43	10,0		
	e	PP	ZE			12,0	
25	ei	(P)	ZE	22	05	15,8	
25	i	(P)	ZE	22	33	14,1	
25	ei	(Pg)	Z	23	10	09,2	
	e		Z			22,1	
	i	S	E			22,3	
26	e		Z	09	24	(13,3)	
	e	P	BZ			13,6	
	e	X	SZ	25	15		
	e	X	Z	26	03,3		
	e	S	SN			14	
	e	S	SE			22	
26	e	P	SZ	12	15	03	$\Delta = 6400$ Km.
	e	PPP	SZ		18	34	
	e	S	SZ SN		23	18	
	e	PS	SZ			31	
	e	SSS	SZ		30	(08)	
		LR	SZ SN		33	-	
26	e		E	15	29	30,0	
	e	P	ZN			31,3	
	e	S	SN		31	18	
	e	(L)	SZ			41	
26	e	PPPP	SZ SN	17	00	20	$\Delta = (10600)$
	e	SKS	SZ		03	20	$h = 100$ Km
	e	(sS)	SN		04	47	
	e	SS	SN		10	23	
	e	(sSS)	SZ		14	50	
		G	SN		19	-	
		LR	SZ SN		31	-	
26			E	20	20	40,9	
	e	X	N			42,0	
			Z			42,5	

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Cont'

26	i	P	BZ	21	15	27,0	C
	i	P	Z			28,4	C
	i	X	E			28,6	W
	e	S	SN		17	15	
	e	L	SZ			38	
27	e	P	Z	13	30	43,4	
	i	P	BZ			43,7	
	e	S	BE		31	19,-	
			ZNE			(23)	
27	e	(L)	SZ		22	17	
28	e		BZ			32,2	
	e	Pg	Z	00	12	33,2	
	i	X	Z			34,4	
	ii	X	BE			37,0	
			BN BE			12,2	
	i	Sg	NE		13	12,4	
	i	X	Z			15,6	
	e	(L)	SZ SN SE			38	
28	e	(P)	Z	00	15	23,4	
	i	P	BZ			27,0	
	i	S	BE		16	03,8	
	e	X	ZNE			(04,-)	
28	ei	P	BZ	00	58	25,0	
	e		ZE			26,0	
	e	X	SZ	01	06	-	
28	ei	X	ZNE	01	59	51,0	
	i	X	E			51,2	
28	i	X	ZNE	04	07	41,7	
	ei	P	BZ	04	16	46,4	
28	ei	P	Z			47,0	G
	i	X	BZ			54,0	
	e	(pP)	BN		17	28,6	
	e	(pP)	ZN			28,8	
	e	S	SN	04	26	08	
	e	SS	SNSE		31	-	

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Cont'							
28	e	SSS	SN SE	04	34	-	
	e	(LR)	SN SE		41	-	$\Delta = (8\ 000\ \text{Km.})$
28	ii		BZ BN			25,0	CN
	i	Pg	ZN	06	06	26,3	CN
	i		BZ BN BE			34,0	
	i	Sg	ZNE			34,3	
28	e	(P)	Z	07	21	07,7	
	e	(S)	Z			48,1	
28	e	(P)	Z	13	33	47,4	
	i	X	Z			53,4	
28	i	X	ZNE	20	59	24,6	
28	e	P	Z	21	45	(21,2)	
	e	S	EZ			57,0	
28	i	X	ZNE	21	55	13,0	
29	e	(P)	Z	04	45	(57,6)	
	e	S	N		46	32,6	
30	i	X	ZNE	16	09	06,7	
30	i	X	Z	21	00	05,3	
30	ei	(P)	Z	21	45	43,0	
	i	S	E			55,4	
	i	X	Z			56,4	
	i	X	N			57,5	
31	e	X	Z	07	55	59,4	
	e	X	Z BZ		57	17 -	
	e	X	Z			40,-	
	e	X	SZ	08	01	07	
	e	(S)	SN SE		07	15	
	e	(PS)	SZ SN SE		08	12	
	e	LR	SZ SN		26	-	
31	i	Pg	Z	18	35	09,7	
	i	Sg	E			25,2	
	e	X	N			26,5	

31	ii	P	Z BZ	23	37	28,9	D
	e	Sg Sg	E		38	22,3	
	i	X	E			23,5	
	i	S	BN			24,0	
31	e	X	SN	23	46	10	
	e	X	SZ		47	33	

Additif:

26	i		ZE	14	00	46,5	W
	i	X	Z			47,1	
2	e	(PcSPKP)	SZ	00	16	46	

Sadettin Kesili

TECHNICAL UNIVERSITY OF ISTANBUL
 Institute of Seismology
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 April 1-30, 1962
 Istanbul 41°02'6 N, 28°59'1

1	i	P	Z	00	50	35,6	D ?
	i	P	BZ			36,3	D
	i	P	SZ			36	D
	i	X	Z			37,5	
	i	X	Z	51		03,8	
	e	S	SNSZ	55		02	
	L	R	SZ	58		00	
	L	R	SNSE	58		20	

1	i	P	Z	01	40	40,1	Felt at Amasya, Samsun,
	i	P	BZ			40,8	Merzifon, Zile (Turkey)
	i	X	Z	41		18,8	Presse.
	e	(X)	SZSN	42		05	
	e	X	SZSN			20	
	e	L	SZSNSE			25	

1	ei	Pg	Z	15	35	(01,6)	
	e	Sg	NE			38,8	

2	i	Pg	Z	21	22	12,4	C
	i	Sg	ZNE			19,3	

2	ei	X	{ N	23	37	44,4	
			{ E			45,1	
			{ Z			45,3	

3	e	X	{ E	05	40	54,0	
			{ Z			54,6	

3	e	X	NE	11	00	41,4	
	i	X	Z			42,0	

3	e	S	SZ SN	16	46	19	
	e	LR	SZ SN	17	26	-	

3	e	Pg	Z	20	57	17,9	
	e	Sg	NE			32,4	

3	i	X	ZNE	21	03	23,4	
---	---	---	-----	----	----	------	--

3	i	X	ZNE	23	42	04,3	
---	---	---	-----	----	----	------	--

4	e	(P)	Z	05	42	27,1	
---	---	-----	---	----	----	------	--





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Cont'

4	e	X	Z	05	42	59,0	
	e	X	E		43	15	
	e	(Li)	SZ SN		45	09	
	e	X	Z		45	29	
	e	LM	SZ SN		46	(10)	
4	e	X	ZNE	10	11	07,6	
	i	X	Z			08,3	
4	i	X	Z	10	53	13,8	
4	i	X	ZNE	19	47	48,8	
4	i		BZ	19	56	57,9	C
	i		SZ SN			57,9	
	e	Sn	SZ SN		58	24	
	e	Lg ₁	N' SZ SN		59	04	
	e	SgSgSg	SN BN		59	24	
		Rg	SN SZ BZ			33	
		LR	SN SZ	20	00	08	
4	i	X	ZNE	19	47	48,8	
4	i	X	Z N	20	23	02,0	
	i	X	E			02,3	
4	i	} Pn	BZ	20	52	53,3	D
	i		ZZ			53,8	C
	i	} PgPg	BZ		53	30,7	
	i		BN			32,3	
	i	} X	BE			38,3	
	i		BN			40,7	
	i		BZ			41,2	
	e	(Sn)	SZ SN		54	14	
	e	X	Z'N'		54	52	
		Li	{SZ {SN		55	00	
	e	X	BE		55	13,3	
	e	X	SE			18	
		Lg ₂	{BZ			20,7	
			{BN			22,0	
	i	X	SE			26,-	

Δ = 820

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Cont'								
4	e	Rg	BZ BN	}	20	55	29,7	
	e	X	SE					34,-
	e	X	BE					35,7
	e	LM	{ SZ SN Z' N'		56		-	
4	e		Z		21	01	24,4	Crete
	i	Pn	BZ				24,4	
	e		Z'				24,9	
	i	X	BZ BN BE				33,-	
	e	Sn	SZ SN		02	(43)		
	e	Li	SZ SN Z'		03	32		
	e	X	SE				47	
	i	(SgSgSg)	BN				51,0	
		Lg ₂	SZ SN SE				56	
	e	Rg	BZ		04	00		
	e	X	SE				05	
		LM	SZ SN Z' N'				(30)	
5	i	X	NE		01	05	21,0	
5	e	X	ZN		02	12	02,4	
	i	X	E				02,8	
5	e	LM	SZ SN		04	25	-	
5	e	L	{ SZ SN		07	21	-	
		M	{ SZ SN			22	-	
5	i	}	Z N		17	46	06,4	
	i		X	Z				06,5
5	e	}	Z N		20	54	19,3	
	i		X	E				19,5
5	e		NE		21	23	45,0	
	e	X	Z				45,4	
	e	X	ZNE		27	44,8		
6	e	Pg	Z		00	05	(07,4)	
	e	(Sg)	E				23,1	
	e	X	N				23,4	

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Cont'

6	e	X	E	00	05	23,8	
6	e	(PKP/PP)	SZ	17	09	58	
	e	L	SZ	18	00	-	
6	e	Pn	BZ	18	49	44,3	
	e	(S)	BN		51	55	
	e	LM	SZ		52	(33)	
6		LM	SZ	07	13	-	
7	e	X	E	20	47	07,2	
7	e	P	Z BZ	21	37	12,8	
	e	PnPn	E BZ BN BE			17,3	
	ei	Pb	BN BE			34,0	
	ei	PbPb	{ BE			42,3	
			{ BZ BN			43,3	
	e	PgPg	{ BZ			47,9	
			{ BN BE			48,2	
	e	X	{ BN	38		01,8	
			{ BZ BE			06,8	
	e	X	E			31,2	
	ei	(SnSn)	BN			50,-	
	e		{ BZ BN	39		22	
	e	Lg ₁	{ SE			25	
	i	SgSg	BZ			29,9	
		Lg ₂	BZ			33,-	
	e	X	BE			42,-	
	e	X	BN			48,-	
	i	(SgSgSg)	BZ			52,-	
	e	(Rg)	SE	40		03	
7	e	P	BZ	23	16	16,3	
	e	P	Z			16,6	
8	i		Z BZ BN BE	03	13	34,1	C
	ei	Pb	N			34,2	N
	i	Pg	{ ZNE			35,4	
			{ BZ BN BE			47,9	
	i	Sg	{ N BN BE			48,2	
			{ E			48,3	
			{ Z				

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Cont'								
8	i	(SgSg)	Z BZ	03	13	49,8		
8	ei	X	N	12	18	49,6		
	ei	X	Z			50,2		
9	e	(Pg)	Z	02	44	(07,6)		
	e	Sg	ZNE			39,8		
	i	X	N			40,9		
9	e	(Pg)	BZ	21	39	53,0		
	e	Sg	BZ BN BE		40	(51)		
9	e	P	BZ	23	35	22,-		
	e	Sg	BE		36	22,-		
10	i	(P)	BZ BN BE	00	00	32,7		
10	e	P	BZ	00	24	(10,6)		
	e	X	BN		25	12,8		
	e	X	BN SN		25	43		
	e	X	SE			48		
	e	X	SZ SE SN		26	08		
10	e	LM	SZ	11	16	-		
10	e	P	Z BZ	12	28	38		
	e	S	NZ BZ BN		29	45		
	e	LM	SZ	12	30	17		
10	e	LM	SZ	15	13	-		
10	e	X	Z	21	03	10,9		
10	ei	X	ZN	21	11	30,9		
	i	X	E			31,3		
10	i	} Pn Pn Pn (PnPn) Pb PgPg PgPgPg	Z	21	39	02,6		
	e		SE BZ SZ SN			02,6	C NE	
	i		BN BE			03,0	NE	Δ = 810 Km
	ei		BZ BN BE			05,0	C NE	
	i		SE			10,-		
	i		BZ BN BE			12,0		Ionian Sea 38 ⁰ / ₄ N, 19 ⁰ / ₄ E H=21 37 13
	i		{SZ SN SE			20,-		M=6 ¹ / ₄ -6 ¹ / ₂ (Athenes, Collm- berg)
	i		{BZ BN BE			21,-		(B.C.I.S)
	i		SZ SE			37,-		
	e		SZ SE }			58,-		
	ii	{Sn}	SZ	40	25			
	i	{Sb}	SE		34			
	i	{Lg ₁ }	SE		57			
	i	{Lg ₂ }	SN SE	41	07			

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Cont'								
10	i	Rg	SE	21	41	27		
	i	PcP	SE		45	(42)		
	i	PcS	SZ		49	26		
	i	ScS	SE		52	38		
Lo	e	X	SZ SN	22	13	08		
	e	X	SZ		15	47		
10	e	Pn	Z	22	12	40,3	Confused by the precede	
			BZ			41,0	H=22 10 51 (BCIS)	
10	e	LM	SZ	22	22	-	After shock	
10	e	LM	SZ	22	24	-	"	"
10	e	LM	SZ	22	26	-	"	"
10	e	LM	SZ	22	30	-	"	"
10	e	LM	SZ	22	37	-	"	"
10	e	Pn	BZ	23	00	(34)		
	e	X	Z			45,3		
	i	X	NZ			48,4		
10	e	LM	SZ	23	16	-		
10	e	LM	SZ	23	22	-		
10	e	P	Z	23	37	(54,3)		
10		Pn	BZ	23	38	(07)		
			BE SN		40	32		
	e	(Pg)	BZ BN			34		
		LM	SZ SN SE		41	-		
10	e	X	Z	23	44	19,4		
10		LM	{ SZ SN					
			{ SE	23	48	-		
11	e	LM	SZ	00	11	-		
11	e	LM	SZ SN	00	15	-		
11	e	LM	SZ SN	00	27	-		
11	e	LM	SZ SN	00	33	-		
11	e	(P)	ZN	00	44	54,1		
11	e	LM	SZ SN	01	16	-		
11	e	LM	SZ	01	26	-		
11	e	(P)	Z	01	30	29,8		
11	e	LM	SZ SN	01	32	-		
11	e	Pn	BZ	01	37	(44)		
	e	X	Z			(48,3)		
	e	LM	{ SZ SN		40	-		
			{ SE					

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11	e	(P)	Z		01	49	(20,4)
	e	LM	SZ SN SE		01	52	-
11	e	Pn	Z		02	00	21,9
	e	Pn	BZ		02	00	31
	e	LM	SZ SN		02		-
11	e	LM	SZ SN SE		02	54	-
11	e	(Pn)	Z		02	57	(34,9)
	e	LM	SZ SN SE		03	00	-
11	e	LM	SZ SN SE		03	11	-
11	e	LM	SZ SN SE		03	16	-
11	e	X	Z		03	44	17,3
11	e	LM	SZ SN SE		03	48	-
11	e	LM	SZ SN SE		04	10	-
11	e	LM	SZ SN SE		04	11	-
11	e	LM	SZ SN SE		04	29	-
11	e	X	ZN		05	35	52,0
	i	X	E				52,0
	i	X	N				52,5
11	e	LM	SZ		09	47	-
11	ei	Pn	Z BZ BN		10	49	23,2
	i	X	BZ BE				28
	i	(PnPn)	BZ				33
	i	Pb	BZ SZ				37,7
	i	X	BZ				44
	e	PbPb	SZ				51
	e	PgPg	SZ		50	00	
	e	Sn	SZ				46
			N				48,6
	e	Li	SN SE				50
	i		SZ SN SE		51	07	
	e	Lg ₁	SE				29
	e	Lg ₂	SN				29
	ei	Rg	SZ SN SE				48
							57
			ZN				59,8
		LR	SZ SN SE		52	(32)	
		ScS			11	03	37
11		LM	SZ SN SE		13	15	-
11		LM	SZ SN SE		13	23	-
11		LM	SZ SN SE		15	34	-
11		LM	SZ SN SE		16	28	-
11	i	Pg	BZ BE NZE		18	48	11,8
	i	Sg	BN BE ZNE				24,2
11		LM	SZ SN SE		18	59	-
11		LM	SZ SN SE		20	37	-



11		LM	SZ SN SE	22	50	-		
11		LM	SZ SN SE	23	19	-		
12	e	Pn	SZ	00	03	(41)		
		LM	SZ SN SE		07	-		
12	e	(Pn)	BZ	00	45	(29)		
	e	X	SE		47	32		
	e	LM	SZ SE		48	33		
12	i	Pg	ZNE	00	49	28,0		
	i	X	BZ BE N			28,5		
	i	X	ZNE			29,2		
	i	Sg	{ ZNE			47,2		
			{ BZ BN BE			47,3		
12	i	P	BZ ZZ'	01	04	53,6	C	$\Delta = 9000$
	i	X	BZ BN			54,6	D N	
	i	PP	BZ		05	00		
	i	PcP	Z		05	00,4		
	i	} PP	SN	00	08	03		
	i		BZ			03,2		
	i		Z			03,4		
	i		SZ			10		
	i	PPP	SZ SN		09	50		
	i	PPPP	SN		11	19		
			SZ			23		
	e	P(a)	SE		11	20		
	e	S	{ NE		15	03		
			{ SE					
	e	SKS	SZ SN			10		
	i	PS	SZ			49		
	i	} PPS	SZ		16	11		
	i		SE				15	
	ei	SS	SZ SN		20	45		
	e	SSS	SZ SN		24	16		
		G	SE		26	28		
	e	(SSSS)	SZ SN			40		
	i	LR	SZ SN SE		31	08		
		W ₂	SZ SN SE	03	09	-		
12	e	(P)	Z	05	28	16,7		
	e		BZ				16,8	
12	e	LM	SZ SN	06	09	-		
12	i	X	BZ BN BE	14	01	59,4		
12	e	X	NE	18	31	58,1		
	ei	X	Z			58,6		
12	e	P	Z	19	40	(12,3)		
	e	S	Z NE			58,-		
12	ei	Pg	Z BZ BE	19	50	19,8		
	i	Sg	{ ZNE			33,2		
			{ BE			34,0		

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Cont'							
12	i	(SgSg)	ZE	19	50	34,7	
			BZ BN BE			34,8	
12	i	X	ZNE	19	51	46,6	
12	i	X	ZNE	22	12	42,2	
12	e	X	{ N	22	16	33,0	
		E				33,9	
		Z				34,1	
13	e	X	ZNE	00	06	22,7	
13	e	X	ZNE	02	41	04,0	
13	e	Pg	Z	04	19	01,2	
	i	Sg	ZE			22,4	
13	i	Pg	Z	06	48	41,8	
	i	Sg	ZE			54,8	
	i	(SgSg)	ZE			56,2	
13	i	Pb	Z	08	57	55,2	
	ii	Pg	{ BZ BE			55,3	
						ZE BZ BE BN	56,6
	i	X	E BE BN		58	07,4	
	i	Sg	Z BZ BE			11,3	
13	i	Pb	Z	15	17	39,9	
	ii	Pg	ZNE			41,3	
			N			52,8	
	i	Sg	Z			54,0	
13	ei	P	Z	18	43	41,4	C
	e		NE			41,8	
13	e	P	ZE	19	47	50,0	
14	e	(Pb)	Z	07	12	29,8	
	ii	Pg	Z			30,7	D
	i	Sg	EZ			44,4	
			N			44,6	
15	e		BZ Z	18	18	16,1	$\Delta = 6400$ Km.
	e	P	Z			16,3	
	e		SZ SN			16,-	
	e	PcP	SZ		19	07	
			SN			10	
	e	PP	SZ		20	26	
	e	PPP	SN		21	(46)	
	e	PPPP	SZ		22	10	
	e	S	{ SN		26	16	
						SZ	19
						SN	30
	e	PS	{ SZ			32	
		LR ₁	SZ SN SE	35	-		
		LR ₂	SZ SN SE	41	-		
15	e	P	SZ	18	55	08	
	e	PPP	SZ		58	47	
			SN			48	

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Cont'										
15	i	S	SZ SN SE	20	03	11				
	e	PS	SZ SN			26				
	e	SS	SZ		07	08				
		G	SN SE		09,5	-				
		LR ₁	SZ SN SE		12	-				
		LR ₂	SZ SN SE		18	-				
16	e	Pn	Z			06,1				
	e	X	BZ	00	17	06,2			Δ = 750 Km.	
	e	X	BZ			15,3			Southern Albania	
	e	X	BE			19,0			H= 00 15 25 (BCIS)	
	i	PbPb	BE			31,1				
	e	PgPg	BZ			44,7				
	e	X	BZ			54,6				
	e	PgPgPg	BZ		18	10				
	e	X	BZ BN		18	37				
	e	Sb	BZ BE			47				
	e	Lg ₂	SZ SE		19	03				
	e	X	BZ SN		19	23				
	e	Rg	BZ BN SZ SE			31,5				
	e	X	{ BZ BN ZNE			46,5				
			{ BE			47,0				
		LR	SZ SE			(58)				
		LM	SZ SN SE		20	25				
			Z'N'E'			-				
16	i	Pg	Z	01	58	33,2				
	i	Sg	{ E			47,3				
			{ N			47,6				
16	i	Pn	Z BZ BN	07	20	19,4	D		Deep ?	
	i	X	BN		21	18				
	i	X	Z			31,0				
	i	X	BZ BN BE			34				
16	e	X	SZ	13	15	-				
16	e	P	BZ Z	13	32	34,6			Δ = 9500 Km. Ca.	
	e	(rP)	{ BN BE		33	14				
			{ E			16,2				
	e	S	BN BE		42	54,0				
	i	X	SE ZE			56				
	e	X	SN		43	33				
	e	X	SE			38				
		PS	BZ BN BE			48				
16	e	P	SZ	18	07	(28)				
	e	PPPP	SZ		14	06				
	e	X	SN		18	-				
		PPS	SZ		19	10				
	e	SS	SZ SN		24	-				
	e	PKKP	SZ SN		25	37				
		LR	SZ SN		34	-				
		LR	SZ SN		41	-				
16	e	LR	SZ	20	19	-				
17	i	(P)	BZ BN Z	02	02	52,5				
	i	X	BN BE E		03	15,6				

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17	e	Pn	Z	02 03	55,6	
			BZ	10 05	56,8	Adriatic Sea
	e	LM	SZ SN SE	09	35	H=10 03 50 (BCIS)
17		LM	SZ	11 20	22	
17	ei	Pn	{ Z		50,7	
			{ BZ	11 35	51,8	Ionian Sea (BCIS)
		LM	SZ SN SE	39	-	
17	i	Pg	{ Z		41,7	C
			{ NE		42,7	
			{ BZ	13 14	43,3	C
	i	Sg	ZNE		05,8	
	i	Sg	BN BE	15	06,8	
	i	Sg	BZ SZ	15	07,5	
17	e	LM	SZ	13 29	-	
17	e	LM	SZ	14 19	-	
17	e	LM	SZ	14 59	-	
17	e	LM	SZ	19 34	-	
17	e	LM	SZ	21 40	-	
17	e	P	BZ Z	22 44	(53,2)	
	e	PP	SZ SN	47	07	
	e	(Pa)	SZ SN	48	15	
	e	PPP	SZ SN		40	
	e	S	SZ SN	52	56	
	e	SS	SZ	56	(20)	
	e	LR	SZ SN SE	23 02	-	
	e	LR	SZ SN SE	07	-	
18	i	Pg	BZ Z	07 18	12,7	
	i	X	E		25,1	
	i	Sg	BZ BN BN ZNE		26,7	
18	e	LM	SZ	10 20	-	
18	e	X	SZ	10 48	-	
		LM	SZ SN SE	49	-	
18	e	X	SZ	17 35	-	
		LM	SZ SN SE	37	-	
18		P diff.	SZ	19 29	10	Δ = 12 400 Km.
	e	X	SZ	33	(02)	
	e	PP	SZ		36	
	e	PPP	SZ	36	05	
	e	SKS	SN	39	42	
	e	SKKS	SN	40	36	
	ei	PS	SZ SN	43	10	
	e	(ScSP)	SN		37	
	e	PPS	SZ	44	16	
	e	PKKS	SZ	47	23	
	e	PcPPKP	SN	48	(07)	
	e	SS	SZ SN	48	57	
	e	SKKS ₂	SN	51	10	
	e	PKPKP	SN	52	21	
	e	SSS	SZ SN		59	

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Cont'								
18	e	PKPPKS	SE	19	53	05		
	e	SSSS	SZ SN		57	06		
		G	SN	20	02,8	-		
		LR	SZ SN		05	-		
		LM	SZ SN		10	-		
19	i	(P)	BZ	02	08	(05,9)		
		LR	SZ SN SE		10	-		
		LM	SZ SN SE		11	-		
19	e	P	BZ	03	17,8			
		LM	SN SE	03	21,5			
19	e	X	BE	03	19,4			
		LM	SZ SN SE		22,5			
19	ii	Pg	BZ BN BE	08	22	23,6	Felt at Bursa and Gemlik	
	ii		ZNE			23,6		
	i	Pg	SZ SN SE			23,-	C NW	
	i	(Sg)	SN SE			31		
19	e	P	BZ	11	58	17,5		
			NE	12	02	-		
	e		ZN	21	10	40,9		
	e		E			41,3		
	i		Z			41,5		
19	e	P	SZ	22	37	31		
	e	X	SZ		39	13		
	e	X	SZ		50	-		
	e		Z BZ BN	23	26	03,7		
	i		ZE			04,1	D E ?	
	e	P	SZ			04,-	D	
	e	PP	SZ		28	(12)		
	e	PPP	SZ SN		29	(32)		
	e		ZN		29	(34)		$\Delta = 6400$ Km.
	e	S	SZ SN		34	05		
	e	SS	SN		38	05		
		LR	SZ SN		43	-		
		LR	SZ SN		49	-		
20	ii	P	Z BZ	06	00	29,9	C	
	ii	P	SZ SN SE			30,-	C N E	
	i	P	E BN BE			30,4	E	$\Delta = 9800$
	i	P	E			30,6	E	
	i	P	N			31,2	N	
	i	P	BN			31,2	S	
	e	SKS	E	10	48			
			NE			56,4		
			SN SE			57		
	e		ZN	11	16			
	i	S	SE SN			16		
	ei	{ PS	SE	12	13			
		{ PPS	SN			45		
	e	X	SZ SN SE	16	20			
		SS	SZ SN SE			50		
	e	X	SE	19	20			
		SSS	SZ SN			40		
	e	X	SN	21	45			
		SSSS	SZ SE	22	20			

19
 19
 19

19

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Cont'								
20		G	SN	06	23,0			
		LR	SZ SN SE		27	-		
		LR	SZ SN SE		33	-		
20	i	P	Z BZ	23	58	27,3	C	
	e	X	NE			28,1		
	e	(LM)	Z NE BZ SZ		59	45		
22	i	Pg	BZ BN BE ZN	01	11	47,3	CN (E ?)	
	i	Sg	E			53,8		
			ZN			54,0		
22	e	P	SZ	04	59	(30)		
	e	X	SZ	05	02	24		
	e	PP	SZ		03	23		
	e	PS	SZ		12	18		
	e	LR	SZ		33			
22	i	P	ZNE BN BE	21	59	21,9	CS(E?)	Deep
	i	(sP)	ZNE BN BE	22	00	16,5		
	e	X	BN BE			45,9		
23	e		Z	06	10	04,8		$\Delta = 8600$ Km.
	e		E			(05,0)		
	i	P	Z			08,4	C	
	ei		E			08,8	E	
	ii		SZ SN			09,-	C S.	
	ei	P	N BN			09,1	N	
	i	P	BE			12,0	W	
	i	(PcP)	SZ SN SE			26		
	i	X	Z		13	07		
	i	S	Z SZ			55		
	e	S	E BE		19	57		
	ii	S	N BN SN SE			59		
			N'E'					
	i	X	ZNE		20	04		
	i	SKS	SZ		20	13		
	e	X	E'			27		
	i	PS	SZ			35		
	i	PPS	SN			59		
	e	SS	SE		25	02		
		G	SE		28	30		
	e	SSS	SZ SE		29	-		
	e	SSSS	SZ		30,5			
		R	SZ SN		35	19		
23	e	X	Z	08	29	55,3		
	e	X	Z			56,3		
	i	X	E		30	21,6		
	i	X	N			22,3		
23	e	P	Z BZ	14	11	50,9		
	e	S	E BZ BE		12	24,1		
	e		N BN			24,4		
25	e	LM	SZ	04	07	-		
25	e	P	SZ	04	49	(20)		Felt at SE France
	e	X	SZ SN SE		52	(20)		H = 04 44 48 (BCIS)
	e	X	SN		54	(40)		
		R	SZ SN		55	10		
		R	SZ SN		56	10		

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25	e	P	Z BZ	06	24	(31,0)	
		LM	SZ SN		27	30	
25	ei	P	Z SZ SN	15	59	37	C S
	i	PcP	SZ			47	
	e	PP	SZ	16	02	29	
	e	PPP	SZ		04	(24)	
	e	S	E SZ SN, SE		09	43	
	i	SKS	N SN			55	
	i	(ScS)	SN		10	03	
	e	PS	SZ SN			40	
	e	SS	SZ SN		15	15	
	e	X	SZ		16	15	
		G	SN		18	-	
		R	SZ SN		25	-	
		R	SZ SN SE		35	-	
25	e	(P)	SZ	17	29	25	Obscured by the precedent
25	e	P	SZ	20	02	(02)	
	e	S	SZ SN		12	18	
		R	SZ SN		35		
27	e		N	22	20	28,3	
	e	X	Z			28,6	
	i		E			29,0	
28	e	Pn	BZ	12	20	15,9	
	e	Pn	SZ SN			16	CN
	i	Pn	BZ			20,2	
	i	Pb	BZ BN			36,0	
	ii	X	BE			40,0	
	i	X	SZ SE SN		21	25	
	i	(Sb)	BZ BN		21	49	
	ei	PcP	SZ SN SE		27	15	
28	e	Pn	SZ SN	12	45	05	C N
	ei	P	BZ	12	45	09,6	
	i	P	BZ SE			15,0	
	i	X	BZ			20,2	
	i	X	BZ			23,2	
	ii	Pb	BZ BN			25,9	
	i	X	SZ SN SE			30	
	i	Sb	BZ BN SE		46	38	
29	e	(S)	NE	09	28,4		
29	e	(S)	NE	18	04	02,3	
29	e	P	N	20	55	19,5	
	e	S	E			43,4	
			N			44,9	
29	i	P	N	21	03	38,1	
	e	S	E		04	02,3	
			N			03,3	
29	i	P	N	21	04	25,4	
	i	(S)	N			50,3	
30	e	X	SZ SN SE	01	28	-	

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				02 38 30		C S	$\Delta = 8700$ Km.
30	i	P	SZ SN				
	e	P	SZ SN				
	e	P	E			31,1	
	e	P	N			35,0	
	e	X	SZ			52	
	e	X	SZ SN	40		27	
	e	PP	SZ SN	41		31	
	e	PPP	SZ SN	43		22	
		P	SN	44		30	
		PPP	SZ SN	44		50	
	e	X	SZ	48		25	
						30	
	i	S	{ SN			33	
			{ SZ SE				
	e	SKS	{ SZ			40	
			{ SN			47	
	e	SS	SZ SN SE	53		40	
		R	SZ SN	03 03		-	
30	e	P	N	03	56	27,6	
	e	S	NE		57	01,3	
30	e	PKP	BZ	16	36	36,5	
	e	PKP	SZ			36	
		PKS	SZ		40	43	
		PPP	SZ		43	36	
		SKSP	SZ SN		50	15	
		SS	SZ SN		59	20	
		SSS	SZ	17	04	35	
		SSSS	SZ		08	19	
		R	SZ SN		24	-	
30	e	PKP	BZ	18	50	42,5	
			SZ			42	
		PP	SZ		54	(03)	
		PPP	SZ		57	18	
30	e	P	BZ	23	57	12,2	
			SZ			12	
	e	X	BZ	23	57	16,2	
	e	S	SZ SN	00	02	43	
		R	SZ SN		06	-	
		R	SZ SN		09	-	
		LM	SZ SN		11	-	

ADDITIF:

10	e	LM	SZ	12	40	-	
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Sadettin Kesili

TECHNICAL UNIVERSITY OF ISTANBUL
 Institute of Seismology
 PRELIMINARY SEISMOLOGICAL BULLETIN
May 1-31, 1962

Istanbul 41°02'6" N, 28°59'1" E

1	i	P _k	BZ	03 45	11,1	Δ = 175
	i } i }		BZ BN BE NE		14,9 15,4	
	i	Sg	E BZ BN BE		39,3	
	i		N		39,7	
1	i	P _k	BZ	03 50	55,6	Δ = 175
	i } i } i }		N BZ BN BE E		59,2 59,3 59,4	
	i	Sg	BZ BN BE	51	23,5	
	i		NE		23,6	
1	i	P _k	N	06 01	39,7	Δ = 175 Km.
	i } i } i }		BZ BN E		39,8 43,6 43,7 44,0	
	i	Sg	E	02	07,6	
	i		BZ BN BE		08,3	
1	i	(P) Sg	ZN	13 14	48,1	
	i } i }		N E		13,3 13,7	
1	e	P _g	Z	13 26	(47,7)	
	i		Sg { N E Z		27	05,4 05,5 06,1
2	ei	P _n	ZNE	04 29	09,7	Δ = 370 Km.
	e	P _g	Z		21,2	
	e	P _g P _g	N		25,1	
	e	P _g P _g P _g	NE		34,6	
	e	(Sn)	N		42,5	
		Sb	N		58,9	
		Lg ₁	Z		30 00,6	
		Sg ₁	E		(10,6)	
	e	SgSg	E		12,6	
	e	SgSgSg	E		21,3	
4	i	P	Z	02 36	37,9	
	e	X	E		37 18,5	
	e	X	N		21,3	
	e	X	Z		25,2	
	e	X	Z		28,7	



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6	i	Pg	ZN	03	51	34,4	$\Delta = 370$ Km.
	i	PgPg	E			38,7	
	e	X	E		47,5		
		Li	N		58,6		
	ei	Sb	E	52	08,0		
		Lg ₁	E		08,9		
		Sg ¹	N		14,3		
	e	SgSg	N		20,1		
		X	N		21,5		
			N		23,4		
		Rg	}				
		E		24,6			
6	e	(PKP)	Z'	19	19	(36)	
	e	(SKKS)	Z'			29	14
	e	(SKKKS)	N'				23
7	ei	Pk	Z	17	51	48,3	
			Z'N'E'			(48)	
			Z'			50	D
	e	X	Z		53,8		
	e	X	Z		54,2		
	e	(PPP)	ZZ'	56	41,7		
	ei	S	N'	18	01	41	
			N			44,7	
			EZ'			45,4	
	8	i	Pg	Z	10	47	00,6
BZ				00,7			
i		Sg	BE BN		11,2		
			BZ	11,4			
			ZE	11,9			
8	i	(Pg)	BZ	17	56	20,7	D
			Z			21,4	
	i	Sg	N		34,0		
			BE	(34,8)			
			NE	35,3			
8	i	Pn	BZ	18	54	55,9	$\Delta = 300$
			Z			56,0	
	i	X	Z		56,6		
	i	Pk	Z		57,1		
	i	Pg	ZN		58,5		
	i	X	Z		59,4		
	i	Pb	}	BZ		59,3	
				ZE		59,7	
				BZ	55	00,1	
	i	PgPgPg	E		12,0		
	i	Li	N		29,8		
	i	Sb	}	BZ		36,1	
				ZE		36,2	
	i	Lg ₁	N		36,5		

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Cont'							
8	i		N	18	55	38,8	
	i	Lg ₂	EN			43,0	
	i	Sg	ZE			43,5	
	i		BZ			44,2	
		SgSg	N			49,9	
	i	SgSgSg	N			56,0	
8	e	Pg	NE	23	25	39,5	
	i		BZ BN BE			39,7	
	e	Sg	E			52,0	
	i		(SgSg)	N			52,7
			BE			58,7	
8	e	Pn	Z BZ	23	55	36,5	Δ = (860)
	e	Pk	Z			44,8	South of Crete
	e	X	Z BZ			47,7	Gaydos islands region
	e	X	Z		56	02,4	34,8 N 24,0
	i	Pg	Z BZ			09,8	H=23 53 40
	i	PgPgPg	Z			45,1	(BCIS)
	e	Sn	Z		57	04,-	
	e	SgSg	Z			56,4	
9	e	Pn	Z	03	21	59,4	Δ = 330 Km.
	i	Pk	BZ		22	01,2	
	i		Z			01,3	
	i	Pg	Z			08,6	
	i		BZ BN BE			09,1	
	i	X	Z			16,3	
	i	PgPgPg				21,5	
	i		BE			22,1	
	e	Sn	{ BZ BN BE			29,-	
	i		Z			30,2	
	e	Li	Z BZ			36,9	
	i	X	{ BN BE			38,4	
			NE			38,8	
	e	Lg ₁	Z BZ BN BE			43,2	
	i	X	N			47,4	
	i	X	E			51,2	
	i	Sg	Z N E BZ BN BE			52,4	
	e	SgSg	{ N			56,4	
			BE			57,2	
	i	X	E	23		00,7	
	e	X	BZ			04,3	
	e	SgSgSg	Z			08,4	
9	e	(P)	Z	12	03	56	
	e	(S)	N			04	49
	e		SZ			04,8	
	e	LM	SZ			10,-	

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9	e	(P)	Z	12	18	44,7	
	e	LM	SZ		31	-	
9	e	LM	SZ	13	07	-	
9	e	Pn	BZ	19	45	(17,9)	
	e		ZE			18,2	
	e	Pk	E			25,4	
	e	Pb	NE			40,2	
	e	PgPgPg	E		46	27,4	
	e		N		47	15,4	
	e	Sb	{ SZ BE		47,3	-	
	e	X	E			22,2	
	e	Lg ₁	ZN			30,5	
	e		E			31,8	
	e	SgSg	EZ			40,8	
	ei	(PcP)	ZNE		49	52,8	
9	e	LM	SZ	21	44	-	
9	e	LM	SZ	22	40	-	
10	e	P	BZ SZ	00	15	28,0	D
	i		BZ			29,1	C
	i	P	Z			29,4	D
	i	pP	Z BZ			44,2	
	e	X	N		25	13,5	
	e		SZ SN			17	
	e	S	ZE			17,3	
10	e	(P)	BZ	00	47	(03)	
	e		Z			(04)	
	i	(P/PKP)	Z BZ			07,9	D
	i	X	Z BZ			13,9	
10	e		BZ	05	24	53,3	
	ei	P	Z			53,6	D
	e		SZ			54	C
	e	SKS	SZ SN SE		35	15	
	e	S	SZ SN SE			29	
		LR	SZ SN		52	29	
10		LM	SZ	09	40	-	
10		LM	SZ	11	02	-	
10		LM	SZ	11	34	-	
10		LM	SZ	14	39	-	
10	e	Pn	Z	18	32	42,7	
	i	X	Z			46,0	
	e	X	BZ			(47)	
	e	X	ZE			56,8	
	e	Pb	ZE		33	00,7	
	e	PbPb	N			04,9	
	e	Pg	N			15,5	

Δ = 780

Yugoslavia
 South of Seutari Lake
 felt at Titograd(IV)
 (Beograd) 42.1N, 19.2E
 H=18 30 56 (BCIS)

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Cont'									
10	e	X	N	18	33	20,3			
			E			20,9			
	e	Sn	ZE		34	02,7			
	e	Sb	Z			31,7			
	e	SgSg	{ N			58,1			
	e		{ BZ BN		34,9	-			
			{ E		35	01,7			
	e	X	N			02,1			
	e	SgSgSg	N			14,6			
	e	X	NE			21,-			
		LM	SZ SN SE		36,0	-			
10		LM	SZ	20	38	-			
10		LM	SZ	23	20	-			
11	ii	Pg	ZNE	00	20	56,4	DW(S?)	Δ = 120 Km.	
	i		{ BZ BN BE			56,7	D SW		
	i	Pb	ZE			57,4			
	i	X	ZE			58,4			
	i	X	Z		21	02,3			
	e	(PgPg)	Z			04,7			
	ii	Sg	{ BZ BN BE			12,9			
			{ Z N E			13,2			
	ii	Sb	ZN			14,7			
	i	SgSg	{ N			16,9			
			{ Z			17,4			
11		LM	SZ	01	13	-			
11	e	P	{ ZNE	03	51	41,4			
			{ BZ BN			41,9			
	e	(S)	BN		52	17,2			
	i		BE			18,5			
	e		E			18,9			
	e	X	ZE			19,7			
11		LM	SZ	06	22	-			
11	i	P _{diff.}	SZ Z SE	14	25	59	CE		
	e		X	Z		27	57		
	e	(PKP)	Z		29	30			
	e		SZ			34			
	i	PP	{ SZ SE		30	19			
			{ Z			24			
	e	X	{ BZ BE N E			25			
			{ ZNE			41			
	e	PPP	SZ SE		32	33			
	e	(PKS)	SE		33	08			
	e	X	SE			26			
	i	PPPP	SZ SE		34	27			
	i	SKS	SE		36	42			
	i	SKS ₂	SE		37	08			
	e	X	SZ		39	32			

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Cont'

11	e				14	39	(38)	
	i	PS	NE				40	
	i	IPS	SZ			40	46	
	i	SS	SN SE			45	03	
	i	X	SE			46	00	
	i	SKKS ₂	SE			48	18	
	e	SSS ₂	SE			49	-	
	ei	G	SN			56	-	
		R ₁	SZ SE		15	01	-	
		R ₂	SZ SE			10	-	
11	e	X	Z		20	13	15,7	
12	e	X	Z		00	09	45,7	
12		LM	SZ		01	00	-	
		F	SZ			03	-	
12	i	Pg	ZNE BZ		16	58	25,8	D Δ = 185
	e	(Lg ₂)	NE				46,4	
	i		BN BE				50,5	
	i	Sg	ZNE				50,7	
12		LM	SZ SN SE		18	32	-	
		F	SZ SN SE			35	-	
12		LM	SZ SN SE		19	22	-	
		F			20	02	-	
13	i	Pg	BZ		05	40	33,4	
	i		Z				34,7	
	e	(Lg ₂)	N				54,2	
	i	(Sb ₂)	E				55,9	
	i		ZNE				56,7	
	i	Sg	BN BE				56,8	
14	i	Pg	BZ		19	00	09,3	
	i	Pg	Z				09,4	
			E				46,9	
	i	Sg	BN BE				47,7	
			ZN				48,1	
15	e	P	SZ SN SE Z BZ		05	37	39	Δ = 11400
	e	X	Z			40	39	
	e	PP	Z' SN			41	49	
	e		SZ SN Z E				50	
	i	X	SZ SN SE BZ BN BE Z E				53	
	e	X	Z N E			42	46,9	
	e	PPP	SZ SN SE			44	04	
	e	(PKS)	SZ			45	27	
	e	PPPP	SZ SN SE			46	(04)	
	i	X	SZ			48	13	
	i	SKS	SN SE				24	
	i	S	SN SE			49	24	
	e	PS	SN			50	50	
	i		SZ SE				54	
	i	PPS	SZ SN SE			51	40	

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Cont'

15	i	X	SZ SN SE	05	52	09	
	e	X	SZ SN		55	-	
	ei	SS	SE		56	24	
	e	SSSS	SZ	06	03	24	
	ei	G	SN SE		06	-	
15	i	Pn	BZ	08	32	49	Aegean Sea
	i	Pk	BZ			53	Lemnos isl. region
	i	X	BZ			57	39.7 N, 24.7 E
	i	Pb	BZ			58	H=08 31 45 (BCIS)
	i	X	BZ		33	07	
	i	Pg	BZ			09	
	e	X	BZ BN BE			11	
	i	(Sb)	N'E'			44	
			BE BN			45	
	ei	X	BZ BN		34	07	
		G	SN SE			09	
	i	X	BZ BE			32	
		LM	SZ			39	
15		LM	SZ	20	12	-	
		F	SZ		24	-	
16	e	X	SZ SN	19	29	00	
	e	X	SZ SN		31	35	
16	e	X	SZ	20	43	-	
17	i	Pg	BZ	20	11	10,4	
	e		E			10,5	
	ii	Sg	BN			28,2	
			BE			28,3	
			E			28,6	
			BZ			28,8	
17	e	(Pn)	E	20	14	36,1	
	i		BZ			36,5	
	i	X	BZ			53,3	
	e		E			54,4	
	ei	X	E		15	13,2	
	i	Sg	BN			24,8	
			BZ BE			25,8	
			E			26,2	
17	e	(P)	BZ	21	02	(17)	
	e	X	E			26,5	
	e	X	E			54,1	
	i	S	BN		03	06,-	
			E			07,1	
17	i	Pg	BZ	21	44	31,5	
			E			31,9	
	e	X	E			53,1	
	i	Sg	BE			42,3	
			E BZ BN			42,5	

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18		LM	SZ	12	30	-	
18	e	P	BZ	18	58	34	
	e	X	Z			37,9	
	e	X	Z			46,8	
	e	S	SN	19	08	29	
	e	X	SZ		17	-	
		LM	SZ		24	-	
18	e	P(KP)	{ BZ	23	38	35,5	
			{ SZ			35,-	
			{ Z			36,0	
19	i	}	P	08	32	59,0	
	e					59,3	
	e		X		33	11,1	
	e		X			34,2	
	e		X			40,1	
	e		X			41,5	
	e	S	{ N			45,1	
			{ BZ BN			45,5	
	e	SgSg	EN			49,3	
19	i	(Pg)	N	12	31	51,5	
	i	Sg	NE			57,7	
	i	SgSg	N			58,1	
19	e	P diff.	SZ	15	12	20	$\Delta = 11600$
	i	}	PP		16	41	
	e			{ SZ SE			41,5
	e		{ NE BZ BE				
	e	PPP	SZ	19	00		
	i	SKS	SE	23	10		
	i	PS	SZ SN SE	26	59		
	ei	PPS	SE	27	06		
	e	PKKP	SE	28	16		
	e	SS	SN SE	31	23		
	e	X	SE	32	21		
	e	SSS	SE	35	51		
		G	SN	41	-		
		R	SZ SN SE	47	-		
		R	SZ SN SE	57	-		
19	ii	Pg	{ BZ	16	40	37,3	C $\Delta = 70$
			{ E			37,8	W
	e		N			37,9	N
	ii	Pg	N			38,1	S
	e	Sg	{ BZ			47,-	
			{ N			47,8	
			{ E			47,9	
			{ BN BE			48,-	
19	i	Pg	BZ	16	44	08,7	
	i	Sg	{ BZ BN BE			18,2	
			{ NE			18,5	
19		Sg	{ BZ BN BE	16	45	24,2	
			{ N			24,3	
			{ E			24,5	
19	i	Pg	{ BZ	17	53	32,0	
			{ N			33,2	

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Station	Phase	Component	Time	Distance (km)	Amplitude	Notes	
19	i	Sg	BZ	17 53	42,5		
			E		42,9		
			BN BE		43,0		
			N		43,1		
19	ei	Pn	BZ	20 49	58,0	$\Delta = 1000$ Km. ca.	
			NE		59,9		
	i	X	BZ	50	09,5		
			BZ BN		11,5		
	i	(PbPb)	N		31,1		
			BN		39,5		
	i	X	BN	51	11,2		
			BN BE		30		
	e	X	BN BE		30		
			Sn		46		
	i	X	BE	52	05		
G			36				
e	PcS	SZ	21 00	36			
20	e	P	BZ	00 42	37,8		
			X		44		
			X		43 05		
			G		46,2		
			R		47,3		
20	e	P	N BZ	05 38	(47)		
			N		39 51,5		
			LM		40 36		
20	e	X	BZ BN BE	11 13	42		
			Z		42,1		
20	i	Pg	BZ BN BE	13 16	28,-		
			Z N E		28,4		
	i	Sg	BZ BN BE		38,-		
			ZNE		38,6		
20	e	Pn	BZ	19 16	32,5	$\Delta = 300$ Km.	
			(Pk)		Z		33,5
			X		Z		36,2
	i	Pg	Z		40,9		
			X		E		17 16,9
	e	Sg	BN BE		19,5		
			NE		20,3		
E			21,3				
21	i	P	BZ BN BE	12 11	53,6	$\Delta = 5800$ Km. C(SW?) C SW W E China(Presse) D NE	
			SZ SN SE		54		
			X		E		54,0
	i	X	E		54,5		
	i	X	BN BE		58		
			SZ SN SE		58		
	e	PcP	SZ	13	06		
			PP		SZ SN SE		54
	e	PcS	SZ	17	08		
SN SE			10				
i	S	SE	19	16			

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Cont'								
21	i	PS	SE	12	19	33		
	e		SN		21	43		
	i	ScS	SE			48		
	ei	X	SN			53		
	e	SS	SN SE		22	43		
		G	SE		26	-		
		R ₁	SZ SN SE		29	-		
		R ₂	SZ SN SE		33	-		
21	e	P	BZ	13	24	42,5		
21	e	(PKP)	BZ	21	34	28,5	$\Delta = 14000$ Km. $h = 100$ Km.ca. Fidji islands (Presse)	
	i	(PKIKP)	BZ			37		
	e	X	E			42,0		
	i	pPKP	SZ		35	00		
	i	SPKP	SZ			13		
	i	PP	SZ		36	26		
	i	pPP	SZ			43		
	i	sPP	SZ		37	08		
	i	SKP	SZ		38	02		
	i	PPP	SN		38	21		
	e	pPPP	{ SN SZ			43 45		
21	i	SKKS	SZ		43	56		
	ei	PS	SE		46	43		
	e	SPP	SZ SN		47	28		
	i	SSP	SN		50	08		
	i	X	SZ SN SE			33		
	ei	SS	SE		53	19		
	i	SSS	SE SN		57	06		
	i	SSSS	SE		59	38		
	ei	(PSPS ₂)	SZ SE	22	16	(03)		
		W ₂	SZ SN SE		23	00		
21	e	Pn	BZ	21	48	12,9	$\Delta = 440$ Km.	
	ei	Pb	E			16,1		
	i	Pg	BZ BN BE E			22,8		
	i	PgPg	E			28,7		
	i	Sb	{ E SN		49	07,2 08		
	i	Sg	E			23,4		
21	e	P	BZ	22	59	40,5		
	i	Pg	{ BZ BN BE E			41,5 42,3		
	i	Sg	BZ BN BE			54,5		
	i	(SgSg)	E			56,5		
22		LM	SZ	05	30	-		
		F	SZ	06	(18)	-		
22		LM	SZ	06	20	-		
		F	SE		40	-		

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22	i		BZ	08	25	40,5	C	$\Delta = 14600$ Km.
	i	PKP	Z			40,6	C	$h = 100$ Km.ca.
	i		SZ			40,-		
	e	X	E			57,1		
	e	pPKP	BZ		26	10,0		
			SZ			10,-		
	e	sPKP	SZ			(17)		
	i	PP	BZ SZ SN SE		28	09		
	i	pPP	SZ			33		
	i	siP	SZ			42		
	i	SKP	SN SE		29	10		
	e	pPKS	BN BE SZ SN			38		
	e		BZ			54		
	i	sPKS	SZ SE			56		
		sPPP	SE		31	52		
	e	SKS	SE		32	(42)		
	e	SKKS	SN		34	37		
	e	PKKP	SN SE		35	(34)		
	e	SPP	SZ SE		40	(14)		
	e	(ScSPKP)	SZ			41		
	e	SSSS	SZ			51,1		
	e	(SSS ₂)	SZ SN		09	10 -		
22	e	X	SZ		15	42 -		
22	e	Pg	Z		16	13 40,9		
	i	Sg	ZN			45,1		
22	i	Sg	Z		18	22 50,3		
			E			50,7		
22	e	P	SZ		22	23 (14)		
	e	(SKS)	SZ SN SE			33 12		
23	i	(P)	Z		02	21 12,7		
	e	X	Z			17,9		
23		LM	SZ		18	37 -		
		F				46 -		
24		LM	SZ SN		05	10 -		
		F				23 -		
24		LM	SZ SN SE		08	39 -		
24	i	Pg	BZ BN BE		20	49 11,4		
			Z			11,5		
	e	X	BE			24		
	i	Sg	NE E			24,2		
			NE BE			25,8		
25	e	P	BZ SZ		00	56 43		
	e	X	SZ			58 18		
		LM	SZ SN		01	08 -		
25	e	(P/PKP)	SZ		04	39 16		
	e	X	SZ			42		
	e	X	SZ			42 50		
	e	(PP)	SZ			43 20		
		LM	SZ SN		05	28 -		

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25	i	Pg	Z	08	14	51,7		
	ii	Sg	{ ZE N			57,6		
25	e	Pn	Z	10	12	01,0	Δ = 330 Felt at Germencik (AYDIN, TURKEY) (Presse)	
	e	(Pk)	Z			02,2		
	i	Pg	Z			10,6		
	i	Li	ZN			38,3		
	ii	Li	E			38,4		
	i	X	BN			52,4		
	i	Sg	{ Z BZ BE			55,2 56,1		
	ii	SgSg	N			59,4		
26	ei	P	Z BZ BN	02	31	46,1		D
	e	X	{ Z BZ			51,9 52,0		
26	e } i } e } e } e }	X X (S) X	Z E BZ EN N	08	59	33,4 34,0 46,3 50,0 51,8		
26	i	Pg	ZNE BZ BN BE	11	09	21,2 21,4	C NW	
	i		BZ BN BE			24,5		
	ii	Sg	ZNE			24,8		
26	e	X LM	SZ	13	13 (40)	- -		
26	e1 } e } e } e } e } e } e } e } e } e }	P X X X X X S	Z BZ BZ Z BZ Z { SZ N	19	55	08,4 08,5 12,1 34,0 37,3 44,0 47,4 (46) 51,4	C ?	
	e	SSS	SZ SN		11	-		
	e	LR	SZ SN		17	-		
27		LM	SZ	15	21	-		
27	i	Pg	Z BZ	16	46	51,4		
	i	Sg	E BE		47	21,0		
	i	SgSg	N			27,3		
27	e	Pg	ZNE	18	03	21,6		
	e	Sg	ZNE			41,8		
	e	SgSg	ZN			44,2		
27	e	(P)	BZ BE	23	41	41,1		
	e	X	BZ BE			42,1		
	e	X	BZ		44	06,5		
	e	X	N			06,7		

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28	e	P	{ BZ Z	03 00	26,5 26,7	
28	e	LM	SZ	04 10	-	
28	e	(Pg)	Z	12 22	15,5	
		Li	ZNE		41,0	
		Lg ₂	ZNE		49,6	
	e	3g	ZNE		54,5	
28	i	P	Z	15 30	41,3	
	i	Sg	ZNE	31	22,8	
	e	X	NE		26,3	
28	i	Pn	{ ZE DZ	21 48	08,7 08,9	D
	i	Pk	ZE		10,8	
	i	Pg	{ BE BZ ZE BN		16,8 17,3 18,0	
	i	PgPgPg	N		29,9	
	i	Sn	E		38,7	
		Li	E		46,5	
	ii	X	N		47,2	
	i	Lg ₂	E		56,7	
	i	Sg	{ SN ZNE BZ SZ SE	49	00,2 01,3 01,7 01,-	
28	i	Pn	BZ	22 58	30,2	D
			ZNE		30,6	D W
	i	Pk	Z		31,7	
			BZ BN		39,6	
	i	Pg	{ ZNE SZ SN		40,1 40,-	D W
	i	PgPgPg	N		52,5	
	i	Sn	NE	59	00,0	
	i	} Lg ₁	SZ SN SE		16,-	
	i		N		16,2	
	ii	Sg	{ SZ SN SE E		23 24,0	
	i		SgSg	N		26,2
28		Pn	Z	23 20	37,9	
	e	X	Z		54,6	
	e	PgPgPg	E		59,2	
	e	Sn	E	21	07,5	
	ii	X	E BN		16,6	
	i	Sg	ZE BZ		30,4	
	i	SgSg	NE		34,3	

Additif:

19	e	X	SZ SN	20 53	31	
	e	PcP	BZ	56	51	

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29	i	(Pk)	BZ	00	00	06,2	D
			Z			06,5	D
	i	X	BZ			13,2	
	i	X	BE			17,9	
	e	Sn	E			35,3	
	ii	X	E			44,6	
		Lg ₂	BN			56,4	
			E			56,9	
	e	Sg	ZNE		01	00,5	
	e	SgSg	Z			03,0	
29	i	Pn	ZE BZ	00	15	40,6	
	e	Pk	Z			41,8	
	i	Pg	ZNE			49,5	
	i	PgPg	Z			55,6	
	i	X	Z			15,2	
		Li	{ N			18,3	
			{ NE			18,7	
	i	Lg ₂	Z BZ			32,2	
	i	X	Z			33,3	
	i	Sg	ZNE			35,3	
	i	SgSgSg	NE			47,9	
29	e	PgPg	Z	00	56	(00,7)	
	e	Sn	Z			15,5	
	e	X	BZ BN			22,7	
	i	Li	NE BE			26,7	
	e	Lg ₂	{ BE			39,8	
			{ Z N E			40,1	
	i	Sg	{ Z			(41,0)	
			{ ZNE			42,9	
	e	SgSg	E BN			45,6	
29	e	X	BZ BE	00	58	(26,9)	
	e	Pg	Z			30,1	
	e	Li	NE			57,6	
	e	Lg ₂	{ ZE BN BE		59	10,6	
			{ Z			11,5	
	e	Sg	ZNE			14,5	
29	i	Pn	Z E BZ	01	25	58,0	
	i	Pk	ZE			59,9	
	e	(Pb)	Z		26	03,4	
	e	(PbPb)	Z			05,7	
	i	Pg	{ ZNE			06,7	
			{ BZ				
	i	PgPgPg	E			17,8	
	ii	} X	Z			30,9	
	e		N			31,5	
	e	X	E			37,2	
	ii	X	ZN			37,6	
		Lg ₁	Z			43,0	
	i	Lg ₂	NE BN BE			46,6	
			{ BZ ZN E			51,4	
	i	Sg	{ SZ SN SE			51,-	

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Cont'						
29	e	(Pg)	BZ	01	30	46,5
			Z			46,9
	e	X	E			15,9
	e	X	BE			27,7
	e	Sg	N BN BE			30,3
	e	X	BE			34,0
	e	X	N			35,9
29	e	Pn	Z	01	38	23,3
			BZ			(23,5)
	e	Pk	Z			24,5
	i	Pg	Z BZ			32,4
	e	X	E			33,5
	i	PgPg	E Z BZ			36,2
	i	PgPgPg	N			45,2
	i	Li	ZE BE	39		01,6
	ii	Li	NE			02,8
			E			13,2
	e	Lg ₁	BE			13,7
	e	} Lg ₂	BZ			14,6
	i		ZE			15,6
	i		BZ			16,0
	i	Sg	N BN			19,3
			Z			20,2
	i	SgSg	Z			24,4
29	i	X	BE	01	41	41,4
	i	(Sg)	BN BE			55,7
29	e	Pn	Z	02	21	44,9
	e	Pg	Z			53,8
			BZ			(54,0)
	e	X	BE			10,1
	e	X	E			20,7
	i	} Li	ZNE			21,5
	ii		BN BE			21,7
		Lg ₁	Z			29,3
	e	X	BZ			31,7
	i	X	BE			33,7
	e	X	BN BE			37,5
	e	} Sg	ZE			37,5
	e		BZ			37,9
	e	(Rg)	N			43,1
29	i	} Pg	BZ BN BE	03	48	07,7
	i		E			07,9
	i	X	BZ			10,4
	e	X	N			23,0
	i	} Sg	E			24,5
	i		N BN BE			24,7
		SgSg	BZ			25,8
29	i	Pg	BZ	06	14	34,4
	i	X	EZ			48,6
	i	} Sg	BN BE	15		17,1
			BZ			17,5

Additif:
 29 e X E 01 38 39,9

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29	e	(S)	Z	07	35	21,4		
29	e	(P)	BZ	09	30	03,7		
	i	X	BE			33,9		
	i	X	E BN			34,2		
	e	X	E			47,3		
	e	S	BZ BN DE			49,2		
	e	S	E			51,8		
29	e	X	Z	11	14	57,0		
	e	X	BZ BN BE		15	16,-		
	e	X	BE			27,-		
29	ii	Pg	{ BZ BE Z N E	15	03	37,0	(DS?)E	
	ii	Sg	{ BN NE BZ BE			39,7		
						40,0		
29	i	Pg	{ BZ Z	18	32	34,4		
						35,1		
	i	Sg	{ BN BE Z N			56,7		
						56,8		
29	ii	Pg	{ BZ BN BE Z N E	20	19	44,5	C NW	
						44,6	C NW	
	ii	Pk	E			45,8	C N	
	ii	Sg	{ BZ BN BE N E			50,5		
						50,6		
29		LM	SZ	21	40	-		
29	i	}	Z BZ	22	12	32,2	C?	
	e		SZ			32,-		
			LM	SZ	23	03	-	
29	e	(P)	Z	22	24	27,2		
	e	X	N			39,0		
	e	S	EN			40,4		
29	e	P	{ Z BZ	23	46	02,2		
							02,3	
	e	(S)	BE		47	17		
		LM	SZ SN SE		49	-		
29/30	i	Pg	BZ	23	59	33,0		
	e	X	Z			34,2		
	i	Sg	BZ BE	00	00	14,0		
	e	X	E			18,3		
30	e	X	BZ	01	20	32,-		
	e	X	BZ BE		24	35,-		
30	e	P	{ Z Z SZ	10	12	40,9	$\Delta = 6400$	
							41,6	
							42,8	
							44,-	
	e	X	SZ			44,-		
	e	PPP	SZ		16	14,-		
	e	S	SZ		20	42,-		
	e	SS	SZ		24	-		
		R ₁	SZ		29	-		
		R ₂	SZ		35	-		

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31	ei } e e e e e e e e	Pg PgPgPg Li X X Lg ₁ Lg ₂ X ² Sg SgSg	BZ Z N Z BN N E E E BZ BN Z BZ BN BE NE	01 43	14,0 14,3 26,1 41,6 43,2 43,6 44,5 49,1 56,0 57,6 58,1 59,8 44 00,8		
31	e	P	{ BZ Z	02 03	53,5 54,-		
		LM	SZ	20	-		
31	e	P	{ Z BZ Z SZ	06 41	(07,3) 08,0 08,4 08,-		$\Delta = 9800$
	e	X	SZ	44	52		
	ei } e e i	PP	N SZ Z		55,5 56,- 56,3		
	e	X	SZ	46	09		
	e	SKS	SE	51	35		
	ei	SKKS	SE		48		
	ei	S	SZ SN		55		
	ei	PS	SN	53	03		
	e	PPS	SZ SN SE		30		
	e	SS	SE		57,1		
31	ii	Pg	BZ ZNE	13 12	29,3 29,5		C NE
	ii	Sg	{ BN BE E BZ		37,5 37,8 38,2		
31	e e } i ei e e i	P X X X Sg X	BZ BZ Z BZ Z BE NE BN	17 04	13,5 14,6 14,9 51,7 52,3 54,4 54,5 55,8		
31	i } i i ei e e i	P (k) (Pb) .Pg (Sk) Sg SgSg	BZ Z Z Z DN BE N BZ N BN	20 16	23,4 24,1 25,0 27,2 44,8 45,4 45,6 46,7 48,0		$\Delta = 1'5 \text{ Km ca.}$ D

Sadettin Kesili

TECHNICAL UNIVERSITY OF ISTANBUL
 Institute of Seismology
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Istanbul 41°02'6" N, 28°59'1" E

1	e	Fg	Z	02 09	39,3	
			BZ		(39,4)	
	e	X	BN	10	09,8	
	e	Sg	BZ		23,8	
			BN		24,3	
			N		25,0	
	e	(SgSg)	E		27,0	
1	i	Pk	BZ	16 31	55,8	Δ = 155
	ei		Z		55,8	
	i	Pg	Z		58,4	
	i	X	BZ BE	32	18,8	
	i	Sk	Z BN		19,2	
	i	X	N		19,5	
	i	Sg	Z N		20,5	
		Rg	N		26,0	
1	ei	Pk	Z	19 38	59,0	Δ = 335
			BZ		59,3	
	i	Pg	BZ	39	06,2	
			Z		06,3	
	ei	Sn	BN		27,2	
			E		27,6	
	i	Sk	N BE		35,0	
			E		35,6	
	i	X	N BN		37,2	
	e	X	BN		46,0	
	ei	Lg ₂	BZ		47,2	
			ZE BE		47,4	
	i	Sg	E		51,5	
	e		Z, N		51,5	
	i		BN BE		52,0	
1	e	X	Z	22 39	27,1	
	e	X	E N	40	07,2	
2	e	X	Z N	00 16	28,0	
	e	X	N E		36,6	
2	e	X	SZ	12 39	-	
		LR	SZ	13 12	-	
2	e	P	SZ	17 27	03,-	
	e	(S)	SZ	37	03	
	e	(SKS)	SN		20	
	e	(LR)	SZ	53	-	
3	i	Pg	ZNE	07 11	56,2	C NW Δ = 60 Km.
			BZ BN BE		56,5	C NW
	i	Pk	NE		56,8	
	i	X	N		59,8	
	i	Sg	Z N BZ	12	04,5	
	ii		E		04,5	
	i	X	BN BE		05,2	
	i	Sk	N E		06,1	

Addititf:

2	e	X	SZ	16 52	-	
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3	ei		Z	15	12	58,2	D	$\Delta = 7000 \text{ Km.ca.}$	
	e		Z			58,6	C		
	i	P	BZ			58,8	C		
	i		SZ SN			59,-	C		
	e	PcP	SZ		13	34,-			
	e	PP	SZ		15	08,-			
	e	(PcS)	SZ		17	58,-			
	e	S	SZ SN		21	40,-			
	e	SS	SN		26	20,-			
		G	SN		28,6				
		R	SZ		32	38,-			
4	i	Pk	BZ BN BE Z N E Z' N'	05	32	18,1 18,2	C NW C NW		$\Delta = 95 \text{ Km.}$
	ii	Pg	N E Z' N'			19,4	NW		Felt at Bursa (Presse)
	i	X	E			24,7			
	i	Sk	E			31,8			
			E'			32,0			
	ii		SZ SN SE			33,-			
	i	Sg	E'			33,2			
	i		N'			33,4			
	ii		Z N E			33,8			
	i	X	E'			34,1			
			Z'			34,2			
5	i	Pg	Z	05	41	18,1			
	i	Sg	Z N E			33,3			
5	i	Pn	Z BZ	21	40	24,1		$\Delta = 260 \text{ Km.}$	
	i	X	Z			27,5			
	i	Pg	BE			31,3			
	i		Z			32,5			
	i	X	BZ			35,6			
	i	X	BZ			35,9			
	e	(Sn)	E			41,4			
	i	Li	Z N E BN BE			51,9 52,1			
	i	X	Z			52,8			
	e	X	Z			53,0			
	i	X	Z			53,7			
	i	(Sk)	E			56,3			
	i	Lg ₁	E			57,6			
	i	Lg ₂	E N		41	00,2			
	e	X	N			05,7			
	i	Sg	Z			06,0			
5	e	Pn	Z	22	19	47,0		$\Delta = 260 \text{ Km.}$	
	i		BZ			47,3			
	i	X	BN			54,3			
			N			54,6			
	i	Pg	Z			55,5			
			BZ BN			56,0			
	i	PgPg	BN			58,0			
			E Z			58,5			
	i	X	E		20	01,5			
	ii	Li	BN BE			15,3			
			E			15,7			
			N			16,1			
	i	X	BN BE			18,5			
	i	Sk	E			20,1			

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Cont

5	i	Lg ₁	E	22	20	22,1	
	i	Lg ₂	E			23,2	
	i	X	BE			26,4	
	i	Sg	{ Z			28,2	
			{ N E			29,2	
6	e	Pk	{ Z			13,8	Δ = 95 Km.
			{ BZ			14,1	
	i	Pg	Z N			14,5	
	e	Sk	N E			27,1	
	i	Sg	{ BZ BN BE			28,3	
			{ N			28,7	
	i	SgSg				29,3	
6	i	P	{ BZ	18	13	59,6	
			{ Z		14	00,5	
	e	S	{ BN BE			36,1	
			{ BE			36,7	
			{ N			37,3	
	e	S	E			40,1	
6		R	SZ	18	35	-	
		F	SZ	19	12	-	
6	e	Pk	{ Z	18	38	35,3	Δ = 95 Km.
	i		{ BZ BN BE			35,4	
	i	Pg	Z			36,4	C NW
	i	PgPg	E			37,8	
	i	X	BE			47,0	
	i	Sk	{ NE			48,8	
			{ BN BE			49,3	
	ii	Sg	NE			50,4	
6		LM	SZ	23	17	-	
		F	SZ		39	-	
7	i	Pg	Z	00	29	00,1	
	i	Sk	{ BN BE			15,5	
			{ NE			15,7	
	i	X	Z BZ			16,1	
	i	Sg	Z N E			17,1	
7	i	Pg	Z N E BZ	11	44	26,6	D = 26 Km.
	i	Sg	Z N E BE BN			29,9	
	i	X	N			31,4	
7	i	Pn	Z	20	00	59,6	Δ = 330 Km.
	i	X	{ BZ		01	05,8	
			{ Z			06,2	
	i	Pg	Z			09,0	
	i	PgPg	E			13,8	
	i	Sn	{ E			29,8	
			{ BZ			30,0	
	i	Li	{ BZ BN BE			36,0	
			{ E			36,8	
			{ Z			37,7	
	i	Lg ₁	{ BN			45,3	
			{ E			45,6	

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Cont'

7	i	Lg ₂	BE ZE	20 01	49,8 50,6	
	i	X	BZ BN		51,0	
	i	Sg	{ N BE		53,7 54,2	
	e	X	BZ		56,7	
	i	SgSg	{ BZ BE Z		57,3 57,4	
	i	X	BE		59,8	
		Rg	E BN	02	01,3	
8	e	X	Z	07 47	34,3	
	e	Sg	{ BZ N		48,4 49,7	
8		LM F	SZ	10 02 15	- -	
9	No record Z N E between 07 15 and (10) 07 15 .					
9		Pn	BZ	10 42	37,7	C
	e	X	BN		39,8	
	e	X	BZ		40,9	
	e	X	BZ		45,7	
	i	X	BE		46,7	W
	i	X	{ BN BE BZ		50,5 51,0	
	e	X	BZ		52,5	
	e	X	BZ		52,8	
	e	X	BE		55,7	
	e	X	BE		59,8	
	i	S	{ BE BN BZ	43	16,9 17,0 17,5	
	e	X	{ BZ BE		26,1 26,4	
	e	X	SZ SN SE		30,-	
	i	S	BN BE		34,0	
	e	X	SZ		36,-	
9	e	Pn	BZ	23 23	17,5	C
	e	S	{ BE BN DZ	24	10,8 11,0 11,3	
10	e	P	BZ	05 59	(28,1)	
	e	X	BZ BN	06 00	57,8 37,0	
	e	S	{ BZ BE		38,0 39,5	
10	e	P	Z	23 53	23,4	
	e	S	NE		40,7	

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11	ei	Pn	Z	06	17	40,0		
	i	P	Z			42,3		
	i	P	E			42,7		
	e	P	Z'			43,4		
	e	S	Z'		19	22,-		
11	i	Pk	Z BZ	16	44	27,3	D	Δ = 95 Km.
	i	Pg	Z BZ			28,8	C	
	i	Sk	DE			39,4		
	i	Sg	Z N E BZ BN DE			41,0		
	i	SgSg	{ Z N E BZ BN DE			43,5		
		LM	SZ	19	08	-		
13	i	Pg	{ BZ DE E N	17	31	15,9		Δ = 335
	e					06,5		
13	i	PgPg	BZ DE			09,0		
	e		E			09,3		
	e	PgPgPg	E N			17,6		
	i	Sn	{ N E			25,3		
	e					25,8		
	i	X	E			33,0		
	i	Li	{ E Z N			34,5		
						34,7		
						34,9		
		Lg ₁	E			42,7		
	e	Lg ₂	{ Z E N			45,1		
						45,2		
	i	X	E			49,7		
	e	Sg	{ N Z			50,4		
						51,6		
	e	Rg	E			58,5		
13	i	Pk	Z N	23	44	58,8		
	e	Pg	Z N			59,5		
	e	Sk	N		15	11,3		
	ii	Sg	Z N E			13,1		
	i	SgSg	Z N E			14,8		
	e	SgSgSg	N E			17,7		
	e	X	N E			35,5		
14	i	Pk	Z N BZ	01	51	48,7	D S	Δ = 270 Km.
	i	X	Z			49,8		
	i	Pg	Z N E BZ BN			51,8	D W	
	e	Sk	Z		52	12,3		
	i	Sg	Z N BZ BN			15,3		
14	e	Pg	Z BZ	06	44	43,0		
	e	PgPg	N BN			46,1		
	e	PgPgPg	Z			51,1		
	e	Sn	N BN			54,0		
	i	Li	N EN		45	04,7		
	e	Lg ₂	E			15,9		
	i	Sg ²	N Z BN BZ			17,8		
	i	SgSg	Z BZ			20,2		

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Cont'							
14	e	Rg	Z N	06	45	24,0	
		SgSgSg	Z E			32,3	
14	i	P	Z BZ	08	03	55,9	Δ = 9000 Km.
	i	X	Z			59,5	
	e	P	SZ			59,-	
	e	PP	Z BZ	07		55,5	
	e	(S)	E	13		56	
	e	(SKS)	SN SE	14		04	
		ScS	SZ			27	
		PS	SZ			(38)	
		PPS	SZ	15		00	
	e	(SS)	SZ	18		39	
		R ₁	{ E	28,9		-	
			{ SZ SN	29		-	
		R ₂	{ SZ SN	36		-	
14	e	P	{ BZ	22	26	18,5	
			{ Z			19,2	
	e	PP	BZ	29		18,0	
	e	S	SN	36		09	
	e	SS	SN	41		11	
	e	SSS	SZ	45		-	
		R ₁	SZ	50		-	
		R ₂	SZ	59		-	
15	e	Pg	Z BZ	03	30	38	
	e		{ BE			21,5	
	i		{ BN			22,2	
	e	Sg	{ BZ			22,9	
	e		{ Z			23,1	
	e		{ NE			23,4	
15	i	Pg	Z BZ	05	27	56,0	C
	e	Sn	E	28		14,1	
	e	Li	N			24,4	
	e	Lg ₂	N			34,9	
	i		{ BE			38,3	
	ii	Sg	{ BN BZ			35,2	
	i		{ N			40,4	
	i	SgSg	N			44,6	
		Rg	E N			47,8	
	e	SgSgSg	E			(52,9)	
15	i	Pg	Z BZ	05	35	30,2	C
	e	X	Z	36		13,4	
	e		E			14,2	
	i	Sg	{ N BN }			14,2	
	e		{ Z BZ }			14,3	
	e	X	N			46,4	
	e	X	E			49,0	
15	i	Pg	Z	05	39	14,6	C
	e	Sn	E BE			33,0	
	e	X	BN			45,8	
	i	Lg ₁	Z BE			50,8	
	i	X	E			58,4	
	e		Z N			59,1	
	i	Sg	Z			59,6	
	e		BZ			59,7	

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Cont'							
15	i	SgSg	N	05	40	00,6	
		Rg	Z			04,2	
		SgSgSg	E			10,9	
15	e	(P)	SZ	06	49	(31)	
	e	(S)	SZ	07	00	19	
15	e	Pn	Z	08	54	14,0	$\Delta = 325 \text{ Km.}$
	i	X	{ BZ			16,2	
			{ Z			16,6	
	i	X	Z			17,1	
	i	X	Z			17,9	
	i	X	Z			18,6	
	i	X	Z			21,0	
	i	X	Z			22,4	
	ii	Pg	{ Z N E			22,8	
			{ BZ BN BE				
	i	PgPg	N			25,1	
	i	Sn	E, BN			41,0	
	i	X	BN			50,5	
	i	X	BN			54,5	
	i		BE			05,6	
	ii		{ E			05,9	
	ii	Sg	{ N BN			06,4	
	i		{ BZ			06,5	
	i		{ Z			07,1	
15	i	Pg	Z BZ	15	26	48,8	C
	i	Sk	E		27	17,6	
	e	X	Z N E BZ BN			29,0	
	i	Sg	{ Z N E			31,4	
			{ BZ BN BE			31,5	
15	i	(P)	{ BZ	17	55	31,4	C
			{ Z			32,4	D
15	i	Pg	{ BZ	19	07	08,0	
			{ Z			08,7	
	i	Sg	{ BN BE			27,2	
			{ N E			28,9	
16		IM	SZ	05	55	-	
		F	SZ	(07	15)		
17	e	P	{ Z BZ	04	40	02,8	
			{ SZ		40	08	
	e	X	Z BZ		40	08,8	
	e	(S)	SN		50	20	
	e	(SKS)	SZ		51	06	
		R	SZ	05	08	-	
18	i	in	Z BZ	10	53	29,4	C
			{ BZ BN BE			31,2	
	i	Pk	{ Z			31,3	C
	i	X	Z			32,9	
	i	Pb	{ BE			34,4	
			{ Z			34,6	C
	i		DZ			37,8	C
	i		BN BE			37,9	
	i	Pg	Z			38,1	C
	ii		E			38,1	

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18	i	PgPg	{ Z BN	10 53	50,7 51,1	
	e	Sn	E		56,8	
	ii	Sk	N	54	07,7	
	i	Lg ₂	{ E E		07,8 17,6	
	i	Sg	{ Z N E BN BE		22,6 23,5	
	i	SgSg	Z N		26,0	
	i	Rg	{ Z E N		29,1 29,6 29,8	
	i	SgSgSg	N		34,4	
	i	X	N		35,1	
19	i	P	{ BZ Z	00 01	12,8 13,3	D Δ = 10000 Km.ca. D
	i	pP	{ BZ Z SZ SN	{ 02	29,8 30,9 30,-	C h = 300 Km. ca. C
	e	PP	SZ	05	(51)	
	e	(SKS)	SN	11	37	
	e	S	SZ SN	12	10	
		SP	SZ	14,0		
		SS	SN	19	-	
19		I	SZ	18 04	-	
		F	SZ	18 06	-	
20	e	P	SZ	05 01	(54)	
	e	S	SZ	11	(05)	
		R	SZ	32	-	
		R	SZ	38	-	
20	ei	P	Z	23 59	13,6	
	e	Sg	N E		36,9	
21	i	Pg	Z	19 59	24,6	
	i	Sg	N E		36,7	
22	i	P	Z	10 37	07,6	
	i		BZ		10,0	
	i	Pg	DZ BN		11,3	
			Z N		11,4	
	i	X	Z		12,2	
	i	X	BZ Z N		13,3	
	i	X	BN		15,3	
	e	X	BE		16,0	
	e	X	BE		20,3	
	e	X	BN		21,2	
22	e	P	BZ	10 38	32,3	
			Z		32,4	
	e	S	N		38,0	
			BN		38,5	
	e	X	BN		43,7	

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22	ei	P	BZ Z BN N	10	40	23,3	C D	S(W)	
	e	(S)	BE BN			34,5			
22	e	P	BZ Z	10	40	55,0	CD		
	e	S	BN BE		41	07,0			
22	i	P	Z BZ BN	10	41	35,9	DS		
	i	S	{ E			47,5			
			{ BE			47,7			
22	i	P	{ Z BZ	10	42	17,8	D		
	ei	P	{ BZ BE Z N E	05	09	32,8	CW	$\Delta = 2300 \text{ Km.ca}$	
			{ SZ			33,-			
	i	X	{ E			37,5	E		
	e	S	{ SZ		13	14			
			{ SN SE			24			
		R	{ SZ SN		18	-			
		LM	{ SZ SN		19	-			
23	ei	P	Z	06	44	31,9			
23	No record both Benioff and Sprengnether between 07 34 and 10 34								
23	i	P	Z	09	56	50,6	C		
	e	S	N E	10	06	53,5			
23	e	(P)	Z	10	10	28,5	D		
	i	P	Z			40,2	C		
	e	(S)	N E		20	25,4			
23		LM	SZ	16	11	-			
24	i	P	{ Z BZ	01	31	27,1	D	$\Delta = 6800 \text{ Km.ca}$	
			{ SZ			27,-			
	i	PcP	BZ			55,1			
	e	S	SN SE		39	46			
		R ₂	SZ		55	-			
24		LR	SZ	15	26	-			
25		LM	SZ	07	27	-			
25	e	P	BZ Z	11	22	17,3	C		
	i	P	SZ SN SE			17,-	D S		
	i	PcP	BZ Z			35,6			
	i	X	E			40,1			
	ei	PP	SZ		25	13,-			
	e	PPP	SZ		27	01,-			
	e	PPPP	SZ SN		28	18,-			
	i	X	SN		32	05,-			
	e	S	SZ			11,-			
	i	X	SN			45,-			
	e	PS	SZ			49,-			
	i	X	SN			51,-			
	e	SS	SZ SN		37	36,-			
		R	SZ			45,-			

25	e	(LM)	SZ	19	46	-				
25	e	X	SZ	22	12	-				
		F	SZ				13	-		
25	e	M	SZ	23	14	-				
		F	SZ				26	-		
26	e	M	SZ	03	31	-				
		F	SZ				59	-		
26	i	P	{BE BZ Z	14	55	23,9				
							24,3	C		
							40,4			
							43,6			
							56	28		
26	e	X	SZ	57	13					
26	e	Pg	{BZ Z	15	18	48,2				
							48,5			
							56,6			
							58,1			
26	e	Sg	E BZ				58,3			
26	i	Pg	BZ Z	20	19	08,5				
26	i	Sg	{Z BZ BN BE N E				58,4			
							58,5			
							59,4			
26	i	(SgSg)	Z	20	05,0					
27	e	L	SZ	04	27	-				
27	e	LM	SZ	05	26	-				
27	e	LM	SZ	14	28	-				
							F	SZ	15	12
27	e	LM	SZ	16	23	-				
							F	SZ	59	-
28	e	P	SZ	04	47,0	-				
							S	SZ SN SE	57	18
							LR	SZ	05	24
28	i	P	BZ Z BZ SZ SN SE BZ BN SN BE N E Z N BZ BN SN SN E BZ SZ SZ SE SZ	06	52	37,7	C Destruction near			
							37,7	D VAN (TURKEY)		
							38,7	C		
							43	C NE 38,7 N .44,0 E		
							51,5	(Presse)		
							54	10		
							30,2			
							30,4			
							32,7			
							35,3			
							35,8			
							37,5			
							38,-			
							47,0			
							50,0			
							50,-			
							55	10,-		
56	25,-									

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28	e	L	SZ	19	15	-
		F	SZ	20	25	-
29	i	Pg	BZ Z	10	57	46,9
		(Sg)	NE BE BN			50,2
		X	E			52,1
		X	N E			52,7
		X	N			55,0
29	e	(P)	SZ	16	39	57,-
		LM	SZ	17	(06)	-
29		LM	SZ	21	49	-
29	i	P	Z BZ BE	22	39	55,4
		X	Z		40	17,4
		X	Z			28,0
		X	E N			30,1
		S	Z N SZ SN		43	21
		PcS	SZ		47	54
30	e	X	SZ	09	57	-
		LM	SZ	10	03	-
		F			10	-
30	e	P	SZ	19	42	11
		X	BZ			19
		(S)	SN		52	(10)

Sadettin Kesili

SEISMOLOGICAL PUBLICATION RECEIVED

We acknowledge thanks the receipt of the following Seismological publications and bulletins during the month of June 1962.

- U.S.C.G.S.....Preliminary Determination of Epicenters:36,37,38,39,42.
- UPPSALA.....Preliminary Seismogram Readings:June 1 -June 21,1962.
- B.C.I.S.....Détermination Préliminaire: 33,34,35,36,37,38.
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- TRIESTE.....Bollettino Sismico Préliminare No:10 et 11
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TECHNICAL UNIVERSITY OF ISTANBUL

SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

JULY, 1962

--- No: 76 ---

----- 1963 -----



1 - STATIONS:

ISTANBUL:

(IST) Long.: 41° 02'6 N., Lat.: 28° 59'1 E.
A = + .66151 B = + .36648 C = + .6543
Bed-rock : Graywack of Devonian.
Altitude : 50 m. ca.

CINE:

(CIN) Long.: 37° 06'0 N., Lat.: 28° 05'2 E.
A = + .70075 B = + .37395 C = + .6076
Bed-rock : Micaschist and Gneiss.
Altitude : 120 m. ca.
(out of operation during the month of July.)

KASTAMONU:

(KAS) Long.: 41° 22'3 N., Lat.: 33° 46'0 E.
A = + .6257 B = + .4183 C = + .6584
Bed-rock : Eocene flysch with nummilitic limestone.
Altitude : 850 m. ca.

2 - SEISMOGRAPHS:

Please see next page.

3 - TIME:

Two different Quartz clocks are used for time marking. One of them is connected to Benioff "B", Sprengnether "S" and other both of Hagiwara Electromagnetic seismograph "HES" sets. Avarage clock drift of HES is at least 0.1 sec. per week. Time signals are received from Pontoise and Moscow are recorded directly and automatically only on the "BN" component for "S" and "B" sets. Same radio signals are recorded on all "HES" films once daily for "HES" sets. Master and slave pendulum are used for time marking in all auxilary stations and time corrections refer to time signals that written above.
ALL TIMES WERE GIVEN IN G.M.T.

4 - RECORDERS:

Driven motor of the single drum film recorder of "HES" short period seismographs supplied by A.C. current which is controlled by their Quartz clock. Also, driven motor of the single drum film recorders of "HES" long period seismographs supplied by ordinary A.C. current.
"S" and "B" sets are both supplied by their crystal oscillator's A.C. current.
In all auxilary stations, driven motor speed of the recorders controlled by their slave pendulum.

5 - INTERPRETATIONS:

All seismogram interpretations are made at Central office in Istanbul.
"X" means an un undetermined phase. "i" and "e" mean sharp and gradual beginnings as usual.

-B-

Where readable, the direction of first motion is indicated by following symbols :

C and D : Compression and Dilatation
N and S : North and South
E and W : East and West

All readable double amplitudes and periods of body waves and Surface waves are given in micron and sec. respectively when double amplitude and period could be reliably measured. The magnitude is given ordinarily according to preliminary determination of Pasadena, Palisades and Berkeley.

6 - TABLES:

- a) Jeffreys, H. and Bullen K. E. (1940)
"Seismological tables"
- b) Brunner, G.J. (1935)
"Chart of Depth, time and Distance for Deep focus Earthquakes"
- c) Provisional Travel-Time curves of near Earthquakes were proved more appropriate for the calculation of the distance of normal shocks. (Δ up to 1500 km.)
- d) Labrouste, Y. (1952)
Diagrams on films for different depths.

7 - DISTANCE:

All coordinates of epicentres, origin times and depths refer to U.S.C.G.S. unless otherwise stated. If any origin time was given, epicentral distance is calculated as a difference of that origin time and P arrival time at the station.

8 - INTENSITIES:

The intensities of the shocks felt in Turkey are given on MERCALLI-SIEBERG scale according to our questionnaires.

Seismograms are filed with the main office at Istanbul except the records of "S" and "B" which are filed with the U.S. Coast and Geodetic Survey at Washington, 25 D.C. Copies of individual seismograms may be obtained from them.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO MAIN OFFICE:

Director
Seismological Institute
TECHNICAL UNIVERSITY
ISTANBUL
TURKEY

General abbreviations used : Z, vertical ; N, N-S ; E, E-W component.

NAME	Abr.	T ₁ sec.	T ₂ sec.	h ₁	h ₂	α^2	V _{max.}		RECORDING			
								at sec.	drum speed mm. /min.	on		
Hagiwara Electromagnetic seismograph	HES short period	HSZ	1.00	1.17	1.01	.99	.052	63.000	.7	20	On reader 160mm.	Non perforated 35 mm. film
		HSN	.98	1.03	.99	1.12	.048	65.400	.5			
		HSE	1.00	1.14	1.00	1.00	.049	60.600	.6			
	HES long period	HLZ	1.10	18.4	2.62	.80	.265	608	1.2	20	On reader 160mm.	
		HLN	1.07	17.8	2.75	.84	.231	780	1.1			
		HLE	1.10	18.0	3.15	.99	.185	930	1.2			
BENIOFF	BZ	1.00	.73	--	--	---	25.000	1.0	60	On reader 160mm.	Photographic Paper	
	BN	1.00	.73	--	--	---	25.000	1.0				
	BE	1.00	.77	--	--	---	25.000	1.0				
SPRENGNETHER	SZ	30	100	--	--	---	750	30	15	On reader 160mm.		
	SN	30	100	--	--	---	750	30				
	SE	30	96	--	--	---	750	30				
CIN Coulomb- Grenet	Z	1.4	.7	1.45	1.06	---	12.000	--	30	On reader 160mm.	Photographic Paper	
KAS Coulomb- Grenet	Z	1.4	.4	.73	1.7	---	18.000	0.4	30			
	N	1.0	.7						30			

 V_{max} : Maximum magnification , T₁ : Period of pendulum , T₂ : Period of galvanometer

 α^2 : Coupling factor , h₁ : damping constant of pendulum when the galvanometer clamped

 h₂ : Damping of galvanometer when the pendulum is clamped.

July
 1
 KA e Pg Z,N 05 11 43
 i Sg N 48
 Δ = 40 km.

1 Tongo islands region.
 28.8 S. - 176.9 W.
 h about 25 km.
 H = 05 07 37
 KAS e PKP Z 05 27 28
 Δ = 159°

1 Off coast of Azerbaijan, S.S.R.
 40.8 N. - 49.9 E.
 h about 46 km.
 H = 11 46 29,8
 KAS e P Z 11 49 32
 Δ = 1280 km.

1 Minor trace of local shock.
 Kas i Pg Z,N 13 46 45

1 Tongo islands region.
 15.7 S. - 172.6 W.
 h about 65 km.
 H = 13 35 05,1
 KAS e PKP Z 13 54 37
 Δ = 147°

1 Sinkiang province, China.
 40.0 N. - 75.4 E.
 h about 25 km.
 H = 21 23 41,7
 KAS e P Z 21 30 03
 e PP Z 31 02
 e PPP Z 18
 Δ = 31°
 IST e L SZ 21 38 --
 F SZ 22 25 --

2 Minor trace of distant shock
 KAS e P Z OL 26(50)
 e S Z 29(58)

2
 IST i Pg HSZ 02 44 58,2
 i Sg HSZNE 45 10,4
 Δ = 85 km.

2
 IST i Pg HSZNE 04 36 16,9 DSE
 i Sg HSN 28,4
 HSZE 28,7
 Δ = 85 km.

KAS e Pg Z,N 04 36 51
 i Sg N 37 31

2 Santa Cruz islands.
 10.3 S. - 165.9 E.
 h about 50 km.
 H = 08 32 37,9
 M = 6¼ (Berk.)

KAS e PKP Z 08 51 37
 Δ = 127°

IST e (PKP) HSZ 08 51 43,9
 e PKP SZ,BZ 45
 e X SZ 54 55
 e X SN 55 11
 Δ = 133°

3
 KAS was out of operation from
 03:57 to 07:35 (GMT).

3
 IST e X SZ 06 41 --
 e X SZ 47 --

3 Local.
 KAS i Pg Z,N 16 29 57
 i Sg Z,N 30 02
 Δ = 40 km.

3 About 500 miles west of
 Macquarie islands.
 56.3 S. - 142.5 W.
 h about 23 km.
 H = 18 13 35,6
 IST e X SZ 18 34 04
 e PKP² SZ 34 35
 e PP² SZ 38 19
 e SKKS SN 45 07
 e SKSP SN 48 06
 e PPS SZ 51 21
 Δ = 163°05

KAS e (PP) Z 18 34 33

3 Local.
 KAS i Pg Z,N 19 01 00
 i Sg Z,N 05
 Δ = 40 km.

3 Mid-Atlantic Ocean.
 4.3 N. - 31.6 W.
 h about 23 km.
 H = 21 16 59,3
 IST e L SZ 21 45 --
 F SZ 22 08 --

4
 IST i P HSZ 14 21 02,30
 i (S) HSZNE 22 24,7
 microns sec.
 P HSZ 0.3 0.1

4 Local.
KAS i Pg Z,N 16 45 39
i Sg Z,N 46 02
 $\Delta = 195$ km.

4 Local.
KAS e Pg Z,N 21 33 23
i Sg Z,N 39
 $\Delta = 135$ km.

5 South of Honshu, Japan.
30.9 N. - 141.4 E.
h about 23 km.
H = 17 40 55,3
KAS e P Z 17 53 16
e PP Z 56 25
 $\Delta = 82^{\circ}5$
IST e P SZ 17 53 31
e SN 18 03 55
e S SE 04 02
 $\Delta = 85^{\circ}6$

5 Felt at Lemnos island.
IST i P(n) HSZ,BZ 21 23 20,8 C
i S(g) HSE 24 13,7
i SS BZ 21,3

KAS e Pn Z,N 21 24 11

5
IST ei P HSZ 22 03 56,2
i P HSZN 56,6 D
i BZ 04 02,7
i S HSNE 35,3
microns sec.
P HSZ 0.2 0.7
P HSN 0.1 0.7
P HSE 0.1 0,8
S HSZ 0.3 1.0
S HSN 0.4 1.0
S HSE 0.3 1.0

5 Local.
KAS e Pg Z,N 22 04 32
e (Sg) Z,N 05 40

5 Near izMIT.
IST i Pg HSZNE 23 02 52,1 DSE
i Sg HSZNE 03 02,6
LM SZNE 07
 $\Delta = 85$ km.

KAS i Pn Z,N 23 03 21
i Pb Z,N 25
i Sg Z,N 04,03
 $\Delta = 270$ km.

5
IST i Pg HSZNE 23 07 16,8 DSE
i Sg BZNE 39,0
 $\Delta = 85$ km.

5 Traces.
KAS e Pg Z,N 23 07(50)
e Sg Z,N 08 28

6
IST i Pg HSZNE 00 24 06,6 D
i Sg HSZNE 18,6
 $\Delta = 85$ km.

6 Minor trace.
KAS e Z,N 00 24 42

6 Traces.
IST i Pg HSZNE 01 34 55,9
i (Sg) HSN 35 08,6

6 South of Honshu, Japan.
32.6 N. - 139.7 E.
h about 62 km.
H = 01 15 34,8
KAS e P Z,N 01 27 38
 $\Delta = 79^{\circ}$

6 Traces.
IST i Pg HSZNE 01 34 55,9
i (Sg) HSN 35 08,6

6
IST i Pg HSZNE 02 07 02,0
i Sg HSNE 14,2
 $\Delta = 85$ km.

6 Arabian sea east of Socatra.
13.3 N. - 58.0 E.
h about 30 km.
H = 02 12 19,9
KAS i P Z 02 19 13 C
i PP Z 20 09
e S Z,N 22 51
e SS Z,N 23 55
 $\Delta = 34^{\circ}5$

IST e P HSZ 02 19 35,0
i BZNE 40,0 C
ei PP HSZE 21 07,3
ii SZ 09
e S SNE 25 30
e SS SN 28 12
 $\Delta = 37^{\circ}8$

microns sec
P HSZ 0.2 1.2
PP HSZ 0.8 2.2

6
KAS e Pg Z,N 02 26 37
e Sg N 27 15
 $\Delta = 320$ km.

IST i Pg HSZ 02 28 03,3 D
i Sg HSZ 15,4
HSZ 16,0
 $\Delta = 85$ km.

6
 IST e HSZ 02 53 27,9
 e BZ 36,9
 e BE 37,5
 BE 41,2
 i (P) HSZ 42,4 C
 i S HSNE 54 35,3
 microns sec
 P HSZ 0.2 0.5
 S HSZ 0.4 1.0
 S HSN 0.3 1.0
 S HSE 0.3 0.8

6
 IST i Pg HSZ 04 12 13,0
 i Sg HSNE 14,5
 i BE 19,0
 Δ = 85 km.

6
 IST i Pg HSZ 06 30 14,1 C
 i Sg HSZN 26,0
 Δ = 85 km.

6
 IST i Pg HSZ 06 39 38,2 C
 i Sg HSNE 49,7
 i HSNE 50,8
 Δ = 85 km.

6 Ionian sea.
 38.0 N. - 20.2 E.
 h about 30 km.
 H = 09 16 15,0
 M = 5 (Pal.)

IST i Pn HSZ 09 18 07,6 CNE
 (PnPn) HSZ 14,4
 Px HSZN 17,4
 i HSZ 22,8
 i HSZ 30,2
 i HSZ 32,5
 i PbPb HSZ 35,5
 i PgPg HSZE 47,5
 i HSZ 19 48,2
 i Sx HSZ 53,4
 Li HSE 54,6
 Rg HSZN 20 49
 LR HLZNE 21 28
 Δ = 840 km.
 microns sec
 M HLZ 231.8 9.5
 M HLN 109.2 8.2
 M HLE 178.6 11.8

KAS e Pn Z 09 18 56
 i Pb Z 19 28
 i Pg Z 20 02
 i Sn Z 54
 i Sg Z 22 22

Lg₁ Z 09 22 52
 SgSg Z 23 04
 Δ = 1190 km.

6 Traces.
 KAS e Z 12 31 41

6
 IST i HSZ 13 09 58,1
 ei HSZ 10 12,3
 e L SZ 30 --

6
 IST e L SZ 13 50 --
 F SZ 52 --

6 Ionian sea.
 37.2 N. - 19.4 E.
 h about 25 km.
 H = 15 54 20,5

IST e Pn HSZ 15 56(12,8)
 e Px BN 24
 LM SZNE 59 54

6
 IST e (P) HSZ 16 07 22,3
 e BZ 27,1
 e L SZNE 10 30

6
 IST e L SZ 16 16 --

6
 IST e Pn HSZ 17 01 59,8
 e HSZ 02 38,6
 e HSZ 03 09,2
 e S SZ 04 --
 e L SZNE 05 --

6 Hindu-Kush.
 36.6 N. - 70.4 E.
 h about 203 km.
 H = 23 05 32,2
 M = 6 $\frac{1}{2}$ (Pas.)

IST ei P HSZ 23 11 44,8 C
 ei P HSZ 45,2 C
 HSZ 45,8 C
 i P HSNE 45,8
 i pP HSZ 12 30,8
 i sP HSZNE 43,0
 e S HSN 16 45,0
 ii SZ,HLN 45,0
 i (sS) SZ 17 47
 i SZ 19 12
 i BNE 21 43
 i SZ 23 22

h about 210 km. (IST)
 Δ = 33°
 S HLZ microns sec
 53.4 9.0

IST			microns	sec.	
	P	HSZ	4.2	1.5	
	P	HSN	1.1	1.5	
	P	HSE	2.3	1.5	

KAS	i	P	Z	23 11 12	C
	i	pP	Z	56	
				$\Delta = 28^\circ$	

7 Rat islands, Aleutian islands.
 51.3 N. - 178.6 E.
 H about 60 km.
 H = 06 12 48,9

KAS	i	P	Z	06 23 09	C
	e	PcP	Z	21	
	e	PP	Z	27 54	
				$\Delta = 83^\circ$	

IST	e	P	HSZ	06 25 16,3	C
	i		HSZ	16,8	
	i		SZ	17	C
	i		BZ	17,3	
	e	PP	HSZ	28 31,6	
	e	S	SNE	35 47	
				$\Delta = 85^\circ$	

			microns	sec.
	P	HSZ	0.2	1.0
	PP	HSZ	0.1	1.0

7 Rat islands, Aleutian islands.
 51.3 N. - 178.8 E.
 h about 60 km.
 H = 07 14 34,6

IST	e	(P)	HSZ	07 26 42,8
-----	---	-----	-----	------------

7 Local

KAS	i	Pg	Z,N	08 53 20	C
	i	Sg	Z,N	29	
				$\Delta = 75 \text{ km.}$	

IST	e	Px	HSZN	09 13 17,5
	e	Pb	HSZ	29,2
	i	Pg	HSZN	20,1
	i	Sx	HSE	38,3
	i	Sg	HSNE	40,6

7 Traces. Ionian sea.

IST	e	Pn	HSZ	12 23(59,8)
-----	---	----	-----	-------------

7

IST	e	Pn	HSZ	12 49(00,4)
	i	Sg	HSNE	57 25,1
				$\Delta = (910 \text{ km.})$

7 Traces. Ionian sea.

KAS	e	Pn	Z,N	14 22(29)
-----	---	----	-----	-----------

7 Traces. Ionian sea.

KAS	e	Pn	Z	15 57(09)
-----	---	----	---	-----------

7	IST	i	P	HSZ	16 20 25,6	CS
		i		HSZ	25,9	D
		i	S(g)	HSNE	47,4	

7 Traces. Ionian sea.

KAS	e	Pn	Z	17 02(32)
-----	---	----	---	-----------

7	IST	e	L	SZ	23 15 --
---	-----	---	---	----	----------

8

IST	e	(P)	HSZ,SZ03	34 31,2
	e	(S)	SZ	44,8
		M	SZ	04 11 --
			$\Delta = (86^\circ)$	

8 was out of operation
 KAS from 17:58 to 12:55 of July 9.

8 Minor trace of Local shock.

IST	i	(Sg)	HSZNE	23 08 53
-----	---	------	-------	----------

8 Minor trace of Local shock.

IST	i	(Sg)	HSZNE	23 30 36
-----	---	------	-------	----------

9

IST	e		SZ	04 49 --
	e	L	SZ	51 --

9

IST	e	L	SZ	07 12 --
-----	---	---	----	----------

9

IST	i	Pg	HSZ	08 33 44,9
	i		HSNE	34 03,1
	i	Sg	HSE	05,9
			$\Delta = 160 \text{ km.}$	

9

IST	e		SZ	17 40 --
	e	L	SZ	42 --

9

IST		LM	SZ	18 05 --
				09 --

10 Minor trace of Local shock.

KAS	e	Pg	Z,N	00 48 45
	i	Sg	Z,N	55

10 Fiji islands.
 20.8 S. - 178.7 W
 h about 584 km.
 H = 05 12 06,4

KAS	ei	PKP	Z,N	05 30 41
	e	PP	Z	33 05
			$\Delta = 151^\circ$	

IST	i	PKP	HSZ	05 30 49,2	C?
-----	---	-----	-----	------------	----

10	IST	i	Pg	HSZ	07 41	09,9		
		i	Sg	HSE		25,5		
			Δ = 110 km.					
10	IST	i	Pg	HSZ	09 16	30,4	D	
		i	Sg	HSE		50,7		
				HSN		51,4		
10	Aegean sea. 38.0 N. - 25.9 E. h about 25 km. H = 10 06 02 Felt at <u>IZMIR.</u> (Press)							
IST	ei	Pn	HSZ	10 06	53,3			
	i	S	SZNE		07 45			
KAS	e	Pn	Z,N	10 07	40			
	i	Pg	Z,N		08 08			
	i	Sg	Z,N		10 17			
	Δ = 680 km.							
10	IST	i	P(n)	HSZ	10 17	40,9		
		i	Sg	HSE		18 25,6		
		i		BZNE		27,8		
10	IST	i	Pn	HSZE	10 57	04,8	D	
		i	Px	HSZE		06,9	D	
		i	Pb	HSZNE		11,1		
		i	Li	HSE		50,1		
		i	Sb	HSN		51,7		
			Lg ₁	HSE		55,6		
			Lg ₂	HSN	58 00,7			
				HSZE		02,1		
	Δ = 375 km.							
10	Traces.							
KAS	e	P(n)	Z	10 57	49			
	e		Z		58 49			
		S(g)	Z,N		59 33			
11	Afghanistan. 31.8 N. - 66,9 E. h about 25 km. H = 01 03 59,3							
KAS	e	P	Z	01 09	52			
	e	PP	Z		10 32			
	e	PcP	Z		12 21			
	e	S	Z,N		13 23			
	Δ = 22°							
IST	e	P	HSZ	01 10	(28,0)			
	e	S	SNE		15(35)			
11	IST	e	Pn	HSZ	05 03	42,5		
		i	Pb	HSZ		47,1	D	
		i	Pg	HSZ		49,0		
	i Lg HSZNE 05 04 26,0 i S(b) HSE 32,0 Δ = (375 km.)							
	KAS Traces. e Pn Z,N 05 04 39 e S(g) Z,N 06 23							
	11 Kamchatka. 53.2 N. - 159.6 E. h about 69 km. H = 07 17 27,4							
	KAS e P Z 07 29 04 Δ = 76°							
	11 Traces. KAS e Z 08 56 27							
	11 Panay, Philippinnes islands. 10.4 N. - 140.9 E. h about 66 km. H = 12 40 30,7							
	KAS e P Z 12 52 51 e PcP Z 55 e PP Z 56 69 Δ = 83°							
	IST e P HSZ 12 53 04 i HSZ 29,4 C i HSZ 36,0 e HSZ 45,8 Δ = 85°							
	11 Minor trace of local shock. IST e S(g) HSN 13 26 43,7							
	11 Traces. IST e P HSZ 16 07 25,9 e S HSNE 08 09,5							
	11 Local shock. IST i Pg HSZ 16 41 36,0 e Sg HSN 53,4 HSE 53,6 Δ = 130 km.							
	12 Local shock. KAS e Pg Z,N 00 16 29 i Sg Z,N 39 Δ = 85 km.							
	12 Traces. IST e S HSZN 00 33 30,8 e HSN 31,8							
	12 Traces. IST e Pn BZ 02 13(26) e L SZ 16 54							

12
 IST e P HSZ 04 44(48,0)
 e S HSZN 45 32,0
 microns sec.
 S HSZ 0.1 0.8
 S HSM 0.1 0.7
 S HSE 0.2 0.7

12
 KAS e Pn Z,N 12 33 16
 e S(g) Z,N 34 44

12
 IST e HSZ 12 34 16,6
 e HSZ 34,7
 e HSZ 48,4
 e L HSN 36 33

13 Panay, Philippines islands.
 10.4 N. - 122.6 E.
 h about 66 km.
 H = 03 32 00,5

KAS ei p Z 03 44 17 D
 e PP Z 47 35
 Δ = 83°

IST e P HSZ 03 44 34,0
 i P HSZ,BZ 35,0 D
 e S HLN 54 58
 Δ = 85°

 microns sec.
 P HSZ 0.7 1.8

13 Panay, Philippines islands.
 10.2 N. - 121.7 E.
 h about 157 km.
 H = 03 32 12,6

KAS ei P Z 03 44 29 D
 e PP Z 47 35
 Δ = 85°

IST i P HSZ 03 44 45,7
 e S HLN 54 58
 Δ = 85°

 microns sec.
 P HSZ 0.8 1.8

13 Tibet-India border.
 30.5 N. - 79.6 E.
 h about 25 km.
 H = 05 01 08,6

KAS ei P Z 05 08 28 D
 e PP Z 09 48
 Δ = 38°

13 Komandorskie, islands region.
 56.2 N. - 164.0 E.
 h about 59 km.
 H = 22 19 23,3

KAS ei P Z 22 30 55 D

e PP Z 22 33 25
 Δ = 74°5

IST e P HSZ 22 31 04,6
 i HSZ 05,2 D
 Δ = 75°2

14 Iran.
 27.3 N. - 56.7 E.
 h about 30 km.
 H = 06 44 26,5

KAS e P Z 06 49 35
 i Z,N 41
 e PP Z 59
 e S Z,N 07 03 45
 Δ = 23°

14 KAS i Pg Z,N 14 31 18
 i Sg Z,N 42
 Δ = 200 km.

14 Tibet- India border.
 30.4 N. - 79.5 E.
 h about 40 km.
 H = 15 58 53,7

KAS i P Z 16 05 12 D
 e PP Z 38
 Δ = 31°

14 IST e (S) SN 20 15(19)
 e LM SN 28 --

14 Kurile islands.
 50.2 N. - 155.8 E.
 h about 60 km.
 H = 20 38 01,3

KAS ei P Z 20 49 43
 e PcP Z 51 09
 e PP Z 53 23
 Δ = 76°

14 KAS e Z 20 57 37
 e Z 58 55

15 EST e P HSZ 06 25(58,5)
 e S HSZN 27 08,5

15 Honshu, Japan.
 39.8 N. - 140.9 E.
 h about 103 km.
 H = 06 47 22,5

KAS i P Z,N 06 58 58 C
 i pP Z 59 23
 i PP Z 07 01 47
 Δ = 76°

IST e P HSZ 06 59 14,1
 ei (PP) HSZ 07 02 14,3
 $\Delta = 76^{\circ}3$
 microns sec.
 P HSZ 0.3 1.2
 PP HSZ 0.2 1.3

16
 IST ei Pn HSZ 07 05 12,1
 i PnPn HSZ 14,0
 i (Pb) HSZ 19,5
 e PgPg HSN 43,1
 e Sn HSZNE 06 22,8
 $\Delta = 670$ km.

16 Alaska.
 62.3 N. - 153.1 W.
 h about 39 km.
 H = 12 54 40,6

IST i P HSZ,BZ 13 06 32,3 C
 i HSZN 36,7 C
 $\Delta = 78^{\circ}5$
 microns sec.
 P HSZ 0.4 1.0

16 Traces.
 KAS e Z 15 18 24

16 550 miles south of easter islands.
 34.8 S. - 108.6 W.
 h about 25 km.
 H = 16 16 40,9

IST ei PKP HSZ,BZ 16 36 19,5
 i BZ 20,0
 $\Delta = 145^{\circ}0$

KAS e PKP Z 16 36 29

16 Traces.
 KAS e Z 16 49 12

17 Fiji islands region.
 17.3 S. - 178.8 W.
 h about 538 km.
 H = 00 18 14,5
 KAS i PKP Z,N 00 36 48 C
 e Z 37 42
 $\Delta = 143^{\circ}5$

17 Minor trace of local shock.
 IST i Sg HSNE 04 23 05,0

L7 Near coast of Chile.
 43.0 S. - 74.9 W.
 h about 26 km.
 H = 05 32 08,8
 IST e (PKP) HSZ 05 51(10,6)

e PP SZ 05 53 00
 e (PPS) SZ 06 03 05
 $\Delta = 124^{\circ}3$
 PP

KAS e PKP Z,N 05 51 16
 e Z 24
 e (PP) Z 53 24
 $\Delta = 128^{\circ}5$

17 Hokkaido, Japan.
 43.J N. - 144.5 E.
 h about 30 km.
 H = 17 20 22,9

KAS e P Z,N 17 32 07
 e PP Z 35 00
 $\Delta = 76^{\circ}0$

IST e P HSZ,BZ17 32 22,2
 KSZ 23,3
 e S SN 42 16
 e HSE 42 38
 $\Delta = 77^{\circ}7$

19 Minor trace of local shock.
 KAS e Pg Z,N 21 24 07
 i Sg Z,N 12
 $\Delta = 40$ km.

20 Tongo islands region.
 21.0 S. - 174.8 W.
 h about 28 km.
 H = 16 27 20,9

KAS e PKP Z 16 47 11
 $\Delta = 146^{\circ}0$

21 Northern Iran.
 36.6 N. - 54.6 E.
 h about 41 km.
 H = 03 07 03,0

KAS e Pn Z 03 11 07
 $\Delta = 1800$ km.

21 Traces.
 IST e P HSZ 19 37(52,8)
 e HSNE 38 10,6
 i Sg HSZNE 11,2

22
 IST i Pg HSZ 14 46 58,4
 i PgPg HSE 59,8
 i Sg HSNE 47 17,7
 i (SgSg) HSZ 18,1
 $\Delta = 145$ km.

23
 IST i Pg HSZ 08 48 06,0
 i Li HSZ 10,8
 i Lg₂ HSZ 14,7
 i Sg₂ HSN 20,3
 $\Delta = 105$ km.

23
 IST e Pg HSZ 10 04(12,1)
 e Sn HSZN 40,7
 Li HSZ 45,1
 i Sb HSZN 51,2
 Lg₁ HSNE 53,9
 i Sg HSZ 05 04,3
 i SgSg HSZ 07,1
 Δ = 395 km.

23 Traces.
 KAS i Z,N 15 16 15

24
 KAS i Pg Z,N 01 53 19 C
 i Sg Z,N 26
 Δ = 60 km.

24 Sulu sea.
 10.3 N. - 121.5 E.
 h about 21 km.
 H = 16 23 10,8
 KAS e P Z,N 16 35 32
 e PP Z 38 04
 Δ = 82°
 IST e P HSZ 16 35 50,8
 e PP HSZ,SZ 38 24,5
 e LM SZ 16 56 --
 Δ = 85°5
 P HSZ microns sec.
 0.2 1.4

24 Traces.
 KAS e Pn Z 18 17 23
 e (Sg) Z 18 21

24
 IST i P HSZ 18 46 09,1
 i HSZN 20,9
 e S HSZ 47 17

24 Mexico-Guatamala border region.
 15.5 N. - 92.5 W.
 h about 129 km.
 H = 21 08 22,6
 M = 5,6 (Berk.) 5 1/2 (Pal.)
 IST e PP SZ 21 26 13
 HSZ,SZ 54
 SP SZ 35 08
 PS SZ 22
 sSP SZ (54)
 SPP SZ 36 19
 i PKKP HSZ 38 42,4 D
 Δ = 100°3

KAS Traces.
 e PKP Z 21 16(01)

25 West of Jamaica.
 18.9 N. - 81.1 W.
 h about 64 km.
 H = 04 37 50,7

IST ei P HSZ 04 51 02,7
 ei P SZ 03 C
 i HSZ 18.9
 SKS SZE 05 01 23
 SKKS SZNE 56
 i S SNE 02 13
 ei PS SE 03 14
 e PPS SE (58)
 Δ = 92°

KAS P 04 51 18
 e PP Z 55 04
 e PPP Z 57 07
 Δ = 96°

25 Traces.
 IST i P(g) HSZ 05 42 04,3
 i HSN 23,4
 i Sg HSZN 25,9

25
 KAS i Pg Z 07 55 41 C
 i Sg Z,N 49
 Δ = 70 km.

25 Minor trace of distant shock.
 IST e P HSZN 18 38 02,6

25 Strongly felt at ISPARTA.
 (IV+ M. Mercalli intensity.)
 IST i (Pb) HSZ 22 03 07,0
 i PbPb HSZ 10,2
 i HSZ 11,5
 i Pg HSZN 13,1
 i (Sn) HSZ 40,6
 Li HSZ 48,5
 i Sb HSZN 50,3
 Lg₁ HSZN 53,6
 Lg₂ HSZN 59,4
 Rg₂ HSZN 04 10,7
 Δ = 388 km.
 M HSZ microns sec.
 0.4 1.4

26 Kurile islands.
 47.1 N. - 153.9 E.
 h about 35 km.
 H = 04 23 11,9

KAS i P Z,N 04 35 02 D
 Δ = 77°

26 South of Panama.
 7.5 N. - 82.7 W.

h about 21 km.
 H = 08 14 41,8
 M = 6 $\frac{3}{4}$ (Pas.), 7 (Berk.)

IST	e	P	SZ	08 28 34	D
	e		SZ	40	D
	e	PKP	HSE	32 44,3	C
	i	PP	SZ	33 00	
	i	SKS	SNE	39 15	
	e	SKKS	SN	40 29	
	i	PS	SZE	41 50	
			$\Delta = 102^\circ$		

KAS	e	P	Z	08 28 42	
	ei		Z,N	32 56	
	e	SKS	Z	41 39	
	e	PS	Z	43 32	
	e	SS	Z	48 43	
		L	Z	09 05 --	
			$\Delta = 104^\circ$		

26 Roumania.
 44 $\frac{1}{2}$ N. - 22 $\frac{1}{2}$ E.
 (BCIS)

KAS	e	Pn	Z,N	22 36 49	
	i		Z,N	37 04	
	e	Pb	Z,N	12	
	e	Sn	Z,N	38 18	
			$\Delta = 820$ km.		
IST	i	Pn	HSZ	22 36 12,1	
	i	Sn	HSZNE	37 18,4	
			$\Delta = 640$ km.		

27 Traces.

KAS	e		Z	00 01 47	
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27 New Hebrides islands.
 14.8 S. - 167.6 E.
 h about 205 km.
 H = 06 11 55,3

IST	i	PKP	HSZ	06 31 11,4	C
	i	(pPKP)	HSZ	32 23,3	
			$\Delta = 149^\circ$		

27 Local.

KAS	i	Pg	Z,N	19 51 13	
	i	Sg	N	19	
			$\Delta = 50$ km.		

27 KAS	e	P	Z,N	20 02 09	
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28 Local. Samoa islands region.
 16.2 S. - 173.2 W.
 h about 40 km.
 H = 00 05 10,8

KAS	ei	PKP ₁	Z,N	00 24 51	
	i	PKP ₂	Z,N	25 07	
	e	PP	Z,N	28 08	
			$\Delta = 149^\circ$		

IST	e	PKP ₁	SZ	00 24 58	
	i		HSZ	58,6	C
	i	PKP ₂	HSZ	25 00,3	C
	e	PP	SZ	28 31	
			$\Delta = 150^\circ$		

28 Minor trace of local shock.
 IST e (Sg) HSZ 18 24 16,0

28 IST	i	Pg	HSZ	18 43 51,5	
	i	Sg	HSE	44 10,5	
			HSN	11,0	
			$\Delta = 155$ km.		

28 Off east coast of Honshu, Japan.
 36.9 N. - 141.9 E.
 h about 39 km.
 H = 19 43 00,3

28 KAS	e	P	Z,N	19 54 69	
	e	PP	Z	57 58	
			$\Delta = 78^\circ 5$		

28 Kurile islands.
 44.6 N. - 148.6 E.
 h about 32 km.
 H = 20 46 26

28 KAS	i	P	Z,N	20 58 19	D
			$\Delta = 77^\circ 5$		

28 IST	i	(P)	HSZ	20 59 37,1	
--------	---	-----	-----	------------	--

28 Traces.

28 KAS	e	PKP	Z,N	23 58 50	
--------	---	-----	-----	----------	--

29 Local.

29 KAS	i	Pg	Z,N	21 37 36	C
	i	Sg	Z,N	42	
			$\Delta = 50$ km.		

29 Local.

29 KAS	i	Pg	Z,N	22 52 03	C
	i	Sg	N	09	
			$\Delta = 50$ km.		

30 Near north coast of New-Guinea.
 3.3 S. - 143.9 E.
 h about 25 km.
 H = 17 16 44,4
 M = 6 $\frac{1}{4}$ - 7 (Pas.), 7 (Berk.)

30 KAS	e	P	Z	17 31 04	
	e	PP	Z,N	34 15	
	e	PPP	Z	35 21	

30 IST	e	P	SN	17 31 (57)	
	e	PKP	HSZ	35 31,2	D
	i		HSZ	51,1	D

i PP HSZ 17 36 17,9 C
 SKS SN 42 35
 ei SS SE 51(10)

30
 IST e HSN 19 07 04,1

30 Western Colombia.
 5.0 N. - 76.3 W.
 h about 45 km.
 H = 20 18 49,3
 M = 6 $\frac{5}{4}$ (Pas., Berk.), 6 (Pal.)

IST i P HSZ 20 32 25,1 D
 i PKP HSZ 36 24,8 C
 i HSE 53
 i PP HSE 37 31
 e PKS SE 40 41
 i SKS SN 43 27
 i SKKS SE 29
 SN 44 17
 $\Delta = 97^{\circ}5$

microns sec.
 PKP HSZ 1.7 2.2

KAS e P Z,N 20 32 38
 e PP Z,N 35 49
 $\Delta = 101^{\circ}$

31 Near south coast of Greece.
 36.5 N. - 22.7 E.
 h about 109 km.
 H = 01 25 32,7

IST P HSZ 01 27 15,3
 SP HSZ 43,4
 e HLZ 29 34
 e HLN 35
 e HSNE 37,1
 e SZ 45

microns sec.
 P HSZ 0.2 1.2

KAS e P(n) Z 01 27 59

31 Japan.
 32.5 N. - 132.1 E.
 h about 33 km.
 H = 05 09 17,5

KAS i P Z,N 05 20 57 D
 $\Delta = 75^{\circ}$

31 Near north coast of Luzon,
 Philippines.
 18.8 N. - 120.8 E.
 h about 39 km.
 H = 05 13 04,1

KAS i P Z,N 05 24 50 D
 $\Delta = 76^{\circ}$

IST e (PP) HSZ 05 25 09,2

31 Local.
 IST i Pg HSNE 11 45 34,1
 i Sg HSNE 37.4
 $\Delta = 40$ km.

Director
 Prof. K. ERGIN

TECHNICAL UNIVERSITY OF ISTANBUL
SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

AUGUST, 1962

--- No: 77 ---

----- 1963 -----



1 - STATIONS:

ISTANBUL (IST):

Long.: 41° 02'6 N., Lat.: 28° 59'1 E.
A=+.66151 B=+.36648 C=+.6543
Bed-rock : Graywack of Devonian.
Altitude : 50 m. Ca.

CINE (CIN):

Long.: 37° 06'0 N., Lat.: 28° 59'2 E.
A=+.70075 B=+.37395 C=+.6076
Bed-rock : Micascist and Gneis.
Altitude : 120 m. Ca.

KASTAMONU (KAS):

Long.: 41° 22'3 N., Lat.: 33° 46'0 E.
A=+.62570 B=+.41830 C=+.6584
Bed-rock : Eocene flysch with nimmulitic limestone.
Altitude : 850 m. Ca.

2 - SEISMOGRAPHS:

Please see the next page.

3 - TIME:

Two different quartz clocks are used for time marking. One of them is connected to Benioff "B", Sprengnether "S". And the other is connected to both of Hagiwara Electromagnetic Seismograph "HES" sets. The average clock drift of "HES" is at least 0.1 sec. per week. The time signals which are received from Pontoise and Moscow are recorded directly and automatically only on "BN" component for "S" and "B" sets. Same radio signals are recorded on all "HES" seismograms, once a day. Master and Slave pendulum are used for time marking in all auxiliary stations, and time corrections refer to time signals that written above. (ALL THE TIMES HAVE BEEN GIVEN IN G.M.T.)

4 - RECORDERS:

Driven motors of the single drum film recorder of "HES" short period seismographs are supplied by A.C. current which is controlled by their quartz clock. But driven motors of the single drum film recorder of "HES" long period seismographs are supplied by ordinary A.C. current. "S" and "B" sets are both supplied by A.C. current which is obtained by their crystal oscillator. In all auxiliary stations, driven motor speed of the recorders is controlled by their slave pendulum.

5 - INTERPRETATIONS:

All seismogram interpretations are made at central office in Istanbul.

"X" means an undetermined phase. "i" and "e" mean sharp and gradual beginnings as usual.

Abbreviations used : Z, vertical ; N, N-S ; E, E-W component.

NAME		Abr.	T ₁ sec.	T ₂ sec.	h ₁	h ₂	σ^2	V _{max.} at sec.	RECORDING	
									drum speed mm. /min.	on
Hagiwara Electromagnetic seismograph	HES short period	HSZ	1.00	1.17	1.01	.99	.052	63.000	.7	20 On reader 160mm. Non perforated 35 mm. film
		HSN	.98	1.03	.99	1.12	.048	65.400	.5	
		HSE	1.00	1.14	1.00	1.00	.049	60.600	.6	
	HES long period	HLZ	1.10	18.4	2.62	.80	.265	608	1.2	
		HLN	1.07	17.8	2.75	.84	.231	780	1.1	
		HLE	1.10	18.0	3.15	.99	.185	930	1.2	
BENIOFF	BZ	1.00	.73	--	--	---	25.000	1.0	60 Photographic Paper	
	BN	1.00	.73	--	--	---	25.000	1.0		
	BE	1.00	.77	--	--	---	25.000	1.0		
SPRENGNETHER	SZ	30	100	--	--	---	750	30		
	SN	30	100	--	--	---	750	30		
	SE	30	96	--	--	---	750	30		
CIN	Coulomb-Grenet	Z	1.4	.7	1.45	1.06	---	12.000	--	30
KAS	Coulomb-Grenet	Z	1.4	.4	.73	1.7	---	18.000	0.4	30
		N	1.0	.7						30

V_{max} : Maximum magnification , T₁ : Period of pendulum , T₂ : Period of galvanometer
 σ^2 : Coupling factor , h₁ : damping constant of pendulum when the galvanometer clamped
h₂ : Damping of galvanometer when the pendulum is clamped.

-B-

Where readable, the direction of first motion is indicated by following symbols :

C and D : Compression and Dilatation
N and S : North and South
E and W : East and West

All readable double amplitudes and periods of body waves and Surface waves are given in micron and sec. respectively when double amplitude and period could be reliably measured. The magnitude is given ordinarily according to preliminary determination of Pasadena, Palisades and Berkeley.

6 - TABLES:

- a) Jeffreys, H. and Bullen K. E. (1940)
"Seismological tables"
- b) Brunner, G.J. (1935)
"Chart of Depth, time and Distance for Deep focus Earthquakes"
- c) Provisional Travel-Time curves of near Earthquakes were proved more appropriate for the calculation of the distance of normal shocks. (Δ up to 1500 km.)
- d) Labrouste, Y. (1952)
Diagrams on films for different depths.

7 - DISTANCE:

All coordinates of epicentres, origin times and depths refer to U.S.C.G.S. unless otherwise stated. If any origin time was given, epicentral distance is calculated as a difference of that origin time and P arrival time at the station.

8 - INTENSITIES:

The intensities of the shocks felt in Turkey are given on MERCALLI-SIEBERG scale according to our questionnaires.

Seismograms are filed with the main office at Istanbul except the records of "S" and "B" which are filed with the U.S. Coast and Geodetic Survey at Washington, 25 D.C. Copies of individual seismograms may be obtained from them.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO MAIN OFFICE:

Director
Seismological Institute
TECHNICAL UNIVERSITY
ISTANBUL
TURKEY

AUGUST

1 Near N.coast of New-Guinea.
 H= 04 36 57,6
 h about 33 km.
 3.2 S - 143.7 E.
 M = 6½ - 6¾ (Pas.), 7 (Berk.)

IST e P SZ 04 51(53)
 e HSZ,SZ 56 20,3
 i PP SZNE 34 C
 SKS SN 05 02 33
 SS SN 12 07
 Δ = 111°

1 Kansu Province, China.
 39.1 N. - 98.6 E.
 h about 33 km.
 H = 15 47 45.5

IST i P HSZ 15 57 56,3
 Δ = 53°5

1 Iraq.
 36.3 N. - 41.6 E.
 h about 33 km.
 H = 16 38 56,4

KAS e Pn Z,N 16 40 54
 e Pb Z,N 41 18
 e Sg N 43 22
 Δ = 875 km.

2
 KAS i P N 10 10 10

2
 IST i (Pg) HSZ 12 17 49,3
 i Sg HSNE 57,3

2 West Pakistan.
 33.4 N. - 73.5 E.
 h about 33 km.
 H = 15 32 20,9

KAS ei P Z 15 38 49
 Δ = 3204

3 Northern Chile-Argentina border.
 23.2 S. - 67.5 W.
 h about 71 km.
 H = 08 56 12,1
 M = 7 - 7¼ (Pas.), 6,8 (Berk.)

IST i (s)P SZN 09 11 12
 e (PKP) HSZ 14 36,6
 e (pPKP) HSZ 15 02
 ei PP HSZ 15 09
 SZN
 i sPP SZ 40
 e PPP SZ 17 35

i SKS HSNE 09 21 03
 SNE
 HLNE
 SKKS SN 21 28
 SNE 59
 SKKS HLE
 i SP SZ 24 24
 i SZ 30
 Δ = 109°
 h about 80 km. (ITU)
 micron sec.
 PP HSZ 0.1 2.2

CIN e (P) Z 09 13 18,5
 e Z 50
 e PKP Z 14 34
 i PP Z 54,5 C
 e PPP Z 17 01
 e SKS Z 20 41
 e SP Z 24 09
 i SPP Z 25 05,5
 i PPS Z 36,5
 e SS Z 28 00
 e PKPPKP Z 33 33
 Δ = 108°

KAS ei PKP Z 09 14 39
 e PP Z 15 34
 e PPP Z 17 52
 e SP Z 23 58
 i PKKP Z 24 34
 PPS Z 25 34
 (PKKS) Z 28 24
 SKKS Z 31 56
 Δ = 114°

3 Loyalty Islands region.
 23.3 S. - 171.2 E.
 h about 30 km.
 H = 10 16 26,7

CIN e PKP Z 10 36 03
 Δ = 145°

3 Kirghiz, USSR.
 40.9 N. - 73.3 E.
 h about 25 km.
 H = 11 04 03,6

KAS e P Z 11 10 09
 e PP Z 11 03
 e PPP Z 15
 e PcP Z 13 15
 e (S) Z,N 14 47
 Δ = 29°7°

IST i P HSZE 11 10 40,9 D
 Δ = 31°9

CIN e P Z 11 10 55
 Δ = 35°

Time correction has not accuracy between 4 and 8 of August.

4
IST e HSE 17 17 03,2
e HSZ 04,4
e (S) HSZNE 18,8

4
KAS e r Z 17 17 29
(S) Z 20 09

IST e P HSZ 19 27(19,8)
e (S) HSZ 28 17

5
KAS e P Z,N 01 25 22
e Z,N 26 50

5 Novaya Zemlya.
h = 0 km.
Nuclear explosion app. 30 MT
(BCIS)
IST e P SZ 09 15(44)
e PP SZ 16(59)

5 Traces.
KAS i Pn Z 15 31 04

5 i X HSZNE 21 19 18,6
IST i X HSZNE 18,9
e X HSZNE 46

6 North Atlantic Ocean.
32.0 N. - 40.8 W.
h about 48 km.
H = 01 35 30,5
IST i P HSZE, SZ01 45 05,5 D
i HSZE 09,0 D
i HSZ 10,1
i pP HSZ 18,6
PcS SZ 50(01)
i S SNE 52 53
i ScS SNE 55 02

$\Delta = 55^\circ 5'$
h = 40 km. (ITU)
microns sec.
P HSZ 0.3 1.2
KAS e P Z 01 45 29
 $\Delta = 60^\circ$

6 e X HSN 20 24 28,3
IST e X HSE 28,8
i X HSZ 29,2

6 Kermadec islands region.
26.9 S - 177.1 W.

h about 50 km.
H = 20 51 56,8
M = 6 (Berk.) $5\frac{1}{2}$ (Pal.)

KAS e PKP₁ Z 21 11 39
i PKP₂ Z 45
i Z 12 47
i Z 13 37
e PP Z 15 09
 $\Delta = 147^\circ$

IST e PKP HSZ 21 11 52,5

7 Traces.
IST e HSZ 02 30 46,9

7 Near coast of Turkey.
36.1 N. - 30.4 E.
h about 33 km.
H = 05 15 45,9

IST e Pn HSZ 05 17 09,3
i PbPb HSZ 26,3
e Sn HSZN 18 03,3

KAS weak.
e Pn Z,N 05 17 16
e Sg Z,N 18 22

8 Traces.
CIN e Z 00 47 44

8 Aleutian islands region.
52.1 N. - 170.5 W.
h about 40 km.
H = 10 54 56,3

CIN e P Z 11 07 51,5
 $\Delta = 90^\circ$

8 Traces.
CIN e Z 14 23 14,5
e 19,5

8 Near coast of east Hondo, Japan.
37.0 N. - 141.5 E.
h about 53 km.
H = 17 55 37

IST e P HSZ 18 08 (02,8)

8 e P(g) HSZ 21 00(14,0)
e Sg HSNE 50,7

9	Salta province, Argentina. 24.1 S. - 66.5 W. h about 128 km. H = 06 19 51,4					10 CIN	e (Pg)	Z	13 56(13)
CIN	e P Z			06 27(47)		10 CIN	e (Pn)	Z	14 20 14
9	weak.					10 CIN	e (Pg)	Z	14 22 59,5
KAS	e Pn Z,N i Sg Z,N			10 23 36 57		10 CIN	e (Pg)	Z	14 22 59,5
9	Ryukyu islands region. 30.1 N. - 129.0 E. h about 198 km. H = 10 44 00,5					10 IST	e e e L	HSN HSN HSNE	14 23 56,8 24 10,2 25 31
CIN	e P Z			10 55 50,5		10 KAS	e Pn Z,N e (Sn) Z,N		14 24 32 25(42)
9						10 CIN	e (Pg)	Z	13 05 51
9						10 CIN	e	Z	17 12 09
IST	e Sg HSNE			18 14 12,4		10 CIN	e	Z	17 12 09
9						10 IST	e Sg HSNE		19 14 25,6
9						10 IST	i Sg HSNE		19 57 35,9
9	Traces.					10 CIN	e	Z	23 32(05)
9						10 IST	e Sg HSNE e HSNE		23 44 55,1 45 05,2
10	<u>Felt at AMASYA.</u>					10 KAS	e Pg Z,N i Sg Z,N		02 30 40 31 02
	$\Delta = 190$ km.								
10						11 KAS	i (Pg) Z i Sg N		01 28 40 56
IST	i Pg HSZNE i Sg HSNE			09 04 12,8 13,9		11 CIN	e (Pn) Z e (Sg) Z		02 06 15 22
10									
IST	e (Sg) HSNE			11 37 46,2					

11 Fiji islands.
 20.0 S. - 178.8 W.
 h about 638 km.
 H = 01 47 39,6

IST e PKP₁ HSZ 02 06 12,3
 i PKP₂ HLZ 17,0 D
 e pPKP HSZ 08 44
 e SKP HSZ 57,7
 e PP HLZ 09 53,4
 $\Delta = 147^\circ$
 h about 600 km.(ITU)

KAS i PKP₁ Z,N 02 06 07 D
 i PKP₂ Z,N 22
 ei pPKP Z,N 08 32
 i SKP Z 52
 $\Delta = 14^\circ 05'$

11
 CIN e (Pn) Z 02 06 15
 e (Sg) Z 22

11
 CIN e (Pg) Z 02 08 54

11 Tongo islands region.
 15.7 S. - 172.9 W.
 h about 157 km.
 H = 06 47 41,7

KAS e PKP Z 07 07 06
 e (PKS) Z,N 10 53
 $\Delta = 139^\circ 05'$

CIN e PKP 07 07 21,5
 $\Delta = 140^\circ$

11 Off north coast of Formosa.
 25.2 N. - 123.3 E.
 h about 140 km.
 H = 08 15 43,7

KAS i P Z,N 08 27 02 C
 i sP Z,N 40
 e S N 36 21
 $\Delta = 76^\circ$

IST e P HLZNE 08 27 22 DN
 e pP HSNE 28(02)
 PP SZN 30 19
 e sPP SZ 31(05)
 e PPP SZ 32 13
 e PPPP SZ 33 26
 e sPPPP SN 33 50
 ei S SNE 36 58
 HSNE
 HSNE
 ei SKS SNE 37 21

11 Cont.
 i PS SN 38 00
 HSE
 $\Delta = 77^\circ 05'$
 h about 125 km.(ITU)

CIN e P HLZ microns sec.
 10.5 3.0
 e P Z 08 27(34)

11 Traces.
 CIN e Z 08 37 18

11 Traces.
 CIN e Z 08 57(44)

11
 CIN e (Pn) Z 09 13 22

11
 IST e (Sg) HSNE 13 36 07,3

11
 IST e (Sg) HSNE 18 10 03,8

12 Traces.
 CIN e Z 00 12(36)

12
 IST e (Sg) HSZ 02 20 34,8

12
 IST e Sg HSNE 02 48 11,7

12
 IST e (Sg) HSN 03 20 07

12 Turkey.
 37.5 N. - 30.7 E.
 h about 33 km.
 H = 04 49 28,4

CIN e (Pb) 04 50 12,5

IST e HLZ 04 50 37,3
 i Pb HSNE 37,9
 i PbPb HSNE 42,1
 e PgPg HSNE 47,5
 e Sn HLN 51 15,2
 HSNE
 e Li HSN 25
 $\Delta = 460$ km.

16
 IST e Pg HSN 18 31 53,1
 e Sg HSNE 32 01

17 Samoa islands region.
 15.8 S. - 172.9 W.
 h about 33 km.
 H = 00 32 26,9

KAS i PKP Z,N 00 52 06 C

17 Traces.
 CIN e Z 04 06 00

17
 IST e P(g) HSN 04 06 27,6
 e Sg HSNE 07 05,6

17 Panay region, Philippines.
 10.6 N. - 121.6 E.
 h about 33 km.
 H = 05 04 31,5

KAS i P Z,N 05 16 48 C
 e S N 26 58
 $\Delta = 81^{\circ}3$

IST e P HLZ 05 17 10,9 D?
 e HSN 11,6

CIN e P Z 05 17(14)
 i (pP) Z 19
 $\Delta = 88^{\circ}$

17
 IST i Pg HSE 11 25 27,9
 i Sg HSNE 50,2
 $\Delta = 160$ km.

17
 IST e Sg HSNE 18 28 34,7

17 weak.
 KAS e Z,N 19 09 17
 e Z,N 10 29

17 Traces.
 CIN e Z 19 18 41

17 Samoa islands region.
 15.4 S. - 172.7 W.
 h about 33 km.
 H = 22 55 55,4

KAS e PKP Z,N 23 15 35
 $\Delta = 149^{\circ}$

18
 IST e Sg HSNE 01 51 20

18 Turkey.
 37.0 N. - 32.5 E.
 h about 33 km.
 H = 04 28 56,1

CIN e Z 04 29 48
 e (Sg) Z 50

IST e P HSZ 04 30(08,4)
 ei P HSN 10,7
 e Pg HSNE 27,0
 e HSE 29,9
 PgPg HSN 33
 (PgPgPg)HSE 47
 e S_x HSN 31 10
 e Li HSNE 14
 e (Sb) HSE 20
 Rg₁ HSE 25
 e SgSg HSE 37,9
 i (SgSgSg)HSNE 54,0
 $\Delta = (500)$ km.

18 Central Alaska.
 62.3 N. - 152.5 W.
 h about 32 km.
 H = 16 43 54,3
 M = 6 - 6 $\frac{1}{4}$ (Pas.)

KAS i P Z,N 16 55 18 C
 $\Delta = 75^{\circ}5$

IST e (P) HLZ 16 55 44,7
 e P HSN,HLZ (46,1)
 $\Delta = 77^{\circ}$

CIN e P Z 16 56 04
 $\Delta = 80^{\circ}$

18 Central Alaska.
 62.3 N. - 152.5 W.
 h about 32 km.
 H = 17 46 14,9
 M = 6 - 6 $\frac{1}{4}$ (Pas.)

KAS e P Z,N 17 58 02
 e PP Z,N 18 00 38
 $\Delta = 75^{\circ}5$

IST e P HLZ 17 58 06,7
 e HLZ 07,4
 $\Delta = 77^{\circ}$

CIN e P Z 17 58 25
 $\Delta = 80^{\circ}$

18
 IST e (Sg) HSNE 18 52 19,7

19 KAS e Pg Z,N 00 42 41
 e Sg Z,N 43 01
 $\Delta = 185$ km.

19 Traces.
 IST e HSN 00 43 32

19 IST i HSNE 02 08 04,2

19 Traces.
 CIN e Z 03 15 10,5
 out of operation from
 16h 00m of August 19 till the
 end of the month.

19 NW of Sin-kiang province, China.
 44.6 N. - 81.7 E.
 h about 33 km.
 H = 18 26 38,6

KAS i P Z,N 18 33 28
 e S N 43 18
 $\Delta = 350$

IST e HSZN
 P HLZ 18 33 57,1
 i SZN 58,1 C
 HLZN
 i HSZNE 34 07,8 D
 SZNE
 e PP SZ 35 25
 i Pa HSZE 33,1

very clear Pa waves.
 i (Pa) HSE 39,7
 e HSN 45,1
 e PPP SN 35 41
 i S SNE 39 51
 $\Delta = 3804$

		microns	sec.
P	HSN	0.4	1.4
P	HSE	1.0	1.4

19 IST e Pg HSN 23 13 13,5
 i Sg HSNE 27,2
 $\Delta = 95$ km.

19 Near coast of North Chile.
 26.6 S. - 69.8 W.
 h about 51 km.
 H = 23 12 50,4

IST e (SS) SZ 23 41 52
 20 e L SZ 00 07 --

20 IST e Sg HSNE 00 30(46)

20 IST i Sg HSNE 08 55 20,9

20 IST e (Pg) HSN 09 49 16,5
 i Sg HSNE 31,4

20 IST i Sg HSNE 14 35 15,0

20 IST e Sg HSNE 23 21 23

21 IST e Sg HSNE 02 06 20

21 Foreshock of S. Italy.(Roma)
 IST e SZ 16 01,5
 e SZ 03,0

21 Southern Italy.
 41.5 N. - 15.4 E.
 h about 36 km.
 H = 18 09 06,8

IST e Pn HSZE 18 11 36,2
 i (Pa) HSZE 37,7
 ii PnPn HSE 41,6
 e HSE 43,9
 i Px HSE 46,3
 i (sP) HSE 49,8
 i HSE 54,6
 i PgPg HSZ 12 27,0
 i Sn HSNE 13 36,9
 i SgSgSg HSN 15 07,1
 e (Rg) HSZNE (17)
 $\Delta = 1160$ km. = 10^5
 h about 40 km.

		microns	sec.
Pn	HSN	0.2	1.4
Pn	HSE	0.6	1.4

KAS i P Z,N 18 12 25 C
 $\Delta = 140$

21 Southern Italy.
 41.4 N. - 15.5 E.
 h about 34 km.
 H = 18 19 33,3

IST e Pn HSZE 18 22 02,1

21 Cont.
 i (Pa) HSE 22 04,5
 i PnPn HSE 07,3
 i_{max} Px HSZE 10,7
 i (sP) HSE 11,5
 i Pb HSZE 16,3
 i PbPb HSE 31,9
 i PgPg HSE 41,6
 e PgPgPg HSE 52,2
 e Sn HSN 23 46,1
 e Sx HSE 24(06) 17,2

$\Delta = 1160 \text{ km.} = 10^0 5$
 h about 40 km.

		microns	sec.
Pn	HSN	0.2	1.0
Pn	HSE	0.6	1.2
M	HSN	0.7	1.4
M	HSE	2.9	1.6

KAS i P Z,N 18 22 51 C
 e S N 25 31
 e PcS N 28 11
 $\Delta = 14^0$

21 Southern Italy.
 41.2 N. - 15.2 E.
 h about 31 km.
 H = 18 44 56,4

IST e Pn HSZN 18 47 26,2
 KAS e P Z,N 18 48 15
 $\Delta = 14^0$

21 IST i Sg HSZNE 19 19 17,3

21 Kermadec islands region.
 28.7 S. - 176.8 W.
 h about 55 km.
 H = 21 06 00,1
 M = $6\frac{1}{4}$ - $6\frac{1}{2}$ (Pas.)

KAS e PKP₁ Z,N 21 25 49
 i PKP₂ Z,N 26 32
 e SKP₂ N 29 38
 $\Delta = 161^0 5$

out of operation from 22h 30m of
 august 21 till 14 h of august 22.

IST e PKP SZ 21 25(59)
 e (PP) SZ 29 41
 PPP SZ 34(58)

21 Easter islands region.
 29.6 S. - 111.4 W.
 h about 33 km.
 H = 21 09 50,3

IST e PKP HSZ 21 29(28,3)
 $\Delta = 147^0$

22 IST e L SZ 05 25 --

23 weak.
 KAS e Pn Z,N 03 21 49
 e (Sg) 22 54

24 KAS i Pg Z,N 01 59 08 D
 i Sg N 13
 $\Delta = 45 \text{ km.}$

24 weak.
 KAS i (Pg) Z,N 02 02 27

24 Fiji islands region.
 24.5 S. - 178.8 E.
 h about 526 km.
 H = 06 47 08,1

KAS weak
 i PKP Z,N 07 05 52
 e Z 07 54
 e Z 08 36
 $\Delta = 150^0$

IST ei PKP HSZ 07 05 59,5 D
 i HSZ 59,8 C
 PKP HSZ micron sec.
 0.2 0.9

25 KAS e Z,N 00 40 51

25 KAS e (P) Z,N 00 59 38

25 KAS e Pn Z,N 06 29 46
 i Sg N 31 32
 $\Delta = 640 \text{ km.}$

25 BCIS
 Greece.
 $39^0 \frac{1}{2}$ N. - $21^0 \frac{3}{4}$ E.
 H = 07 18 47

IST i Pn HSZ 07 20 20,1 C
 e PbPb HSE 45,4
 e Sn HSNE 21 24
 e SgSg HSZ 22 09,3
 $\Delta = 650 \text{ km.}$

29	IST	i	Px	HSZ	00 41 25,2	30	Traces.		
		i	Pg	HSZ	25,9	KAS	e	Z	13 58(10)
		i	Sx	HSNE	36,9				
29	KAS	e	Ph	Z,N	00 42 00	30	Tonga islands region.		
		i	Sg	Z,N	41		21.2 S. - 174.4 W.		
			$\Delta = 270$ km.				h about 33 km.		
							H = 17 17 51,9		
							M = 5 $\frac{1}{2}$ (Berk.)		
29	Local.					KAS	e	PKP ₁	Z,N 17 37 38
IST	i	Pg	HSZNE	08 57 15,7	C		i	PKP ₂	Z,N 52
	i	Sg	HSZNE	16,7			i	pPKP ₁	Z 38 22
							i	pPKP ₂	Z 36
							i		Z,N 54
							e	SKP	Z 40 50
							e	PP	Z,N 41 26
								$\Delta = 153^\circ$	
29	Northwest of Chagos islands.					31	Fiji islands region.		
	1.9 S. - 67.9 E.						15.4 S. - 177.3 W.		
	h about 33 km.						h about 60 km.		
	H = 09 12 00,4						H = 10 33 30,2		
KAS	e	P	Z	09 21 17		IST	e	PKP	SZ 10 53(11)
		$\Delta = 53^\circ 5$							
29	IST	i	Pg	HSZN	13 43 17,1	31	Near east coast of Kamchatka.		
		i	Sg	HSE	23,8		52.5 N. - 160.6 E.		
			$\Delta = 56$ km.				h about 63 km.		
							H = 16 26 05,9		
29	IST	e	(Sg)	HSZNE	19 10 28,7	IST	e	P	SZ 16 37 59
								$\Delta = 79^\circ$	
29	Traces.					31	Rat islands, Aleutian islands.		
KAS	e		Z	15 24(23)			51.3 N. - 179.7 W.		
							h about 26 km.		
29	Near east coast of Honshu, Japan.						H = 17 02 43,4		
	34.1 N. - 139.1 E.						M = 6 $\frac{3}{4}$ (Pas.)		
	h about 33 km.					IST	i	P	SZ 17 15 17 C
	H = 22 36 53,9						i	S	SN 25 50
KAS	e	P	Z	22 48 56			e	PS	SZN 26 45
		$\Delta = 79^\circ$					e	PPS	SZ 27 17
								$\Delta = 84^\circ$	
30	Romania.								
	45.5 N. - 26.7 E.								
	h about 100 km.								
	H = 07 46 25,2								
IST	i	Pn	HSNE	07 47 42,3	D				
			HLZN						
	i	(Sn)	HSZ	48 37,3					
		$\Delta = 590$ km.							
KAS	i	P	Z	07 48 07	C				
	i	S	Z	48 21					
		$\Delta = 700$ km.							

TECHNICAL UNIVERSITY OF ISTANBUL
SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

SEPTEMBER, 1962

----- No: 78 -----

----- 1963 -----



1 - STATIONS:

ISTANBUL (IST):

Long.: 41° 02'6 N., Lat.: 28° 59'1 E.
A=+.66151 B=+.36648 C=+.6543
Bed-rock : Graywack of Devonian.
Altitude : 50 m. Ca.

CINE (CIN):

Long.: 37° 06'0 N., Lat.: 28° 59'2 E.
A=+.70075 B=+.37395 C=+.6076
Bed-rock : Micascist and Gneis.
Altitude : 120 m. Ca.

KASTAMONU (KAS):

Long.: 41° 22'3 N., Lat.: 33° 46'0 E.
A=+.62570 B=+.41830 C=+.6584
Bed-rock : Eocene flysch with nimmulitic limestone.
Altitude : 850 m. Ca.

2 - SEISMOGRAPHS:

Please see the next page.

3 - TIME:

Two different quartz clocks are used for time marking. One of them is connected to Benioff "B", Sprengnether "S". And the other is connected to both of Hagiwara Electromagnetic Seismograph "HES" sets. The average clock drift of "HES" is at least 0.1 sec. per week. The time signals which are received from Pontoise and Moscow are recorded directly and automatically only on "BN" component for "S" and "B" sets. Same radio signals are recorded on all "HES" seismograms, once a day. Master and Slave pendulum are used for time marking in all auxiliary stations, and time corrections refer to time signals that written above. (ALL THE TIMES HAVE BEEN GIVEN IN G.M.T.)

4 - RECORDERS:

Driven motors of the single drum film recorder of "HES" short period seismographs are supplied by A.C. current which is controlled by their quartz clock. But driven motors of the single drum film recorder of "HES" long period seismographs are supplied by ordinary A.C. current. "S" and "B" sets are both supplied by A.C. current which is obtained by their crystal oscillator. In all auxiliary stations, driven motor speed of the recorders is controlled by their slave pendulum.

5 - INTERPRETATIONS:

All seismogram interpretations are made at central office in Istanbul.
"X" means an undetermined phase. "i" and "e" mean sharp and gradual beginnings as usual.

-B-

Where readable, the direction of first motion is indicated by following symbols :

C and D : Compression and Dilatation
N and S : North and South
E and W : East and West

All readable double amplitudes and periods of body waves and Surface waves are given in micron and sec. respectively when double amplitude and period could be reliably measured. The magnitude is given ordinarily according to preliminary determination of Pasadena, Palisades and Berkeley.

6 - TABLES:

- a) Jeffreys, H. and Bullen K. E. (1940)
"Seismological tables"
- b) Brunner, G.J. (1935)
"Chart of Depth, time and Distance for Deep focus Earthquakes"
- c) Provisional Travel-Time curves of near Earthquakes were proved more appropriate for the calculation of the distance of normal shocks. (Δ up to 1500 km.)
- d) Labrouste, Y. (1952)
Diagrams on films for different depths.

7 - DISTANCE:

All coordinates of epicentres, origin times and depths refer to U.S.C.G.S. unless otherwise stated. If any origin time was given, epicentral distance is calculated as a difference of that origin time and P arrival time at the station.

8 - INTENSITIES:

The intensities of the shocks felt in Turkey are given on MERCALLI-SIEBERG scale according to our questionnaires.

Seismograms are filed with the main office at Istanbul except the records of "S" and "B" which are filed with the U.S. Coast and Geodetic Survey at Washington, 25 D.C. Copies of individual seismograms may be obtained from them.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO MAIN OFFICE:

Director
Seismological Institute
TECHNICAL UNIVERSITY
ISTANBUL
TURKEY

General abbreviations used : Z, vertical ; N, N-S ; E, E-W component.

NAME	Abr.	T_1 sec.	T_2 sec.	h_1	h_2	g_2	$V_{max.}$		RECORDING			
							at sec.	drum speed mm. /min.	on			
Hagiwara Electromagnetic seismograph	HES short period	HSZ	1.00	1.17	1.01	.99	.052	63.000	.7	20	On reader 160mm.	Non perforated 35 mm. film
		HSN	.98	1.03	.99	1.12	.048	65.400	.5			
		HSE	1.00	1.14	1.00	1.00	.049	60.600	.6			
	HES long period	HLZ	1.10	18.4	2.62	.80	.265	608	1.2			
		HLN	1.07	17.8	2.75	.84	.231	780	1.1			
		HLE	1.10	18.0	3.15	.99	.185	930	1.2			
BENIOFF	BZ	1.00	.73	--	--	---	25.000	1.0	60			
	BN	1.00	.73	--	--	---	25.000	1.0				
	BE	1.00	.77	--	--	---	25.000	1.0				
SPRENGNETHER	SZ	30	100	--	--	---	750	30	15			
	SN	30	100	--	--	---	750	30				
	SE	30	96	--	--	---	750	30				
CIN Coulomb- Grenet	Z	1.4	.7	1.45	1.06	---	12.000	--	30			
KAS Coulomb- Grenet	Z	1.4	.4	.73	1.7	---	18.000	0.4	30			
		N	1.0	.7						30		

V_{max} : Maximum magnification , T_1 : Period of pendulum , T_2 : Period of galvanometer

g_2 : Coupling factor , h_1 : damping constant of pendulum when the galvanometer clamped

h_2 : Damping of galvanometer when the pendulum is clamped.

SEPTEMBER

1 Gulf Aden
 e P Sz 00 46,3
 IST e S SE 50(10)
 e SZE 15

1 Red Islands, Aleutian islands.
 51.3 N. - 179.7 W.
 h about 25 km.
 H = 03 46 05,0
 M = 6 $\frac{1}{2}$ (Pas.), 6 (Pal.)

IST i P HSZ 03 58 38,0
 e P SZN 38 CS
 e PP BZ 38,1
 SKS SZN 04 01 58
 PS SZNE 09 09
 SS SZN 10 04
 SS SZNE 15(00)
 $\Delta = 85^{\circ}$

1 New-Hebrides Islands.
 15.9 S. - 168.2 E.
 h about 244 km.
 H = 04 52 14,5

IST e PKP SZ 05 11 08
 e HSZ 19,8
 i SKP HSZ,BZ 19 18,5
 SZ
 $\Delta = 137^{\circ}$

1 e P SZ 04 12(10)
 IST

1 Near coast of West Pakistan.
 25.8 N. - 65.3 E.
 h about 46 km.
 H = 15 01 04,6

IST e P SZ 15 07 40
 e S SN 13 03
 $\Delta = 33^{\circ}5$

1 North-West of Iran.
 35.6 N. - 50.0 E.
 h about 21 km.
 H = 19 20 38.5
 M = 7,3 Athens, 7 $\frac{1}{4}$ (Pas.)
 7 $\frac{3}{4}$ (Berk.), 7 (Pal., Upp.,
 Strasbourg, Kiruna)

IST i P BZE 19 24 40 CW
 e P SZNE CSW
 HSNE,HLZNE 40,4 W
 sP HSNE 52
 PP HSNE 55,6
 HLZNE
 PPP HLZN 25 04,6
 HLZN
 (ng) HSNE 33

S HSE,SNE 27 59,6
 Q HLNE 28 09,7
 SS HLZN 19
 SSS HLZN 37
 L HLNE 30 53
 Lg2 HLZ 31 14
 Rg HLZN 46
 $\Delta = 2055$ km.

1 i P BZ 20 31 38
 IST

2 Svalbard Region.
 79.0 N. - 0.2.7 E.
 h about 19 km.
 H = 23 43 24,9 of Sept. 1.

IST e L SZ 00 02 --

2 Rat island, Aleutian islands.
 51.3 N. - 179.8 W.
 h about 26 km.
 H = 03 02 29,3

IST e P SZ 03 15(07)
 e LM SZ 48 --

2 North-West Iran.
 35.6 N. - 49.2 E.
 h about 33 km.
 H = 07 12 02,4

IST e S SZN 07 19 15

2 IST LM SZ 13 31 --

2 IST LM SZ 16 10 --

2 IST i Pg HSZ 19 49 09,8
 ii Sg HSNE 16,0

3 IST i P HSZ 01 34 26,8
 i P HSZ 27,1
 i Sg HSZNE 40,4

3 IST e Pn HSZ,BZ 15 17 49,2 C
 e Pb HSZ 52.9
 e (Sn) HSZNE 18 16
 e (S) HSZNE 47
 $\Delta = (350$ km.)
 Deeper than normal.

4 i P(b) HSZNE 00 57 15,3 DS
 IST i Pg HSZE 17,0
 i (SgSg) HSZE 35,6
 Δ = (145 km.)

4 North-West Iran.
 35.6 N. - 49.7 E.
 h about 24 km.
 H = 13 30 10,9

IST e P HSZ 13 34 13,6 C?
 e BZ,SZ
 HSNE 39 39

4 IST i (Pg) HSZ 13 41 36,8
 i Sg HSZNE 53,4

4 TURKEY - Ermenia S.S.R. border.
 39.9 N. - 44.2 E.
 h about 33 km.
 H = 22 59 19,4

BCIS 40.0 N. - 44.0 E.
 H = 22 59 17

Moscow:
 39.7 N. - 44.1 E.
 H = 22 59 13
 M = 5³/₄ - 6 (Matsushiro)
 M = 5.8 (Uppsala, Kiruna)
 M = 5.5 (Moscow)
 M = 5.3 (Ksara)
 M = 5 (Kew)
 M = 4.7 (Lwov)

IST i P HSZ,BZ 23 02 06,8 C
 i HSZ,SZ 08,9 C
 i HSZ 23,4 C
 e S SZNE 04 21
 e L HSE 05 49
 Δ = 1300 km.

Macro-seismic data:

Epicenter:
 39°05 N. - 43°09 E.
 Max. Intensity : VII+
 h = 22 km.
 Area of felt shaking
 about 11.700 km².
 Area of which V intensities
 are felt : 4.250 km².
 The Intensity distribution in
 the Eastern TURKEY is as follow:
 In AĞRI VI, in AĞRI at Abuzer
 IV+, at Aşkale IV+, at Bölük -
 başı IV, at Feran IV+, at Harabe-
 begöl IV+, at Yukarıküpüran
 IV+, in Eleşkirt III(at Mirangi
 IV+, at Mollaosman IV+,) in Diya-
 din(at Kalender IV+, Yk. Taşlıçay
 V, at Aş. Gündeperi V, at Çarhıyan
 V, at Yk. Geldüş IV+, at Alikör III
 at Yk. Düzmeş V). In Doğubeya-
 zıt VI+, In Karaköse(at Mollaali IV

at Sağırtaş IV+, at Aşma IV+, at Sırdo
 IV+, at Akçay IV). In Iğdır VII+, .
 KARS
 In Arpaçay (at Taşlıçay V,). In Tuz-
 luca III (at Aslanlı VI+, at Alikö-
 se VII+, at Gülahmet VI+, at Aş.ken-
 zek VI, at Kars III, at Soğukbulak
 V, at Hasankent V, at Kumbulak VI,
 at İncesu köy V, at İncesu V, at
 Kazkoparan V+, at Kula VI, at Osman-
 köy III, at Tendürek III, at Tezek-
 ci V+, at Kılıçlı III, at Kağın IV,
 at Koçbaşı VII+). In Sarıkamış III

--:--:--:--:--:--:--:--:--:--

5 IST e X SZNE 02 18 --

5 Local.
 IST i Pg HSZ 21 04 52,6
 i HSN 52,9
 i Sg HSN 54,7

6 IST i Px HSZNE 02 58 48,1 CNW
 i Pg HSZN,BZ 48,7
 i PgPg HSN 50,2
 i Sg HSNE 59 03,7

6 IST e P(g) HSZ 06 14(17,7)
 e Sg HSNE 48,2
 i HSZ 49,6

6 IST i Px HSZ 09 11 04,4 C
 i Pg HSZNE 05,2 CSW
 i Sx HSNE 21,4
 i Sg HSZNE 24,2

6 IST e (S) SZ 11 57 --
 LM SZ 12 02 --

7 IST LM SZ 12 22 --

7 IST e (LM) SZ 12 49 --

8 IST L SZ 10 30 --

9 Near coast of Panay,
Philippines islands.
10.3 N. - 121.4 E.
h about 58 km.
H = 01 34 38,5

IST e P HSZ 01 47 10,3
i BZ,SZ 11 C?
P HSZ 0.2 1.3
micron sec.

9 IST e (P) HSZ 04 30 19
e S HSN 31 10

10 Dodecanese Island.
35.0 N. - 27.1 E.
h about 33 km.
H = 09 36 24,3
M = 5 - 5 $\frac{1}{2}$ (Athens)

IST e (Pn) HSZ 09 38 05,9
e HSZ 07,1
e HSZ 12,9
e SgSg HLZE 40 08
Strong microseisms.

10 Fiji Islands.
21.1 S. - 179.2 W.
h about 640 km.
H = 15 43 59.4
M = 6 $\frac{1}{2}$ (Pas.)

IST i PKP HSZ,BZ 16 02 33,4 C
i SZ D
i PKP HSZN 38,5 C
HLZ,BZ,SZ D
micron sec.
PKP HSZ 1.6 0.9
PKP HSN 0.3 0.7
PKP HSE 0.3 0.7
ii PKP HSZ,HLZ 46,5 C
SZ D
Micron sec.
PKP HSZ 0.8 0.9
pPKP HLZ,SZ 05 03
PP SZ 06 01
PPP SZ 09 29
PSKS SZN 16 33
PPS SN 19(00)
SSP SZ 25 28
h about 650 km. (IST)
 $\Delta = 153^\circ$

11 IST e (L) SZNE 00 23 --

11 IST e (P) SZ 11 19 08
e SZN 22 21

11 IST e (Sg) HSZNE 22 33 59,7

11 IST i (Pg) HSZ 23 33 19,0
i HSN 25,2
i HSN 29,1

12 IST e (P) SZ 02 23,1

12 IST i P BZ 17 17 07
i S HSNE 41,4

12 Hindu-Kush.
36.5 N. - 69.2 E.
h about 50 km.
H = 20 57 00,4
M = 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.), 6 (Pal.)

IST i P BZ 21 03 17,5
i P SZNE 18 DE
i S HSN 08 23
SZNE
 $\Delta = 32^\circ$

13 IST e (P) HSNE 22 48 44,0
i HSE 47,3
i (SgSg) HSNE 49 28,7

14 IST Western TURKEY.
39.6 N. - 28.6 E.
h about 69 km.
H = 00 33 25,8

Moscow:
40.0 N. - 28.0 E.
H = 00 33 27
M = 4 - 4 $\frac{1}{2}$ (Moscow)

IST i BZNE C
ii Px HSNE 00 33 48,4 NE
e HLZNE CNE
i HLZNE 51,3
ii Pg HLZNE,BE 51,9 DSW
i (Sg) HLE 13,3
HLZ 34 14,2
 $\Delta = 175$ km.

Macroseismic data:

Epicenter:
39.6 N. - 28.3 E.
Max. Intensity: VII
h = ~~22 km.~~ 14 km.
Area of felt shaking
about : 87.800 km²
Area of which V intensities
are felt : 24.400 km².

The Intensity distribution in Western TURKEY is as follow:

İZMİR

In İzmir at Aliğa IV+, at Yenifoça VI+. In Bergama V. In Foça IV. In Seferhisar III. In Torbalı III. In Tire III. In Kiraz III.

BURSA

In Bursa IV+ (at Armutlu III, at Çalı V, at Derecikonağı V+, at Harmançık V). In Orhangazi V, in Gemlik III+ in İnegöl IV, in Mudanya III, in Mustafa Kemal Paşa V+.

BALIKESİR

In Balıkesir VI+ (at Manyas V, at Orhanlar VI+, at Ömerköy V, at Şamlı VII at Çağış V, at Yağcılar VI+, at Korucu V, at Armutova V, at Havran V+, at Altınova V.) In Erdek IV+, in Bandırma V, in Gönen IV+, in Manyas IV+, in Susurluk V, in Balya V, in İvrindi V+, in Dursunbey VII, in Edremit IV+, in Ayvalık V+, in Savaştepe V+, in Bigadiç V+.

ÇANAKKALE

In Çanakkale IV (at Evciler IV+) In İmroz III+, in Gelibolu III, in Lapseki VI+, in Biga V+, in Bozcaada IV+, in Çan IV, in Yenice V, in Bayramiç III+, in Ezine II+.

TEKİRDAĞ

In Tekirdağ V (at Ballı IV+, at Marmara Ereğlisi III). In Malkara III.

EDİRNE

In Edirne at İbriktepe IV. In İpsala III.

In Çanakkale (at Evreşe IV, at Umurbey III),

KÜTAHYA

In kütahya III (at Köprüören IV+, at Domaniç IV+). In Tavşanlı V+, in Emet V+, in Simav III+, in Gediz IV.

BİLECİK

In Bilecik at Küplü III+.

MANİSA

In Manisa (at Palamut IV, at Ahmetli V). In Kırkağaç IV+, in Akhisar III, in Turgutlu III.

KOCAELİ

In Kocaeli at Pamukova III+.

--:--:--:--:--:--:--:--:--:--

14

IST	i	Px	HSZNE	00 45	25,3
	ii	Pg	BZ,HSZ		28,0
	ii		HSNE		28,5
	i	Sx	HSN		47,1
	i	Sg	HSNE		50,8

15

IST	LM	SZ	08 19	--
	F	SZ	30	--

15

					Kurile Islands
					48.5 N 156.8 E
					h about 33 km.
					H = 22 50 46,3
					M = 6½ (Pas.), 6 (Pal.)
IST	i	P	BZ,SZ	23 02 55	D
	i		HSZ		59,4 C-D
	i		HSZ	03 11,6	C-D
					Micron sec.
	i	P	HSZ	0.6	1.8
	i	S	SN	12 58	
					Δ = 80°3

16

IST	i		HSZ	07 58	53,0
	i	(Sg)	HSE		58,6

17

					Fiji Islands
					2L.0 S. - 179.1 W.
					h about 601 km.
					H = 17 55 45,4
IST	i	PKP	HSZ, SZ	18 14	20,6 C
	ii	PKIKP	HSZ		25,8 D
	i		SZ		26 D
	i	pPKP	SZ	16 50	D
	e	PP	SZ	18 51	
					Δ = 150°5

17

					Yugoslavia - Albanie border.
					41.0 N. - 20.7 E.
					h about 33 km.
					H = 19 44 47,8
IST	e	Pn	HSZ	19 46	(18,6)
	e	PgPg	HSZE		42,6
	e	(PgPgPg)	HSZE	47 07,0	
	ei	Sn	HSZ	48 05	
	i	SgSg	HSZ		09
					Δ = 670 km.

18

					South of Panama.
					7.5 N.- 82.3 W.
					h about 33 km.
					H = 00 29 05,2
					M = 7 (Pas., Berk.)
					M = 6½ - 6¼ (Pal.)
IST	e	Pdiff.	SZ	00 42	(33)
	e		SZE	47 00	
	e	(PKP)	HSZNE		06,4
			PP	HSZ	13
	i	SKS	SE	53 31	
	i	(S)	SN	54 34	
	i	PS	SE	56 03	
					Δ = 101°

18

IST	LM	SZ	08 43	--
	F	SZ	56	--

IST LM SZ 22 54 --

19
IST i P BZ,HSZ 01 06 14,8
e (SGSg) HSN 07 12
LM SZ 02 04 --

19
IST i HSZ,BZ 04 22 07,6
i Sg HSE 28,4

19 Western Iran.
29.9 N. - 50.4 E.
h about 66 km.
H = 07 28 43,2
IST i (P) HSZ,BZ 07 33 19,2
e (SS) SZ 37 08
 $\Delta = 20^\circ$

19 Novaya Zemlya.
73.8 N. - 53.8 E.
h = 0 km.
H = 11 00 56,4
M = 5 - 5 $\frac{1}{4}$ (Pal.)
IST e P SZ 11 07 52
 $\Delta = 35^\circ$

19
IST e X SZ 14 20 --

20
IST ei Pn HSZ,BZ 08 03 13,5
i Pb HSZ 16,5
i Pg HSZ 18,1
i PgPg HSN 22,1
i PgPgPg HSZN 23,8
i (Sn) HSZ 04 19,0
HSE 19,6
i Li HSE 35,8
HSN 40,8
i Lg HSE 41,4
HSZ 42,0
i Sg HSZ 45,8
HSN 46,2
 $\Delta = 205$ km.

21
IST Novaya Zemlya.
LM SZ 08 18 --

22 Northern Burma.
26.5 N. - 97.0 E.
h about 33 km.

H = 06 51 32,3
M = 6,4 (Upp.,Kir.)

IST i P HSZ 07 01 17,6 C
LM SZ 25 --
 $\Delta = 56^\circ 5$

Records of Sprengnether and Benioff both lost during the changing of the paper.

22
IST i Pg HSZ,BZ23 01 03,1
i Sg HSNE,BNE 23,6

23
IST off west coast of Crete.
e SZ 20 45 --
e SZNE 47 --

24 Near east coast of Hokkaido, Japan.
42.8 N. - 145.3 E.
h about 33 km.
H = 14 38 21,7
IST i P SZ 14 50 23,0 C
 $\Delta = 150$ km.

24
IST i Pg HSZ,BZ 15 09 19,3 D
i Lg₁ HSNE,BE 35,7
i Sg₁ HSE, BE 38,8
 $\Delta = 150$ km.

24
IST e SZ 23 30 --
e SZ 31 00
e SZ 34 --

25
IST LM SZ 01 34 --

25
IST LM SZ 02 03 --

25 Novaya Zemlya
IST LM SZNE 13 19 --

25
IST LM SZNE 16 33 --

26
IST LM SZ 02 02 --

26
IST LM SZ 14 10 --

27 Novaya Zemlya
IST LM SZNE 08 15 --

27
IST i Pg HSZ 17 19 48,4
i Sg HSNE 20 04,3
Δ = 135 km.

28
IST i Pg HSZ 14 19 58,3
i Sg HSZNE 40 12,2
Δ = 117 km.

28
IST i P HSZ,BZ 15 23(38,3)

28 Western Colombia.
5.2 N. - 76.2 W.
h about 127 km.
H = 18 56 08.7

IST e (P) SZ 19 09 32
e sP SZ 10(09)
e (PKP) HSZ,SZ,BZ 13 31
pPP SZ 14 00
e SKS SNE 20 01
e SP SZE 22 16
e SSP SZE (50)
Δ = 98°
h about 100 km.

29
IST e Pn HSZ,BZ 05 25 21,7 CE
i HSZ 22,4 D
i Pb HSZ 24,3 C
HSZE
ii Pg HLZ 29,0 CE
BZNE
i HLZ 30,7
i PgPg HSE,HLZ 31,9
Li HSN 54
Lg1 HSE 59
Lg2 HSNE,HLZ 26 05
i Sg HLZN 08
i Sg HSN 09
Δ = 295 km.

29
IST i Sg HSZNE BZNE 05 28 46,6

29 Greece - Albania border
40.1 N. - 21.0 E.
h about 33 km.
H = 06 21 20

IST e P HSZ 06 22 59,4
e HSE 24 18
e LM SZ 26 --
Δ = 730 km.

29 Southern Iran
28.2 N. - 57.4 E.
h about 50 km.
H = 06 53 56.1

IST i P HSZE 06 59 31,7 DE
LM SZNE 07 10 --
Δ = 27° ca.

29
IST i Pn HSZE 08 23 57,7 CE
i Pg HSZNE 24 04,7 DNE

29 Santiago Del Estero province,
Argentina.
27.0 S. - 63.6 E.
h about 575 km.
H = 15 17 47.7
M = 6½ (Pas.), 6¼ (Pal.)

IST e P SZ 15 31(13)
e sP SZ 34 12
e PP SZNE,HSZ 35 52
e pPP SZ,HSZ 37 40
e sPP SZN 38,7
e PPPP SZ 39 48
e SKS SZ 41 02
e SP SZ 44 22
ei SPP SNE 44 54
e PS SN 45 29
e SZNE 46 54
ei SN 48 03
e SKKP SNE 50 33
SSS SN 53 55
Δ = 102°

29
IST e (S) HSZ 15 34 40,3
i (S) HSZNE,BZNE 41,0

29
IST ei Pg HSZ,BZ 17 54 43,1
ii Sg HSZNE 58,0
Δ = 100 km.

29
IST LM LM SZNE 19 34 --

30
IST e (Pn) HSZ 01 53 07,6
e HSZ 09,8
e Pb HSZ 14,0
e PbPb HSZ 17,8
e Sn HSZ 38
e Lg₂ HSZN 58,2
i SgSg HSZNE 54 03

Δ = 400 km.

30
IST e LM SZNE 03 13 --

30
IST e X SZ 11 18 --
(L) SZ 12.0

30 Near north coast of Luzon,
Philippine.
18,6 N. - 120.9 E.
h about 51 km.
H = 21 57 24.8

IST i P HSZ 22 09 22,6 C
e S HSN 19 24

Δ = 79°

Two auxiliary seismological stations
of our Institute were out of opera-
tion during the month of September.
This is only the Seismological
Bulletin of Istanbul.

TECHNICAL UNIVERSITY OF ISTANBUL
SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

OCTOBER, 1962

----- No: 79 -----

----- 1963 -----



1 - STATIONS:

ISTANBUL (IST):
Long.: 41° 02'6 N., Lat.: 28° 59'1 E.
A=+.66151 B=+.36648 C=+.6543
Bed-rock : Graywack of Devonian.
Altitude : 50 m. Ca.

CINE (CIN):
Long.: 37° 36'0 N., Lat.: 28° 05'2 E.
A=+.70075 B=+.37395 C=+.6076
Bed-rock : Micascist and Gneis.
Altitude : 120 m. Ca.

KASTAMONU (KAS):
Long.: 41° 22'3 N., Lat.: 33° 46'0 E.
A=+.62570 B=+.41830 C=+.6584
Bed-rock : Eocene flysch with nimmulitic limestone.
Altitude : 850 m. Ca.

2 - SEISMOGRAPHS:

Please see the next page.

3 - TIME:

Two different quartz clocks are used for time marking. One of them is connected to Benioff "B", Sprengnether "S". And the other is connected to both of Hagiwara Electromagnetic Seismograph "HES" sets. The average clock drift of "HES" is at least 0.1 sec. per week. The time signals which are received from Pontoise and Moscow are recorded directly and automatically only on "BN" component for "S" and "B" sets. Same radio signals are recorded on all "HES" seismograms, once a day. Master and Slave pendulum are used for time marking in all auxiliary stations, and time corrections refer to time signals that written above. (ALL THE TIMES HAVE BEEN GIVEN IN G.M.T.)

4 - RECORDERS:

Driven motors of the single drum film recorder of "HES" short period seismographs are supplied by A.C. current which is controlled by their quartz clock. But driven motors of the single drum film recorder of "HES" long period seismographs are supplied by ordinary A.C. current. "S" and "B" sets are both supplied by A.C. current which is obtained by their crystal oscillator. In all auxiliary stations, driven motor speed of the recorders is controlled by their slave pendulum.

5 - INTERPRETATIONS:

All seismogram interpretations are made at central office in Istanbul.

"X" means an undetermined phase. "i" and "e" mean sharp and gradual beginnings as usual.

Where readable, the direction of first motion is indicated by following symbols :

- C and D : Compression and Dilatation
- N and S : North and South
- E and W : East and West

All readable double amplitudes and periods of body waves and Surface waves are given in micron and sec. respectively when double amplitude and period could be reliably measured. The magnitude is given ordinarily according to preliminary determination of Pasadena, Palisades and Berkeley.

6 - TABLES:

- a) Jeffreys, H. and Bullen K. E. (1940)
"Seismological tables"
- b) Brunner, G.J. (1935)
"Chart of Depth, time and Distance for Deep focus Earthquakes"
- c) Provisional Travel-Time curves of near Earthquakes were proved more appropriate for the calculation of the distance of normal shocks. (Δ up to 1500 km.)
- d) Labrouste, Y. (1952)
Diagrams on films for different depths.

7 - DISTANCE:

All coordinates of epicentres, origin times and depths refer to U.S.C.G.S. unless otherwise stated. If any origin time was given, epicentral distance is calculated as a difference of that origin time and P arrival time at the station.

8 - INTENSITIES:

The intensities of the shocks felt in Turkey are given on MERCALLI-SIEBERG scale according to our questionnaires.

Seismograms are filed with the main office at Istanbul except the records of "S" and "B" which are filed with the U.S. Coast and Geodetic Survey at Washington, 25 D.C. Copies of individual seismograms may be obtained from them.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO MAIN OFFICE:

Director
 Seismological Institute
 TECHNICAL UNIVERSITY
 ISTANBUL
TURKEY

ations used : Z, vertical ; N, N-S ; E, E-W component.

NAME		Abr.	T_1 sec.	T_2 sec.	h_1	h_2	σ^2	$V_{max.}$ at sec.	RECORDING		
									drum speed mm. /min.	on	
Hagiwara Electromagnetic seismograph	HES short period	HSZ	1.00	1.17	1.01	.99	.052	63.000	.7	20	On reader: 160mm. Non perforated 35 mm. film
		HSN	.98	1.03	.99	1.12	.048	65.400	.5		
		HSE	1.00	1.14	1.00	1.00	.049	60.600	.6		
	HES long period	HLZ	1.10	18.4	2.62	.80	.265	608	1.2		
		HLN	1.07	17.8	2.75	.84	.231	780	1.1		
		HLE	1.10	18.0	3.15	.99	.185	930	1.2		
BENIOFF	BZ	1.00	.73	--	--	---	25.000	1.0	60	Photographic Paper	
	BN	1.00	.73	--	--	---	25.000	1.0			
	BE	1.00	.77	--	--	---	25.000	1.0			
SPRENGNETHER	SZ	30	100	--	--	---	750	30	15		
	SN	30	100	--	--	---	750	30			
	SE	30	96	--	--	---	750	30			
CIN	Coulomb-Grenet	Z	1.4	.7	1.45	1.06	---	12.000	--	30	
KAS	Coulomb-Grenet	Z	1.4	.4	.75	1.7	---	18.000	0.4	30	
		N	1.0	.7						30	

V_{max} : Maximum magnification , T_1 : Period of pendulum , T_2 : Period of galvanometer

σ^2 : Coupling factor , h_1 : damping constant of pendulum when the galvanometer clamped

h_2 : Damping of galvanometer when the pendulum is clamped.

October

1
 IST i (Pg) HSZ,BZ 05 04 30,3
 i Sg HSZNE 05 17,9

Sothern Iran.
 27.9 N. - 54.9 E.
 h about 16 km.
 H = 12 13 57,4

IST i P HSZ,BZE 12 19 21,0 C
 ii HSZ 21,3 C
 i S SN 24 37
 Δ = 2407

2
 IST i Pg HSZ,BZ 10 03(14)

2
 IST i Sg HSZNE 10 17 08,3
 BZNE

3
 IST e P SZ 01 29(14)
 e (S) SNE 33(54)

4 Black Sea.(Kara deniz) TURKEY.
 42.2 N. - 36.1 E.
 h about 33 km.
 H = 07 24 44,3

Moscow:
 42½ N. - 36. E.
 H = 07 24 42
 Felt at Samsun.
 Intensity IV.

IST i Pn HSZ,BZ 07 26 01,9 D
 i Sn HSZNE 27 01,7
 Δ = 590 km.
 masked by microseisms.

4 Greece.
 38.3 N. - 22.7 E.
 h about 38 km.
 H = 19 46 10,1

IST i Pn HSZNE 19 47 36,7 C
 BZNE
 Δ = 630 km.
 masked by microseisms.

5
 IST i Pg HSZ,BZ 02 39 57,4 D
 i Sg BNE 40 22,7
 Δ = 215 km.

5
 IST ei P BZ,SZ 20 07 43,4 D
 e S SNE 12(00)

6 Azores islands.
 40.8 N. - 29.5 W.
 h about 33 km.
 h = 03 17 07,2

IST e P BZ 03 25 09,9 C
 e P SZ 10 D
 e (S) SZN 31(40)
 LM SZN 39 --

6 Azores region.
 40.5 N. - 29.5 W.
 h about 33 km.
 H = 03 54 58,3

IST e P SZ 04 03(07)
 LM SZ 16 --

6 New-Hebrides islands.
 17.4 S. - 167.7 E.
 h about 33 km.
 H = 04 23 24,3

IST e PKP SZ 04 42(36) D?
 e PP SZ 45 36
 e PKS SZ 46 15

6 New-Hebrides islands.
 17.4 S. - 167.9 E.
 h about 33 km.
 H = 07 56 20,4

IST e PKP SZ 08 15 46

6 Local.
 IST i Pg BZ 13 13 47,8

6 New-hebrides islands.
 17.5 S. - 167.6 E.
 h about 42 km.
 H = 23 31 27,7

IST e PKP BZ 23 50 48

7
 IST e SZ 10 14 --

8 Bulgarie.
 IST e P BZ 14 27 34,6
 e BZ 42,1
 i Pg BZ 45,3
 LM SZNE 29,0

8 Bulgarie.
 42.2 N. - 24.1 E.
 h about 33 km.
 H = 15 11 12,8

IST e P BZ 15 12 10,5
 e BZ 37,3
 i Pg BZ 21,0

8 Near coast of Formosa.
 24.3 N. - 121.7 E.
 h about 29 km.
 H = 21 56 22,2
 M = 6 (Pas,) 6½ (Pal.)

IST i P SZN 22 08 11 CS
 i PcP SZ 23
 e PP SZN 11 18
 e PPP SZ 12 55

Cont.
 e PPPP SZ 2? 14 05
 i S SN 17 58
 i SN 18 09
 i SKS SN 29
 i PS SZN 18 40
 Δ = 76°

9 Bismark sea.
 3.2 S. - 148.2 E.
 h about 33 km.
 H = 20 14 38.3
 M = 6 1/4 (Pas.)

IST e PKP SZ 20 34(12)
 e (SKKS) SZN 43 48

10 Samoa islands region.
 15.1 S. - 173.3 W.
 H = 21 52 36,8
 h about 33 km.

IST e PKP SZ 22 12 31

11
 IST e P BZ 01 38(23,0)
 e (S) BNE 39 34,0

12
 IST LM SZ 12 01 --

12
 IST e Pb BZ 22 51 11,1
 i Pg BZN 13,7 DS

13 North-Western of Iran.
 35.5 N. - 49.8 E.
 h about 33 km.
 H = 10 23 38,2

IST ei P HSZ,BZ 10 27 40,4 C
 e BN 31 00,0
 e S SZNE 00,0
 e HSN 00,4
 i SNE 06

13 Local.
 IST i Pg HSZNE, 11 47 19,7
 i Sg HSZNE 21,5

13 Santa Cruz islands region.
 12.6 S. - 166.6 E.
 h about 33 km.
 H = 18 47 44,5

IST ei HSE 19 05 32,4
 e 32,6
 e SZ 06(57)
 e BZ 07 23
 e HSZ,SZ 09(23)

14
 IST e LM SZ 14 09(22)
 e LM SZN 12 --

14
 IST L SZNE 15 49 --
 LM SZNE 16 01 --

14
 IST L SZNE 19 49 --
 F SZ 20 02 --

15
 IST LM SZN 03 14 --

15
 IST i (Pg) HSZ,BZ 05 19 09,2
 e (Sg) HSNE, 48,4

15
 IST e P(b) HSZ,BZ 17 39 16,4
 i P(g) BZ 19,3
 BZNE,HSE 38,1
 ei Sg HSE 38,3
 HSN 38,4

15
 IST e Pn HSZ,BZ 22 03 40,0
 i BZ 05 07,0

15 Near coast of south island,
 New Zealand.
 17.0 S. - 167.5 E.
 h about 33 km.
 H = 23 36 35,0

IST e PKP SZ 23 56 18
 i HSZ,BZ,SZ 24,4 C
 micron sec.
 PKP 0.5 1.1

16 Near islands, Aleutian islands.
 51.6 N. - 178.5 W.
 h about 27 km.
 H = 18 02 32,9

IST e P SZ 18 15 07 C

18
 IST i Pg HSZ,BZ 00 16 15,5
 i Sg HSE,BE 35,5
 Δ = 169 km.

19
 IST e BZN 12 06 --

19
 IST e BZN 19 36 --

19
 IST e SZ 22 11 --

19
IST e P HSZ 22 57 40,3
i Pg HSZ,BZ 40,6
i Sg HSZE,BZE 58 00,7
HSN,BN 00,9

22 Novaya Zemlya.
IST L SZ 09 12 --
LM SZ 23 --

22 Northern Kurile islands.
49.8 N. - 155.8 E.
h about 19 km.
H = 15 23 32,9

IST e P SZ 15 35 32

22
IST e Pn HSZ,BZ 21 14 26,5
i Px HSZ 27,2
i (Pb) HSZ 29,8
i Pg HSZ,BZ 33,8
i Li HSN 15 03,0
i Lg₂ HSN 16,4
i Sg HSNE,BNE 17,9
Δ = 340 km.

23
IST i P HSZ 21 22 21,6 C?
i Sg HSN 48,6

24 Local.
IST i Pg HSZNE 08 42 11,4
i Sg HSZNE 13,1

25
IST i P HSZ 08 47 31,1 D

25
IST e L SZ 10 05 --

25
IST e LM SZ 16 40 --

25
IST e SN 20 47(24)
e (SKS) SZ 48 06
e LQ SN 21 03 --
e LR SZ 14 --

26
IST ei P HSZ,BZ 01 23 52,9
BN 24 41,6
e S(g) HSE,BE 42,1
HSN,BN 42,6

26
IST e (PP) SZ 07 43 22
e LM SZ 08 26 --

26 Eastern Mediteranean sea.
33.7 N. - 27.9 E.
h about 33 km.
H = 11 26 12,4

IST e P HSZ,BZ 11 28 03,8
i Pb HSZ 22,5
e (Sn) HSZN,HLZN 29(41)
e (Sb) HSZN 30 16,8

26
IST e SZ 16 26(40)
e SZ 27 11
LM SZ 54 --

27
IST e SZ 14 50 --
F SZ 15 10 --

28
IST L SZ 13 11 --
LM SZ 37 --

28
IST LM SZ 23 46 --

29
IST i Pg HSZ,BZ 00 31 18,8
i Sg HSNE,BNE 43,8
Δ = 210 km.

29
IST LM SZ 03 38 --

29
IST e (S) SZ 07 26,5
e L SZ 33(12)
L SZ 41 --

29
IST e HSZ 21 20 46
e BZ 50,3
e HSZ 55,7

29
IST L SZ 22 10 --

30 Bouvet islands region.
54.2 S. - 9.1 E.
h about 33 km.
H = 01 46 32,7

IST i P HSZ,BZ 01 59 58,1 D
e BZ 02 03,6
e SE 11 --
L SZ 32 --

30
IST LM SZ 09 22 --

30
IST e P HSZ,BZ 13 00 47,7
i Sg HSZE,BZE 01 03,0

30 Eastern India,
26.6 N. - 93.3 E.
h about 33 km.
H = 16 13 25.6

IST e P HSZ,BZ 16 22 49,4
e LM SZ 17 01 --

31
IST e L SZ 11 59,8
SZ 12 20 --

31
IST e HSZ 12 20(47)

Two auxiliary seismological stations
of our Institute were out of operation
during October.

TECHNICAL UNIVERSITY OF ISTANBUL
SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

NOVEMBER, 1962

----- No.: 80 -----

----- 1963 -----



1 - STATIONS:

İSTANBUL (IST):

Long.: 41° 02'6 N., Lat.: 28° 59'1 E.
A=+.66151 B=+.36648 C=+.6543
Bed-rock : Graywack of Devonian.
Altitude : 50 m. ca.

ÇİNE (CIN):

Long.: 37° 36'0 N., Lat.: 28° 05'2 E.
A=+.70075 B=+.37395 C=+.6076
Bed-rock : Micascist and Gneis.
Altitude : 120 m. ca.

KASTAMONU (KAS):

Long.: 41° 22'3 N., Lat.: 33°46'0 E.
A=+.62570 B=+.41830 C=+.6584
Bed-rock : Eocene flysch with nimmulitic limestone.
Altitude : 850 m. ca.

2 - SEISMOGRAPHS:

Please see next page.

3 - TIME:

Two different quartz clocks are used for time marking. One of them is connected to Benioff "B", Sprengnether "S", and the other is connected to both of Hagiwara Electro-magnetic Seismograph "HES" sets. The average clock drift of "HES" is at least 0.1 sec. per week. The time signals which are received from PONTOISE and MOSCOW are recorded directly and automatically only on N component for "B" and "S" sets. Same radio signals are recorded on all HES seismograms once a day. Master and Slave pendulum are used for time marking in all auxiliary stations and time corrections refer to time signals that written above.
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"x" means an undetermined phase. "i" and "e" mean sharp and gradual begininings as usual.

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Where readable, the direction of first motion is indicated by following symbols :

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Diagrams on films for different depths.

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The intensities of the shocks felt in Turkey are given on MERCALLI-SIEBERG scale according to our questionnaires.

Seismograms are filed with the main office at Istanbul except the records of "S" and "B" which are filed with the U.S. Coast and Geodetic Survey at Washington, 25 D.C. Copies of individual seismograms may be obtained from them.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO MAIN OFFICE:

Director
Seismological Institute
TECHNICAL UNIVERSITY
ISTANBUL
TURKEY

2 - SEISMOGRAPHS:

General abbreviations used: Z for vertical; N for N-S; E for E-W component.

NAME	Abr.	T_1	T_2	h_1	h_2	G^2	$V_{max.}$	RECORDING			
		sec.	sec.					sec.	drum speed	on:	
								mm / min			
Hagiwara Electromagnetic Seismographs	HES	HSZ	1,00	1,17	1,00	0,99	0,052	63.000	0.7		
	short	HSN	0,98	1,03	0,99	1,12	0,048	65.400	0.5	20	
	period	HSE	1,00	1,14	1,00	1,00	0,049	60.000	0.6		
	HLZ	HLZ	1,10	18,4	2,62	0,80	0,265	608	1,2		
	long	HLN	1,07	17,8	2,75	0,84	0,231	780	1,1	20	
	perid	HLE	1,10	18,0	3,15	0,99	0,185	930	1,2		
BENIOFF	BZ	BZ	1,00	0,73	--	--	--	25.000	1,0		
	BN	BN	1,00	0,73	--	--	--	25.000	1,0	60	
	BE	BE	1,00	0,77	--	--	--	25.000	1,0		
SPRENGNETHER	SZ	SZ	30	100	--	--	--	1.500			
	SN	SN	30	100	--	--	--	750		15	
	SE	SE	30	96	--	--	--	750			
CIN	Coulomb Grenet.	Instrumental constants will be published in the Bulletin of January 1963.									
KAS	Coulomb Grenet.										

Non perforated
35 mm. film

Photographic Paper

$V_{max.}$: Maximum Magnification . T_1 : Period of Pendulum. T_2 : Period of galvanometer.
 h_1 : Damping constant of pendulum when the galvanometer clamped. G : Coupling factor..
 h_2 : Damping constant of galvanometer when the pendulum clamped.

NOVEMBER

1 off coast of Western New-Guinea.
 1.9 N. - 133.0 E.
 h about 56 km.
 H = 15 33 22,6

IST	e	BZ	15 50(43)
	e	PP SZ	51(04)
	e	(PPS) SNE	16 00(00)
	e	L SZ	22 --

1 North of Western New-Guinea.

IST	e	(PP) BZ,SZ	18 10(14)
	e	L SZ	40 --

2 South of Sumbawa.
 10.0 S. - 117.8 E.
 h about 33 km.
 H = 14 46 39,2

IST	e	P HSZ,BZ	15 00 04,2
	e	L SZ	33 --

3 Felt at Akhisar in TURKEY.
 Intensity +IV

IST	i	Pg HSZ,BZ	04 08 43,2 D
	i	PgPg BZ,HSZ	48,2
	i	Sg HSE,BNE	09 16,7

4 off coast of Southern Chile.
 43.2 S. - 75.6 W.
 h about 33 km.
 H = 22 53 34,2
 M = 5 $\frac{3}{4}$ -6 (Pas.) 5 $\frac{1}{2}$ (Pal.)

IST	e	PKP SZ	23 12 32
	e	SZ	14 21

5
 IST e L SZ 01 32 --

5
 IST i P HSZNE 10 04 16,3 DSE
 i Pg BN 16,9

6 Southern Iran.
 28.0 N. - 55.6 E.
 h about 33 km.
 H = 00 09 47,2

IST	i	P HSZNE	00 15 15,8 C
		BZE	15,9 CE
		HLZE	16 -
	ei	S HLNE	19 48
		SZNE	56
		L HLN	25 --

7
 IST i P HSZ 05 51 44,2
 i HSZ 46,0
 i Sg BNE 52 18,5

7
 IST e L SZ 13 18 --

8
 IST e LM SZ 01 35 --

9 Iran-Iraq border region.
 33.4 N. - 47.2 E.
 h about 33 km.
 H = 01 11 02,1

IST	i	P HSZNE	01 14 50,6 D?
	i	PP HSZE	15 06,0
		$\Delta = 1800$ km.	
			microns sec.
	P	HSZ	1.6 2.0

9 Central Romania.
 45.8 N. - 26.7 E.
 h about 130 km.
 H = 02 14 47,6

IST	i	Pn HSZ	02 16 00,1 C
	e	sP HSZN	36
	e	Sn HSE	17 04
		h about 160 km.	
		$\Delta = 550$ km.	

9
 IST i P HSZ 05 58 54,1
 i HSZ 56,9
 i P(g) HSZ 57,9
 i Lg₁ HSZNE 59 35,4
 i Sg HSZNE 42,3
 $\Delta = 330$ km.

9
 IST i Pg HSZ 07 10 26,8
 i Sg HSNE 40,9
 $\Delta = 120$ km.

9
 IST i Pb HSZ,BZ 20 09 03,9 D
 i Pg HSZNE 06,0
 i HSZ 07,4
 i Sg HSNE 26,0
 HLE 26,6

9
 IST i P HSZ,BZ 20 10 54,4 D
 i Pg HLZNE 55,5
 i BZ 56,4
 i HSZ 57,8
 HSE 11 17,0
 i Sg BNE 17,2
 HLE 17,4

10 Kurile islands
 43.8 N. - 147.2 E.
 h about 60 km.
 H = 01 33 19,0
 M = 5½ (Pal.)

IST e HSZ,BZ 01 45 19,4 C
 i HSZ,BZN 19,7 C
 i P HSZNE 20,0 DNE
 i SZ 20 C
 ei HSZNE 53 15,3
 i S BE,SE 16
 e BN
 Δ = 80°

10
 IST e BZ 09 43 10,9
 L SZ 48

10 Local.
 IST i Pg HSZNE 12 58 53,6 CNW
 i Sg HSNE 56,8

10
 IST e (P) HSZ 18 37 48,7
 e (S) HSE 38 06,1

11 Mascarene islands region.
 23.9 S. - 60.5 E.
 h about 33 km.
 H = 07 39 15,4

IST i P HSZ,BZ 07 50 54,3 D
 e S SE 08 00(15)
 L SZ 15 --
 Δ = 75°

11 Lake Baikal region, U.S.S.R.
 55.8 N. - 113.1 E.
 h about 33 km.
 H = 11 31 44,5
 M = 6 ¼ (Pas.)

IST i P HSZ,BZ 11 41 10,0 D
 e S SN 48(20)
 Δ = 53°

11 Red sea.
 17.2 N. - 40.7 E.
 h about 34 km.
 H = 15 15 33,6

IST i P HSZ 15 21 05,7 C
 ei S SE 25(38)
 Δ = 32°

11 Santa Cruz islands.
 12.9 S. - 166.5 E.
 h about 77 km.
 H = 16 09 57,6
 M = 6 - 6¼ (Pas.)

Cont'

i PKP HSZ,BZ 16 29 07,6 D
 i SZ 31 47
 i PKS SZ 32 33
 e PS SZ 41(38)
 Δ = 129°

11 TURKEY.
 IST i P HSZ,BZ 21 56 17,3
 i S HSN,BN 57 02,0
 Δ = 380 km.
 Intensities: Çal III
 Sarayköy V
 Uşak III
 Çivril IV

11 Vancouver island region.
 48.9 N. - 128.8 W.
 h about 33 km.
 H = 21 45 02,5
 (PP) HSZNE 22 01 25,3 CNW

11 off coast of Southern Chile.
 43.2 S. - 76.0 W.
 h about 33 km.
 H = 22 14 18,7
 M Δ 6½ - 6¾ (Pas.)

IST ei PKP HSZ,BZ 22 33 20,2 C
 PP SZN 35 08
 PS SZN 45 12
 PPS SN 46 49
 PKKS SZN 47 45
 SS SN 52 18
 SSS SN 56(25)
 Δ = 125°

12 Ryu-Kyu islands.
 26.0 N. - 128.4 E.
 h about 40 km.
 H = 12 49 10,8

IST e P HSZ,SZ 13 01 18,1
 Δ = 79°

12 Andreanof islands.
 IST e L SZ 20 13 --

12
 IST L SZ 21 49 ΔΔ

14 Central of Honshu Japan.
 35.7 N. - 140.8 E.
 h about 61 km.
 H = 07 48 05,5

IST e P SZ 08 00 32
 e S SN 10(24)
 Δ = 83°

14	IST	L	SZ	16 41 --	16	CIN	i (P)	Z	19 20 16,5
14	IST	e P	SZ	22 16(10)	16	IST	i (Pg)	HSZ,BZ	18 57 49,6
15	IST	Local. i Pg	HSZN,BZ09	20 27,5 CN			i	HSZ,BN	58 08,8
		i Sg	HSZNE,BZNE	28,6			i Sg	BZNE,HSN	09,3
L5	IST	i P	HSZ,BZ	13 04 45,3	16	IST	i Sg	BN	20 21 54,7
		i Pg	HSZ,BZ	47,5 C	16	Andaman island.			
		i Sg	HSZNE,BZNE05	06,6		13.5 N. - 93.2 E.			
		$\Delta = 163$ km.				h about 33 km.			
15	CIN	Local. e Pg	Z	11 31 55		H = 21 10 01,8			
		e Sg	Z	32 09		M = 6 - 6 $\frac{1}{4}$ (Pal.)			
15	CIN	Traces. e	Z	12 49(20)	16	IST	i P	HSZ,BZ	21 20 19,7 CNW
L5	IST	Central Chile. 38.3 S. - 73.2 W.					e PP	SZ	22 37
		h about 33 km.					e (PPPP)	SZ	24 32
		H = 15 51 57,6					e	BN	28 38
15	IST	e PKP	SZ	16 12(31)			e S	BZ,HLNE	41
							i	SZ,HSNE	42
15	IST	e (P)	SZ	23 39 56			i	SE	43
15	IST	Near coast of Northern Peru. 8.7 S. - 79.8 W.						PS	52
		h about 45 km.						PPS	29 13
		H = 23 24 15,7						S $\frac{1}{2}$ S	30 10
		M = 6 (Pas.)						SS	32 37
15	IST	e PKP	SZ	23 44(10)				Q	35,5
								$\Delta = 61^{\circ}08$	
16	IST	Eastern islands region. 32.3 S. - 111.1 W.			17	IST	i Pg	HSZ,BZ	00 55 27,8
		h about 43 km.					i Sg	HSE,	46,8
		H = 07 18 37,3					i Sg	HSN,BN	48,2
		M = 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.) 6 (Pal.)			17	IST	L	SZ	12 05 --
16	CIN	i PKP	Z	07 38 09	18	CIN	e Pg	Z	04 13 12
		e	Z	44	18	CIN	e	Z	04 54 19
		e	Z	39 11		CIN No record between 10h 40m and 13h 20 m of Nov. 20.			
		e	Z	41	19	IST	e P	HSZ,BZ	10 03 14,4
		$\Delta = 144^{\circ}$					e	BE	22,1
16	IST	i PKP ₁	HSZ,BZ	07 38 16,2 C			e S	HSE,BNE	04 01,0
		i	HSZ	16,7 D	19	IST	e L	SZ	11 31 --
		i	SZN	17 C	20	KAS	e P	Z	07 04 32
		i PKP ₂	HSZ,BZ,SZ	23,9 C					
		$\Delta = 145^{\circ}$							
16	IST	i Sg	HSZNE	16 57 13,4					

IST i Pg HSZNE 15 23 19,6 CNE
 i Sg HSNE 24 00,5
 $\Delta = 345$ km.

20
 CIN e Pg Z 16 05 39
 e Sg Z 51
 $\Delta = 100$ km.

20
 IST i P HSZ 18 06 34,8 C
 i HSE 07 05,8
 i HSN 10,8

21 Felt at Eskişehir in TURKEY.
 Intensity: +III at Eskişehir.

IST i P HSZ 06 33 46,2 D
 i S HSN 34 08,8
 i Sg HSZE 10,8
 $\Delta = 180$ km.

22
 CIN e Pg Z 15 09 52,5
 e Sg Z 10 01
 $\Delta = 70$ km.

22
 IST e (Sg) HSZ 19 09 36,1
 e (Sg) HSN 39,6

22
 IST e HSZ 22 02 13,8
 i S HSN 18,2

22
 IST e P HSZ 23 08 22,9
 i Sg 55,3
 $\Delta = 230$ km.

23
 IST i Pg HSZ,BZ 13 28 45,6 D
 i Sg HSNE,DNE 56,5
 $\Delta = 85$ km.

23 Fiji islands.
 21.5 S. - 179.3 W.
 h about 609 km.
 H = 23 05 47,4
 23 24 27,8

IST e PKP HSZ,BZ
 $\Delta = 160^{\circ}$

24
 CIN No records from 19h 55m on Oct.22
 till 14h 40m on Oct.24.

24 Fiji islands.
 24.8 S. - 180.0 E.
 h about 500 km.
 H = 10 34 07,7

IST e PKP HSZ,BZ 10 53 03,2 D
 $\Delta = 160^{\circ}$

24 Mid-Atlantic ocean.
 9.8 N. - 40.7 W.
 h about 33 km.
 H = 16 19 44,9

IST e HSZ,BZ 16 30 46,6
 i P HSZ,BZ 47,8 D
 i HSZ 48,1 D
 i SZ 48 D
 e (S) SN 39(50)
 LM SZ 52 --
 $\Delta = 680$

24
 IST i (Sg) HSZ,BZ 19 07 40,0

24
 IST e Pg HSZ,BZ 23 06 50,5
 i Sg BZNE,HSN 07 03,5
 $\Delta = 110$ km.

2
 IST e Sg HSZ,BN 01 19 37,6

25
 CIN e Pg Z 04 15 53
 e Sg Z 16 11,5
 $\Delta = 155$ km.

25
 CIN e (P) Z 13 13 38

26 Sinkiang Province, China.
 39.8 N. - 77.2 E.
 h about 142 km.
 H = 05 29 30,2

IST e P SZN 05 36 37
 $\Delta = 360^{\circ}$

26
 IST e L SZ 17 22 --

26
 CIN e Z 20 59 22
 e Z 21 00 12

26 TURKEY. Felt at Kocaeli, Sakarya
 and Yalova.
 Intensities: Yalova III
 Sakarya III
 Kocaeli V

IST i Pg BZNE 22 58 50,2 DSE
 i Sg BZNE 59 00,8
 $\Delta = 90$ km.

27
CIN e Z 01 10 48

27
CIN i Pg Z 05 04 26

27
CIN e Z 10 19 14

27
IST e L SZ 13 04 --

27
IST e L SZ 17 40 --

27 Local.
CIN e Pg Z 18 00 06
i Sg Z 14,7

28
IST e (P) SZ 03 00(41)
L SZ 28 --

28
CIN e Z 11 43 14

28 Andaman islands.
9.9 N. 93.4 E.
h about 53 km.
H = 15 25 58,7

IST e (P) HSZ,BZ 15 36 29,6
e HSZ 50,7

29
CIN e Pg Z 04 20 05
e Sg Z 28
 $\Delta = 195$ km.

29
CIN e (Sg) Z 04 58 11

29 Tonga islands.
22.3 S. - 175.9 W.
h about 33 km.
H = 09 33 51,1

IST e PKP HSZNE 09 23 44
 $\Delta = 155^{\circ}$

29
IST e HSZE,BZ11 34 52,7

29
IST e HSZNE 16 59 24,5

29 New-Hebrides islands.
17.3 S. - 168.5 E.
H = 19 06 37,6

IST e SZ 19 27 --
LM SZ 20 13 --

29
IST i (Pg) HSZNE 21 06 28,4
Local.

30 Guerrero, Mexico.
17.4 N. - 99.6 W.
h about 51 km.
H = 21 51 22,9

IST e PP SZ 22 09 58
e (PPS) SZN 19(05)
 $\Delta = 105^{\circ}$

Kastamonu seismological station
was out of operation during
the month of November.

Copied :

Dup

TECHNICAL UNIVERSITY OF ISTANBUL UNIVERSITY
SEISMOLOGICAL INSTITUTE

SEISMOLOGICAL BULLETIN

NOVEMBER, 1962

----- No.: 80 -----

Handwritten to M.

----- 1963 -----

KEY OBSERVATORY
27 NOV 1963
RICE - D,
SUN

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Director
Seismological Institute
TECHNICAL UNIVERSITY
ISTANBUL
TURKEY

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		HSE	1,00	1,14	1,00	1,00	0,049	60.000	0.6		
	HLZ long perid	HLZ	1,10	18,4	2,62	0,80	0,265	608	1,2		
		HLN	1,07	17,8	2,75	0,84	0,231	780	1,1	20	
		HLE	1,10	18,0	3,15	0,99	0,185	930	1,2		
BENIOFF	BZ	1,00	0,73	--	--	--	25.000	1,0			
	BN	1,00	0,73	--	--	--	25.000	1,0	60		
	BE	1,00	0,77	--	--	--	25.000	1,0			
SPRENGNETHR	SZ	30	100	--	--	--	1.500				
	SN	30	100	--	--	--	750		15		
	SE	30	96	--	--	--	750				
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35 mm. film

Photographic Paper

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1 off coast of Western New-Guinea.
 1.9 N. - 133.0 E.
 h about 56 km.
 H = 15 33 22,6

IST e BZ 15 50(43)
 e PP SZ 51(04)
 e (PPS) SNE 16 00(00)
 e L SZ 22 --

1 North of Western New-Guinea.

IST e (PP) BZ, SZ 18 10(14)
 e L SZ 40 --

2 South of Sumbawa.
 10.0 S. - 117.8 E.
 h about 33 km.
 H = 14 46 39,2

IST e P HSZ, BZ 15 00 04,2
 e L SZ 33 --

3 Felt at Akhisar in TURKEY.
 Intensity +IV

IST i Pg HSZ, BZ 04 08 43,2 D
 i PgPg BZ, HSZ 48,2
 i Sg HSE, BNE 09 16,7

4 off coast of Southern Chile.
 43.2 S. - 75.6 W.
 h about 33 km.
 H = 22 53 34,2
 M = 5 $\frac{1}{2}$ -6 (Pas.) 5 $\frac{1}{2}$ (Pal.)

IST e PKP SZ 23 12 32
 e SZ 14 21

5
 IST e L SZ 01 32 --

5
 IST i P HSZNE 10 04 16,3 DSE
 i Pg BN 16,9

6 Southern Iran.
 28.0 N. - 55.6 E.
 h about 33 km.
 H = 00 09 47,2

IST i P HSZNE 00 15 15,8 C
 BZE 15,9 CE
 HLZE 16 --
 ei S HLNE 19 48
 SZNE 56
 L HLN 25 --

7
 IST i P HSZ 05 51 44,2
 i HSZ 46,0
 i Sg BNE 52 18,5

7
 IST e L SZ 13 18 --

8
 IST e LM SZ 01 35 --

9 Iran-Iraq border region.
 33.4 N. - 47.2 E.
 h about 33 km.
 H = 01 11 02,1

IST i P HSZNE 01 14 50,6 D?
 i PP HSZE 15 06,0
 Δ = 1800 km.
 P HSZ 1.6 microns 2.0 sec.

9 Central Romania.
 45.8 N. - 26.7 E.
 h about 130 km.
 H = 02 14 47,6

IST i Pn HSZ 02 16 00,1 C
 e sP HSZN 36
 e Sn HSE 17 04
 h about 160 km.
 Δ = 550 km.

9
 IST i P HSZ 05 58 54,1
 i HSZ 56,9
 i P(g) HSZ 57,9
 i Lg₁ HSZNE 59 35,4
 i Sg HSZNE 42,3
 Δ = 330 km.

9
 IST i Pg HSZ 07 10 26,8
 i Sg HSNE 40,9
 Δ = 120 km.

9
 IST i Pb HSZ, BZ 20 09 03,9 D
 i Pg HSZNE 06,0
 i HSZ 07,4
 i Sg HSNE 26,0
 HLE 26,6

9
 IST i P HSZ, BZ 20 10 54,4 D
 i Pg HLZNE 55,5
 i BZ 56,4
 i HSZ 57,8
 HSE 11 17,0
 i Sg BNE 17,2
 HLE 17,4

10 Kurile islands
43.8 N. - 147.2 E.
h about 60 km.
H = 01 33 19,0
M = 5½ (Pal.)

IST e HSZ,BZ 01 45 19,4 C
i P HSZ,BZN 19,7 C
i HSZNE 20,0 DNE
i SZ 20 C
ei HSZNE 53 15,3
i S BE,SE 55 16
e BN
Δ = 80°

10
IST e BZ 09 43 10,9
L SZ 48

10 Local.
IST i Pg HSZNE 12 58 53,6 CNW
i Sg HSNE 56,8

10
IST e (P) HSZ 18 37 48,7
e (S) HSE 38 06,1

11 Mascarene islands region.
23.9 S. - 60.5 E.
h about 33 km.
H = 07 39 15,4

IST i P HSZ,BZ 07 50 54,3 D
e S SE 08 00(15)
L SZ 15 --
Δ = 75°

11 Lake Baikal region, U.S.S.R.
55.8 N. - 113.1 E.
h about 33 km.
H = 11 31 44,5
M = 6¼ (Pas.)

IST i P HSZ,BZ 11 41 10,0 D
e S SN 48(20)
Δ = 53°

11 Red sea.
17.2 N. - 40.7 E.
h about 34 km.
H = 15 15 33,6

IST i P HSZ 15 21 05,7 C
ei S SE 25(38)
Δ = 32°

11 Santa Cruz islands.
12.9 S. - 166.5 E
h about 77 km.
H = 16 09 57,6
M = 6 - 6¼ (Pas.)

Cont'

i PKP HSZ,BZ 16 29 07,6 D
i SZ 31 47
i PKS SZ 32 33
e PS SZ 41(38)
Δ = 129°

11 TURKEY.
IST i P HSZ,BZ 21 56 17,3
i S HSN,BN 57 02,0
Δ = 380 km.
Intensities: Çal III
Sarayköy V
Uşak III
Çivril IV

11 Vancouver island region.
48.9 N. - 128.8 W.
h about 33 km.
H = 21 45 02,5
(PP) HSZNE 22 01 25,3 CNW

11 off coast of Southern Chile.
43.2 S. - 76.0 W.
h about 33 km.
H = 22 14 18,7
M Δ 6½ - 6¾ (Pas.)

IST ei PKP HSZ,BZ 22 33 20,2 C
PP SZN 35 08
PS SZN 45 12
PPS SN 46 49
PKKS SZN 47 45
SS SN 52 18
SSS SN 56(25)
Δ = 125°

12 Ryu-Kyu islands.
26.0 N. - 128.4 E.
h about 40 km.
H = 12 49 10,8

IST e P HSZ,SZ 13 01 18,1
Δ = 79°

12 Andreanof islands.
IST e L SZ 20 13 --

12
IST L SZ 21 49 ΔΔ

14 Central of Honshu Japan.
35.7 N. - 140.8 E.
h about 61 km.
H = 07 48 05,5

IST e P SZ 08 00 32
e S SN 10(24)
Δ = 83°

14 IST L SZ 16 41 --

14 IST e P SZ 22 16(10)

15 Local.
IST i Pg HSZN,BZO9 20 27,5 CN
i Sg HSZNE,BZNE 28,6

L5
IST i P HSZ,BZ 13 04 45,3
i Pg HSZ,BZ 47,5 C
i Sg HSZNE,BZNE05 06,6
Δ = 163 km.

15 Local.
CIN e Pg Z 11 31 55
e Sg Z 32 09

15 Traces.
CIN e Z 12 49(20)

L5 Central Chile.
38.3 S. - 73.2 W.
h about 33 km.
H = 15 51 57,6

IST e PKP SZ 16 12(31)

15 IST e (P) SZ 23 39 56

15 Near coast of Northern Peru.
8.7 S. - 79.8 W.
h about 45 km.
H = 23 24 15,7
M = 6 (Pas.)

IST e PKP SZ 23 44(10)

16 Eastern islands region.
32.3 S. - 111.1 W.
h about 43 km.
H = 07 18 37,3
M = 6½ - 6¾ (Pas.) 6 (Pal.)

CIN i PKP Z 07 38 09
e Z 44
e Z 39 11
e Z 41
Δ = 144°

IST i PKP₁ HSZ,BZ 07 38 16,2 C
i HSZ 16,7 D
i SZN 17 C
i PKP₂ HSZ,BZ,SZ 23,9 C
Δ = 145°

16 IST i Sg HSZNE 16 57 13,4

16 CIN i (P) Z 19 20 16,5

16 IST i (Pg) HSZ,BZ 18 57 49,6
i HSZ,BN 58 08,8
i Sg BZNE,HSN 09,3

16 IST i Sg BN 20 21 54,7

16 Andaman island.
13.5 N. - 93.2 E.
h about 33 km.
H = 21 10 01,8
M = 6 - 6½ (Pal.)

IST i P HSZ,BZ 21 20 19,7 CNW
e PP SZ 22 37
e (PPPP) SZ 24 32
e EN 28 38
e S BZ,HLNE 41
i SZ,HSNE 42
i SE 43
PS SN 52
PPS SN 29 13
SgS SE 30 10
SS SE 32 37
Q SN 35,5
Δ = 6108

17 IST i Pg HSZ,BZ 00 55 27,8
i Sg HSE, 46,8
i Sg HSN,BN 48,2

17 IST L SZ 12 05 --

18 CIN e Pg Z 04 13 12

18 CIN e Z 04 54 19

CIN No record between 10h 40m and 13h 20 m of Nov. 20.

19 IST e P HSZ,BZ 10 03 14,4
e BE 22,1
e S HSE,BNE 04 01,0

19 IST e L SZ 11 31 --

20 KAS e P Z 07 04 32

20
IST i Pg HSZNE 15 23 19,6 CNE
i Sg HSNE 24 00,5
Δ = 345 km.

20
CIN e Pg Z 16 05 39
e Sg Z 51
Δ = 100 km.

20
IST i P HSZ 18 06 34,8 C
i HSE 07 05,8
i HSN 10,8

21 Felt at Eskişehir in TURKEY.
Intensity: +III at Eskişehir.

IST i P HSZ 06 33 46,2 D
i S HSN 34 08,8
i Sg HSZE 10,8
Δ = 180 km.

22
CIN e Pg Z 15 09 52,5
e Sg Z 10 01
Δ = 70 km.

22
IST e (Sg) HSZ 19 09 36,1
e (Sg) HSN 39,6

22
IST e HSZ 22 02 13,8
i S HSN 18,2

22
IST e P HSZ 23 08 22,9
i Sg 55,3
Δ = 230 km.

23
IST i Pg HSZ,BZ 13 28 45,6 D
i Sg HSNE,BNE 56,5
Δ = 85 km.

23 Fiji islands.
21.5 S. - 179.3 W.
h about 609 km.
H = 23 05 47,4
IST e PKP HSZ,BZ 23 24 27,8
Δ = 160°

24
CIN No records from 19h 55m on Oct.22
till 14h 40m on Oct.24.

24 Fiji islands.
24.8 S. - 180.0 E.
h about 500 km.
H = 10 34 07,7

IST e PKP HSZ,BZ 10 53 03,2 D
Δ = 160°

24 Mid-Atlantic ocean.
9.8 N. - 40.7 W.
h about 33 km.
H = 16 19 44,9

IST e HSZ,BZ 16 30 46,6
i HSZ,BZ 47,8 D
i P HSZ 48,1 D
i SZ 48 D
e (S) SN 39(50)
LM SZ 52 --
Δ = 680

24
IST i (Sg) HSZ,BZ 19 07 40,0

24
IST e Pg HSZ,BZ 23 06 50,5
i Sg BZNE,HSN 07 03,5
Δ = 110 km.

2
IST e Sg HSZ,BN 01 19 37,6

25
CIN e Pg Z 04 15 53
e Sg Z 16 11,5
Δ = 155 km.

25
CIN e (P) Z 13 13 38

26 Sinkiang Province, China.
39.8 N. - 77.2 E.
h about 142 km.
H = 05 29 30,2

IST e P SZN 05 36 37
Δ = 360°

26
IST e L SZ 17 22.--

26
CIN e Z 20 59 22
e Z 21 00 12

26 TURKEY. Felt at Kocaeli, Sakarya
and Yalova.
Intensities: Yalova III
Sakarya III
Kocaeli V

IST i Pg BZNE 22 58 50,2 DSE
i Sg BZNE 59 00,8
Δ = 90 km.

27
CIN e Z 01 10 48

27
CIN i Pg Z 05 04 26

27
CIN e Z 10 19 14

27
IST e L SZ 13 04 --

27
IST e L SZ 17 40 --

27 Local.
CIN e Pg Z 18 00 06
i Sg Z 14,7

28
IST e (P) SZ 03 00 (41)
L SZ 28 --

28
CIN e Z 11 43 14

28 Andaman islands.
9.9 N. 93.4 E.
h about 53 km.
H = 15 25 58,7

IST e (P) HSZ,BZ 15 36 29,6
e HSZ 50,7

29
CIN e Pg Z 04 20 05
e Sg Z 28
 $\Delta = 195$ km.

29
CIN e (Sg) Z 04 58 11

29 Tonga islands.
22.3 S. - 175.9 W.
h about 33 km.
H = 09 33 51,1

IST e PKP HSZNE 09 23 44
 $\Delta = 155^\circ$

29
IST e HSZE,BZ11 34 52,7

29
IST e HSZNE 16 59 24,5

29 New-Hebrides islands.
17.3 S. - 168.5 E.
H = 19 06 37,6

IST e SZ 19 27 --
LM SZ 20 13 --

29
IST i (Pg) HSZNE 21 06 28,4 D?
Local.

30 Guerrero, Mexico.
17.4 N. - 99.6 W.
h about 51 km.
H = 21 51 22,9

IST e PP SZ 22 09 58
e (PPS) SZN 19(05)
 $\Delta = 105^\circ$

Kastamonu seismological station
was out of operation during
the month of November.