USCGS
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SEISMOLOGICAL BULLETIN

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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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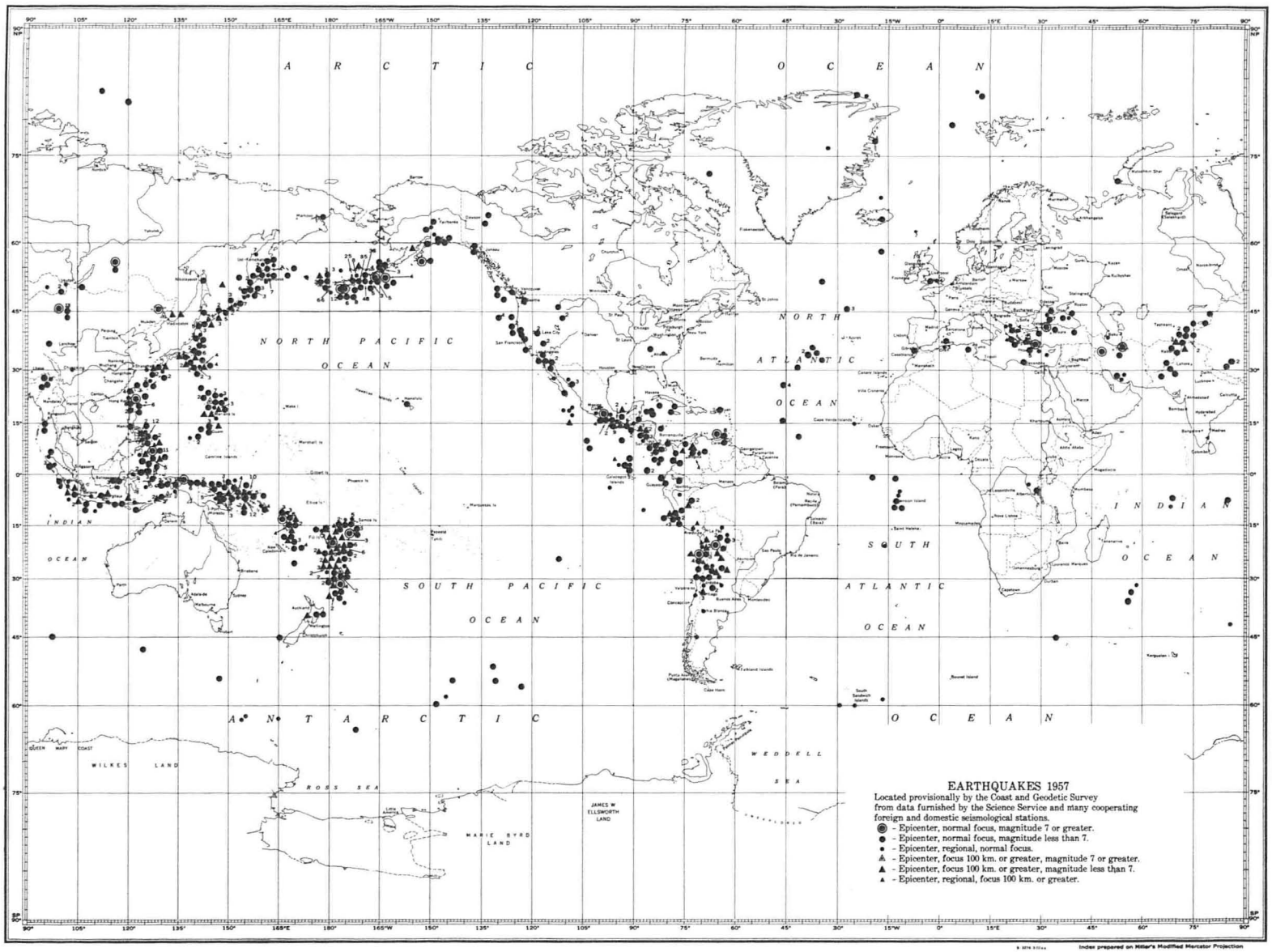
ARCTIC OCEAN
NORTH PACIFIC OCEAN
NORTH ATLANTIC OCEAN
SOUTH PACIFIC OCEAN
SOUTH ATLANTIC OCEAN
INDIAN OCEAN
ANTARCTIC OCEAN
WEDDELL SEA
ROSS SEA
WILKES LAND
QUEEN MARY COAST
MARIE BYRD LAND
JAMES W ELLSWORTH LAND
EARTHQUAKES 1957
Located provisionally by the Coast and Geodetic Survey from data furnished by the Science Service and many cooperating foreign and domestic seismological stations.
- Epicenter, normal focus, magnitude 7 or greater.
- Epicenter, normal focus, magnitude less than 7.
- Epicenter, regional, normal focus.
- Epicenter, focus 100 km. or greater, magnitude 7 or greater.
- Epicenter, focus 100 km. or greater, magnitude less than 7.
- Epicenter, regional, focus 100 km. or greater.
Index prepared on Miller's Modified Mercator Projection

1957

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
Kipapa, T. H. (KIP)
*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 (PR)
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.

US COMM-CGS-DC

Date 1957	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Dec.	h m s	°	°	
1	01 00 26*	47½ N.	153½ E.	Kurile Islands.
1	01 09 00*	47½ N.	154 E.	Kurile Islands.
1	01 38 14*	52½ N.	170 W.	Fox Islands, Aleutian Islands.
1	02 12 34*	47½ N.	153½ E.	Kurile Islands.
1	10 00 05*	47 N.	154 E.	Kurile Islands.
1	19 05 35*	52½ N.	170 W.	Fox Islands, Aleutian Islands.
2	12 48 54*	37 N.	2 E.	Near coast of Algeria. Slight damage at Tenes.
2	17 41 10*	13 N.	88½ W.	Near coast of El Salvador. Felt in southeastern El Salvador. h about 100 km.
2	23 58 58*	83 N.	25 W.	Near northeast coast of Greenland. h about 100 km.
3	01 46 05*	51½ N.	178 W.	Andreanof Islands, Aleutian Islands.
3	21 46 18*	52 N.	169 W.	Fox Islands, Aleutian Islands.
3	23 31 16*	51 N.	178½ W.	Andreanof Islands, Aleutian Islands.
4	00 27 01*	0	125 E.	Molucca Passage.
4	03 37 45*	45½ N.	99½ E.	Outer Mongolia. 20 injured, 13 missing and damage in Bayankhonger, Ara Khangai and Uber Khangai district. Mag. 7.9.
4	05 00 48**			Outer Mongolia aftershock.
4	07 17 28**			Tonga Islands region.
4	09 09 10*	45½ N.	99 E.	Outer Mongolia aftershock.
4	11 19 30*	45½ N.	100½ E.	Outer Mongolia aftershock.
4	13 20 08*	45 N.	101½ E.	Outer Mongolia.
4	22 16 59*	45 N.	99½ E.	Outer Mongolia aftershock.
4	23 41 57*	45 N.	99 E.	Outer Mongolia aftershock.
5	07 40 09*	41 N.	142½ E.	Near east coast of Hokkaido, Japan. h about 100 km.
5	14 04 30*	72 N.	6 E.	Jan Mayan Island region.
5	18 09 32*	45 N.	100 E.	Outer Mongolia aftershock.
6	03 49 33*	45 N.	150½ E.	Kurile Islands. h about 60 km.
6	08 36 21*	44½ N.	150½ E.	Kurile Islands.
7	03 16 43*	6½ S.	123½ E.	Flores Sea. h about 550 km.
7	08 24 03*	15½ N.	92 W.	Guatemala.
7	14 11 15*	43½ N.	100 E.	Outer Mongolia aftershock.
7	22 05 00*	45 N.	150½ E.	Kurile Islands.
7	22 18 49*	13½ N.	82 W.	Off east coast of Nicaragua.
8	01 34 40*	13 S.	167 E.	New Hebrides Islands.
8	06 13 02*	45 N.	100½ E.	Outer Mongolia aftershock.
8	12 16 30*	35 N.	142 E.	Off east coast of Honshu, Japan.
8	14 41 34*	34½ N.	142 E.	Off east coast of Honshu, Japan.
8	15 29 15*	45 N.	99 E.	Outer Mongolia aftershock.
8	16 26 33**			Outer Mongolia aftershock.

Date 1957	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Dec.	h m s	°	°	
8	21 28 45*	44½ N.	100 E.	Outer Mongolia aftershock.
9	01 16 09*	18 N.	122½ E.	Near north coast of Luzon, Philippine Islands.
9	08 02 19*	64½ N.	17½ W.	Iceland.
9	15 49 34**			New Hebrides Islands.
9	22 07 43*	65½ N.	133 W.	Yukon.
10	14 35 57*	6 S.	154½ E.	Solomon Islands. Felt at Aropa, Buin and Rabaul. Mag. 6-3/4.
10	15 53 02*	5½ S.	155 E.	Solomon Islands aftershock. Felt at Rabaul.
11	03 28 44*	6½ S.	155 E.	Solomon Islands aftershock.
11	18 11 07*	30½ N.	142 E.	South of Honshu, Japan.
11	21 55 10*	44½ N.	101 E.	Outer Mongolia.
12	09 47 02*	14½ S.	167½ E.	New Hebrides Islands.
12	18 38 19*	13½ S.	167 E.	New Hebrides Islands.
13	01 31 57*	7 N.	76 W.	Colombia. Felt throughout western Colombia. h about 100 km. Mag. 6-3/4.
13	01 44 59*	34½ N.	48 E.	Iran. 1392 killed, many injured. Farsinaj destroyed. Mag. 7-1/4.
13	02 27 45*	6 S.	154½ E.	Solomon Islands aftershock.
13	17 30 19*	15 S.	173½ W.	Samoa Islands region.
13	20 03 58*	6½ S.	155½ E.	Solomon Islands aftershock.
13	20 26 22*	52½ N.	170 W.	Fox Islands, Aleutian Islands.
13	23 37 45**			About 150 miles off south coast of Nicaragua.
15	22 18 25*	14½ S.	73 W.	Peru.
16	17 27 47*	50 N.	127 W.	Vancouver Island.
16	23 05 28*	34 N.	48 E.	Iran aftershock.
17	05 10 11*	53½ N.	162 E.	Near east coast of Kamchatka. Mag. 6-3/4.
17	13 50 12*	12½ S.	166½ E.	Santa Cruz Islands. h about 100 km. Mag. 7-3/4.
18	02 11 40*	11 N.	63½ W.	Venezuela.
18	20 44 53*	60 S.	28 W.	Sandwich Islands.
19	04 11 13**			Nicaragua.
19	12 03 55**			Kamchatka.
19	19 01 08*	30½ N.	142 E.	South of Honshu, Japan.
20	10 16 20**			Andreanof Islands, Aleutian Islands.
20	11 18 42*	30½ S.	71 W.	Central Chile.
21	16 04 35*	36 N.	2 E.	Algeria.
21	18 53 27*	36 N.	2 E.	Algeria.
23	12 34 03*	35 N.	36½ W.	Atlantic Ocean.
23	13 19 28*	12½ N.	86½ W.	Nicaragua. h about 150 km.
24	15 40 04**			Northern Chile.
25	02 09 20*	53½ N.	162 E.	Near east coast of Kamchatka.

Date 1957	Origin Time G. C. T.	Lat.	Long.	Region, Focal Depth, and Remarks
Dec.	h m s	°	°	
25	13 42 12*	55 N.	161 E.	Near east coast of Kamchatka.
25	16 26 01*	10½ N.	62½ W.	Venezuela. Felt at Point Fortin, Port of Spain and St. Augustine, Trinidad, B. W. I.
26	06 42 03*	53½ N.	162 E.	Near east coast of Kamchatka.
26	12 09 11*	32½ S.	178 W.	Kermadec Islands.
26	12 20 35*	41½ N.	127 W.	Off coast of California.
26	18 48 17*	54 N.	162 E.	Near east coast of Kamchatka.
27	01 28 02*	36½ N.	141 E.	Near east coast of Honshu, Japan.
27	15 00 45*	53½ N.	162 E.	Off east coast of Kamchatka.
28	14 36 40*	18 S.	64½ W.	Bolivia.
28	15 29 27**			Southern Bolivia.
28	19 01 22*	16 S.	172 W.	Tonga Islands region.
29	14 11 40*	13 N.	144 E.	Mariana Islands.
29	15 12 08**			Coquimbo Province, Chile. Felt.
29	19 09 55*	34 S.	70½ W.	Central Chile. Felt. h about 100 km.
30	12 46 04*	53½ N.	166 W.	Fox Islands, Aleutian Islands.
30	13 28 51*	10½ N.	62 W.	Near coast of Venezuela. Felt at Port of Spain, Trinidad, B.W.I.
30	13 58 26*	19 N.	120½ E.	Near north coast of Luzon, Philippine Islands. Felt at Aparri, Bangued, Laoag, Tagudin and Vigan.
30	18 38 00*	53 N.	164 W.	South of Unimak Island.
31	10 21 35*	58 N.	32 W.	North Atlantic Ocean.
31	13 02 20*	25 N.	46 W.	North Atlantic Ocean.
31	14 28 15*	45 S.	165½ E.	Off coast of South Island, New Zealand.
31	21 16 03*	45 S.	96½ E.	South Indian Ocean.

Date and Station		Phase (GCT)
Dec. 1		h m s
COL	iP	00 47 41
SLC	eP	00 56 14
Dec. 1		
SLC	eP	01 04 43
Dec. 1		
BC	eP	01 11 14
BUT	eP	01 10 45
COL	iP	01 07 24
EUR	eP	01 10 54
HH	eP	01 10 26
RC	eP	01 11 24
TUC	eP	01 11 48
Dec. 1		
BC	eP	01 19 47
BOZ	eP	01 19 23
	iP	19 31
	e	19 43
BUT	eP	01 19 23
COL	eP	01 15 58
EUR	iP	01 19 26
HH	eP	01 19 04
RC	eP	01 19 53
	i	20 01
TUC	eP	01 20 17
Dec. 1		
COL	eP	01 26 36
Dec. 1		
BC	eP	01 46 12
BOZ	eP	01 45 35
COL	eP	01 42 13
EUR	eP	01 45 44
HH	eP	01 45 09
	i	45 22
	iPcP	47 41
RC	eP	01 46 22
TUC	eP	01 46 44
	i	46 56
Dec. 1		
COL	iP	02 19 31
EUR	eP	02 23 01
HH	eP	02 22 32
	e	22 55

Date and Station		Phase (GCT)
Dec. 1		h m s
COL	eP	03 26 16
	i	26 28
EUR	eP	03 29 46
HH	eP	03 29 25
Dec. 1		
COL	eP	05 17 36
EUR	eP	05 21 09
Dec. 1		
COL	eP	07 13 04
Dec. 1		
BC	eP	07 33 11
BOZ	eP	07 34 45
EUR	eP	07 33 53
HH	eP	07 33 56
RC	eP	07 34 36
SLC	eP	07 33 57
TUC	iP	07 32 12
	eL	37 49
Dec. 1		
COL	eP	08 25 56
Dec. 1		
COL	iP	10 07 05
	i	07 34
EUR	iP	10 10 32
	iPcP	11 05
HH	eP	10 10 01
	e	10 36
	ePcP	11 08
RC	eP	10 10 59
	e(PcP)	11 33
TUC	eP	10 11 22
Dec. 1		
EUR	eP	10 23 54
TUC	eP	10 22 15
Dec. 1		
COL	iP	11 19 36
	i	19 48
HH	iP	11 18 47
Dec. 1		
HH	eP	13 21 50
Dec.		
COL	eP	14 13 37
	i	15 41
	i	15 49

Date and Station		Phase (GCT)
		h m s
EUR	eP	14 17 13
HH	eP	14 14 53
Dec. 1		
HH	eP	14 40 00
Dec. 1		
COL	iP	17 11 23
Dec. 1		
COL	eP	17 48 22
Dec. 1		
BC	eP	19 13 29
BUT	eP	19 13 00
COL	eP	19 09 30
EUR	eP	19 13 05
HH	eP	19 12 26
	i	12 38
	ePcP	14 58
RC	eP	19 13 43
SIT	eP	19 10 20
TUC	eP	19 14 02
	i	14 08
Dec. 1		
COL	eP	21 15 35
Dec. 1		
EUR	eP	21 34 09
Dec. 1		
COL	eP	22 13 29
Dec. 1		
EUR	eP	22 54 52
Dec. 1		
EUR	eP	23 36 20
Dec. 2		
EUR	eP	00 24 46
Dec. 2		
EUR	eP	00 42 18
Dec. 2		
COL	eP	02 43 28
EUR	eP	02 44 27
Dec. 2		
EUR	eP	02 58 43
Dec. 2		
HH	e(P)	05 37 45
Dec. 2		
HH	eP	06 00 48
	e	01 14

Date and Station		Phase (GCT)
Dec. 2		h m s
HH	eP	07 29 43
Dec. 2		
COL	iP	08 35 39
Dec. 2		
COL	eP	11 57 06
Dec. 2		
EUR	eP	12 54 36
Dec. 2		
COL	eP	13 00 41
EUR	iP	13 01 29
HH	eP	13 00 50
RC	eP	13 00 31
TUC	eP	13 01 38
Dec. 2		
EUR	iP	13 48 47
TUC	eP	13 50 31
Dec. 2		
COL	iP	15 27 56
Dec. 2		
COL	eP	16 34 46
Dec. 2		
COL	iP	17 51 47
	ipP	52 06
COLU	iP	17 46 04
	ipP	46 22
	iPP	46 54
EUR	eP	17 48 08
	ipP	48 24
HH	eP	17 48 52
	epP	51 07
RC	eP	17 48 56
TUC	eP	17 47 04
Dec. 2		
EUR	eP	19 44 53
Dec. 2		
COL	eP	20 15 23
Dec. 2		
HH	i(P)	20 38 57
Dec. 2		
COL	eP	21 55 03
EUR	eP	21 53 03
HH	e(P)	21 52 41
Dec. 2		
COL	eP	23 00 28

Date and Station		Phase (GCT)
		h m s
Dec. 3		
BC	iP	00 08 20
COL	iP	00 04 59
	ipP	05 17
COLU	iP	00 08 05
EUR	iP	00 07 55
HH	iP	00 06 44
	epP	09 00
RC	eP	00 07 08
TUC	iP	00 08 43
Dec. 3		
RC	e(P)	00 22 14
Dec. 3		
BC	iP	01 54 39
	i	54 58
BOZ	iP	01 54 12
	i	54 29
BUT	iP	01 54 04
COL	iP	01 50 49
	eL	54 46
COLU	iP	01 57 10
EUR	iP	01 54 16
HH	iP	01 53 47
	ePcP	55 24
	e(S)	59 34
RC	iP	01 54 55
SLC	iP	01 54 31
SJ	iP	01 59 02
TUC	iP	01 55 17
Dec. 3		
COL	eP	01 58 31
Dec. 3		
COL	eP	04 53 04
	iP	53 06
	iS	53 26
	iL	53 32
Dec. 3		
COL	eP	08 52 58
	eS	54 03
	eL	54 08
Dec. 3		
COL	iP	10 35 40
Dec. 3		
EUR	eP	13 50 52
RC	eP	13 52 15

Date and Station		Phase (GCT)
		h m s
Dec. 3		
COL	iP	15 26 44
	ipP	27 04
Dec. 3		
COL	iP	18 10 03
	epP	11 02
Dec. 3		
COL	iP	21 42 49
EUR	eP	21 47 37
HH	eP	21 46 39
	i	46 44
Dec. 3		
BC	eP	21 54 08
BOZ	eP	21 53 44
COL	iP	21 50 15
	ipP	50 32
COLU	eP	21 56 59
EUR	eP	21 53 40
	i	53 52
HH	eP	21 53 11
	i	53 24
	ePcP	55 47
RC	eP	21 54 22
	i	54 34
	ePcP	56 14
TUC	eP	21 54 50
Dec. 3		
EUR	eP	21 58 44
Dec. 3		
BC	eP	23 39 50
BOZ	eP	23 39 22
	i	39 30
COL	iP	23 35 59
COLU	iP	23 42 19
	i	42 30
EUR	iP	23 39 26
HH	iP	23 38 56
	i	39 06
	iPcP	41 00
	iPP	41 16
	e(S)	44 49
RC	iP	23 40 04
	i	40 14
	ePcP	41 27
SJ	iP	23 44 12
TUC	iP	23 40 27

Date and Station		Phase (GCT)
		h m s
Dec. 4		
COL	iP	00 03 21
EUR	iP	00 02 47
HH	eP	00 03 42
RC	eP	00 03 22
TUC	e(P)	00 02 10
Dec. 4		
EUR	iP	00 18 47
HH	eP	00 19 42
RC	eP	00 19 21
TUC	e(P)	00 17 56
Dec. 4		
BC	eP'	00 45 45
BOZ	eP'	00 45 41
COL	iP	00 39 56
	i	40 24
COLU	eP'	00 46 30
	e(PP)	49 16
EUR	iP'	00 45 40
	iPP	46 22
HH	e(P)	00 41 36
	e(P')	45 33
	ePKKP	56 48
RC	iP'	00 45 52
	iPP	47 07
SJ	iP'	00 47 37
TUC	iP'	00 45 53
	ePP	47 08
Dec. 4		
BC	iP	02 52 22
	e	53 03
EUR	eP	02 53 07
	iS	54 26
	iL	54 39
TUC	e(P)	02 52 59
	iL	54 26
Dec. 4		
EUR	eP	03 09 08
	eS	10 33
	eL	10 47
RC	e(P)	03 08 11
Dec. 4		
EUR	eP	03 37 58
Dec. 4		
BC	eP	03 51 04C

Date and Station		Phase (GCT)
		h m s
BC	eS	04 02 29
	eL	13 25
BOZ	eP	03 50 25C
	eS	04 01 04
	eL	12 40
BUT	eP	03 50 25D
	iS	04 01 03
	eL	12 55
CHI	eP	03 51 09N,W
	iS	04 02 01
	eSS	08 25
	eL	15 05
COL	iP	03 47 43C
	i	47 59
COLU	eP	03 51 41C
	i	51 57
	i(PP)	55 20
	iPP	55 44
	i	56 43
	eSKS	04 02 21
	eS	03 22
	iPS	04 58
	ePKKP	07 48
	eSS	10 28
	eP'P'	16 28
	eL	21 56
EUR	iP	03 50 45C
HONO	eP	03 50 27C
	eS	04 00 36
	i	00 50
	i(PS)	01 38
	i	02 58
	i	04 10
	iSS	06 25
	iSSS	10 38
	iL	12 03
HH	iP	03 50 08C
	i	50 13
	iPP	53 39
	eS	04 00 35
	e(PS)	01 31
	e	02 53
	e	04 13
	ePKKP	08 42
	iSSS	10 03
	i	11 34
	eL	12 50
	i	15 49
	iP'P'	16 49
	eP'P'P'	37 03
LIN	eP	03 51 15
	e	51 31
	ePP	54 43
	eS	04 01 43
PHIL	eP	03 51 04
	e	54 33
	iPP	55 27
	e	57 42

Date and Station		Phase	(GCT)
			h m s
PHIL	eSKS	04	01 33
	iS		02 30
	iPPS		04 24
	iPKKP		09 07
	eSSS		12 46
	eL		16 14
RC	eP	03	50 40
	i		50 49
	eS	04	01 30
	e(ScS)		02 18
	eSS		07 33
	eL		15 09
	eP'P'		16 24
SLC	eP	03	50 47D
	iS	04	01 47
	iSS		07 35
	eSSS		11 00
	eL		14 31
SJ	eP'	03	56 37C
	iPP		57 26
	i		59 39
	i	04	00 21
	iSKS		03 32
	eSKKS		04 38
	eS		05 24
	i(PKKP)		07 16
	ePS		08 22
	eSS		13 59
	iP'P'		15 58
	eL		26 32
SIT	eP	03	48 52C
	ePP		51 21
	ePPP		53 22
	eS		58 00
	eScS		59 28
	eSS	04	02 18
	i		02 50
	i		03 20
	eL		05 32
TUC	iP	03	51 31
	i		51 51
	e		54 29
	iPP		55 32
	i		55 50
	iPPP		57 49
	e		58 04
	e		59 20
	e		59 22
	e	04	00 48
	eSKS		02 20
	iPS		04 32
	ePKKP		08 13
	iSS		09 27
	eP'P'		16 19
	eL		17 21
UK	eP	03	50 39D
	e		53 15
	ePP		54 17
	eS	04	01 18
	iS		01 34
	e(PS)		02 34
	i		07 06
	eSS		07 40
	eL		16 10

Date and Station		Phase	(GCT)
			h m s
WASH	iP	03	51 21
	ePP		55 11
	iPS	04	04 19
Dec. 4			
HH	iP	04	05 08
Dec. 4			
HH	eP	04	31 18
Dec. 4			
HH	iP	04	41 15
Dec. 4			
HH	iP	04	47 08
Dec. 4			
HH	eP	05	00 58
	e		01 50
Dec. 4			
COL	iP	05	10 47
HH	iP	05	13 13
	i		13 18
RC	eP	05	13 45
Dec. 4			
COL	eP	05	28 45
Dec. 4			
COL	iP	05	29 46
HH	iP	05	32 13
Dec. 4			
COL	eP	05	35 21
HH	e(P)	05	37 48
	e		38 47
Dec. 4			
HH	eP	05	56 09
Dec. 4			
COL	eP	06	01 09
HH	iP	06	03 34
Dec. 4			
COL	eP	06	14 35
HH	eP	06	17 01
Dec. 4			
COL	eP	06	27 06
HH	eP	06	29 32
Dec. 4			
COL	iP	06	33 13
EUR	eP	06	36 17
HH	iP	06	35 40
Dec. 4			
HH	eP	06	45 19

Date and Station		Phase	(GCT)
			h m s
Dec. 4			
COL	eP	07	01 01
HH	eP	07	03 26
Dec. 4			
HH	eP	07	14 38
Dec. 4			
HH	iP	07	23 46
Dec. 4			
COL	eP	07	30 37
EUR	iP	07	30 06
HH	e(P)	07	30 36
RC	e(P)	07	30 52
TUC	eP	07	30 03
Dec. 4			
HH	eP	07	35 27
Dec. 4			
COL	iP	07	47 19
HH	eP	07	49 43
Dec. 4			
COL	iP	08	03 10
HH	iP	08	00 44
Dec. 4			
EUR	iP	08	06 14
HH	iP	08	05 37
Dec. 4			
COL	eP	08	15 30
HH	eP	08	17 55
Dec. 4			
COL	iP	08	19 03
HH	iP	08	21 28
Dec. 4			
COL	eP	08	26 05
HH	eP	08	28 27
Dec. 4			
HH	eP	09	06 02
Dec. 4			
COL	eP	09	10 14
HH	eP	09	12 39
Dec. 4			
COL	iP	09	19 17
EUR	iP	09	22 21
HH	iP	09	21 43

Date and Station		Phase	(GCT)
			h m s
RC	iP	09	22 15
SLC	eP	09	22 21
Dec. 4			
COL	iP	10	52 38
HH	iP	10	55 05
Dec. 4			
HH	eP	11	06 05
Dec. 4			
COL	iP	11	29 24
EUR	iP	11	32 29
HH	iP	11	31 51
RC	eP	11	32 24
Dec. 4			
HH	iP	11	40 08
Dec. 4			
COL	eP	12	23 20
HH	iP	12	25 47
Dec. 4			
COL	iP	12	44 58
	ipP		45 48
EUR	eP	12	48 03
HH	iP	12	47 25
	e		48 08
Dec. 4			
COL	eP	13	20 42
HH	iP	13	23 08
	i		23 14
Dec. 4			
BC	eP	13	33 26
BOZ	eP	13	32 48
BUT	iP	13	32 45
	e		33 05
COL	iP	13	30 04
EUR	iP	13	33 08
HH	iP	13	32 31
RC	iP	13	33 04
SLC	eP	13	33 10
Dec. 4			
COL	eP	13	47 30
	iP		47 32
HH	eP	13	49 56

Date and Station		Phase (GCT)
		h m s
Dec. 4		
COL	eP	14 49 03
	ipP	49 21
Dec. 4		
HH	eP	14 59 25
Dec. 4		
COL	iP	15 58 05
EUR	eP	16 01 10
HH	iP	16 00 32
	i	03 38
Dec. 4		
HH	e(P)	16 10 27
Dec. 4		
COL	eP	16 17 05
Dec. 4		
COL	eP	16 55 03
HH	eP	16 57 30
Dec. 4		
EUR	eP	17 08 57
Dec. 4		
COL	eP	18 52 31
HH	eP	18 54 56
Dec. 4		
COL	iP	18 55 09
HH	iP	18 57 35
Dec. 4		
COL	iP	19 45 47
HH	iP	19 48 12
Dec. 4		
COL	eP	20 40 04
EUR	eP	20 43 31
HH	iP	20 42 59
Dec. 4		
COL	iP	22 26 56
EUR	iP	22 30 00
HH	iP	22 29 22
RC	eP	22 29 54
Dec. 4		
HH	iP	22 37 32
Dec. 4		
HH	e(P)	23 00 44
Dec. 4		
BUT	iP	23 54 35

Date and Station		Phase (GCT)
		h m s
COL	iP	23 51 57
EUR	iP	23 55 00
HH	iP	23 54 21
RC	eP	23 54 54
Dec. 5		
HH	eP	00 18 19
Dec. 5		
COL	eP	00 47 14
HH	eP	00 49 40
Dec. 5		
EUR	eP	01 31 28
Dec. 5		
COL	eP	02 28 43
	i	28 53
HH	eP	02 31 19
	e	32 02
Dec. 5		
COL	eP	02 56 09
HH	eP	02 58 35
Dec. 5		
COL	iP	04 18 24
HH	eP	04 20 50
Dec. 5		
EUR	eP	07 51 31
HH	e(P)	07 51 12
RC	eP	07 52 07
Dec. 5		
HH	eP	08 02 42
Dec. 5		
COL	iP	08 27 37
HH	iP	08 30 03
Dec. 5		
HH	e(P)	08 57 22
Dec. 5		
COL	eP	09 14 23
Dec. 5		
COL	iP	10 46 13
HH	eP	10 46 18
TUC	iP	10 45 52
Dec. 5		
EUR	eP	12 14 43
Dec. 5		
EUR	eP	12 31 20

Date and Station		Phase (GCT)
		h m s
Dec. 5		
HH	eP	14 08 25
Dec. 5		
BUT	iP	14 13 59
COL	iP	14 12 22
EUR	iP	14 14 47
HH	iP	14 13 44
RC	eP	14 13 55
	e	15 01
TUC	iP	14 15 27
Dec. 5		
HH	eP	16 23 57
Dec. 5		
COL	iP	18 19 29
EUR	iP	18 22 33
HH	iP	18 21 55
RC	eP	18 22 29
Dec. 5		
COL	iP	19 27 16
HH	eP	19 29 44
Dec. 5		
COL	eP	21 50 14
Dec. 6		
COL	eP	00 23 28
Dec. 6		
COL	eP	00 45 46
Dec. 6		
COL	iP	01 00 16
HH	eP	01 02 42
Dec. 6		
SJ	iP	01 32 44
	i	33 32
Dec. 6		
COL	iP	02 26 21
EUR	iP	02 29 42
	ipP	29 57
HH	eP	02 29 14
RC	eP	02 30 08
	e	30 22
Dec. 6		
COL	iP	02 39 01
	i	39 14
EUR	eP	02 42 22
	ipP	42 35

Date and Station		Phase (GCT)
		h m s
HH	eP	02 41 53
	i	42 06
RC	eP	02 42 53
	e	43 01
Dec. 6		
BC	eP	04 00 32
BOZ	iP	04 00 19
BUT	iP	04 00 14
COL	iP	03 56 53
COLU	eP	04 02 36
EUR	iP	04 00 14
	ipP	00 28
HH	iP	03 59 46
	ipP	59 59
RC	iP	04 00 40
	ipP	00 53
SLC	eP	04 00 23
	ipP	00 38
TUC	e(P)	04 01 07
	epP	01 17
Dec. 6		
HH	eP	06 10 19
Dec. 6		
BC	eP	08 47 24
	i	47 39
BOZ	eP	08 47 02
BUT	eP	08 46 54
	iP	47 07
COL	iP	08 43 46
COLU	eP	08 49 15
	i	59 29
EUR	iP	08 47 08
	i	47 19
HH	iP	08 46 38
	i	46 52
RC	iP	08 47 33
SLC	eP	08 47 17
	i	47 32
TUC	eP	08 47 56
	i	48 10
Dec. 6		
COL	iP	10 01 12
HH	iP	10 00 24
	e	00 50

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Date and Station		Phase	(GCT) h m s
Dec. 6			
EUR		eP	14 47 23
Dec. 6			
EUR		iP	15 27 13
HH		eP	15 28 11
Dec. 6			
HH		e(P)	15 56 59
		e	57 23
Dec. 6			
HH		eP	16 08 38
Dec. 6			
EUR		iP	17 45 54
Dec. 6			
EUR		iP	18 10 22
Dec. 6			
HH		e(P)	19 51 11
Dec. 6			
HH		e(P)	22 11 14
Dec. 6			
HH		eP	23 07 43
Dec. 6			
HH		e(P)	23 11 15
SLC		eP	23 10 59
		i	11 27
Dec. 7			
BC		eP'	03 34 34
COLU		iP'	03 35 20
EUR		iP'	03 34 30
		iPP	35 53
HH		iP'	03 34 26
		ePP	35 45
RC		eP'	03 34 43
TUC		iP'	03 34 42
		ePP	36 42
Dec. 7			
HH		eP	05 39 14
Dec. 7			
EUR		eP	06 21 28
SJ		eP	06 27 41
Dec. 7			
BC		iP	08 30 05
BOZ		iP	08 30 52
		e	31 38
BUT		iP	08 30 59
COLU		eP	08 28 50
		eS	32 52
		eL	35 24
EUR		iP	08 30 33
		i	30 53
HH		iP	08 31 19
SLC		eP	08 30 20
TUC		iP	08 29 22
		iPP	30 27
		eL	37 21
WASH		iP	08 30 29
Dec. 7			
EUR		iP	09 07 53
TUC		iP	09 06 43
		e	09 10
Dec. 7			
EUR		iP	09 10 21
Dec. 7			
EUR		eP	10 45 53
Dec. 7			
EUR		eP	13 26 22
HH		iP	13 25 44
Dec. 7			
EUR		iP	13 31 41
Dec. 7			
BC		eP	14 24 39
BOZ		eP	14 24 01
COL		eP	14 21 21
BUT		eP	14 23 58
EUR		iP	14 24 21
HH		iP	14 23 44
		i	23 50
Dec. 7			
EUR		eP	17 59 48
HH		iP	17 59 09
		i	59 14
Dec. 7			
HH		eP	18 37 54
Dec. 7			
COL		eP	20 40 49
HH		iP	20 43 16
Dec. 7			
COL		eP	22 12 26
EUR		iP	22 15 47
HH		eP	22 15 17
SJ		ePP	22 22 41
		i	22 51
Dec. 7			
BC		eP	22 26 03
BOZ		eP	22 26 35
BUT		eP	22 26 42
		e	27 38
COL		eP	22 29 51
COLU		eP	22 23 31
		ePP	24 12
		eS	27 30
		eL	30 17
EUR		iP	22 26 25
HH		eP	22 26 57
		i	27 01
Dec. 8			
COL		iP	01 47 18
		i	47 41
EUR		eP	01 47 41
Dec. 8			
HH		eP	05 00 07
Dec. 8			
COL		iP	06 22 59
EUR		eP	06 26 04
		i	26 45
HH		iP	06 25 25
		i	27 31
RC		eP	06 27 09
Dec. 8			
COL		eP	06 38 14
Dec. 8			
COL		eP	06 59 46
EUR		eP	07 03 17
Dec. 8			
COL		eP	09 32 45
EUR		iP	09 35 39
HH		iP	09 35 16
Dec. 8			
EUR		iP	09 41 07
HH		iP	09 40 45
Dec. 8			
BC		eP	12 28 40
BOZ		eP	12 28 19
BUT		iP	12 28 14
		i	28 24
COL		iP	12 25 30
EUR		iP	12 28 24
HH		iP	12 28 01
		i	28 12
RC		iP	12 28 51
		i	29 00
SLC		eP	12 28 34
Dec. 8			
HH		eP	12 40 07
Dec. 8			
HH		eP	12 47 24
Dec. 8			
BC		eP	14 53 53
BUT		eP	14 53 17
		e	53 28
COL		iP	14 50 34
EUR		iP	14 53 27
		i	53 38
HH		iP	14 53 04
		i	53 15
RC		eP	14 54 05
SLC		eP	14 53 38
Dec. 8			
HH		iP	15 02 37
Dec. 8			
BC		eP	15 42 36
BUT		iP	15 41 52
COL		iP	15 39 13
EUR		iP	15 42 18
HH		iP	15 41 38
RC		iP	15 42 13
Dec. 8			
HH		eP	16 04 48
Dec. 8			
BC		eP	16 39 51
COL		iP	16 36 19
EUR		eP	16 39 27
		i	39 33

Date and Station		Phase (GCT)
		h m s
HH	iP	16 38 48
	i	38 56
RC	eP	16 39 32
Dec. 8		
COL	iP	17 30 19
HH	eP	17 34 30
Dec. 8		
HH	e(P)	19 27 48
Dec. 8		
HH	eP	21 12 58
Dec. 8		
COL	iP	21 38 44
EUR	eP	21 41 48
HH	iP	21 41 09
RC	e(P)	21 42 35
Dec. 8		
HH	e(P)	22 08 05
Dec. 8		
HH	e(P)	23 53 09
Dec. 9		
EUR	eP	00 08 52
HH	iP	00 08 29
Dec. 9		
COL	eP	01 12 06
Dec. 9		
COL	eP	01 27 44
Dec. 9		
HH	iP	01 55 34
Dec. 9		
EUR	eP	04 22 39
Dec. 9		
COL	eP	08 10 42
EUR	eP	08 12 18
HH	eP	08 11 16
Dec. 9		
HH	eP	09 18 59
Dec. 9		
COL	eP	14 23 28
	iS	24 46
	iL	25 04
Dec. 9		
COL	iP	16 02 19
EUR	eP	16 02 37

Date and Station		Phase (GCT)
		h m s
Dec. 9		
RC	eP	17 20 15
Dec. 9		
BC	iP	20 00 05
	i	00 35
EUR	eP	20 00 30
	i	00 39
	iS	01 09
	iL	01 16
Dec. 9		
EUR	eP	20 12 30
Dec. 9		
EUR	eP	20 14 27
Dec. 9		
BC	eP	22 14 06
BOZ	eP	22 12 50
	e	13 35
	eL	19 48
BUT	eP	22 12 43
	e(S)	17 16
	eL	19 14
COL	iP	22 09 12
	iS	10 52
	iL	11 08
COLU	iP	22 15 52
	eL	30 15
EUR	iP	22 13 34
	i	14 13
	eS	18 11
	eL	22 05
HH	iP	22 12 16
	iS	16 03
	iL	16 42
RC	iP	22 13 28
	eL	26 09
SLC	iP	22 13 32
	eL	22 13
SJ	iP	22 18 16
SIT	eP	22 09 43
	i	10 09
	eS	11 40
	iL	12 08
Dec. 9		
BC	eP	22 24 46
LIN	e(P)	22 21 42
	e(S)	23 34
	eL	24 34
WASH	e(P)	22 29 03
	e	32 07

Date and Station		Phase (GCT)
		h m s
Dec. 10		
RC	eP	01 05 36
Dec. 10		
COL	eP	04 17 14
	iS	17 52
	iL	18 00
Dec. 10		
COL	eP	08 17 25
Dec. 10		
BC	eP	14 49 20
	e	49 55
	ePP	53 07
	eS	15 00 10
BUT	eP	14 49 38
COL	iP	14 48 22
	iS	58 36
	iSS	15 04 20
	e(SSS)	07 41
	eL	10 06
EUR	iP	14 49 17
	i	50 01
	ePKKP	15 06 26
HONO	eP	14 45 23
	iPcP	46 31
	iS	53 16
	eL	58 27
HH	eP	14 49 26D
	e	52 45
	ePP	53 28
	eSKS	15 00 08
	eS	00 38
	ePKKP	06 18
	eP'P'	14 28
SLC	eP	14 49 33
SJ	eP'	14 55 16
	iPP	59 00
	e(SKKKS)	15 07 40
	eSS	17 57
	eSSS	22 19
	eL	39 14
SIT	eP	14 48 34
	eSKS	59 06
	iScS	15 00 10
	e	04 46
	ePS	05 24
	eL	11 38
UK	eP	14 48 54
	e(PP)	52 21
	eL	15 20 12
Dec. 10		
EUR	iP	15 08 51
Dec. 10		
EUR	eP	15 11 30
Dec. 10		
COL	iP	15 40 19

Date and Station		Phase (GCT)
		h m s
Dec. 10		
HH	iP	15 42 47
Dec. 10		
COL	eP	16 05 24
EUR	iP	16 06 19
	i	06 39
HH	eP	16 06 28
Dec. 10		
TUC	iP	16 41 17
Dec. 10		
EUR	eP	16 55 07
Dec. 10		
EUR	iP	18 21 01
Dec. 10		
EUR	eP	19 32 36
Dec. 10		
BC	eP	19 40 37
COL	eP	19 36 36
EUR	iP	19 40 13
HH	eP	19 39 39
	e	40 09
	i	42 13
Dec. 10		
HH	iP	19 45 45
Dec. 10		
EUR	eP	21 32 37
Dec. 10		
UK	eP	23 07 25
Dec. 11		
COL	eP	03 00 39
EUR	eP	03 00 49
Dec. 11		
EUR	iP	03 01 32
Dec. 11		
COL	eP	03 17 40
	iL	18 37
Dec. 11		
COL	eP	03 41 10
EUR	iP	03 42 04
Dec. 11		
EUR	eP	04 16 21
	i	16 35
	eS	17 23
	eL	17 31
Dec. 11		
EUR	eP	04 27 58
	i	28 11

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Date and Station		Phase (GCT) h m s
EUR	eS	04 29 00
	eL	29 08
Dec. 11		
COL	eP	07 25 57
	eS	27 15
	eL	27 27
Dec. 11		
COL	iP	09 15 24
Dec. 11		
HH	eP	11 04 28
Dec. 11		
BC	eP	18 23 31
BOZ	eP	18 23 15
BUT	eP	18 23 08
COL	eP	18 20 37
EUR	iP	18 23 18
HH	iP	18 22 58
	i	23 14
RC	iP	18 23 47
SLC	eP	18 23 29
TUC	eP	18 23 54
Dec. 11		
COL	eP	20 20 10
Dec. 11		
HH	eP	21 17 42
Dec. 11		
BC	eP	22 08 32
BOZ	eP	22 07 55
COL	iP	22 05 10
EUR	eP	22 08 15
HH	iP	22 07 37
Dec. 11		
EUR	eP	23 11 05
Dec. 11		
EUR	iP	23 45 11
Dec. 12		
COL	iP	00 01 50
Dec. 12		
EUR	eP	00 50 55
	i	51 03
	eS	51 50
	eL	51 56
Dec. 12		
COL	eP	00 55 04
	eS	56 26
	eL	56 40
Dec. 12		
EUR	iP	01 59 12
	i	02 02 25
	i	03 25
Dec. 12		
BOZ	eP	03 05 53
HH	eP	03 06 25
	i	06 28
	i(S)	06 59
	iL	07 03
Dec. 12		
HH	iP	03 27 42
	e	27 52
Dec. 12		
COL	eP	03 48 55
Dec. 12		
COL	iP	04 29 32
	i	29 59
Dec. 12		
TUC	eP	07 46 22
Dec. 12		
BC	iP	08 00 41
EUR	iP	08 01 26
	iS	02 35
	iL	02 47
HH	eP	08 03 37
SLC	eP	08 01 58
	e	02 28
Dec. 12		
COL	iP	09 59 48
EUR	iP	10 00 03
TUC	eP	10 00 14
Dec. 12		
COL	iP	10 02 31
EUR	iP	10 02 46
Dec. 12		
COL	iP	16 18 14
	eS	19 39
	eL	19 53
Dec. 12		
COL	eP	16 47 47
HH	iP	16 50 14
Dec. 12		
BC	eP	18 51 15
COL	iP	18 50 58
	i	50 17
	i	51 25
EUR	iP	18 51 16
	i	51 35
	iPP	54 59
HH	eP	18 51 39
TUC	iP	18 51 43
	e	52 04
Dec. 12		
COL	eP	19 02 13
EUR	iP	19 06 07
HH	eP	19 05 28
Dec. 12		
COL	eP	19 23 40
EUR	iP	19 23 59
Dec. 12		
HH	eP	19 35 21
Dec. 12		
COL	eP	20 17 04
Dec. 12		
HH	eP	22 45 36
Dec. 13		
BC	iP	01 40 11C
	ipP	40 30
BOZ	iP	01 40 36C
	epP	40 53
BUT	iP	01 40 46C
	i(pP)	41 24
CHI	eP	01 38 51
	eL	47 07
COL	iP	01 43 38C
	i	44 23
	iPP	46 27
COLU	iP	01 37 39C
	ipP	37 52
	iS	42 16
	eL	45 32
EUR	iP	01 40 32C
HH	iP	01 41 02C
	ipP	41 16
	ePP	43 16
	eS	48 26
PHIL	eP	01 38 32
	eS	43 48
	eL	51 15
RC	iP	01 39 57D
	ipP	40 11
	ePP	41 45
SLC	iP	01 40 18C
	ipP	40 43
	iPP	41 52
	eS	47 04
	eL	50 44
SJ	iP	01 35 29C
	i	35 42
	iS	38 12
	iL	38 29
SIT	eP	01 42 49
TUC	iP	01 39 33C
	ipP	39 46
	iPP	41 10
	eS	45 43
	eL	48 50
UK	iP	01 41 08C
	ipP	41 20
WASH	iP	01 38 21D
	eL	54 11
Dec. 13		
BC	eP	01 59 26
	ePP	02 03 50
BOZ	eP	01 58 39D
	iP'	02 02 10
	eSKS	09 16
	ePS	11 28
BUT	iP	01 58 39D
	e(P')	02 02 01
	ePP	03 07
	e	04 33
	ePS	11 30
	eL	30 14
COL	iP	01 57 13C
	i	58 38
	iS	02 07 12
	i	08 09
	i	11 30
	iSS	12 44
	eSSS	15 28
	ePKKP	15 56
	eL	20 06
	eP'P'	24 04
	eSKPP'	27 25
COLU	ePP	02 02 22
	eSKS	09 10
	eL	28 30
HONO	ePP	02 05 20
	e	08 10
	eS	13 18
	e(PPS)	17 06
	eSS	21 44
	eSSS	26 14
	eL	33 22
HH	iP	01 58 30D
	e	02 01 30
	iP'	01 56
	ePP	02 19
	eSKS	09 05
	eS	09 47
	ePKKP	15 18
	eP'P'	23 33

Date and Station		Phase (GCT)
		h m s
PHIL	ePP	02 01 30
	iS	08 24
	i	09 51
	eSS	14 16
	eL	21 21
RC	iP	01 58 36D
	ePP	02 02 32
	ePS	11 24
SLC	eP	01 59 02D
	eS	02 09 40
	iS	10 24
SJ	eP	01 58 45
	ePP	02 02 35
	iSKS	09 14
SIT	eP	01 57 58D
	eS	02 08 46
	eFS	09 46
	e	13 36
	eSS	14 49
	eSSS	18 21
	eL	21 18
TUC	eP	01 59 22
	i	59 38
	e	02 02 54
	iPP	04 09
	e	06 16
	eSKKS	11 15
	iPS	13 40
	ePKKP	14 45
	eL	36 07
WASH	iP	01 58 07D
	eS	02 08 40
Dec. 13		
COL	eP	02 33 37
	ipP	33 55
EUR	eP	02 34 14
	ipP	34 32
Dec. 13		
COL	eP	02 40 08
EUR	iP	02 40 04
Dec. 13		
HH	eP	04 02 40
Dec. 13		
EUR	eP	04 21 31
HH	eP	04 23 02
TUC	e(P)	04 20 32
Dec. 13		
COL	eP	09 19 20
	ipP	20 05
Dec. 13		
HH	eP	10 12 35

Date and Station		Phase (GCT)
		h m s
Dec. 13		
COL	eP	11 39 58
Dec. 13		
TUC	e(P)	12 16 20
Dec. 13		
EUR	eP	13 22 39
HH	eP	13 22 08
TUC	eP	13 23 42
	e	23 55
Dec. 13		
HH	eP	13 24 31
Dec. 13		
EUR	iP	16 28 17
Dec. 13		
COL	iP	17 14 38
EUR	iP	17 17 48
HH	iP	17 17 19
RC	eP	17 18 08
Dec. 13		
COL	iP	17 32 57
	iS	33 43
	iL	33 49
Dec. 13		
COL	iP	17 42 41
EUR	iP	17 42 10
HH	iP	17 42 41
TUC	iP	17 42 10
Dec. 13		
HH	iP	19 07 06
Dec. 13		
HH	e(P)	19 30 08
Dec. 13		
COL	iP	20 16 23
HH	e(P)	20 17 26
Dec. 13		
BC	eP	20 34 11
	e	34 38
BUT	eP	20 33 34
	eS	39 22
	eL	43 14
CHI	e(S)	20 43 19
	eL	51 43
COL	iP	20 30 20
	i	30 42
	i	31 08
	iS	33 42
	iL	34 46

Date and Station		Phase (GCT)
		h m s
COLU	iP	20 36 50
	eS	45 18
	eScS	46 40
	eL	57 23
EUR	iP	20 33 48
HONO	e(P)	20 33 08
	eS	38 05
	eL	41 02
HH	iP	20 33 16
	i	33 28
	ePP	34 40
	iPcP	35 48
	eS	38 47
PHIL	eP	20 37 04
	iS	45 13
	eL	56 55
RC	iP	20 34 28
SJ	iP	20 38 51
	i	39 03
SIT	eP	20 31 02
	eS	34 52
	i	35 14
	eL	38 04
TUC	iP	20 34 51
	ePP	37 02
	eS	41 40
	eL	45 48
UK	eP	20 33 17
Dec. 13		
HH	i(P)	22 47 04
Dec. 13		
BOZ	eP	23 45 26
COL	iP	23 48 51
COLU	iP	23 43 08
	i	43 26
EUR	eP	23 45 12
	i	45 30
HH	eP	23 45 54
	i	46 10
RC	eP	23 44 52
	ePP	45 59
TUC	eP	23 44 07
Dec. 14		
COL	eP	02 54 59
EUR	eP	02 58 34
HH	eP	02 57 55
RC	eP	02 59 15
TUC	eP	02 59 30

Date and Station		Phase (GCT)
		h m s
Dec. 14		
COL	eP	07 13 26
	iL	14 26
Dec. 14		
TUC	e(P)	11 23 12
	e	23 23
Dec. 14		
TUC	e(P)	13 08 48
Dec. 14		
COL	iP	16 07 45
EUR	eP	16 11 13
HH	eP	16 10 41
RC	eP	16 11 53
	e	12 04
TUC	eP	16 12 16
Dec. 14		
COL	iP	16 59 57
EUR	eP	17 03 24
HH	iP	17 02 54
RC	eP	17 04 02
TUC	e(P)	17 04 36
	eL	29 44
Dec. 14		
EUR	iP	19 39 23
Dec. 14		
HH	eP	22 40 03
Dec. 14		
EUR	iP	23 15 57
RC	eP	23 15 22
SJ	eP	23 11 12
	e	13 39
TUC	eP	23 14 58
Dec. 15		
COL	eP	04 07 36
EUR	iP	04 11 06
Dec. 15		
EUR	iP	04 41 05
	i	41 19
	iS	42 10
	iL	42 22
Dec. 15		
HH	e(P)	06 16 53
Dec. 15		
COL	eP	15 30 37
	i	30 47

Date and Station		Phase	(GCT)
			h m s
Dec. 15			
COL		eP	15 34 58
Dec. 15			
COL		eP	15 40 48
Dec. 15			
TUC		iP	18 02 44
		e	03 05
Dec. 15			
COL		iP	18 25 55
		iS	26 18
		iL	26 23
Dec. 15			
COL		eP	21 11 45
Dec. 15			
BC		iP	21 17 41
		i	17 57
EUR		iP	21 18 35
HH		e(P)	21 20 34
TUC		eP	21 17 39
		e	17 54
		e	18 21
		iS	18 52
		iL	19 03
Dec. 15			
EUR		eP	22 29 25
HH		eP	22 29 58
RC		eP	22 29 09
TUC		eP	22 28 30
Dec. 16			
HH		eP	02 51 45
		i	51 54
Dec. 16			
COL		iP	03 57 44
		i	58 15
HH		eP	03 57 46
		e	58 17
TUC		e(P)	03 57 15
		i	57 49
Dec. 16			
HH		eP	04 32 54
		iP	32 56
Dec. 16			
COL		iP	05 15 57
		i	18 15
		i	19 48
		iS	20 36
		iL	21 26
Dec. 16			
HH		e(P)	06 08 10

Date and Station		Phase	(GCT)
			h m s
Dec. 16			
EUR		iP	09 34 21
		i	34 53
		i	35 18
Dec. 16			
COL		eP	10 00 04
		eS	00 55
		eL	01 02
Dec. 16			
COL		eP	12 53 25
Dec. 16			
EUR		eP	14 44 15
HH		eP	14 44 46
RC		eP	14 43 56
Dec. 16			
BC		iP	17 31 39
		e	33 11
BOZ		iP	17 30 33
		i	30 48
		eS	32 52
		iL	33 50
BUT		iP	17 30 11
		i	30 19
		e	31 10
		eL	32 42
CHI		iP	17 33 47
		e(S)	38 31
		eL	42 11
COL		iP	17 32 08
		i	32 37
		iS	35 44
		iL	36 28
COLU		iP	17 35 00
		ePP	36 21
		eS	40 46
		eL	43 38
EUR		iP	17 30 54
HH		iP	17 29 55
		i	30 13
		i	30 33
		iS	31 32
		iL	32 08
RC		iP	17 31 47
		eL	36 56
SLC		iP	17 31 09
		eL	34 01
SJ		iP	17 37 37
		ePcP	38 25
SIT		eP	17 29 56
		i	30 04
		eS	31 27
		eL	31 54

Date and Station		Phase	(GCT)
			h m s
TUC		iP	17 32 36
		eS	36 38
		eL	38 54
UK		iP	17 30 28
		e	31 37
		eS	32 41
		eL	34 41
WASH		iP	17 34 57
		e(S)	40 48
		e	41 28
		eL	45 14
Dec. 16			
HH		iP	19 15 35
RC		eP	19 14 55
		e	15 37
TUC		e(P)	19 14 21
Dec. 16			
HH		eP	21 07 18
Dec. 16			
COL		eP	23 17 42
HH		e(P)	23 18 58
Dec. 17			
BC		eP	05 20 09C
		e	20 34
BOZ		eP	05 19 35C
		i	20 00
		eL	35 12
BUT		eP	05 19 26C
		e(S)	27 02
		eL	34 10
COL		iP	05 15 57C
		i	16 25
COLU		eP	05 22 06C
		eS	31 51
		e	33 08
		eL	41 48
EUR		iP	05 19 47C
HONO		eP	05 18 19
		i	20 40
		iS	24 59
		iL	28 56
HH		eP	05 19 09
		iPcP	20 39
		iPP	20 55
		eS	26 23
		eScS	29 00
		eP'P'	49 42
PHIL		e(P)	05 22 18
		e	23 50
		eP'PP	26 45
		e(S)	31 24
		e	33 11
		eL	39 39

Date and Station		Phase	(GCT)
			h m s
RC		iP	05 20 10C
		i	20 37
		eL	35 38
		eP'P'	49 58
SLC		eP	05 19 55D
		i	20 21
SIT		eP	05 17 12C
		eS	22 36
		eL	25 40
		eScS	27 21
TUC		eP	05 20 42C
		iPcP	21 07
		e	22 06
		eS	29 28
		eL	37 28
		eP'P'	49 52
WASH		eP	05 21 53
		eL	06 12 10
Dec. 17			
COL		eP	05 31 29
EUR		eP	05 35 21
Dec. 17			
HH		eP	08 38 22
		e	39 02
RC		eP	08 39 03
		e	39 42
Dec. 17			
COL		eP	08 42 06
EUR		eP	08 45 54
HH		eP	08 45 18
RC		eP	08 46 18
		e	09 13 04
TUC		eP	08 46 48
Dec. 17			
EUR		iP	09 59 13
Dec. 17			
COL		eP	10 30 35
Dec. 17			
RC		eP	10 57 35
Dec. 17			
COL		iP	12 40 58
		i	41 11
Dec. 17			
COL		iP	12 50 58
		i	51 10
EUR		iP	12 54 47
HH		eP	12 54 10
		e	55 40

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Date and Station		Phase (GCT)
		h m s
RC	iP	12 55 11
	e	55 23
TUC	eP	12 55 41
Dec. 17		
BC	iP	14 02 57C
	i	03 02
	ipP	03 23
	eS	13 21
BOZ	eP	14 03 22D
	ipP	03 57
	e	04 27
	eSKS	13 40
	e	16 07
	eSS	20 48
	e	24 10
	e	29 00
	eL	32 05
BUT	eP	14 03 18D
	e	07 43
	eSKS	13 35
	e	15 03
	e(SS)	21 15
	e	24 39
	eL	28 35
CHI	eP	14 04 37
	e(P')	08 09
	ePP	09 13
	epPP	09 41
	eSKS	15 09
	eSKKS	15 53
	e	17 49
	ePS	18 25
	eSS	24 33
	eSSS	28 53
	eL	35 53
COL	iP	14 02 36
	i	03 14
	iS	12 51
	iPS	13 42
	iSS	18 19
	i	19 24
	ePKKP	20 22
	iL	25 08
	eP'P'	28 48
COLU	iP'	14 08 50C
	e	09 44
	iPP	10 18
	eSKKS	16 30
	eS	17 24
	ePS	19 29
	iPKKP	19 32
	eSS	25 45
	eL	43 20
EUR	iP	14 02 58D
HONO	iP	13 58 50C
	ipP	59 26
	iPcP	14 00 02
	iS	05 46

Date and Station		Phase (GCT)
		h m s
HONO	i	14 06 30
	iSS	08 06
	eL	09 30
HH	eP	14 03 14C
	i	03 19
	ipP	03 52
	isP	04 11
	epPP	07 35
	e(PPP)	08 50
	eSKS	13 42
	eS	14 15
	epS	15 39
	e	20 00
	iPKKP	20 35
	i	21 10
	eP'P'	28 35
	eP'P'P'	49 35
LIN	eP	14 04 08
	epP	04 44
	ePP	08 20
	iPS	17 40
	eL	24 00
PHIL	eP'	14 09 21
	iPP	10 19
	e	14 12
	eSKKS	16 21
	e	19 07
	iPS	20 03
	eSS	26 42
	eSSS	31 36
	eL	41 03
RC	iP	14 03 47D
	ipP	04 23
	iSKS	14 28
	e	24 42
	eP'P'	28 33
	eP'P'P'	46 40
SJ	iP'	14 09 15C
	ipP	09 50
	iPP	11 22
	ipPP	11 56
	eSKS	16 36
	ePS	21 20
	eSS	28 50
	i	30 00
	eSSS	34 30
	eL	42 10
SLC	eP	14 03 16D
	epP	03 47
	e(PP)	08 17
	iSKS	13 37
	i	14 09
	eS	15 01
	e(SS)	23 33
	e(SSS)	27 29
	eL	32 17
SIT	iP	14 02 39D
	ipP	03 13

Date and Station		Phase (GCT)
		h m s
SIT	ePP	14 06 18
	iS	12 56
	isS	13 40
	i	14 48
	e	17 19
	e(SS)	18 48
	eSSS	21 46
	eL	25 32
TUC	iP	14 03 07C
	ipP	03 40
	i	04 28
	i	05 06
	i	05 49
	iPP	06 38
	i	07 47
	eSKS	13 32
	eS	13 55
	iS	14 00
	isS	14 38
	ePKKP	21 06
	e	22 26
	iL	27 24
	eP'P'	28 38
	e	29 13
	eP'P'P'	49 42
UK	iP	14 02 33C
	ipP	03 08
	i	03 48
	ePPP	07 26
	eS	12 52
	i	13 29
	e	14 42
	e(SS)	19 12
	eL	25 24
WASH	e(P)	14 05 22
	eP'	08 58
	iPP	10 12
	e(S)	18 36
	iPS	20 06
	e(SS)	27 18
	e(SSS)	32 14
	eL	39 06
Dec. 17		
COL	iP	15 02 20
Dec. 17		
COL	eP	17 22 36
	i	23 17
EUR	iP	17 23 05
	ipP	23 38
HH	eP	17 23 54
	e	25 02
Dec. 17		
EUR	eP	18 30 27
Dec. 17		
TUC	e(P)	22 34 07
Dec. 17		
BC	iP	23 35 14
	e	35 46
	eL	36 33

Date and Station		Phase (GCT)
		h m s
EUR	iP	23 36 03
	eS	37 45
	eL	38 13
Dec. 18		
BC	eP	02 20 56
COL	eP	02 23 43
EUR	eP	02 21 09
HH	eP	02 21 18
RC	e(P)	02 20 19
SLC	eP	02 20 52
SJ	eP	02 13 36
TUC	eP	02 20 22
Dec. 18		
RC	eP	02 42 39
Dec. 18		
EUR	iP	02 51 51
HH	eP	02 52 42
TUC	eP	02 51 10
Dec. 18		
BOZ	eP	04 18 41
Dec. 18		
COL	eP	08 40 36
EUR	eP	08 43 59
HH	iP	08 43 29
RC	eP	08 44 39
TUC	eP	08 45 13
Dec. 18		
RC	eP	08 52 21
Dec. 18		
COL	eP	09 02 47
Dec. 18		
COL	eP	11 40 58
EUR	iP	11 44 18
HH	eP	11 43 48
RC	eP	11 44 00
TUC	eP	11 45 20
Dec. 18		
COL	eP	11 50 57
	iS	51 29
	iL	51 33

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

Date and Station		Phase (GCT) h m s
Dec. 21		
HH	eP	16 02 49
Dec. 21		
EUR	iP	16 17 15
HH	eP	16 16 38
TUC	eP	16 17 24
Dec. 21		
COL	iP	18 53 17
	iS	53 41
	iL	53 44
HH	iP	18 57 53
Dec. 21		
COL	iP	18 58 44
	iS	59 16
	iL	59 22
HH	eP	19 03 15
Dec. 21		
EUR	iP	19 06 07
HH	eP	19 05 38
RC	eP	19 05 11
TUC	eP	19 06 15
Dec. 21		
BC	eP	19 21 51
BOZ	eP	19 22 40
BUT	eP	19 22 45
EUR	eP	19 22 19
HH	eP	19 23 07
TUC	eP	19 21 07
	e	22 17
Dec. 21		
COL	eP	20 39 18
	i	39 24
HH	e(P)	20 39 06
Dec. 21		
HH	eP	21 03 38
Dec. 21		
COL	iP	21 10 02
HH	iP	21 09 15
Dec. 22		
EUR	eP	00 22 57
	i	24 49
HH	iP	00 25 17
RC	iP	00 24 33
TUC	iP	00 24 01

Date and Station		Phase (GCT) h m s
Dec. 22		
COL	iP	00 37 17
	eS	37 46
	eL	37 52
HH	iP	00 41 44
	i	42 03
Dec. 22		
EUR	iP	06 31 37
RC	eP	06 32 02
Dec. 22		
BOZ	eP	07 24 42
Dec. 22		
COL	iP	09 56 34
EUR	iP	10 00 11
HH	eP	09 59 38
RC	eP	10 00 36
TUC	eP	10 01 05
Dec. 22		
EUR	eP	10 17 48
	i	18 28
Dec. 22		
COL	eP	11 46 06
	eS	46 37
	eL	46 42
Dec. 22		
HH	e(P)	12 13 38
Dec. 22		
EUR	iP'	14 44 27
HH	iP'	14 44 22
RC	eP'	14 44 39
	e	47 14
TUC	eP'	14 44 42
	e	47 16
Dec. 22		
COL	iP	17 00 49
HH	eP	17 04 56
Dec. 22		
COL	iP	17 19 24
Dec. 23		
COL	eP	00 14 37
	iL	15 08
Dec. 23		
COL	eP	07 41 40
	eS	42 23
	eL	42 32
Dec. 23		
SJ	e(P)	12 10 30

Date and Station		Phase (GCT) h m s
Dec. 23		
BC	eP	12 44 30
	e	44 59
BOZ	eP	12 43 46
BUT	iP	12 43 51
COL	eP	12 44 59
COLU	eP	12 41 18
	eS	47 04
	eL	49 20
EUR	iP	12 44 24
HH	eP	12 43 51
	i	44 02
PHIL	e(P)	12 41 20
	eS	45 40
	eL	47 18
RC	eP	12 43 10
SLC	eP	12 44 02
TUC	eP	12 44 21
Dec. 23		
BOZ	eP	13 26 49
COL	eP	13 30 09
COLU	iP	13 24 19
EUR	iP	13 26 34
	ipP	27 02
HH	iP	13 27 15
	epP	27 42
RC	iP	13 26 11
	epP	26 37
TUC	eP	13 25 29
Dec. 23		
HH	eP	15 34 11
Dec. 23		
COL	eP	16 53 35
	i	53 44
Dec. 23		
TUC	eP	19 02 14
Dec. 23		
COL	eP	19 41 21
Dec. 23		
COL	eP	21 43 13
HH	iP	21 45 40
Dec. 24		
COL	iP	02 39 13
	eS	40 10
	eL	40 21

Date and Station		Phase (GCT) h m s
Dec. 24		
SJ	eP	03 40 38
	iS	41 08
	iL	41 14
Dec. 24		
COL	iP	03 56 23
Dec. 24		
HH	e(P)	06 01 46
Dec. 24		
COL	eP	06 56 00
Dec. 24		
HH	e(P)	07 32 16
Dec. 24		
EUR	eP	10 18 09
Dec. 24		
HH	eP	10 40 19
Dec. 24		
COL	eP	11 06 47
	eL	07 30
Dec. 24		
HH	e(P)	11 58 25
Dec. 24		
HH	eP	12 24 09
Dec. 24		
COL	eP	12 34 09
Dec. 24		
COL	iP	13 50 33
Dec. 24		
EUR	eP	14 09 20
	eS	10 11
	eL	10 23
Dec. 24		
BC	iP	15 51 45
BOZ	eP	15 52 16
BUT	iP	15 52 19
EUR	iP	15 52 04
HH	iP	15 52 31
RC	iP	15 51 47
SLC	eP	15 51 56
TUC	iP	15 51 16
	e	53 39
	ePPP	56 05
Dec. 24		
COL	eP	16 33 01
	iL	33 39
Dec. 24		
COL	eP	16 56 48

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

Date and Station		Phase (GCT)
Dec. 27		h m s
HH	iP	21 02 56
	e	03 21
RC	e(P)	21 02 09
SJ	eP	20 58 07
Dec. 27		
TUC	e(P)	23 17 05
Dec. 28		
EUR	iP	02 18 45
Dec. 28		
COL	iP	05 22 08
Dec. 28		
COL	iP	05 46 01
HH	iP	05 48 28
Dec. 28		
EUR	eP	08 38 46
	eL	39 43
Dec. 28		
HONO	eP	14 26 09
Dec. 28		
BH	iP	14 42 56
	iS	48 32
BOZ	eP	14 48 32
	e	49 30
BUT	iP	14 48 36
COL	eP	14 50 41
COLU	iP	14 46 05
	eS	53 42
	e	56 10
	eL	59 32
EUR	iP	14 48 22
	i	49 05
HH	iP	14 48 48
	ePP	51 58
RC	iP	14 48 00
SJ	iP	14 43 44
SLC	eP	14 48 11
TUC	iP	14 47 33
	eP'P'	15 16 09
WASH	eP	14 46 32
	ePPP	50 08
	eL	15 07 17
Dec. 28		
COLU	eP	15 39 05
EUR	iP	15 41 15
HH	iP	15 41 42

Date and Station		Phase (GCT)
		h m s
RC	eP	15 41 00
Dec. 28		
EUR	eP	16 29 44
RC	e(P)	16 30 09
Dec. 28		
BC	eP	19 13 08
	i	13 19
BOZ	eP	19 13 52
	e	14 11
BUT	iP	19 13 46
	i	14 06
COL	iP	19 13 48
	i	14 00
EUR	iP	19 13 14
HH	eP	19 13 47
	i	13 59
RC	eP	19 14 10
	i	14 22
SLC	iP	19 13 34
	i	13 44
TUC	iP	19 13 13
	i	13 24
Dec. 29		
EUR	eP	00 05 32
Dec. 29		
EUR	eP	00 30 21
HH	eP	00 30 21
RC	eP	00 29 23
TUC	eP	00 30 26
Dec. 29		
HH	eP	04 43 27
Dec. 29		
COLU	eP	05 44 48
	i	44 51
Dec. 29		
COL	iP	11 59 47
	eL	12 00 50
Dec. 29		
COL	iP	12 01 59
	iL	02 32
Dec. 29		
COL	eP	12 52 18
	eL	53 55
Dec. 29		
EUR	eP	14 24 41
Dec. 29		
BC	iP	14 45 47

Date and Station		Phase (GCT)
		h m s
EUR	eP	14 46 44
	i	46 55
	eS	47 35
	eL	47 43
Dec. 29		
BC	eP	15 24 03
BUT	iP	15 24 39
EUR	iP	15 24 21
HH	iP	15 24 51
	i	25 05
RC	iP	15 24 13
SLC	eP	15 24 14
TUC	iP	15 23 34
Dec. 29		
EUR	eP	16 07 33
Dec. 29		
BUT	eP	19 22 39
EUR	iP	19 22 21
	ipP	22 52
HH	eP	19 22 50
RC	eP	19 22 14
	epP	22 45
TUC	eP	19 21 37
Dec. 29		
EUR	iP	20 52 16
HH	eP	20 52 17
Dec. 29		
COL	eP	21 31 25
EUR	iP	21 34 54
HH	eP	21 34 22
Dec. 29		
EUR	eP	21 59 02
TUC	eP	22 00 50
Dec. 29		
COL	iP	22 26 26
HH	iP	22 25 39
Dec. 29		
EUR	eP	23 02 43
RC	e(P)	23 02 07
Dec. 30		
COL	iP	00 00 27
EUR	iP	00 00 03

Date and Station		Phase (GCT)
		h m s
HH	eP	00 00 32
TUC	iP	00 00 03
	e	02 28
Dec. 30		
EUR	iP	00 02 17
Dec. 30		
EUR	iP	04 17 51
	ipP	18 22
Dec. 30		
EUR	eP	05 57 04
Dec. 30		
COL	eP	06 35 38
HH	eP	06 35 32
Dec. 30		
HH	iP	07 43 12
Dec. 30		
BC	eP	12 53 41
BOZ	eP	12 53 03
COL	eP	12 49 32
	eS	52 43
	eL	53 57
HH	iP	12 52 36
	iPeP	55 24
	i	55 45
RC	iP	12 53 50
TUC	eP	12 54 18
Dec. 30		
BUT	eP	13 38 30
EUR	eP	13 38 31
HH	eP	13 38 43
RC	eP	13 37 39
TUC	eP	13 37 48
Dec. 30		
COL	iP	14 10 10
EUR	eP	14 12 31
HH	eP	14 12 04
	e	12 10
Dec. 30		
TUC	eP	14 34 54
Dec. 30		
COL	iP	14 46 34
Dec. 30		
TUC	eP	15 14 59

Date and Station		Phase (GCT)
		h m s
Dec. 30		
BC	eP	18 45 24
COL	iP	18 41 28
	iL	45 44
EUR	iP	18 44 58
HH	eP	18 44 22
RC	eP	18 45 39
SJ	iP	19 14 08
	iS	14 14
	eL	14 16
Dec. 30		
EUR	eP	20 27 01
	i	27 52
Dec. 31		
EUR	eP	00 04 14
Dec. 31		
COL	iP	07 03 07
EUR	eP	07 06 10
HH	iP	07 05 32
TUC	eP	09 03 29
Dec. 31		
HH	e(P)	10 17 16
Dec. 31		
BOZ	eP	10 30 19
BUT	eP	10 30 19
COL	eP	10 30 16
COLU	eP	10 29 15
	eL	43 42
EUR	iP	10 31 07
HH	iP	10 30 10
	i	31 42
RC	eP	10 29 51
SLC	eP	10 30 44
TUC	eP	10 31 30
Dec. 31		
EUR	eP	12 07 52
HH	eP	12 06 53
RC	eP	12 06 39
Dec. 31		
EUR	eP	12 37 26
Dec. 31		
EUR	iP	13 07 04

Date and Station		Phase (GCT)
		h m s
Dec. 31		
COL	iP	13 13 49
EUR	iP	13 12 27
	iPcP	13 14
HH	eP	13 12 10
	e	12 55
	ePcP	13 03
RC	iP	13 11 16
SJ	eP	13 06 52
TUC	eP	13 12 07
Dec. 31		
COL	iP	13 15 55
EUR	iP	13 16 49
HH	iP	13 15 51
	i	17 22
RC	eP	13 15 33
	e	17 19
Dec. 31		
RC	eP	13 45 50
Dec. 31		
EUR	eP	14 12 00
Dec. 31		
COL	iP	14 24 28
	iL	25 20
HH	e(P)	14 28 24
Dec. 31		
BOZ	eP'	14 47 05
BUT	eP'	14 47 01
COL	iP'	14 46 57
	ePKKP	57 38
COLU	iP'	14 47 24
	i	47 38
EUR	eP	14 42 47
	iP'	46 49
	ePKKP	57 56
	iPKKP	58 06
	i	58 28
	iSS	15 02 02
HONO	iP	14 39 52
	i	40 06
	eL	15 02 40
HH	iP'	14 47 00
	i	48 03
	iPP	48 13
	ePKKP	57 29
	e	58 45
	ePPS	59 04
	e	59 41
	e	15 01 24
	e	04 39

Date and Station		Phase (GCT)
		h m s
RC	iP'	14 47 07
	ePP	48 28
	iPKKP	57 19
	e	15 00 58
SJ	iP'	14 47 26
SLC	eP'	14 46 55
TUC	eP	14 42 51
	iPKKP	58 16
Dec. 31		
BH	eP	15 24 46
	eS	30 46
Dec. 31		
HH	e(P)	17 46 32
Dec. 31		
COL	eP	20 19 50
Dec. 31		
EUR	eP	21 05 40
Dec. 31		
BC	eP'	21 36 19
EUR	eP'	21 36 09
HH	eP'	21 36 40
RC	eP'	21 36 26
TUC	eP'	21 36 07
Dec. 31		
COL	iP	22 14 05
EUR	iP	22 14 36
Dec. 31		
EUR	eP	22 34 26
	eL	35 21
Dec. 31		
HH	i(P)	22 44 54

Date and Station		Phase (GCT)
		h m s

LOCAL AND MINOR EARTHQUAKES

Date and Station	Hour (G.C.T.)	Date and Station	Hour (G.C.T.)	Date and Station	Hour (G.C.T.)	Date and Station	Hour (G.C.T.)
BOZ		TUC					
Dec.		Dec.					
20	02.5	12	08.0				
			09.8				
BUT		15	04.7				
Dec.			07.5				
2	07.9		21.8				
3	10.7		22.9				
12	03.1	16	08.9				
	09.2		15.6				
15	10.2	17	01.3				
20	02.3		01.4				
21	07.4		01.9				
			04.7				
COL			05.3				
Dec.			23.6				
1	02.6	18	12.5				
	21.8	22	02.2				
7	20.1	23	02.3				
8	05.8		03.6				
9	19.4		11.0				
10	15.7		11.2				
11	10.1	24	22.1				
15	15.8	25	10.2				
18	05.2	26	00.8				
	21.7	29	10.6				
19	20.6		14.8				
21	15.5	31	07.2				
22	09.3		07.6				
	12.1		08.1				
	17.4						
27	17.9	UK					
28	10.5	Dec.					
29	01.3	20	18.4				
	11.2						
	14.3						
EUR							
Dec.							
17	10.2						
21	04.8						
25	13.1						
30	12.8						
	18.2						
HONO							
Dec.							
14	01.4						
16	22.5						
31	01.4						
SJ							
Dec.							
2	03.7						
10	11.9						
27	10.8						
	11.4						
28	15.4						
30	14.5						
TUC							
Dec.							
4	03.0						
	03.1						
	03.6						
	12.5						
7	14.0						
11	04.3						
	04.5						