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COAST & GEODETIC SURVEY
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SEISMOLOGICAL BULLETIN

November, 1956

MSI - 191

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U. S. DEPARTMENT OF COMMERCE

Sinclair Weeks, Secretary

COAST AND GEODETIC SURVEY—WASHINGTON

H. Arnold Karo, Director

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National Oceanic and Atmospheric Administration

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March 4, 2011

The instrumental results of the following stations are tabulated in this report.

**Balboa Heights, C. Z. (BH)
The Panama Canal Co.
*Boulder City, Nev. (BC)
Bureau of Reclamation
*Bozeman, Mont. (BOZ)
Montana State College
**Burlington, Vt. (BUR)
University of Vermont
*Butte, Mont. (BUT)
Montana School of Mines
*Chicago, Ill. (CHI)
University of Chicago and
U. S. Weather Bureau
College, Alaska (COL)
*Columbia, S. C. (COLU)
University of South Carolina
*Eureka, Nev. (EUR)
Eureka Corporation Limited
Honolulu, T. H. (HONO)
*Hungry Horse, Mont. (HH)
Bureau of Reclamation
*Lincoln, Nebr. (LIN)
Nebraska Wesleyan University
**Philadelphia, Pa. (PHIL)
The Franklin Institute
**Rapid City, S. Dak. (RC)
South Dakota State School of Mines
*Salt Lake City, Utah (SLC)
University of Utah
San Juan, Puerto Rico (SJ)
Sitka, Alaska (SIT)
Tucson, Ariz. (TUC)
Ukiah, Calif. (UK)
International Latitude Observatory
Washington, D. C. (WASH)

*Indicates a station maintained by a local institution in cooperation with the Coast and Geodetic Survey.
**Indicates a station operating on an independent basis.
Other stations are observatories of the Coast and Geodetic Survey.

All seismogram interpretations are made or revised at Washington except those for Balboa Heights.
All magnitude determinations are by Pasadena unless otherwise stated. Minor earthquakes are listed at the end of the bulletin.

One asterisk (*) following an origin time indicates probable error of one-tenth minute. Two asterisks (**) following an origin time indicates error of one quarter minute. All origin times and locations are determined from P data only. For Pasadena epicenters the time is given in one-tenth minute.

All seismograms are on file in the Coast and Geodetic Survey, except those from Balboa Heights and Burlington, which may be obtained on loan by addressing the Seismograph Station Director: - Meteorological and Hydrographic Office, Panama Canal Company, Balboa Heights, Canal Zone; University of Vermont, Burlington, Vermont.

Date 1956	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Nov.	h m s	° ′	° ′	
1	05 52 34*	27½ N.	54 E.	Southern Iran aftershock.
1	15 42 12*	10 N.	80 W.	Near north coast of Panama. Felt at Balboa Heights.
1	17 31 05**			Kamchatka.
2	10 38 55*	32 N.	112 W.	Southern Arizona.
2	16 04 30*	39 N.	23 E.	Near east coast of Greece. Extensive property damage at Volos.
3	05 26 02*	61 N.	139 W.	Southern Yukon, Canada
3	10 04 02*	52 N.	159 E.	Near south coast of Kamchatka.
3	18 02 04*	24 S.	180	South of Fiji Islands. h about 500 km.
4	05 37 15*	35½ N.	140½ E.	Near east coast of Honshu, Japan. Felt. h about 100 km.
4	07 05 43*	22 S.	175 W.	Tonga Islands. h about 60 km. Mag. 6-1/2 - 6-3/4.
4	08 35 20*	34 S.	68 W.	Mendoza Province, Argentina.
4	11 53 30**			Southern Quebec, Canada. Felt at Gatineau, Ontario, Canada.
4	21 40 55*	61 N.	139 W.	Yukon, Canada.
6	00 03 15**			Tonga Islands.
6	14 12 35*	5½ S.	134 E.	Aru Islands.
6	23 14 20*	52 N.	176 W.	Andreanof Islands, Aleutian Islands.
7	03 06 51*	17½ S.	178½ W.	Fiji Islands. h about 600 km.
7	17 07 55**			Northeastern Iran.
8	03 45 51*	24 S.	179 E.	Fiji Islands region. h about 550 km.
8	06 50 24*	18 S.	178 W.	Fiji Islands. h about 500 km.
8	15 44 50*	9 N.	126 E.	Mindanao, Philippine Islands. Felt at Hinatuan, Mambajao, and Surigao.
9	06 01 51*	36 N.	34½ W.	North Atlantic Ocean.
9	11 55 16**			Near south coast of Java.
9	13 06 10*	17 N.	94 W.	Southern Mexico. Slight damage in Oaxaca Province. h about 150 km. Mag. 6¼ - 6½.
9	17 56 26*	17½ S.	178 W.	Kermadec Islands. h about 350 km.
10	00 08 27*	10½ N.	86 W.	Near coast of Costa Rica. h about 100 km. Mag. 6.
10	09 06 34*	40½ N.	124 W.	Near coast of northern California. Felt in Humboldt County. Mag. 4 (Berk).
10	11 53 30**			Near coast of Kodiak Island, Alaska.
10	14 39 56*	16 N.	121 E.	Luzon, Philippine Islands. Felt at Baguio, Dagupan, and Manila.
10	15 41 02*	25 N.	94½ E.	India-Burma border. h about 150 km.
11	03 13 48*	16½ S.	179 W.	Fiji Islands. h about 650 km.
11	19 15 20*	44 N.	149 E.	Kurile Islands.
12	08 33 20*	1 N.	126 E.	Molucca Passage.
12	20 57 35*	73 N.	7 E.	Svalbard foreshock.
13	02 58 37*	73 N.	7 E.	Svalbard region.

Date 1956	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Nov.	h m s	° ′	° ′	
13	07 40 58*	21½ S.	174 E.	Loyalty Islands region.
13	08 36 17**			Do.
13	09 55 29*	48½ S.	124 E.	Indian Ocean, about 1000 miles south of Australia.
13	14 38 51*	15 N.	123 E.	Near east coast of Luzon, Philippine Islands. Felt at Daet and Manila.
14	00 51 27*	36½ N.	71 E.	Hindu Kush. h about 150 km. Felt at Kabul, Afghanistan, and Lahore and Parachinar, Pakistan.
14	05 10 24*	6 S.	153½ E.	New Britain region. Felt at Karoola. h about 100 km.
15	14 17 09*	5 S.	104½ W.	Galapagos Islands foreshock.
15	17 27 55*	3 S.	103½ W.	Pacific Ocean, about 900 miles west of Galapagos Islands.
16	03 23 05*	35½ N.	121 W.	Near coast of California. Felt from Salinas to San Luis Obispo. Mag. 4-3/4.
16	06 23 10**			Rat Islands, Aleutian Islands.
16	08 26 11*	41 N.	116 W.	Northeastern Nevada.
16	08 48 14*	4 S.	139 E.	Central New Guinea. h about 150 km.
16	11 43 35*	14 N.	123 E.	Southern Luzon, Philippine Islands. Felt at Daet.
16	11 53 54*	8½ N.	71 W.	Northwestern Venezuela.
16	16 16 19*	20 S.	170½ E.	New Hebrides Islands region.
16	22 02 19*	18 S.	69 W.	Peru-Bolivia-Chile border region. h about 150 km.
17	19 15 06*	27½ N.	126 E.	Ryukyu Islands region. h about 150 km.
17	20 27 15*	54½ N.	134 W.	Queen Charlotte Islands region. Felt at Ketchikan and Petersburg, Alaska. Mag. 6½.
18	05 19 26*	40 N.	76½ E.	Western Sinkiang Province, China.
18	09 46 49*	27 S.	176 W.	Kermadec Islands foreshock.
18	18 16 25*	27 S.	176 W.	Kermadec Islands region.
18	21 22 38*	28½ N.	129½ E.	Ryukyu Islands.
19	02 50 31*	3 S.	139½ E.	New Guinea.
19	12 02 26*	14 N.	144 E.	Marianas Islands. h about 150 km.
20	11 03 30*	7 S.	129 E.	Banda Sea.
20	11 58 55*	½ S.	123½ E.	Near east coast of Celebes. h about 200 km.
20	23 20 52*	39½ N.	25½ E.	Aegean Sea.
21	06 22 10*	49 N.	141½ E.	Off west coast of Sakhalin.
21	07 33 28*	38 N.	142 E.	Near coast of northern Honshu, Japan. Felt. h about 60 km.
21	07 49 47*	4 S.	152½ E.	Solomon Islands. Felt at Namatanai and Rabaul. h about 100 km.
21	22 06 55*	15½ N.	99½ W.	Near coast of Guerrero, Mexico. Felt at Acapulco.
22	08 32 45*	8½ N.	82½ W.	Panama-Costa Rica border.
22	15 37 49*	15 S.	178 W.	Fiji Islands.
22	23 29 07*	3 S.	132 E.	Near west coast of New Guinea.
23	02 51 40**			Off coast of Oregon.

Date 1956	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Nov.	h m s	° ′	° ′	
23	10 00 50*	52½ N.	169½ W.	Fox Islands, Aleutian Islands.
24	01 56 06*	22½ S.	67 W.	Argentina-Bolivia border. Felt at Antofagasta, Chile. h about 150 km.
24	20 41 58*	27 S.	175 W.	Kermadec Islands region.
25	07 21 36**			Tonga Islands.
25	11 24 59*	54 N.	164 W.	Unimak Island region, Aleutian Islands.
25	14 15 10*	17 S.	71½ W.	Near coast of southern Peru. h about 100 km.
25	18 07 40*	15 S	168 E.	New Hebrides Islands. h about 100 km.
26	02 59 34**			Bonin Islands.
26	04 12 42*	37 N.	90½ W.	Missouri. Felt in southeastern Missouri and southwestern Illinois.
26	05 07 55*	½ N.	122½ E.	Celebes.
26	18 49 56*	26 S.	70½ W.	Northern Chile. Felt at Antofagasta. h about 100 km.
26	23 29 41*	22 S.	169 E.	Loyalty Islands. Mag. 6-3/4.
27	00 51 46*	21 S.	168½ E.	Loyalty Islands aftershock.
27	02 19 34**			Do.
27	06 17 29**			Do.
27	06 59 34*	5 S.	154 E.	Solomon Islands.
27	08 00 06**			Off north coast of Hokkaido, Japan.
27	09 44 06**			Loyalty Islands aftershock.
27	13 19 05*	21 S.	169 E.	Do.
27	15 52 20**			Do.
28	06 59 18**			Do.
28	15 11 33*	30 S.	176 W.	Kermadec Islands.
28	19 27 11*	49½ N.	155 E.	Northern Kurile Islands. Mag. 6-3/4 - 7.
29	04 13 35*	58 S.	46½ W.	South Orkney Islands region.
29	07 16 07*	27 N.	141 E.	Bonin Islands foreshock.
29	09 15 20*	27 N.	141 E.	Bonin Islands. Mag. 7.
29	14 36 20*	27½ N.	141½ E.	Bonin Islands aftershock.
30	16 42 03**			Near north coast of Vancouver Island, B. C., Canada.
30	16 51 28*	20½ S.	174½ W.	Tonga Islands.
30	19 30 34*	31½ S.	70 W.	San Juan Province, Argentina. h about 150 km.

Date and Station		Phase	(GCT) h m s
Nov. 1			
		e(P)	00 39 13
Nov. 1			
EUR		eP	01 14 09
		i	14 17
Nov. 1			
HH		eP	04 36 26
Nov. 1			
COL		iP	06 05 19
		iPP	08 47
EUR		eP'	06 11 17
HH		e(P')	06 10 07
TUC		eP'	06 12 48
Nov. 1			
COL		eP	07 44 25
Nov. 1			
EUR		eP'	08 11 09
HH		eP'	08 11 04
Nov. 1			
HH		e(P)	09 43 13
Nov. 1			
BH		iP	15 42 29
		iS	42 44
EUR		eP	15 50 22
HH		eP	15 50 56
RC		eP	15 49 57
SJ		eP	15 46 00
		i	46 06
TUC		eP	15 49 19
Nov. 1			
COL		iP	17 36 40
COLU		e(P)	17 50 27
EUR		iP	17 40 35
HH		e(P)	17 40 08
RC		e(P)	17 40 57
Nov. 1			
COL		iP	19 00 49
TUC		eP	18 59 08
Nov. 1			
EUR		eP	23 23 34
Nov. 2			
EUR		eP	00 09 14

Date and Station		Phase	(GCT) h m s
Nov. 2			
HH		e(P)	00 43 59
Nov. 2			
EUR		eP	02 31 32
TUC		e(P)	02 31 31
Nov. 2			
BC		i	02 43 18
BUT		eP	02 44 14
EUR		eP	02 43 38
		i	44 09
HH		iP	02 44 25
SLC		eP	02 43 05
RC		eP	02 44 13
TUC		iP	02 43 01
Nov. 2			
BC		eP	03 00 05
		i	00 14
		i	00 26
		i	00 36
		iS	00 56
		iL	01 05
Nov. 2			
EUR		eP	10 40 51
		i	41 20
		eS	42 25
		eL	42 36
SLC		e(S)	10 43 38
		eL	43 13
TUC		iP	10 39 12
		iS	39 37
		eL	40 22
Nov. 2			
BC		eP	16 18 04
BUT		eP	16 17 19
COL		iP	16 16 20
EUR		eP	16 17 50
HH		iP	16 17 09
SJ		iP	16 16 33
TUC		e(P)	16 18 12
Nov. 2			
EUR		eP	21 57 54
Nov. 2			
EUR		eP	22 00 45
Nov. 3			
BUT		iP	05 30 51
		eL	37 29

Date and Station		Phase	(GCT) h m s
COL		iP	05 27 27
		i	27 45
EUR		eP	05 31 35
		ePcP	34 22
HH		eP	05 30 24
		e	31 33
		eS	34 39
		e	35 35
		eL	35 55
TUC		eP	05 32 49
Nov. 3			
COL		iP	10 10 10
EUR		eP	10 13 53
		iP	14 00
		i	14 13
HH		e(P)	10 13 23
Nov. 3			
EUR		eP	10 53 00
HH		eP	10 53 39
		e	55 29
Nov. 3			
BH		eP	11 55 13
Nov. 3			
HH		e(P)	15 17 05
Nov. 3			
COL		iP	17 04 38
EUR		iP	17 04 18
HH		eP	17 04 46
TUC		eP	17 04 19
Nov. 3			
BC		iP	18 13 55
EUR		iP	18 14 01
		ipP	15 54
HH		e(P)	18 16 25
TUC		iP	18 14 00
		e	15 50
Nov. 3			
HH		eP	18 31 33
Nov. 3			
BH		eP	18 39 56
TUC		e(P)	18 44 51
Nov. 3			
EUR		eP	19 05 51
TUC		eP	19 05 49

Date and Station		Phase	(GCT) h m s
Nov. 3			
EUR		eP	23 11 33
Nov. 3			
EUR		eP	23 55 44
Nov. 4			
HH		e(P)	00 17 26
Nov. 4			
HH		eP	00 35 49
		eL	36 18
Nov. 4			
BC		iP	05 49 23
		ipP	49 41
BUT		iP	05 48 57
COL		iP	05 46 11
		ipP	46 31
		isP	46 47
EUR		iP	05 49 07
		ipP	49 27
		esP	49 42
HH		iP	05 48 44
		i(pP)	49 09
		e(PP)	51 12
SLC		eP	05 49 17
TUC		iP	05 49 48
		epP	50 09
Nov. 4			
EUR		eP	06 31 56
Nov. 4			
BC		iP	07 17 59
BOZ		e(S)	07 29 28
		eL	44 40
BUT		eP	07 18 36
		iP	18 38
		ePP	22 01
COL		iP	07 18 37
		i	18 54
		ipP	19 04
		i	19 24
		i	20 15
		ePPP	23 59
		iS	29 23
		iPS	30 22
		e	32 50
		eSS	35 29
		eL	42 12
EUR		iP	07 18 07
		ePKKP	36 31
		eP'P'	44 30
HONO		iP	07 14 08

Date and Station		Phase (GCT)
		h m s
HH	eP	07 18 37
	ipP	19 02
	e(PP)	22 29
	eS	29 06
	iPKKP	36 17
	eP'P'	44 23
SLC	eP	07 18 23
	iP	18 25
	ipP	18 41
	i	19 12
TUC	eP	07 18 04
	i	18 06
	isP	18 44
	e(PP)	21 33
	e(S)	28 22
	isS	28 40
	ePKKP	36 34
	eL	41 12
	e(P'P')	44 43
UK	iP	07 17 44
Nov. 4		
BC	iP	08 47 44
BUT	eP	08 48 20
EUR	iP	08 48 01
HH	iP	08 48 31
SLC	eP	08 47 58
TUC	eP	08 47 16
Nov. 4		
EUR	eP	19 30 04
Nov. 4		
BUT	eP	19 54 43
COL	eP	19 51 17
	e(S)	52 29
	iL	52 53
EUR	eP	19 55 28
HH	eP	19 54 16
	eL	20 00 06
Nov. 4		
BUT	eP	20 01 34
EUR	eP	20 04 10
Nov. 4		
BUT	e(P)	21 45 50
	eL	52 28
COL	eP	21 42 19
	i	42 41
	iS	43 22
	iL	43 41
EUR	eP	21 46 28
	e(PcP)	49 57

Date and Station		Phase (GCT)
		h m s
HH	iP	21 45 19
	eL	50 29
RC	e(P)	21 46 40
	eL	55 36
SIT	e(P)	21 42 08
	i	42 10
	e(S)	43 00
	iL	43 06
Nov. 4		
COL	eP	22 09 55
	iS	10 59
	iL	11 11
HH	e(P)	22 14 18
Nov. 4		
HH	eP	22 45 20
Nov. 5		
HH	e(P)	06 08 55
	e	09 18
Nov. 5		
COL	eP	08 48 33
Nov. 5		
COL	iP	12 42 23
Nov. 5		
COL	eP	12 56 54
HH	iP	12 59 09
Nov. 5		
COL	iP	17 31 14
Nov. 5		
HH	e(P)	18 24 15
Nov. 5		
COL	iP	20 36 48
EUR	iP	20 40 18
Nov. 6		
BC	eP	00 15 31
	i	15 45
COL	iP	00 16 10
EUR	iP	00 15 40
	i	15 53
HH	e(P)	00 16 19
RC	eP	00 16 30
	e	16 42
SLC	eP	00 15 56
	i	16 09
TUC	eP	00 15 36
	i	15 49
UK	e(P)	00 15 28

Date and Station		Phase (GCT)
		h m s
Nov. 6		
EUR	eP	02 23 47
Nov. 6		
EUR	eP	02 34 27
Nov. 6		
COL	iP	03 03 40
EUR	eP	03 07 10
TUC	eP	03 09 46
Nov. 6		
EUR	eP	05 54 28
HH	e(P)	05 49 40
Nov. 6		
TUC	e(P)	06 09 02
Nov. 6		
EUR	eP	08 32 38
Nov. 6		
BH	eP	13 39 49
	eS	40 30
Nov. 6		
BC	eP'	14 31 13
	e	33 43
COL	iP	14 25 36
	e(PP)	30 05
EUR	eP	14 27 07
	iP'	31 10
	iPKKP	42 16
HONO	eP	14 24 02
HH	ePP	14 31 08
	e	32 57
RC	eP	14 31 25
	ePP	32 43
Nov. 6		
EUR	eP	22 11 25
Nov. 6		
BC	iP	23 22 43
	i	22 59
COL	iP	23 18 52
	i	19 33
	i	20 09
COLU	eP	23 25 15
EUR	eP	23 22 20
HH	iP	23 21 50
	iPcP	23 59
RC	eP	23 23 00
SLC	eP	23 22 35

Date and Station		Phase (GCT)
		h m s
TUC	eP	23 23 24
Nov. 7		
COL	iP	03 18 30
EUR	eP	03 18 11
TUC	eP	03 18 13
Nov. 7		
COL	e(P)	08 34 09
Nov. 7		
BC	e(P)	09 16 51
	i	17 09
COL	iP	09 13 03
	i	13 23
	i	13 37
EUR	eP	09 16 28
HH	e(P)	09 16 01
	e	16 11
RC	e(P)	09 16 03
	e	17 22
SLC	eP	09 16 59
TUC	eP	09 17 31
	e	17 40
Nov. 7		
EUR	eP	12 08 55
Nov. 7		
EUR	eP	15 34 04
Nov. 7		
COL	iP	15 51 54
EUR	eP	15 55 33
Nov. 7		
COL	eP	16 04 09
Nov. 7		
COL	eP	17 19 56
Nov. 7		
EUR	eP	18 55 14
HH	eP	18 53 48
Nov. 7		
COL	iP	19 53 33
Nov. 7		
EUR	eP	22 44 54
Nov. 8		
COL	eP	02 27 08
EUR	eP	02 26 50
Nov. 8		
BC	iP	03 57 41

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Date and Station		Phase (GCT) h m s
COL	iP	03 58 04
	epP	04 00 02
	ipP	00 10
EUR	iP	03 57 47
	ipP	59 47
HH	eP	03 58 13
	epP	04 00 21
	ePP	02 07
SLC	eP	03 58 03
TUC	iP	03 57 46
	epP	59 47
	eS	04 07 49
Nov. 8		
HH	eP	04 15 16
Nov. 8		
BC	iP	07 01 48
	e	03 01
	ipP	03 36
COL	iP	07 02 13
	ipP	04 03
	eSKS	11 47
	iS	12 03
	esPS	16 08
EUR	iP	07 01 54
	ipP	03 43
	e(S)	11 30
	eP'P'	28 24
	eSKPP'	31 11
HONO	iP	06 57 50
HH	iP	07 02 20
	epP	04 15
	iSKS	12 01
	iS	12 18
	iPKKP	20 10
	eP'P'	28 20
RC	iP	07 02 44
	e(pP)	04 45
SLC	eP	07 02 11
	e(pP)	03 51
	ipP	04 01
TUC	iP	07 01 55
	epP	03 43
	e(S)	11 28
	e(PKKP)	20 25
	eP'P'	28 32
	eSKPP'	31 13
UK	eP	07 01 28
	epP	03 18
Nov. 8		
HH	e(P)	07 48 21
Nov. 8		
EUR	eP	11 59 43
Nov. 8		
EUR	eP	13 35 46
Nov. 8		
COL	eP	15 57 03
EUR	eP'	16 03 08
Nov. 8		
EUR	eP	17 18 05
Nov. 8		
BH	iP	23 14 50
	iS	15 16
Nov. 8		
HH	eP	23 15 49
Nov. 9		
EUR	eP	00 30 42
Nov. 9		
BC	iP	06 12 23
COL	eP	06 12 48
COLU	eP	06 09 12
HH	eP	06 11 46
	ePcP	12 36
RC	eP	06 11 06
SLC	eP	06 11 55
	iP	12 00
TUC	eP	06 12 19
Nov. 9		
HH	e(P)	07 12 55
Nov. 9		
COL	e(P)	07 45 55
	i	46 05
Nov. 9		
HH	eP'	12 14 17
SLC	eP'	12 14 34
Nov. 9		
BC	eP	13 11 37
	iP	11 38
	ipP	12 07
	iPcP	15 02
	eL	19 53
BOZ	eP	13 12 25
	iP	12 29
	ipP	12 59
	ePP	13 49
	i(S)	17 25
	eL	21 49
BUT	iP	12 12 33
	ipP	13 06
	iS	17 38
	isS	18 40
	iL	20 16
CHI	iP	13 11 26
	ipP	11 54
	iPP	12 26
	iS	15 38
	eL	16 21
	iL	16 30
COL	iP	13 16 02
	ePP	18 38
	e(PPP)	20 14
	iS	24 02
	e(sS)	24 43
	i	25 35
	e(ScS)	26 24
	eL	29 56
COLU	iP	13 10 41
	iS	14 25
	iL	17 36
HONO	eP	13 16 08
	iP	16 10
	iPcP	16 54
	i	17 33
HH	iP	13 12 54
	epP	13 29
	iS	18 20
	esS	19 19
	eL	27 08
LIN	eP	13 11 14
	eS	15 15
	iL	15 47
RC	iP	13 11 52
	e(pP)	12 31
	ipP	12 35
	iPP	13 01
	isPP	13 33
	i	13 56
	iPcP	15 10
	iS	16 53
	eL	17 29
SLC	eP	13 11 55
	iP	11 56
	ipP	12 25
	iPP	13 05
	i(PcP)	15 31
	iS	16 33
	iL	17 29
SJ	eP	13 11 41
	iP	11 42
	ipP	12 16
	isP	12 32
	iPP	12 42
	iPcP	15 04
	iS	16 04
	iL	17 08
	iScS	22 24
SIT	iP	13 15 00
	ipP	15 32
	isP	15 43
	iS	22 03
	isS	22 51
SIT	iScS	13 24 28
	eL	27 06
TUC	iP	13 10 50
	i	10 53
	ipP	11 19
	eS	14 40
	iS	14 46
	iL	14 55
UK	eP	13 12 45
	epP	13 14
	ePP	14 45
	ePcP	15 21
	e(S)	17 58
	esS	18 55
	eL	21 33
WASH	iP	13 11 37
	ipP	12 06
	i(PP)	12 45
	iL	16 54
Nov. 9		
HH	eP	13 43 44
	i	44 22
Nov. 9		
BC	iP	18 08 41
COL	eP	18 09 14
	epP	10 42
EUR	eP	18 08 47
	e	09 26
SLC	eP	18 09 03
Nov. 9		
EUR	eP	18 45 03
Nov. 9		
COL	eP	22 58 22
Nov. 10		
BH	eP	00 10 01
BC	iP	00 15 30
	epP	16 04
COL	iP	00 19 24
	ipP	19 58
COLU	iP	00 13 36
	iS	18 06
	eL	20 09
EUR	eP	00 15 52
HH	eP	00 16 32
	ipP	18 17
RC	eP	00 15 29
SLC	eP	00 15 39
SJ	eP	00 13 06
	epP	13 32

Date and Station		Phase (GCT)
		h m s
SJ	e(S)	00 17 06
	eL	17 14
TUC	iP	00 14 46
	iPcP	17 39
Nov. 10		
EUR	eP	01 40 07
Nov. 10		
BC	iP	09 08 38
EUR	iP	09 08 06
	i	08 31
	i	08 52
	iS	09 12
	iL	09 42
HH	iP	09 09 10
	e	09 18
RC	eP	09 10 15
	e(PP)	11 00
SLC	eP	09 08 48
TUC	eP	09 09 44
UK	iP	09 06 56
	iS	07 11
	eL	07 19
Nov. 10		
BC	iP	12 00 12
COL	iP	11 55 16
	i	56 11
	iS	56 32
	iL	56 47
EUR	iP	11 59 44
	e	59 57
HH	eP	11 58 55
RC	eP	12 00 12
TUC	eP	12 00 55
Nov. 10		
BC	e(P)	14 57 44
COL	iP	14 51 47
	i	52 45
	iPP	54 45
EUR	eP	14 54 03
	ePP	58 15
HH	eP	14 53 45
RC	eP'	14 58 54
SLC	eP'	14 58 29
SJ	iP'	14 59 35
TUC	e(P')	14 59 11

Date and Station		Phase (GCT)
		h m s
Nov. 10		
EUR	eP	15 10 10
Nov. 10		
EUR	eP	18 10 55
HH	eP	18 11 55
Nov. 10		
EUR	eP	18 27 44
Nov. 10		
BC	iP	18 34 48
COL	iP	18 29 39
	i(S)	29 57
	iL	30 00
EUR	eP	18 35 06
HH	eP	18 35 34
TUC	eP	18 34 19
Nov. 10		
BC	eP	20 28 07
	iP	28 19
	i	29 44
BUT	eP	20 30 56
EUR	iP	20 27 23
HH	eP	20 29 51
	e	31 41
SLC	e(P)	20 28 15
	i	28 29
	eS	29 21
	eL	29 30
TUC	eP	20 29 54
	e	30 22
	e	32 33
	eL	31 56
UK	eP	20 28 20
	e	29 08
Nov. 10		
COL	i(P)	22 39 57
Nov. 10		
COL	eP	23 12 09
EUR	iP	23 12 47
Nov. 11		
BC	iP	03 24 59
COL	iP	03 25 23
	ipP	27 39
	e(SKS)	34 44
EUR	eP	03 25 04
	ipP	27 18
HH	eP	03 25 32

Date and Station		Phase (GCT)
		h m s
TUC	iP	03 25 06
	e	25 18
Nov. 11		
EUR	eP	04 41 11
Nov. 11		
EUR	eP	08 40 54
Nov. 11		
EUR	eP	11 09 04
Nov. 11		
COL	iP	13 08 03
Nov. 11		
COL	eP	13 13 41
Nov. 11		
BC	iP	13 27 59
EUR	iP	13 27 38
HH	eP	13 28 05
RC	eP	13 28 03
Nov. 11		
BC	eP	16 08 49
COL	iP	16 04 54
EUR	iP	16 08 26
HH	eP	16 07 54
	e	09 45
TUC	eP	16 09 25
Nov. 11		
BC	iP	19 26 36
	i	26 47
BUT	iP	19 26 04
	i	26 37
COL	iP	19 22 59
	e(S)	29 01
COLU	iP	19 28 22
EUR	iP	19 26 18
	i	26 30
HH	eP	19 25 49
	iP	25 50
RC	iP	19 26 43
SLC	eP	19 26 28
TUC	iP	19 27 06
Nov. 11		
HH	eP	19 54 55
Nov. 12		
EUR	eP	04 38 33

Date and Station		Phase (GCT)
		h m s
Nov. 12		
BC	eP	05 16 50
EUR	iP	05 16 55
TUC	eP	05 16 55
Nov. 12		
EUR	eP	05 33 56
Nov. 12		
EUR	eP	06 56 49
TUC	e(P)	06 55 33
Nov. 12		
BC	iP	07 25 36
COL	iP	07 21 43
	ipP	22 07
EUR	iP	07 25 13
	ipP	25 34
	i	26 59
	i	30 41
HH	eP	07 24 41
	i	26 46
	e	30 25
RC	eP	07 25 50
SLC	eP	07 25 27
TUC	iP	07 26 14
	e	26 27
	e	26 51
Nov. 12		
EUR	eP	08 51 58
Nov. 12		
EUR	eP	10 03 21
TUC	eP	10 03 17
Nov. 12		
BC	eP	10 44 28
EUR	eP	10 44 31
Nov. 12		
BC	iP	10 50 17
EUR	eP	10 50 16
TUC	e(P)	10 50 05
Nov. 12		
BC	iP	11 05 25
EUR	eP	11 05 23
HH	eP	11 04 57
TUC	eP	11 05 12

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Date and Station		Phase	(GCT) h m s
Nov. 12			
BC		e(P)	11 27 08
COL		eP	11 28 03
EUR		eP	11 27 07
		i	27 33
HH		eP	11 26 41
TUC		e(P)	11 25 08
Nov. 12			
COL		iP	12 49 01
EUR		eP	12 48 23
TUC		e(P)	12 48 29
Nov. 12			
EUR		eP	14 20 55
Nov. 12			
COL		iP	15 11 30
EUR		eP	15 14 58
		i	15 14
HH		eP	15 14 27
		e	14 42
RC		eP	15 15 24
Nov. 12			
HH		eP	15 54 27
Nov. 12			
EUR		eP	16 18 19
Nov. 12			
COL		eP	17 03 50
Nov. 12			
COL		iP	21 05 20
EUR		eP	21 07 51
Nov. 12			
EUR		eP	21 52 50
HH		eP	21 52 44
Nov. 12			
EUR		eP	22 09 23
Nov. 12			
EUR		eP	22 31 18
Nov. 12			
COL		iP	23 35 16
Nov. 12			
EUR		eP	23 52 02
Nov. 13			
EUR		eP	00 30 31
Nov. 13			
COL		iP	03 06 23
EUR		eP	03 08 54
TUC		eP	03 09 32
Nov. 13			
BC		iPKS	03 42 20
EUR		eP'	03 38 54
		iP'	38 58
		iPKS	42 09
		i	42 31
HH		eP'	03 38 48
RC		ePKS	03 42 29
SLC		ePKS	03 42 19
		e	42 53
TUC		iPKS	03 42 36
Nov. 13			
TUC		eP	03 55 19
Nov. 13			
EUR		eP	04 16 53
TUC		eP	04 16 28
Nov. 13			
BC		eP	07 53 52
COL		iP	07 54 05
		e	54 15
		e	54 37
EUR		iP	07 53 57
		i	54 22
TUC		eP	07 54 03
		e	54 25
Nov. 13			
COL		eP	08 09 14
Nov. 13			
COL		eP	08 14 42
Nov. 13			
BC		e(P)	08 49 05
EUR		eP	08 49 12
		iP	49 16
		i	49 38
TUC		e(P)	08 49 23
Nov. 13			
BC		eP'	10 14 51
		e	15 31
BUT		eP'	10 15 00
COL		iP'	10 14 43
EUR		eP'	10 14 45
		i	14 54
HH		e(P')	10 15 01
		eP'	15 03
RC		iP'	10 15 12
SLC		e(P')	10 14 59
		eP'	15 02
SJ		iP'	10 15 13
TUC		eP'	10 14 55
		e(PKS)	17 45
Nov. 13			
EUR		eP	12 52 33
Nov. 13			
EUR		eP	13 07 26
Nov. 13			
BC		e(P)	13 29 24
		eP	29 26
COL		iP	13 30 04
EUR		eP	13 29 31
TUC		eP	13 29 30
Nov. 13			
COL		iP	14 50 41
EUR		eP	14 53 01
HH		e(P)	14 52 47
Nov. 13			
EUR		eP	15 09 22
Nov. 13			
COL		eP	16 39 51
Nov. 13			
COLU		iP	21 49 23
EUR		eP	21 51 41
Nov. 14			
BC		eP	01 05 45
BUT		eP	01 04 56
COL		iP	01 02 56
		iPcP	03 19
		ipP	03 42
		i	03 55
		iPP	05 39
		i	06 12
EUR		eP	01 05 25
		ePKKP	21 12
		eP'P'	29 32
HH		eP	01 04 44
		esP	05 52
RC		eP	01 05 04
TUC		e(P)	01 08 58
		eP'	09 55
		e(PKKP)	21 56
Nov. 14			
COL		iP	02 41 55
EUR		eP	02 45 22
TUC		eP	02 46 10
Nov. 14			
COL		iP	04 07 57
Nov. 14			
COL		iP	05 22 44
		ipP	23 06
EUR		iP	05 23 39
Nov. 14			
EUR		eP	05 45 02
Nov. 14			
EUR		eP	07 38 04
Nov. 14			
EUR		eP	09 57 08
Nov. 14			
EUR		eP	11 42 09
Nov. 14			
EUR		iP	14 35 42
		i	36 28
HH		eP	14 36 49
RC		eP	14 36 04
TUC		eP	14 34 56
Nov. 14			
HH		eP	15 18 48
Nov. 14			
TUC		e(P)	16 51 03
Nov. 14			
EUR		eP	19 37 55
Nov. 14			
EUR		eP	20 43 44
Nov. 14			
EUR		eP	22 07 11
HH		eP	22 07 42
		e	08 01
SJ		eP	22 03 00
		i	03 09
Nov. 15			
BC		iP	14 25 05
COL		iP	14 29 05

Date and Station		Phase (GCT) h m s
EUR	iP	14 25 34
	i	27 23
HH	iP	14 26 36
RC	eP	14 26 00
SLC	eP	14 25 37
Nov. 15		
EUR	eP	14 43 48
Nov. 15		
BH	iP	17 33 38
	iL	41 44
BC	iP	17 35 36
BUT	eP	17 36 53
COL	iP	17 39 38
EUR	iP	17 36 05
	i	37 55
HH	eP	17 37 08
RC	iP	17 36 32
SLC	eP	17 36 09
TUC	eP	17 35 54
	e	36 23
Nov. 15		
COL	iP	20 42 03
Nov. 15		
EUR	eP	21 55 09
Nov. 16		
BC	eP	03 24 19
	i	24 29
BUT	eP	03 26 25
	eL	29 32
EUR	iP	03 24 27
HH	eP	03 26 27
	eL	30 20
RC	eP	03 27 00
TUC	eP	03 25 18
	iL	27 56
UK	eP	03 24 06
	e	24 12
	e	24 33
	eS	24 48
	eL	25 08
Nov. 16		
COL	iP	06 28 05
	i	28 13
	i	28 25

Date and Station		Phase (GCT) h m s
EUR	eP	06 31 41
HH	eP	06 31 15
Nov. 16		
EUR	eP	06 44 06
TUC	eP	06 42 33
	e	43 10
Nov. 16		
BC	iP	08 27 30
BOZ	e(P)	08 28 01
	eS	30 06
	eL	30 34
BUT	eP	08 27 37
	eS	28 38
	eL	28 52
COL	iP	08 32 22
EUR	iP	08 26 39
HH	iP	08 28 03
	e	28 31
	eL	30 04
RC	eP	08 28 41
SLC	eP	08 27 08
	iP	27 13
	eS	27 53
	iS	27 59
	eL	28 04
TUC	iP	08 28 40
	e	29 18
	eL	31 22
UK	e(P)	08 27 40
	e	28 06
	e(S)	28 47
	eL	29 07
Nov. 16		
BC	eP	09 02 09
BUT	eP'	09 06 25
COL	iP	09 00 43
	ipP	01 17
	i	01 27
	i	02 17
EUR	iP	09 02 06
	ipP	02 40
	iPP	06 21
HONO	iP	08 58 53
HH	eP	09 02 06
	ePP	06 18
RC	e(P')	09 07 08
SJ	iP'	09 07 55
	ipP'	08 26

Date and Station		Phase (GCT) h m s
Nov. 16		
HH	e(P)	10 06 16
Nov. 16		
EUR	eP	10 24 25
Nov. 16		
COL	eP	11 46 22
Nov. 16		
COL	iP	11 55 29
	i	56 12
EUR	eP	11 57 56
HH	eP	11 57 40
Nov. 16		
BH	iP	11 55 58
	iS	57 28
BC	eP	12 02 39
	i	02 51
BUT	eP	12 03 04
	iP	03 09
	i	03 34
COLU	eP	11 59 41
	iP	59 44
	i	12 00 03
	ePP	00 38
	e	01 08
	ePcP	02 35
	eS	04 21
	eL	05 00
EUR	iP	12 02 56
	i	03 21
HH	eP	12 03 21
	e	03 26
RC	eP	12 02 15
	eS	09 07
SJ	iP	11 56 35
	iS	58 38
	iL	58 47
TUC	eP	12 02 03
UK	eP	12 03 39
WASH	eP	12 00 19
	i	00 40
Nov. 16		
COL	iP	12 05 51
	i	06 18
	eL	30 16
Nov. 16		
COL	eP	14 16 56
Nov. 16		
COL	eP	16 29 26
EUR	iP	16 29 29

Date and Station		Phase (GCT) h m s
Nov. 16		
HONO	iP	21 35 14
Nov. 16		
EUR	eP	21 47 30
Nov. 16		
BC	iP	22 13 13
	ipP	13 44
EUR	iP	22 13 32
	ipP	14 04
HH	iP	22 14 02
	epP	14 34
	epPP	17 27
RC	eP	22 13 15
	epP	13 46
SJ	iP	22 09 12
Nov. 16		
HH	e(P)	22 29 05
Nov. 16		
BC	iP	23 24 01
	i	24 10
Nov. 17		
EUR	eP	00 19 01
Nov. 17		
EUR	eP	06 32 51
Nov. 17		
EUR	eP	07 26 37
Nov. 17		
EUR	eP	09 29 16
HH	eP	09 30 21
TUC	eP	09 27 54
	e	33 40
Nov. 17		
COL	iP	10 15 17
HH	eP	10 14 30
	e	14 31
Nov. 17		
HH	eP	12 06 47
Nov. 17		
BUT	eP	12 24 46
EUR	eP	12 24 30
	i	25 08
HH	eP	12 25 31
TUC	eP	12 24 20
Nov. 17		
BC	iP	13 40 21
	i	40 32

Date and Station		Phase (GCT)
		h m s
EUR	iP	13 40 54
RC	eP	13 41 14
TUC	eP	13 39 27
	e	44 23
Nov. 17		
COL	eP	14 46 27
Nov. 17		
HH	eP	15 30 41
Nov. 17		
EUR	eP	19 12 25
Nov. 17		
COL	eP	19 25 16
HH	eP	19 27 47
Nov. 17		
COL	iP	19 40 36
	iS	41 18
	iL	41 25
Nov. 17		
COL	iP	20 28 35
	iS	28 56
	iL	28 59
Nov. 17		
BH	e(P)	20 38 08
	e(S)	46 33
BC	iP	20 32 22
	i	32 40
	iS	36 48
	eL	39 19
BOZ	iP	20 31 15
	i	32 19
	iS	34 31
	iL	36 03
BUT	iP	20 31 02
	iS	34 05
	iL	34 51
COLU	eP	20 35 07
	ePP	36 52
	ePPP	37 16
	eS	41 32
	eL	44 30
EUR	eP	20 31 42
	iP	31 43
HONO	eP	20 34 44
HH	iP	20 30 34
	e(S)	33 37
	eL	34 17
PHIL	eS	20 41 15
	e	41 32
	eSS	44 18
	iL	46 17

Date and Station		Phase (GCT)
		h m s
RC	iP	20 32 17
	e(S)	37 15
	eL	39 00
SLC	eP	20 31 55
	i	32 21
	i	32 27
	i	33 28
	e	33 34
	eS	35 45
	eL	37 06
SIT	iP	20 28 00
	iS	28 36
	iL	29 15
TUC	iP	20 33 08
	eS	38 05
	eL	42 04
UK	iP	20 31 18
	iS	34 44
	eL	36 29
Nov. 17		
SLC	iP	20 37 46
Nov. 17		
SLC	eP	21 58 31
Nov. 17		
EUR	eP	23 03 27
Nov. 18		
TUC	eP	01 22 32
Nov. 18		
EUR	iP	02 00 07
HH	eP	01 59 46
Nov. 18		
COL	eP	03 37 58
TUC	eP	03 37 15
Nov. 18		
COL	iP	05 30 39
HH	eP	05 32 35
Nov. 18		
COL	eP	09 23 13
	iP	23 15
	ipP	23 38
EUR	eP	09 26 42
	e	28 01
HH	eP	09 26 11
	e	26 22
	i	28 21
RC	eP	09 27 21
Nov. 18		
BC	eP	09 59 30
COL	eP	10 00 10

Date and Station		Phase (GCT)
		h m s
EUR	iP	09 59 37
TUC	eP	09 59 33
Nov. 18		
EUR	iP	10 41 03
TUC	eP	10 40 23
Nov. 18		
EUR	eP	13 02 53
HH	eP	13 02 59
SJ	iP	12 54 38
Nov. 18		
BC	eP	16 59 23
EUR	eP	17 01 20
Nov. 18		
BC	eP	18 29 04
BUT	eP	18 29 38
COL	eP	18 29 42
EUR	eP	18 29 10
HH	eP	18 29 48
RC	eP	18 30 05
TUC	eP	18 29 06
Nov. 18		
BC	eP	21 35 36
BUT	eP	21 35 24
COL	iP	21 32 57
EUR	eP	21 35 31
	iP	35 36
	i	35 57
HH	eP	21 35 12
	i	35 24
RC	eP	21 36 03
TUC	eP	21 36 12
Nov. 19		
COL	eP	03 03 12
Nov. 19		
BOZ	eP	06 18 34
	eS	18 51
	eL	18 54
BUT	iP	06 18 23
	iS	18 33
	iL	18 34

Felt: Helena, Mont.

Date and Station		Phase (GCT)
		h m s
HH	iP	06 18 49
	iS	19 19
	eL	19 24
Nov. 19		
BC	e(P)	07 27 11
	iS	28 18
	iL	29 15
BUT	eP	07 29 02
COL	e(P)	07 30 28
EUR	eP	07 27 39
	eS	30 31
	iL	31 09
HH	eP	07 29 23
RC	eP	07 28 59
TUC	eP	07 25 47
	e	26 05
	e	26 33
	e(S)	26 58
	eL	27 28
Nov. 19		
HH	eP	09 08 19
Nov. 19		
BC	iP	12 15 19
	i	15 49
BUT	iP	12 15 12
	i	15 33
	ePP	18 44
COL	iP	12 13 18
	iPcP	13 38
	ipP	14 02
	isP	14 14
EUR	iP	12 15 09
	iPP	18 39
HH	iP	12 15 05
	epP	15 45
	ePP	18 32
	ipPP	19 08
RC	iP	12 15 45
	ePP	19 39
TUC	eP	12 15 40
	e	16 08
	ePP	19 33
	epPP	20 23
Nov. 19		
COL	iP	15 50 39
	i	51 13
EUR	eP	15 53 56
	e	54 18
HH	e(P)	15 53 30

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Date and Station		Phase (GCT) h m s
Nov. 19		
COL	eP	19 39 14
EUR	eP	19 39 31
Nov. 19		
COL	eP	20 50 22
Nov. 19		
EUR	eP	22 16 37
	e	16 54
Nov. 20		
EUR	iP	01 08 31
Nov. 20		
BH	iP	02 44 54
	iS	45 04
Felt: Intensity III		
EUR	eP	02 52 48
HH	eP	02 53 30
Nov. 20		
BC	e(P)	03 44 18
EUR	eP	03 44 17
	i	44 38
	iS	45 48
	iL	45 58
Nov. 20		
COL	iP	06 36 06
Nov. 20		
BUT	eP	08 10 52
HH	eP	08 10 17
Nov. 20		
COL	iP	11 16 47
EUR	eP'	11 22 10
RC	eP'	11 22 24
Nov. 20		
COL	iP	12 11 35
	e	11 54
	e	12 19
	e	13 07
EUR	eP	12 13 43
HONO	iP	12 10 46
HH	eP'	12 17 28
	e	17 50
RC	iP'	12 17 32
SLC	eP'	12 17 24
SJ	eP'	12 19 18
Nov. 20		
EUR	eP	12 17 20
EUR	i	12 18 06
Nov. 20		
EUR	eP	12 28 07
Nov. 20		
EUR	eP	12 56 19
Nov. 20		
EUR	eP	18 41 40
	eL	45 06
TUC	e(P)	18 39 53
	e	40 08
	e(S)	40 35
	eL	41 07
Nov. 20		
EUR	eP	18 54 31
Nov. 20		
EUR	eP	22 57 58
HH	eP	22 57 47
Nov. 20		
COL	eP	23 32 40
EUR	eP	23 34 13
HH	iP	23 33 33
Nov. 20		
COL	eP	23 48 20
Nov. 21		
HH	iP	03 09 20
Nov. 21		
COL	iP	06 29 41
EUR	eP	06 33 16
HH	eP	06 32 45
SLC	eP	06 33 24
Nov. 21		
EUR	eP	07 24 16
Nov. 21		
EUR	iP	07 25 36
	ipP	25 53
TUC	iP	07 25 31
	ipP	25 48
Nov. 21		
BC	iP	07 45 21
	epP	45 40
BUT	eP	07 44 51
	ipP	45 02
COL	iP	07 42 03
	ipP	42 18
	iS	48 56
	eScS	51 56
	eL	53 27
EUR	iP	07 45 06
HH	iP	07 44 41
	e(PcP)	45 25
	ePPP	49 04
	iS	53 52
RC	iP	07 45 33
SLC	iP	07 45 15
TUC	eP	07 45 48
UK	eP	07 44 39
Nov. 21		
COL	iP	08 01 57
EUR	eP	08 03 11
HH	e(P)	08 03 13
	e	03 28
Nov. 21		
EUR	eP	08 11 31
TUC	eP	08 10 17
Nov. 21		
BUT	eP	08 41 54
EUR	eP	08 41 06
HH	e(P)	08 42 53
SLC	eP	08 41 05
TUC	eP	08 39 49
	e	39 53
Nov. 21		
COL	eP	13 12 26
Nov. 21		
BC	iP	22 12 16
	i	12 23
	e	14 37
	eL	19 51
EUR	iP	22 12 47
HH	eP	22 13 55
	e	14 33
TUC	eP	22 11 24
	eL	16 57
Nov. 22		
BUT	eP	00 27 16
HH	eP	00 25 19
	eS	26 06
	eL	26 34
Nov. 22		
HH	eP	03 16 48
Nov. 22		
COL	iP	03 29 18
COL	iS	03 30 20
	iL	30 24
HH	eP	03 33 32
Nov. 22		
BH	iP	08 33 32
	i(S)	34 12
BC	iP	08 40 28
BUT	eP	08 41 11
COL	eP	08 44 09
HH	eP	08 41 29
RC	iP	08 40 25
SLC	eP	08 40 38
	ePP	42 27
SJ	eP	08 37 06
TUC	iP	08 39 47
Nov. 22		
BC	eP	15 50 01
BUT	eP	15 50 33
COL	iP	15 50 18
EUR	eP	15 49 59
HH	eP	15 50 33
SLC	eP	15 50 18
TUC	eP	15 50 07
UK	eP	15 49 39
Nov. 22		
BC	e(P)	16 45 27
	i	45 38
	i	45 53
	e(S)	46 43
	iL	47 03
EUR	eP	16 45 18
	i	45 32
	iS	46 26
	iL	46 39
UK	eP	16 44 46
	e	44 51
	e	45 07
	iS	45 21
	eL	45 32
Nov. 22		
HH	eP	20 22 29
Nov. 22		
BC	e(P)	21 24 00

Date and Station		Phase	(GCT) h m s
EUR		iP	21 24 03
		i	24 18
Nov. 22			
EUR		eP'	23 48 21
Nov. 23			
EUR		eP	00 22 36
		epP	22 57
TUC		e(P)	00 21 48
		eL	35 04
Nov. 23			
HH		eP	00 48 18
Nov. 23			
EUR		eP	02 02 41
Nov. 23			
BUT		eP	02 54 03
EUR		eP	02 53 38
HH		eP	02 53 59
TUC		eP	02 55 24
		e	55 31
Nov. 23			
EUR		eP	09 11 12
		i	11 27
Nov. 23			
BC		iP	10 08 34
EUR		iP	10 08 10
HH		eP	10 07 38
		e(PcP)	10 16
TUC		iP	10 09 14
Nov. 23			
EUR		iP	10 10 26
Nov. 23			
EUR		eP	12 30 47
Nov. 23			
EUR		eP	14 59 24
Nov. 23			
COL		eP	22 07 15
EUR		iP	22 10 55
Nov. 23			
EUR		iP	22 13 21
Nov. 23			
TUC		eP	22 53 14
Nov. 24			
BC		iP	02 07 31
		ipP	08 01
BUT		iP	02 08 05
BUT		ipP	02 08 36
		isP	08 52
COLU		iP	02 05 48
		ipP	06 17
EUR		iP	02 07 48
		ipP	08 19
HH		iP	02 08 17
		ipP	08 49
RC		iP	02 07 32
		ipP	08 03
SJ		eP	02 03 37
		ipP	04 05
		isP	04 21
		ePP	05 16
TUC		iP	02 07 00
UK		eP	02 08 10
Nov. 24			
EUR		iP	03 31 53
Nov. 24			
EUR		eP	08 32 34
TUC		eP	08 32 35
Nov. 24			
EUR		eP	08 47 04
Nov. 24			
EUR		eP	09 13 03
Nov. 24			
EUR		eP	15 18 54
Nov. 24			
COL		iP	15 39 54
EUR		eP	15 39 36
Nov. 24			
EUR		iP	17 49 16
Nov. 24			
EUR		iP	19 37 20
Nov. 24			
BC		eP	20 54 41
		i	55 34
COL		eP	20 55 22
EUR		iP	20 54 48
		i	55 16
HH		eP	20 55 26
SLC		eP	20 55 04
		i	55 14
TUC		eP	20 54 44
		eL	21 36 20
UK		e(P)	20 55 26
Nov. 24			
EUR		eP	22 54 00
Nov. 24			
BC		eP	23 12 57
		e	13 13
COL		eP	23 13 54
EUR		eP	23 12 54
HH		eP	23 12 39
Nov. 24			
EUR		eP	23 34 17
Nov. 25			
HH		e(P)	01 12 13
Nov. 25			
EUR		eP	01 53 27
		e	54 34
HH		eP	01 54 21
Nov. 25			
EUR		eP	02 19 20
HH		eP	02 19 10
Nov. 25			
HH		eP	06 40 20
		e	40 27
Nov. 25			
BC		eP	07 33 30
COL		eP	07 34 14
EUR		eP	07 33 39
Nov. 25			
EUR		eP	08 42 56
		i	43 13
		eS	43 39
		eL	43 51
UK		eP	08 42 12
		e	42 18
		e	43 22
Nov. 25			
COL		eP	09 57 55
Nov. 25			
BC		eP	11 32 28
		e	32 48
COL		eP	11 28 17
		i	28 27
		eL	32 12
EUR		eP	11 31 55
		i	32 09
HH		eP	11 31 29
		e	31 54
		e(PcP)	34 34
RC		eP	11 32 36
TUC		eP	11 33 03
		e	33 14
Nov. 25			
EUR		eP	11 38 11
Nov. 25			
EUR		eP	12 08 36
		epP	09 48
HH		eP	12 09 35
RC		eP	12 10 08
TUC		eP	12 08 40
Nov. 25			
BUT		eP	12 15 28
COL		iP	12 15 10
EUR		eP	12 14 44
SLC		eP	12 14 59
TUC		eP	12 14 43
Nov. 25			
BC		iP	14 26 08
		i	26 12
COL		eP	14 28 47
COLU		iP	14 24 13
		i	24 26
EUR		iP	14 26 18
		i	26 32
HH		iP	14 26 49
		i	27 03
RC		iP	14 26 02
		i	26 16
SLC		eP	14 26 11
		i	26 25
SJ		iP	14 22 01
TUC		eP	14 25 40
Nov. 25			
EUR		eP	14 54 13
Nov. 25			
BC		eP	14 58 00
BUT		eP	14 58 36
COL		eP	14 58 35

Date and Station		Phase (GCT)
		h m s
EUR	e(P)	14 57 57
HH	eP	14 58 43
SLC	eP	14 58 27
UK	eP	14 57 42
Nov. 25		
COL	iP	15 27 41
EUR	eP	15 28 39
HH	eP	15 27 46
SLC	eP	15 28 17
UK	eP	15 29 10
Nov. 25		
EUR	eP	16 32 54
COL	iP	16 27 33
	iS	28 22
	i	28 32
	iL	28 42
HH	eP	16 32 00
Nov. 25		
EUR	iP	17 23 40
	i	23 53
Nov. 25		
BC	iP	18 20 30
	i	21 09
BUT	eP	18 20 51
COL	iP	18 20 16
EUR	iP	18 20 31
	i	20 50
	eP'P'	46 24
HH	eP	18 20 50
	i	20 55
	ePP	24 30
SLC	eP	18 20 47
TUC	iP	18 20 40
UK	iP	18 20 10
Nov. 25		
COL	iP	23 15 49
EUR	eP	23 15 21
Nov. 26		
SLC	e(P)	00 12 09
Nov. 26		
BC	iP	03 12 15
BUT	iP	03 11 59
	ipP	12 28

Date and Station		Phase (GCT)
		h m s
COL	iP	03 09 38
	ipP	10 06
EUR	iP	03 12 02
	ipP	12 31
HH	iP	03 11 49
RC	iP	03 12 46
	e	13 01
SLC	iP	03 12 13
	ipP	12 42
TUC	eP	03 12 38
Nov. 26		
COLU	e(S)	04 16 11
	iL	16 54
EUR	e(P)	04 17 24
RC	e(P)	04 16 24
	e(S)	17 42
	eL	19 02
Nov. 26		
BC	eP'	05 26 41
	e	27 06
COL	eP	05 20 56
	e	21 21
EUR	eP'	05 26 36
	i	27 54
HH	eP'	05 27 39
RC	eP'	05 26 46
Nov. 26		
BC	iP	05 38 26
BUT	eP	05 37 29
COL	iP	05 33 58
EUR	iP	05 38 03
HH	iP	05 37 10
	e	38 11
SLC	eP	05 38 02
Nov. 26		
COL	eP	10 17 15
	iS	17 50
	iL	18 10
Nov. 26		
BC	iP	12 26 14
COL	iP	12 26 40
EUR	iP	12 26 20
HH	eP	12 26 46
SLC	eP	12 26 35

Date and Station		Phase (GCT)
		h m s
TUC	eP	12 26 20
Nov. 26		
BC	eP	13 02 55
EUR	eP	13 03 01
SLC	eP	13 03 15
TUC	e(P)	13 03 03
Nov. 26		
EUR	eP	16 00 15
Nov. 26		
BC	iP	19 01 05
	ipP	01 28
	isP	01 43
BUT	iP	19 02 05
	i	02 21
COLU	iP	18 59 57
	i	19 00 09
EUR	iP	19 01 47
	ipP	02 04
	ePKKP	20 47
	eP'P'	28 48
HH	iP	19 02 17
	i	02 35
RC	iP	19 01 36
	i	01 51
SLC	eP	19 01 40
	i	01 56
	i	02 21
	i	02 48
SJ	iP	18 57 54
	ipP	58 10
	i(sP)	58 39
	ipPP	19 00 06
	eS	04 16
	eL	07 40
	iScS	08 12
TUC	iP	19 01 14
	eS	10 06
	eL	23 40
UK	eP	19 02 06
	i	02 21
Nov. 26		
TUC	e(P)	21 29 36
Nov. 26		
BC	iP	23 42 52D
	i	43 18
BUT	eP	23 43 18D
	iSKS	54 02
	ePS	56 12
	e	57 27
	e(PKKP)	00 00 33
	eSS	01 08

Date and Station		Phase (GCT)
		h m s
BUT	eSSS	00 05 21
	eL	08 59
COL	iP	23 42 53C
	eSKS	53 23
	eSSS	00 14 22
	eL	18 27
EUR	iP	23 42 55D
	i	46 03
	eSKS	53 20
	iS	54 06
	ePKKP	00 00 14
	eP'P'	08 17
HH	eP	23 43 22
	e	43 36
	ePKKP	59 58
	e	00 00 26
RC	e(P)	23 43 58
	ePP	47 59
	eSKS	54 30
	ePKKP	00 00 04
	eL	28 31
SLC	eP	23 43 11D
SJ	eP'	23 48 45
	ePKS	52 10
	e(SKS)	55 28
	ePS	00 01 00
	eSS	08 48
	eL	34 48
TUC	eP	23 43 02C
	eSKS	53 38
	ePS	55 24
	eL	00 11 48
UK	eP	23 42 31D
	i	42 33
Nov. 27		
BC	iP	01 04 58
	i	05 07
BUT	eP	01 05 23
COL	iP	01 04 57
EUR	iP	01 05 00
HH	eP	01 04 21
SLC	eP	01 05 16
TUC	eP	01 05 04
UK	eP	01 04 36
Nov. 27		
EUR	eP	01 11 37
Nov. 27		
EUR	eP	02 14 10

Date and Station		Phase	(GCT) h m s
Nov. 27			
EUR		eP	02 29 21
Nov. 27			
BC		iP	02 32 46
EUR		iP	02 32 48
		i	32 58
TUC		eP	02 32 53
Nov. 27			
HH		eP	02 52 49
Nov. 27			
EUR		eP	03 35 36
Nov. 27			
BC		eP	06 30 40
COL		e(P)	06 30 34
EUR		iP	06 30 45
TUC		eP	06 30 48
Nov. 27			
BC		e(P)	07 13 29
COL		eP	07 11 56
EUR		eP	07 12 59
		e	13 24
HH		e(P)	07 13 46
Nov. 27			
BC		eP	07 36 22
EUR		eP	07 36 15
TUC		eP	07 36 29
		eL	50 50
Nov. 27			
COL		e(P)	07 54 27
EUR		eP	07 58 08
Nov. 27			
BC		iP	08 11 23
COL		iP	08 07 46
EUR		iP	08 11 06
		i	11 53
HH		eP	08 10 36
Nov. 27			
EUR		eP	08 51 58
Nov. 27			
EUR		eP	09 33 37
TUC		eP	09 33 37
Nov. 27			
BC		e(P)	09 57 08
		eP	57 13
EUR		eP	09 57 19
Nov. 27			
EUR		eP	11 22 46
Nov. 27			
EUR		eP	12 01 31
Nov. 27			
EUR		eP	12 47 01
		e	47 24
Nov. 27			
BC		iP	13 32 19
COL		iP	13 32 18
EUR		iP	13 32 21
		i	32 35
		ePP	35 09
HH		eP	13 32 59
SLC		eP	13 32 37
TUC		iP	13 32 26
UK		e(P)	13 31 58
Nov. 27			
BC		eP	16 05 28
EUR		iP	16 05 32
Nov. 27			
COL		iP	19 39 56
EUR		iP	19 39 26
HH		eP	19 39 55
Nov. 27			
COL		iP	19 44 35
HH		iP	19 47 30
		e	47 54
		e	49 38
Nov. 27			
TUC		eP	20 49 02
Nov. 27			
EUR		e(P)	22 15 54
Nov. 27			
EUR		eP	22 20 54
Nov. 28			
BC		eP	03 56 25
EUR		eP	03 56 28
Nov. 28			
EUR		eP	04 26 04
Nov. 28			
BC		iP	07 12 26
EUR		iP	07 12 30
TUC		eP	07 12 34
Nov. 28			
SLC		eP	08 23 55
Nov. 28			
COL		iP	09 24 30
EUR		e(P)	09 23 26
		iP	23 29
HH		eP	09 22 42
TUC		e(P)	09 25 03
		e	25 08
Nov. 28			
BC		iP	15 24 24
		i	24 35
BUT		e(P)	15 24 59
COL		iP	15 25 08
		e	28 28
EUR		iP	15 24 32
		i	24 43
HH		eP	15 24 59
SLC		eP	15 24 47
TUC		eP	15 24 26
		e	24 38
UK		eP	15 24 11
Nov. 28			
BUT		eP	16 43 19
COL		eP	16 40 43
EUR		iP	16 43 29
		ipP	43 49
HH		eP	16 43 09
Nov. 28			
BC		iP	19 37 46C
		iPcP	38 22
		eP'P'	20 06 42
BUT		iP	19 37 09C
COL		iP	19 33 52C
		iPP	35 21
		iPcP	36 28
		i	36 47
		iS	39 12
		eL	40 57
COLU		iP	19 39 40C
		i	39 56
COLU		iS	19 50 22
		eL	20 03 20
EUR		iP	19 37 26C
		i	37 41
		e	50 31
		eP'P'	20 06 21
HH		iP	19 36 53C
		iS	44 43
		i	45 05
		eScS	46 43
		iScS	47 04
		eP'P'	20 06 45
PHIL		eS	19 49 24
		eL	20 04 36
RC		iP	19 37 52D
		iS	46 32
		eP'P'	20 06 32
SLC		eP	19 37 36D
		eP'P'	20 06 33
		iP'P'	06 48
SJ		ePP	19 45 16
TUC		iP	19 38 18C
		e	39 33
		eS	47 23
		eL	55 20
		eP'P'	20 06 29
		e(SKPP')	11 32
UK		iP	19 36 57C
Nov. 28			
EUR		eP	22 09 23
		e	11 45
TUC		eP	22 08 06
Nov. 28			
EUR		eP	22 22 46
Nov. 28			
EUR		eP	23 28 34
Nov. 29			
BC		eP'	04 32 29
COL		iP'	04 33 01
		i	33 19
EUR		e(P)	04 28 34
		eP'	32 04
		iPP	32 52
		ePKKP	42 50
HH		eP	04 32 17
		ePP	33 41
RC		eP	04 32 32
SLC		eP	04 31 58
SJ		iP	04 25 34

Date and Station		Phase (GCT)
		h m s
TUC	ePP	04 31 50
Nov. 29		
HH	eP	04 42 26
	e	42 36
	e	46 25
Nov. 29		
BUT	eP	07 21 29
COL	eP	07 21 17
EUR	eP	07 21 35
HH	eP	07 21 19
RC	eP	07 22 03
Nov. 29		
BC	eP	07 28 43
BUT	eP	07 28 24
COL	iP	07 26 00
EUR	iP	07 28 30
	i	28 38
HH	iP	07 28 13
RC	eP	07 28 59
SLC	eP	07 28 40
TUC	eP	07 29 07
Nov. 29		
EUR	eP	08 42 46
Nov. 29		
BC	iP	09 28 00D
	i	28 07
BUT	iP	09 27 42D
	i	28 45
	iPP	31 12
COL	iP	09 25 16D
	i	25 32
	ePcP	26 01
	iPcP	26 07
	iPP	27 52
	i(PPP)	29 16
	iS	33 16
	i	34 05
	e(SS)	36 53
	eL	38 49
EUR	iP	09 27 46D
	iPP	31 17
	ePPP	33 23
	e(PKKP)	47 26
HH	iP	09 27 31D
	e	28 18
	i	28 37
	eS	37 30

Date and Station		Phase (GCT)
		h m s
RC	iP	09 28 15C
	ePP	31 42
	eSKS	39 08
SLC	iP	09 27 59C
	i	28 06
	i	28 24
	i	28 38
	e	30 31
	ePP	31 23
	eS	38 27
	i	39 29
	e	42 31
	eSS	44 27
	eL	51 11
SJ	eP'	09 34 28
	ePP	36 29
TUC	iP	09 28 23
	e	29 16
	eL	53 48
UK	eP	09 27 25
Nov. 29		
BUT	eP	09 38 59
COL	iP	09 36 34
EUR	eP	09 39 05
Nov. 29		
EUR	eP	09 43 21
Nov. 29		
BC	eP	10 04 10
BUT	eP	10 03 51
	i	04 23
COL	iP	10 01 25
EUR	iP	10 03 57
HH	iP	10 03 41
RC	eP	10 04 24
SLC	eP	10 04 08
TUC	e(P)	10 04 33
Nov. 29		
COL	iP	10 45 29
EUR	eP	10 42 50
	i	43 21
	e	45 48
HH	eP	10 42 23
RC	eP	10 42 32
	e	43 02
TUC	eP	10 41 53
Nov. 29		
EUR	eP	11 44 37

Date and Station		Phase (GCT)
		h m s
Nov. 29		
COL	iP	11 56 57
EUR	eP	12 01 35
Nov. 29		
COL	iP	12 22 27
Nov. 29		
EUR	eP	14 21 30
Nov. 29		
COL	eP	14 39 04
EUR	eP	14 41 35
Nov. 29		
BC	eP	14 48 58
COL	iP	14 46 15
	i	46 20
	i	46 51
	e(PP)	49 14
EUR	iP	14 48 46
HH	eP	14 48 29
	i	48 36
SLC	eP	14 48 56
Nov. 29		
SLC	eP	15 15 38
Nov. 29		
EUR	iP	15 49 48
Nov. 29		
EUR	eP	16 34 22
Nov. 29		
COL	iP	17 35 20
Nov. 29		
UK	e	19 20 40
	e	20 45
Nov. 29		
HH	eP	20 49 36
Nov. 29		
COL	eP	21 13 14
EUR	eP	21 15 47
HH	e(P)	21 15 34
Nov. 29		
EUR	e(P)	21 24 32
	eP	24 36
Nov. 29		
COL	eP	23 39 13
Nov. 29		
COL	eP	23 45 22
Nov. 29		
HH	e	23 51 11

Date and Station		Phase (GCT)
		h m s
Nov. 30		
EUR	eP	00 46 42
Nov. 30		
SLC	e(P)	04 35 44
	i	36 01
Nov. 30		
EUR	eP	08 24 21
	i	25 13
Nov. 30		
BC	iP	11 41 55
BUT	eP	11 42 29
COL	iP	11 42 34
EUR	eP	11 42 03
HH	eP	11 42 32
	e	42 42
RC	eP	11 42 51
TUC	eP	11 41 58
Nov. 30		
EUR	eP	12 58 11
Nov. 30		
EUR	eP	13 05 44
Nov. 30		
EUR	eP	13 26 17
Nov. 30		
BC	eP	13 29 16
EUR	eP	13 29 38
HH	eP	13 30 17
SJ	eP	13 26 00
TUC	eP	13 28 34
Nov. 30		
COL	iP	14 51 28
EUR	iP	14 54 15
HH	iP	14 53 53
Nov. 30		
BC	eP	16 46 28
EUR	eP	16 45 25
HH	eP	16 44 32
	e(S)	46 11
	eL	47 17
RC	iP	16 46 24
SIT	e(P)	16 44 24
	eL	45 51

Date and Station		Phase (GCT)	Date and Station		Phase (GCT)	Date and Station		Phase (GCT)	Date and Station		Phase (GCT)
		h m s			h m s			h m s			h m s
TUC	eP	16 47 03	Nov. 30								
			EUR	eP	22 19 33						
Nov. 30											
BC	iP	17 03 36	Nov. 30								
			BC	eP	22 52 32						
BUT	e(P)	17 04 03									
	eP	04 17	EUR	eP	22 52 29						
COL	iP	17 04 16	Nov. 30								
	ipP	04 27	EUR	eP	23 08 07						
EUR	eP	17 03 43									
HH	eP	17 04 14									
SLC	eP	17 04 01									
TUC	e(P)	17 03 56									
Nov. 30											
BC	e(P)	17 29 37									
COL	eP	17 29 15									
EUR	eP	17 28 41									
HH	e(P)	17 29 55									
RC	e(P)	17 29 39									
TUC	eP	17 30 20									
Nov. 30											
BC	iP	19 42 29									
	iPcP	42 53									
	ipP	43 02									
	isP	43 13									
BUT	iP	19 43 04									
	ipP	43 39									
COL	ePP	19 49 30									
EUR	iP	19 42 46									
	ipP	43 20									
	i	44 09									
HH	iP	19 43 15									
	ipP	43 51									
	esP	44 04									
RC	iP	19 42 38									
SLC	eP	19 42 40									
SJ	iP	19 39 12									
	ipP	39 42									
TUC	eP	19 42 10									
Nov. 30											
SLC	eP	20 26 39									
Nov. 30											
EUR	eP	21 57 29									
	e	57 55									

Local and Minor Earthquakes		Local and Minor Earthquakes			
day	hour	day	hour		
COL		Nov.			
Nov.		18	01.4		
1	20.5		02.9		
2	00.1	23	09.3		
	10.9	28	11.0		
4	04.3	30	14.8		
	15.6				
	19.9	TUC			
5	08.8	Nov.			
	12.9	1	07.2		
6	08.2		11.4		
	12.3	2	01.5		
	15.9		06.9		
	23.1		07.0		
7	01.3	4	09.0		
	10.4	6	05.9		
	10.9	10	09.2		
8	02.9	14	08.2		
	10.9		10.5		
9	07.4	18	11.3		
10	07.8		17.0		
	10.8	21	11.4		
	14.8	23	06.2		
	18.7	27	04.5		
	21.9		10.5		
12	14.5	28	10.3		
15	19.7	29	00.8		
16	12.2	30	05.0		
20	23.9		07.1		
26	10.4		08.4		
	13.7				
	18.4	UK			
27	01.3	Nov.			
	07.8	4	01.7		
	12.6	13	16.2		
28	09.3				
	20.4				
29	10.6				
	13.6				
30	00.3				
	10.6				
EUR					
Nov.					
2	16.7				
3	18.8				
10	07.2				
12	10.2				
15	03.4				
	13.1				
16	10.0				
18	06.5				
19	13.9				
24	00.3				
25	06.6				
	15.0				
27	15.0				
	14.8				
HONO					
Nov.					
17	21.2				
19	22.0				
SJ					
Nov.					
16	04.4				
17	05.1				