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Veröffentlichung Nr. 30

Geophysikalisches Institut

Universität Fridericiana

Karlsruhe

Deutschland - Germany

SEISMOLOGISCHER JAHRESBERICHT  
SEISMOLOGICAL BULLETIN

BÜHLERHÖHE BUH

1967

U. HÄGELE-WALTER

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Vorwort

Die seismologische Station "Bühlerhöhe" (BUH) ist eine im Jahr 1966 eingerichtete Telemetrie-Station, die vom Geophysikalischen Institut der Universität (TH) Karlsruhe betrieben wird. Sie ist die erste einer Reihe identischer Stationen, die im Lauf der nächsten Jahre errichtet werden sollen.

Im Herbst 1966 wurden die ersten Versuchsregistrierungen durchgeführt. Seit Februar 1967 ist die Station mit nur wenigen Unterbrechungen in Betrieb. Über einige Monate hinweg wurde mit verschiedenartigen Seismometern und Registriereinrichtungen nur die Vertikalkomponente seismischer Erschütterungen aufgezeichnet. Im September 1967 wurde BUH zur 3-Komponenten-Station mit GEOTECH 18 300 (S-13) -Seismometern ausgebaut. Seit dieser Zeit sind auch ihre Konstanten und Eichfaktoren genau bekannt.

Seit Anfang 1968 meldet die Station täglich ihre Aufzeichnungen an den USCGS in Rockville, Maryland, USA und an das BCIS in Strasbourg, Frankreich. Nachdem die registrierten Daten den seismischen Ereignissen zugeordnet sind, werden sie auch an das ISC in Edinburgh, Großbritannien weitergeleitet.

Der vorliegende Jahresbericht 1967 ist der erste veröffentlichte Bericht der Station. Er ist gleichzeitig der erste Bericht einer deutschen Station, der mit Hilfe einer elektronischen Datenverarbeitungsmaschine hergestellt wurde. Dieses automatisierte Verfahren wird zur Zeit erweitert. Für das Jahr 1968 werden die beiden Stationen KRL (Karlsruhe) und BUH einen gemeinsamen seismologischen Bericht dieser Art herausgeben. Von 1969 an ist die Herausgabe eines gemeinsamen Berichtes fast aller westdeutschen Stationen geplant. Den Rechenprogrammen für diese überregionalen Jahresberichte liegt das Rechenprogramm für den vorliegenden Bericht der Station BUH zugrunde.

An dieser Stelle möchte ich Herrn Priv.-Doz. Dr. K. Fuchs für seine vielen wertvollen Anregungen und seine stete Hilfsbereitschaft während der Erstellung des Programms herzlich danken.

Karlsruhe, im April 1969

U. Hägele-Walter



## Beschreibung der Station BUH

### Postanschrift:

Geophysikalisches Institut der  
 Universität Fridericiana  
 75 Karlsruhe 21  
 Hertzstrasse 16  
 Germany

### Geographische Koordinaten:

$\varphi = 48^{\circ} 40' 31.7''$  N                      H = 53. 93317  
 $\lambda = 8^{\circ} 13' 42.3''$  E                      R = 34. 43170  
 h = 750 m über NN

### Geologischer Untergrund:

Granit des Schwarzwaldes

### Instrumente:

Über den gesamten Zeitraum des Berichtes war immer ein Vertikal-Seismometer GEOTECH S-13 (vormals 18 300) in Betrieb.

Bis September 1967 waren zeitweise zusätzlich aufgestellt:

- 1 WILLMORE SEISMOMETER MK II
- 1 HALL-SEARS-SEISMOMETER HS-10-1 Vertical
- 1 SEISMOGRAPH VERTICAL COURTES PERIODES (MINIATURE)
- 1 Feldseismometer STROPPE FS 60

Ab 25. 9. 1967 waren zu dem Vertikal-Seismometer noch 2 Horizontalseismometer GEOTECH S-13 (vormals 18 300) in Nord-Süd- bzw. Ost-West-Richtung in Betrieb genommen worden. Die Seismometer sind auf eine Eigenperiode von 2.0 sec und leicht unterkritische Dämpfung ( $h = 0.7$ ) eingestellt. Das Blockdiagramm (Seite XV) verdeutlicht die Übertragung der seismischen Signale von der Seismometer-Station BUH zur Registrieranlage im 35 km entfernten Institutsgebäude in Karlsruhe. Die Gesamtvergrößerung der Registrierung bei einer Bodenperiode  $T$  berechnet sich zu

$$V(T) = F_S(T) \cdot V_M \cdot V_{DM} \cdot \frac{1}{F_R}$$

wobei  $F_S(T) =$  Seismometerfaktor in  $mV/\mu = V/mm$ . Die beigefügten

Frequenzcharakteristiken der Seismometer geben Auskunft über die Größe dieses Faktors für eine bestimmte Bodenperiode, bzw. Bodenfrequenz.

$V_M =$  Verstärkungsfaktor des Modulators. Diese Größe wird während der Sommermonate auf  $2^9 = 512$  eingestellt, während der Wintermonate mit stärkerer mikroseismischer Aktivität auf  $2^8 = 256$ .

$V_{DM} =$  Verstärkungsfaktor des Demodulators. Dieser Faktor liegt konstant bei 5.

$F_R =$  Registrierwerk-Faktor. Diese Größe hängt im wesentlichen von den für die Registrierung verwendeten Drehpulschreibern und dem Auflagedruck der Schreibspitze auf dem Registrierpapier ab.  $F_R$  wird täglich 2 mal kontrolliert durch Anlegen einer Eichspannung von 1 V bzw. 5 V (über die Eicheinheit) an die Drehpulschreiber. Sein Wert schwankt zwischen 0.35 V/mm und 0.55 V/mm.

### Zeitdienst

Als Zeitnormal dient eine Quarzuhr Typ GCZK 24E der Firma Patek Philippe, Genf. Mehrmals täglich wird zur Kontrolle der Quarzuhr auf die Seismogramme direkt das Signal des Zeitzeichensenders HBG (75 KHz) gegeben.

Die Quarzuhr gibt über die Eich- und Zeitmarkeneinheit zu jeder vollen Minute einen Kontakt. Bei jeder vollen Stunde bleibt dieser Kontakt aus. Die Uhr ist so eingestellt, daß sie den Minutenkontakt 30.0 sec nach der tatsächlichen vollen Minute gibt. Zu den eigentlichen Uhrkorrekturen sind also immer 30.0 sec zuzuzählen.

Außer der Zeitmarkierung liefert die Quarzuhr gleichzeitig eine frequenzstabile Wechselspannung für den Betrieb der Synchronmotoren der im Institut gebauten Registrierwerke.



## Erläuterungen zum Jahresbericht

Die zu verschiedenen Ereignissen gehörenden Angaben sind durch Striche voneinander getrennt.

Die ersten beiden Zeilen enthalten jeweils die Angaben über den Bebenherd:

Monat, Tag, Nummer der seismischen Region, Beschreibung des Herdgebietes in der 1. Zeile, in der 2. Zeile folgen Herdzeit (Stunde, Minute, Sekunde), geographische Breite, geographische Länge, Herdtiefe, Magnitude und Bezeichnung der Institution, durch welche diese Angaben bestimmt wurden. Bei Beben mit einer Epizentralentfernung kleiner oder gleich 2500 km erscheint unter der Herdzeit eine in Klammern gesetzte Nummer. Unter dieser Nummer ist das Epizentrum in die dem Bericht vorangestellte Karte eingetragen. (Die Karte wurde freundlicherweise vom Geodätischen Institut der Universität Karlsruhe zur Verfügung gestellt.)

Für den Ausdruck der Herddaten wurden die vom USCGS zur Verfügung gestellten Lochkarten verwendet. Wurde ein Ereignis (meist stationsnah) nur vom BCIS nach Ort und Zeit bestimmt, wurden diese Angaben auf Lochkarten gebracht und für den Bericht verwendet. Konnte ein registriertes Ereignis überhaupt nicht identifiziert werden, wurde als Überschrift nur "NO DETERMINATION OF EPICENTER" ausgedruckt.

Die weiteren Zeilen geben dann die aus den Seismogrammen gemachten Ablesungen wieder. Gemäß der im Seitenkopf vorgegebenen Spalten-einteilung folgen aufeinander

1. Abkürzung für die Station
2. Einsatzzeit (Stunde (H), Minute (M), Sekunde (SEC))  
Konnte bei einem Ersteinsatz die Zehntelsekunde nicht bestimmt werden, wird anstelle der Ziffer ein "-" ausgedruckt.
3. Richtung des Einsatzes (+ oder -, erst ab 25. September)
4. Güte des Einsatzes (I = impetus, E = emersio)
5. Phase  
Bei herdnahen Reflexionen an der Oberfläche wird von der üblichen Schreibweise abgewichen, anstelle von pP erscheint AP, für sS steht XS.

## 6. Komponente

### 7. Abkürzung für den Seismometertyp (SM)

GT = GEOTECH S-13 (vormals 18300)

( $T_0 = 2.0$  sec,  $h = 0.7$ )

FT = SEISMOGRAPH VERTICAL COURTES PERIODES (MINIATURE)

( $T_0 = 1.0$  sec,  $h = 0.7$ )

HS = HALL and SEARS HS-10-1 Vertical

( $T_0 = 1.0$  sec,  $h = 0.7$ )

WT = WILLMORE SEISMOMETER MK II

( $T_0 = 2.0$  sec,  $h = 0.7$ )

### 8. Periode T des Einsatzes in sec (erst ab 25. September)

### 9. Doppelamplitude DA des Einsatzes auf dem Seismogramm in mm (erst ab 25. September)

### 10. $\log(A/T)$ unter der Überschrift LOGA/T, wobei A die Amplitude der wahren Bodenbewegung in $\text{nm} = 10^{-6}$ mm und T = Periode der Bodenbewegung in sec bedeuten.

### 11. Epizentralentfernung in Bogengrad DELTA (GRD) und in km DELTA (KM) untereinander

### 12. Azimut von der Station zum Epizentrum (AZ S/E) und vom Epizentrum zur Station (AZ E/S) untereinander.

**DIE DATENVERARBEITUNG WURDE AUF  
DEN RECHENANLAGEN DES  
DEUTSCHEN RECHENZENTRUMS IN DARMSTADT  
UND DES KERNFORSCHUNGSZENTRUMS IN  
KARLSRUHE DURCHGEFÜHRT**



## Introduction

The seismological station "Bühlerhöhe" (BUH) is a telemetry station set up in 1966 by the Geophysical Institute of the University of Karlsruhe. It is the first one in a chain of identical telemetry stations which will be set up within the coming years.

In autumn 1966 the first experiments in recording were made. Since February 1967 the station is in action with only a few interruptions. For a few months only the vertical component of seismic signals was recorded by several seismometers and recording systems. In September 1967 BUH was completed to a 3-components-station with GEOTECH 18 300 (S-13) seismometers. Since these days constants and calibration factors of the station are exactly known.

Since January 1968 the station gives daily its recorded dates to the USCGS in Rockville, Maryland, USA and to the BCIS in Strasbourg, France. After connecting the dates to the according seismic events they are also given to the ISC in Edinburgh, Great Britain.

The Seismological Bulletin 1967 is the first published bulletin of station BUH. It is also the first bulletin of a German station which was established by a computer. This automatisisation is extended at present. For 1968 the two stations KRL (Karlsruhe) and BUH will issue together one bulletin of this kind. For 1969 the issue of one central bulletin of nearly all stations of western Germany is planned. The computer programs for these over-regional bulletins are developed from the computer program for this bulletin.

I would like to thank Priv.-Doz. Dr. K. Fuchs for many stimulating discussions and his expert association in programming.

Karlsruhe, April 1969

U. Hägele-Walter

## Station Description

### Mailing address:

Geophysikalisches Institut  
der Universität Fridericiana  
D 75 Karlsruhe 21  
Hertzstrasse 16  
Germany

### Geographic position:

$\varphi = 48^{\circ} 40' 31.7''$  N                      H = 53. 93317  
 $\lambda = 8^{\circ} 13' 42.3''$  E                      R = 34. 43170  
h = 750 m above sea level

### Geologic foundation:

Granite of the Black Forest

### Instruments:

During the time under report one Vertical-Seismometer has always been in operation: GEOTECH S-13 (formerly 18300). Up to September 1967 some additional seismometers were operating from time to time:

- 1 WILLMORE SEISMOMETER MK II
- 1 HALL-SEARS-SEISMOMETER HS-10-1 Vertical
- 1 SEISMOGRAPH VERTICAL COURTES PERIODES (MINIATURE)
- 1 Feldseismometer STROPPE FS 60

On September 25, 1967 two horizontal GEOTECH S-13 Seismometers in N-S and E-W direction started working in addition to the vertical GEOTECH S-13 Seismometer. The seismometers are operating at a period of 2.0 sec and a slight under-damping (  $h = 0.7$  ). The diagram (page XV) shows the transmission of the seismic signals from the station BUH to the recording system in the institute at Karlsruhe 35 km away. The overall magnification of the records at the period T of the ground motion is determined by:

$$V(T) = F_S(T) \cdot V_M \cdot V_{DM} \cdot \frac{1}{F_R}$$

where:

$F_S(T)$  = Seismometer Factor in  $mV/\mu = V/mm$  (see added



diagrams)

$V_M$  = Gain of the amplifier in the modulator. During summer time this factor is  $2^9 = 512$ . During winter time with more micro seismic activity the factor is  $2^8 = 256$ .

$V_{DM}$  = Gain of the amplifier in the demodulator. This factor is fixed at 5.

$F_R$  = Recording factor, it depends mainly on the type of moving-coil recorder and the pen-paper pressure.  $F_R$  is determined twice a day by a calibration voltage of 1 V, resp. 5 V (from the calibration unit) at the moving-coil recorder. The value of  $F_R$  varies between 0.35 V/mm and 0.55 V/mm.

#### Timing:

As time standard a crystal clock type GCZK 24E of Patek Philippe is used. For controlling the clock several times a day the time signals received from HBG (75 kc) are recorded directly on the seismograms.

The crystal clock gives contact by the time-marking and calibration unit at each full minute. At each full hour this contact is wanting. The clock is adjusted to make the minute contact 30.0 sec after the real full minute. Therefore to the real clock correction 30.0 sec have to be added.

Besides the time marking the crystal clock supplies also the frequency stabilized alternating current for operating the synchronic motors of the recording system built in the institute.

#### Interpretation of Bulletin Columns

The dates belonging to various events are separated by dashes.

The first two lines give information about the hypocenter:

Month, day, number of seismic region, description of epicenter region in the first line, and in the second line

origin time (hour, minute, second), geographic latitude, geographic longitude, depth, magnitude and institution by which the information is given. Events with an epicentral distance up to 2500 km are numbered (number in brackets). With this number the epicenter is plotted in the map. (The map has been made available by the Geodetic Institute of the University of Karlsruhe).

For these data the USCGS punched hypocenter cards were used. If an event (mostly near to station) was located only by BCIS, these dates were punched into cards and used for the bulletin. If a recorded event could not be identified as headline was printed: "NO DETERMINATION OF EPICENTER".

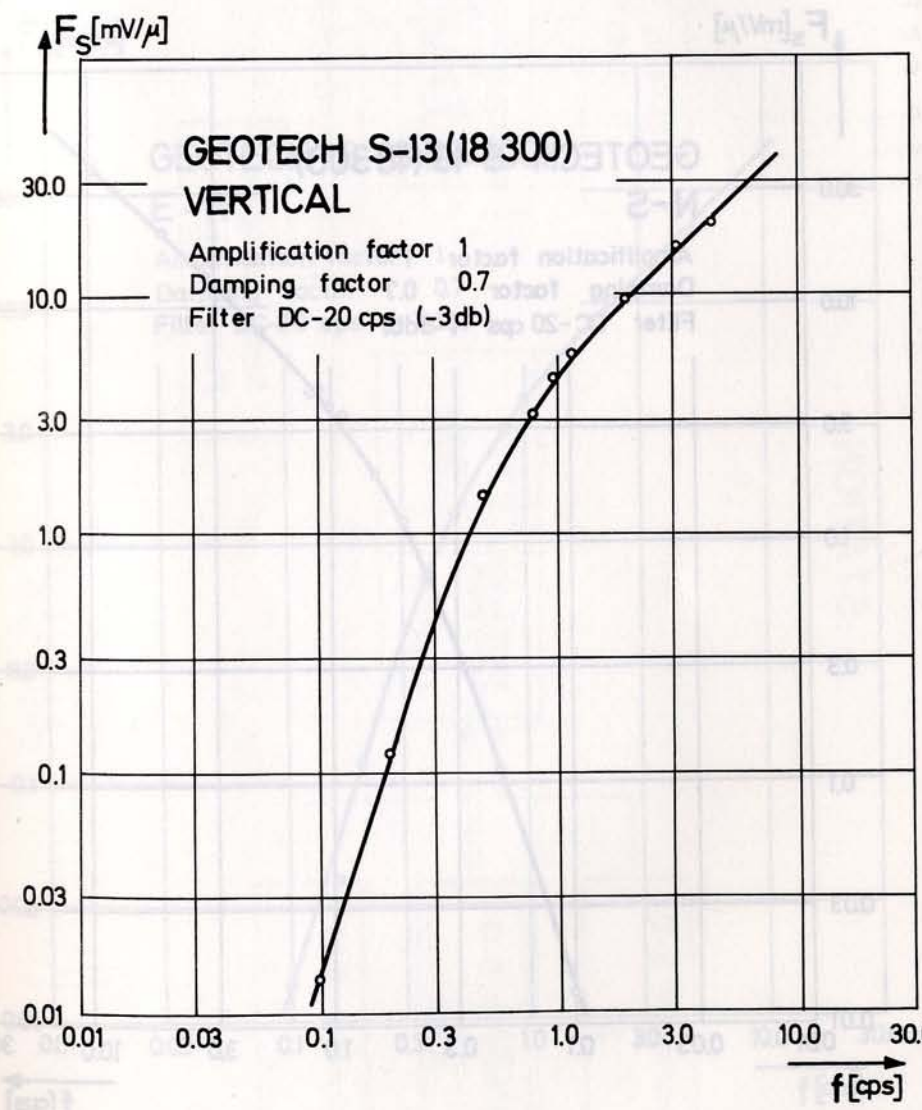
The further lines contain the data learned from the seismograms. Corresponding to the pages headline are listed:

1. Station abbreviation
2. Arrival time (hour (H), minute (M), second (SEC))  
If the tenth of a second could not be read, instead of the digit "-" is printed.
3. Direction of motion (+ or -, not before September 25th)
4. Sharpness indication of phase (I = impetus, E = emersio)
5. Phase
6. Component
7. Abbreviation for seismometer type (SM)  
GT = GEOTECH S-13 (formerly 18 300)  
( $T_0 = 2.0$  sec,  $h = 0.7$ )  
FT = SEISMOGRAPH VERTICAL COURTES PERIODES (MINIATURE)  
( $T_0 = 1.0$  sec,  $h = 0.7$ )  
HS = HALL and SEARS HS-10-1 Vertical  
( $T_0 = 1.0$  sec,  $h = 0.7$ )  
WT = WILLMORE SEISMOMETER MK II  
( $T_0 = 2.0$  sec,  $h = 0.7$ )

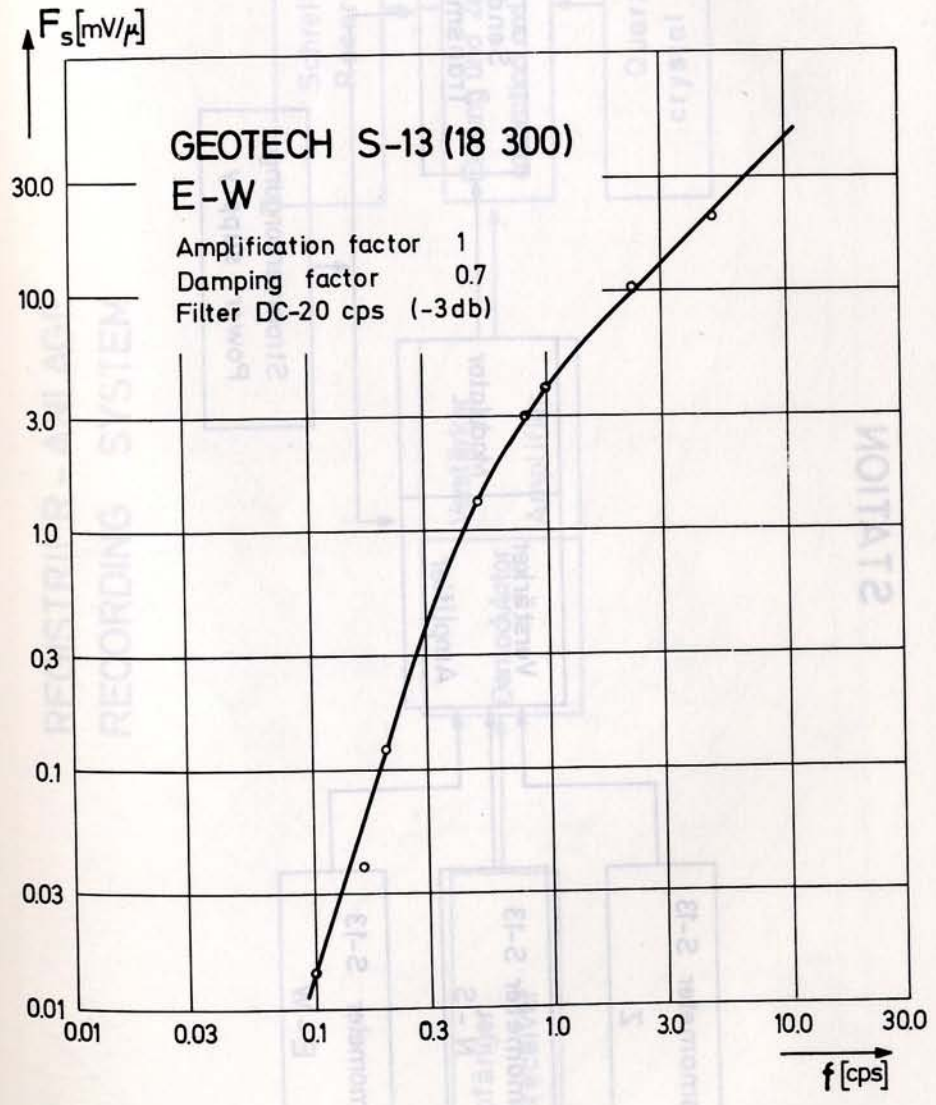
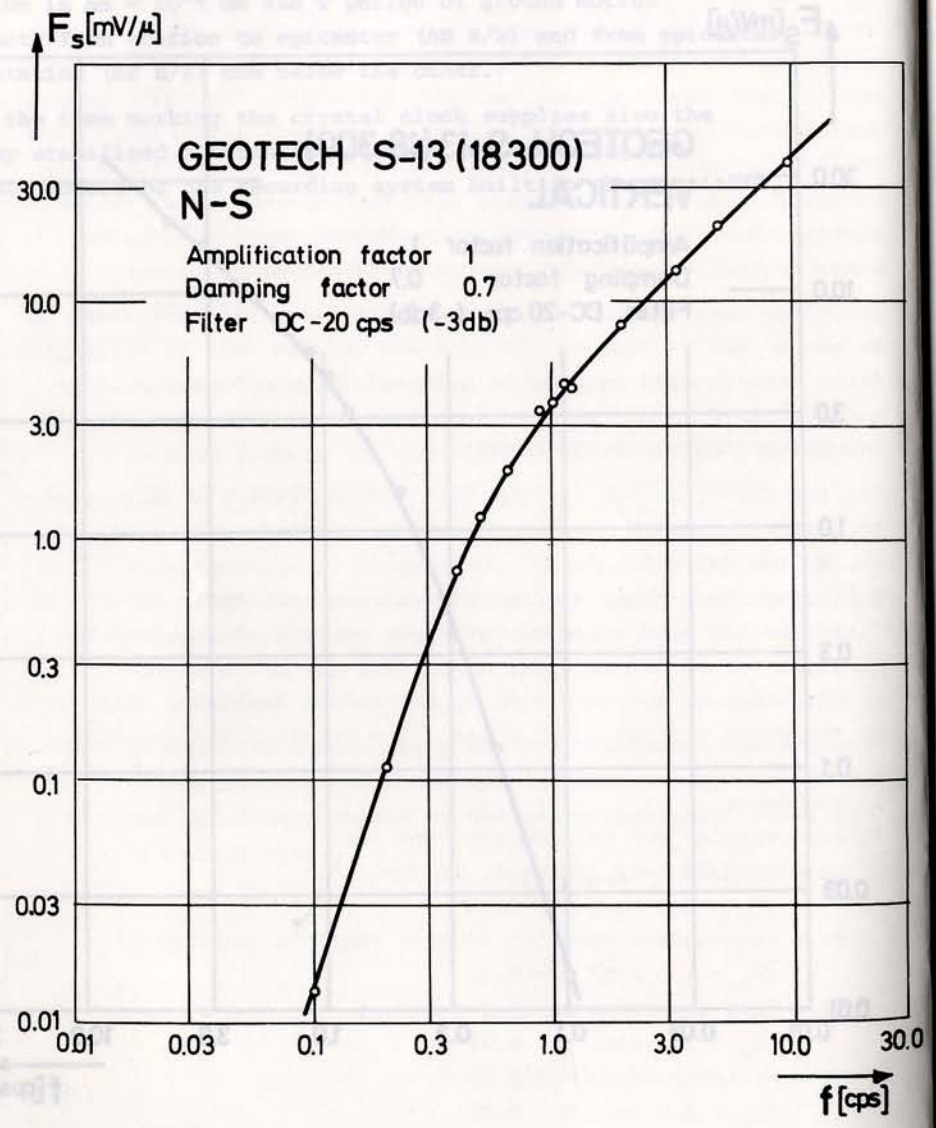


- 3. Period  $T$  of ground motion in sec (not before September 25th)
- 4. Peak-peak amplitude  $DA$  on the seismogram in mm (not before September 25th)
- 5.  $\log(A/T)$  named  $\text{LOGA}/T$ , where  $A$  means amplitude of real ground motion in  $\text{nm} = 10^{-6}$  mm and  $T$  period of ground motion
- 6. Azimuth from station to epicenter (AZ S/E) and from epicenter to station (AZ E/S) one below the other.

Besides the time marking the crystal clock supplies also the frequency stabilized alternating current for operating the synchronous motors of the recording system built in the institute.

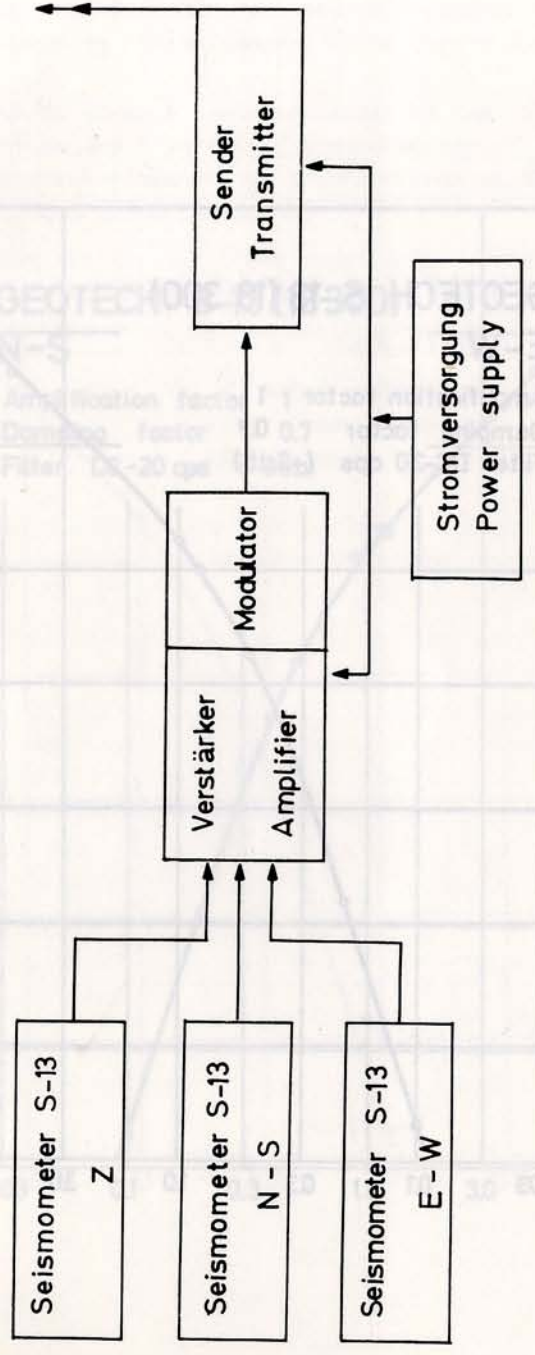




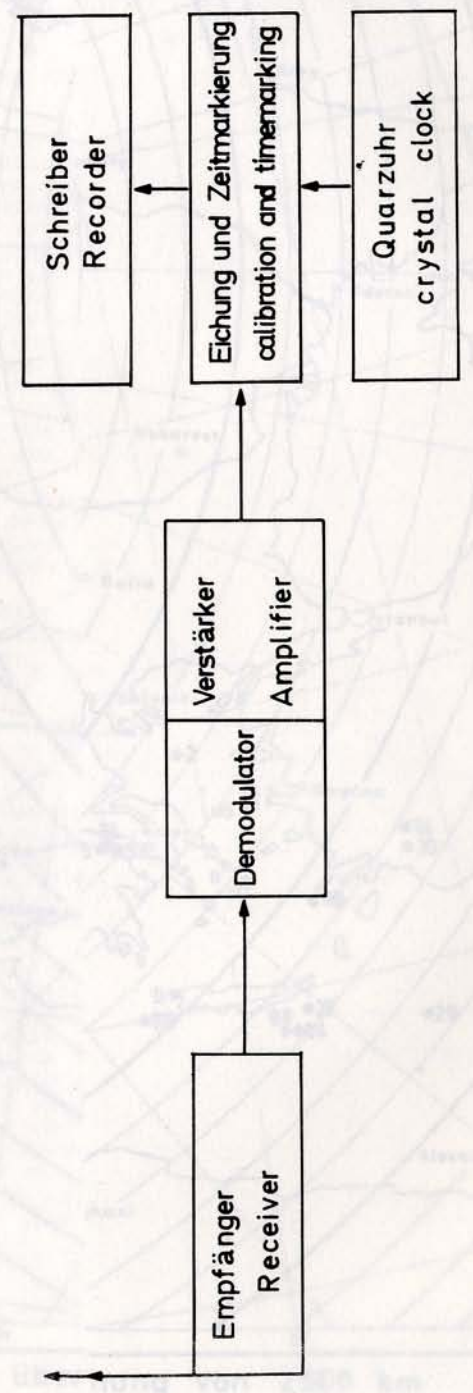




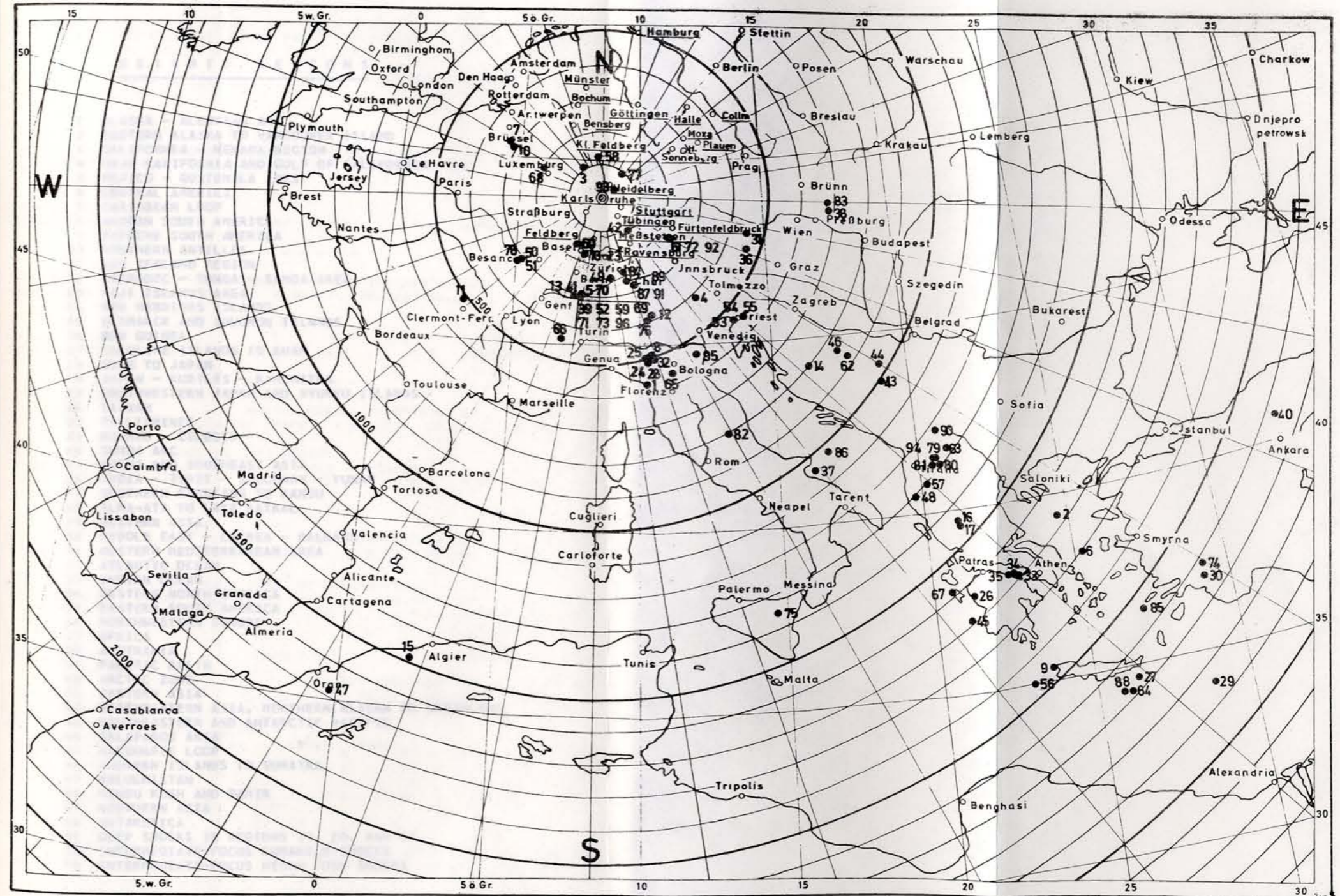
# STATION



# REGISTRIER - ANLAGE RECORDING SYSTEM







Übersicht über die von Bühlhöhe (BUH) 1967 registrierten Beben bis zu einer Entfernung von 2500 km  
 Schiefachsige mittabstandstreue Azimutalprojektion bezogen auf Karlsruhe

STATION

RECORDING SYSTEM  
 РЕГИСТРИРОВАНИЕ

Seismometer S-0  
 Seismometer S-13  
 Seismometer S-18  
 E-W

Seismometer S-13  
 Seismometer S-18  
 E-W

Seismometer S-13  
 Seismometer S-18  
 E-W

Seismometer S-13  
 Seismometer S-18  
 E-W

Seismometer S-13  
 Seismometer S-18  
 E-W

Seismometer S-13  
 Seismometer S-18  
 E-W



## SEISMIC REGIONS

- 1 ALASKA - ALEUTIAN ARC
- 2 EASTERN ALASKA TO VANCOUVER ISLAND
- 3 CALIFORNIA - NEVADA REGION
- 4 BAJA CALIFORNIA AND GULF OF CALIFORNIA
- 5 MEXICO - GUATEMALA AREA
- 6 CENTRAL AMERICA
- 7 CARIBBEAN LOOP
- 8 ANDEAN SOUTH AMERICA
- 9 EXTREME SOUTH AMERICA
- 10 SOUTHERN ANTILLES
- 11 NEW ZEALAND REGION
- 12 KERMADEC - TONGA - SAMOA AREA
- 13 FIJI ISLANDS AREA
- 14 NEW HEBRIDES ISLANDS
- 15 BISHARCK AND SOLOMON ISLANDS
- 16 NEW GUINEA
- 17 CAROLINE ISLANDS TO GUAM
- 18 GUAM TO JAPAN
- 19 JAPAN - KURILES - KAMCHATKA
- 20 SOUTHWESTERN JAPAN AND RYUKYU ISLANDS
- 21 TAIWAN
- 22 PHILIPPINES
- 23 BORNEO - CELEBES
- 24 SUNDA ARC
- 25 BURMA AND SOUTHEAST ASIA
- 26 INDIA - TIBET - SZECHWAN - YUNAN
- 27 SOUTHERN SINKIANG TO KANSU
- 28 ALMA-ATA TO LAKE BAIKAL
- 29 WESTERN ASIA
- 30 MIDDLE EAST - CRIMEA - BALKANS
- 31 WESTERN MEDITERRANEAN AREA
- 32 ATLANTIC OCEAN
- 33 INDIAN OCEAN
- 34 EASTERN NORTH AMERICA
- 35 EASTERN SOUTH AMERICA
- 36 NORTHWESTERN EUROPE
- 37 AFRICA
- 38 AUSTRALIA
- 39 PACIFIC BASIN
- 40 ARCTIC ZONE
- 41 EASTERN ASIA
- 42 NORTHEASTERN ASIA, NORTHERN ALASKA TO GREENLAND
- 43 SOUTHEASTERN AND ANTARCTIC PACIFIC
- 44 GALAPAGOS AREA
- 45 MACQUARIE LOOP
- 46 ANDAMAN ISLANDS TO SUMATRA
- 47 BALUCHISTAN
- 48 HINDU KUSH AND PAMIR
- 49 NORTHERN ASIA
- 50 ANTARCTICA
- 51 DEEP SHOCKS IN REGIONS 19, 20, AND 41
- 52 INTERMEDIATE-FOCUS RUMANIAN SHOCKS
- 53 INTERMEDIATE-FOCUS HINDU KUSH SHOCKS



## 1967 SEISMOLOGICAL BULLETIN OF STATION BUEHLERHOEHE (BUH) PAGE 1

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
								DELTA(KM)	AZ F/S

FEB 02	27		SOUTHERN SINKIANG PROV., CHINA						
7 37	54.9	39.7N	75.5E	39KM	MAG=5.3				USCGS

BUH	7 46	28.6	I P	Z GT			47.6	74.5	
							5290.0	304.2	

FEB 02	19		HOKKAIDO, JAPAN, REGION						
16 24	39.1	41.6N	139.7E	176KM	MAG=5.4				USCGS

BUH	16 36	32.5	I P	Z GT			80.4	34.8	
							8940.0	329.8	

FEB 05	32		ASCENSTON ISLAND REGION						
18 55	45.1	5.4S	11.4W	19KM	MAG=5.2				USCGS

BUH	19 5	29.2	I P	Z GT			56.5	203.7	
							6280.0	15.5	

FEB 07	1		ALASKA PENINSULA						
14 53	13.9	56.7N	157.2W	67KM	MAG=5.6				USCGS

BUH	15 4	46.6	I P	Z GT			74.3	351.8	
	5 3		PCP	Z			8260.0	10.0	

FEB 10	36		NORTHERN ITALY						
5 2	52.0	44.2N	10.2E						PCIS
( 1 )									

BUH	5 4	1.4	PN	Z GT			4.7	162.4	
	04 19.0		PG	Z			521.0	343.8	
	04 40.3		I	Z					
	04 51.7		SN	Z					

FEB 13	32		NORTH ATLANTIC OCEAN						
23 14	19.6	52.7N	34.1W	10KM					USCGS

BUH	23 20	1.9	I P	Z GT			26.8	294.8	
							2980.0	98.6	

## 1967 SEISMOLOGICAL BULLETIN OF STATION BUEHLERHOEHE (BUH) PAGE 2

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
								DELTA(KM)	AZ F/S

FEB 14	46		ANDAMAN ISLANDS REGION						
1 36	4.7	13.7N	96.5E	27KM					USCGS

BUH	1 48	6.3	I P	Z GT			78.7	82.2	
							8750.0	317.6	

FEB 15	8		PERU-BRAZIL BORDER REGION						
16 11	11.8	9.0S	71.3W	597KM	MAG=6.2				USCGS

BUH	16 23	8.6	I P	Z GT			89.8	256.3	
	23 10		PCP	Z			9990.0	139.4	
	23 36		E	Z					
	25 19		AP	Z					

FEB 17	12		TONGA ISLANDS REGION						
10 10	51.5	23.7S	175.2W	19KM	MAG=6.4				USCGS

BUH	10 30	35.-	E PKP	Z WT			154.9	7.5	
							17220.0	354.7	

MAR 02	19		NEAR EAST COAST OF KAMCHATKA						
23 3	39.7	53.8N	160.5E	21KM	MAG=5.0				USCGS

BUH	23 15	22.8	I P	Z GT			75.2	16.6	
	15 24		I	Z			8360.0	341.5	

MAR 04	12		TONGA ISLANDS						
6 16	21.9	18.5S	175.4W	225KM	MAG=5.7				USCGS

BUH	6 35	42.-	E PKP	Z GT			149.8	6.9	
	35 47		I	Z			16650.0	355.3	
	35 53		I	Z					
	36 48		PKP2	Z					



## 1967 SEISMOLOGICAL BULLETIN OF STATION BUEHLERHOEHE (BUH) PAGE

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/	DELTA(KM)	AZ E/S
--	---	---	-----	-------	----	---	----	--------	------------	-------	-----------	--------

MAR 04 NO DETERMINATION OF EPICENTER

BUH	8	27	21.1	PG	Z	GT						
		27	22.1	PN	Z							
		27	37.2	SN	Z							

MAR 04 NO DETERMINATION OF EPICENTER

BUH	12	10	35.7	PG	Z	GT						
		10	38.1	PN	Z							
		10	45.9	SG	Z							
		10	50.1	SN	Z							

MAR 04	30	AEGEAN SEA										
17 58	6.4	39.2N	24.6E	33KM								USCG
( 2 )												

BUH	18	1	37.-	E P	Z	GT			15.1	122.8		
									1680.0	314.2		

MAR 07 NO DETERMINATION OF EPICENTER

BUH	2	37	59.2	PN	Z	GT						
		37	8.5	PG	Z							
		38	26.7	I	Z							
		38	35.3	SN	Z							

MAR 11	34	VERA CRUZ, MEXICO										
14 44	59.2	19.1N	95.8W	33KM								USCG

BUH	14	57	32.-	E P	Z	GT			84.7	292.9		
		57	47	PCP	Z				9420.0	139.8		

MAR 13	37	RED SEA										
19 22	15.4	19.7N	38.9E	7KM								USCG

BUH	19	29	35.2	I P	Z	GT			38.0	128.7		
									4220.0	326.7		

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	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/	DELTA(KM)	AZ E/S
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MAR 14	26	INDIA-CHINA BORDER REGION										
6 58	4.6	28.4N	94.3E	24KM								USCGS

BUH	7	8	50.9	I P	Z	GT			66.8	73.1		
		11	25	PP	Z				7420.0	314.0		

MAR 16	14	LOYALTY ISLANDS REGION										
12 9	37.7	22.1S	170.5E	66KM								USCGS

BUH	12	29	22.0	I PKP	Z	GT			149.9	34.4		
									16670.0	336.3		

MAR 17 NO DETERMINATION OF EPICENTER

BUH	14	54	2.9	PG	Z	GT						
		54	24.6	SG	Z							

MAR 18	36	GERMANY										
9 59	57.0	49.6N	7.9E									BCIS
( 3 )												

BUH	10	0	16.8	PN	Z	GT			0.9	346.9		
		00	31.5	SN	Z				105.0	166.7		

MAR 18 NO DETERMINATION OF EPICENTER

BUH	16	44	54.6	PN	Z	GT						
		45	10.3	SG	Z							
		45	11.3	SN	Z							

MAR 19	24	BANDA SEA										
1 10	45.8	6.7S	129.9E	60KM								USCGS

BUH	1	29	21.8	I PKP	Z	GT			115.6	69.7		
		30	25	PP	Z				12850.0	321.3		



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	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ E/S

MAR 19				19 KURILE ISLANDS						
4 1	36.7			45.4N 151.3E	33KM					USCGS

								80.9	25.4	
BUH	4 13	49.5		I P		Z GT		8990.0	336.3	
	15	9		I		Z				

MAR 20				19 KURILE ISLANDS						
13 31	34.0			45.6N 151.4E	51KM		MAG=5.7			USCGS

								80.7	25.3	
BUH	13 43	44.0		I P		Z GT		8980.0	336.3	

MAR 20				19 KURILE ISLANDS						
13 40	52.8			45.6N 151.5E	53KM		MAG=5.3			USCGS

								80.8	25.2	
BUH	13 53	3.3		I P		Z GT		8980.0	336.4	

MAR 20				19 KURILE ISLANDS						
13 52	5.5			45.6N 151.5E	32KM		MAG=5.4			USCGS

								80.8	25.2	
BUH	14 4	17.3		I P		Z GT		8980.0	336.4	

MAR 20				19 KURILE ISLANDS						
17 11	34.8			45.5N 151.4E	33KM		MAG=5.0			USCGS

								80.8	25.3	
BUH	17 23	47.1		I P		Z GT		8990.0	336.3	

MAR 20				14 LOYALTY ISLANDS REGION						
19 7	25.2			22.1S 170.6E	28KM		MAG=5.5			USCGS

								150.0	34.2	
BUH	19 27	8.-		E PKP		Z GT		16670.0	336.4	
	27 14			I		Z				
	27 20			I		Z				

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	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ E/S

MAR 22 NO DETERMINATION OF EPICENTER

BUH	15 4	51.0		PN		Z GT				
	04	58.2		PG		Z				
	05	23.2		SN		Z				

MAR 22				36 NORTHERN ITALY						
19 14	51.0			46.3N 12.6E						PCIS
				( 4 )						

								3.8	127.2	
BUH	19 15	49.9		PN		Z GT		423.0	310.4	
	16	8.6		PG		Z				
	16	40.4		SN		Z				

MAR 22 NO DETERMINATION OF EPICENTER

BUH	19 19	33.2		PN		Z GT				
	19	44.2		PG		Z				
	20	18.5		SN		Z				

MAR 24				36 SWITZERLAND						
17 38	18.2			46.6N 7.7E	33KM		MAG=4.2			USCGS
				( 5 )						

								2.1	190.0	
BUH	17 38	51.2		PN		Z WT		235.0	9.6	

MAR 25				19 KURILE ISLANDS						
22 47	58.4			45.5N 151.4E	41KM		MAG=5.5			USCGS

								80.8	25.3	
BUH	23 0	11.0		I P		Z GT		8990.0	336.3	
	0	26		PCP		Z				

MAR 27				41 NORTHEASTERN CHINA						
8 58	25.5			38.4N 116.5E	61KM		MAG=5.4			USCGS

								72.5	51.5	
BUH	9 9	47.-		F P		Z GT		8070.0	318.8	
	10	5		PCP		Z				







H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
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APR 01	5	57	9.1	19	KURILE ISLANDS			46.3N 152.0E		40KM	MAG=5.5	USCGS
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BUH	6	9	17.4	I P	Z GT			80.3 8920.0	24.6 336.6			
-----	---	---	------	-----	------	--	--	----------------	---------------	--	--	--

APR 01	7	48	27.8	19	KURILE ISLANDS REGION			45.9N 152.0E		40KM	MAG=5.0	USCGS
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BUH	8	0	38.5	I P	Z GT			80.6 8970.0	24.8 336.7			
-----	---	---	------	-----	------	--	--	----------------	---------------	--	--	--

APR 01	12	23	35.5	19	KURILE ISLANDS			45.7N 151.8E		40KM	MAG=5.9	USCGS
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BUH	12	35	45.9	I P	Z GT			80.8 8980.0	25.0 336.5			
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APR 01	14	0	33.8	19	KURILE ISLANDS			45.8N 151.7E		23KM	MAG=5.4	USCGS
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BUH	14	12	46.8	I P	Z GT			80.6 8970.0	25.0 336.5			
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APR 02 NO DETERMINATION OF EPICENTER

BUH	0	56	13.5	PG	Z GT							
		56	15.9	PN	Z							
		56	24.2	I	Z							
		56	24.6	SG	Z							

APR 03	7	38	28.4	37	RED SEA			19.9N 38.5E		33KM	MAG=5.1	USCGS
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BUH	7	45	43.0	I P	Z GT			37.6 4180.0	129.1 326.9			
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H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
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APR 03	8	4	15.4	15	NEW BRITAIN REGION			6.1S 151.5E		16KM		USCGS
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BUH	8	23	22.1	I PKP	Z GT			127.4 14160.0	48.5 330.1			
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APR 03	16	36	19.8	36	NORTHERN ITALY			44.9N 10.6E		33KM	MAG=4.7	USCGS
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BUH	16	37	22.8	PN	Z GT			4.1 458.0	155.9 337.6			
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APR 04	3	54	26.2	19	KURILE ISLANDS REGION			45.5N 152.2E		42KM	MAG=5.0	USCGS
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BUH	4	6	38.6	I P	Z GT			81.1 9010.0	24.8 336.8			
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APR 04	16	59	4.1	30	CRETE			35.4N 23.6E		71KM	MAG=4.8	USCGS
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BUH	17	3	2.-	E P	Z GT			17.5 1940.0	133.9 324.2			
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APR 04	18	4	47.0	36	BELGIUM			50.4N 4.3E				BCTS
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BUH	18	5	32.2	PN	Z GT			3.1 343.0	305.4 122.5			
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H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
							DELTA(KM)	AZ E/W	

APR 05 18 MARIANA ISLANDS REGION  
 2 34 11.1 20.0N 147.1E 50KM MAG=5.9 USCG

BUH	2	48	3.2	I	P			102.4	39.4
		52	12					11390.0	333.5

APR 06 NO DETERMINATION OF EPICENTER

BUH	16	1	16.8	PG				Z	GT
		01	17.8	PN				Z	
		01	31.7	SN				Z	
		01	32.6	I				Z	

APR 07 NO DETERMINATION OF EPICENTER

BUH	17	14	13.4	PG				Z	GT
		14	15.3	PN				Z	
		14	28.8	SN				Z	

APR 07 30 TURKEY  
 17 7 16.2 37.4N 36.1E 49KM MAG=4.8 USCG

BUH	17	12	18.5	I	P			23.1	108.
		12	25		AP			2570.0	308.

APR 07 30 TURKEY  
 18 33 31.3 37.4N 36.2E 39KM MAG=5.0 USCG

BUH	18	38	35.6	I	P			23.2	108.
		38	45		E			2580.0	308.
		38	49		E				

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H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
							DELTA(KM)	AZ F/S	

APR 08 13 FIJI ISLANDS REGION  
 5 35 17.1 19.9S 178.6W 616KM MAG=5.3 USCGS

BUH	5	53	55.7	I	PKP			150.8	13.3
		54	2		E			16760.0	350.8
		54	13		E				
		56	24		APKP				

APR 08 NO DETERMINATION OF EPICENTER

BUH	9	31	41.6	PG				Z	GT
		31	41.9	I				Z	
		31	53.2	SG				Z	

APR 08 36 FRANCE  
 12 47 1.0 46.0N 3.0E RCIS

BUH	12	48	24.6	PN				4.5	235.0
		48	40.2	I				495.0	51.2
		49	21.7	I					
		49	23.2	I					

APR 08 NO DETERMINATION OF EPICENTER

BUH	13	1	1.7	PN				Z	GT
		02	15.3	I				Z	
		02	19.8	I				Z	
		02	23.4	I				Z	

APR 09 36 NORTHERN ITALY  
 7 6 39.0 45.9N 10.9E RCIS

BUH	7	7	29.5	PN				3.3	145.9
		07	40.5	PG				369.0	327.9
		08	11.0	SN					
		08	32.2	I					



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ E/S

APR 9/10 12 TONGA ISLANDS REGION USCGS  
 23 57 24.9 17.7S 173.0W 70KM MAG=4.9

BUH 0 17 7.- E PKP Z GT 149.1 2.3  
 16570.0 358.5

APR 10 15 SOLOMON ISLANDS USCGS  
 15 2 42.2 7.3S 155.8E 29KM MAG=5.6

BUH 15 21 52.2 I PKP Z GT 130.5 44.4  
 25 12 PP Z 14510.0 332.2

APR 10 1 ALASKA PENINSULA USCGS  
 19 57 34.4 58.6N 154.3W 86KM MAG=5.5

BUH 20 8 51.5 I P Z GT 72.1 350.5  
 8 52 I Z 8020.0 12.1  
 9 6 PCP Z  
 9 15 E Z

APR 10 15 SOLOMON ISLANDS USCGS  
 21 49 19.5 7.3S 155.9E 39KM MAG=5.3

BUH 22 8 29.5 I PKP Z GT 130.5 44.3  
 8 38 E Z 14510.0 332.2

APR 11 7 LEEWARD ISLANDS USCGS  
 12 42 47.7 18.8N 62.7W 49KM MAG=5.2

BUH 12 53 13.5 I P Z GT 63.6 268.8  
 53 26 E Z 7070.0 135.7  
 53 34 PCP Z

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ E/S

APR 12 7 LEEWARD ISLANDS USCGS  
 4 40 53.0 19.3N 63.6W 38KM MAG=4.5

BUH 4 51 4.5 I P Z GT 63.8 270.0  
 7100.0 135.5

APR 12 46 NORTHERN SUMATRA USCGS  
 4 51 40.2 5.3N 96.5E 55KM MAG=6.1

BUH 5 4 9.5 I P Z GT 84.9 87.8  
 4 44 I Z 9440.0 318.4

APR 12 36 SWITZERLAND RCIS  
 18 34 21.0 46.4N 7.3E (13)

BUH 18 34 53.6 PN Z GT 2.4 195.8  
 35 29.8 SG Z 263.0 15.2

APR 13 14 NEW HEBRIDES ISLANDS USCGS  
 4 14 33.6 18.7S 168.8E 123KM MAG=5.2

BUH 4 34 1.4 I PKP Z GT 146.2 34.6  
 34 33 I Z 16260.0 336.7

APR 13 13 FIJI ISLANDS REGION USCGS  
 17 13 43.5 18.0S 178.6W 610KM MAG=5.0

BUH 17 32 24.5 I PKP Z GT 148.9 12.7  
 32 31 E Z 16550.0 351.3

APR 13 NO DETERMINATION OF EPICENTER

BUH 17 6 32.4 PN Z GT  
 06 48.0 I Z  
 06 48.4 SN Z





H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

APR 13 20 RYUKYU ISLANDS 38KM MAG=6.0 USCGS  
19 53 42.4 27.3N 128.7E

BUH	20	6	27.5	I P	Z	GT	87.6	50.2	
							9730.0	325.2	

APR 13 5 GUERRERO, MEXICO 86KM MAG=5.6 USCGS  
19 59 51.9 18.5N 100.2W

BUH	20	12	33.8	I P	Z	GT	87.9	295.8	
							9770.0	141.1	

APR 14 NO DETERMINATION OF EPICENTER

BUH	13	5	37.0	PN	Z	GT			
		06	14.1	SN	Z				

APR 14 NO DETERMINATION OF EPICENTER

BUH	15	20	36.9	PN	Z	GT			
		20	43.1	PG	Z				
		21	8.5	SN	Z				
		21	15.4	SG	Z				

APR 15 31 YUGOSLAVIA 44.3N 16.3E BCIS  
2 8 4.0 (14)

BUH	2	9	47.1	PN	Z	GT	7.1	125.2	
		09	55.0	I	Z		788.0	311.1	
		11	57.5	SG	Z				
		12	2.2	I	Z				

APR 15 NO DETERMINATION OF EPICENTER

BUH	20	58	32.4	PN	Z	GT			
		58	37.5	PG	Z				
		59	5.6	SG	Z				

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

APR 16 12 SOUTH OF FIJI ISLANDS 38KM MAG=5.3 USCGS  
7 18 11.8 19.4S 175.9E

BUH	7	37	59.-	E PKP	Z	GT	149.1	23.2	
							16580.0	344.0	

APR 16 19 KURILE ISLANDS 24KM MAG=5.3 USCGS  
10 10 6.7 46.4N 153.3E

BUH	10	22	18.6	I P	Z	GT	80.5	23.7	
							8950.0	337.4	

APR 19 NO DETERMINATION OF EPICENTER

BUH	16	48	31.5	PG	Z	GT			
		48	46.0	SG	Z				

APR 19 7 DOMINICAN REPUBLIC REGION 103KM MAG=5.0 USCGS  
21 57 5.1 18.8N 69.6W

BUH	22	7	57.-	E P	Z	GT	68.1	273.9	
		8	24	PCP	Z		7580.0	135.8	

APR 20 28 EASTERN KAZAKH SSR 49.7N 78.1E MAG=5.7 USCGS  
4 7 57.6

BUH	4	16	9.8	I P	Z	GT	44.1	61.1	
							4910.0	296.7	

APR 20 NO DETERMINATION OF EPICENTER

BUH	8	45	25.4	PG	Z	GT			
		45	40.2	SG	Z				



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H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
DELTA(KM) AZ F/S

APR 22 46 NORTHERN SUMATRA USC  
13 7 38.1 5.1N 96.4E 42KM MAG=5.4 USC

BUH 13 20 9.6 I P Z GT 85.0 88.1  
20 15 PCP Z 9450.0 318.4  
20 25 E Z

APR 22 NO DETERMINATION OF EPICENTER

BUH 22 49 42.5 PG Z GT  
49 44.2 SG Z

APR 23 NO DETERMINATION OF EPICENTER

BUH 8 38 44.7 PN Z GT  
39 23.0 SG Z  
39 41.8 I Z

APR 23 31 ALGERIA USC  
9 30 22.0 36.3N 2.4E 33KM MAG=4.8 USC

BUH 9 33 26.0 I P Z GT 13.1 201.3  
1460.0 17.3

APR 24 48 TADZHIK SSR USC  
8 51 10.9 37.4N 72.7E 31KM MAG=5.6 USC

BUH 8 59 42.9 I P Z GT 47.1 78.7  
59 47 AP Z 5240.0 305.4

APR 24 41 E. RUSSIA-N.E. CHINA BORDER REG. USC  
15 12 48.2 42.4N 131.0E 521KM MAG=4.2 USC

BUH 15 23 44.3 I P Z GT 76.3 39.9  
8480.0 325.0

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H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
DELTA(KM) AZ F/S

APR 24 NO DETERMINATION OF EPICENTER

BUH 20 22 33.0 PG Z GT  
22 43.9 SG Z

APR 26 13 FIJI ISLANDS REGION USC  
21 46 41.2 16.5S 175.6E 116KM MAG=4.8 USC

BUH 22 6 11.- E PKP Z GT 146.3 22.3  
16260.0 344.9

APR 29 1 ANDREANOF ISLANDS, ALFUTIAN IS. USC  
3 55 20.8 51.4N 178.3W 50KM MAG=6.0 USC

BUH 4 7 27.2 I P Z GT 80.1 4.2  
8910.0 355.7

APR 29 1 ANDREANOF ISLANDS, ALFUTIAN IS. USC  
12 25 32.7 51.5N 178.2W 51KM MAG=5.3 USC

BUH 12 37 39.0 I P Z GT 80.1 4.1  
8900.0 355.7

APR 29 12 TONGA ISLANDS USC  
12 31 9.4 15.6S 173.8W 59KM MAG=4.6 USC

BUH 12 50 46.5 I PKP Z GT 147.0 3.6  
16340.0 357.6

MAY 01 30 GREECE USC  
7 9 0.5 39.7N 21.3E 15KM MAG=5.6 USC

BUH 7 12 4.2 I P Z GT 13.0 129.0  
14 21 S Z 1440.0 318.1







H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/E  
DELTA(KM) AZ F/S

MAY 02 NO DETERMINATION OF EPICENTER

BUH 23 54 23.7 PG Z GT  
54 40.0 SG Z

MAY 03 36 SWITZERLAND  
0 24 29.0 47.4N 7.9E RCTS  
(22)

BUH 0 24 51.1 PN Z GT 1.3 190.0  
24 53.2 PG Z 144.0 9.8  
25 9.0 SG Z

MAY 03 NO DETERMINATION OF EPICENTER

BUH 0 52 34.5 PG Z GT  
52 50.4 SG Z

MAY 03 NO DETERMINATION OF EPICENTER

BUH 1 21 18.1 PN Z GT  
21 20.0 PG Z  
21 36.0 SG Z

MAY 03 36 SWITZERLAND  
1 42 5.0 47.4N 7.9E RCTS  
(23)

BUH 1 42 26.8 PN Z GT 1.3 190.0  
42 28.9 PG Z 144.0 9.8  
42 44.7 SG Z

MAY 05 NO DETERMINATION OF EPICENTER

BUH 11 51 5.6 PG Z GT  
51 11.0 SG Z

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/E  
DELTA(KM) AZ F/S

MAY 08 NO DETERMINATION OF EPICENTER

BUH 12 4 59.7 PG Z GT  
05 14.0 SG Z

MAY 08 12 SOUTH OF KERMADEC ISLANDS  
18 44 56.8 33.2S 178.4W 50KM MAG=5.3

BUH 19 5 47.3 I PKP 7 GT 163.8 20.3  
18210.0 344.2

MAY 09 19 KURILE ISLANDS  
6 14 57.1 44.2N 149.0E 40KM MAG=5.3

BUH 6 27 11.- E P Z GT 81.3 27.4  
27 24 PCP Z 9040.0 335.0

MAY 09 NO DETERMINATION OF EPICENTER

BUH 11 17 53.4 PG Z GT  
18 8.8 SG Z

MAY 09 NO DETERMINATION OF EPICENTER

BUH 14 7 18.3 PG Z GT  
07 35.5 SG Z

MAY 09 NO DETERMINATION OF EPICENTER

BUH 17 3 25.6 PG Z GT  
03 38.2 SG Z



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ F/S

MAY 10			36	NORTHERN ITALY					BCIS
5 22	0.0		44.6N	10.4E					
(24)									

BUH	5 23	3.6	PN	Z	GT		4.3	159.1	
	23 52.2		SN	Z			483.0	340.7	

MAY 11			48	TADZHIK-SINKIANG BORDER REGION					USCGS
14 50	58.8		39.4N	73.8E	21KM			MAG=5.6	

BUH	14 59	28.-	E P	Z	GT		46.7	75.8	
	59 32		I	Z			5190.0	304.0	
	0 54		PCP	Z					

MAY 12			36	NORTHERN ITALY					USCGS
17 53	23.1		44.7N	10.4E	39KM			MAG=4.2	
(25)									

BUH	17 54	27.6	PN	Z	GT		4.3	158.7	
	54 44.0		PG	Z			473.0	340.3	
	55 15.4		SN	Z					

MAY 14			30	SOUTHERN GREECE					USCGS
4 16	1.7		37.7N	21.2E	66KM			MAG=4.8	
(26)									

BUH	4 19	29.6	I P	Z	GT		14.5	134.6	
							1610.0	323.5	

MAY 15	NO DETERMINATION OF EPICENTER								
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BUH	6 35	27.4	PN	Z	GT				
	35 38.5		PG	Z					
	36 6.4		SN	Z					
	36 25.8		SG	Z					

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ F/S

MAY 15			30	CRETE					USCGS
8 12	57.1		34.6N	26.7E	33KM			MAG=4.9	
(27)									

BUH	8 17	25.1	I P	Z	GT		19.6	129.0	
	17 39		PP	Z			2180.0	321.4	

MAY 15			36	NORTHERN ITALY					BCIS
10 0	4.0		44.6N	10.4E					
(28)									

BUH	10 4	39.6	PN	Z	GT		4.3	159.1	
	04 58.0		PG	Z			483.0	340.7	
	05 29.5		SN	Z					
	05 57.6		SG	Z					

MAY 19	NO DETERMINATION OF EPICENTER								
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BUH	15 51	15.0	PG	Z	GT				
	51 16.9		PN	Z					
	51 27.0		SN	Z					
	51 30.0		SG	Z					

MAY 20			3	NEVADA					USCGS
15 0	0.2		37.1N	116.1W					

BUH	15 12	18.5	I P	Z	GT		81.3	318.1	
							9040.0	33.7	

MAY 21			24	SOUTHERN SUMATRA					USCGS
18 45	11.7		1.0S	101.5E	173KM			MAG=6.3	

BUH	18 58	6.0	I P	Z	GT		92.9	88.3	
	58 50		AP	Z			10330.0	318.6	
	1 25		PP	Z					



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H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	A7 S/F	DELTA(KM)	A7 E/S
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MAY 23											
14 0 0.0											

3 NEVADA											
37.3N	116.4W										

81.3	318.5
9040.0	33.5

NO DETERMINATION OF EPICENTER

MAY 24											
19 1 42.2											
01 46.0											
01 51.2											
01 52.0											

NO DETERMINATION OF EPICENTER

MAY 25											
8 55 1.9											
55 3.0											
55 16.5											
55 18.5											

MAY 27											
1 42 47.1											

27 SOUTHERN SINKIANG PROV., CHINA											
39.9N	77.3E										

MAY 27											
17 22 58.7											

1 RAT ISLANDS, ALEUTIAN ISLANDS											
51.9N	176.1E										

79.3	7.7
8810.0	351.9

## 1967 SEISMOLOGICAL BULLETIN OF STATION BUEHLERHOEHE (BUH) PAGE 26

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	A7 S/F	DELTA(KM)	A7 E/S
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MAY 27											
19 5 48.5											

27 KASHMIR-SINKIANG BORDER REGION											
36.1N	77.8E										

51.2	76.9
5690.0	307.2

MAY 28											
4 8 0.0											

29 WESTERN KAZAKH SSR											
50.0N	78.0E										

44.0	60.8
4890.0	296.4

MAY 29											
21 1 44.3											

19 HOKKAIDO, JAPAN, REGION											
43.3N	145.7E										

81.1	30.0
9010.0	333.1

MAY 30											
23 53 30.9											

30 EASTERN MEDITERRANEAN SEA											
34.2N	28.8E										

21.1	125.9
2340.0	319.6

NO DETERMINATION OF EPICENTER

MAY 31											
12 7 32.3											
07 37.5											

MAY 31											
3 36 19.0											

1 FOX ISLANDS, ALEUTIAN ISLANDS											
53.7N	165.6W										

77.9	356.3
8660.0	4.2

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
							DELTA(KM)	AZ E/S	

JUN 01	19	NEAR EAST COAST OF KAMCHATKA							
10 16	9.4	53.9N 160.6E				28KM	MAG=4.9		USCGS

BUH	10 27 50.9	I P	Z GT				75.2	16.5	
							8360.0	341.5	

JUN 01	30	TURKEY							
10 39 22.8		36.9N 29.2E				36KM	MAG=5.0		USCGS

BUH	10 43 47.8	I P	Z GT				19.3	119.8	
							2150.0	314.2	

JUN 01	15	SOLOMON ISLANDS							
20 47 45.6		6.8S 155.0E				31KM	MAG=5.6		USCGS

BUH	21 6 53.7	I PKP	Z GT				129.7	45.1	
							14420.0	331.9	

JUN 02	32	CENTRAL MID-ATLANTIC RIDGE							
6 31 28.2		0.9N 28.4W				33KM	MAG=5.0		USCGS

BUH	6 41 13.2	I P	Z GT				57.1	225.3	
							6350.0	28.2	

JUN 03		NO DETERMINATION OF EPICENTER							
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BUH	7 17 19.7	PG	Z GT						
	17 29.5	I	Z						
	17 31.0	I	Z						
	17 32.0	SG	Z						

JUN 03	1	KODIAK ISLAND REGION							
9 8 56.4		58.4N 151.2W				32KM	MAG=5.5		USCGS

BUH	9 20 19.0	I P	Z GT				71.9	348.8	
	20 28	PCP	Z				8000.0	14.2	

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	A7 S/E
							DELTA(KM)	AZ E/S	

JUN 04	19	OFF EAST COAST OF KAMCHATKA							
5 26 44.6		51.4N 159.3E				9KM	MAG=4.8		USCGS

BUH	5 38 41.5	I P	Z GT				77.3	18.2	
							8590.0	340.9	

JUN 05	12	TONGA ISLANDS							
1 21 20.2		21.3S 174.5W				33KM	MAG=5.2		USCGS

BUH	1 41 8.-	E PKP	Z GT				152.6	5.6	
	41 26	E	Z				16970.0	356.1	
	41 36	PKP2	Z						
	45 11	PP	Z						

JUN 06	15	NEW BRITAIN REGION							
6 35 16.1		6.2S 152.0E				58KM	MAG=5.4		USCGS

BUH	6 54 17.-	E PKP	Z GT				127.7	48.0	
							14200.0	330.4	

JUN 07	36	AUSTRIA							
16 19 27.2		48.0N 14.3E				33KM			USCGS

BUH	16 20 28.0	PN	Z GT				4.1	97.3	
	20 41.8	I	Z				456.0	281.8	
	21 13.2	I	Z						
	21 35.8	I	Z						

JUN 08	14	LOYALTY ISLANDS REGION							
13 22 13.7		21.4S 170.3E				90KM	MAG=5.3		USCGS

BUH	13 41 52.8	I PKP	Z GT				149.2	34.2	
	42 17	PKP2	Z				16590.0	336.5	



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

JUN 09 NO DETERMINATION OF EPICENTER

BUH	15	38	26.5	PN	Z	GT			
	38	43.4		SG	7				
	38	44.0		SN	Z				

 JUN 10 36 NORTHERN ITALY  
 4 42 49.0 44.6N 10.5E  
 (32)

							4.4	158.3	
BUH	4	43	54.3	PN	Z	GT	486.0	339.9	
	44	11.1		PG	Z				
	44	43.6		I	Z				
	44	45.3		SN	Z				

 JUN 10 32 NORTH OF ASCENSION ISLAND  
 5 45 52.8 3.6S 12.1W 12KM MAG=5.1 USCGS

							55.0	205.1	
BUH	5	55	25.-	E P	Z	GT	6110.0	16.4	

 JUN 10 13 FIJI ISLANDS REGION  
 13 58 53.3 19.3S 178.2W 596KM MAG=5.1 USCGS

							150.2	12.3	
BUH	14	17	38.7	I PKP	Z	GT	16700.0	351.5	
	17	48		PKP2	Z				
	20	2		PP	Z				
	47	52		E	Z				

 JUN 11 30 GREECE  
 5 35 3.7 38.1N 22.9E 37KM MAG=4.4 USCGS  
 (33)

							15.0	129.5	
BUH	5	38	38.7	I P	Z	GT	1670.0	319.6	

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

JUN 11 NO DETERMINATION OF EPICENTER

BUH	11	4	54.0	PG	Z	GT			
	04	57.7		I	Z				
	05	9.2		SG	Z				
	05	10.8		SN	Z				

 JUN 11 19 KURILE ISLANDS  
 11 50 17.4 47.5N 154.4E 36KM MAG=4.9 USCGS

							79.8	22.6	
BUH	12	2	23.5	I P	Z	GT	8870.0	338.0	

JUN 11 NO DETERMINATION OF EPICENTER

BUH	17	11	14.5	PN	Z	GT			
	11	51.8		SN	Z				

 JUN 12 12 TONGA ISLANDS  
 0 48 59.2 21.1S 174.4W 13KM MAG=5.1 USCGS

							152.4	5.3	
BUH	1	8	48.-	E PKP	Z	GT	16940.0	356.3	
	9	5		PKP2	Z				

 JUN 12 30 GREECE  
 1 29 6.9 38.2N 22.8E 27KM MAG=4.5 USCGS  
 (34)

							14.9	129.5	
BUH	1	32	46.7	I P	Z	GT	1650.0	319.5	

 JUN 12 30 GREECE  
 2 51 5.5 38.2N 22.7E 33KM MAG=4.8 USCGS  
 (35)

							14.8	129.7	
BUH	2	54	41.7	I P	Z	GT	1650.0	319.7	
		57	12	S	Z				
		59	24	L	Z				

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ E/S
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JUN 12 14 NEW HEBRIDES ISLANDS USCGS  
 3 5 34.1 18.0S 167.7E 8KM MAG=4.8

BUH 3 25 13.1 I PKP Z GT  
 145.2 35.8  
 16140.0 336.0

JUN 12 NO DETERMINATION OF EPICENTER

BUH 8 32 24.6 PG Z GT  
 32 32.8 SG Z

JUN 12 19 KURILE ISLANDS USCGS  
 23 22 45.3 47.4N 154.3E 56KM MAG=5.4

BUH 23 34 49.4 I P Z GT  
 34 52 PCP Z  
 79.9 22.7  
 8880.0 338.0

JUN 13 14 NEW HEBRIDES ISLANDS USCGS  
 0 17 15.6 17.5S 167.5E 9KM MAG=4.8

BUH 0 36 53.7 I PKP Z GT  
 144.6 35.7  
 16080.0 336.1

JUN 13 36 AUSTRIA BCIS  
 17 39 46.0 (36) 47.5N 14.3E  
 4.2 103.9  
 471.0 288.5

BUH 17 40 52.0 PN Z GT  
 41 11.0 PG Z  
 41 40.0 SN Z  
 42 7.3 SG Z

JUN 14 41 NEAR E. COAST OF EASTERN RUSSIA USCGS  
 3 46 20.3 45.3N 136.9E 360KM MAG=4.7

BUH 3 57 31.3 I P Z GT  
 76.2 34.6  
 8470.0 327.9

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ E/S
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JUN 14 12 TONGA ISLANDS USCGS  
 5 6 16.3 15.2S 173.6W 11KM MAG=5.9

BUH 5 25 59.2 I PKP Z GT 146.6 3.3  
 26 13 PKP2 Z 16300.0 357.9  
 26 27 E Z

JUN 14 19 KURILE ISLANDS USCGS  
 8 5 58.6 47.5N 154.4E 55KM MAG=5.3

BUH 8 18 2.7 I P Z GT 79.8 22.6  
 8870.0 338.0

JUN 14 19 KURILE ISLANDS USCGS  
 8 13 2.2 47.5N 154.5E 53KM MAG=5.4

BUH 8 25 4.8 I P Z GT 79.8 22.5  
 8870.0 338.1

JUN 14 NO DETERMINATION OF EPICENTER

BUH 16 46 8.2 PG Z GT  
 46 13.9 SG Z  
 46 15.8 I Z

JUN 15 NO DETERMINATION OF EPICENTER

BUH 15 46 46.3 PN Z GT  
 46 56.6 PG Z  
 47 39.0 SG Z  
 47 52.4 I Z

JUN 15 NO DETERMINATION OF EPICENTER

BUH 15 55 22.7 PG Z GT  
 55 38.9 SG Z



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
---	---	-----	-------	----	---	----	--------	------------	--------	-----------	--------

JUN 16 NO DETERMINATION OF EPICENTER

BUH	16	3	30.9	PG							
		03	44.0	SG							
					Z						
					Z						

JUN 16 NO DETERMINATION OF EPICENTER

BUH	16	47	34.1	PG							
		47	47.3	SG							
					Z						
					Z						

 JUN 17 10 SOUTH SANDWICH ISLANDS REGION USCGS  
 5 0 11.8 58.3S 26.6W 140KM MAG=6.1

BUH	5	14	33.-	E P				110.4	198.8		
		18	8	E				12270.0	23.9		
		18	27	PKP							
		19	3	E							
					Z						
					Z						

BUH	5	0	0.	I P				110.4	198.8		
		19	38	PP				12270.0	23.9		
		24	47	SKS							
		26	42	S							
					Z						
					Z						

 JUN 17 31 SOUTHERN ITALY USCGS  
 15 42 55.4 41.6N 16.2E 24KM MAG=4.4

BUH	15	45	3.7	PN				9.0	138.6		
		45	37.3	I				1010.0	324.3		
		46	5.0	I							
		46	42.1	SN							
					Z						
					Z						

 JUN 17 36 CZECHOSLOVAKIA BCIS  
 17 45 41.0 48.4N 17.5E MAG=4.0

BUH	17	47	12.3	PN				6.2	90.9		
		47	38.4	PG				685.0	276.1		
		48	27.4	SN							
		48	42.5	I							
					Z						
					Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
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 JUN 17 36 SWITZERLAND BCIS  
 20 22 2.0 46.4N 7.4E

BUH	20	22	39.5	PN						2.3	194.2
		22	4.7	PG						261.0	13.6
		23	15.2	I							
		23	16.8	SG							
					Z						
					Z						

JUN 18 NO DETERMINATION OF EPICENTER

BUH	21	48	48.-	E P/PKP							
		50	55	I							
		51	2	E							
					Z						
					Z						

JUN 19 NO DETERMINATION OF EPICENTER

BUH	0	24	35.-	E P/PKP							
		26	11	I							
		26	15	I							
					Z						
					Z						

 JUN 19 37 RED SEA USCGS  
 14 35 20.2 20.6N 38.4E 35KM MAG=4.5

BUH	14	42	27.0	I P						37.0	128.6
					Z					4110.0	326.4
					Z						

 JUN 19 1 FOX ISLANDS, ALEUTIAN ISLANDS USCGS  
 17 7 45.4 52.7N 166.9W 33KM MAG=5.7

BUH	17	19	46.2	I P						78.9	357.0
		19	47	E						8770.0	3.3
		19	53	PCP							
					Z						
					Z						

 JUN 20 1 FOX ISLANDS, ALEUTIAN ISLANDS USCGS  
 5 25 22.4 52.8N 167.1W 31KM MAG=4.5

BUH	5	37	24.6	I P						78.8	357.2
					Z					8760.0	3.2
					Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ E/S	
JUN 20	6 20	49.5					1	FOX ISLANDS, ALEUTIAN ISLANDS		9KM	MAG=4.5	USCGS
							52.7N	166.9W				
									78.9	357.0		
BUH	6 32	54.9	I P				Z	GT	8770.0	3.3		
-----												
JUN 20	7 35	45.2					1	FOX ISLANDS, ALEUTIAN ISLANDS		29KM	MAG=4.0	USCGS
							52.9N	166.9W				
									78.7	357.0		
BUH	7 47	47.-	E P				Z	GT	8750.0	3.3		
-----												
JUN 20	7 38	44.9					1	FOX ISLANDS, ALEUTIAN ISLANDS		11KM	MAG=5.2	USCGS
							52.8N	167.1W				
									78.8	357.2		
BUH	7 50	49.9	I P				Z	GT	8760.0	3.2		
		50 51	E				Z					
		51 2	PCP				Z					
-----												
JUN 20	NO DETERMINATION OF EPICENTER											
BUH	17 5	15.9	PN				Z	GT				
		05 17.2	PG				Z					
		05 31.1	SN				Z					
		05 32.3	SG				Z					
-----												
JUN 21	18 4	49.5					1	CENTRAL ALASKA		17KM	MAG=5.4	USCGS
							64.8N	147.4W				
									65.3	348.8		
BUH	18 15	32.0	I P				Z	GT	7260.0	17.6		
-----												
JUN 21	18 13	2.9					1	CENTRAL ALASKA		17KM	MAG=5.6	USCGS
							64.8N	147.4W				
									65.3	348.8		
BUH	18 23	45.7	I P				Z	GT	7260.0	17.6		
		23 50	E				Z					

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ E/S	
JUN 21	18 24	45.7					1	CENTRAL ALASKA		17KM	MAG=5.4	USCGS
							64.8N	147.4W				
									65.3	348.8		
BUH	18 35	28.8	I P				Z	GT	7260.0	17.6		
-----												
JUN 22	NO DETERMINATION OF EPICENTER											
BUH	10 30	17.0	PG				Z	GT				
		30 29.7	SG				Z					
-----												
JUN 22	NO DETERMINATION OF EPICENTER											
BUH	16 1	48.7	PG				Z	GT				
		01 49.5	I				Z					
		02 4.2	I				Z					
-----												
JUN 23	0 25	29.8					12	SAMOA ISLANDS REGION		33KM	MAG=5.1	USCGS
							15.0S	172.3W				
									146.4	1.0		
BUH	0 45	8.7	I PKP				Z	GT	16280.0	359.4		
-----												
JUN 23	0 42	13.4					12	SAMOA ISLANDS		33KM	MAG=5.1	USCGS
							14.9S	172.4W				
									146.3	1.1		
BUH	1 1	52.5	I PKP				Z	GT	16270.0	359.3		
		2 10	E				Z					
-----												
JUN 23	5 5	4.8					24	BANDA SEA		85KM	MAG=5.9	USCGS
							5.8S	130.5E				
									115.3	68.6		
BUH	5 23	37.8	I PKP				Z	GT	12820.0	321.7		



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S	
JUN 23	10	6	54.1	30	TURKEY					14KM	MAG=4.8	USCGS
(40)												
BUH	10	11	24.2	I P	Z GT			19.6	104.2			
		11	31	AP	Z			2180.0	302.2			
-----												
JUN 23	21	30	11.5	14	NEW HEBRIDES ISLANDS REGION					37KM	MAG=5.3	USCGS
BUH	21	49	49.3	I PKP	Z GT			146.2	36.7			
		50	2	E	Z			16260.0	335.3			
-----												
JUN 27	20	32	59.3	1	ANDREANOF ISLANDS, ALEUTIAN IS.					26KM	MAG=5.1	USCGS
BUH	20	45	8.8	I P	Z GT			80.2	5.3			
								8910.0	354.5			
-----												
JUN 28	1	10	3.9	19	KURILE ISLANDS					33KM	MAG=5.4	USCGS
BUH	1	22	13.4	I P	Z GT			80.4	25.1			
		22	28	PCP	Z			8940.0	336.3			
-----												
JUN 28	5	34	6.4	12	SAMOA ISLANDS					40KM	MAG=4.8	USCGS
BUH	5	53	42.3	I PKP	Z GT			145.8	1.5			
		53	56	PKP2	Z			16210.0	359.1			
-----												
JUN 28					NO DETERMINATION OF EPICENTER							
BUH	9	39	54.2	PG	Z GT							
		39	59.3	SG	Z							

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S	
JUN 29	2	52	50.1	6	SOUTH OF PANAMA					33KM	MAG=4.8	USCGS
BUH	3	5	8.9	I P	Z GT			86.7	274.2			
								9640.0	138.5			
-----												
JUN 29	16	36	15.7	24	BANDA SEA					121KM	MAG=5.4	USCGS
BUH	16	54	44.-	F PKP	Z GT			115.2	71.1			
		55	48	PP	Z			12810.0	320.9			
-----												
JUN 30	3	45	3.0	36	SWITZERLAND							BCIS
(41)												
BUH	3	45	38.2	PN	Z GT			2.4	195.8			
			45	47.4	PG	Z		263.0	15.2			
			46	16.6	I	Z						
			46	22.1	SG	Z						
-----												
JUL 01	7	28	57.6	24	SOUTHERN SUMATRA					26KM	MAG=5.5	USCGS
BUH	7	42	1.-	E P	Z GT			90.9	89.8			
								10110.0	318.5			
-----												
JUL 01	8	37	2.0	36	GERMANY							BCIS
(42)												
BUH	8	37	11.8	I	Z GT			0.6	130.1			
			37	12.2	PG	Z		64.9	310.6			
			37	15.3	I	Z						
			37	20.4	SG	Z						

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/E  
DELTA(KM) AZ F/S

JUL 01 1 ALASKA PENINSULA  
21 22 10.0 54.0N 161.0W 19KM MAG=4.5 USCGS

BUH 21 34 5.2 I P Z GT 77.3 353.6  
8590.0 7.3

JUL 01 1 SOUTH OF ALASKA  
23 10 7.2 54.4N 158.0W 33KM MAG=6.2 USCGS

BUH 23 21 57.3 I P Z GT 76.6 351.8  
8520.0 9.4  
22 9 PCP Z  
23 38 E Z  
24 37 PP Z

JUL 02 31 YUGOSLAVIA  
1 14 3.3 43.7N 19.2E 33KM MAG=4.2 USCGS  
(43)

BUH 1 16 15.8 I P Z GT 9.1 119.2  
1010.0 307.1  
18 54 S Z  
16 57 I Z  
19 22 F Z  
20 5 I Z

JUL 02 46 NICOBAR ISLANDS REGION  
7 3 52.9 8.7N 93.8E 33KM MAG=5.7 USCGS

BUH 7 16 2.- F P Z GT 80.6 87.6  
8960.0 318.0  
19 22 PP Z

JUL 02 20 KYUSHU, JAPAN  
20 34 36.2 31.2N 130.1E 181KM MAG=4.9 USCGS

BUH 20 46 52.6 I P Z GT 85.1 47.0  
9460.0 325.6

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/E  
DELTA(KM) AZ F/S

JUL 03 31 YUGOSLAVIA  
2 53 47.9 44.2N 19.2E 60KM MAG=4.3 USCGS  
(44)

BUH 2 57 53.7 I P Z GT 8.8 116.6  
57 56 I Z 978.0 304.5  
58 36 I Z

JUL 04 19 HOKKAIDO, JAPAN, REGION  
23 42 13.7 43.2N 142.5E 160KM MAG=5.6 USCGS

BUH 23 54 6.5 I P Z GT 80.1 32.2  
8900.0 331.2  
54 17 PCP Z  
54 20 I Z  
54 47 I Z

JUL 05 30 SOUTHERN GREECE  
0 53 14.2 36.8N 21.3E 22KM MAG=4.8 USCGS  
(45)

BUH 0 56 51.5 I P Z GT 15.2 136.4  
56 57 I Z 1690.0 325.3

JUL 06 1 FOX ISLANDS, ALEUTIAN ISLANDS  
13 42 22.5 52.6N 168.2W 14KM MAG=5.9 USCGS

BUH 13 54 28.0 I P Z GT 79.1 357.8  
54 42 PCP Z 8790.0 2.5  
58 57 E Z

JUL 06 NO DETERMINATION OF EPICENTER

BUH 16 59 58.4 PG Z GT  
00 5.5 SG Z  
00 11.3 SN Z



H	M	SFC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
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JUL 06 NO DETERMINATION OF EPICENTER

BUH	17	46	26.0	PG	Z	GT					
	46	28.4		I	Z						
	46	44.0		SN	Z						
	46	45.1		SG	Z						

 JUL 06 32 CENTRAL MID-ATLANTIC RIDGE  
 19 19 48.4 8.1N 38.5W 33KM MAG=4.9 USCGS

BUH	19	29	27.2	I P	Z	GT	56.3	240.1			
							6260.0	144.6			

 JUL 08 14 NEW HEBRIDES ISLANDS  
 0 58 54.7 15.4S 167.5E 137KM MAG=5.2 USCGS

BUH	1	18	9.5	I PKP	Z	GT	142.7	34.3			
	18	16		PKP2	Z		15870.0	337.3			
	18	33		APKP	Z						
	21	40		PP	Z						

 JUL 11 31 YUGOSLAVIA  
 12 41 19.0 44.5N 17.3E MAG=4.3 RCIS  
 (46)

BUH	12	43	9.-	E P	Z	GT	7.5	120.5			
	44	57		E	Z		836.0	307.0			
	45	37		E	Z						
	45	48		E	Z						

 JUL 12 6 SOUTH OF PANAMA  
 21 0 20.9 5.6N 82.6W 33KM USCGS

BUH	21	13	2.-	E P	Z	GT	86.4	274.4			
	13	10		E	Z		9600.0	138.4			
	13	17		E	Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
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 JUL 12 13 FIJI ISLANDS  
 21 14 53.1 16.1S 178.3E 33KM MAG=5.3 USCGS

BUH	21	34	33.3	I PKP	Z	GT	146.5	17.5			
							16290.0	348.1			

 JUL 13 31 ALGERIA  
 2 10 20.0 35.5N 0.1W 13KM MAG=5.0 USCGS  
 (47)

BUH	2	13	48.4	I P	Z	GT	14.5	208.1			
							1620.0	22.5			

 JUL 13 13 FIJI ISLANDS  
 7 36 7.2 16.2S 178.1E 50KM MAG=5.4 USCGS

BUH	7	55	44.-	E PKP	Z	GT	146.6	17.0			
							16290.0	347.8			

 JUL 13 14 NEW HEBRIDES ISLANDS  
 10 4 19.0 20.4S 169.3E 46KM MAG=5.0 USCGS

BUH	10	24	0.6	I PKP	Z	GT	147.9	35.0			
		24	11	PKP2	Z		16450.0	336.1			

 JUL 13 31 ALBANIA  
 14 38 53.9 40.7N 19.5E 23KM MAG=4.4 USCGS  
 (48)

BUH	14	41	35.5	I P	Z	GT	11.3	130.8			
		43	58	S	Z		1260.0	318.7			
		44	43	E	Z						

 JUL 15 36 SWITZERLAND  
 2 23 12.0 46.8N 8.8E RCIS  
 (49)

BUH	2	23	45.0	PN	Z	GT	1.0	168.3			
		23	48.9	I	Z		213.0	348.7			
		23	54.0	PG	Z						
		24	14.4	SN	Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ	S/F
								DELTA(KM)	AZ	F/S

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ	S/F
								DELTA(KM)	AZ	F/S

JUL 15 28 EASTERN KAZAKH SSP MAG=5.4 USCGS  
 3 26 57.4 49.8N 78.1E

AUG 30 26 SZECHWAN PROVINCE, CHINA MAG=6.1 USCGS  
 4 22 1.5 31.7N 100.3E 3KM

BUH 3 35 9.4 I P Z GT 44.1 61.0  
 4900.0 296.6

BUH 4 33 5.4 I P Z GT 68.2 66.6  
 34 27 E Z 7580.0 314.5  
 35 40 PP Z

JUL 16 36 FRANCE MAG=4.4 BCIS  
 14 4 11.0 47.3N 5.4E 20KM

AUG 30 19 KURILE ISLANDS MAG=5.5 USCGS  
 13 33 26.4 45.4N 151.5E 33KM

BUH 14 4 41.7 PN Z FT 2.3 235.1  
 04 55.3 I Z 261.0 53.0

BUH 13 45 39.2 I P Z GT 81.0 25.3  
 46 51 E Z 9000.0 336.4

JUL 17 1 FOX ISLANDS, ALFUTIAN ISLANDS MAG=5.0 USCGS  
 11 28 13.4 51.1N 169.3W 33KM

AUG 30 NO DETERMINATION OF EPICENTER

BUH 11 40 25.0 I P Z GT 80.6 358.5  
 8960.0 1.7

BUH 13 51 32.8 PG Z GT  
 51 37.9 SG Z

JUL 18 36 FRANCE MAG=5.4 BCIS  
 0 57 46.0 47.3N 5.4E

AUG 31 12 TONGA ISLANDS MAG=5.4 USCGS  
 18 53 25.2 17.5S 175.2W 277KM

BUH 0 58 30.3 PN Z GT 2.3 235.1  
 59 1.1 SN Z 261.0 53.0

BUH 19 12 41.8 I PKP Z GT 148.8 6.4  
 12 46 I Z 16540.0 355.7

AUG 27 36 SWITZERLAND MAG=5.4 BCIS  
 21 25 26.0 46.5N 7.4E

SEP 01 16 EAST NEW GUINEA REGION MAG=5.6 USCGS  
 3 31 10.5 5.6S 147.2E 182KM

BUH 21 26 1.3 PN Z GT 2.3 194.8  
 26 9.7 PG Z 250.0 14.2  
 26 37.4 I Z  
 26 39.0 SG Z

BUH 3 49 49.7 I PKP Z GT 124.8 52.7  
 13870.0 328.1

SEP 01 NO DETERMINATION OF EPICENTER

BUH 5 27 37.- PN Z GT  
 27 45.4 PG Z  
 28 21.4 SG Z



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

## SEP 01 NO DETERMINATION OF EPICENTER

BUH	15	7	24.4	PG	Z	GT			
		07	25.9	SG	Z				
		07	29.1	I	Z				

SEP 01	19	KURILF ISLANDS							
22 42	1.8	44.9N 147.0E	134KM	MAG=5.4			USCGS		

BUH	22	53	58.9	I P	Z	GT	80.1	28.4	
							8900.0	333.7	

SEP 03	8	OFF COAST OF PERU							
21 7	30.8	10.6S 79.8W	38KM	MAG=6.5			USCGS		

BUH	21	20	56.5	I P	Z	GT	96.6	261.6	
		21	1	PCP	Z		10740.0	138.2	
		21	45	F	Z				

SEP 04	12	KERMADEC ISLANDS REGION							
3 51	58.9	31.4S 179.4W	231KM	MAG=5.5			USCGS		

BUH	4	12	19.-	E PKP	Z	GT	161.8	21.3	
		12	24	F	Z		17990.0	343.7	
		13	16	PKP2	Z				

## SEP 05 NO DETERMINATION OF EPICENTER

BUH	10	59	37.4	PG	Z	GT			
		59	42.3	SG	Z				
		94	92.0	PKP2	Z				

SEP 05	36	NORTHERN ITALY							
11 37	3.0	45.6N 13.9E	38KM	MAG=4.0			USCGS		

BUH	11	38	19.4	PN	Z	GT	4.9	126.5	
		39	1.5	SN	Z		550.0	310.6	

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
							DELTA(KM)	AZ E/S	

## SEP 05 NO DETERMINATION OF EPICENTER

BUH	14	19	2.0	PG	Z	GT			
		19	3.9	SG	Z				
		19	4.9	L	Z				

SEP 05	36	NORTHERN ITALY							
15 18	16.0	45.7N 14.2E					BCIS		

BUH	15	19	31.7	PN	Z	GT	5.0	124.0	
		19	50.5	I	Z		561.0	308.4	
		20	28.1	SN	Z				
		20	58.0	I	Z				

SEP 05	36	NORTHERN ITALY							
15 21	1.0	45.7N 14.2E					BCIS		

BUH	15	22	16.2	PN	Z	GT	5.0	124.0	
		23	10.3	I	Z		561.0	308.4	
		23	13.2	SN	Z				

SEP 06	30	CRETE							
4 59	24.7	35.0N 23.0E	33KM	MAG=4.8			USCGS		

BUH	5	3	30.-	E P	Z	GT	17.5	136.0	
							1950.0	325.9	

SEP 06	46	ANDAMAN ISLANDS REGION							
7 30	10.8	14.7N 93.6E	33KM	MAG=5.6			USCGS		

BUH	7	41	56.2	I P	Z	GT	76.1	83.6	
		42	7	PCP	Z		8460.0	317.2	

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
 DELTA(KM) AZ E/S

SEP 06 1 FOX ISLANDS, ALEUTIAN ISLANDS  
 17 24 40.1 52.6N 168.5W 33KM MAG=4.8 USCGS

BUH 17 36 34.8 I P Z GT 79.1 358.0  
 8790.0 2.3

SEP 08 31 GREECE-ALBANIA BORDER REGION  
 2 4 49.1 40.7N 20.2E 30KM MAG=4.7 USCGS  
 (57)

BUH 2 7 34.0 I P Z GT 11.7 128.8  
 9 37 S Z 1300.0 317.2

SEP 08 NO DETERMINATION OF EPICENTER

BUH 10 27 28.4 PG Z GT  
 27 30.2 I Z

SEP 08 NO DETERMINATION OF EPICENTER

BUH 14 8 48.1 PG Z GT  
 08 59.7 SG Z

SEP 08 NO DETERMINATION OF EPICENTER

BUH 16 58 55.6 PG Z GT  
 59 7.8 I Z

SEP 08 NO DETERMINATION OF EPICENTER

BUH 17 34 18.0 PN Z GT  
 34 35.4 PG Z  
 35 3.0 SN Z  
 35 18.2 I Z

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
 DELTA(KM) AZ E/S

SEP 09 43 SOUTH PACIFIC CORDILLERA  
 16 52 1.3 54.8S 136.0W 33KM MAG=5.4 USCGS

BUH 17 11 58.- E PKP Z GT 157.2 240.9  
 17480.0 91.1

SEP 09 NO DETERMINATION OF EPICENTER

BUH 21 59 40.2 PG Z GT  
 59 48.1 SG Z

SEP 11 14 LOYALTY ISLANDS REGION  
 4 37 16.4 21.4S 169.7E 11KM MAG=5.0 USCGS

BUH 4 57 4.8 I PKP Z GT 149.0 35.2  
 16570.0 335.9

SEP 11 NO DETERMINATION OF EPICENTER

BUH 15 29 1.7 PG Z HS  
 29 3.7 PN Z  
 29 15.3 SG Z  
 29 16.9 SN Z

SEP 12 32 SOUTH ATLANTIC RIDGE  
 0 23 27.7 22.8S 10.5W 33KM MAG=4.9 USCGS

BUH 0 34 56.- E P Z GT 73.1 198.1  
 8130.0 12.9

SEP 12 19 KURILE ISLANDS  
 2 43 33.1 44.6N 149.8E 25KM MAG=5.1 USCGS

BUH 2 55 48.3 I P Z GT 81.2 26.8  
 9030.0 335.4



	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(KM)	DELTA(GRD)	AZ S/E	AZ E/S
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SEP 16 36 GERMANY  
6 53 42.0 47.8N 11.1E RCIS  
(61)

BUH	6	54	18.6	PN	Z	GT		2.1	113.6			
		54	22.2	PG	Z			235.0	295.7			
		54	48.6	SN	Z							
		54	51.7	I	Z							

SEP 17 5 CHIAPAS, MEXICO  
7 56 22.7 17.2N 94.1W 45KM MAG=5.2 USCGS

BUH	8	8	55.8	I P	Z	GT		85.1	290.5			
								9470.0	139.5			

SEP 19 19 HOKKAIDO, JAPAN, REGION  
10 56 8.6 43.0N 145.2E 84KM MAG=5.9 USCGS

BUH	11	8	16.6	I P	Z	GT		81.2	30.5			
								9020.0	332.8			

SEP 20 31 YUGOSLAVIA  
6 9 10.7 44.3N 17.7E 11KM MAG=4.2 USCSS

BUH	6	12	4.5	I P	Z	GT		7.9	120.4			
								874.0	307.2			

SEP 26 31 YUGOSLAVIA  
5 5 36.2 41.7N 21.2E 39KM MAG=4.4 USCSS

BUH	5	8	18.3	-I P	Z	GT	0.5	0.6	0.7	1280.0	11.5	122.6
		10	21	S	Z							311.8
		8	27	I	Z							
		8	34	I	Z							
		11	45	LR	Z							

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(KM)	DELTA(GRD)	AZ S/E	AZ E/S
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SEP 27 30 CRETE  
7 24 29.9 34.4N 26.6E 20KM MAG=4.7 USCGS  
(64)

BUH	7	28	56.6	+I P	Z	GT		19.7	129.6			
		29	7	I	Z			2190.0	321.8			

SEP 27 3 NEVADA  
17 0 0.0 37.1N 116.1W USCGS

BUH	17	12	18.7	+I P	Z	GT	1.5	2.4	1.4	81.3	318.1	
										9040.0	33.7	

SEP 28 15 NEW BRITAIN REGION  
4 56 56.3 6.6S 153.4E 44KM MAG=5.9 USCGS

BUH	5	16	1.-	E PKP	Z	GT	1.1	3.5	1.5	128.8	46.7	
										14310.0	331.0	

SEP 28 1 GULF OF ALASKA  
15 44 55.7 59.5N 147.1W 28KM MAG=5.6 USCSS

BUH	15	56	9.0	+I P	Z	GT	1.7	1.6	1.5	70.3	347.0	
										7820.0	17.1	

SEP 29 6 OFF COAST OF CENTRAL AMERICA  
5 18 49.6 12.3N 91.2W 33KM MAG=5.2 USCSS

BUH	5	31	33.4	-I P	Z	GT	1.5	2.5	1.4	87.0	285.2	
										9670.0	139.2	

OCT 01 36 NORTHERN ITALY  
22 45 43.6 44.3N 11.1E 33KM MAG=4.2 USCSS  
(65)

BUH	22	46	55.7	-	PN	Z	GT	0.3	6.6	1.7	4.8	154.7
		47	16.3		PG	Z				535.0	336.7	
		47	52.9		SN	Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
							DELTA(KM)	AZ F/S	

OCT 02 13 FIJI ISLANDS REGION  
0 12 52.8 21.0S 178.8W 604KM MAG=5.2 USCGS

BUH	0	31	34.-	+E	PKP	Z	GT	1.5	1.0	151.9	14.1
		31	41		I	Z				16880.0	350.2
		31	53		I	Z					

OCT 03 6 COSTA RICA  
18 16 3.2 10.9N 85.9W 21KM MAG=5.8 USCGS

BUH	18	28	36.7	+I	P	Z	GT	1.8	2.0	84.6	280.3
										9410.0	138.4

OCT 04 NO DETERMINATION OF EPICENTER

BUH	14	45	27.2	+	PN	Z	GT				
		45	27.7		PG	Z					
		45	45.5		S	Z					

OCT 04 36 FRANCE  
17 37 21.0 45.2N 7.0E BCIS

BUH	17	38	18.-		PN	Z	GT			3.6	194.1
		40	2.5		L	Z				398.0	13.2

OCT 05 NO DETERMINATION OF EPICENTER

BUH	6	46	0.8	+	PN	Z	GT	0.1	2.0		
		46	38.1		SG	Z		0.1	2.5		

OCT 05 31 IONIAN SEA  
12 0 51.2 37.8N 20.7E 15KM MAG=5.0 USCGS

BUH	12	4	14.3	+I	P	Z	GT			14.2	135.7
										1570.0	324.2

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
							DELTA(KM)	AZ F/S	

OCT 06 NO DETERMINATION OF EPICENTER

BUH	14	5	36.-	+	PN	Z	GT				
		05	4.3		PG	Z		0.2	1.0		
		06	12.3		SG	Z		0.2	1.3		

OCT 06 NO DETERMINATION OF EPICENTER

BUH	15	5	37.-		PN	Z	GT				
		05	44.3		PG	Z		0.2	2.2		
		06	13.4		SG	Z		0.2	6.3		

OCT 06 NO DETERMINATION OF EPICENTER

BUH	17	39	17.2	-	PG	Z	GT	0.1	5.0		
		39	32.2		SG	Z		0.1	4.5		

OCT 07 19 KURILE ISLANDS  
8 28 1.2 49.2N 156.3E 33KM MAG=5.3 USCGS

BUH	8	40	2.0	+I	P	Z	GT	1.0	5.0	78.7	20.8
										8750.0	339.1

OCT 07 19 KURILE ISLANDS  
9 6 52.3 49.2N 156.3E 33KM MAG=4.9 USCGS

BUH	9	18	52.5	+I	P	Z	GT	1.0	2.0	78.7	20.8
										8750.0	339.1

OCT 07 13 FIJI ISLANDS REGION  
10 33 8.2 17.3S 178.9W 563KM MAG=4.9 USCGS

BUH	10	51	52.2	+I	PKP	Z	GT	0.8	1.5	148.2	13.0
		51	57		E	Z				16470.0	351.1



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
OCT 08 36 GERMANY BCIS											
9	57	18.0									
(68)											
										1.4	322.7
										158.0	141.7
BUH	9	57	46.-	PN	Z	GT	0.5	0.5			
	58	2.9		SN	Z		0.8	1.0			
-----											
OCT 08 36 SWITZERLAND BCIS											
13	57	29.0									
(69)											
										2.3	192.6
										259.0	12.0
BUH	13	58	6.0	PN	Z	GT	0.1	3.6			
	58	41.6		SG	Z		0.1	7.4			
-----											
OCT 08 36 SWITZERLAND BCIS											
14	3	47.0									
(70)											
										2.3	192.6
										259.0	12.0
BUH	14	4	23.2	PN	Z	GT	0.1	2.0			
	04	58.8		SG	Z		0.1	2.8			
-----											
OCT 08 36 SWITZERLAND BCIS											
15	27	13.0									
(71)											
										2.3	190.9
										258.0	10.4
BUH	15	27	50.9	PN	Z	GT	0.1	5.0			
	28	26.0		SG	Z		0.1	9.0			
-----											
OCT 08 NO DETERMINATION OF EPICENTER											
23	32	53.3									
	33	2.8									
BUH	23	32	53.3	PG	Z	GT	0.1	1.5			
	33	2.8		SG	Z		0.1	3.0			
-----											
OCT 09 NO DETERMINATION OF EPICENTER											
1	12	16.5									
	12	24.1									
	12	27.1									
BUH	1	12	16.5	PG	Z	GT	0.1	1.7			
				SG	Z		0.1	4.0			
				I	Z		0.1	12.0			

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	DELTA(KM)	AZ E/S
OCT 09 36 GERMANY USCGS											
10	3	2.8									
(72)											
										2.1	111.1
										230.0	293.2
BUH	10	3	37.8	PN	Z	GT	0.1	0.3			
	03	41.7		PG	Z		0.1	3.0			
	04	8.1		SN	Z		0.4	25.0			
-----											
OCT 09 13 FIJI ISLANDS REGION USCGS											
17	21	49.5									
										151.8	15.1
										16880.0	349.5
BUH	17	40	26.5	-I	PKP	Z	GT				
-----											
OCT 09 NO DETERMINATION OF EPICENTER											
19	59	24.3									
	00	0.2									
BUH	19	59	24.3	+ PN	Z	GT	0.1	1.5			
				SN	Z		0.1	3.0			
-----											
OCT 10 14 NEW HEBRIDES ISLANDS REGION USCGS											
6	26	46.3									
										146.7	29.4
										16310.0	340.1
BUH	6	46	23.8	-I	PKP	Z	GT	1.0	4.0	1.5	
-----											
OCT 11 NO DETERMINATION OF EPICENTER											
14	11	45.8									
	11	47.6									
BUH	14	11	45.8	+ PG	Z	GT	0.1	12.0			
				SG	Z		0.1	0.0			
-----											
OCT 12 13 FIJI ISLANDS REGION USCGS											
6	35	6.7									
										151.8	14.0
										16880.0	349.5
BUH	6	53	45.4	+I	PKP	Z	GT	2.0	3.0	1.6	
				I	Z						
				I	Z						

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ E/S

OCT 12 NO DETERMINATION OF EPICENTER

BUH	12	1	46.2	+	PN	Z	GT	0.2	0.5
		01	55.3		PG	Z		0.3	1.6
		02	22.6		SN	Z		0.2	2.5
		02	34.5		SG	Z			

 OCT 12 19 NORTHWEST OF KURILE ISLANDS USCGS  
 12 53 46.9 52.2N 152.5E 476KM MAG=5.5

BUH	13	4	40.0	-I	P	Z	GT	0.6	15.0	75.0	21.9
									8340.0	336.4	

OCT 12 NO DETERMINATION OF EPICENTER

BUH	18	43	8.4		PG	Z	GT	0.1	3.0
		43	17.3		SG	Z		0.1	5.0

 OCT 12 24 BANDA SEA USCGS  
 18 31 37.1 7.1S 129.8E 45KM MAG=6.2

BUH	18	50	16.5	+I	PKP	Z	GT	1.3	5.0	1.7	115.9	70.1
		51	24		PP	Z					12880.0	321.2

 OCT 14 36 SWITZERLAND BCIS  
 6 34 21.0 46.4N 7.5E

BUH	6	34	57.3		PN	Z	GT	0.1	4.0	2.3	192.6
		35	32.7		SG	Z		0.1	3.5	259.0	12.0

 OCT 15 6 NEAR COAST OF NICARAGUA USCGS  
 8 0 50.3 11.9N 86.0W 162KM MAG=6.2

BUH	8	13	2.7	-I	P	Z	GT			83.9	281.1
		13	14		AP	Z				9330.0	138.4

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E
								DELTA(KM)	AZ E/S

OCT 16 NO DETERMINATION OF EPICENTER

BUH	12	53	3.5		PG	Z	GT	0.1	0.5
		53	10.4		SG	Z		0.1	3.0
		53	16.5		SN	Z		0.1	5.0

 OCT 16 2 VANCOUVER ISLAND REGION USCGS  
 13 27 35.6 49.3N 129.1W 33KM MAG=5.2

BUH	13	39	26.-	-E	P	Z	GT	1.1	2.8	1.4	75.7	332.8
									8420.0	27.7		

OCT 16 NO DETERMINATION OF EPICENTER

BUH	16	37	1.3	-	PG	Z	GT		
		37	2.3		PN	Z			
		37	16.5		SG	Z			
		37	18.5		SN	Z			

 OCT 17 28 EASTERN KAZAKH SSR USCGS  
 5 3 58.0 49.8N 78.1E MAG=5.7

BUH	5	12	9.2	+I	P	Z	GT	0.9	3.0	1.4	44.1	61.0
									4900.0	296.6		

 OCT 18 40 GREENLAND SEA USCGS  
 1 11 44.8 79.8N 2.4E 33KM MAG=5.7

BUH	1	18	3.-	E	P	Z	GT				31.3	358.1
									3480.0	172.6		

 OCT 18 3 NEVADA USCGS  
 14 30 0.8 37.1N 116.1W

BUH	14	42	18.8	+I	P	Z	GT	1.0	4.0	1.5	81.3	318.1
									9040.0	33.7		



	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	
									DELTA(KM)	AZ F/S	

OCT 20 30 TURKEY  
6 47 38.0 37.9N 37.7E 33KM MAG=4.8 USCGS

BUH 6 52 50.- -E P Z GT 2.0 1.0 23.9 105.9  
2650.0 306.3

OCT 21 40 NOVAYA ZEMLYA  
4 59 58.1 73.4N 54.8E MAG=5.9 USCGS

BUH 5 6 27.7 +I P Z GT 0.8 4.5 2.2 32.0 23.3  
3560.0 245.4

OCT 23 18 BONIN ISLANDS REGION  
8 27 6.2 28.9N 139.1E 463KM MAG=5.3 USCGS

BUH 8 39 21.1 -I P Z GT 1.3 1.8 1.8 91.2 41.6  
10130.0 330.0

OCT 23 NO DETERMINATION OF EPICENTER

BUH 11 11 43.9 - PG Z GT  
11 55.9 SG Z

OCT 25 21 TAIWAN REGION  
0 59 22.6 24.5N 122.2E 65KM MAG=6.0 USCGS

BUH 1 11 58.1 +I P Z GT 1.3 1.0 1.6 86.4 56.6  
12 1 PCP Z 9600.0 322.7  
15 23 PP Z

OCT 25 NO DETERMINATION OF EPICENTER

BUH 1 29 56.4 -I P/PCP Z GT  
29 58 PCP Z

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/E	
									DELTA(KM)	AZ F/S	

OCT 25 1 RAT ISLANDS, ALEUTIAN ISLANDS  
9 21 48.6 51.4N 176.5E 33KM MAG=4.8 USCGS

BUH 9 33 54.- +E P Z GT 0.8 1.0 1.5 79.8 7.5  
8870.0 352.2

OCT 26 21 TAIWAN REGION  
0 22 21.6 24.5N 122.2E 63KM MAG=5.6 USCGS

BUH 0 34 58.5 +I P Z GT 2.5 1.5 2.0 86.4 56.6  
9600.0 322.7

OCT 26 30 TURKEY  
4 55 38.3 37.3N 29.1E 35KM MAG=5.1 USCGS  
(74)

BUH 4 59 59.7 -I P Z GT 1.5 3.0 2.1 19.0 119.1  
2110.0 313.5

OCT 27 NO DETERMINATION OF EPICENTER

BUH 16 5 6.8 - PG Z GT 0.1 3.5  
05 7.2 PN Z  
05 21.2 SG Z  
05 23.4 SN Z

OCT 30 14 LOYALTY ISLANDS REGION  
2 36 45.1 22.0S 170.1E 32KM MAG=4.4 USCGS

BUH 2 56 33.- E PKP Z GT 1.4 0.5 149.7 35.0  
16640.0 335.9

OCT 30 NO DETERMINATION OF EPICENTER

BUH 3 11 1.4 - PG Z GT 0.1 0.8  
11 3.2 SG Z 0.1 2.2





	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ	S/F		
									DELTA(KM)	AZ	F/S		
NOV 08	17	9	27.1									USCGS	
				1	RAT ISLANDS, ALEUTIAN ISLANDS								
				51.1N	178.5E			29KM	MAG=5.3				
BUH	17	21	36.-	E P	Z	GT	1.0	1.0	1.5	80.3	6.3		
										8920.0	353.5		
-----													
NOV 08	17	22	32.1									USCGS	
				1	RAT ISLANDS, ALEUTIAN ISLANDS								
				51.1N	178.4E			10KM	MAG=5.2				
BUH	17	34	44.-	+E P	Z	GT	0.8	0.6	1.3	80.2	6.3		
										8920.0	353.5		
-----													
NOV 08	17	42	14.0									BCIS	
				36	NORTHERN ITALY								
				45.8N	10.8E								
(76)													
BUH	17	43	7.2	-	PN	Z	GT	0.1	4.2	3.4	147.8		
			43	18.4	PG	Z				375.0	329.7		
-----													
NOV 09	2	18	45.5									USCGS	
				24	BANDA SEA								
				7.2S	123.6E			560KM	MAG=5.8				
BUH	2	36	18.3	-I	PKP	Z	GT	0.8	1.0	112.0	75.3		
			40	29	PPP	Z				12450.0	319.8		
-----													
NOV 09				NO DETERMINATION OF EPICENTER									
BUH	14	58	8.4	PG	Z	GT	0.1	6.5					
			58	10.2	SG	Z		0.1	0.5				
			58	11.5	I	Z		0.1	1.2				
-----													
NOV 10				NO DETERMINATION OF EPICENTER									
BUH	11	3	9.8	PG	Z	GT	0.1	0.3					
			03	10.2	PN	Z		0.1	1.5				
			03	23.4	SG	Z		0.3	1.5				
			03	26.4	SN	Z							

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ	S/F	
									DELTA(KM)	AZ	F/S	
NOV 10	13	11	18.1									USCGS
				13	FIJI ISLANDS REGION							
				18.0S	178.5W			592KM	MAG=5.0			
BUH	13	30	1.3	+I	PKP	Z	GT	1.0	1.0	148.9	12.5	
										16560.0	351.4	
-----												
NOV 10	18	38	37.6									USCGS
				33	CHAGOS ARCHIPELAGO REGION							
				6.0S	71.4E			32KM	MAG=5.4			
BUH	18	50	28.-	E	P	Z	GT	1.5	1.0	77.3	114.6	
										8590.0	322.7	
-----												
NOV 11	11	55	55.6									USCGS
				33	CHAGOS ARCHIPELAGO REGION							
				6.0S	71.4E			37KM	MAG=5.6			
BUH	12	7	48.2	-I	P	Z	GT	2.2	1.2	77.3	114.6	
										8590.0	322.7	
-----												
NOV 11	12	14	57.3									USCGS
				33	CHAGOS ARCHIPELAGO REGION							
				6.0S	71.3E			34KM	MAG=5.7			
BUH	12	26	59.4	-I	P	Z	GT	1.9	1.3	77.2	114.7	
										8590.0	322.8	
-----												
NOV 11	18	0	0.7									USCGS
				33	CHAGOS ARCHIPELAGO REGION							
				6.1S	71.4E			33KM	MAG=5.7			
BUH	18	12	53.-	-E	P	Z	GT	1.6	1.0	77.4	114.6	
										8600.0	322.7	
-----												
NOV 12	10	36	52.0									USCGS
				12	TONGA ISLANDS REGION							
				17.2S	172.0W			34KM	MAG=5.6			
BUH	10	56	37.2	+I	PKP	Z	GT	1.8	3.5	148.6	0.5	
			56	48	PKP2	Z				16520.0	359.8	



	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F		
									DELTA(KM)	AZ E/S		

NOV 12 NO DETERMINATION OF EPICENTER

BUH	13	57	21.0	+I P/PKP	Z GT	0.1	3.3	0.0				
		57	39	S	Z							

NOV 12	14	LOYALTY ISLANDS REGION										
17	24	31.9	22.8S	170.7E	26KM	MAG=5.1						USCGS

BUH	17	44	19.-	E PKP	Z GT	1.8	0.8		150.7	34.6		
									16750.0	336.0		

NOV 14	16	EAST NEW GUINEA REGION										
5	28	36.9	5.4S	147.1E	201KM	MAG=5.8						USCGS

BUH	5	47	13.3	+I PKP	Z GT	0.9	1.0	1.5	124.5	52.7		
									13850.0	329.1		

NOV 19	19	NEAR EAST COAST OF HONSHU, JAPAN										
12	6	59.5	36.4N	141.1E	41KM	MAG=5.5						USCGS

BUH	12	19	34.3	+I P	Z GT	1.4	3.2	2.1	85.5	36.4		
		19	47	PCP	Z				9500.0	330.9		

NOV 19	14	LOYALTY ISLANDS REGION										
17	29	20.9	22.6S	170.9E	33KM	MAG=5.2						USCGS

BUH	17	49	1.-	E PKP	Z GT				150.6	34.1		
		49	11	E	Z				16740.0	336.4		

NOV 20	36	GERMANY										
1	2	46.0	49.5N	8.5E								RCIS

BUH	1	3	1.6	+ PG	Z GT	0.1	1.5		0.8	12.2		
		03	13.8	SN	Z				93.3	192.4		
		03	15.4	SG	Z							

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F		
									DELTA(KM)	AZ E/S		

NOV 21	40	NORWEGIAN SEA										
17	2	25.0	72.7N	8.5E	33KM	MAG=5.5						USCGS

BUH	17	7	39.-	F P	Z GT	1.7	2.0	1.0	24.1	0.2		
									2680.0	180.5		

NOV 21	32	NORTH ATLANTIC RIDGE										
21	50	24.3	48.2N	27.8W	33KM	MAG=5.0						USCGS

BUH	21	55	35.4	+I P	Z GT	1.0	0.8		23.8	282.6		
									2640.0	104.8		

NOV 22	14	LOYALTY ISLANDS REGION										
15	19	26.8	22.7S	170.9E	42KM	MAG=5.2						USCGS

BUH	15	39	8.-	F PKP	Z GT				150.6	34.2		
		39	15	PKP2	Z				16750.0	336.3		

NOV 23	33	EASTERN GULF OF ADEN										
8	35	49.5	14.5N	52.1E	3KM							USCGS

BUH	8	44	43.-	F P	Z GT	0.8	0.5		40.5	119.1		
		44	52	I	Z				5510.0	322.9		

NOV 24	13	FIJI ISLANDS REGION										
5	42	14.0	16.4S	177.9W	428KM	MAG=5.4						USCGS

BUH	6	1	4.-	F PKP	Z GT				147.4	11.0		
		1	10	E	Z				16390.0	352.5		
		1	13	I	Z							

NOV 24 NO DETERMINATION OF EPICENTER

BUH	15	0	23.0	+ PG	Z GT	0.1	6.5					
		00	25.9	SG	Z							



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
								DELTA(KM)	AZ F/S

## IV 24 NO DETERMINATION OF EPICENTER

IH	15	5	36.-	PN	Z	GT	0.1	0.0	
	06	13.5		SN	Z				
	06	20.1		I	Z		0.5	1.5	
	06	22.4		I	Z				

## IV 26 20 RYUKYU ISLANDS

08	9.8		28.6N 130.0E	33KM	MAG=5.7				USCGS
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IH	0	20	54.-	E P	Z	GT	87.1	48.5	
							9690.0	325.7	

## IV 26 1 KODIAK ISLAND REGION

01	11	6.3	56.6N 152.2W	28KM	MAG=4.9				USCGS
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IH	8	22	40.-	E P	Z	GT	73.8	348.0	
							8210.0	13.4	

## IV 27 12 TONGA ISLANDS

01	18	42.4	21.3S 174.3W	33KM	MAG=5.4				USCGS
----	----	------	--------------	------	---------	--	--	--	-------

IH	8	38	48.2	-I PKP	Z	GT	152.6	5.2	
							16970.0	356.4	

## IV 28 20 KYUSHU, JAPAN

01	36	54.1	32.1N 130.8E	125KM	MAG=5.6				USCGS
----	----	------	--------------	-------	---------	--	--	--	-------

IH	2	49	13.4	+I P	Z	GT	84.7	46.0	
							9410.0	325.9	
							49 48		

## IV 28 36 FRANCE

07	19	39.0	47.3N 5.3E	15KM					BCIS
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IH	7	20	24.0	- PN	Z	GT	2.4	236.1	
							267.0	53.9	
							20 53.5		

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
								DELTA(KM)	AZ F/S

## NOV 29 NO DETERMINATION OF EPICENTER

BUH	11	5	12.4	PG	Z	GT	0.1	0.8	
							05 21.6	I	7

## NOV 29 NO DETERMINATION OF EPICENTER

BUH	15	25	5.9	- PG	Z	GT	0.3	0.7	
							25 20.7	SG	Z

## NOV 30 31 ALBANIA

07	23	51.5	41.5N 20.5E	29KM	MAG=6.0				USCGS
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BUH	7	26	30.-	-E P	Z	GT	1.0	0.6	11.2		
							28 49	S	Z	1250.0	313.8
							26 35	I	Z		
							29 6	E	Z		

## NOV 30 NO DETERMINATION OF EPICENTER

BUH	15	4	22.4	- PG	Z	GT	0.1	2.8	
							04 27.6	SG	Z

## NOV 30 NO DETERMINATION OF EPICENTER

BUH	16	0	58.0	- PG	Z	GT	0.1	1.8	
							01 11.2	SG	Z

## NOV 30 13 FIJI ISLANDS REGION

15	47	44.2	17.9S 178.3W	629KM	MAG=4.7				USCGS
----	----	------	--------------	-------	---------	--	--	--	-------

BUH	16	6	23.3	-I PKP	Z	GT	0.7	1.0	148.8
							6 30	PKP2	Z

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ F/S
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DEC 02 31 ALBANIA  
 0 24 15.7 41.3N 20.6E 29KM MAG=5.1 USCGS  
 (80)

BUH	0	26	55.-	E P	Z GT	1.2	0.5		11.4	125.6		
		29	20	S	Z				1270.0	314.3		

DEC 02 31 ALBANIA  
 12 44 42.7 41.3N 20.3E 17KM MAG=5.4 USCGS  
 (81)

BUH	12	47	23.6	+I P	Z GT	0.8	0.6		11.3	126.4		
		49	28	S	Z				1250.0	314.0		
		47	55	E	Z							

DEC 03 31 CENTRAL ITALY  
 21 30 0.3 42.5N 13.2E 33KM MAG=4.6 USCGS  
 (82)

BUH	21	31	46.-	E P	Z GT	0.3	0.5		7.1	148.8		
		33	7	S	Z				789.0	332.3		

DEC 03 36 CZECHOSLOVAKIA  
 22 10 54.0 48.7N 17.5E MAG=3.7 PCIS  
 (83)

BUH	22	12	25.-	PN	Z GT	0.8	0.5		6.1	86.4		
		12	5.5	PG	Z				683.0	273.3		
		14	10.5	SG	Z	0.8	3.5					
		14	10.3	SG	N							

DEC 04 36 SWITZERLAND  
 2 58 46.0 47.0N 7.8E PCIS  
 (84)

BUH	2	59	17.5	+ PN	Z GT	0.1	0.8		1.7	190.0		
		59	20.2	PG	Z	0.1	1.5		190.0	0.7		
		59	39.5	SN	Z	0.1	1.5					

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ F/S
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DEC 05 30 DODECANESE ISLANDS  
 5 20 2.9 36.5N 26.9E 138KM MAG=4.6 USCGS  
 (85)

BUH	5	24	8.6	-I P	Z GT	1.0	2.0	1.8	18.3	124.8		
		24	11	AP	Z				2030.0	317.5		

DEC 05 1 ANDREANOF ISLANDS, ALFUTIAN IS.  
 9 5 13.1 51.6N 173.4W 36KM MAG=5.3 USCGS

BUH	9	17	20.6	+I P	Z GT	0.9	1.7	1.8	89.1	1.1		
									8900.0	359.0		

DEC 09 31 ADRIATIC SEA  
 3 9 52.2 42.0N 16.5E 33KM MAG=4.5 USCGS  
 (86)

BUH	3	11	58.5	+I P	Z GT				8.9	135.9		
			13 32	S	Z				985.0	321.8		
			12 3	I	Z							
			13 41	I	Z							
			13 31	+ S	N							
			13 30	+ S	F							

DEC 09 NO DETERMINATION OF EPICENTER

BUH	19	4	42.6	+ PN	Z GT	0.1	0.6					
		05	4.2	SN	Z	0.5	4.0					
		05	12.4	I	Z	0.2	2.5					

DEC 10 3 NEAR COAST OF NORTHERN CALIF.  
 12 6 50.3 40.5N 124.6W 5KM MAG=5.8 USCGS

BUH	12	19	15.-	E P	Z GT				81.9	325.7		
		19	21	PCP	Z				9110.0	29.5		



H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ F/S
DEC 10	22 51	24.3	26 INDIA								
			17.7N 73.9E	33KM						MAG=6.0	USCGS
								60.9	96.2		
BUH	23	1 39.-	E P	Z GT	1.2	1.0	1.6	6770.0	316.3		
-----											
DEC 11	2 36	16.0	36 SWITZERLAND								
			46.7N 9.9E								RCIS
								2.3	149.8		
BUH	2	36 52.5	- PN	Z GT	0.3	2.5		253.0	331.0		
		36 59.8	PG	Z	0.4	4.7					
		37 26.3	SN	Z	0.4	2.6					
		37 31.9	SG	Z							
-----											
DEC 12	8 6	16.7	14 LOYALTY ISLANDS REGION								
			22.7S 171.1E	39KM						MAG=4.9	USCGS
								150.7	33.8		
BUH	8	27 6.-	+E PKP	Z GT	1.5	1.0		16760.0	336.5		
-----											
DEC 13	10 38	23.4	19 KURILF ISLANDS								
			47.6N 152.6E	124KM						MAG=5.5	USCGS
								79.2	23.7		
BUH	10	50 14.2	+I P	Z GT	1.1	8.0	2.4	8810.0	336.9		
-----											
DEC 13	10 58	21.6	19 KURILE ISLANDS								
			49.4N 154.5E	138KM						MAG=5.1	USCGS
								78.1	21.8		
BUH	11	10 6.-	+E P	Z GT	0.7	1.1	1.5	8680.0	338.0		
-----											
DEC 13	19 7	14.4	14 NEW HEBRIDES ISLANDS								
			19.1S 168.7E	51KM						MAG=5.7	USCGS
								146.5	35.0		
BUH	19	26 50.-	-E PKP	Z GT				16290.0	336.4		
		26 52	I	Z							
		27 5	APKP	Z							

H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F	DELTA(KM)	AZ F/S
DEC 14	2 54	47.6	30 CRETE								
			34.4N 26.2E	7KM						MAG=4.5	USCGS
											(88)
								19.5	130.3		
BUH	2	59 12.-	E P	Z GT	0.7	0.6		2170.0	322.4		
-----											
DEC 16	20 53	58.3	19 NEAR EAST COAST OF KAMCHATKA								
			51.2N 157.7E	24KM						MAG=5.5	USCGS
								77.1	19.2		
BUH	21	5 50.8	+I P	Z GT	1.0	1.0		8570.0	339.8		
-----											
DEC 17	0 25	15.1	48 AFGHANISTAN-USSR BORDER REGION								
			36.5N 71.4E	82KM						MAG=5.2	USCGS
								46.8	80.6		
BUH	0	33 38.5	-I P	Z GT	1.8	1.9		5200.0	305.8		
-----											
DEC 18	6 24	19.7	14 LOYALTY ISLANDS REGION								
			22.4S 170.8E	34KM						MAG=4.8	USCGS
								150.3	34.1		
BUH	6	44 8.4	+I PKP	Z GT	1.3	0.5		16710.0	336.4		
-----											
DEC 19	3 23	49.6	48 TADZHIK SSR								
			37.5N 72.0E	89KM						MAG=5.5	USCGS
								46.6	79.1		
BUH	3	32 10.-	-E P	Z GT	1.2	0.8		5180.0	305.2		
-----											
DEC 19	NO DETERMINATION OF EPICENTER										
BUH	14	20 44.2	PG	Z GT	0.1	2.0					
		20 54.1	SG	Z	0.2	0.5					
		20 5.6	L	Z	1.5	1.0					

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
DELTA(KM) AZ E/S

DEC 20 NO DETERMINATION OF EPICENTER

BUH 3 46 21.7 + PN Z GT 0.1 0.5  
46 29.3 PG Z 0.2 0.5  
46 49.9 SN N 0.2 1.0  
47 1.4 L Z

DEC 20 36 SWITZERLAND  
4 31 4.0 46.9N 9.8E  
(89) BCIS

BUH 4 31 37.7 - PN Z GT 0.1 1.5 2.1 148.7  
31 45.1 PG Z 0.2 0.7 230.0 329.9  
32 6.0 SN N 0.2 1.2  
32 16.9 L Z

DEC 20 46 ANDAMAN ISLANDS REGION  
11 34 25.9 11.8N 93.0E 61KM MAG=5.4  
USCGS

BUH 11 46 17.8 -I P Z GT 0.8 0.5 77.8 86.1  
8650.0 317.6

DEC 21 31 YUGOSLAVIA  
0 9 39.0 42.1N 20.7E 19KM MAG=4.7  
(90) USCGS

BUH 0 12 16.0 +I P Z GT 0.9 0.5 11.0 122.3  
14 18 S N 1220.0 311.2

DEC 21 8 NEAR COAST OF NORTHERN CHILE  
2 25 21.6 21.8S 70.0W 33KM MAG=6.3  
USCGS

BUH 2 39 1.- +E P Z GT 1.0 0.8 98.7 247.0  
39 57 I Z 10970.0 139.0  
42 55 PP Z

H M SEC PHASE SM T DA LOGA/T DELTA(GRD) AZ S/F  
DELTA(KM) AZ E/S

DEC 21 7 NORTHERN COLOMBIA  
11 37 22.5 7.0N 72.1W 33KM MAG=5.4  
USCGS

BUH 11 49 21.- +E P Z GT 0.8 0.5 78.4 267.4  
8720.0 138.2

DEC 22 36 SWITZERLAND  
10 47 29.0 46.8N 9.8E  
(91) BCIS

BUH 10 48 2.2 - PN Z GT 0.1 1.2 2.2 150.1  
48 9.6 PG Z 240.0 331.2  
48 30.3 SN E  
48 36.9 SG E

DEC 22 36 GERMANY  
13 5 0.9 47.6N 11.1E  
(92) BCIS

BUH 13 5 44.9 - PN Z GT 0.5 0.5 2.2 118.3  
06 12.7 SN Z 245.0 300.4  
06 17.1 SG Z 0.5 1.0

DEC 22 36 GERMANY  
14 1 42.0 48.2N 9.0E  
(93) BCIS

BUH 14 1 55.5 PG Z GT 0.1 3.0 0.7 132.8  
02 6.1 SG Z 0.1 4.0 77.9 313.3

DEC 22 NO DETERMINATION OF EPICENTER

BUH 16 50 18.9 + PG Z GT 0.1 2.5  
50 28.6 SG Z 0.1 5.2

DEC 24 40 JAN MAYEN ISLAND REGION  
4 22 1.2 71.9N 0.9W 33KM MAG=5.0  
USCGS

BUH 4 27 11.5 +I P Z GT 2.0 0.8 23.7 353.0  
2630.0 164.9



	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ F/S

DEC 24	7 LEFWARD ISLANDS									
20 3 10.9	17.4N	61.1W	24KM						MAG=6.4	USCGS

BUH	20 13 41.2	-I P	Z GT	1.3	1.5	1.8	63.5	266.5		
	13 45	E	Z				7060.0	136.2		

DEC 24	7 LEEWARD ISLANDS									
21 32 31.3	17.4N	61.3W	20KM						MAG=5.9	USCGS

BUH	21 43 2.8	-I P	Z GT	1.4	3.5	2.2	63.6	266.7		
							7080.0	136.2		

DEC 25	15 NEW IRELAND REGION									
1 23 33.6	5.3S	153.7E	64KM							USCGS

BUH	1 42 32.-	E PKP	Z GT	1.3	1.0		127.8	45.6		
							14200.0	331.7		

DEC 27	8 CHILE-BOLIVIA BORDER REGION									
9 17 55.7	21.2S	68.3W	135KM						MAG=6.4	USCGS

BUH	9 31 12.-	+E P	Z GT	1.8	1.5	1.9	97.2	246.2		
							10810.0	139.5		

DEC 27	12 TONGA ISLANDS REGION									
16 22 48.5	22.3S	174.8W	33KM						MAG=6.1	USCGS

BUH	16 42 36.-	E PKP	Z GT	1.8	0.2		153.6	6.4		
							17070.0	355.5		

DEC 29 NO DETERMINATION OF EPICENTER

BUH	16 33 9.2	- PG	Z GT	0.1	1.5					
	33 15.9	SG	Z	0.1	1.5					

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ F/S

DEC 29	31 ALBANIA									
19 49 23.6	41.5N	20.4E	39KM						MAG=4.7	USCGS

BUH	19 52 0.-	F P	Z GT	1.5	1.0		11.2	125.4		
							1240.0	314.0		

DEC 30	36 NORTHERN ITALY									
4 19 21.2	44.7N	12.2E	33KM						MAG=5.3	USCGS

BUH	4 20 32.1	- PN	Z GT	0.8	9.5	2.5	4.8	144.1		
	20 50.9	PG	Z				537.0	327.0		
	21 24.2	SN	E							

DEC 30	36 SWITZERLAND									
23 1 18.0	46.3N	7.8E								BCIS

BUH	23 1 56.3	- PN	Z GT	0.1	2.0		2.4	187.2		
	02 31.3	SN	Z	0.1	0.7		267.0	6.9		

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ F/S

DEC 24	7 LEFWARD ISLANDS									
20 3 10.9	17.4N	61.1W	24KM						MAG=6.4	USCGS

BUH	20 13 41.2	-I P	Z GT	1.3	1.5	1.8	63.5	266.5	7060.0	136.2
	13 45	E	Z							

DEC 24	7 LEEWARD ISLANDS									
21 32 31.3	17.4N	61.3W	20KM						MAG=5.9	USCGS

BUH	21 43 2.8	-I P	Z GT	1.4	3.5	2.2	63.6	266.7	7080.0	136.2
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DEC 25	15 NEW IRELAND REGION									
1 23 33.6	5.3S	153.7E	64KM							USCGS

BUH	1 42 32.-	E PKP	Z GT	1.3	1.0		127.8	45.6	14200.0	331.7
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DEC 27	8 CHILE-BOLIVIA BORDER REGION									
9 17 55.7	21.2S	68.3W	135KM						MAG=6.4	USCGS

BUH	9 31 12.-	+E P	Z GT	1.8	1.5	1.9	97.2	246.2	10810.0	139.5
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DEC 27	12 TONGA ISLANDS REGION									
16 22 48.5	22.3S	174.8W	33KM						MAG=6.1	USCGS

BUH	16 42 36.-	E PKP	Z GT	1.8	0.2		153.6	6.4	17070.0	355.5
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DEC 29 NO DETERMINATION OF EPICENTER

BUH	16 33 9.2	- PG	Z GT	0.1	1.5					
	33 15.9	SG	Z	0.1	1.5					

	H	M	SEC	PHASE	SM	T	DA	LOGA/T	DELTA(GRD)	AZ S/F
									DELTA(KM)	AZ F/S

DEC 29	31 ALBANIA									
19 49 23.6	41.5N	20.4E	39KM						MAG=4.7	USCGS

BUH	19 52 0.-	F P	Z GT	1.5	1.0		11.2	125.4	1240.0	314.0
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DEC 30	36 NORTHERN ITALY									
4 19 21.2	44.7N	12.2E	33KM						MAG=5.3	USCGS

BUH	4 20 32.1	- PN	Z GT	0.8	9.5	2.5	4.8	144.1	537.0	327.0
	20 50.9	PG	Z							
	21 24.2	SN	E							

DEC 30	36 SWITZERLAND									
23 1 18.0	46.3N	7.8E								BCIS

BUH	23 1 56.3	- PN	Z GT	0.1	2.0		2.4	187.2	267.0	6.9
	02 31.3	SN	Z	0.1	0.7					