

GEODÆTISK INSTITUT

Proviantgården · Copenhagen · Denmark

Bulletin of the seismological station

NORD

$\varphi = 81^{\circ}36'N$. $\lambda = 16^{\circ}41'W$. $h = 35$ m.

Lithologic foundation: calcareous greywacke

Instruments.

Willmore. Z. $T_p = 1$ sec, $T_g = 1/4$ sec. No attenuation.

Strobach. N and E. $T = 6$ sec, $\nu = 15:1$, $V_0 = 500$. (Belongs to Geophysikalisches Institut, Hamburg.)

Seismological Readings. Distant quakes.

Phases are indicated by the symbols used in ISS. Times are given in GMT. Positions of epicenters are those given by BCIS. The periods given are periods of full oscillations. For Z trace amplitudes are given. C means compression, D dilatation. + means movement towards N or E respectively.

Seismological Readings. Local shocks.

Distances less than 5° . Some tremors of not-seismic origin may be included.

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July

- 2 *eP·Z* 02^h16^m37^s
 $\Delta = 54^\circ$. $h = 100$ km. Japan.
- 2 *e·Z* 04 11 16
- 3 *e·Z* 07 18 31
- 4 *iP·Z* 06 22 43
 $\Delta = 80^\circ$. $h = 145$ km. Mariana Islands.
- 4 *e·Z* 19 22 37
- 4 *i·Z* 19 54 48
- 5 *iP·Z* 02 32 56
 $\Delta = 68^\circ$. $h = 33$ km. Ryukyu Islands.
- 5 *iP·Z* 05 13 27
 $\Delta = 69^\circ$. $h = 60$ km. Lesser Antilles.
- 5 *iP·Z* 06 43 35 C.
 $\Delta = 52^\circ$. $h = 44$ km. China.
- 6 *iP·Z* 16 21 15
 $\Delta = 88^\circ$. $h = 19$ km. Region of Ascension Islands.
- 6 *iPKP·Z* 22 28 14
e·Z 42 20
e·Z 46 35
L·E 60
L·N 65
 $\Delta = 119^\circ$. $h = 27$ km. Loyalty Islands.
- 7 *eP·Z* 08 14 03
 $\Delta = 52^\circ$. $h = 90$ km. Kurile Islands.
- 7 *L·NE* 14 02 —
 $\Delta = 104^\circ$. $h = 57$ km. New Britain.
- 7 *iP·Z* 15 53 08
i·Z 53 30
 $\Delta = \text{ab. } 120^\circ$. SW of Tristan da Cunha Islands.
- 8 *eS·Z* 07 58 24 very weak onset.
 $\Delta = 7^\circ$. North of Jan Mayen Island.
- 9 *eP·Z* 06 44 06
 $\Delta = 72^\circ$. $h = 46$ km. Honduras.
- 9 *e·Z* 09 46 33
- 9 *e·Z* 17 18 00
- 10 *eP·Z* 13 05 31
 $\Delta = 72^\circ$. $h = 33$ km. Mexico.
- 11 *eP·N* 09 44 16
 $\Delta = 84^\circ$. $h = 163$ km. Nicobar Islands Region.

July

- 12 *eP·Z* 05^h07^m26^s
eS·Z 09 20
 Jan Mayen Region.
- 12 *e·Z* 23 52 16
- 13 *eP·Z* 21 56 05
ePcP·Z 56 20
 $\Delta = 73^\circ$. $h = 33$ km. Taiwan.
- 13 *e·Z* 22 26 05
 $\Delta = 123^\circ$. $h = 468$ km. Kermadec Islands Region.
- 14 *iP·Z* 00 18 48 D.
 $\Delta = 81^\circ$. $h = 168$ km. Phillipine Islands.
- 14 *e·Z* 15 56 15
- 15 *iP·Z* 00 30 12 C.
 $\Delta = 83^\circ$. $h = 70$ km. Phillipine Islands.
- 17 *iP·Z* 01 12 30 C.
ePP·Z 15 11
 $\Delta = 72^\circ$. $h = 40$ km. Mexico.
- 17 *eP·Z* 16 30 36
 $\Delta = 63^\circ$. $h = 51$ km. Japan.
- 18 *iP·ZNE* 14 14 33
iS·NE 23 30
L·NE 36 —
 $\Delta = 68^\circ$. $h = 21$ km. Ryukyu Islands.
- 18 *e·Z* 14 42 49
i·Z 44 58
- 18 *eP·Z* 15 27 11
 $\Delta = 68^\circ$. $h = 100$ km. Ryukyu Islands.
- 19 *eP·Z* 12 09 42
 $\Delta = 68^\circ$. $h = 31$ km. Ryukyu Islands.
- 19 *e·Z* 23 09 16
 $\Delta = 45^\circ$. $h = 37$ km. Ionian Sea.
- 20 *iP·Z* 02 25 50
iPcP·Z 26 05
 $\Delta = 82^\circ$. Andaman Islands.
- 20 *iP·Z* 08 55 40
 $\Delta = 71^\circ$. $h = 33$ km. Mexico.
- 20 *iP·Z* 09 13 37 D.
 $\Delta = 67^\circ$. $h = 33$ km. Ryukyu Islands.
- 20 *e·Z* 13 25 40
e·Z 25 47
 Seismic?

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July

21	<i>i</i> · <i>Z</i>	04 ^h 38 ^m 14 ^s
	<i>i</i> · <i>Z</i>	38 17
23	<i>eP</i> · <i>Z</i>	14 50 32
		$\Delta = 86^\circ$. $h = 33$ km. Pacific Ocean.
23	<i>ePKP</i> · <i>ZNE</i>	22 09 49
	<i>ePP</i> · <i>ZNE</i>	11 04
	<i>L</i> · <i>NE</i>	41 —
		$\Delta = 117^\circ$. $h = 44$ km. New Hebrides.
23	<i>ePKP</i> · <i>Z</i>	22 20 25
		$\Delta = 117^\circ$. $h = 37$ km. New Hebrides.
24	<i>eP</i> · <i>Z</i>	09 01 27
		$\Delta = 97^\circ$. $h = 104$ km. Region north of Celebes.
25	<i>iP</i> · <i>Z</i>	03 00 29 <i>D.</i>
		$\Delta = 94^\circ$. $h = 593$ km. West Brazil.
25	<i>iP</i> · <i>Z</i>	18 50 50
	<i>iPP</i> · <i>Z</i>	52 52
		$\Delta = 56^\circ$. $h = 280$ km. Japan Sea.
27	<i>e</i> · <i>Z</i>	02 46 48
	<i>i</i> · <i>Z</i>	46 58
	<i>i</i> · <i>Z</i>	46 07
28	<i>eP</i> · <i>Z</i>	00 45 16
	<i>iPcP</i> · <i>Z</i>	45 37
		$\Delta = 70^\circ$. $h = 149$ km. Ryukyu Islands.
28	<i>eP</i> · <i>ZNE</i>	01 18 05
	<i>ipP</i> · <i>Z</i>	18 18
	<i>iSKS</i> · <i>NE</i>	29 19
		$\Delta = 88^\circ$. $h = 136$ km. Ecuador.
28	<i>eP</i> · <i>Z</i>	15 29 09
	<i>ePcP</i> · <i>Z</i>	30 45
		$\Delta = 55^\circ$. $h = 34$ km. Japan.
30	<i>e</i> · <i>Z</i>	11 26 58
31	<i>e</i> · <i>Z</i>	18 26 35
	<i>e</i> · <i>Z</i>	27 19

August

1	<i>e</i> · <i>Z</i>	10 40 46
2	<i>e</i> · <i>Z</i>	01 36 49
2	<i>e</i> · <i>Z</i>	04 25 18
	Seismic?	
2	<i>e</i> · <i>Z</i>	10 34 14
	<i>i</i> · <i>Z</i>	34 40
2	<i>iP</i> · <i>Z</i>	12 21 21
		$\Delta = 54^\circ$. $h = 38$ km. Kurile Islands Region.

August

2	<i>eP</i> · <i>Z</i>	14 ^h 40 ^m 54 ^s
		$\Delta = 47^\circ$. $h = 50$ km. Near Kamchatka.
3	<i>iP</i> · <i>Z</i>	03 18 41 <i>D.</i>
		$\Delta = 66^\circ$. $h = 132$ km. Puerto Rico.
4	<i>i</i> · <i>Z</i>	05 15 15 <i>C.</i>
4	<i>iP</i> · <i>Z</i>	23 02 08
	<i>iPcP</i> · <i>Z</i>	03 30
		$\Delta = 53^\circ$. $h = 45$ km. Kurile Islands.
5	<i>eP</i> · <i>Z</i>	02 33 14
		$\Delta = 35^\circ$. $h = 53$ km. Alaska.
8	<i>eP</i> · <i>Z</i>	05 44 50
		$\Delta = 47^\circ$. $h = 57$ km. Aleutian Islands.
8	<i>iP</i> · <i>ZNE</i>	12 26 50
		$\Delta = 47^\circ$. $h = 33$ km. Aleutian Islands.
11	<i>eP</i> · <i>Z</i>	11 17 52
		$\Delta = 96^\circ$. $h = 143$ km. Celebes.
11	<i>e</i> · <i>Z</i>	12 55 00
11	<i>iP</i> · <i>ZNE</i>	16 01 02 <i>C.</i>
	<i>iPcP</i> · <i>Z</i>	02 02
	<i>eS</i> · <i>NE</i>	08 36
	<i>eScS</i> · <i>NE</i>	10 49
	<i>ePKPPKP</i> · <i>Z</i>	16 30 58 $T = 3$ sec.
		$\Delta = 55^\circ$. $h = 50$ km. Japan.
11	<i>eP</i> · <i>Z</i>	23 21 20
		$\Delta = 56^\circ$. $h = 95$ km. Japan.
11	<i>eP</i> · <i>Z</i>	23 43 19
	<i>iPcP</i> · <i>Z</i>	44 22
		$\Delta = 55^\circ$. $h = 50$ km. Japan.
13	<i>e</i> · <i>Z</i>	04 46 06
13	<i>e</i> · <i>Z</i>	11 59 47
13	<i>e</i> · <i>Z</i>	12 02 39
13	<i>iP</i> · <i>Z</i>	13 47 29
		$\Delta = 69^\circ$. $h = 158$ km. Lesser Antilles.
14	<i>e</i> · <i>Z</i>	01 58 10
	<i>i</i> · <i>Z</i>	58 23
14	<i>e</i> · <i>Z</i>	02 11 53
14	<i>e</i> · <i>Z</i>	08 14 21
14	<i>i</i> · <i>Z</i>	11 57 58
	<i>e</i> · <i>Z</i>	59 54

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August

- 14 *i*·*Z* 12^h13^m07^s 2 mm.
e·*Z* 13 41 5 mm.
 Near.
- 14 *eP*·*Z* 22 15 44
 $\Delta = 66^\circ$. $h = 20$ km. Japan.
- 15 *e*·*Z* 07 04 48
- 15 *e*·*Z* 09 36 19
- 15 *iP*·*Z* 19 14 35
 $\Delta = 65^\circ$. $h = 39$ km. Japan.
- 19 *eP*·*Z* 02 52 30
 $\Delta = 55^\circ$. $h = 32$ km. Japan.
- 19 *e*·*Z* 04 34 16
- 19 *iP*·*ZNE* 05 22 12 *D*.
iSKS·*NE* 31 50 *N*: +, *E*: -.
 $\Delta = 96^\circ$. $h = 649$ km. Peru-Brasil frontier.
- 19 *iP*·*Z* 05 43 51 *C*.
iPP·*Z* 45 39
iPPP·*Z* 47 09
 $\Delta = 61^\circ$. $h = 17$ km. Japan.
- 19 *iP*·*Z* 08 17 37
 $\Delta = 61^\circ$. $h = 25$ km. Japan.
- 19 *eP*·*Z* 15 03 12
 $\Delta = 67^\circ$. $h = 100$ km. Mona Passage.
- 19 *eP*·*Z* 20 39 22
 $\Delta = 91^\circ$. $h = 25$ km. Near Sumatra.
- 20 *ePKP*·*Z* 05 21 54
 $\Delta = 116^\circ$. $h = 592$ km. Fiji Islands.
- 21 *e*·*Z* 08 07 42
- 21 *iP*·*Z* 17 10 22 *C*.
 $\Delta = 57^\circ$. $h = 40$ km. Japan.
- 23 *eP*·*Z* 04 21 41
iPcP·*Z* 22 56
 $\Delta = 51^\circ$. $h = 25$ km. Tadzhik.
- 23 *e*·*Z* 17 52 18
- 24 *e*·*Z* 23 26 28
- 25 *eP*·*Z* 07 07 38
 $\Delta = 44^\circ$. $h = 36$ km. Alaska.
- 27 *e*·*Z* 02 47 40

August

- 27 *iP*·*Z* 16^h31^m14^s *C*.
ePcP·*Z* 32 43
 $\Delta = 52^\circ$. $h = 45$ km. Kurile Islands.
- 27 *eP*·*Z* 16 59 55 *C*.
 $\Delta = 80^\circ$. $h = 38$ km. Mariana Islands.
- 27 *e*·*Z* 21 05 22
 $\Delta = 52^\circ$. $h = 51$ km. Kurile Islands.
- 27 *eP*·*Z* 22 17 24
 $\Delta = 48^\circ$. $h = 33$ km. Crete.
- 28 *i*·*ZE* 17 42 22
i·*E* 43 59 $T = 6$ sec.
 $\Delta = \text{ab. } 6^\circ$.
- 29 *e*·*Z* 06 03 35
- 29 *e*·*Z* 12 40 17
- 29 *e*·*Z* 14 06 35
- 29 *i*·*Z* 14 56 13 *D*.
- 29 *eP*·*Z* 14 59 34
 $\Delta = 46^\circ$. $h = 41$ km. Aleutian Islands.
- 30 *eP*·*Z* 02 33 49
 $\Delta = 44^\circ$. $h = 67$ km. Aleutian Islands.
- 31 *iP*·*ZNE* 02 01 00 *D*.
iPP·*Z* 04 57
 $\Delta = 95^\circ$. $h = 626$ km. Peru-Brasil border.
- 31 *eP*·*ZNE* 02 09 27
iSKS·*NE* 19 08 *N*: +, *E*: -.
 $\Delta = 95^\circ$. $h = 629$ km. Peru-Brasil border.
- 31 *e*·*Z* 18 04 23
- 31 *e*·*Z* 18 45 50
- September
- 1 *iPKP*·*Z* 00 28 44 *D*.
ePP·*Z* 31 55
 $\Delta = 141^\circ$. $h = 131$ km. Sandwich Islands.
- 1 *iP*·*Z* 04 54 22 *D*.
 $\Delta = 72^\circ$. $h = 155$ km. Mexico.
- 1 *iP*·*ZE* 19 02 12 *D*.
eS·*E* 11 51
 $\Delta = 74^\circ$. $h = 37$ km. The sea off Guatemala.
- 2 *iP*·*Z* 00 34 28 *C*.
ePcP·*Z* 36 05
 $\Delta = 46^\circ$. $h = 39$ km. Aleutian Islands.

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September

2	<i>e</i> · <i>Z</i>	03 ^h 59 ^m 05 ^s	
	<i>i</i> · <i>Z</i>	59 12	
4	<i>iP</i> · <i>Z</i>	09 57 40	
	$\Delta = 47^\circ$.	$h = 40$ km.	Aleutian Islands.
5	<i>iP</i> · <i>ZE</i>	02 38 17	<i>D.</i>
	$\Delta = 3^\circ$.	$h = 33$ km.	Spitsbergen.
5	<i>eP</i> · <i>Z</i>	06 22 00	
	$\Delta = 52^\circ$.	$h = 104$ km.	Tadzhik (USSR).
5	<i>eP</i> · <i>Z</i>	11 41 41	
	<i>ePPP</i> · <i>Z</i>	43 21	
	$\Delta = 37^\circ$.	$h = 43$ km.	Alaska.
8	<i>e</i> · <i>Z</i>	11 45 33	
	<i>e</i> · <i>Z</i>	48 31	
	<i>i</i> · <i>NE</i>	49 17	
	<i>i</i> · <i>E</i>	12 06 34	
9	<i>e</i> · <i>Z</i>	09 18 40	
11	<i>iP</i> · <i>Z</i>	02 55 17	<i>C.</i>
	$\Delta = 47^\circ$.	$h = 60$ km.	Aleutian Islands.
11	<i>iP</i> · <i>Z</i>	22 26 20	<i>C.</i>
	$\Delta = 74^\circ$.	$h = 134$ km.	Near coast of Venezuela.
12	<i>e</i> · <i>Z</i>	23 28 35	
13	<i>ePKP</i> · <i>Z</i>	21 38 19	
	$\Delta = 126^\circ$.	$h = 40$ km.	Off Chile.
14	<i>iP</i> · <i>Z</i>	08 12 28	<i>C.</i>
	$\Delta = 53^\circ$.		Iran-Iraq frontier.
14	<i>iP</i> · <i>Z</i>	22 00 48	
	$\Delta = 61^\circ$.	$h = 55$ km.	Near coast of Hondu.
15	<i>iP</i> · <i>Z</i>	01 55 02	<i>C.</i>
	<i>ePcP</i> · <i>Z</i>	56 22	
	$\Delta = 50^\circ$.	$h = 36$ km.	Cyprus.
16	<i>e</i> · <i>Z</i>	10 25 27	
	<i>e</i> · <i>E</i>	26 05	
16	<i>iP</i> · <i>Z</i>	12 20 17	
	$\Delta = 69^\circ$.	$h = 430$ km.	Off Hondu, Japan.
16	<i>iP</i> · <i>Z</i>	13 42 37	
	$\Delta = 68^\circ$.	$h = 19$ km.	Mid-Atlantic Ridge.
16	<i>eP</i> · <i>Z</i>	17 26 21	<i>C.</i>
	$\Delta = 47^\circ$.	$h = 49$ km.	Near coast of Kamchatka.
17	<i>iP</i> · <i>Z</i>	08 53 19	
	$\Delta = 73^\circ$.	$h = 53$ km.	Near coast of Taiwan.

September

18	<i>iP</i> · <i>Z</i>	05 ^h 17 ^m 20 ^s	
	$\Delta = 49^\circ$.	$h = 39$ km.	Crete.
18	<i>iP</i> · <i>Z</i>	11 09 27	<i>D.</i>
	$\Delta = 46^\circ$.	$h = 55$ km.	Caspian Sea.
19	<i>eP</i> · <i>Z</i>	06 22 20	
	$\Delta = 83^\circ$.	$h = 61$ km.	Mariana Islands.
19	<i>iP</i> · <i>Z</i>	09 58 26	
	<i>L</i> · <i>E</i>	10 25.9	
	$\Delta = 80^\circ$.	$h = 33$ km.	Off Panama.
19	<i>eP</i> · <i>Z</i>	15 19 15	trace ampl.: 9,8 mm.
	<i>iS</i> · <i>Z</i>	19 59	trace ampl.: 15,0 mm.
19	<i>ePKP</i> · <i>Z</i>	21 54 06	
	$\Delta = 141^\circ$.	$h = 33$ km.	Sandwich Islands.
21	<i>e</i> · <i>Z</i>	01 35 12	
22	<i>e</i> · <i>Z</i>	05 02 39	
22	<i>e</i> · <i>Z</i>	21 31 54	
23	<i>e</i> · <i>Z</i>	09 56 25	
24	<i>iP</i> · <i>Z</i>	06 50 06	<i>D.</i> trace ampl.: 1.0 mm.
	<i>i</i> · <i>Z</i>	50 21	
	<i>e(S)</i> · <i>Z</i>	50 34	trace ampl.: 7.6 mm.
24	<i>iP</i> · <i>Z</i>	19 15 48	<i>D.</i>
	$\Delta = 71^\circ$.	$h = 55$ km.	Mexico.
24	<i>eP</i> · <i>Z</i>	21 51 30	
	$\Delta = 65^\circ$.	$h = 50$ km.	Off Hondu, Japan.
25	<i>eP</i> · <i>Z</i>	02 34 07	
	$\Delta = 36^\circ$.	$h = 125$ km.	Alaska.
25	<i>eP</i> · <i>Z</i>	05 40 46	
	$\Delta = 77^\circ$.	$h = 33$ km.	Hawaiian Islands.
25	<i>iP</i> · <i>Z</i>	21 14 14	<i>C.</i>
	<i>iS</i> · <i>Z</i>	15 31	
	$\Delta = 8^\circ$.	$h = 33$ km.	Spitsbergen.
26	<i>e</i> · <i>Z</i>	12 49 06	
27	<i>e</i> · <i>Z</i>	07 02 12	
27	<i>eP</i> · <i>Z</i>	11 29 07	
	$\Delta = 45^\circ$.	$h = 27$ km.	Aleutian Islands.
27	<i>ePKP</i> · <i>Z</i>	12 26 53	
	$\Delta = 141^\circ$.	$h = 33$ km.	Sandwich Islands.
27	<i>eP</i> · <i>Z</i>	19 29 06	
	$\Delta = 45^\circ$.	$h = 42$ km.	Aleutian Islands.

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September

- 27 *eP·Z* 19^h35^m21^s
 $\Delta = 45^\circ$. $h = 22$ km. Aleutian Islands.
- 27 *iP·Z* 21 18 10
 $\Delta = 70^\circ$. $h = 160$ km. China Sea.
- 28 *iP·Z* 01 37 28
 $\Delta = 98^\circ$. $h = 100$ km. Sumatra.
- 28 *iP·Z* 03 35 29
 $\Delta = 68^\circ$. $h = 41$ km. Off Hondu, Japan.
- 28 *eP·Z* 05 09 46
 $\Delta = 54^\circ$. $h = 204$ km. Hindu Kush.
- 28 *iP·Z* 22 46 34
 $\Delta = 61^\circ$. $h = 41$ km. Near Persian Coast.
- 29 *eP·Z* 08 32 51
 $\Delta = 46^\circ$. $h = 33$ km. Aleutian Islands.
- 29 *iP·Z* 08 57 24 C.
i·Z 57 46
 $\Delta = 80^\circ$. $h = 60$ km. Andaman Islands.
- 29 *eP·Z* 17 00 04
 $\Delta = 55^\circ$. $h = 45$ km. Japan.
- 29 *eP·Z* 19 19 27
 $\Delta = 96^\circ$. $h = 110$ km. Celebes.

October

- 1 *eP·Z* 00 26 12
 $\Delta = 60^\circ$. $h = 32$ km. Kansu Province (China).
- 1 *e·Z* 03 39 00
- 2 *iP·Z* 07 30 14 C.
 $\Delta = 47^\circ$. $h = 33$ km. Grece.
- 3 *iP·Z* 01 09 53
 $\Delta = 48^\circ$. $h = 99$ km. Crete.
- 6 *eP·Z* 11 13 49
 $\Delta = 56^\circ$. $h = 115$ km. Japan.
- 7 *e·Z* 10 10 35
- 7 *e·Z* 17 00 10
- 8 *e·Z* 05 35 40
- 8 *i·ZNE* 23 11 43
 Near, trace disappeared.
- 8 *eP·Z* 23 54 46

October

- 9 *eP·Z* 06^h59^m57^s
 $\Delta = 54^\circ$. $h = 33$ km. Tsinghai Province (China).
- 10 *e·Z* 05 54 04
- 10 *e·Z* 13 54 28
- 11 *e·Z* 05 02 47
- 11 *iP·Z* 07 11 25
 $\Delta = 39^\circ$. $h = 42$ km. Kodiak Island.
- 11 *iP·Z* 07 47 50
 $\Delta = 42^\circ$. $h = 0$ km. Kazakhstan (USSR).
- 11 *i·Z* 08 32 20
- 12 *iP·Z* 03 55 44 C.
 $\Delta = 91^\circ$. $h = 104$ km. Talaud Islands.
- 13 *eP·Z* 02 34 44
 $\Delta = 91^\circ$. $h = 241$ km. Off Mindanao (Phillippines).
- 13 *ePKP·Z* 05 18 09
e·Z 21 41
 $\Delta = 137^\circ$. $h = 33$ km. Sandwich Group.
- 13 *ePKP·Z* 11 06 08
 $\Delta = 141^\circ$. $h = 33$ km. Sandwich Group.
- 15 *e·Z* 13 09 34
- 16 *e·Z* 03 58 02
- 17 *e·Z* 10 38 41
- 17 *e·Z* 12 01 06
- 17 *e·Z* 13 30 16
- 17 *e·Z* 17 13 38
- 18 *e·Z* 01 49 11
- 18 *eP·Z* 10 52 18
 $\Delta = 44^\circ$. $h = 33$ km. Aleutian Islands.
- 18 *iPKP·Z* 17 10 47 D.
 $\Delta = 121^\circ$. $h = 33$ km. Near coast of Chile.
- 19 *e·Z* 09 03 09
- 19 *e·Z* 09 51 27
- 19 *eP·Z* 11 06 03
 $\Delta = 55^\circ$. $h = 230$ km. Japan Sea.
- 19 *ePKP·Z* 11 37 57
 $\Delta = 121^\circ$. $h = 149$ km. Argentina.

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October

- 20 *eP·Z* 08^h10^m47^s
 $\Delta = 15^\circ$. $h = 0$ km. Novaya Zemlya. Explosion.
- 20 *e·Z* 14 02 41
- 21 *e·Z* 17 46 05
- 22 *e·Z* 15 08 03
- 23 *iPKP·Z* 00 28 03
 $\Delta = 142^\circ$. $h = 33$ km. Sandwich Group.
- 23 *e·Z* 02 29 42
- 23 *eP·Z* 08 34.9
L·E 38 47
 $\Delta = 15^\circ$. $h = 0$ km. Novaya Zemlya. Explosion.
- 23 *iP·Z* 10 35 07
 $\Delta = 19^\circ$. $h = 0$ km. Novaya Zemlya. Explosion.
- 23 *iP·Z* 14 52 49 C.
e·Z 56 36
eSKS·E 15 03 13
 $\Delta = 93^\circ$. $h = 20$ km. Molucca Passage.
- 23 *iP·Z* 15 05 44 C.
 $\Delta = 93^\circ$. $h = 33$ km. Molucca Passage.
- 25 *e·Z* 16 35 48
 $\Delta = 73^\circ$. $h = 114$ km. Gulf of Aden.
- 26 *eP·Z* 15 40 21
L·N 16 25.6
L·E 26.5
 $\Delta = 94^\circ$. $h = 34$ km. Off Sumatra.
- 26 *eP·Z* 17 33 33
 $\Delta = 72^\circ$. $h = 91$ km. State of Guerrero.
- 26 *eP·Z* 19 41 50
 $\Delta = 94^\circ$. $h = 62$ km. Off Sumatra.
- 26 *eP·Z* 22 08 01
 $\Delta = 79^\circ$. $h = 154$ km. Colombia.
- 27 *e·Z* 07 49 08
- 28 *iP·Z* 10 55 57
 $\Delta = 53^\circ$. $h = 52$ km. Iran.
- 28 *eP·Z* 22 53 37
 $\Delta = 42^\circ$. $h = 33$ km. Baikal Lake, USSR.
- 29 *eS·NE* 09 30 36
 $\Delta = 45^\circ$. $h = 16$ km. Region of Vancouver Island.
- 30 *eP·Z* 02 25 33
 $\Delta = 51^\circ$. $h = 36$ km. Off Oregon.

October

- 30 *eP·ZE* 08^h37^m10^s
L·NE 42.9
M·NE 45.0
 $\Delta = 15^\circ$. $h = 0$ km. Novaya Zemlya. Explosion.
- 30 *iP·Z* 16 05 10
 $\Delta = 48^\circ$. Aleutian Islands.
- 30 *eP·Z* 21 26 42
 $\Delta = 69^\circ$. $h = 31$ km. Off Hondu, Japan.
- 30 *e·Z* 22 32 40
- 31 *iP·Z* 01 52 21 C.
 $\Delta = 47^\circ$. $h = 35$ km. Aleutian Islands.
- 31 *i·Z* 06 42 48 C trace ampl.: 31 mm.
e·N 42 51
 Near.
- 31 *eP·Z* 08 33 07
L·NE 40 34 $T = 15$ sec.
 $\Delta = 16^\circ$. $h = 0$ km. Novaya Zemlya. Explosion.
- November
- 2 *eP·Z* 23 43 50
 $\Delta = 43^\circ$. $h = 33$ km. Peninsula of Alaska.
- 3 *i(P)·Z* 22 46 20
 $\Delta = 19^\circ$. North Atlantic.
- 4 *L·E* 07 31.6
M·E 32.0 $T = 15$ sec.
 $\Delta = 16^\circ$. $h = 0$ km. Novaya Zemlya, nuclear explosion.
- 5 *eP·Z* 10 45 42
 $\Delta = 53^\circ$. $h = 142$ km. Kurile Islands.
- 6 *ePKP·Z* 00 16 05
 $\Delta = 148^\circ$. $h = 35$ km. Auckland Islands Region.
- 6 *iP·Z* 08 09 49 C.
 $\Delta = 67^\circ$. $h = 37$ km. Bhutan.
- 6 *e·Z* 20 17 05
- 12 *iP·Z* 02 27 44 D.
 $\Delta = 83^\circ$. $h = 39$ km. Congo.
- 12 *e·Z* 05 32 37
- 12 *e·Z* 15 04 44 trace ampl.: 2 mm.
i·Z 05 13 trace ampl.: 5 mm.
 Near.
- 13 *eP·Z* 14 14 49 C.
iS·Z 16 40
 $\Delta = 10^\circ$. Jan Mayen Region.

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November

13	<i>e(P)·Z</i>	14 ^h 22 ^m 17 ^s	
	<i>e(S)·Z</i>	24 04	
13	<i>e(P)·Z</i>	17 48 06	
	<i>e(S)·Z</i>	49 55	
14	<i>L·N</i>	05 20 16	
	$\Delta = 79^\circ$.	$h = 29$ km.	Off Panama.
15	<i>eP·ZN</i>	07 26 40	C.
	<i>iScS·N</i>	36 30	
	<i>L·N</i>	40.5	
	$\Delta = 55^\circ$.	$h = 43$ km.	Japan.
16	<i>e·Z</i>	16 08 36	
17	<i>eP·Z</i>	16 25 53	
	<i>e(S)·Z</i>	27 39	
18	<i>iP·Z</i>	22 21 16	
	<i>iPP·Z</i>	23 57	
	$\Delta = 73^\circ$.	$h = 38$ km.	Taiwan.
19	<i>iP·Z</i>	23 35 05	D.
	<i>ipP·Z</i>	35 52	
	$\Delta = 96^\circ$.	$h = 157$ km.	Region of Celebes.
20	<i>e·Z</i>	17 11 20	
20	<i>eP·Z</i>	18 07 19	
	$\Delta = 52^\circ$.	$h = 34$ km.	Mid-Atlantic Ridge.
20	<i>i·Z</i>	23 17 59	C.
	<i>e·Z</i>	18 19	
			Japan?
21	<i>e·Z</i>	15 53 52	
	<i>i·Z</i>	54 15	
23	<i>e·Z</i>	11 48 29	
25	<i>e·Z</i>	12 09 02	
25	<i>e·Z</i>	16 07 04	C.
25	<i>iP·Z</i>	20 30 06	C.
	$\Delta = 62^\circ$.	$h = 45$ km.	Japan.
26	<i>e·Z</i>	03 32 30	
27	<i>eP·Z</i>	06 07 53	
	$\Delta = 67^\circ$.	$h = 25$ km.	Japan.
27	<i>eP·Z</i>	17 24 08	
	$\Delta = 97^\circ$.	$h = 33$ km.	Region of Halmahera.
28	<i>iP·Z</i>	10 24 19	
	$\Delta = 55^\circ$.	$h = 31$ km.	Coast of India-Pakistan.

December

1	<i>eP·Z</i>	21 ^h 23 ^m 56 ^s	
	<i>ipP·Z</i>	24 49	
	$\Delta = 70^\circ$.	$h = 206$ km.	China Sea.
2	<i>e·Z</i>	19 54 21	
3	<i>i·Z</i>	05 50 42	C.
3	<i>eP·Z</i>	08 51 36	
	$\Delta = 72^\circ$.	$h = 140$ km.	Taiwan.
3	<i>eP·Z</i>	18 40 13	
	$\Delta = 46^\circ$.	$h = 44$ km.	Armenian SSR.
3	<i>iP·Z</i>	20 03 53	D.
	$\Delta = 54^\circ$.	$h = 386$ km.	Japan Sea.
4	<i>iP·Z</i>	03 50 25	
	$\Delta = 42^\circ$.	$h = 62$ km.	Alaska.
4	<i>eP·Z</i>	12 48 20	
	<i>L·N</i>	13 11	
	<i>L·E</i>	12.2	
	<i>M·E</i>	14.5	
	$\Delta = 60^\circ$.	$h = 45$ km.	Tsinghai Province, China.
4	<i>eP·Z</i>	17 40 14	
	<i>eS·Z</i>	42 11	
	$\Delta = 11^\circ$.		Jan Mayen Island.
4	<i>e·Z</i>	20 47 37	
5	<i>ePKP·Z</i>	13 20 44	
	<i>ePKP·E</i>	20 55	
	$\Delta = 148^\circ$.	$h = 33$ km.	Tasmania.
6	<i>iP·Z</i>	06 00 44	C.
	$\Delta = 79^\circ$.	$h = 35$ km.	Andaman Islands.
6	<i>eP·ZNE</i>	16 48 22	
	<i>M·NE</i>	17 10.2	
	$\Delta = 49^\circ$.	$h = 60$ km.	Kurile Islands.
9	<i>eP·Z</i>	02 23 02	C.
	$\Delta = 41^\circ$.	$h = 31$ km.	Kodiak Island.
9	<i>e·Z</i>	10 52 40	
9	<i>ePKP·Z</i>	11 37 12	
	$\Delta = 129^\circ$.	$h = 34$ km.	Near coast of Chile.
9	<i>ePKP·Z</i>	20 07 25	
	$\Delta = 119^\circ$.	$h = 620$ km.	Region of Fiji Islands.
10	<i>eP·Z</i>	08 47 54	
	$\Delta = 49^\circ$.	$h = 17$ km.	Crete Island.
12	<i>e·Z</i>	01 44 58	

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December

- 12 *eP·Z* 23^h15^m44^s
 $\Delta = 55^\circ$. $h = 65$ km. Japan.
- 13 *eP·Z* 08 51 59
 $\Delta = 71^\circ$. $h = 55$ km. Ryukyu Islands.
- 15 *e·Z* 03 22 46
- 15 *eP·Z* 22 11 56
 $\Delta = 49^\circ$. $h = 33$ km. Crete Island.
- 16 *eP·Z* 13 48 51
 $\Delta = 47^\circ$. $h = 62$ km. Off Kamchatka.
- 17 *ePKP·Z* 22 32 22
 $\Delta = 152^\circ$. $h = 45$ km. Tasmania.
- 18 *e·Z* 03 00 27
- 20 *iP·ZNE* 13 37 31
ipP·Z 38 08 D.
iS·NE 47 26
isS·NE 48 36
 $\Delta = 81^\circ$. $h = 176$ km. Colombia.
- 20 *i·Z* 13 56 04 C.
- 24 *e·Z* 00 00 02
- 24 *eP·Z* 07 00 12
 $\Delta = 55^\circ$. $h = 125$ km. Japan.
- 24 *eP·Z* 7 23 47
 $\Delta = 62^\circ$. $h = 33$ km. Nepal.
- 24 *eP·Z* 20 30 07
 $\Delta = 9^\circ$. $h = 33$ km. Off Spitzbergen.
- 25 *eP·Z* 11 29 54
 $\Delta = 67^\circ$. $h = 33$ km. Bhutan.
- 25 *eP·Z* 21 59 59
 $\Delta = 52^\circ$. $h = 130$ km. Sinkiang Province, China.
- 27 *e·Z* 16 58 57
 $\Delta = 83^\circ$. $h = 37$ km. N of Ascension Island.
- 28 *e·Z* 05 14 46
i·Z 14 51
- 29 *eP·Z* 15 04 50
 $\Delta = 74^\circ$. $h = 45$ km. Mexico-Guatemala frontier.
- 29 *e·Z* 20 31 04
- 30 *eP·ZN* 00 47 48
i·E 47 58
iS·E 54 38
i·N 54 44
 $\Delta = 46^\circ$. $h = 56$ km. Aleutian Islands.

December

- 30 *iP·Z* 07^h17^m37^s C.
 $\Delta = 52^\circ$. $h = 35$ km. Sinkiang Province, China.

- 30 *eP·Z* 23 31 07
 $\Delta = 67^\circ$. $h = 32$ km. Atlantic Ocean.

Local shocks.

- | July | (P) | (S) |
|------|---|-----------------------------------|
| 1 | 13 ^h i 09 ^m 12 ^s | e 09 ^m 32 ^s |
| 2 | 23 e 41 31 | i 41 33 |
| 3 | 7 i 31 17 | i 31 19 |
| | 7 e 38 42 | e 39 03 |
| 5 | 6 e 54 09 | |
| | 12 e 38 40 | |
| 6 | 23 e 02 51 | |
| 7 | 0 i 16 50 | |
| 8 | i 23 39 | i 23 42 |
| 8 | 15 e 00 09 | |
| 9 | 13 i 21 39 | |
| | 20 i 37 28 | i 37 32 |
| 10 | 1 e 32 10 | |
| 16 | 22 e 56 39 | i 56 59 |
| 19 | 0 i 39 37 | |
| | 4 i 02 16 | |
| 21 | 1 i 16 44 | |
| | 1 i 20 51 | |
| | 19 i 30 46 | i 31 14 |
| 22 | 1 e 40 08 | |
| 24 | 1 e 31 19 | i 31 40 |
| 25 | 0 e 42 26 | i 42 51 |
| | 21 e 57 52 | i 58 20 |
| 26 | 8 i 38 41 | i 39 09 |
| 28 | 17 e 45 48 | |
| 29 | 10 e 29 13 | e 29 36 |
| | 19 e 42 54 | i 42 57 |
| 30 | 4 i 54 39 | e 55 13 |

August

- | | | |
|----|------------|---------|
| 2 | 0 i 32 28 | i 32 48 |
| | 3 i 38 59 | |
| | 21 e 05 50 | i 06 11 |
| 3 | 2 e 48 53 | i 49 12 |
| 4 | 10 e 23 47 | |
| | 18 i 53 07 | |
| 5 | 18 e 06 50 | |
| | 18 i 10 13 | |
| 6 | 13 i 39 43 | i 40 03 |
| 8 | 15 i 24 04 | e 24 36 |
| 9 | 1 i 49 46 | i 50 11 |
| 10 | 7 e 36 27 | e 36 53 |
| 11 | 6 e 09 14 | e 09 34 |
| 13 | 13 e 26 32 | |
| 14 | 3 e 07 45 | i 08 20 |
| | 5 e 05 45 | i 06 21 |
| | 5 e 19 28 | e 20 04 |
| | 7 e 27 16 | e 27 47 |
| | 9 e 16 42 | e 17 15 |

Trace ampl.: 5.7 mm.

Trace ampl.: 4.2 mm.

Nord 1961

August			September			October		
	(P)	(S)		(P)	(S)		(P)	(S)
12 ^h	<i>i</i> 13 ^m 07 ^s	<i>e</i> 13 ^m 41 ^s	Trace ampl.: 9.4 mm.	13 10 ^h	<i>e</i> 03 ^m 04 ^s	<i>e</i> 03 ^m 29 ^s		
14	<i>e</i> 04 32	<i>e</i> 04 57		11	<i>e</i> 10 22	<i>i</i> 10 45		
20	<i>e</i> 07 43	<i>e</i> 08 16		19	<i>e</i> 08 45			
15 1	<i>i</i> 02 19	<i>i</i> 02 38		14 8	<i>e</i> 15 35	<i>i</i> 16 01		
15 8	<i>e</i> 22 08	<i>e</i> 22 27		12	<i>e</i> 11 49			
11	<i>i</i> 03 56	<i>e</i> 04 31		15 22	<i>e</i> 37 15			
16 5	<i>e</i> 07 19			16 3	<i>e</i> 11 27			
14	<i>e</i> 09 57	<i>i</i> 10 17		6	<i>e</i> 32 34			
15	<i>i</i> 27 49	<i>i</i> 28 08		7	<i>e</i> 10 29			
17 12	<i>i</i> 01 59			11	<i>e</i> 07 42			
18	<i>i</i> 27 57			20	<i>e</i> 47 54			
18 5	<i>e</i> 07 00			17 3	<i>e</i> 01 05			
19 1	48 23			18 16	<i>e</i> 52 31			
13	<i>e</i> 59 15			19 2	<i>e</i> 31 29	<i>e</i> 31 50		
16	<i>e</i> 03 35			7	<i>e</i> 58 44			
23	<i>i</i> 42 17	<i>i</i> 42 38		13	<i>e</i> 45 30			
20 11	<i>e</i> 08 43			15	<i>e</i> 19 15	<i>i</i> 19 59	Trace ampl.: 9.8 mm, 15 mm.	
19	<i>i</i> 19 01		Trace ampl.: 11.2 mm.	21	<i>e</i> 39 10	<i>i</i> 39 31		
22 5	<i>i</i> 40 42			20 6	<i>e</i> 17 23			
23	<i>i</i> 15 26	<i>i</i> 15 58	Trace ampl.: 13.2 mm.	15	<i>e</i> 58 58	<i>e</i> 59 40		
23 10	<i>i</i> 34 23			21 0	<i>i</i> 24 58			
25 1	<i>e</i> 15 42			17	<i>i</i> 34 18	<i>e</i> 34 59		
26 7	<i>e</i> 45 54			24 6	<i>i</i> 50 06	<i>e</i> 50 34	Trace ampl.: 1 mm, 7.6 mm.	
7	<i>e</i> 55 01			26 0	<i>e</i> 14 49			
28 17	<i>i</i> 42 22	<i>i</i> 43 59	Trace ampl.: 7.6 mm.	3	<i>e</i> 59 34			
29 5	<i>e</i> 48 26			20	<i>i</i> 30 00	<i>i</i> 30 49		
12	<i>i</i> 43 38			27 5	<i>e</i> 24 14			
16	<i>e</i> 04 06			29 2	<i>i</i> 42 06			
30 1	<i>i</i> 05 29	<i>i</i> 05 57		5	<i>e</i> 36 14			
8	<i>e</i> 00 40			30 23	<i>e</i> 54 05	<i>i</i> 54 33		
11	<i>e</i> 43 21							
31 7	<i>e</i> 22 13							
9	<i>i</i> 18 14							
19	<i>e</i> 21 22							
September			September			September		
1 2	<i>e</i> 06 57			1 17	<i>e</i> 07 14			
5	<i>e</i> 14 41			2 23	<i>e</i> 26 18			
5	<i>e</i> 51 59			3 21	<i>e</i> 47 34			
23	<i>e</i> 18 25			23	<i>e</i> 40 33			
3 11	<i>e</i> 38 17			4 1	<i>e</i> 15 11			
4 4	<i>i</i> 41 37	<i>i</i> 41 57		10	<i>e</i> 07 07			
15	<i>e</i> 48 03	<i>i</i> 48 29		14	<i>e</i> 20 16			
5 0	<i>e</i> 26 17	<i>e</i> 26 45		5 2	<i>e</i> 13 20	<i>e</i> 13 48		
2	<i>i</i> 38 17		Trace ampl.: 38 mm.	6 6	<i>i</i> 17 04			
6	<i>e</i> 11 32			14	<i>e</i> 36 12			
12	<i>e</i> 08 38	<i>i</i> 08 59		8 1	<i>e</i> 34 58	<i>e</i> 35 29		
8 7	<i>e</i> 46 52			22	<i>e</i> 03 48			
10	<i>e</i> 52 00			23	<i>i</i> 11 43	Trace disappeared.		
9 0	<i>e</i> 05 58			9 0	<i>i</i> 07 07			
5	<i>e</i> 04 32			23	<i>e</i> 03 02			
6	<i>e</i> 49 27	<i>e</i> 50 38		10 5	<i>e</i> 38 05			
20	<i>i</i> 54 45			16	<i>e</i> 42 56	<i>e</i> 43 18		
11 1	<i>e</i> 01 47			11 4	<i>i</i> 17 59			
8	<i>e</i> 40 30			8	<i>e</i> 03 40			
16	<i>e</i> 48 49			12 15	<i>e</i> 05 16			
13 8	<i>i</i> 27 25	<i>i</i> 27 50		22	<i>e</i> 14 39			
9	<i>e</i> 18 48			13 2	<i>i</i> 19 17			
				7	<i>e</i> 48 50			
				8	<i>e</i> 25 37			
				9	<i>e</i> 10 43	<i>e</i> 11 08		
				18	<i>e</i> 54 21			

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October		(P)	(S)
14	7 ^h	<i>e</i> 29 ^m 25 ^s	
	14	<i>e</i> 28 15	<i>e</i> 28 ^m 46 ^s
16	2	<i>e</i> 31 51	
17	9	<i>e</i> 45 39	
	9	<i>e</i> 50 29	
	17	<i>e</i> 33 25	
	22	<i>i</i> 33 22	<i>i</i> 33 42
18	10	<i>e</i> 59 23	<i>e</i> 59 37
19	4	<i>i</i> 36 32	
	5	<i>e</i> 10 04	
	8	<i>e</i> 06 49	<i>e</i> 07 17
	8	<i>e</i> 37 07	
20	7	<i>i</i> 23 39	<i>i</i> 24 16
	13	<i>e</i> 47 45	<i>e</i> 48 05
	20	<i>e</i> 15 45	<i>e</i> 16 13
22	12	<i>e</i> 53 24	<i>e</i> 54 02
23	0	<i>i</i> 42 30	<i>i</i> 42 50
	1	<i>e</i> 41 03	
	6	<i>e</i> 12 19	<i>e</i> 12 59
	13	<i>e</i> 04 14	<i>i</i> 04 40
24	7		<i>e</i> 34 32
	14	<i>e</i> 57 53	<i>e</i> 58 31
	17	<i>e</i> 07 30	
	21	<i>e</i> 49 53	<i>e</i> 50 17
25	0	<i>i</i> 15 35	
	4	<i>i</i> 39 11	<i>i</i> 39 31
	9	<i>e</i> 40 46	<i>i</i> 41 28
	20	<i>e</i> 34 53	<i>e</i> 35 24
26	6	<i>e</i> 20 24	
27	3	<i>e</i> 40 39	
30	3	<i>i</i> 08 44	
	3	<i>i</i> 18 30	
31	6	<i>i</i> 42 48	
	21	<i>i</i> 46 15	<i>e</i> 46 35

Trace ampl.: 31 mm.

November		(P)	(S)
1	10	<i>e</i> 49 19	<i>e</i> 49 35
	22		<i>e</i> 04 31
2	4	<i>e</i> 29 49	
	4	<i>e</i> 36 40	
	18	<i>i</i> 25 11	<i>e</i> 25 31
	18	<i>i</i> 37 58	
3	21	<i>e</i> 25 48	
5	0	<i>e</i> 17 17	<i>i</i> 17 54

November		(P)	(S)
7	1 ^h	<i>i</i> 06 ^m 10 ^s	<i>i</i> 06 ^m 30 ^s
	9	<i>i</i> 17 05	
8	0	<i>e</i> 03 58	
9	8	<i>i</i> 42 03	<i>i</i> 42 24
11	8	<i>e</i> 29 00	
12	15	<i>e</i> 04 44	<i>i</i> 05 13
	23	<i>e</i> 23 27	
21	15	<i>e</i> 10 40	<i>e</i> 11 11
22	8	<i>e</i> 20 07	
23	10	<i>i</i> 11 01	<i>i</i> 11 32
24	2	<i>e</i> 09 58	
	9	<i>e</i> 09 07	<i>e</i> 09 37
	21	<i>e</i> 18 11	
25	5	<i>e</i> 10 14	<i>i</i> 10 19
27	19	<i>e</i> 45 33	
28	9	<i>e</i> 55 00	

Trace ampl.: 2 mm, 5 mm.

December		(P)	(S)
1	2	<i>i</i> 18 12	
2	16	<i>e</i> 52 25	
5	11	<i>e</i> 38 10	
8	5	<i>i</i> 57 11	
	20	<i>e</i> 16 29	
	22	<i>i</i> 19 49	
11	17	<i>i</i> 01 40	
16	9	<i>e</i> 29 14	<i>e</i> 29 42
17	7	<i>e</i> 20 27	
	8	<i>i</i> 29 42	
18	6	<i>e</i> 04 26	<i>e</i> 04 44
20	9	<i>e</i> 15 19	<i>e</i> 15 39
22	4	<i>i</i> 08 29	<i>e</i> 08 49
23	23	<i>i</i> 10 02	
25	0	<i>e</i> 30 50	
	9	<i>e</i> 54 35	
	14	<i>e</i> 54 07	
	19	<i>e</i> 04 17	<i>e</i> 04 21
26	1	<i>e</i> 52 13	
	9	<i>e</i> 14 41	
27	20	<i>i</i> 09 25	
29	0	<i>e</i> 22 00	
	20	<i>e</i> 00 57	
30	20	<i>e</i> 26 54	
31	20	<i>e</i> 36 26	<i>e</i> 36 55

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