U.S. Department of Interior

Geological Survey

South Carolina Seismic Program

Seismological Data Report

Selected Events March 1973-December 1977

and

Network Events January 1978 - July 1980

By

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Introduction

The purpose of this data report is to collect and distribute data acquired from the South Carolina Seismic Network (Tarr and King, 1974) in order to facilitate current studies of earthquake occurrence. Record interpretation, data processing, and collation of hypocenter data and related event parameters have been performed by personnel at the U.S. Geological Survey. The processing and interpretation are subject to revision on the basis of results from current research. Hypocentral parameters are computed by the program HYPOELLIPSE (Lahr, 1979).

Data from 37 stations using three velocity models (and associated station corrections) are employed:

Model	Region
I	Summerville-Middleton Place and Adams Run
II	Bowman
III	Other

(See fig. 1 and table 1.) Model I is the result of crustal structure studies (Amick, 1979) and the program VELINV, a velocity inversion program (Gawthrop, 1980). Model II is based on the interpretation of data obtained from three calibration blasts and eight well-recorded earthquakes in the Bowman region used in VELINV. Model III is a general subsurface model of South Carolina established from seismic refraction and deep-well drilling (Bonini and Woollard, 1960). See tables 2 and 3 for an explanation of these models.

Hypocenter solutions for local earthquakes are designated either "free-depth solution" or "fixed-depth solution." All computations allow the depth to be determined as part of the solution (to go free from the starting depth) if the data are of sufficiently good quality. If not, the depth is held fixed at the starting value. If, in computation for a "free-depth solution," the depth change between iterations is greater than 10 km, the event becomes a "fixed-depth solution" and the depth is held at the last determined depth. "Selected Events" in the title of this report refers to those earthquakes in the Summerville-Middleton Place, Adams Run, and Bowman areas during March 1973-December 1977 which have been reread and relocated using the above models. Data in this bulletin supersedes data in previous data reports where applicable (Carver, and others, 1977, and Carver, and others, 1978).

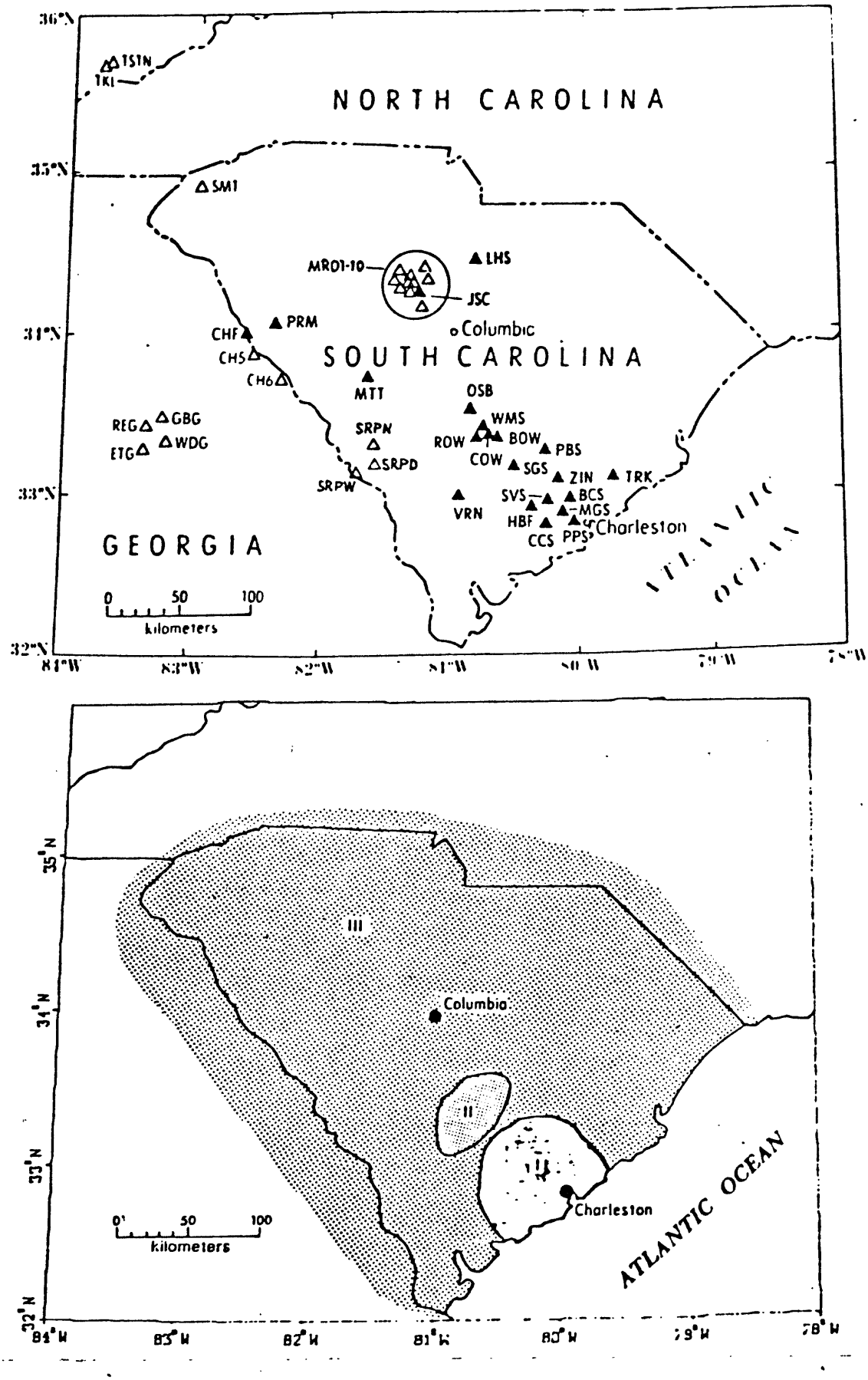

Figure 1.--a. South Carolina Network stations (solid triangles) and cooperating stations (open triangles) operating during July 1980.
b. Location of velocity model--regions I, II, and III.

Table 1.--List of Stations in the South Carolina Network

Code	Station	Period of Operation (year/month/day)	Latitude deg-min	Longitude deg-min	Elevation meters
AYRT	Ayres	77/01/19-77/01/29	33 N. 1.08	80 W. 8.12	---
BCS	Baptist College	76/03/31-present	32 N. 58.87	80 W. 4.30	12
BLA*	Blacksburg, Va.	62/09/04-present	37 N. 12.68	80 W. 25.26	634
BOW	Bowman	77/10/22-present	33 N. 22.60	80 W. 38.57	50
CAF	Charleston AFB	73/02/27-73/04/13	32 N. 54.90	80 W. 3.83	10
CCS	Caw Caw Swamp	76/03/31-present	32 N. 48.97	80 W. 15.32	9
CHF	Calhoun Falls	77/02/14-present	34 N. 1.48	82 W. 35.20	152
CH5*	Calhoun Falls #5	75/12/01-present	33 N. 44.0	82 W. 19.50	114
CH6*	Calhoun Falls #6	75/12/01-present	33 N. 52.75	82 W. 31.17	146
COW	Cow Castle Creek	77/10/22-present	33 N. 22.86	80 W. 42.031	50
FMF	Francis Marion Natl. Forest	73/02/28-73/10/02	32 N. 57.24	80 W. 50.46	---
GVS	Graniteville	74/05/20-76/08/09	33 N. 35.82	81 W. 51.17	100
HBF	Hart's Bluff	73/03/23-present	32 N. 55.98	80 W. 22.68	10
JSC	Jenkinsville	74/05/20-present	34 N. 16.74	81 W. 15.48	120
LHS	Liberty Hill	74/05/20-present	34 N. 28.74	80 W. 48.48	120
MGS	Middleton Gardens	76/03/31-present	32 N. 53.82	80 W. 8.45	9
MKC	Moncks Corner	73/03/13-73/10/01	33 N. 11.40	80 W. 2.40	25
MTT	Monetta	76/08/09-present	33 N. 45.08	81 W. 38.17	182
NHS	North Hampden	74/05/20-80/06/25	33 N. 4.32	79 W. 45.36	10
OSB	Orangeburg	77/04/02-present	33 N. 32.83	80 W. 50.67	91
OSC	Orangeburg	74/05/20-77/04/02	33 N. 32.40	80 W. 49.50	60
PBS	Pigeon Bay	74/05/20-present	33 N. 16.74	80 W. 15.84	25
PPS	Pierpont	76/03/31-present	32 N. 49.42	80 W. 2.40	4
PPM	Parson's Mtn.	75/07/04-present	34 N. 5.00	82 W. 21.80	254
ROW	Rowesville	77/10/22-present	33 N. 21.93	80 W. 47.67	50
SBRT	----------	77/01/19-77/01/29	33 N. 1.20	80 W. 14.83	---
SGS	St. George	73/03/08-present	33 N. 11.58	80 W. 30.72	25
SMA	Summerton	74/05/20-75/07/01	33 N. 37.68	80 W. 19.08	30
SRPD*	Savannah River Plant "D"	76/08/06-present	33 N. 9.30	81 W. 42.75	31
SRPN*	Plant "N"	76/08/06-present	33 N. 19.73	81 W. 35.33	94
SRPW*	Plant "W"	76/08/06-present	33 N. 12.13	81 W. 34.68	77
SVS	Slandsville	76/03/31-present	32 N. 58.13	80 W. 14.92	3
TRK	Turkey Creek	80/06/25-present	33 N. 7.33	79 W. 46.67	10
VRN	Varneville	79/10/15-present	33 N. 2.25	80 W. 56.50	30
VSC	Varneville	74/05/20-79/10/15	32 N. 52.74	81 W. 3.00	30
WMS	West Middle School	77/10-22-present	33 N. 25.64	80 W. 44.45	50
ZIN	Mt. Zion	77/10/22-present	33 N. 6.43	80 W. 9.77	---

*cooperating station not operated by USGS
leaders (---) indicate information unavailable or unused

Table 2.--Velocity Models

Gradient Models	I (Summerville-Middleton Place Adams Run)	II (Bowman)
P-wave surface velocity	6.00	5.61
Gradient (km/sec/km)	.013	.051
Apparent depth to base of crust	29.91	45.44
Sub-crust P-wave velocity	8.23	8.10
Vp/Vs	1.745	1.691
Greatest distance with weight 1.0 (km)	75.00	100.0
Least distance with weight 0.0 (km)	250.00	250.0

Layered Model	III (SC exclusive of regions I and II)
Depth to top of layer (km)	P-wave velocity (km/sec)
0.0	2.5
1.2	5.8
3.5	6.2
32.0	8.2
Vp/Vs	1.73
Greatest distance with weight 1.0 (km)	75.0
Least distance with weight 0.0 (km)	250.0

Table 3.--Station Corrections

STATION	Corrections (sec) Model I	Model II	Model III
AYRT	----*	----	----
BCS	----	----	----
BLA	----	----	----
BOW	.10	.30	.10
CAF	----	----	----
CCS	----	----	----
CHF	----	----	----
CH5	----	----	----
CH6	----	----	----
COW	----	.40	----
FMF	----	----	----
GVS	----	----	.20
HBF	-.50	----	-.10
JSC	----	----	-.10
LMS	.10	-.15	----
MGS	-.10	----	----
MKC	----	----	----
MTT	.20	----	.10
NHS	----	-.45	----
OSB	----	.10	----
OSC	-.15	----	-.15
PBS	.05	----	----
PPS	----	----	----
PRM	----	----	----
ROW	-.05	.50	----
SBRT	----	----	----
SGS	.15	.15	----
SMA	----	----	.10
SRPD	----	----	----
SRPN	----	----	----
SRPW	----	----	----
SVS	----	----	----
VRN	----	----	----
VSC	----	----	.10
WMS	-.15	.30	----
ZIN	----	----	----

* leaders mean no station correction required.

Explanation of Hypocenter Information

Summary Catalog

REG - geographical region of location; indexed I, II, III with respect to velocity model and station corrections used in hypocenter location

Origin Time - year, month, day, hour, minute, seconds of event in UTC (Coordinated Universal Time)

Latitude, Longitude - epicentral location; negative values are south and west, respectively

M - magnitude of event, determined from coda duration in the formula:

$M = -.87 + 2.0*\log(\text{duration}) + .0035*\text{DIST} + .007*\text{DEPTH}$

(Lee and others, 1972)

Error Ellipsoid - A, B, and C lengths of semi-axes in kilometers, trend of axes in degrees clockwise from north, plunge of axes in degrees from horizontal

% - confidence level of error ellipsoid

RMS - root-mean-square of residuals

No. ob. - number of phase arrivals used in location

Gap - largest azimuthal separation between stations

DM - distance to third nearest station

Q - hypocenter quality; based on the greater of the dimensions of elliptical shadow of error ellipsoid cast onto surface and vertical deviation of ellipsoid from hypocenter:

Quality	Greatest distance from hypocenter (km)
A	2.5
B	5.0
C	10.0
D	>10.0

Explanation of Hypocenter Information

Data Report

DATE - 2 digit year, month, and day

ORIGIN TIME - computed origin time of event

REGION - general area of event; also refers to velocity model used for computing location

LATITUDE - location of event N or S of 0°(equator), measured in degrees and decimal minutes

LONGITUDE - location of event E or W of 0°(Prime Meridian), measured in degrees and decimal minutes

DEPTH - location of event down from surface, measured in kilometers; free- or fixed-depth solution indicated

MAG(D) - magnitude of event, determined from coda duration in the formula:

DMAG=-.87 + 2.0*log(duration) + .0035*DIST + .007*DEPTH (Lee, and others, 1972)

NUM. OBS. - number of p- and s-phase arrivals used in computing hypocenter

GAP - largest azimuthal separation between stations in degrees

RMS - root-mean-square of travel-time residuals, in seconds

QUALITY - hypocenter quality; based on dimensions of elliptical shadow of error ellipsoid cast onto surface and vertical deviation of ellipsoid from hypocenter, whichever is greater:

Quality	Greatest distance from from hypocenter (km)
A	2.5
B	5.0
C	10.0
D	>10.0

68% CONFIDENCE ELLIPSE AND VERTICAL DEVIATION - computed epicentral confidence ellipse and depth deviation; semi-axes of ellipse are in kilometers, trend is degrees measured from north

Explanation of Column Headings

STATION - station code

DIST - great circle distance to event, in kilometers

AZM - station to epicenter azimuth, in degees clockwise from north

AIN - angle of departure in degrees from downward vertical

PHASE - phase identification

I or E indicates character of P- or S-arrival

(I=impulsive, E=emergent)

C or D (+ or -) indicates direction of first motion

(C or + = compressive, D or - = dilitational)

0-4 indicates quality of arrival, 4 weighted arrivals are not used in computing hypocenter. (For further explanation see Dart, 1980).

TIME - arrival time of phase in seconds (hour and minute of arrival from Origin Time)

TOBS - observed travel time in seconds from computed origin time

TCAL - calculated travel time in seconds from computed origin time

RES - residual travel time in seconds;

TOBS - TCAL - (station correction)

DMAG - magnitude of event at station computed by method of Lee and others, 1972.

Charleston Seismic Zone Events
March 1973-July 1980

Table 4. - Charleston seismic zone events March 1973 - July 1980

Catalog		Origin time (UTC)						North latitude (deg)	East longitude (deg)	Focal depth (km)	M	Error ellipsoid axes										Rms (s)	No. ob	Gap	DM	Q	Hypo auth
REG	Index	yr	mo	d	h	min	s					a(km)	Tr	Pl	b(km)	Tr	Pl	c(km)	Tr	Pl	%						
I	1	1973	3	25	4	29	32.870	32.989	-80.105	5.0	...	2.8	229	2	8.9	320	13	>99.9	130	76	68	....	3	241	44	D	....
I	2	1973	4	23	21	32	39.300	33.004	-80.239	5.9	...	1.9	55	1	5.0	325	10	32.3	151	79	68	....	4	197	33	D	....
I	3	1973	6	9	19	23	50.570	33.103	-80.434	15.0	...	18.1	254	0	53.6	344	8	>99.9	163	82	68	1.72	6	189	40	D	....
I	4	1973	6	12	20	45	22.530	33.283	-80.417	5.0	...	2.1	259	3	8.1	349	3	>99.9	123	85	68	0.68	4	239	54	D	....
I	5	1973	8	25	9	17	30.910	32.950	-80.189	1.3	...	2.0	239	0	4.1	329	4	>99.9	148	86	68	0.10	5	156	30	D	....
I	6	1973	11	13	15	10	3.420	32.923	-80.189	0.7	1.4	2.2	237	0	7.5	326	33	12.6	146	56	68	0.11	5	248	42	D	....
I	7	1973	12	19	10	16	18.460	32.997	-80.267	12.4	...	2.2	57	3	4.8	326	18	17.6	157	71	68	....	4	191	32	D	....
II	8	1974	5	28	5	1	34.290	33.364	-80.706	6.8	1.7	0.4	139	1	1.1	49	7	2.0	237	82	68	0.08	10	183	42	A	....
I	9	1974	7	7	4	3	36.640	33.004	-80.223	3.7	0.9	1.9	73	6	3.9	342	7	90.1	203	80	68	0.04	4	162	44	D	....
I	10	1974	11	22	5	25	56.240	32.921	-80.144	7.6	3.8	1.0	258	1	2.0	348	11	2.9	162	78	68	0.13	10	202	41	B	....
I	11	1974	11	22	6	22	44.440	32.892	-80.145	9.6	2.7	0.6	87	5	2.0	355	21	6.0	189	68	68	0.09	9	208	44	C	....
I	12	1975	4	28	5	46	52.630	33.002	-80.216	10.2	3.1	0.8	251	0	1.1	341	8	2.0	160	82	68	0.10	10	163	35	A	....
I	13	1976	4	6	21	42	35.910	33.307	-79.728	8.4	2.2	1.2	332	19	3.1	74	32	6.2	217	51	68	0.18	11	223	74	C	....
I	14	1976	4	28	6	15	54.110	33.751	-81.668	0.3	1.8	0.8	92	3	1.1	182	3	4.5	317	85	68	0.21	14	105	70	B	....
I	15	1976	7	3	9	28	42.550	32.994	-80.241	13.7	1.1	0.7	64	11	1.2	331	13	2.2	192	72	68	0.05	6	163	34	A	....
I	16	1976	8	28	23	15	39.560	33.095	-80.182	2.5	0.6	3.2	77	2	7.1	347	2	>99.9	211	87	68	....	4	164	40	D	....
I	17	1976	9	15	5	15	35.440	33.144	-81.413	4.5	2.4	1.2	323	5	2.7	232	7	4.9	89	81	68	0.35	17	189	70	B	....
II	18	1976	9	22	8	44	34.440	33.371	-80.716	6.6	1.7	0.9	40	0	0.4	310	6	1.7	130	84	68	0.13	16	120	43	A	....
II	19	1976	9	22	8	52	21.270	33.395	-80.682	1.0	0.8	0.6	316	2	1.3	46	5	3.3	205	84	68	0.14	10	120	41	B	....
II	20	1976	9	22	9	14	14.170	33.371	-80.708	4.1	1.1	0.7	226	1	0.4	316	4	2.1	121	85	68	0.14	18	108	43	A	....
II	21	1976	9	23	5	40	10.600	33.375	-80.708	4.5	1.1	0.5	309	7	1.2	41	17	2.1	198	71	68	0.12	13	148	43	A	....
I	22	1976	11	14	21	12	12.010	32.961	-80.188	4.4	1.2	0.8	279	6	1.1	10	11	5.3	160	77	68	0.16	12	123	17	C	....
II	23	1976	11	21	13	31	46.470	33.377	-80.707	3.9	1.3	0.4	316	2	0.8	226	5	2.1	68	84	68	0.13	16	109	43	A	....
II	24	1976	11	22	00	30	51.390	33.378	-80.713	1.5	1.9	0.4	312	3	0.7	222	4	2.7	79	85	68	0.13	18	115	58	B	....
II	25	1976	11	28	9	38	49.790	33.389	-80.693	5.2	0.9	0.5	318	4	1.9	228	10	2.3	70	79	68	0.13	11	145	42	A	....
I	26	1977	1	18	18	29	14.220	33.042	-80.214	7.0	2.7	0.8	52	29	0.4	304	30	1.6	178	46	68	0.09	17	136	17	A	....
I	27	1977	1	20	4	5	45.750	32.928	-80.163	6.6	1.9	0.6	239	16	0.7	335	21	1.6	114	63	68	0.15	19	94	10	A	....
I	28	1977	2	26	10	9	56.140	32.923	-80.178	4.9	1.6	0.3	21	7	0.2	290	8	0.6	152	79	68	0.05	13	103	12	A	....
I	29	1977	3	18	7	36	8.630	32.934	-80.175	4.2	1.2	0.4	268	1	0.6	359	7	1.4	169	82	68	0.07	9	122	11	A	....
I	30	1977	3	30	8	27	47.780	32.952	-80.184	7.9	2.9	0.6	298	18	0.8	34	18	1.5	166	64	68	0.12	16	91	11	A	....
I	31	1977	5	31	23	50	13.400	32.942	-80.226	12.1	2.5	1.2	300	13	1.7	35	22	4.2	182	64	68	0.18	11	89	14	B	....
I	32	1977	6	5	00	42	29.730	33.052	-81.412	3.5	2.7	1.0	121	1	3.7	211	27	2.9	29	62	68	0.22	15	213	76	B	....
I	33	1977	6	22	20	43	40.060	32.995	-80.155	1.3	2.1	1.1	293	3	1.3	24	4	15.0	166	84	68	0.17	10	123	11	D	....
I	34	1977	8	23	13	45	0.030	32.938	-80.163	7.6	2.3	0.7	29	5	0.5	296	27	1.4	129	62	68	0.07	11	104	10	A	....
II	35	1977	8	25	4	20	7.150	33.381	-80.697	9.0	2.9	1.0	228	1	0.4	318	3	1.8	119	86	68	0.11	17	111	42	A	....
II	36	1977	9	1	21	5	32.220	33.390	-80.681	7.4	1.8	0.3	322	2	1.0	53	30	1.2	229	59	68	0.08	14	168	41	A	....
II	37	1977	11	10	11	24	59.700	33.386	-80.696	1.0	0.8	0.9	121	1	1.6	31	9	3.1	217	80	68	0.18	10	140	6	B	....
I	38	1977	12	15	7	15	55.160	32.983	-80.264	13.1	2.0	1.0	25	6	0.6	294	14	2.0	138	74	68	0.14	17	106	15	A	....
I	39	1977	12	15	19	16	43.630	32.944	-80.167	7.5	2.6	0.7	27	12	0.5	294	16	1.6	153	69	68	0.11	17	85	10	A	....
I	40	1977	12	16	11	14	34.410	32.737	-80.317	8.1	2.1	0.8	280	13	1.8	186	18	2.6	45	67	68	0.16	25	213	24	A	....
I	41	1977	12	16	11	25	31.800	32.725	-80.318	7.1	2.3	1.4	183	9	0.6	275	10	2.6	51	76	68	0.15	25	217	25	B	....
I	42	1977	12	18	1	58	37.790	32.739	-80.292	6.6	1.7	2.0	183	9	1.1	275	11	3.3	54	75	68	0.14	15	291	23	B	....
I	43	1977	12	20	23	41	23.300	33.064	-80.232	12.0	1.8	1.9	129	5	1.4	220	11	5.3	14	77	68	0.14	10	115	18	C	....
I	44	1978	9	7	22	53	22.960	33.063	-80.210	10.0	2.6	0.3	313	21	0.5	212	25	0.8	78	56	68	0.12	28	56	16	A	....
I	45	1978	10	30	9	15	6.460	33.045	-80.152	6.8	...	0.3	159	4	0.4	250	10	0.9	47	79	68	0.06	13	93	16	A	....
I	46	1978	10	30	9	15	13.000	33.045	-80.151	7.3	1.9	0.6	186	9	0.9	94	10	1.9	317	76	68	0.10	10	95	16	A	....
I	47	1978	10	30	9	16	2.780	33.043	-80.154	7.1	...	0.8	82	6	0.5	173	9	1.6	319	79	68	0.07	9	96	16	A	....
I	48	1978	10	30	9	16	14.920	33.039	-80.150	3.0	2.4	0.7	325	4	1.1	235	6	3.9	89	82	68	0.17	13	93	16	B	....
I	49	1978	10	30	10	4	22.000	33.062	-80.187	17.5	1.3	2.9	64	6	4.8	157	24	11.5	321	65	68	....	4	153	23	D	....
I	50	1979	1	27	23	55	15.650	33.051	-80.182	6.2	2.8	0.9	235	2	0.6	325	8	2.3	131	81	68	0.14	16	71	13	A	....
I	51	1979	8	11	2	11	56.590	32.989	-80.227	10.4	2.5	0.4	317	17	0.9	57	30	1.3	202	54	68	0.09	14	100	15	A	....
I	52	1979	10	5	23	5	54.740	32.782	-80.281	13.1	2.1	1.5	295	17	3.2	40	40	2.4	188	45	68	0.18	13	278	21	B	....
I	53	1979	10	21	7	10	28.650	32.920	-80.186	10.7	1.6	0.9	44	4	0.5	313	23	2.7	144	66	68	0.05	8	154	21	A	....
I	54	1979	12	7	5	43	34.970	33.007	-80.168	4.6	2.9	0.3	325	10	0.6	233	12	1.5	94	74	68	0.12	24	105	11	A	....
II	55	1979	12	17	17	34	56.820	33.477	-80.667	7.4	1.1	3.3	101	13	4.6	1	37	9.7	206	50	68	0.11	6	297	11	C	....
I	56	1980	6	22	20	33	6.160	33.012	-80.158	0.2	2.1	1.0	229	0	0.8	319	2	8.5	138	88	68	0.17	15	115	11	C	....
I	57	1980	6	22	23	35	26.520	33.015	-80.158	0.3	1.6	1.2	237	0	0.9	327	1	9.9	146	88	68	0.18	12	117	10	C	....
II	58	1980	7	1	23	33	19.810	33.380	-80.673	2.1	1.6	0.4	300	2	1.0	208	38	0.8	33	51	68	0.11	15	127	8	A	....

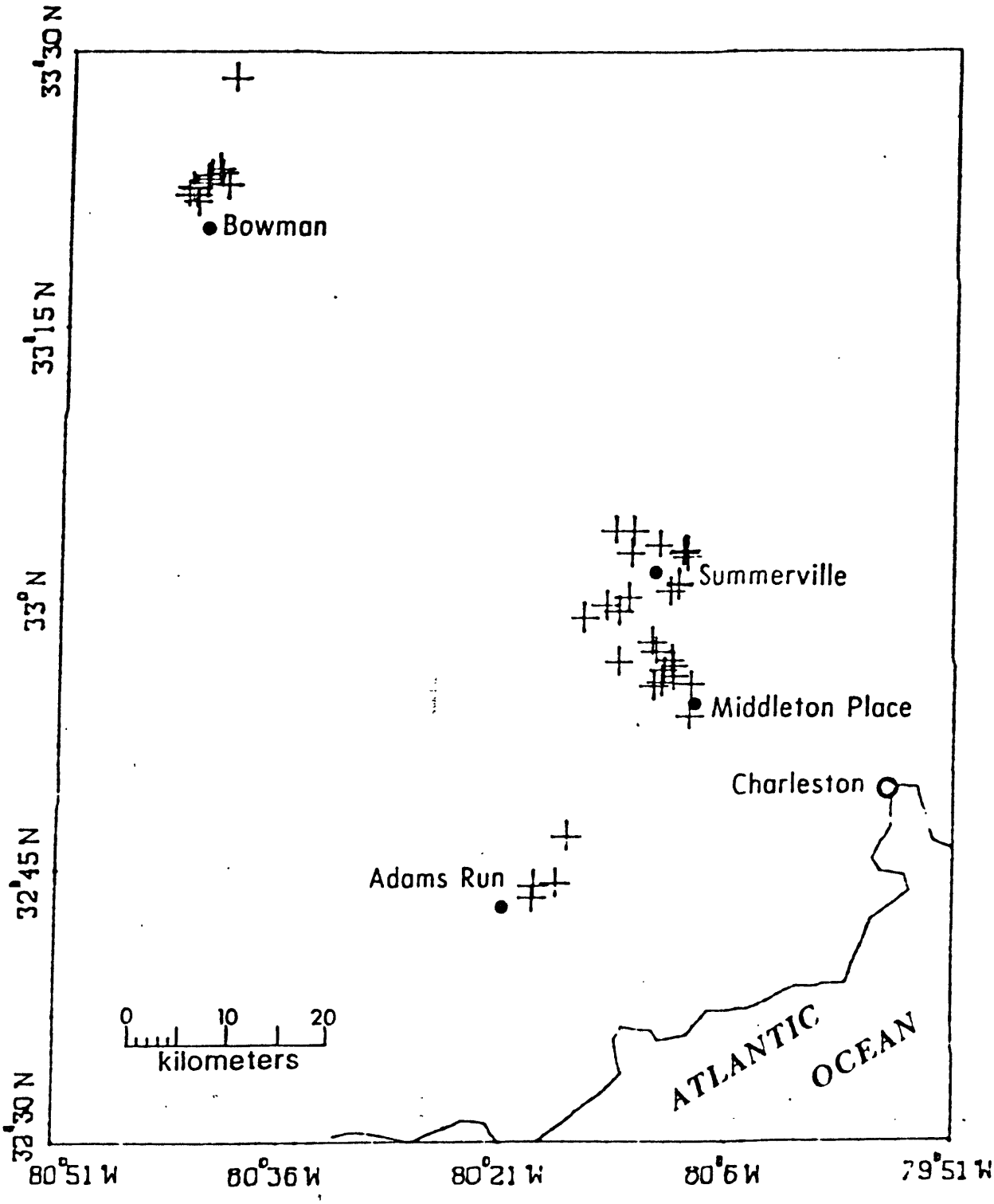

Figure 2.--Charleston Seismic Zone earthquakes from January 1974 through July 1980 that have the longest dimension of the error ellipsoid (semi-axis) less than 10 km.

```
**********************************************
*   DATE            730325                   *
*   ORIGIN TIME      429:32.87  UTC          *
*                                             *
*   REGION    SUMMERVILLE-MIDDLETON PLACE     *
*   LATITUDE         32:59.31 N               *
*   LONGITUDE        80: 6.31 W               *
*   DEPTH             5.00(km)                *
*                   Fixed Depth Solution      *
*                                             *
*   MAG(D)           0.0                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
    3           241          0.00            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  3.01        42.00
                 99.00       -48.00
                 99.00      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MKC	23.2	15	101	EP	36.80	3.93	3.93	0.00	0.0
HBF	26.2	256	99	EP	36.80	3.93	4.43	0.00	0.0
SGS	44.2	301	94	EP	40.40	7.53	7.38	0.00	0.0

```
**********************************************
*   DATE            730423                   *
*   ORIGIN TIME     2132:39.30  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         33: 0.25 N              *
*   LONGITUDE        80:14.34 W              *
*   DEPTH             5.90(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)            0.0                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
    4           197          0.00            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  1.97       -120.00
                  7.62        -30.00
                 31.77       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	15.2	239	110	EP	41.50	2.20	2.70	0.00	0.0
MKC	27.8	42	100	EP	44.00	4.70	4.70	0.00	0.0
				ES	47.50	8.20	8.20	0.00	
SGS	33.0	309	98	EP	45.00	5.70	5.55	0.00	0.0

```
**********************************************
*   DATE            730609                   *
*   ORIGIN TIME     1923:50.79  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         33: 7.83 N              *
*   LONGITUDE        80:26.69 W              *
*   DEPTH             5.00(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)            0.0                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
    6           198          1.79            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               14.29        -107.00
               48.40         -17.00
               99.00        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	22.8	164	101	IPD	56.50	5.71	3.86	2.35	0.0
				ES 4	58.50	7.71	6.74	1.84	
MKC	38.3	80	95	IPC	58.20	7.41	6.40	1.01	0.0
				ES	61.86	11.07	11.17	-0.10	
FMF	41.9	242	94	EPC	58.10	7.31	6.99	0.32	0.0
				ES	61.50	10.71	12.20	-1.49	
CAF	42.9	124	94	IPD	55.06	4.27	7.15	-2.88	0.0
				ES 4	55.60	4.81	12.48	-7.67	

```
**********************************************
*   DATE              730609                   *
*   ORIGIN TIME       1923:50.57  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33: 6.17 N              *
*   LONGITUDE          80:26.01 W              *
*   DEPTH              15.00(km)               *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             0.0                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    6           189          1.72            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               18.14        -106.00
               56.91         -16.00
               99.00        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	19.5	165	126	IPD	56.50	5.93	4.04	2.39	0.0
				ES 4	58.50	7.93	7.05	1.75	
MKC	38.0	75	109	IPC	58.20	7.63	6.70	0.93	0.0
				ES	61.86	11.29	11.68	-0.39	
CAF	40.3	121	108	IPD	55.06	4.49	7.06	-2.57	0.0
				ES 4	55.60	5.03	12.31	-7.29	
FMF	41.5	247	107	EPC	58.10	7.53	7.24	0.29	0.0
				ES	61.50	10.93	12.63	-1.70	

```
**********************************************
*   DATE              730612                   *
*   ORIGIN TIME       2045:22.53  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33:17.00 N              *
*   LONGITUDE          80:25.02 W              *
*   DEPTH               5.00(km)               *
*                    Fixed Depth Solution      *
*                                              *
*   MAG(D)             0.0                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    4           239          0.68            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  4.92      -133.00
                 18.56       -43.00
                 99.00      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MKC	36.6	106	96	IP	29.30	6.77	6.13	0.64	0.0
				IS	32.00	9.47	10.69	-1.22	
HBF	39.0	175	95	IP	29.00	6.47	6.52	0.45	0.0
				IS 4	31.00	8.47	11.38	-2.03	
FMF	53.9	227	92	EP	31.00	8.47	8.96	-0.49	0.0
				IS 4	34.50	11.97	15.64	-3.67	

```
**********************************************
*   DATE              730825                   *
*   ORIGIN TIME        917:30.91  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           32:56.98 N              *
*   LONGITUDE          80:11.37 W              *
*   DEPTH               1.33(km)               *
*                    Fixed Depth Solution      *
*                                              *
*   MAG(D)             0.0                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    5           156          0.10            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  2.07       -116.00
                  8.06        -26.00
                 99.00       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
CAF	12.4	108	95	EP+2	32.90	1.99	2.07	-0.08	0.0
				ES 4	34.00	3.09	3.61	-0.52	
HBF	17.7	264	93	IPD	33.33	2.42	2.96	-0.04	0.0
				ES 4	35.00	4.09	5.16	-0.20	
MKC	30.1	28	91	EP	36.05	5.14	5.01	0.13	0.0
				ES	39.48	8.57	8.75	-0.17	
SGS	40.4	312	89	EP	37.80	6.89	6.73	0.01	0.0

```
**********************************************
*   DATE            731113                   *
*   ORIGIN TIME     1510: 3.42  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:55.39 N              *
*   LONGITUDE        80:11.35 W              *
*   DEPTH             0.68(km)               *
*                   Fixed Depth Solution     *
*                                            *
*   MAG(D)           1.4                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    5           248          0.11            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  2.17       -123.00
                  9.37        -33.00
                 11.35       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	17.7	274	91	IPD	5.91	2.49	2.95	0.04	1.7
MKC	32.7	25	89	IPD	8.86	5.44	5.45	-0.01	1.1
				ES	12.95	9.53	9.51	0.03	
SGS	42.5	315	88	IPD	10.54	7.12	7.07	-0.10	0.0
JSC	180.2	327	47	EP 4	27.60	24.18	28.17	-3.99	0.0
				ES	53.20	49.78	49.16	0.62	

```
**********************************************
*   DATE            731219                   *
*   ORIGIN TIME     1016:18.46  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:59.79 N              *
*   LONGITUDE        80:15.99 W              *
*   DEPTH            12.40(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           0.0                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    4           191          0.00            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  2.26      -117.00
                  7.11       -27.00
                 16.74      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	12.6	236	134	IPD	20.87	2.41	2.91	0.00	0.0
MKC	30.1	45	111	IPC	23.82	5.36	5.36	0.00	0.0
				IS	27.81	9.35	9.35	0.00	
SGS	31.6	314	109	IPC	24.20	5.74	5.59	0.00	0.0

```
*********************************************
*   DATE            740528                  *
*   ORIGIN TIME      501:34.29  UTC          *
*                                            *
*   REGION   BOWMAN                          *
*   LATITUDE         33:21.81 N              *
*   LONGITUDE        80:42.38 W              *
*   DEPTH             6.75(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           1.7                     *
*********************************************

Num.Obs.        Gap          RMS          Quality
   10           183          0.08            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.43          -40.00
               1.13         -130.00
               1.95         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	22.5	331	101	IPC	38.22	3.93	4.05	-0.12	1.7
				IS	41.25	6.96	6.85	0.11	
SGS	26.2	136	98	IPD	39.08	4.79	4.67	-0.02	1.4
				ES	42.45	8.16	7.89	0.02	
PBS	42.2	103	89	IPC	41.68	7.39	7.36	0.03	0.0
				ES	46.82	12.53	12.44	0.09	
SMA	46.5	51	87	EP-	42.36	8.07	8.07	0.00	1.4
HBF	56.7	147	83	EP-	44.14	9.85	9.78	0.07	0.0
NHS	94.3	110	72	EP	49.62	15.33	15.92	-0.14	0.0
JSC	113.7	333	67	EP-	53.33	19.04	18.96	0.09	2.3
				ES 4	65.95	31.66	32.06	-0.39	
LHS	124.1	356	64	EP 4	54.20	19.91	20.55	-0.49	0.0

```
**********************************************
*   DATE              740707                   *
*   ORIGIN TIME       403:36.64  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 0.22 N               *
*   LONGITUDE         80:13.36 W               *
*   DEPTH              3.74(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            0.9                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
    4           162          0.04            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  2.87       -70.00
                 14.34        20.00
                 88.96       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	16.5	242	102	IP	39.00	2.36	2.81	0.05	1.0
				ES	40.60	3.96	4.90	-0.07	
SGS	34.2	308	94	IP	42.50	5.86	5.71	0.00	0.8
				ES 4	46.80	10.16	9.97	-0.07	
NHS	44.3	80	92	IP	44.00	7.36	7.37	-0.01	0.0
VSC	78.6	260	88	EP 4	42.50	5.86	13.05	-7.19	0.0

```
**********************************************
*   DATE              741122                   *
*   ORIGIN TIME       525:56.24  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:55.28 N               *
*   LONGITUDE         80: 8.65 W               *
*   DEPTH              7.56(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            3.8                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   10           202          0.13            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               1.03         -102.00
               2.02          -12.00
               2.90         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	21.9	273	108	IPC0	59.55	3.31	3.83	-0.02	0.0
NHS	39.9	65	98	IPD0	2.95	6.71	6.72	0.00	0.0
PBS	41.2	344	98	IPD0	3.25	7.01	6.92	0.04	3.6
SGS	45.7	311	97	IPD0	4.16	7.92	7.65	0.12	0.0
SMA	80.0	348	90	EP 3	9.75	13.51	13.27	0.24	4.0
VSC	84.9	267	90	IPD	10.28	14.04	14.07	-0.02	3.9
OSC	93.5	317	89	EP	11.35	15.11	15.48	-0.21	0.0
GVS	175.9	295	48	EP	23.50	27.26	26.88	0.38	0.0
JSC	182.7	326	48	IPD	24.05	27.81	27.71	0.11	0.0
LHS	183.4	340	48	IPC	23.75	27.51	27.80	-0.38	0.0

```
**********************************************
*   DATE              741122                   *
*   ORIGIN TIME       622:44.44  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:53.51 N               *
*   LONGITUDE         80: 8.71 W               *
*   DEPTH              9.64(km)                *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             2.7                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    9           208          0.09            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.70         -87.00
               2.85           3.00
               5.67         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG (sec)
HBF	22.3	282	112	IPC0	47.94	3.50	4.00	-0.01	2.8
				ES 2	50.63	6.19	6.98	0.08	
NHS	41.5	61	101	IPD0	51.46	7.02	7.02	-0.01	2.7
PBS	44.3	346	100	EP 3	52.28	7.84	7.48	0.30	0.0
SGS	47.9	314	98	EP-	52.61	8.17	8.05	-0.03	2.8
				ES 3	58.57	14.13	14.05	-0.18	
SMA	83.2	349	92	EP 3	58.67	14.23	13.80	0.43	0.0
VSC	84.7	269	91	EP 3	58.73	14.29	14.04	0.25	2.4
OSC	95.8	319	90	EP-3	59.91	15.47	15.86	-0.25	2.7
				ES 4	72.30	27.86	27.68	0.44	
GVS	177.4	296	48	EP 4	12.54	28.10	26.84	1.26	0.0
JSC	185.3	326	48	EP 4	12.73	28.29	27.80	0.48	0.0
LHS	186.5	341	48	EP 4	12.68	28.24	27.94	0.19	0.0

```
*********************************************
*   DATE              750428                  *
*   ORIGIN TIME       546:52.63  UTC          *
*                                             *
*   REGION    SUMMERVILLE-MIDDLETON PLACE     *
*   LATITUDE          33: 0.11 N              *
*   LONGITUDE         80:12.97 W              *
*   DEPTH             10.20(km)               *
*                    Free Depth Solution      *
*                                             *
*   MAG(D)            3.1                     *
*********************************************

Num.Obs.        Gap          RMS          Quality
   10           163          0.10            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.82         -109.00
               1.10          -19.00
               2.01         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	16.9	243	120	IPC	55.39	2.76	3.26	0.00	3.4
PBS	31.1	352	106	EP+	58.14	5.51	5.39	0.07	2.8
				ES 2	61.84	9.21	9.40	-0.28	
SGS	34.8	308	104	IPC0	58.83	6.20	5.98	0.07	3.4
NHS	43.7	80	100	IPD0	0.00	7.37	7.40	-0.02	0.0
SMA	70.1	352	94	EP-2	4.48	11.85	11.67	0.19	2.9
VSC	79.2	260	92	IPC	5.75	13.12	13.15	-0.03	3.1
OSC	82.3	316	92	IPD	6.00	13.37	13.66	-0.14	0.0
GVS	166.1	293	48	EP	18.30	25.67	25.41	0.26	0.0
JSC	171.5	326	48	EP-	18.50	25.87	26.07	-0.19	0.0
LHS	172.8	341	48	EP 4	18.61	25.98	26.22	-0.34	0.0

```
**********************************************
*   DATE              760406                   *
*   ORIGIN TIME       2142:35.91  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33:18.43 N              *
*   LONGITUDE          79:43.68 W              *
*   DEPTH               8.44(km)               *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             2.2                     *
**********************************************

Num.Obs.          Gap          RMS          Quality
   11             223          0.18            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               1.79          -44.00
               4.47         -134.00
               5.14         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
NHS	26.2	186	106	IPC2	40.45	4.54	4.55	-0.01	1.9
				ES 2	43.85	7.94	7.94	0.00	
PBS	50.0	266	97	EP-2	44.50	8.59	8.38	0.16	0.0
HBF	73.5	236	92	EP-2	47.75	11.84	12.21	0.13	0.0
SGS	74.1	260	92	EP 2	48.10	12.19	12.31	-0.27	2.1
OSC	105.3	284	88	EP-3	53.15	17.24	17.41	-0.02	0.0
VSC	132.2	249	48	EP 3	57.05	21.14	21.48	-0.35	0.0
LHS	163.9	322	48	EP 2	1.30	25.39	25.33	-0.05	0.0
				ES 4	22.00	46.09	44.21	1.70	
JSC	178.0	307	48	EP+3	3.50	27.59	27.05	0.54	2.6
				ES 3	24.05	48.14	47.20	0.94	
GVS	200.1	279	48	EP 3	5.75	29.84	29.72	0.11	0.0
PRM	259.0	289	48	EP+2	13.00	37.09	36.89	0.20	0.0

```
**********************************************
*   DATE              760428                   *
*   ORIGIN TIME       615:54.11  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33:45.05 N               *
*   LONGITUDE         81:40.09 W               *
*   DEPTH              0.34(km)                *
*                   Fixed Depth Solution       *
*                                              *
*   MAG(D)            1.8                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   14           105          0.21            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.79          -92.00
               1.14           -2.00
               4.53         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
GVS	24.2	225	89	IPD	57.97	3.86	4.03	-0.16	1.6
				IS 4	60.67	6.56	7.03	-0.46	
CH5	60.9	268	87	EP	4.15	10.04	10.14	-0.10	0.0
JSC	69.8	33	86	EP	5.70	11.59	11.61	-0.02	2.1
				ES	14.44	20.33	20.27	0.07	
PRM	74.1	300	86	IPC	6.45	12.34	12.34	0.01	0.0
				ES 4	15.02	20.91	21.53	-0.61	
CH6	80.1	280	85	EP	7.70	13.59	13.33	0.26	0.0
OSC	81.7	107	85	EP	7.60	13.49	13.59	0.05	0.0
				ES	17.70	23.59	23.72	0.14	
LHS	113.2	45	83	EP	12.70	18.59	18.82	-0.33	0.0
				ES 4	26.43	32.32	32.84	-0.69	
SGS	124.0	120	83	EP+	14.90	20.79	20.59	0.05	0.0
				ES	29.70	35.59	35.94	-0.60	
PBS	140.6	112	81	EP+	17.70	23.59	23.33	0.21	0.0
				ES 4	34.15	40.04	40.72	-0.76	
HBF	150.6	127	47	EP+4	19.50	25.39	24.61	1.28	0.0
				ES	37.00	42.89	42.95	0.81	
NHS	193.2	113	47	EP	23.85	29.74	29.79	-0.05	0.0

```
**********************************************
*   DATE              760703                   *
*   ORIGIN TIME        928:42.55  UTC           *
*                                               *
*   REGION    SUMMERVILLE-MIDDLETON PLACE       *
*   LATITUDE          32:59.62 N                *
*   LONGITUDE         80:14.48 W                *
*   DEPTH             13.72(km)                 *
*                    Free Depth Solution        *
*                                               *
*   MAG(D)            1.1                       *
**********************************************

Num.Obs.        Gap          RMS          Quality
    6           163          0.05            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.83        -107.00
               1.32         -17.00
               2.15        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	14.4	242	133	IPD	45.40	2.85	3.27	0.08	0.7
				ES	47.30	4.75	5.71	-0.09	
PBS	31.7	356	111	EP-	48.25	5.70	5.68	-0.03	0.0
SGS	33.6	311	110	EP	48.69	6.14	5.96	0.03	1.3
				ES 4	51.04	8.49	10.39	-2.16	
NHS	46.2	79	104	EP-	50.45	7.90	7.91	-0.01	1.4
VSC	76.7	260	95	EP	55.30	12.75	12.79	-0.04	0.0

```
**********************************************
*   DATE              760828                   *
*   ORIGIN TIME     2315:39.56  UTC            *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 5.70 N               *
*   LONGITUDE         80:10.94 W               *
*   DEPTH              2.51(km)                *
*                    Fixed Depth Solution      *
*                                              *
*   MAG(D)            0.6                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
    4           164          0.00            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  4.94       -67.00
                 26.78        23.00
                 99.00      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
HBF	25.6	226	94	EP-2	43.35	3.79	4.28	0.01	0.4
				ES 2	46.15	6.59	7.47	-0.01	
SGS	32.6	289	92	EP+2	45.15	5.59	5.44	0.00	0.0
PPS	32.9	156	92	EP 4	46.25	6.69	5.48	1.21	0.0
NHS	39.9	94	91	IPD1	46.20	6.64	6.64	0.00	0.7
				ES 4	50.60	11.04	11.59	-0.55	

```
**********************************************
*   DATE              760915                   *
*   ORIGIN TIME       515:35.44  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 8.66 N               *
*   LONGITUDE         81:24.80 W               *
*   DEPTH              4.52(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            2.4                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   17           189          0.35            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               1.26          -35.00
               2.70         -125.00
               4.84         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
VSC	44.9	131	93	EP+2	42.75	7.31	7.49	-0.17	0.0
				ES 2	47.90	12.46	13.06	-0.60	
OSC	70.2	51	89	EP 2	46.90	11.46	11.66	-0.04	0.0
				ES 2	55.60	20.16	20.34	0.08	
MTT	70.4	343	89	EP-2	47.60	12.16	11.70	0.27	2.2
				ES 2	56.00	20.56	20.41	-0.20	
SGS	84.2	86	88	EP 2	49.65	14.21	13.97	0.09	0.0
HBF	99.6	104	86	EP 2	52.05	16.61	16.50	0.62	0.0
				ES 2	63.35	27.91	28.79	0.00	
PBS	108.2	82	86	EP 4	53.55	18.11	17.92	0.14	0.0
JSC	126.7	7	84	EP-3	56.55	21.11	20.96	0.15	2.4
				ES 2	70.95	35.51	36.58	-1.06	
PRM	136.5	320	47	EP+3	58.10	22.66	22.43	0.23	2.7
				ES 2	74.30	38.86	39.14	-0.28	
NHS	154.9	93	47	EP 3	0.35	24.91	24.67	0.24	2.5
				ES 3	18.45	43.01	43.05	-0.04	
LHS	158.3	21	47	EP-3	1.20	25.76	25.08	0.58	0.0
				ES 3	19.20	43.76	43.77	-0.18	

```
*********************************************
*   DATE            760922                  *
*   ORIGIN TIME      844:34.44  UTC          *
*                                            *
*   REGION    BOWMAN                         *
*   LATITUDE         33:22.25 N              *
*   LONGITUDE        80:42.97 W              *
*   DEPTH             6.62(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           1.8                     *
*********************************************

Num.Obs.        Gap          RMS          Quality
   16           120          0.13            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.46         -50.00
               0.87          40.00
               1.71         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	21.3	332	102	EP-	38.25	3.81	3.86	-0.05	0.0
				IS	41.05	6.61	6.52	0.09	
SGS	27.4	136	97	EP+	39.20	4.76	4.87	-0.26	1.0
				ES	43.25	8.81	8.23	0.33	
PBS	43.3	104	88	EP	41.90	7.46	7.54	-0.08	0.0
				ES	47.30	12.86	12.75	0.11	
HBF	57.9	147	82	EP+	44.39	9.95	9.98	-0.03	0.0
SRPN	81.4	267	75	EP+	48.40	13.96	13.85	0.11	0.0
				ES	57.80	23.36	23.42	-0.06	
MTT	95.3	296	71	EP	50.60	16.16	16.08	0.08	0.0
				ES 4	62.50	28.06	27.18	0.88	
NHS	95.5	110	71	EP	50.17	15.73	16.11	0.07	0.0
JSC	112.5	334	67	EP-	53.30	18.86	18.79	0.07	2.0
				ES	66.05	31.61	31.77	-0.16	
LHS	123.2	356	65	EP	54.70	20.26	20.42	-0.02	2.3
				ES	68.80	34.36	34.54	0.07	
PRM	171.9	297	55	EP	1.65	27.21	27.48	-0.27	0.0
				ES 4	24.00	49.56	46.47	3.08	

```
*********************************************
*   DATE              760922                  *
*   ORIGIN TIME       852:21.27  UTC          *
*                                             *
*   REGION    BOWMAN                          *
*   LATITUDE          33:23.71 N              *
*   LONGITUDE         80:40.95 W              *
*   DEPTH              1.03(km)               *
*                    Free Depth Solution      *
*                                             *
*   MAG(D)            0.8                     *
*********************************************

Num.Obs.        Gap          RMS          Quality
   10           120          0.14            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.61         -45.00
               1.35          45.00
               3.31        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	20.8	320	87	EP+	24.90	3.63	3.69	-0.06	0.0
				ES	27.60	6.33	6.24	0.09	
SGS	27.5	145	85	IPD2	25.84	4.57	4.87	-0.44	0.8
				ES	29.75	8.48	8.23	0.00	
PBS	41.1	108	81	EP-	28.62	7.35	7.24	0.11	0.0
				ES 3	33.90	12.63	12.25	0.38	
HBF	58.6	151	76	EP 4	33.13	11.86	10.28	1.58	0.0
SRPN	84.6	265	70	EP+	36.00	14.73	14.67	0.06	0.0
				ES 4	45.40	24.13	24.81	-0.68	
JSC	111.6	331	64	EP 3	40.05	18.78	19.04	-0.26	0.0
				ES 4	52.65	31.38	32.20	-0.82	
LHS	120.8	354	62	EP 3	41.15	19.88	20.48	-0.45	0.0
				ES	55.60	34.33	34.64	-0.05	

```
**********************************************
*   DATE              760922                   *
*   ORIGIN TIME       914:14.17  UTC           *
*                                              *
*   REGION    BOWMAN                           *
*   LATITUDE          33:22.25 N               *
*   LONGITUDE         80:42.46 W               *
*   DEPTH              4.13(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            1.1                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   18           108          0.14            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.47          -43.00
               0.71         -133.00
               2.11         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	21.7	330	95	IPC	18.04	3.87	3.86	0.01	1.0
				ES	20.75	6.58	6.53	0.05	
SGS	26.9	137	92	IPD	18.96	4.79	4.74	-0.10	1.2
				ES	22.39	8.22	8.02	-0.05	
PBS	42.6	104	85	EP	21.61	7.44	7.44	0.00	1.1
				ES	26.95	12.78	12.58	0.20	
HBF	57.5	148	80	EP+	24.20	10.03	9.97	0.05	0.0
VSC	63.2	210	78	EP	25.18	11.01	10.94	0.07	0.0
				ES	32.80	18.63	18.50	0.13	
SRPN	82.2	267	73	EP+	28.00	13.83	14.10	-0.27	0.0
				ES 3	37.60	23.43	23.84	-0.41	
NHS	94.7	110	70	EP	29.75	15.58	16.13	-0.10	0.0
MTT	96.0	296	69	EP-	30.72	16.55	16.33	0.22	0.0
				ES 3	42.05	27.88	27.62	0.26	
JSC	112.9	333	65	EP	33.00	18.83	19.02	-0.19	0.0
				ES 4	45.70	31.53	32.16	-0.63	
LHS	123.3	356	63	EP	34.82	20.65	20.62	0.18	0.0
				ES	48.65	34.48	34.87	-0.14	
PRM	172.6	297	54	EP	42.15	27.98	27.83	0.15	0.0

```
**********************************************
*   DATE              760923                   *
*   ORIGIN TIME       540:10.60  UTC           *
*                                              *
*   REGION    BOWMAN                           *
*   LATITUDE          33:22.51 N               *
*   LONGITUDE         80:42.47 W               *
*   DEPTH              4.45(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            1.1                      *
**********************************************

Num.Obs.          Gap          RMS          Quality
   13             148          0.12            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  0.52        -55.00
                  1.32         35.00
                  2.06       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	21.3	329	96	EP+	14.40	3.80	3.79	0.01	0.0
				ES 3	17.20	6.60	6.41	0.19	
SGS	27.2	138	92	EP+2	15.32	4.72	4.81	-0.24	1.2
				ES 4	19.70	9.10	8.13	0.72	
PBS	42.7	104	85	EP	18.05	7.45	7.46	-0.01	1.0
				ES	23.40	12.80	12.61	0.19	
HBF	57.9	148	80	EP+2	20.55	9.95	10.04	-0.09	0.0
NHS	94.9	111	70	EP-3	26.00	15.40	16.14	-0.29	0.0
				ES 4	37.90	27.30	27.30	0.76	
MTT	95.7	296	70	EP	27.00	16.40	16.28	0.12	0.0
				ES 3	38.45	27.85	27.52	0.33	
JSC	112.5	333	66	EP	29.40	18.80	18.92	-0.12	0.0
				ES	42.60	32.00	32.00	0.00	
LHS	122.8	356	63	EP 2	30.70	20.10	20.52	-0.27	0.0
				ES	45.10	34.50	34.70	0.05	
PRM	172.4	297	54	EP 4	37.35	26.75	27.76	-1.01	0.0
				ES 4	59.10	48.50	46.94	1.55	

```
**********************************************
*   DATE            761114                   *
*   ORIGIN TIME     2112:12.01  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:57.66 N              *
*   LONGITUDE        80:11.28 W              *
*   DEPTH             4.36(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           1.2                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   12           123          0.16            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.90         -105.00
               1.52          -15.00
               5.15         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	8.4	148	117	IPC	13.55	1.54	1.56	0.08	0.0
				IS	14.44	2.43	2.73	-0.12	
BCS	11.1	78	111	IPD	14.05	2.04	1.98	0.06	0.0
				ES 2	15.40	3.39	3.45	-0.06	
CCS	17.3	201	103	IPC	14.97	2.96	2.95	0.01	0.0
				ES 2	17.02	5.01	5.15	-0.14	
HBF	18.0	260	102	IPC	14.47	2.46	3.08	-0.12	1.0
				ES 2	16.29	4.28	5.37	-0.22	
PPS	20.6	138	101	EP+3	15.46	3.45	3.49	-0.04	0.0
				ES 2	18.91	6.90	6.09	0.81	
SGS	39.7	310	94	EP	18.95	6.94	6.62	0.17	1.3
NHS	42.2	73	93	IPD	18.85	6.84	7.04	-0.19	1.4

```
**********************************************
*   DATE            761121                   *
*   ORIGIN TIME     1331:46.47  UTC          *
*                                            *
*   REGION    BOWMAN                         *
*   LATITUDE         33:22.61 N              *
*   LONGITUDE        80:42.39 W              *
*   DEPTH             3.94(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)            1.3                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
   16           109          0.13           A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.40          -43.00
               0.81         -133.00
               2.10         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	21.2	329	95	IPD	50.28	3.81	3.77	0.05	1.2
				ES	52.91	6.44	6.37	0.07	
SGS	27.3	138	91	IPD	51.31	4.84	4.81	-0.12	1.3
				ES	54.75	8.28	8.14	-0.11	
PBS	42.6	105	85	EP+	53.91	7.44	7.45	-0.01	1.4
				ES	59.25	12.78	12.60	0.18	
HBF	58.0	148	79	EP+	56.52	10.05	10.07	-0.01	0.0
				ES	63.70	17.23	17.02	0.21	
VSC	63.8	210	78	EP	57.45	10.98	11.06	-0.07	0.0
SRPN	82.3	266	73	IPC	0.70	14.23	14.12	0.12	0.0
				ES 3	9.90	23.43	23.87	-0.44	
SRPW	83.4	257	72	EP 4	2.00	15.53	14.31	1.22	0.0
MTT	95.8	296	69	EP 4	3.30	16.83	16.31	0.52	0.0
				ES 3	14.30	27.83	27.58	0.25	
JSC	112.4	333	65	EP 2	5.05	18.58	18.94	-0.36	0.0
				ES	18.45	31.98	32.03	-0.05	
LHS	122.6	356	63	EP 2	6.55	20.08	20.54	-0.30	0.0
PRM	172.4	297	54	EP 2	14.65	28.18	27.82	0.37	0.0
				ES 4	32.70	46.23	47.04	-0.80	

```
**********************************************
*   DATE              761122                   *
*   ORIGIN TIME         30:51.39  UTC          *
*                                              *
*   REGION    BOWMAN                           *
*   LATITUDE          33:22.70 N               *
*   LONGITUDE         80:42.77 W               *
*   DEPTH               1.47(km)               *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)              1.9                    *
**********************************************

Num.Obs.          Gap          RMS          Quality
   18             115          0.13            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  0.43        -44.00
                  0.73       -134.00
                  2.66       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	20.7	330	89	EP+	55.13	3.74	3.68	0.06	1.6
				ES 3	57.82	6.43	6.22	0.21	
SGS	27.8	138	86	IPC	56.44	5.05	4.91	-0.02	1.7
				ES	59.80	8.41	8.31	-0.16	
HBF	58.4	148	77	EP+	1.68	10.29	10.23	0.05	1.8
				ES	8.80	17.41	17.30	0.10	
VSC	63.7	210	75	EP+	2.56	11.17	11.13	0.04	1.8
				ES	10.30	18.91	18.82	0.09	
SRPN	81.7	266	71	EP+	5.50	14.11	14.16	-0.05	0.0
				ES	15.20	23.81	23.94	-0.13	
SRPW	82.9	256	70	EP+2	5.40	14.01	14.36	-0.35	0.0
				ES 4	14.90	23.51	24.28	-0.78	
MTT	95.2	296	68	EP	7.95	16.56	16.37	0.18	0.0
				ES 3	19.35	27.96	27.69	0.27	
NHS	95.5	111	68	EP	7.35	15.96	16.42	-0.02	0.0
JSC	111.9	333	64	EP+	10.24	18.85	19.06	-0.22	2.6
				ES 4	23.00	31.61	32.24	-0.63	
LHS	122.4	356	62	EP 3	11.76	20.37	20.70	-0.19	0.0
				ES 2	26.70	35.31	35.01	0.55	
PRM	171.8	297	53	EP+3	19.85	28.46	27.99	0.47	0.0
				ES 4	39.60	48.21	47.33	0.87	

```
**********************************************
*   DATE              761128                   *
*   ORIGIN TIME        938:49.79  UTC           *
*                                               *
*   REGION    BOWMAN                            *
*   LATITUDE           33:23.32 N               *
*   LONGITUDE          80:41.55 W               *
*   DEPTH               5.19(km)                *
*                     Free Depth Solution       *
*                                               *
*   MAG(D)             0.9                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   11           145          0.13            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.58          -41.00
               1.92         -131.00
               2.33         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSC	20.8	324	99	EP	53.50	3.71	3.73	-0.02	0.8
				ES	56.15	6.36	6.31	0.05	
SGS	27.4	142	94	EP	54.65	4.86	4.85	-0.14	1.0
				ES 2	58.50	8.71	8.21	0.25	
PBS	41.7	107	87	EP	57.25	7.46	7.28	0.18	0.9
HBF	58.4	150	81	EP	59.86	10.07	10.10	-0.03	0.0
MTT	96.4	295	70	EP	6.20	16.41	16.34	0.07	0.0
				ES 2	17.85	28.06	27.63	0.43	
JSC	111.8	332	66	EP	8.40	18.61	18.77	-0.16	0.0
				ES	21.55	31.76	31.74	0.02	
LHS	121.4	355	64	EP 2	9.70	19.91	20.26	-0.20	0.0

```
**********************************************
*   DATE              770118                   *
*   ORIGIN TIME       1829:14.22  UTC          *
*                                              *
*   LATITUDE           33: 2.53 N              *
*   LONGITUDE          80:12.82 W              *
*   DEPTH               7.04(km)               *
*                     Free Depth Solution      *
*                                              *
*   MAG(D)             2.7                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   17           136          0.09            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.60         -84.00
               1.19           6.00
               1.20         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SVS	8.8	202	128	IPD0	16.07	1.85	1.86	-0.01	0.0
BCS	14.9	117	114	IPC0	16.92	2.70	2.73	-0.03	0.0
MGS	17.5	157	111	IPC0	17.22	3.00	3.12	-0.02	0.0
				ES	19.51	5.29	5.44	0.02	
HBF	19.6	232	109	IPC0	17.16	2.94	3.44	0.00	2.6
CCS	25.4	189	104	IPC0	18.57	4.35	4.36	-0.01	0.0
PBS	26.7	350	103	IP 4	17.12	2.90	4.56	-1.71	0.0
PPS	29.2	146	102	IPD0	19.23	5.01	4.97	0.04	0.0
				ES 4	22.49	8.27	8.66	-0.40	
SGS	32.5	301	100	IPC4	20.53	6.31	5.50	0.66	2.7
OSC	79.3	314	90	EP 4	27.76	13.54	13.15	0.54	2.7
VSC	80.2	257	90	EP 3	27.94	13.72	13.30	0.41	2.5
				ES 3	37.48	23.26	23.22	0.04	
SRPW	128.6	278	48	EP	35.20	20.98	21.19	-0.21	0.0
				IS 4	51.70	37.48	36.98	0.50	
SRPN	132.1	284	48	IPD	35.90	21.68	21.62	0.06	0.0
				IS 0	52.00	37.78	37.73	0.05	
MTT	153.9	301	48	EP-3	39.55	25.33	24.27	0.86	0.0
JSC	167.9	325	48	EP-2	40.46	26.24	25.97	0.27	0.0
LHS	168.6	341	48	EP 3	40.81	26.59	26.06	0.43	0.0
				ES 4	60.71	46.49	45.47	0.85	
CH5	210.8	291	48	EP 2	46.20	31.98	31.19	0.79	0.0
PRM	230.5	300	48	EP 2	48.56	34.34	33.58	0.76	0.0
CH6	233.5	293	48	EP 4	49.20	34.98	33.94	1.04	0.0
BLA	462.9	358	48	EP 4	28.40	74.18	61.82	12.36	0.0
				ES 4	68.70	114.48	107.87	6.61	

```
**********************************************
*   DATE              770120                   *
*   ORIGIN TIME        405:45.75  UTC           *
*                                               *
*   REGION    SUMMERVILLE-MIDDLETON PLACE       *
*   LATITUDE          32:55.67 N                *
*   LONGITUDE         80: 9.75 W                *
*   DEPTH              6.63(km)                 *
*                   Free Depth Solution         *
*                                               *
*   MAG(D)             1.9                      *
**********************************************
```

Num.Obs.	Gap	RMS	Quality
19	94	0.15	A

68% Confidence Ellipse and Vertical Deviation

Semi-Axis	Length(km)	Trend
	0.63	30.00
	0.94	-60.00
	1.48	vertical

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	4.0	149	149	IPC0	46.97	1.22	1.28	0.05	0.0
				ES	47.47	1.72	2.23	-0.33	
SVS	9.3	299	125	EP	47.71	1.96	1.88	0.08	0.0
AYRT	10.3	14	122	EP+	47.75	2.00	2.03	-0.03	0.0
				ES	49.23	3.48	3.54	-0.06	
BCS	10.4	55	122	IPD0	47.81	2.06	2.03	0.03	0.0
				ES	49.22	3.47	3.55	-0.07	
SBRT	12.9	322	116	IP-0	48.40	2.65	2.40	0.25	0.0
				ES	50.00	4.25	4.20	0.06	
CCS	15.1	215	113	IPC0	48.64	2.89	2.73	0.16	0.0
				ES	50.60	4.85	4.77	0.09	
PPS	16.3	135	111	EP 4	48.84	3.09	2.91	0.19	0.0
				ES 4	50.20	4.45	5.07	-0.62	
HBF	20.2	272	107	IPC0	48.72	2.97	3.51	-0.04	1.8
				ES 4	50.71	4.96	6.13	-0.29	
PBS	40.1	346	97	EP 4	51.75	6.00	6.72	-0.77	0.0
SGS	43.9	312	96	EP	53.29	7.54	7.35	0.05	1.9
VSC	83.2	266	89	EP	59.50	13.75	13.80	-0.04	1.9
				ES	69.46	23.71	24.07	-0.36	
OSC	91.8	318	88	EP	0.55	14.80	15.20	-0.25	0.0
SRPN	140.4	288	48	EP+4	9.00	23.25	22.67	0.58	0.0
				ES 4	25.60	39.85	39.56	0.29	
MTT	164.9	304	48	EP 4	13.55	27.80	25.65	1.96	0.0
JSC	181.1	326	48	EP	13.50	27.75	27.62	0.13	0.0
LHS	182.2	341	48	EP 3	13.26	27.51	27.75	-0.34	0.0
				ES	34.29	48.54	48.42	-0.05	

```
**********************************************
*   DATE            770226                   *
*   ORIGIN TIME     1009:56.14  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:55.37 N              *
*   LONGITUDE        80:10.67 W              *
*   DEPTH             4.94(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)            1.5                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
   13           103          0.05            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.22         -73.00
               0.34          17.00
               0.58        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	4.5	130	137	IPC	57.15	1.01	1.11	0.00	0.0
				ES	57.88	1.74	1.93	-0.02	
SVS	8.4	308	120	IPC0	57.80	1.66	1.61	0.05	0.0
				ES	58.89	2.75	2.81	-0.06	
BCS	11.8	57	112	IPD0	58.30	2.16	2.13	0.03	0.0
				ES 3	59.69	3.55	3.71	-0.16	
CCS	13.9	211	109	IPC0	58.64	2.50	2.44	0.06	0.0
PPS	17.0	130	105	EP 4	59.20	3.06	2.93	0.13	0.0
				ES	61.22	5.08	5.11	-0.03	
HBF	18.8	273	104	EP-	58.80	2.66	3.22	-0.06	1.4
				ES 4	60.59	4.45	5.61	-0.29	
NHS	42.8	67	94	IPD	3.25	7.11	7.13	-0.02	1.5
				ES 3	8.37	12.23	12.45	-0.22	
SGS	43.3	314	94	EP	3.55	7.41	7.21	0.05	1.7
VSC	81.7	267	88	EP	9.65	13.51	13.56	-0.05	0.0
OSC	91.2	319	87	EP 4	13.85	17.71	15.12	2.73	0.0
SRPN	139.2	289	47	EP 4	17.40	21.26	22.72	-1.46	0.0
				ES 4	36.20	40.06	39.64	0.42	
MTT	164.0	304	47	EP 4	21.96	25.82	25.73	-0.11	0.0
				ES 4	41.80	45.66	44.90	0.41	
JSC	180.8	326	47	EP 4	25.90	29.76	27.77	1.99	0.0
				ES 4	45.00	48.86	48.46	0.40	
PRM	240.4	302	47	EP 4	34.15	38.01	35.02	2.99	0.0

```
**********************************************
*   DATE            770318                   *
*   ORIGIN TIME      736: 8.63  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:56.04 N              *
*   LONGITUDE        80:10.48 W              *
*   DEPTH             4.19(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           1.2                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
    9           122          0.07            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.43          -93.00
               0.64           -3.00
               1.41         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	5.2	142	129	IPC0	9.68	1.05	1.11	0.05	0.0
				ES	10.26	1.63	1.93	-0.12	
SVS	7.9	299	117	IPC0	10.16	1.53	1.49	0.05	0.0
				ES	11.23	2.60	2.59	0.01	
BCS	11.0	61	110	IPD0	10.62	1.99	1.95	0.05	0.0
				ES	12.03	3.40	3.40	0.01	
CCS	15.1	210	105	IPC0	11.30	2.67	2.60	0.07	0.0
HBF	19.0	270	101	IPC	11.25	2.62	3.23	-0.11	1.0
				ES 4	13.03	4.40	5.64	-0.36	
NHS	42.0	69	93	EP-	15.58	6.95	7.00	-0.05	1.2
SGS	42.6	312	93	EP 4	16.45	7.82	7.10	0.57	1.2
SRPN	139.1	288	47	EP 4	32.00	23.37	22.79	0.59	0.0
				ES 4	48.40	39.77	39.76	0.01	
MTT	163.5	304	47	EP 4	35.55	26.92	25.76	0.96	0.0
				ES 4	55.25	46.62	44.95	1.33	
LHS	181.2	341	47	EP 4	39.85	31.22	27.90	3.22	0.0

```
**********************************************
*   DATE              770330                   *
*   ORIGIN TIME       827:47.78  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:57.14 N               *
*   LONGITUDE         80:11.04 W               *
*   DEPTH              7.85(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            2.9                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   16            91          0.12            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.64         -83.00
               0.92           7.00
               1.34         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SVS	6.3	287	141	IPD0	49.36	1.58	1.66	-0.08	0.0
MGS	7.3	147	136	IPC0	49.49	1.71	1.78	0.04	0.0
				ES	50.46	2.68	3.10	-0.24	
BCS	11.0	73	125	IPD0	50.06	2.28	2.23	0.05	0.0
CCS	16.5	204	114	IPC0	50.98	3.20	3.02	0.18	0.0
				ES 2	52.56	4.78	5.27	-0.49	
HBF	18.3	263	112	IPC	50.56	2.78	3.29	0.00	2.8
PPS	19.6	137	111	IPC0	51.32	3.54	3.49	0.05	0.0
PBS	37.0	348	100	EP 4	54.42	6.64	6.25	0.34	0.0
SGS	40.6	311	98	IPD	54.91	7.13	6.83	0.15	2.7
NHS	42.1	72	98	IPD0	54.84	7.06	7.08	-0.02	2.9
VSC	81.4	264	91	EP+	1.26	13.48	13.50	-0.02	0.0
OSC	88.4	317	90	EP+	2.26	14.48	14.65	-0.02	2.8
SRPW	133.0	282	48	EP 2	9.20	21.42	21.65	-0.22	0.0
				ES 4	26.40	38.62	37.77	0.85	
SRPN	137.6	288	48	EP 2	9.90	22.12	22.20	-0.08	0.0
				ES 4	26.00	38.22	38.74	-0.52	
SRPD	144.4	279	48	EP 4	11.60	23.82	23.03	0.79	0.0
				ES 4	29.10	41.32	40.19	1.13	
MTT	161.6	303	48	EP 4	13.55	25.77	25.11	0.46	0.0
JSC	177.7	326	48	EP	14.52	26.74	27.08	-0.33	3.3
LHS	178.9	341	48	EP	14.80	27.02	27.22	-0.30	0.0
PRM	238.2	302	48	EP 3	22.74	34.96	34.43	0.54	0.0

```
**********************************************
*   DATE              770531                   *
*   ORIGIN TIME       2350:13.40  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           32:56.52 N              *
*   LONGITUDE          80:13.59 W              *
*   DEPTH              12.14(km)               *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             2.5                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   11            89          0.18            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  1.26       -79.00
                  2.32        11.00
                  3.82      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	9.4	122	142	IPC0	15.87	2.47	2.53	0.04	0.0
				ES 2	17.06	3.66	4.41	-0.58	
CCS	14.2	191	130	IPD0	16.56	3.16	3.07	0.08	0.0
				ES 3	18.09	4.69	5.36	-0.68	
HBF	14.2	266	130	IPD0	15.79	2.39	3.07	-0.19	2.4
BCS	15.1	73	128	IPD0	16.83	3.43	3.19	0.24	0.0
PPS	21.8	127	118	IPC0	17.61	4.21	4.11	0.10	0.0
PBS	37.5	355	106	EP 4	20.83	7.43	6.49	0.89	0.0
SGS	38.5	316	105	IPC	20.30	6.90	6.65	0.10	2.4
				ES 4	23.55	10.15	11.60	-1.71	
NHS	46.3	72	102	IPD	20.99	7.59	7.87	-0.28	0.0
OSB	88.5	319	92	EP-	28.09	14.69	14.67	0.02	2.3
				ES 4	38.45	25.05	25.60	-0.55	
MTT	159.0	304	48	EP 4	37.91	24.51	24.34	-0.03	0.0
				ES 4	58.70	45.30	42.47	2.48	
JSC	176.5	327	48	EP 4	40.39	26.99	26.46	0.52	3.0
				ES 4	62.45	49.05	46.18	2.87	
LHS	178.8	342	48	EP	40.22	26.82	26.74	-0.02	0.0
PRM	235.5	303	48	EP 4	47.81	34.41	33.63	0.78	0.0
				ES 4	78.25	64.85	58.68	6.17	
CHF	250.0	299	48	EP 4	50.35	36.95	35.39	1.55	0.0

```
**********************************************
*   DATE              770605                   *
*   ORIGIN TIME        42:29.73  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 3.13 N               *
*   LONGITUDE         81:24.73 W               *
*   DEPTH              3.49(km)                *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             2.7                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   15           213          0.22            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.99         -59.00
               3.56          31,00
               3.06        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SRPW	22.7	317	97	EP-	33.60	3.87	3.82	0.05	0.0
SRPN	34.8	332	94	IP 0	35.75	6.02	5.81	0.21	0.0
				ES 4	41.80	12.07	10.14	1.93	
OSB	76.2	44	88	EP	42.29	12.56	12.65	-0.10	2.6
MTT	80.3	345	88	EP	43.10	13.37	13.33	-0.16	0.0
SGS	85.5	79	87	EP-	43.84	14.11	14.18	-0.23	2.7
HBF	97.6	98	86	EP-	45.87	16.14	16.18	0.46	2.7
				ES 4	58.52	28.79	28.23	1.43	
SVS	109.1	95	85	EP-	47.60	17.87	18.09	-0.22	0.0
				ES	61.71	31.98	31.56	0.41	
PBS	110.0	77	85	EP 4	48.43	18.70	18.23	0.42	0.0
CCS	111.4	104	85	EP-	47.98	18.25	18.46	-0.21	0.0
MGS	120.1	98	84	EP	49.38	19.65	19.89	-0.14	0.0
BCS	125.5	94	84	EP	50.70	20.97	20.79	0.18	0.0
JSC	136.8	6	47	EP-	52.35	22.62	22.59	0.03	0.0
				ES	69.52	39.79	39.42	0.37	
PRM	144.5	322	47	EP-	52.99	23.26	23.52	-0.26	0.0
CHF	153.4	315	47	EP 4	54.55	24.82	24.61	0.21	0.0
				ES 4	73.80	44.07	42.94	1.12	
NHS	154.6	89	47	EP+	54.41	24.68	24.75	-0.08	0.0
LHS	167.9	19	47	EP 4	56.63	26.90	26.36	0.44	0.0

```
**********************************************
*   DATE            770622                   *
*   ORIGIN TIME     2043:40.06  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         32:59.70 N              *
*   LONGITUDE        80: 9.30 W              *
*   DEPTH             1.34(km)               *
*                   Fixed Depth Solution     *
*                                            *
*   MAG(D)           2.1                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   10           123          0.17            D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  1.16       -99.00
                  1.78        -9.00
                 14.95       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
BCS	7.9	101	99	IPD0	41.28	1.22	1.34	-0.12	0.0
SVS	9.2	252	98	IPD0	41.40	1.34	1.55	-0.21	0.0
MGS	10.9	173	96	IPD	41.83	1.77	1.83	0.04	0.0
				ES	43.42	3.36	3.20	0.33	
PPS	21.8	150	92	EP 4	42.60	2.54	3.64	-1.10	0.0
CCS	21.9	205	92	IPC	43.59	3.53	3.66	-0.13	0.0
HBF	21.9	252	92	EP	43.19	3.13	3.66	-0.03	0.0
PBS	33.1	342	90	EP 4	46.51	6.45	5.51	0.89	0.0
NHS	38.3	77	90	IPD	46.45	6.39	6.37	0.02	0.0
SGS	39.9	303	89	EP+	47.16	7.10	6.64	0.31	0.0
VSC	84.7	261	86	EP 2	54.28	14.22	14.08	0.14	0.0
OSB	88.7	314	85	EP	54.70	14.64	14.75	-0.11	2.1
LHS	175.4	340	47	EP 4	8.43	28.37	27.52	0.75	0.0
PRM	238.1	300	47	EP 4	15.76	35.70	35.14	0.57	0.0

```
**********************************************
*   DATE              770823                   *
*   ORIGIN TIME       1345: 0.03  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           32:56.31 N              *
*   LONGITUDE          80: 9.79 W              *
*   DEPTH               7.57(km)               *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)             2.3                     *
**********************************************

Num.Obs.          Gap          RMS          Quality
   11             104          0.07           A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.67         -127.00
               0.78          -37.00
               1.24         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	5.1	155	146	IPC0	1.33	1.30	1.50	-0.11	0.0
				ES	2.48	2.45	2.63	0.00	
SVS	8.7	293	131	EP+	2.01	1.98	1.90	0.08	0.0
				ES 2	3.16	3.13	3.32	-0.19	
BCS	9.8	61	127	IPD0	2.15	2.12	2.04	0.07	0.0
				ES 3	3.34	3.31	3.57	-0.26	
CCS	16.1	212	114	IPC	3.01	2.98	2.94	0.04	0.0
PPS	17.2	138	113	EP 4	2.70	2.67	3.10	-0.44	0.0
				ES 4	4.83	4.80	5.41	-0.62	
HBF	20.1	268	109	IPC	3.13	3.10	3.55	0.05	2.2
				ES 4	5.03	5.00	6.20	-0.33	
PBS	38.9	346	99	EP 4	6.42	6.39	6.55	-0.22	0.0
SGS	43.1	311	97	EP 2	7.40	7.37	7.23	-0.01	2.0
VSC	83.2	265	90	EP	13.81	13.78	13.80	-0.02	0.0
OSB	92.7	317	89	EP+	15.29	15.26	15.35	-0.09	0.0
MTT	164.2	303	48	EP 4	26.20	26.17	25.46	0.51	0.0
JSC	180.1	326	48	EP 4	27.81	27.78	27.39	0.38	2.7
LHS	181.0	341	48	EP 4	27.61	27.58	27.51	-0.03	0.0
PRM	240.7	302	48	EP 4	35.83	35.80	34.75	1.04	0.0

```
**********************************************
*   DATE              770825                   *
*   ORIGIN TIME       420: 7.15  UTC           *
*                                              *
*   REGION    BOWMAN                           *
*   LATITUDE          33:22.87 N               *
*   LONGITUDE         80:41.82 W               *
*   DEPTH              9.01(km)                *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)            2.9                      *
**********************************************

Num.Obs.          Gap          RMS          Quality
   17             111          0.11             A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.41          -42.00
               1.00         -132.00
               1.75         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSB	22.9	323	106	IPD	11.40	4.25	4.22	-0.07	0.0
SGS	27.1	140	102	IPC0	12.07	4.92	4.88	-0.11	2.8
PBS	41.9	106	92	EP+	14.57	7.42	7.30	0.12	2.5
				ES 3	19.87	12.72	12.35	0.37	
HBF	57.9	149	85	EP+	17.28	10.13	9.94	0.19	2.7
				ES 4	21.14	13.99	16.81	-2.82	
SVS	62.0	138	83	IPC	17.77	10.62	10.60	0.02	2.4
VSC	64.7	211	82	EP-	18.20	11.05	11.05	0.00	0.0
BCS	73.3	127	79	IPC0	19.61	12.46	12.44	0.02	0.0
MGS	74.7	136	79	IPC	19.76	12.61	12.67	-0.06	0.0
				ES	28.37	21.22	21.43	-0.21	
CCS	75.0	147	79	EP+	19.76	12.61	12.72	-0.11	0.0
PPS	87.1	135	75	EP-	21.84	14.69	14.66	0.03	0.0
MTT	96.3	295	73	EP	23.31	16.16	16.13	0.04	0.0
JSC	112.3	332	68	EP-	25.84	18.69	18.60	0.09	3.5
				ES	38.40	31.25	31.46	-0.21	
LHS	122.2	355	66	EP-2	27.10	19.95	20.11	-0.01	0.0
CH5	156.1	284	59	EP 2	32.60	25.45	25.05	0.40	0.0
CH6	177.9	288	55	EP 4	36.70	29.55	28.07	1.48	0.0
CHF	189.2	292	53	EP+4	37.65	30.50	29.57	0.93	3.3

```
**********************************************
*   DATE            770901                   *
*   ORIGIN TIME     2105:32.22  UTC          *
*                                            *
*   REGION    BOWMAN                         *
*   LATITUDE         33:23.41 N              *
*   LONGITUDE        80:40.88 W              *
*   DEPTH             7.37(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)            1.8                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
   14           168          0.08            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.30          -39.00
               1.08         -129.00
               1.18         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
OSB	23.1	319	102	EP+	36.47	4.25	4.17	-0.02	2.0
				ES	39.43	7.21	7.06	-0.02	
SGS	27.0	144	99	EP+	37.22	5.00	4.81	0.04	1.9
				ES	40.63	8.41	8.13	0.02	
PBS	40.8	108	90	EP 2	39.08	6.86	7.11	-0.25	1.6
				ES	44.25	12.03	12.03	0.01	
HBF	58.1	151	83	EP	42.22	10.00	9.99	0.01	1.8
SVS	61.7	139	82	EP-	42.93	10.71	10.60	0.11	0.0
MGS	74.4	137	78	EP+	44.89	12.67	12.68	-0.01	0.0
CCS	75.1	148	77	EP-	44.88	12.66	12.79	-0.13	0.0
				ES 4	52.24	20.02	21.62	-1.60	
JSC	112.1	332	68	EP 2	51.17	18.95	18.68	0.27	0.0
				ES	63.77	31.55	31.58	-0.03	
LHS	121.3	354	65	EP+	52.18	19.96	20.09	0.02	0.0
PRM	173.9	296	55	EP 4	0.51	28.29	27.67	0.62	0.0
				ES	18.96	46.74	46.80	-0.06	

```
**********************************************
*   DATE              771110                   *
*   ORIGIN TIME     1124:59.70  UTC            *
*                                              *
*   REGION    BOWMAN                           *
*   LATITUDE          33:23.19 N               *
*   LONGITUDE         80:41.79 W               *
*   DEPTH              0.98(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            0.8                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   10           140          0.18            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.91          -59.00
               1.69           31.00
               3.08         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
COW	0.7	212	144	EP	0.45	0.75	0.22	0.13	0.7
BOW	5.1	102	100	EP	0.85	1.15	0.92	-0.07	0.7
				ES 2	1.25	1.55	1.56	-0.52	
WMS	6.1	318	98	EP	0.85	1.15	1.10	-0.25	0.8
ROW	9.4	256	94	EP-	1.90	2.20	1.68	0.02	0.9
				ES	3.15	3.45	2.84	-0.24	
OSB	22.5	322	87	EP	4.05	4.35	3.99	0.26	0.0
				ES 2	6.95	7.25	6.75	0.33	
SGS	27.5	141	85	EP-	4.70	5.00	4.87	-0.02	1.0
				ES	8.35	8.65	8.23	0.16	

```
**********************************************
*   DATE              771215                   *
*   ORIGIN TIME       715:55.16  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:58.98 N               *
*   LONGITUDE         80:15.87 W               *
*   DEPTH             13.12(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            2.0                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   17           106          0.14            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.73         -75.00
               1.02          15.00
               1.89        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SVS	2.2	137	171	IPC0	57.28	2.12	2.18	-0.06	0.0
HBF	12.0	242	137	IP	57.75	2.59	2.92	0.17	0.0
MGS	15.0	130	130	IPD0	58.42	3.26	3.27	0.09	0.0
				ES 3	60.44	5.28	5.71	-0.26	
AIN	16.7	35	127	IPD0	58.69	3.53	3.49	0.04	0.0
				ES 2	60.81	5.65	6.10	-0.45	
BCS	18.0	91	125	IPD0	58.86	3.70	3.66	0.04	0.0
				ES	61.34	6.18	6.39	-0.21	
PPS	27.4	130	114	IPD0	0.25	5.09	5.00	0.09	0.0
SGS	32.8	315	110	IPC	1.04	5.88	5.81	-0.08	2.3
PBS	32.8	0	110	IPC	1.16	6.00	5.81	0.14	1.9
NHS	48.5	78	102	EP-	3.32	8.16	8.26	-0.10	2.0
BOW	55.9	321	100	EP+	4.81	9.65	9.43	0.12	0.0
COW	60.3	318	99	EP 4	5.05	9.89	10.13	-0.24	2.0
				ES 4	11.70	16.54	17.68	-1.14	
ROW	65.1	311	97	EP+	5.91	10.75	10.90	-0.10	2.0
				ES 4	12.95	17.79	19.03	-1.15	
WMS	66.2	318	97	EP 4	5.50	10.34	11.08	-0.59	0.0
VSC	74.4	261	95	IPC	7.32	12.16	12.40	-0.24	1.9
OSB	82.7	319	94	EP-	8.95	13.79	13.74	0.05	0.0
MTT	153.4	304	49	EP 4	19.30	24.14	23.55	0.39	0.0
JSC	170.8	327	49	EP 3	22.40	27.24	25.66	1.58	0.0
LHS	173.4	343	49	EP 4	20.80	25.64	25.98	-0.44	0.0
				ES 4	41.85	46.69	45.34	1.18	
PRM	230.1	302	49	EP 4	30.70	35.54	32.86	2.68	0.0
				ES 4	57.95	62.79	57.35	5.44	

```
**********************************************
*   DATE              771215                   *
*   ORIGIN TIME       1916:43.63  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           32:56.66 N              *
*   LONGITUDE          80:10.04 W              *
*   DEPTH               7.52(km)               *
*                     Free Depth Solution      *
*                                              *
*   MAG(D)             2.6                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   17            85          0.11            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  0.62       -96.00
                  0.81        -6.00
                  1.51      vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	5.8	155	142	IPC0	45.05	1.42	1.57	-0.05	0.0
SVS	8.1	290	132	IPD0	45.45	1.82	1.83	0.00	0.0
BCS	9.8	65	127	IPD0	45.60	1.97	2.05	-0.07	0.0
CCS	16.4	210	114	IPD0	46.70	3.07	2.99	0.08	0.0
AIN	18.1	1	112	IPD0	47.03	3.40	3.23	0.17	0.0
HBF	19.8	266	110	EP+	46.60	2.97	3.50	-0.02	0.0
PBS	38.2	346	99	EP 4	50.65	7.02	6.43	0.54	2.6
NHS	41.0	70	98	EP-	50.45	6.82	6.88	-0.06	2.7
SGS	42.4	311	97	EP-	50.95	7.32	7.11	0.06	0.0
BOW	65.1	317	93	EP+	54.70	11.07	10.82	0.15	2.6
COW	69.7	314	92	EP	55.25	11.62	11.57	0.05	0.0
ROW	74.8	309	91	EP+	56.05	12.42	12.42	0.05	2.6
				ES	64.90	21.27	21.67	-0.31	
WMS	75.6	315	91	EP 4	56.00	12.37	12.54	-0.02	0.0
VSC	82.9	265	90	EP+	57.34	13.71	13.74	-0.03	2.6
OSB	92.0	317	89	EP-	58.65	15.02	15.23	-0.21	0.0
				ES 4	65.25	21.62	26.58	-4.95	
MTT	163.5	303	48	EP 4	7.60	23.97	25.38	-1.61	0.0
JSC	179.3	326	48	EP+	11.00	27.37	27.31	0.06	0.0
LHS	180.3	341	48	EP+	11.15	27.52	27.42	0.00	0.0
PRM	240.0	302	48	EP	18.20	34.57	34.68	-0.11	0.0

```
*********************************************
*   DATE              771216                  *
*   ORIGIN TIME       1114:34.41  UTC         *
*                                             *
*   REGION    ADAMS RUN                       *
*   LATITUDE           32:44.24 N             *
*   LONGITUDE          80:19.02 W             *
*   DEPTH               8.07(km)              *
*                    Free Depth Solution      *
*                                             *
*   MAG(D)             2.1                    *
*********************************************

Num.Obs.        Gap          RMS          Quality
   25           213          0.16            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.92         -75.00
               1.85          15.00
               2.45        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
CCS	10.5	33	127	IPD0	36.42	2.01	2.19	-0.18	0.0
				ES 2	37.91	3.50	3.81	-0.32	
HBF	22.4	345	108	IPD	38.30	3.89	3.94	0.45	0.0
MGS	24.2	43	107	IPD0	38.61	4.20	4.22	0.08	0.0
				ES	41.74	7.33	7.36	0.15	
T121	24.6	29	107	IPC0	38.75	4.34	4.27	0.06	0.0
				ES 4	41.45	7.04	7.46	-0.42	
SVS	26.5	14	105	IPC0	38.87	4.46	4.57	-0.11	0.0
PPS	27.7	70	105	EP+	39.16	4.75	4.76	-0.01	0.0
T122	28.2	34	104	IPC	39.18	4.77	4.84	-0.08	0.0
				ES 4	42.50	8.09	8.45	-0.36	
BCS	35.5	40	101	IPD0	40.40	5.99	6.01	-0.02	0.0
AIN	43.5	19	98	EP-	41.80	7.39	7.30	0.08	0.0
				ES 3	47.00	12.59	12.75	-0.16	
SGS	53.7	340	95	IPC	43.38	8.97	8.97	-0.15	2.3
PBS	60.3	5	94	EP 3	44.57	10.16	10.04	0.06	2.0
NHS	64.3	55	93	EP 2	45.06	10.65	10.70	-0.05	2.0
VSC	70.4	283	92	EP 2	46.14	11.73	11.70	0.02	1.9
BOW	76.9	337	91	EP 2	47.28	12.87	12.76	0.01	2.1
				ES	56.70	22.29	22.26	-0.14	
COW	80.2	333	91	EP 2	47.65	13.24	13.30	-0.06	0.0
ROW	82.7	327	90	EP-	48.05	13.64	13.71	-0.02	2.2
				ES 4	60.25	25.84	23.92	2.01	
WMS	86.0	333	90	EP 2	48.60	14.19	14.25	0.08	0.0
OSB	102.4	331	88	EP+2	50.93	16.52	16.94	-0.43	0.0
				ES 4	64.54	30.13	29.57	0.56	
MTT	166.7	312	48	EP 4	0.18	25.77	25.71	-0.14	0.0
JSC	192.1	333	48	EP	3.42	29.01	28.79	0.21	0.0
LHS	198.5	347	48	EP	3.95	29.54	29.58	-0.14	0.0
PRM	241.9	308	48	EP	9.70	35.29	34.85	0.43	0.0
				ES 4	36.58	62.17	60.82	1.35	
CHF	254.9	304	48	EP 4	11.90	37.49	36.43	1.06	0.0
				ES 4	39.40	64.99	63.57	1.42	

```
*********************************************
*   DATE            771216                  *
*   ORIGIN TIME     1125:31.80  UTC         *
*                                           *
*   REGION    ADAMS RUN                     *
*   LATITUDE         32:43.48 N             *
*   LONGITUDE        80:19.06 W             *
*   DEPTH             7.10(km)              *
*                   Free Depth Solution     *
*                                           *
*   MAG(D)           2.3                    *
*********************************************

Num.Obs.        Gap         RMS         Quality
   25           217         0.15           B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)   Trend
               0.78        -81.00
               1.48          9.00
               2.51        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
CCS	11.7	30	121	IPD0	33.94	2.14	2.27	-0.13	0.0
HBF	23.8	346	105	IPD	35.88	4.08	4.11	0.47	0.0
MGS	25.3	41	104	IPD0	36.12	4.32	4.34	0.07	0.0
				ES	39.06	7.26	7.58	-0.15	
T121	25.8	27	104	IPC0	36.31	4.51	4.43	0.08	0.0
				ES 4	39.19	7.39	7.74	-0.35	
SVS	27.8	13	103	IPC0	36.40	4.60	4.75	-0.15	0.0
				ES 4	39.54	7.74	8.29	-0.55	
PPS	28.2	67	102	EP+	36.64	4.84	4.81	0.02	0.0
T122	29.4	33	102	IPC	36.73	4.93	5.00	-0.07	0.0
				ES 4	40.13	8.33	8.73	-0.40	
BCS	36.6	39	99	IPD	37.98	6.18	6.16	0.01	0.0
				ES 3	42.22	10.42	10.76	-0.34	
AIN	44.8	19	96	EP+	39.49	7.69	7.50	0.18	0.0
SGS	55.0	341	94	IPC	40.94	9.14	9.17	-0.18	2.4
PBS	61.7	5	93	EP	42.02	10.22	10.26	-0.09	2.3
NHS	65.2	54	92	EP+	42.63	10.83	10.83	0.00	2.3
VSC	70.7	284	91	EP+	43.46	11.66	11.74	-0.08	2.0
				ES 3	51.88	20.08	20.49	-0.41	
BOW	78.1	337	90	EP	44.85	13.05	12.96	-0.01	2.2
				ES 4	55.05	23.25	22.62	0.46	
COW	81.4	334	90	EP-	45.25	13.45	13.50	-0.05	0.0
				ES	55.20	23.40	23.56	-0.16	
ROW	83.8	328	90	EP-	45.65	13.85	13.90	0.00	2.2
				ES	56.10	24.30	24.25	0.13	
WMS	87.2	333	89	EP 3	46.10	14.30	14.45	0.00	0.0
OSB	103.6	332	88	EP 4	48.59	16.79	17.15	-0.36	0.0
				ES 4	61.93	30.13	29.92	0.21	
MTT	167.6	313	48	EP	58.06	26.26	25.92	0.14	0.0
JSC	193.3	333	48	EP	0.73	28.93	29.05	-0.12	0.0
LHS	199.8	347	48	EP	1.90	30.10	29.85	0.15	0.0
PRM	242.7	308	48	EP 4	7.65	35.85	35.06	0.79	0.0
				ES 4	37.65	65.85	61.17	4.67	
CHF	255.6	304	48	EP	8.80	37.00	36.62	0.38	0.0
				ES 4	36.55	64.75	63.91	0.84	

```
**********************************************
*   DATE              771218                   *
*   ORIGIN TIME       158:37.79  UTC           *
*                                              *
*   REGION    ADAMS RUN                        *
*   LATITUDE          32:44.33 N               *
*   LONGITUDE         80:17.54 W               *
*   DEPTH              6.58(km)                *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)            1.8                      *
**********************************************
```

Num.Obs.	Gap	RMS	Quality
15	291	0.14	B

68% Confidence Ellipse and Vertical Deviation

Semi-Axis	Length(km)	Trend
	1.25	-81.00
	2.04	9.00
	3.28	vertical

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
CCS	9.3	22	125	IPD0	39.58	1.79	1.88	-0.09	0.0
				ES 2	40.70	2.91	3.28	-0.37	
PMS	16.1	19	111	IPD4	39.65	1.86	2.88	-1.02	0.0
				ES 4	41.61	3.82	5.03	-1.21	
MGS	22.6	39	105	EP-	41.66	3.87	3.89	0.08	0.0
HBF	23.0	340	105	IPD	41.50	3.71	3.96	0.25	1.7
				ES 2	44.24	6.45	6.90	0.42	
T121	23.4	24	104	IPD	41.89	4.10	4.02	0.08	0.0
				ES	44.89	7.10	7.02	0.08	
SVS	25.8	9	103	EP+	42.08	4.29	4.41	-0.12	0.0
				ES 3	45.08	7.29	7.70	-0.41	
T122	26.8	31	102	IPC	42.38	4.59	4.57	0.02	0.0
				ES	45.72	7.93	7.97	-0.04	
BCS	33.9	38	99	EP-	43.50	5.71	5.71	0.00	0.0
SGS	54.4	338	94	EP	46.80	9.01	9.06	-0.20	0.0
OSB	103.4	330	87	EP 3	54.65	16.86	17.11	-0.25	1.8
				ES	67.61	29.82	29.86	-0.04	
JSC	193.0	332	48	EP 4	8.39	30.60	29.07	1.53	0.0

```
**********************************************
*   DATE            771220                   *
*   ORIGIN TIME     2341:23.30  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         33: 3.86 N              *
*   LONGITUDE        80:13.91 W              *
*   DEPTH            11.95(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           1.8                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   10           115          0.14           C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               1.65         -120.00
               2.00          -30.00
               5.23         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	8.0	54	146	IPD	25.78	2.48	2.37	0.11	0.0
				ES 3	26.45	3.15	4.13	-0.98	
SVS	10.7	188	137	IPD0	26.00	2.70	2.64	0.06	1.5
BCS	17.6	122	123	IPD0	26.64	3.34	3.50	-0.16	0.0
				ES 4	28.45	5.15	6.11	-0.95	
HBF	20.0	223	120	EP	26.50	3.20	3.83	-0.13	2.1
MGS	20.4	155	119	EP	27.10	3.80	3.89	0.01	0.0
				ES 2	30.08	6.78	6.79	0.16	
CCS	27.6	185	112	EP-	28.40	5.10	4.95	0.15	0.0
				ES 2	31.69	8.39	8.64	-0.25	
SGS	29.8	299	110	EP 3	28.60	5.30	5.28	-0.13	1.8
NHS	44.4	89	102	EP 4	29.90	6.60	7.57	-0.97	0.0
VSC	79.2	255	94	EP 4	36.35	13.05	13.16	-0.11	0.0

```
*********************************************
*   DATE            780907                  *
*   ORIGIN TIME     2253:22.96  UTC         *
*                                           *
*   REGION    SUMMERVILLE-MIDDLETON PLACE   *
*   LATITUDE         33: 3.80 N             *
*   LONGITUDE        80:12.60 W             *
*   DEPTH             9.96(km)              *
*                   Free Depth Solution     *
*                                           *
*   MAG(D)           2.6                    *
*********************************************

Num.Obs.        Gap          RMS          Quality
   28            56          0.12            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.39          -26.00
               0.59         -116.00
               0.73         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	6.6	42	146	IPC	24.91	1.95	1.97	-0.02	0.0
SVS	11.1	199	131	IPC	25.34	2.38	2.46	-0.08	0.0
BCS	15.8	125	121	IPC	26.07	3.11	3.08	0.03	0.0
MGS	19.5	161	116	IPC	26.54	3.58	3.62	0.06	0.0
				ES 2	29.27	6.31	6.31	0.17	
PBS	24.4	348	111	IPC	27.53	4.57	4.35	0.17	2.4
				ES	30.67	7.71	7.59	0.03	
CCS	27.7	189	108	IPD	27.84	4.88	4.86	0.02	0.0
				ES 2	31.84	8.88	8.48	0.40	
PPS	31.0	149	106	EP 4	28.50	5.54	5.36	0.18	0.0
				ES 2	32.47	9.51	9.36	0.15	
NHS	42.4	89	101	EP-	30.08	7.12	7.18	-0.06	2.7
				ES 2	34.96	12.00	12.53	-0.53	
BOW	53.1	310	97	EP+	31.98	9.02	8.90	0.02	0.0
COW	58.0	308	96	EP	32.55	9.59	9.69	-0.10	0.0
				ES 4	40.41	17.45	16.91	0.54	
WMS	63.8	309	95	EP	33.47	10.51	10.63	0.03	0.0
ROW	63.9	302	95	EP+	33.55	10.59	10.66	-0.02	2.6
				ES 4	42.25	19.29	18.61	0.77	
OSB	79.8	312	92	EP 3	36.00	13.04	13.25	-0.21	0.0
VSC	81.1	255	92	EP-	36.27	13.31	13.46	-0.15	2.6
				ES 4	47.19	24.23	23.49	0.74	
SRPW	128.6	277	48	EP-	43.60	20.64	20.88	-0.24	0.0
				ES	59.40	36.44	36.43	0.01	
SRPN	131.9	283	48	IPD	44.50	21.54	21.28	0.26	0.0
				ES	60.10	37.14	37.13	0.01	
SRPD	140.6	274	48	EP-	45.30	22.34	22.34	0.00	0.0
				ES	62.10	39.14	38.98	0.16	
JSC	166.2	324	48	EP 3	48.68	25.72	25.44	0.28	0.0
				ES	67.40	44.44	44.40	0.04	
LHS	166.5	341	48	EP 3	48.45	25.49	25.48	-0.09	0.0
PRM	229.7	300	48	EP+	56.41	33.45	33.16	0.30	0.0
CHF	245.2	296	48	EP 4	58.75	35.79	35.05	0.74	0.0

```
**********************************************
*   DATE              781030                   *
*   ORIGIN TIME        915: 6.46  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 2.68 N               *
*   LONGITUDE         80: 9.13 W               *
*   DEPTH              6.78(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            0.0                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   13            93          0.06            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.27          -27.00
               0.38         -117.00
               0.88         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG (sec)
AIN	7.0	352	134	IPC	8.02	1.56	1.61	-0.05	0.0
				ES	9.31	2.85	2.82	0.03	
BCS	10.3	133	123	IPC	8.47	2.01	2.04	-0.03	0.0
MGS	16.4	176	111	IPC	9.32	2.86	2.94	0.02	0.0
				ES	11.54	5.08	5.13	0.13	
HBF	24.5	240	104	EP 3	10.14	3.68	4.20	-0.02	0.0
PPS	26.7	157	103	EP 4	11.50	5.04	4.55	0.49	0.0
				ES	14.34	7.88	7.94	-0.06	
CCS	27.1	201	102	EP-	11.00	4.54	4.62	-0.08	0.0
				ES	14.54	8.08	8.07	0.01	
NHS	37.1	85	98	EP+	12.74	6.28	6.24	0.04	0.0
SGS	37.4	296	98	EP 2	13.05	6.59	6.29	0.15	0.0
				ES	17.68	11.22	10.97	-0.01	
VSC	85.9	258	89	EP	20.71	14.25	14.24	0.02	0.0
MTT	158.7	300	48	EP 4	32.55	26.09	24.89	1.00	0.0
				ES 4	51.70	45.24	43.43	1.46	

```
**********************************************
*   DATE            781030                   *
*   ORIGIN TIME      915:13.00  UTC          *
*                                             *
*   REGION    SUMMERVILLE-MIDDLETON PLACE     *
*   LATITUDE         33: 2.73 N               *
*   LONGITUDE        80: 9.04 W               *
*   DEPTH             7.34(km)                *
*                   Free Depth Solution       *
*                                             *
*   MAG(D)            1.8                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   10            95          0.10            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.64           14.00
               0.99          -76.00
               1.90         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	6.9	351	136	IPC	14.56	1.56	1.67	-0.11	1.9
				ES	16.04	3.04	2.91	0.13	
BCS	10.3	134	125	IPC	15.03	2.03	2.09	-0.06	0.0
MGS	16.5	177	113	IPC	15.84	2.84	2.99	-0.04	0.0
				ES	18.05	5.05	5.21	0.02	
HBF	24.6	240	105	EP 3	16.83	3.83	4.25	0.08	2.0
PPS	26.7	157	104	EP 4	17.50	4.50	4.58	-0.08	0.0
				ES 4	20.85	7.85	7.99	-0.14	
CCS	27.3	201	103	EP-	17.58	4.58	4.67	-0.09	0.0
				ES	21.34	8.34	8.14	0.20	
NHS	37.0	85	99	EP+	19.32	6.32	6.23	0.09	1.9
SGS	37.5	296	99	EP 2	19.56	6.56	6.31	0.10	1.7

```
**********************************************
*   DATE              781030                   *
*   ORIGIN TIME        916: 2.78  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 2.59 N               *
*   LONGITUDE         80: 9.23 W               *
*   DEPTH              7.11(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            0.0                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
    9            96          0.07            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.53          -3.00
               0.84         -93.00
               1.59        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	7.2	353	134	IPC	4.35	1.57	1.67	-0.10	0.0
				ES	5.77	2.99	2.91	0.08	
BCS	10.3	132	124	IPC	4.82	2.04	2.07	-0.03	0.0
MGS	16.2	176	113	IPC	5.62	2.84	2.93	0.01	0.0
				ES	7.84	5.06	5.12	0.12	
HBF	24.3	240	105	EP 4	6.13	3.35	4.18	-0.33	0.0
PPS	26.6	156	103	EP 4	7.70	4.92	4.55	0.37	0.0
				ES	10.67	7.89	7.93	-0.04	
CCS	26.9	201	103	EP	7.33	4.55	4.60	-0.05	0.0
NHS	37.3	85	99	EP+	9.10	6.32	6.27	0.05	0.0
SGS	37.3	296	98	EP+2	9.40	6.62	6.29	0.18	0.0
				ES 4	14.69	11.91	10.97	0.68	

```
**********************************************
*   DATE              781030                   *
*   ORIGIN TIME       916:14.92  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          33: 2.32 N               *
*   LONGITUDE         80: 9.02 W               *
*   DEPTH              2.95(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            2.4                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   13            93          0.17            B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.75          -27.00
               1.18         -117.00
               3.86         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	7.7	351	110	IPC	16.19	1.27	1.37	-0.09	2.5
BCS	9.7	131	106	IPD	16.62	1.70	1.69	0.02	0.0
				ES	18.08	3.16	2.95	0.22	
MGS	15.7	177	100	IPC	17.50	2.58	2.66	0.03	2.4
				ES	19.59	4.67	4.64	0.21	
HBF	24.3	241	95	EP 4	17.98	3.06	4.06	-0.50	2.5
PPS	26.0	157	95	EP 4	19.40	4.48	4.34	0.14	0.0
				ES	22.52	7.60	7.58	0.03	
CCS	26.6	202	95	IPD	19.19	4.27	4.44	-0.16	0.0
				ES 4	22.28	7.36	7.74	-0.38	
PBS	28.7	338	94	EP	19.86	4.94	4.79	0.10	0.0
NHS	37.0	84	92	IP	20.95	6.03	6.16	-0.13	2.4
SGS	37.9	297	92	EP 2	21.27	6.35	6.31	-0.10	2.3
				ES	26.52	11.60	11.01	0.34	
BOW	59.1	309	89	EP 4	25.20	10.28	9.82	0.36	0.0
				ES 4	32.15	17.23	17.14	-0.08	
COW	64.1	307	89	EP 4	25.89	10.97	10.65	0.33	0.0
				ES 4	34.52	19.60	18.58	1.03	
OSB	85.8	311	87	EP 4	29.82	14.90	14.24	0.66	0.0
				ES 4	38.93	24.01	24.85	-0.84	
VSC	85.9	258	87	EP	28.91	13.99	14.26	-0.27	0.0
MTT	159.2	300	47	EP	40.89	25.97	25.37	0.40	0.0
JSC	171.7	323	47	EP 4	42.85	27.93	26.89	1.05	0.0

```
**********************************************
*   DATE              781030                   *
*   ORIGIN TIME       1004:22.00  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33: 3.71 N              *
*   LONGITUDE          80:11.22 W              *
*   DEPTH              17.47(km)               *
*                     Free Depth Solution      *
*                                              *
*   MAG(D)             1.3                     *
**********************************************

Num.Obs.          Gap           RMS          Quality
    4             153           0.00             D

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  3.01      -123.00
                  6.51       -33.00
                 10.56       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	5.5	24	162	EP	25.00	3.00	3.00	0.00	1.3
MGS	18.8	167	132	EP-	26.10	4.10	4.20	0.00	1.0
HBF	22.9	231	126	EP	26.21	4.21	4.71	0.00	1.4
NHS	40.3	88	111	EP	29.18	7.18	7.18	0.00	1.4

```
**********************************************
*   DATE              790127                   *
*   ORIGIN TIME       2355:15.65  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33: 3.04 N              *
*   LONGITUDE          80:10.91 W              *
*   DEPTH               6.23(km)               *
*                     Free Depth Solution      *
*                                              *
*   MAG(D)             2.8                     *
**********************************************
```

Num.Obs.	Gap	RMS	Quality
16	71	0.14	A

68% Confidence Ellipse and Vertical Deviation

Semi-Axis	Length(km)	Trend
	0.68	-30.00
	0.87	-120.00
	2.26	vertical

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
AIN	6.5	16	133	IPC	17.24	1.59	1.49	0.10	0.0
				ES 4	19.25	3.60	2.60	0.99	
SVS	11.0	215	119	IPC	17.79	2.14	2.09	0.04	0.0
BCS	12.9	127	115	EP+	18.04	2.39	2.37	0.02	0.0
MGS	17.5	167	109	IPC	18.75	3.10	3.07	0.13	0.0
				ES	20.82	5.17	5.36	-0.01	
HBF	22.5	235	104	IPC	18.89	3.24	3.86	-0.13	2.7
PBS	26.5	343	102	EP 4	23.15	7.50	4.50	2.95	0.0
CCS	26.9	195	101	IPD	20.28	4.63	4.57	0.06	0.0
				ES 2	23.50	7.85	7.97	-0.13	
PPS	28.5	152	101	EP 4	20.95	5.30	4.82	0.48	0.0
				ES 2	23.91	8.26	8.41	-0.16	
SGS	34.6	297	98	IPD	21.70	6.05	5.82	0.07	2.6
NHS	39.8	87	96	IPD	22.14	6.49	6.67	-0.18	2.7
BOW	56.0	310	93	EP 2	25.29	9.64	9.32	0.22	0.0
COW	60.9	307	92	EP	25.64	9.99	10.13	-0.14	0.0
WMS	66.7	309	91	EP 2	26.76	11.11	11.08	0.18	0.0
				ES 4	35.06	19.41	19.33	0.33	
ROW	66.9	301	91	EP	26.57	10.92	11.12	-0.15	0.0
OSB	82.7	312	89	EP 4	29.43	13.78	13.71	0.06	0.0
MTT	156.0	300	48	EP 4	41.50	25.85	24.62	1.03	2.9
LHS	168.7	340	48	EP	42.50	26.85	26.16	0.59	0.0
JSC	168.9	324	48	EP 4	42.28	26.63	26.18	0.45	3.0
				ES 4	62.29	46.64	45.68	0.96	
PRM	232.6	299	48	EP 4	49.86	34.21	33.93	0.28	0.0

```
**********************************************
*   DATE              790811                   *
*   ORIGIN TIME       211:56.59  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:59.35 N               *
*   LONGITUDE         80:13.62 W               *
*   DEPTH             10.43(km)                *
*                   Free Depth Solution        *
*                                              *
*   MAG(D)            2.5                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
   14           100          0.09           A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.53          -51.00
               1.04           39.00
               1.16         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SVS	3.0	222	164	IPD	58.30	1.71	1.79	-0.08	0.0
				ES	59.65	3.06	3.13	-0.06	
MGS	13.0	142	128	IPC	59.30	2.71	2.75	0.06	0.0
				ES	61.24	4.65	4.80	0.03	
BCS	14.6	94	125	IPC	59.56	2.97	2.95	0.02	0.0
HBF	15.4	246	123	IPD	59.33	2.74	3.07	0.17	2.6
CCS	19.4	188	117	IPC	0.15	3.56	3.63	-0.06	0.0
				ES 4	2.55	5.96	6.33	-0.37	
PPS	25.4	136	111	EP+	1.05	4.46	4.52	-0.06	0.0
				ES 4	4.03	7.44	7.89	-0.44	
PBS	32.3	354	106	EP+2	2.48	5.89	5.60	0.25	0.0
				ES 4	5.47	8.88	9.77	-0.97	
SGS	34.9	310	105	IPD	2.78	6.19	6.00	0.04	2.5
				ES 4	6.40	9.81	10.47	-0.92	
BOW	57.6	318	97	EP-	6.41	9.82	9.65	0.08	2.4
				ES 4	10.90	14.31	16.83	-2.70	
COW	62.2	315	96	EP-	6.84	10.25	10.39	-0.13	2.5
ROW	67.3	308	95	IPD	7.67	11.08	11.22	-0.09	2.3
				ES 4	15.75	19.16	19.58	-0.33	
LHS	173.8	342	48	EP 4	22.30	25.71	26.32	-0.70	0.0
PRM	232.7	301	48	EP 3	30.50	33.91	33.47	0.44	0.0

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**********************************************
*   DATE              791005                   *
*   ORIGIN TIME       2305:54.74  UTC          *
*                                              *
*   REGION    ADAMS RUN                        *
*   LATITUDE           32:46.91 N              *
*   LONGITUDE          80:16.85 W              *
*   DEPTH              13.06(km)               *
*                     Free Depth Solution      *
*                                              *
*   MAG(D)             2.1                     *
**********************************************

Num.Obs.          Gap          RMS          Quality
   13             278          0.18             B

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               1.67          -59.00
               2.87           31.00
               2.70          vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	18.3	46	124	IP	58.40	3.66	3.70	0.06	0.0
HBF	19.1	332	123	IPD	58.21	3.47	3.80	0.17	2.2
				ES	60.70	5.96	6.63	0.20	
SVS	21.0	8	121	IP	58.60	3.86	4.06	-0.20	0.0
SGS	50.5	335	101	IPC	3.33	8.59	8.56	-0.12	2.1
				ES 4	10.94	16.20	14.94	1.00	
PBS	55.2	2	100	EP 4	4.32	9.58	9.31	0.22	0.0
				ES	11.15	16.41	16.25	0.07	
BOW	73.8	333	96	EP	7.15	12.41	12.31	0.00	0.0
COW	77.5	330	95	EP	7.55	12.81	12.90	-0.09	0.0
				ES	16.95	22.21	22.50	-0.29	
ROW	80.5	323	94	IPC	8.00	13.26	13.39	-0.08	2.1
WMS	83.3	329	94	EP 4	8.14	13.40	13.85	-0.30	0.0
				ES	18.90	24.16	24.16	0.26	
OSB	99.8	328	91	EP 4	10.78	16.04	16.52	-0.48	0.0
				ES 4	24.20	29.46	28.82	0.64	
JSC	189.3	331	49	EP	23.20	28.46	27.91	0.55	0.0
				ES 4	47.70	52.96	48.71	4.25	
LHS	194.5	345	49	EP	24.10	29.36	28.55	0.71	0.0

```
**********************************************
*   DATE              791021                   *
*   ORIGIN TIME       710:28.65  UTC           *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE          32:55.18 N               *
*   LONGITUDE         80:11.13 W               *
*   DEPTH             10.66(km)                *
*                    Free Depth Solution       *
*                                              *
*   MAG(D)            1.6                      *
**********************************************

Num.Obs.        Gap          RMS          Quality
    8           154          0.05            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.91         -116.00
               1.17          -26.00
               2.46         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
MGS	4.9	121	155	EP	30.50	1.85	1.93	0.02	1.5
HBF	18.1	275	119	IPD	31.60	2.95	3.46	0.00	1.7
				ES 4	33.20	4.55	6.03	-0.61	
AIN	20.9	6	116	EP	32.50	3.85	3.87	-0.01	1.6
SGS	43.0	315	101	EP	36.00	7.35	7.29	-0.09	1.6
				ES 4	40.90	12.25	12.73	-0.74	
BOW	66.0	320	95	EP	39.80	11.15	11.01	0.04	0.0
				ES	48.00	19.35	19.21	-0.04	
COW	70.4	317	94	EP	40.40	11.75	11.73	0.02	0.0
				ES	49.20	20.55	20.47	0.09	

```
*********************************************
*   DATE            791207                  *
*   ORIGIN TIME      543:34.97  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         33: 0.40 N              *
*   LONGITUDE        80:10.06 W              *
*   DEPTH             4.59(km)               *
*                   Free Depth Solution      *
*                                            *
*   MAG(D)           2.9                     *
*********************************************

Num.Obs.        Gap          RMS          Quality
   24           105          0.12            A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.38          -23.00
               0.65         -113.00
               1.41         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
SVS	8.7	241	117	IPC	36.55	1.58	1.63	-0.04	0.0
				ES 4	37.72	2.75	2.84	-0.09	
BCS	9.4	108	115	IPD	36.66	1.69	1.74	-0.04	0.0
				ES	38.12	3.15	3.03	0.12	
AIN	11.1	2	112	IPD	36.82	1.85	2.00	-0.15	0.0
				ES	38.49	3.52	3.49	0.03	
MGS	12.4	168	110	IPC	37.00	2.03	2.20	-0.06	0.0
				ES	38.89	3.92	3.83	0.26	
HBF	21.3	247	101	IPD2	37.73	2.76	3.61	-0.35	2.7
				ES 4	39.81	4.84	6.30	-0.59	
CCS	22.7	201	100	IPD	38.82	3.85	3.84	0.02	0.0
				ES 4	41.42	6.45	6.69	-0.24	
PPS	23.6	150	100	EP 4	39.20	4.23	3.98	0.25	0.0
				ES	41.96	6.99	6.94	0.05	
PBS	31.5	343	96	EP 3	40.48	5.51	5.28	0.18	0.0
				ES	44.22	9.25	9.21	-0.05	
SGS	38.2	303	94	IPD	41.35	6.38	6.38	-0.15	2.7
				ES	46.64	11.67	11.14	0.27	
BOW	60.2	313	91	EP+	45.15	10.18	10.00	0.08	0.0
				ES 4	53.10	18.13	17.45	0.50	
COW	65.0	310	90	EP+	45.77	10.80	10.80	0.00	0.0
ROW	70.7	304	89	EP+	46.68	11.71	11.74	0.03	0.0
				ES 4	55.10	20.13	20.48	-0.26	
WMS	70.8	311	89	EP 4	46.74	11.77	11.76	0.16	0.0
				ES	55.25	20.28	20.52	0.02	
VRN	72.4	273	89	IPC	46.85	11.88	12.02	-0.14	2.2
OSB	87.0	314	88	EP	49.50	14.53	14.43	0.11	0.0
				ES	60.35	25.38	25.17	0.21	
MTT	159.6	301	47	EP+	0.40	25.43	25.24	-0.01	3.1
JSC	173.7	324	47	EP	1.80	26.83	26.94	-0.11	3.1
				ES	22.20	47.23	47.02	0.22	
LHS	173.8	340	47	EP 4	1.10	26.13	26.96	-0.92	0.0
				ES 4	21.68	46.71	47.04	-0.50	
PRM	236.4	300	47	EP 4	9.60	34.63	34.57	0.06	0.0

```
**********************************************
*   DATE            791217                   *
*   ORIGIN TIME     1734:56.82  UTC          *
*                                            *
*   REGION    BOWMAN                         *
*   LATITUDE          33:28.61 N             *
*   LONGITUDE         80:40.03 W             *
*   DEPTH              7.36(km)              *
*                    Free Depth Solution     *
*                                            *
*   MAG(D)            1.1                    *
**********************************************

Num.Obs.        Gap          RMS          Quality
    6           297          0.11            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
                  3.46       -66.00
                  7.14        24.00
                  7.94       vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
WMS	8.8	231	128	EP	59.10	2.28	1.98	0.00	0.0
				ES	60.70	3.88	3.34	0.03	
COW	11.1	196	121	EP	59.30	2.48	2.29	-0.21	1.1
				ES	61.40	4.58	3.88	0.03	
BOW	11.3	169	120	EP	59.56	2.74	2.33	0.11	0.0
				ES 4	61.90	5.08	3.94	0.63	
ROW	17.1	224	109	EP	0.60	3.78	3.21	0.07	1.1
				ES 4	4.10	7.28	5.43	1.00	

```
**********************************************
*   DATE              800622                   *
*   ORIGIN TIME       2033: 6.16  UTC          *
*                                              *
*   REGION    SUMMERVILLE-MIDDLETON PLACE      *
*   LATITUDE           33: 0.74 N              *
*   LONGITUDE          80: 9.51 W              *
*   DEPTH               0.24(km)               *
*                     Fixed Depth Solution     *
*                                              *
*   MAG(D)             2.1                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   15           115          0.17            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.82          -42.00
               1.03          -132.00
               8.53          vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
BCS	8.8	113	91	IPD	7.60	1.44	1.47	-0.03	0.0
				ES 2	8.45	2.29	2.56	-0.28	
SVS	9.7	240	91	IPC	7.82	1.66	1.62	0.04	0.0
				ES 2	8.92	2.76	2.83	-0.07	
AIN	10.5	358	91	IPC	7.82	1.66	1.76	-0.10	0.0
				ES 4	8.85	2.69	3.06	-0.38	
MGS	12.9	173	90	IPC	8.35	2.19	2.15	0.14	0.0
				ES 2	10.02	3.86	3.75	0.28	
HBF	22.3	247	89	IPD	9.05	2.89	3.72	-0.33	2.2
				ES 4	11.10	4.94	6.49	-0.68	
SGS	38.6	301	88	IPD	12.98	6.82	6.43	0.23	2.2
BOW	60.6	312	86	IPD	16.43	10.27	10.09	0.08	0.0
				ES 2	24.16	18.00	17.61	0.21	
COW	65.0	309	86	EP 4	16.47	10.31	10.82	-0.52	1.9
				ES 4	24.35	18.19	18.89	-0.70	
ROW	71.1	303	86	EP 2	17.93	11.77	11.83	-0.02	0.0
OSB	87.2	313	85	EP 2	20.49	14.33	14.51	-0.18	0.0
				ES 4	32.75	26.59	25.31	1.27	
LHS	173.5	340	47	EP 4	34.83	28.67	27.41	1.16	0.0
				ES 4	55.47	49.31	47.83	1.30	
JSC	173.7	324	47	EP 3	34.00	27.84	27.43	0.40	0.0
				ES 2	53.87	47.71	47.87	-0.16	

```
**********************************************
*   DATE            800622                   *
*   ORIGIN TIME     2335:26.52  UTC          *
*                                            *
*   REGION    SUMMERVILLE-MIDDLETON PLACE    *
*   LATITUDE         33: 0.90 N              *
*   LONGITUDE        80: 9.49 W              *
*   DEPTH             0.26(km)               *
*                   Fixed Depth Solution     *
*                                            *
*   MAG(D)           1.6                     *
**********************************************

Num.Obs.        Gap          RMS          Quality
   12           117          0.18            C

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.93          -32.00
               1.16         -122.00
               9.86         vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
BCS	8.9	115	91	IPD	27.93	1.41	1.48	-0.08	0.0
				ES 2	29.00	2.48	2.59	-0.11	
SVS	9.9	239	91	IPC	28.15	1.63	1.65	-0.02	0.0
				ES 2	29.45	2.93	2.88	0.05	
AIN	10.2	358	91	IPC	28.16	1.64	1.70	-0.07	0.0
				ES 4	29.11	2.59	2.97	-0.39	
MGS	13.2	173	90	IPC	28.71	2.19	2.20	0.09	0.0
				ES	30.37	3.85	3.84	0.19	
HBF	22.5	246	89	IPD	29.45	2.93	3.74	-0.32	1.7
				ES 4	31.66	5.14	6.53	-0.52	
SGS	38.5	301	88	EP	33.35	6.83	6.41	0.27	1.5
BOW	60.4	312	86	EP 2	36.85	10.33	10.06	0.17	0.0
JSC	173.4	324	47	EP 3	53.70	27.18	27.40	-0.23	0.0
				ES 2	74.30	47.78	47.82	-0.04	

```
*********************************************
*   DATE            800701                  *
*   ORIGIN TIME     2333:19.81  UTC         *
*                                           *
*   REGION    BOWMAN                        *
*   LATITUDE         33:22.83 N             *
*   LONGITUDE        80:40.37 W             *
*   DEPTH             2.05(km)              *
*                   Free Depth Solution     *
*                                           *
*   MAG(D)            1.6                   *
*********************************************

Num.Obs.        Gap         RMS         Quality
   15           127         0.11           A

68% Confidence Ellipse and Vertical Deviation
     Semi-Axis Length(km)    Trend
               0.38         -61.00
               0.95          29.00
               0.89        vertical
```

STATION	DIST (km)	AZM (deg)	AIN (deg)	PHASE	TIME (sec)	TOBS (sec)	TCAL (sec)	RES (sec)	DMAG
COW	2.6	271	128	IPD	20.85	1.04	0.58	0.06	0.0
				ES	21.51	1.70	0.98	0.04	
BOW	2.8	99	125	IPD	20.55	0.74	0.62	-0.17	1.6
WMS	8.2	309	102	IPC	21.63	1.82	1.49	0.03	1.6
				ES	22.97	3.16	2.52	0.14	
ROW	11.4	262	97	IPC	22.27	2.46	2.05	-0.09	1.7
				ES 4	23.61	3.80	3.47	-0.51	
OSB	24.4	319	89	IPC	24.28	4.47	4.32	0.05	1.5
				ES	27.24	7.43	7.30	-0.04	
SGS	25.6	144	88	IPC	24.50	4.69	4.53	0.01	0.0
PBS	39.7	106	83	EP 4	24.85	5.04	6.98	-1.94	0.0
				ES	31.85	12.04	11.81	0.23	
MTT	98.4	295	67	EP	36.62	16.81	16.86	-0.05	0.0
				ES	48.35	28.54	28.51	0.03	
JSC	113.4	331	64	EP-3	38.67	18.86	19.26	-0.39	0.0
				ES 2	52.00	32.19	32.56	-0.37	
PRM	175.0	296	52	EP 3	48.40	28.59	28.38	0.22	0.0

Other South Carolina Events
January 1978-July 1980

Table 5. - Other South Carolina events January 1978 - July 1980

Catalog		Origin time (UTC)						North	East	Focal		Error ellipsoid axes										Res	No.				Hypo
REG	Index	yr	mo.	d	h	min	s	latitude (deg)	longitude (deg)	depth (km)	M	a(km)	Tr	Pl	b(km)	Tr	Pl	c(km)	Tr	Pl	%	(s)	ob	Gap	DM	Q	auth
III	1	1978	1	30	17	9	6.780E	34.931	-81.781	13.1	...	48.2	349	6	13.7	253	42	19.1	86	47	68	0.25	5	270	<1	D	....
III	2	1978	2	8	20	35	39.550E	34.062	-82.134	10.9	2.5	15.7	101	5	37.8	10	5	>99.9	235	82	68	1.63	7	153	58	D	....
III	3	1978	2	14	17	6	41.080E	34.794	-81.756	6.4	2.5	2.4	254	0	9.8	344	3	>99.9	163	87	68	0.18	5	250	97	D	....
III	4	1978	3	2	22	3	26.950E	33.519	-82.612	4.9	2.1	12.2	238	0	5.4	148	2	>99.9	327	88	68	0.19	4	306	..	D	....
III	5	1978	3	8	22	15	50.400E	34.200	-82.098	5.0	2.1	3.9	76	1	20.3	166	1	>99.9	301	88	68	....	3	201	78	D	....
III	6	1978	3	8	22	15	57.570	33.975	-81.323	5.0	2.3	2.2	38	0	9.6	128	4	.....	308	86	68	....	3	189	73	D	....
III	7	1978	3	17	22	15	29.090	34.669	-82.160	12.6	...	3.3	73	1	17.2	164	3	>99.9	325	86	68	....	4	269	93	D	....
III	8	1978	3	27	20	56	44.670E	34.776	-82.595	0.6	2.5	4.8	53	8	18.5	320	21	3.0	163	67	68	0.62	11	282	..	D	....
III	9	1978	3	29	22	10	32.810	33.553	-82.552	1.5	2.4	4.1	119	7	8.0	27	17	28.1	230	71	68	0.32	7	286	..	D	....
III	10	1978	5	2	1	46	11.640	34.163	-82.737	16.3	2.9	6.8	286	1	14.7	195	29	4.5	18	60	68	....	4	307	..	D	....
III	11	1978	5	16	16	6	11.860E	34.953	-81.811	10.7	2.6	3.3	262	1	13.6	352	3	>99.9	153	86	68	0.32	5	272	..	D	....
III	12	1978	6	5	21	37	44.560E	33.538	-82.590	23.2	2.6	4.0	143	10	7.3	235	11	80.1	11	75	68	....	4	285	92	D	....
III	13	1978	6	11	5	28	20.470	34.043	-81.644	3.5	2.5	2.1	227	0	2.9	317	0	.....	90	89	68	0.03	4	216	66	D	....
III	14	1978	6	12	6	33	16.050	34.043	-82.458	3.5	2.5	1.8	255	0	5.1	345	0	>99.9	90	90	68	0.04	5	163	83	D	....
III	15	1978	7	9	00	26	3.610	33.653	-82.611	8.6	2.6	8.1	219	5	4.2	128	7	>99.9	344	81	68	0.17	5	302	..	D	....
III	16	1978	7	9	7	3	34.420	33.492	-82.792	0.1	2.8	5.3	142	1	25.5	232	12	>99.9	47	77	68	0.05	4	290	..	D	....
III	17	1978	8	4	16	21	30.310E	33.987	-81.049	3.9	2.1	1.9	336	0E	3.9	246	0	>99.9	270	89	68	0.17	6	168	59	D	....
III	18	1978	10	4	21	36	36.680	33.570	-82.545	1.7	2.2	2.5	309	0	7.2	39	25	46.2	219	65	68	0.16	6	265	87	D	....
III	19	1978	10	10	13	58	58.820E	34.882	-81.761	17.8	2.4	0.8	266	11	1.8	4	36	3.6	161	51	68	0.08	7	259	..	B	....
III	20	1978	10	10	16	28	18.050	33.979	-81.034	12.5	2.0	2.0	181	2	3.2	271	2	31.8	45	87	68	0.03	5	139	59	D	....
III	21	1978	10	12	21	31	38.380	33.812	-82.441	8.1	2.3	3.6	114	16	5.0	209	17	13.4	344	66	68	0.39	5	266	..	D	....
III	22	1978	10	13	21	28	31.250E	34.313	-82.151	3.5	2.1	2.3	255	0	7.5	345	0	.....	90	90	68	0.03	4	221	78	D	....
III	23	1978	10	24	22	1	25.260	34.401	-82.842	1.2	2.2	4.4	36	12	24.6	301	20	2.6	155	66	68	0.16	6	297	..	D	....
III	24	1978	11	2	18	5	0.970E	34.837	-81.742	0.9	2.2	3.7	96	12	39.2	1	19	3.3	216	67	68	0.63	7	284	..	D	....
III	25	1978	11	2	22	11	14.260E	34.246	-82.108	6.3	2.0	1.7	70	1	24.5	340	14	>99.9	165	75	68	0.24	5	197	78	D	....
III	26	1978	11	6	17	6	14.500E	33.980	-81.021	4.5	1.9	0.9	350	0	1.3	260	0	>99.9	270	90	68	0.17	8	142	59	D	....
III	27	1978	11	6	22	20	38.450E	34.068	-82.056	4.9	1.9	2.0	81	1	25.8	171	12	>99.9	347	77	68	0.30	7	192	77	D	....
III	28	1978	11	7	17	1	2.570E	33.978	-81.024	3.4	1.9	0.6	170	1	0.9	80	1	4.8	305	88	68	0.07	7	141	59	B	....
III	29	1978	11	13	17	2	46.580E	34.951	-81.793	0.0	...	4.2	257	0	20.8	347	2	97.1	166	88	68	0.28	4	272	..	D	....
III	30	1978	11	13	20	4	53.100	34.175	-81.584	5.0	2.2	6.6	287	0	27.6	17	2	>99.9	197	88	68	0.78	6	234	98	D	....
III	31	1978	11	14	20	2	49.710	33.858	-82.348	31.8	1.8	16.9	236	19	>99.9	340	35	4.2	122	48	68	0.44	6	210	67	D	....
III	32	1978	11	14	22	35	25.030	34.188	-82.098	4.0	2.0	2.3	252	0	44.4	342	6	>99.9	161	84	68	0.22	6	187	78	D	....
III	33	1978	11	15	16	3	34.650E	34.905	-81.776	12.8	2.2	7.3	262	1	16.4	352	7	>99.9	163	82	68	0.46	6	261	..	D	....
III	34	1978	11	15	20	4	11.290	34.251	-81.600	5.0	2.1	8.2	292	0	14.3	22	2	>99.9	202	88	68	0.65	6	243	..	D	....
III	35	1978	11	17	18	11	9.920E	33.983	-81.038	4.4	1.8	0.9	339	0	2.4	249	0	>99.9	270	89	68	0.17	7	139	59	D	....
III	36	1978	11	21	17	2	1.840	33.544	-82.596	3.5	2.4	1.8	135	7	4.1	228	29	8.7	32	60	68	0.18	8	264	92	C	....
III	37	1978	12	7	16	9	11.010	34.886	-81.774	11.3	2.3	3.1	260	1	17.1	350	5	>99.9	158	84	68	0.05	4	259	..	D	....
III	38	1978	12	14	21	21	22.880E	33.984	-81.018	3.9	1.8	0.3	335	0	0.6	245	0	59.6	270	89	68	0.21	7	142	58	D	....
III	39	1978	12	15	20	32	0.430	34.003	-80.723	24.3	1.9	17.9	2	0	44.6	272	40	72.7	92	50	68	2.02	7	201	58	D	....
III	40	1978	12	21	17	32	9.920	34.793	-82.660	0.6	2.0	5.8	230	5	42.3	322	24	3.1	128	65	68	0.30	7	298	..	D	....

Table 5. - continued

Catalog		Origin time (UTC)						North latitude	East longitude	Focal depth		Error ellipsoid axes									Rms	No.				Hypo
REG	Index	yr	mo	d	h	min	s	(deg)	(deg)	(km)	M	a(km)	Tr	Pl	b(km)	Tr	Pl	c(km)	Tr	Pl	%	(s)	ob	Gap	DM	Q	auth	*
III	41	1979	1	4	19	53	53.560E	33.964	-81.065	3.9	1.7	0.4	328	0	0.6	238	0	70.1	270	89	68	0.28	8	183	58	D	....	
III	42	1979	1	5	20	19	42.790	34.253	-82.637	26.9	2.4	90.5	139	6	67.7	232	29	15.6	38	60	68	1.66	7	272	..	D	....	
III	43	1979	1	5	22	44	5.040	34.014	-82.567	0.1	2.2	6.6	20	6	1.0	114	36	25.0	282	53	68	0.25	6	196	91	D	....	
III	44	1979	1	8	17	5	15.950E	34.875	-81.772	10.0	2.1	2.1	263	1	5.6	353	5	>99.9	161	84	68	0.37	7	258	..	D	....	
III	45	1979	1	16	18	28	31.490	33.346	-82.142	6.0	2.2	3.5	301	1	8.5	211	3	17.3	50	86	68	0.43	9	257	..	D	....	
III	46	1979	1	19	8	55	35.930	34.691	-82.871	0.3	3.4	4.2	50	15	15.8	313	22	1.8	172	62	68	0.27	9	297	..	D	....	
III	47	1979	1	22	17	11	29.890	33.979	-81.038	5.0	1.7	1.8	256	0	1.4	166	1	82.4	345	88	68	0.14	7	139	59	D	....	
III	48	1979	1	22	22	35	51.220	34.369	-83.094	5.6	2.0	>99.9	227	28	57.9	341	38	87.3	111	39	68	2.75	7	324	..	D	....	
III	49	1979	2	26	21	50	18.940	34.733	-82.557	0.1	2.3	8.7	324	21	2.7	64	24	1.2	198	57	68	0.12	7	278	..	C	....	
III	50	1979	2	27	22	16	43.380	34.060	-82.621	1.5	1.8	64.8	291	7	20.1	25	26	>99.9	188	62	68	1.16	6	293	97	D	....	
III	51	1979	2	27	22	43	2.340	33.532	-82.602	3.3	1.7	2.3	127	2	4.4	36	21	48.9	222	68	68	0.12	6	287	93	D	....	
III	52	1979	1	8	1	4	33.540	34.394	-81.307	4.0	2.3	4.1	272	0	6.1	2	0	>99.9	90	90	68	0.63	10	187	77	D	....	
III	53	1979	2	14	19	42	57.110E	34.541	-81.281	5.0	1.6	2.3	255	0E	3.8	345	4	>99.9	164	86	68	0.54	5	216	..	D	....	
III	54	1979	2	16	14	37	8.460	34.365	-81.353	1.2	3.4	1.3	262	6	2.1	172	6	5.1	37	81	68	0.30	14	184	73	C	....	
III	55	1979	2	20	23	20	44.630	34.389	-81.348	1.7	2.4	2.8	284	13	5.6	189	21	23.5	44	64	68	0.30	7	255	..	D	....	
III	56	1979	2	24	9	31	42.600	34.288	-81.282	7.9	2.1	2.3	234	9	5.0	330	35	6.6	131	53	68	0.17	6	167	68	C	....	
III	57	1979	3	14	16	58	40.550	34.100	-82.812	3.6	2.3	3.8	303	0	6.9	33	1	>99.9	213	88	68	0.34	7	330	..	D	....	
III	58	1979	3	19	19	23	22.410	34.721	-82.579	6.1	2.2	5.3	55	2	29.2	324	27	50.5	149	62	68	0.17	5	279	..	D	....	
III	59	1979	3	21	22	35	18.450	34.030	-82.568	0.5	2.1	7.9	174	10	1.0	75	40	29.1	275	48	68	0.12	5	182	92	D	....	
III	60	1979	3	22	3	17	45.990	34.417	-81.293	0.2	2.0	5.9	232	24	14.8	342	38	10.3	117	42	68	0.44	6	191	80	D	....	
III	61	1979	4	3	20	17	17.070	34.203	-81.148	10.9	1.5	2.9	139	17	7.6	243	37	34.1	29	47	68	0.29	6	204	..	D	....	
III	62	1979	4	6	22	18	12.960E	34.142	-82.038	3.6	...	1.5	257	0	47.5	347	0	>99.9	90	90	68	0.54	5	180	..	D	....	
III	63	1979	4	18	19	16	3.960	33.505	-82.031	17.3	2.1	3.2	109	18	7.3	207	25	11.8	347	58	68	0.01	5	272	..	D	....	
III	64	1979	4	22	2	4	57.570	34.397	-81.295	1.3	2.1	5.0	326	1	3.3	56	7	13.9	228	82	68	0.37	8	188	..	D	....	
III	65	1979	4	22	16	34	5.830	34.794	-81.000	30.0	2.2	13.0	191	3	20.2	99	33	2.4	285	56	68	0.41	5	275	..	D	....	
III	66	1979	4	24	9	49	56.180	34.313	-81.289	5.4	1.6	2.1	249	7	4.0	343	29	9.7	146	59	68	0.17	5	172	70	C	....	
III	67	1979	5	1	18	24	24.430E	33.911	-82.681	9.8	1.6	6.3	85	13	5.3	185	38	>99.9	340	49	68	0.34	5	322	..	D	....	
III	68	1979	5	4	12	13	9.120	34.347	-81.948	4.7	2.7	1.7	260	0	3.8	350	0	>99.9	90	90	68	0.33	10	203	69	D	....	
III	69	1979	5	7	10	00	18.580	34.349	-81.320	3.9	1.7	1.7	254	0	4.3	344	7	>99.9	163	83	68	0.28	5	180	..	D	....	
III	70	1979	5	8	11	19	50.960	34.412	-81.363	1.3	2.4	8.6	257	1	19.1	347	23	57.3	164	66	68	0.79	6	193	99	D	....	
III	71	1979	5	19	16	9	10.640	34.310	-83.008	25.3	2.1	17.1	231	7	11.3	137	28	3.7	333	60	68	0.54	5	322	..	D	....	
III	72	1979	6	5	9	37	43.920E	34.299	-81.310	4.4	2.2	3.8	252	7	8.4	344	17	23.1	140	71	68	0.28	6	170	68	D	....	
III	73	1979	6	11	16	21	4.320	34.126	-81.119	4.0	1.8	3.1	92	1	4.1	182	1	>99.9	317	88	68	0.20	5	193	63	D	....	
III	74	1979	6	30	1	35	8.660E	34.355	-81.328	1.3	2.3	2.8	62	4	4.0	332	4	11.0	196	84	68	0.20	6	182	..	D	....	
III	75	1979	7	17	20	13	7.350	34.743	-82.561	0.1	2.5	35.7	320	23	7.3	212	36	3.5	76	45	68	0.22	5	279	..	D	....	
III	76	1979	8	13	5	19	25.190	33.901	-82.535	23.3	4.1	4.1	18	25	2.3	268	37	0.9	134	42	68	0.08	7	228	85	B	....	
III	77	1979	8	26	1	31	46.740	34.850	-82.934	0.3	4.2	12.0	27	8	39.0	296	12	>99.9	151	75	68	0.05	4	301	..	D	....	
III	78	1979	10	3	3	43	9.680	34.393	-81.310	1.4	2.4	3.0	245	0	4.8	335	15	16.1	154	75	68	0.27	7	188	77	D	....	
III	79	1979	10	8	23	20	9.830	34.323	-81.361	0.0	2.9	2.0	76	4	2.7	168	30	5.0	340	59	68	0.21	8	177	68	B	....	
III	80	1979	10	14	8	23	57.040	34.307	-81.346	3.2	2.9	2.6	255	11	6.0	349	23	14.4	141	64	68	0.22	6	174	67	D	....	
III	81	1979	10	15	23	54	51.480E	34.331	-81.325	1.2	2.4	2.1	264	5	4.3	356	20	50.6	160	69	68	0.50	5	177	70	D	....	
III	82	1979	11	13	22	11	0.310E	34.017	-82.063	3.7	2.1	1.7	263	0	20.9	173	1	>99.9	352	88	68	0.05	5	202	80	D	....	
III	83	1979	12	7	20	20	56.080E	34.782	-82.621	1.6	...	7.1	63	9	19.1	331	9	40.3	196	77	68	0.30	6	284	..	D	....	
III	84	1979	12	10	22	10	0.270	34.126	-82.092	16.8	...	47.4	168	2	1.3	77	12	4.9	267	77	68	0.18	7	179	79	D	....	
III	85	1980	1	2	19	39	30.000	34.083	-82.618	1.3	2.1	3.2	36	14	17.8	301	20	9.9	159	65	68	1.34	5	284	98	D	....	

Table 5. - continued

Catalog		Origin time (UTC)						North latitude	East longitude	Focal depth		Error ellipsoid axes									Rms	No.				Hypo
REG	Indax	yr	mo	d	h	min	s	(deg)	(deg)	(km)	M	a(km)	Tr	Pl	b(km)	Tr	Pl	c(km)	Tr	Pl	X	(s)	ob	Gap	DM	Q	auth	*
III	86	1980	1	7	21	44	56.840	34.029	-82.573	1.4	2.0	57.4	341	5	1.9	73	15	8.8	234	74	68	0.46	5	183	..	D	....	
III	87	1980	1	9	21	36	52.420E	33.861	-82.062	3.0	2.0	1.9	85	3	11.5	353	20	34.2	183	69	68	0.67	5	231	87	D	....	
III	88	1980	1	17	21	8	35.720E	34.560	-82.257	0.8	2.0	2.7	241	0	19.0	331	0	>99.9	90	89	68	0.57	4	247	97	D	....	
III	89	1980	1	25	17	13	53.910E	34.775	-82.591	0.7	2.0	21.2	319	18	8.9	218	39	4.2	69	45	68	0.35	7	282	..	D	....	
III	90	1980	2	4	22	8	57.070E	33.977	-82.056	5.0	...	2.3	84	1	18.3	175	6	.....	345	83	68	....	3	211	81	D	....	
III	91	1980	2	6	20	44	2.710	34.017	-82.660	5.0	2.1	.....	270	12	>99.9	176	17	10.3	34	68	68	0.25	3	352	..	D	....	
III	92	1980	2	13	17	3	14.570	33.854	-82.519	12.1	...	3.2	113	19	5.5	209	19	>99.9	341	62	68	0.14	5	274	..	D	....	
III	93	1980	2	16	20	47	39.640	34.021	-82.740	1.9	2.0	14.4	16	18	7.1	271	36	16.8	128	48	68	0.22	6	328	..	D	....	
III	94	1980	2	29	21	18	33.450	33.143	-82.811	10.8	2.2	31.8	29	1	43.1	298	32	8.3	121	57	68	0.84	5	321	..	D	....	
III	95	1980	3	6	16	40	46.440	34.029	-82.830	8.3	1.9	40.8	182	9	9.3	89	21	5.0	293	67	68	0.20	6	344	..	D	....	
III	96	1980	3	6	22	16	7.890	33.672	-82.036	18.6	2.4	3.0	101	6	7.5	193	14	38.4	349	74	68	1.12	5	231	64	D	....	
III	97	1980	3	7	17	32	5.570	33.638	-82.226	6.3	1.9	6.6	207	9	3.3	115	11	12.3	335	75	68	1.66	5	268	..	D	....	
III	98	1980	3	10	22	11	30.620	34.340	-81.326	4.1	2.3	1.5	256	1	4.2	346	10	>99.9	160	79	68	0.23	6	179	..	D	....	
III	99	1980	3	15	20	40	4.100E	33.698	-82.605	4.9	2.0	21.9	123	1	65.6	214	10	>99.9	27	79	68	1.90	7	276	90	D	....	
III	100	1980	3	18	23	7	20.580E	34.038	-82.061	3.5	1.8	1.0	260	0	13.6	350	0	.....	90	90	68	0.13	6	198	79	D	....	
III	101	1980	3	20	17	22	13.280	34.031	-82.571	1.3	1.4	41.1	159	1	1.0	69	4	6.5	263	85	68	0.26	6	189	..	D	....	
III	102	1980	3	22	18	38	54.760	34.021	-82.646	.....	2.1	42.3	218	14	19.7	311	15	>99.9	86	69	68	0.24	4	348	..	D	....	
III	103	1980	3	27	17	23	48.700	34.030	-82.670	2.9	1.9	11.9	273	13	>99.9	178	24	5.8	30	62	68	0.21	4	344	..	D	....	
III	104	1980	4	7	22	14	33.570	34.322	-82.144	4.8	1.9	2.2	70	1	8.6	160	1	>99.9	295	88	68	0.19	4	236	82	D	....	
III	105	1980	4	9	20	47	23.970	34.848	-79.981	.....	2.8	>99.9	135	7	>99.9	43	22	4.5	241	66	68	....	5	353	..	D	....	
III	106	1980	4	18	22	15	59.670E	34.014	-82.058	4.4	1.8	2.0	84	1	25.8	174	5	>99.9	343	84	68	0.38	5	203	79	D	....	
III	107	1980	4	23	20	48	55.250	34.024	-82.591	3.4	2.0	72.2	171	4	11.6	263	32	2.4	74	57	68	0.44	5	350	..	D	....	
III	108	1980	4	24	6	16	56.570	34.346	-81.345	3.8	3.0	3.2	342	0	2.0	252	1	78.4	72	88	68	0.34	10	181	71	D	....	
III	109	1980	5	2	13	41	31.540	34.029	-82.611	3.0	2.0	11.0	83	1	>99.9	173	18	2.8	350	71	68	0.07	4	334	..	D	....	
III	110	1980	5	6	16	24	32.020	34.020	-82.640	5.0	2.0	>99.9	180	16	>99.9	275	16	7.5	47	67	68	0.11	3	351	..	D	....	
III	111	1980	5	8	21	13	22.120	34.406	-82.181	3.7	2.0	2.0	254	0	9.2	344	0	>99.9	90	90	68	0.36	5	238	86	D	....	
III	112	1980	5	9	15	41	40.660	35.015	-81.906	24.7	...	6.0	253	0	29.2	343	0	>99.9	90	89	68	0.96	4	278	..	D	....	
III	113	1980	5	29	17	43	43.800	34.050	-82.842	5.1	1.9	6.6	279	6	13.7	11	14	>99.9	166	74	68	0.20	5	343	..	D	....	
III	114	1980	5	29	19	51	2.320	34.028	-82.646	7.2	1.9	7.4	262	14	93.6	168	16	4.1	32	68	68	0.31	5	343	..	D	....	
III	115	1980	6	4	19	53	2.060	34.096	-82.668	6.9	1.7	7.8	281	13	3.6	18	27	>99.9	167	59	68	0.72	5	305	..	D	....	
III	116	1980	6	5	15	50	43.130E	34.758	-82.580	1.0	1.5	28.5	310	27	7.1	205	29	3.8	76	48	68	0.05	4	296	..	D	....	
III	117	1980	6	16	20	44	3.310	34.026	-82.564	1.4	2.0	>99.9	349	7	3.1	81	10	18.0	225	77	68	0.34	6	189	..	D	....	
III	118	1980	6	19	15	30	42.590E	34.540	-81.278	5.0	1.8	2.3	255	0E	3.8	345	8	>99.9	164	86	68	0.35	5	216	..	D	....	
III	119	1980	6	25	20	00	28.730	34.026	-82.837	0.0	2.8	9.1	355	3	21.3	264	27	2.1	91	62	68	0.25	7	330	..	D	....	
III	120	1980	7	2	18	18	57.730	34.094	-82.913	4.4	1.9	6.7	289	3	11.6	19	4	>99.9	162	85	68	0.30	5	338	..	D	....	
III	121	1980	7	7	6	21	48.330	34.046	-82.524	1.5	1.7	8.3	342	0	0.2	72	3	0.8	252	87	68	0.17	6	185	..	C	....	
III	122	1980	7	11	19	52	43.290	34.021	-82.768	0.1	2.0	21.8	357	1	52.5	267	28	5.7	89	61	68	0.47	7	328	..	D	....	
III	123	1980	7	21	20	57	34.720	34.039	-82.708	0.0	2.2	8.3	350	9	18.9	256	25	2.2	99	63	68	0.41	7	322	..	D	....	
III	124	1980	7	22	20	17	32.660	33.650	-82.525	4.4	2.1	12.9	43	0	7.2	133	1	>99.9	313	89	68	0.67	6	270	83	D	....	
III	125	1980	7	29	1	10	22.660	34.351	-81.364	1.3	3.2	3.7	359	0	2.1	269	6	10.4	89	84	68	0.35	9	182	71	D	....	
III	126	1980	8	22	20	8	22.290	34.022	-82.590	0.2	1.8	>99.9	321	10	50.9	56	24	11.2	211	63	68	3.58	7	293	..	D	....	
III	127	1980	8	28	19	43	20.770	34.102	-82.628	1.3	1.8	8.8	24	12	26.8	118	19	34.4	264	67	68	0.55	6	285	..	D	....	

"E" denotes probable explosive source

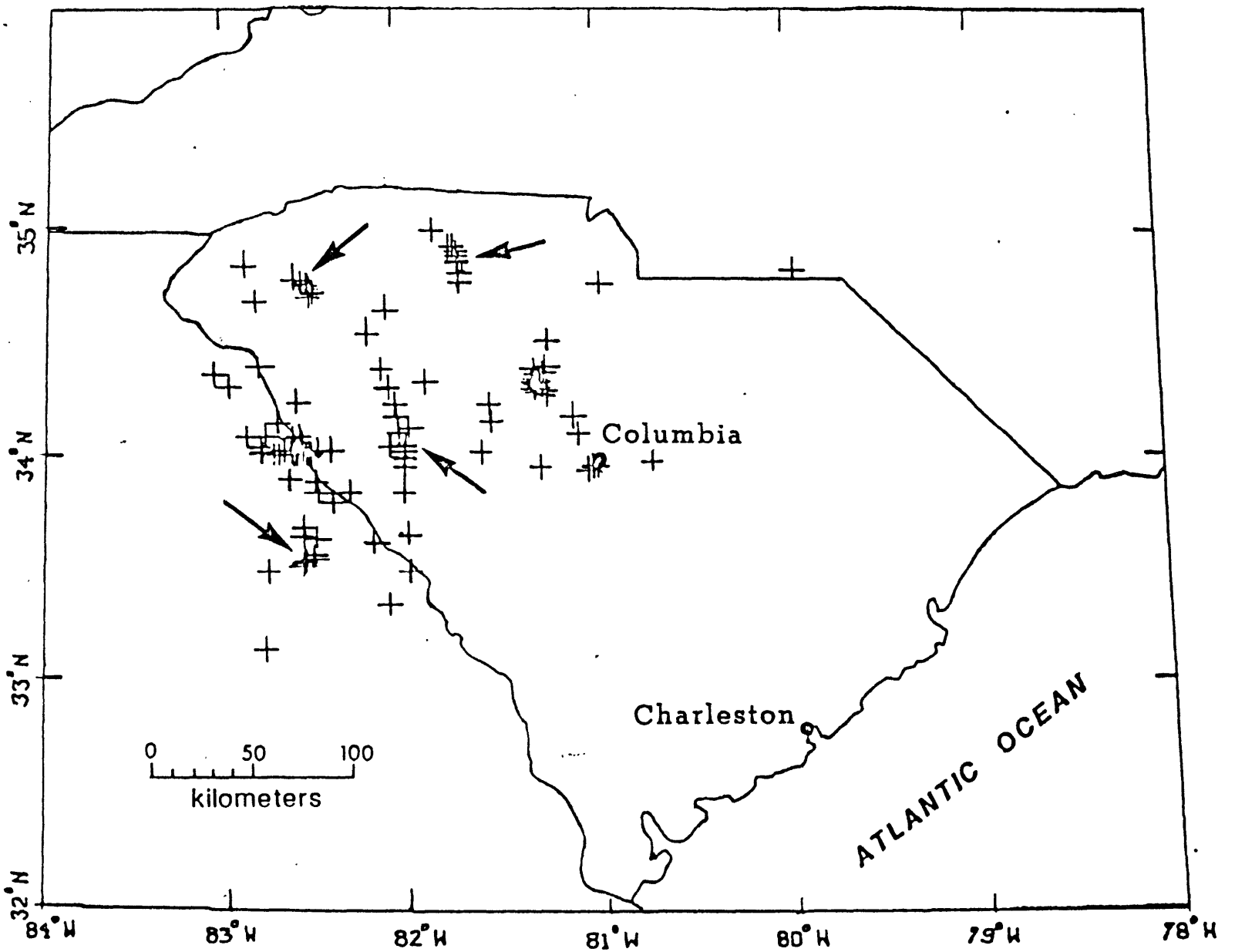

Figure 3.--South Carolina events from January 1978 through July 1980 exclusive of Charleston Seismic Zone earthquakes. Areas indicated by an arrow are regions of known quarry activity.

Acknowledgments

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