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Istituto Nazionale di **GEOFISICA e VULCANOLOGIA**

Roma-2, Catania, Osservatorio Vesuviano, Centro Naz. Terremoti

**THE STROMBOLI GEOPHYSICAL EXPERIMENT.
PRELIMINARY REPORT ON WIDE ANGLE REFRACTION
SEISMICS AND MORPHOBATHYMETRY OF STROMBOLI
ISLAND (SOUTHERN TYRRHENIAN SEA, ITALY) BASED ON
INTEGRATED OFFSHORE-ONSHORE DATA ACQUISITION
(CRUISE STR06 R/V URANIA)**

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The Stromboli geophysical experiment. Preliminary report on wide angle refraction seismics and morphobathymetry of Stromboli island (Southern Tyrrhenian sea, Italy) based on integrated offshore-onshore data acquisition, by

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Abstract - The Stromboli geophysical experiment, performed to acquire onshore and offshore seismic data through a combined on-land and marine network, was finalized to reconstruct the seismic tomography of the volcano and to investigate the deep structures and the location of magma chambers. A detailed swath bathymetry around the volcano has also been acquired by the R/V *Urania* Multibeam. In particular, high resolution bathymetry of the 'Sciara del Fuoco' area allows to image the present-day seafloor setting of the area involved by the submarine slide of 2002-12-30. During the experiment wide angle refraction seismics was performed all around the Stromboli volcano by a 4 GI-GUN tuned array. The data were recorded by the permanent seismic network of the INGV and 20 temporary stations and 10 OBS deployed on the SE, SW and NE submerged flanks of the volcano after detailed morpho-bathymetric analysis.

Sommario - Vengono presentati i risultati preliminari sull'esperimento di geofisica di Stromboli, con acquisizione integrata di dati geofisici a terra ed a mare intorno all'edificio vulcanico dello Stromboli (Tirreno meridionale) e finalizzato a produrre una tomografia sismica per studiare la sua struttura profonda e l'ubicazione delle camere magmatiche che lo alimentano. Una batimetria di dettaglio dell'edificio sommerso stata inoltre acquisita utilizzando il Multibeam in dotazione alla R/V *Urania*. In particolare, la batimetria di alta risoluzione della 'Sciara del Fuoco' ha consentito di ricostruire la morfologia attuale del fondo mare in corrispondenza dell'area interessata dalla frana sottomarina del 2002-30-12. L'esperimento ha prodotto un rilievo di sismica a rifrazione *wide angle* intorno all'apparato vulcanico utilizzando una sorgente sismica prodotta dalla sincronizzazione di 4 GI-GUN. E' stata utilizzata la rete sismica permanente gestita dall'INGV sul vulcano Stromboli, e 20 stazioni mobili, e 10 OBS deposti sui fondali marini sui fianchi SE e SW e NE dopo un'analisi morfobatimetrica di dettaglio.

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ACRONYMS

ACRONYM	DESCRIPTION	URL-email
CNR	Consiglio Nazionale Delle Ricerche	www.cnr.it
IAMC	Istituto Ambiente Marino Costiero	
ISMAR	Istituto di Scienze Marine	www.ismar.cnr.it
INGV	Ist.Naz.Geofisica e Vulcanologia	http://www.ingv.it
GEOPRO	GeoPro World Wide Geophys.Explor.	www.geopro.com
I-O	INPUT/OUTPUT Inc.	www.i-o.com
GURALP	Guralp	www.guralp.net
REFTEK	REFTEK	www.reftek.net
LENNARTZ	lennartz-electronic	www.lennartz-electronic.de
NANOMETRICS	Nanometrics, inc.	www.nanometrics.ca
PDS-2000	RESON	www.reson.com/sw1738.asp
GI-GUN	Generator-Injector gun	www.sercel.com/en/Products/Seismic-Sources/
ACUTIME	GPS Accurate Timing	www.trimble.com/acutime2000.html
SBE	Sea Bird Electronics	www.seabird.com
SWAN-PRO	Communication Technology	www.comm-tec.com
GMT	Generic Mapping Tool	gmt.soest.hawaii.edu/gmt
SEG	Soc. of Exploration Geophysicists	www.seg.org
WARRP	Wide Aperture Refl./Refrac. Profiling	
OBS	Ocean Bottom Seismometer	woodshole.er.usgs.gov/operations/obs/
SRTM	Shuttle Radar Topographic Mission	www2.jpl.nasa.gov/srtm/
MBES	Multibeam Echosounder System	
SBP	Sub Bottom Profiling	
SVP	Sound Velocity Profile	
CTD	Conductivity/Temperature/Depth	
MAW	Modified Atlantic Water	
LIW	Levantine Intermediate Water	
TDW	Tyrrhenian Deep Water	
WMDW	West Mediterranean Deep Water	
GPS-DGPS-RTK	Global Positioning System	samadhi.jpl.nasa.gov
DTM	Digital Terrain Model	en.wikipedia.org
GNU,GPL	GNU is not Unix,General Pub. License	www.gnu.org

Table 1: Acronyms of Organizations, Manufacturers and Products

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Many people contributed to the success of the cruise (STR06 R/V *Urania*). We are particularly indebted to the Master C.L.C. Vincenzo Lubrano, the officers and crew members of R/V *Urania* for their professionalism and efforts in assuring the success of the cruise. The Permanent Seismic Network on Stromboli, monitored by INGV-Osservatorio Vesuviano (Dr. M. Martini), was complemented by 20 mobile stations installed by INGV-Centro Nazionale Terremoti (Dr. C. Chiarabba), INGV-Catania, INGV-Osservatorio Vesuviano and Universit di Firenze (Dr. M. Ripepe). We wish to thank Dr. Laura Beranzoli for her efforts and contacts with GEOPRO. Dr. Luca Gasperini and Dr. G.Stanghellini of ISMAR are acknowledged for the help in cruise preparation and efforts in producing and maintaining the DAPHNE software. This work is an initiative within the Framework of the "INGV - DPC V2 - Monitoring and research activity at Stromboli and Panarea - Unit V2/03", responsible Dr. Mario Castellano of INGV-Osservatorio Vesuviano. The project was funded by CNR and by INGV/Protezione Civile.

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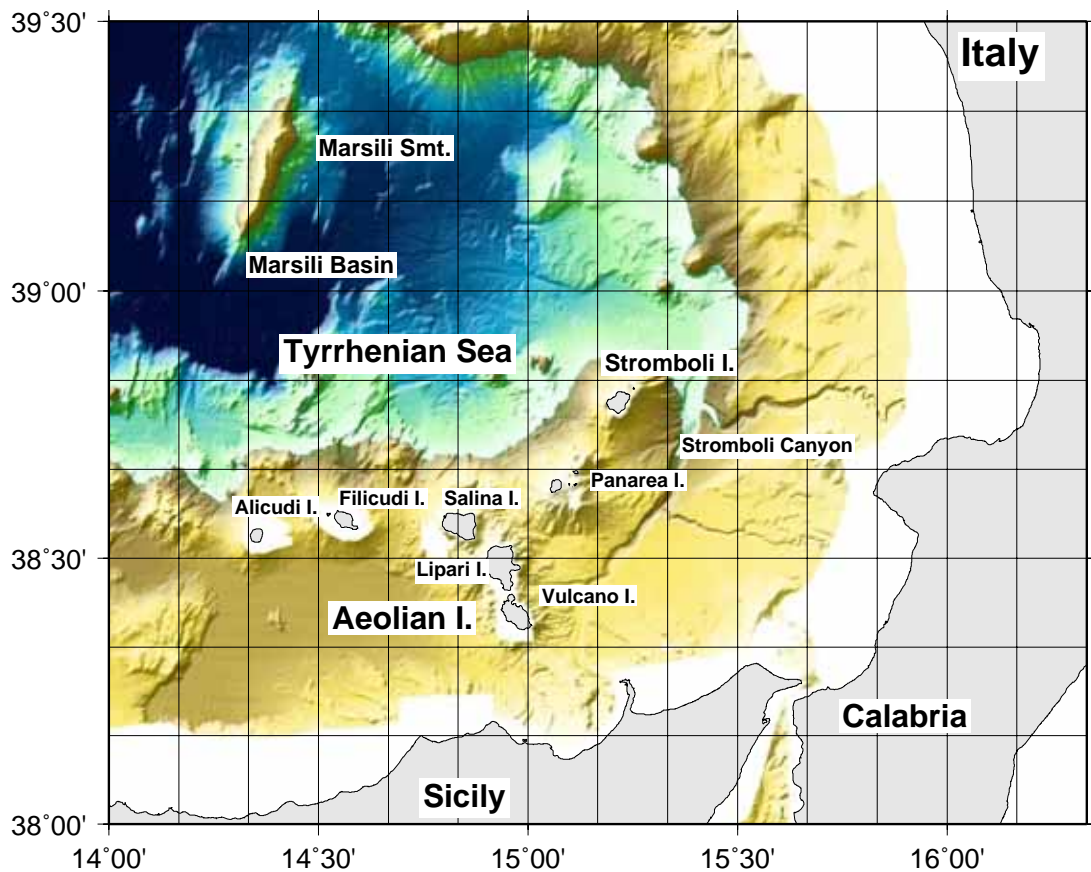
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1 INTRODUCTION

Cruise STR06 on R/V *Urania* was performed in the framework of the "INGV - DPC V2 - Monitoring and research activity at Stromboli and Panarea - Unit V2/03", and resulted as a joint initiative between CNR (IAMC, Napoli and ISMAR, Bologna), INGV (Roma2, Osservatorio Vesuviano, Catania, Gibilmanna-CNT), University of Firenze and DPC, aiming to produce a seismic tomography of the Stromboli volcano, South Eastern Tyrrhenian Sea [Fig.1], and have insights into its 2-D structure and magma chambers. Cruise work plan was designed to extend at sea the existing Seismographic Network, complemented by several mobile stations, and to generate seismic shots by air-gun tuned array. 10 OBS were deployed around Stromboli, along the NE, SE and SW flanks of the volcano, according to (a) morphobathymetric analysis of available and newly produced DTMs, (b) modeling and (c) optimal lineaments with on-land recording stations. Seismic shots along radial and circle lines were obtained by a 4 GI-GUN 105+105 C.I. tuned array, while the absolute shot time was recorded at the resolution of ms. A request for ship time of R/V *Urania* was presented by IAMC, and a period of 7 days, including 2 day of transit was assigned to the project by CNR and scheduled for late November 2006. Cruise STR06 started in Naples 2006-11-27 and ended in Naples 2006-12-06. This paper reports the shipboard activities during the cruise STR06 on R/V *Urania* and some preliminary results regarding also the onshore activities carried out in order to perform the Stromboli geophysical experiment. A description of the ship, equipment and their usage is given thereafter, along with details of the general settings, performances and some scientific and technical results.



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Figure 1: Geographical setting of the Stromboli Volcano, in the framework of the SE Tyrrhenian Sea. Bathymetric data by [Marani, Gamberi and Bonatti(2004), Bortoluzzi et al.(1999)], resolution 6 Arcsec.

2 GEOLOGICAL AND OCEANOGRAPHICAL SETTING

An evidenced high velocity area living in the SE Tyrrhenian Basin has been interpreted by tomographic studies as the Ionian slab subducting toward NW [Cimini(1999)], [Cimini(2004)], [Lucente et al.(1999), Montuori (2004)]. The slab shows an evident vertical continuity with high dipping angles (70° - 75°) down to 400 Km depth, and lateral extensions of 200 Km deeper than 150-200 Km and 100 Km above [Montuori (2004)]. Low velocity zones are present along the whole vertical extension of the high velocity zone, being interpreted as asthenospheric fluxes or convective cells generated by the subducting plate. The coincidence between the observed low velocity zone and the morphology of Aeolian Arc indicates that subduction was able to generate the regional volcanism.

The Aeolian Arc, part of the arc-trench system resulting by the collision of the African and Eurasian plate [Barberi et al.(1974)], is a 200 Km volcanic structure, located on the inner margin of the Calabro-Peloritano Arc. It is active since 1.3 MY on the western portion and it is formed by 7 subaerial (Alicudi, Filicudi, Salina, Lipari, Vulcano, Panarea e Stromboli) and several submarine volcanoes surrounding the Marsili Basin (Figure 1). Present activity is located on the eastern portion (Vulcano, Lipari, Panarea, Stromboli).

Stromboli (924 m a.s.l., 12.6Km^2) is the northernmost Aeolian Island. It is a stratovolcano which rises about 3000 m from the seafloor and stands 924 m above the sea level (Figure 2).

The products continuously erupted by the Stromboli volcano onlap on its submarine flanks, and are often subject to gravitational instabilities (mass gravity flows, debris flows, debris avalanches, slides, rock falls, erosion on channels and slumpings), producing lineaments, that were also observed and mapped by TOBI Side Scan Sonar data (TIVOLI cruise, a joint research project between University of Roma "La Sapienza", CNR-IAMC of Naples, Italy and CNR-ISMAR of Bologna, Italy [Chiocci et al.(1998)]). The eastern sector of the island shows a large chute of detritus, triggered by channelised debris fluxes organized as large-scale sea bottom features perpendicular to the isobaths. The northwestern sector is occupied by the submarine continuation of the "Sciarra del Fuoco", extending for several kilometers before joining laterally the Stromboli canyon, one of the most important canyons of the Southern Tyrrhenian sea, that connects NE Sicilian landforms with the bathyal plain running around the Aeolian arc. The canyon is fed by channelised fluxes on its right flank (between them the Gioia canyon) and mass fluxes on its left flank, including submarine instability products from Stromboli, where its thalweg approaches the island.

The volcanic edifice [Di Fiore et al. (2006)] was recently considered to be similar to the Campanian volcanoes, with well developed, 10-15 Km thick, low-velocity strata and a thin continental crust superimposed [Panza et al.(2004)]. The polyphasic eruption activity [Beccaluva et al.(1985)] intercalated lava strata (high velocity, 2500-4000 m/s) to pyroclastic, explosive products strata (P wave velocity 300-800 m/s), causing strong vertical and horizontal velocity gradients. Seismic tomography inversion, requiring high energy and large number of recording stations is probably the best method for investigating these anomalies.

2.1 MODELING AND PLANNING

Modeling and planning have been performed in order to obtain best results in order to carry out wide angle seismic refraction survey of the Stromboli island [Di Fiore et al. (2006)]

We therefore planned to:

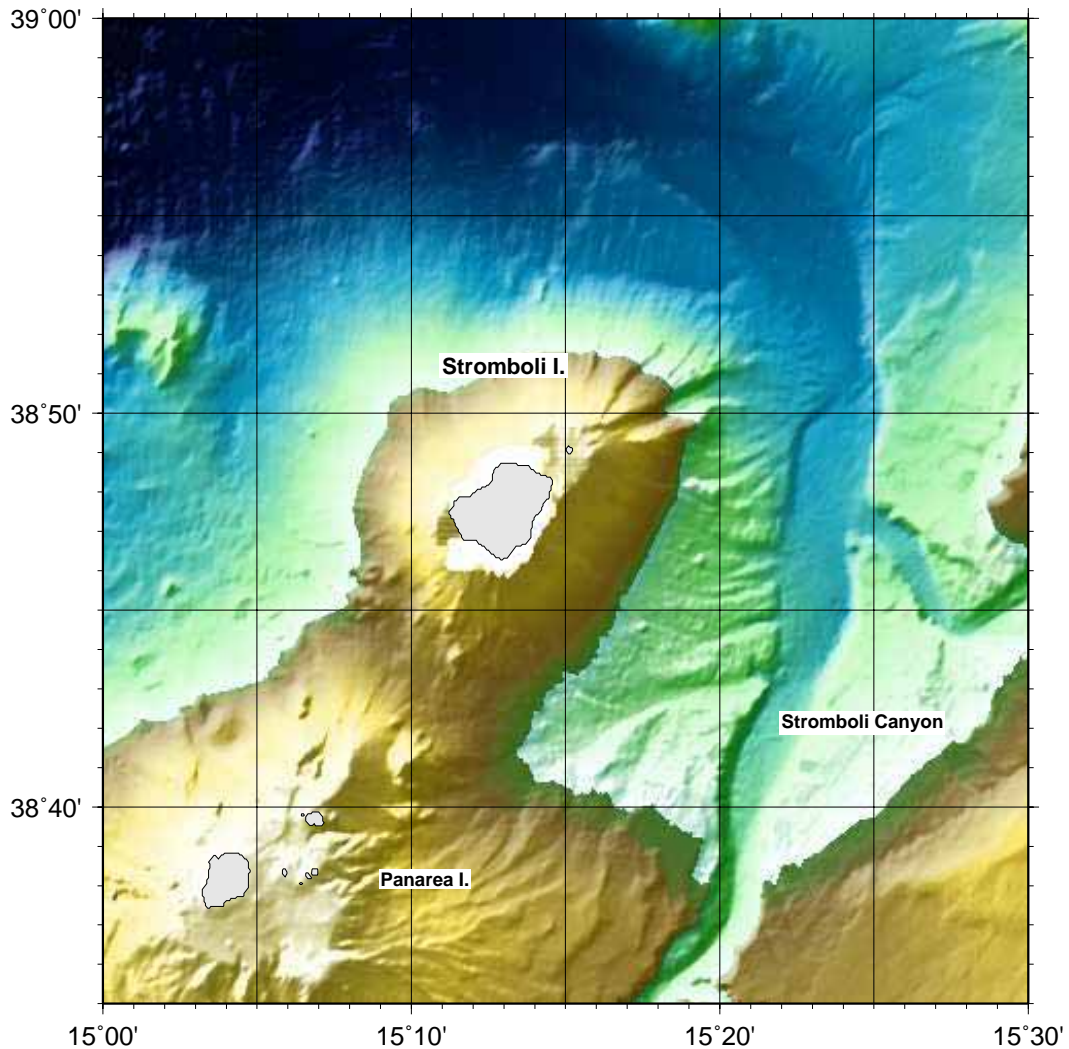
- increase the density of Seismic Network on land, trying to obtain spacing of 500 m,
- deploy a number of 10 OBS at distances of some NM from shore, as close as possible to the Island, according to morphology,
- shoot along radials and concentric circles, at distances of 200-300 m

Best station coverage was presumably on N-S and ENE-WSW runlines (P1 and P2 of Fig. 3).

To model seismic wave behaviour and possible results, and bearing on mind that penetrating energy is limited by (a) sound channel availability and (b) strong gradients on the flanks of volcano producing post-critical incidences limiting transmission, we worked on obtaining data about wave propagation

- in water down to sea bottom
- on lithotypes and volcanic strata, other than studying geometry and angles (pre and post-critical incidences).

See in Appendix 7.2 the mathematical details.



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Figure 2: Geographical setting of the Stromboli Smt, NE portion of the Aeolian back-arc, elevating from the Tyrrhenian bathyal plain (>3500 m depth). Topographic and bathymetric data by [Marani, Gamberi and Bonatti(2004), Bortoluzzi et al.(1999)], resolution 6 Arcsec

Figure 4 is a 2-D section along the line P2 of Figure 3 showing losses from energy measured @ 1m from source, where distribution of density, temperature and Sound Velocity in the water column were taken from [Waite (2002)] and with frequency band 10-200 Hz. Figure 4 evidences a 'shadow' zone generated by speed of sound variations at depths of 200 m, determining a sub-sampling of sea bottom up to full obscurement of the area at distances greater than 2000 m. Furthermore, at distances of 2000 m attenuation is around 50 dB, therefore the source effect is almost vanished. The analysis suggested to shot at an optimal distance of 1000 m from shore, avoiding whenever possible the effusive phases to increase S/N ratios, and make multiple shots on stations to allow stacking of signals.

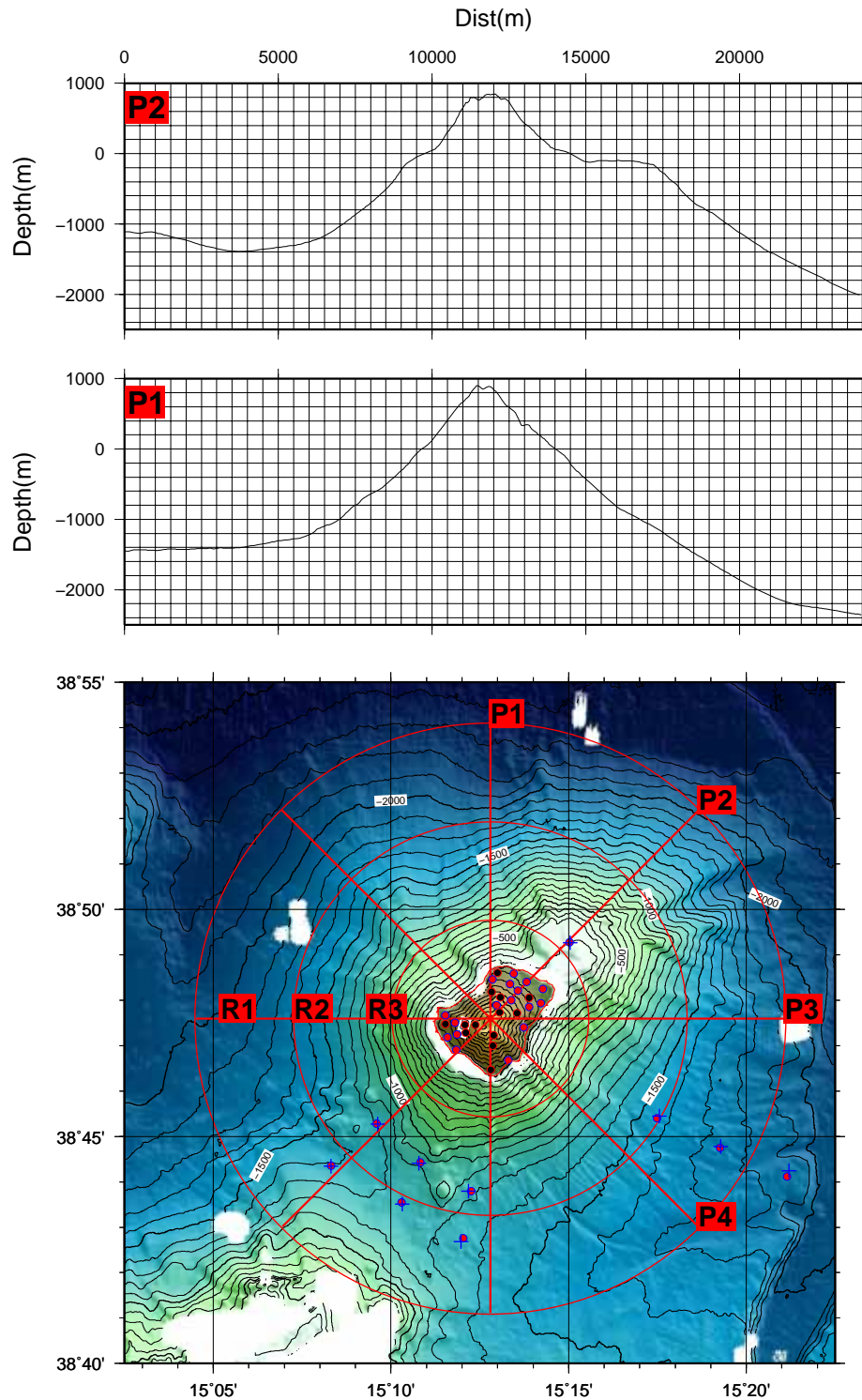


Figure 3: Proposed runlines, according to [Di Fiore et al. (2006)]. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

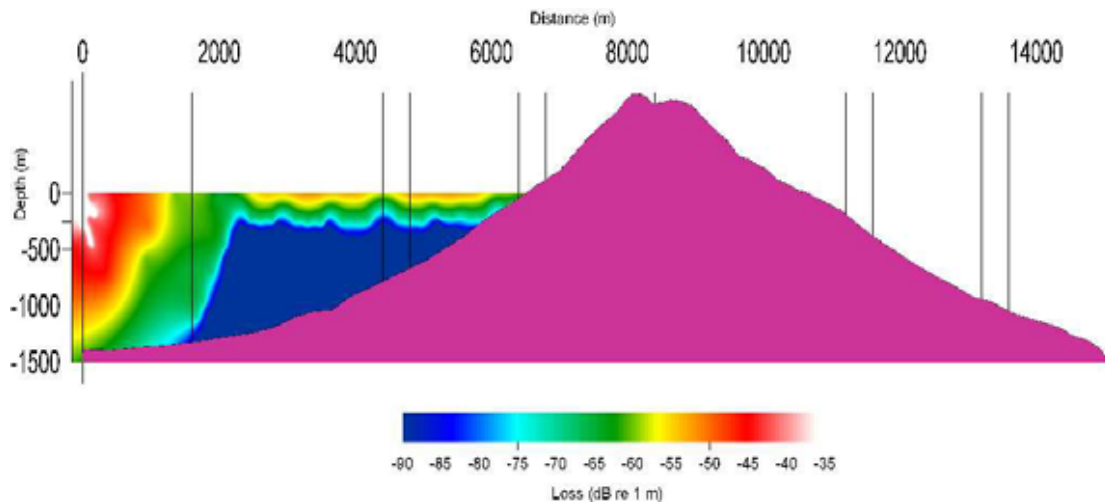


Figure 4: 2-D section [Di Fiore et al. (2006)] with energy loss (db @1m) from source (0,0). See the shadow area at distance $d=2000$ corresponding at an incident angle of 42° .

3 CRUISE SUMMARY

SHIP: R/V *Urania*

START: 2006-11-27 PORT: Naples

END: 2006-12-06 PORT: Naples

SEA/OCEAN: Tyrrhenian Sea, Mediterranean Sea

LIMITS: NORTH 39:45 SOUTH: 38:55 WEST: 14:05 EAST: 14:45

OBJECTIVE: INTEGRATED STUDY OF THE STROMBOLI SMT.

COORDINATING BODIES: IAMC-CNR

CHIEF OF EXPEDITION: Dr. Gemma Aiello

CONTACT: Gemma.Aiello@iamc.cnr.it

DISCIPLINES: WIDE ANGLE SEISMIC REFRACTION, MORPHOBATHYMETRY

WORK DONE: 1890 SEISMIC SHOTS, 290 KM² SURVEY MULTIBEAM, xxxx KM SBP

2 CTD CAST

LOCALIZATION:

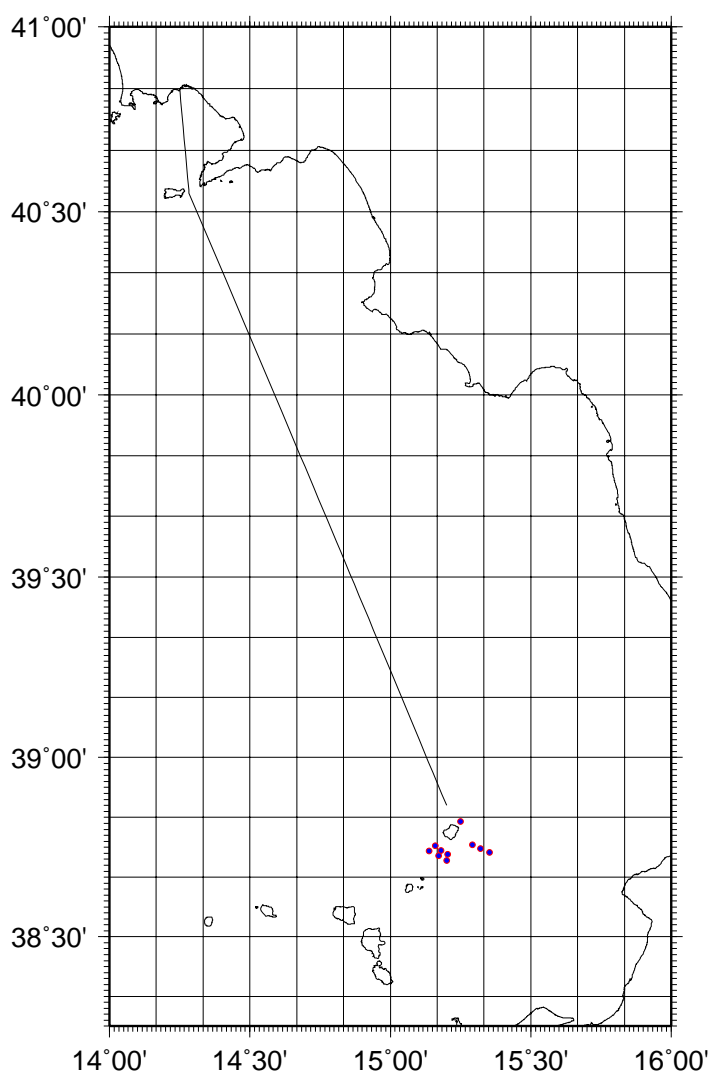


Figure 5: Whole ship track during Cruise STR06, including transits. The red circles are seismic shots.

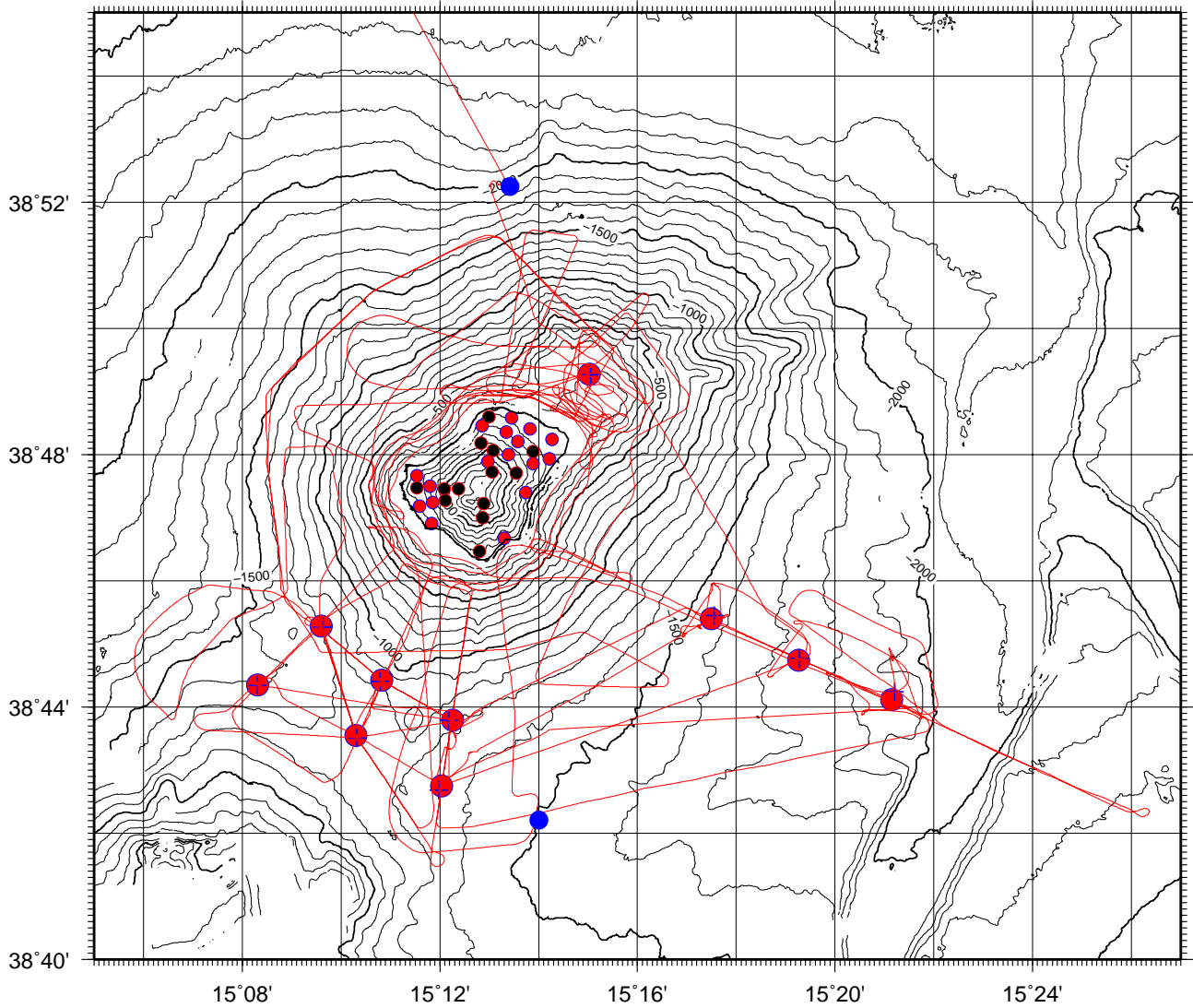


Figure 6: Ship track during Cruise STR06 in the study area. The red lines are seismic shots. The blue squares are the OBS positions. The two blue circles are the CTD casts. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

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Table 2: Scientific and technical parties

4 MATERIALS AND METHODS

The research cruise was carried out with the 61 meter R/V *Urania* (Fig. 7), owned and operated by SO.PRO.MAR. and on long-term lease to CNR. Ship is normally used for geological, geophysical and oceanographical work in the Mediterranean Sea and adjoining waters, including but not limited to, the Atlantic Ocean, the Red Sea, and the Black Sea.



Figure 7: R/V *Urania* .

R/V *Urania* is equipped with DGPS positioning system (satellite link by FUGRO), single-beam and multibeam bathymetry and integrated geophysical and oceanographical data acquisition systems, including ADCP, CHIRP SBP and other Sonar Equipment, other than water and sediment sampling. Additional equipment can be accommodated on the keel or towed, like Side Scan Sonars.

4.1 NAVIGATION AND DATA ACQUISITION

The vessel was set-up for multibeam data acquisition and navigation with PDS-2000 software by RESON. The UTC absolute time was measured and recorded at any shot produced by the PDS-2000 by the Java™Daphne software [Stanghellini and Bortoluzzi(2004)], interfaced to a Trimble Acutime and to the Fugro DGPS. The hull-mounted 16 transducer BENTHOS Chirp system was used. The data flow and performance were controlled by the Communication Technology's SWANPRO software. The SBP-CHIRP workstation received positions trough a sentence by the PDS-2000 and positions were therefore recorded on the XTF trace headers as lat/long of the DGPS antenna.

The instrumental offsets (PDS-2000) are presented in Fig. 8 and in Tab. 3

POSITION	ACROSS	ALONG	HEIGHT
REFERENCE POINT	0.00	0.00	0.00
DGPS	1.64	14.30	14.18
MBEAM	0.00	14.36	-4.96
MAHRS	0.00	0.0	-3.40
ECHO SOUNDER 33	5.50	-1.85	-3.80
CHIRP	-1.0	11.80	-4.00
A-FRAME	6.5	-6.70	0.0
STERN	0.00	-30.60	0.00
STRING-1	4.00	-60.30	-60.0
STRING-2	-4.00	-60.30	-60.0
GI-GUN ARRAY	0.0	-60.3	-6.0

Table 3: Instrumental Offsets on Ship *Urania* (PDS2000). The GPS antenna (primary positioning system) is located on point DGPS.

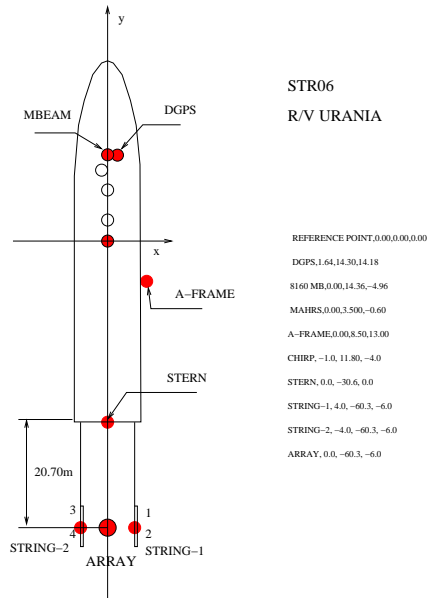


Figure 8: Cruise STR06. Instrumental Offsets (PDS-2000) on R/V *Urania*

4.2 MULTIBEAM BATHYMETRY

One workstation was used for the acquisition of multibeam data, interfacing by a multiseri- al and Ethernet link a RESON 8160 P1 processor, an TSS MAHRS MRU and FOG compass, DGPS receiver (Fugro Omnistar), by a MOXA Multi/serial I/O, TC/P and UDP network sockets. The MBES was the 50kHz, 126 0.5°, 150° aperture RESON 8160 (5000 m range). The sonar head is positioned on the ship's keel using a V-shaped steel frame. A Sound Velocity probe at the Sonar Head is interfaced directly to the MBES processor, thus providing the necessary real-time data for the beam-forming.

In addition two data sets were generated and stored on separate computer for backup on HD and CD/DVD. The PDS-2000 was able to build a 20 m DTM during the acquisition of the entire surveyed area. The existing multibeam datasets will therefore be used for an up-to-date regional bathymetric compilation.

CALIBRATION

Some lines were acquired for testing calibration of the multibeam. Heading and pitch values will be easily found, whereas roll values will be difficult to achieve due to the extremely rough bottom morphology. However, we are confident that any misalignment will be found and, possibly, recovered, using the entire data set of lines.

4.1 CTD CASTS AND SOUND VELOCITY ANALYSIS

CTD casts were taken on surveyed area. Data were collected by a Mod. 911Plus SBE profiling system. The position of the CTD stations are reported in Table 4 and can be viewed in Fig. 6, respectively. Raw data were acquired and processed by SBE's SEASAVE AND SBE data Processing software. The Sound Velocity data from the acquired profiles were immediately imported into the PDS-2000 software for multibeam data corrections.

STATION	DATE TIME UTC	LON	LAT
01	2006-11-28T22:25:42+0000	15:13.42	38:52.25
02	2006-12-02T22:38:01+0000	15:14.00	38:42.21

Table 4: CTD Stations positions.

4.3 SEISMIC SOURCE

A tuned array of 4 SERCEL's (formerly SODERA-SSI) GI-GUN was used for producing the seismic shots. Two bars hanging two guns each were towed at 6m water depth on the port and left sides 20 m off the stern (Fig.9). Each gun was set in the 'harmonic' 105+105 CI, medium port configuration. The array was energized by a Mod. I21, 37 KW, electrically driven BAUER Compressor, that delivered air (1500 L/min at the pressure of 250 Bars) on a 6x50L bottle reservoir. The guns received the final pressure at the outlet ports trough a pressure regulator (on average 130 to 180 bars). Another K1000 (1000 L/min) by BAUER compressor pumping on the same reservoir was available as a spare.

The array was fired and synchronized by using the ISMAR's synchronizer [Masini and Ligi (1995)] (Fig.10). The instrument is able to control 4 GI-GUNS (or 8 Air-guns) in manual, semi-automatic and automatic modes, up to the array synchronization (generator and injector delays, data visualization, etc). The synchronization is performed by cross-correlating the near-field seismic signal from the hydrophones in the guns, calculating the reciprocal delays and checking and applying trough the line the appropriate timing to each gun (ahead of time or delay) against the first one. A programmable, fixed delay at the time-break can be set for each gun, in this case 10 ms. The time-break can be generated by the internal Main and Delayed Time Base Generators, or can be input by an external system, typically the navigation system, on either TTL or CC mode.

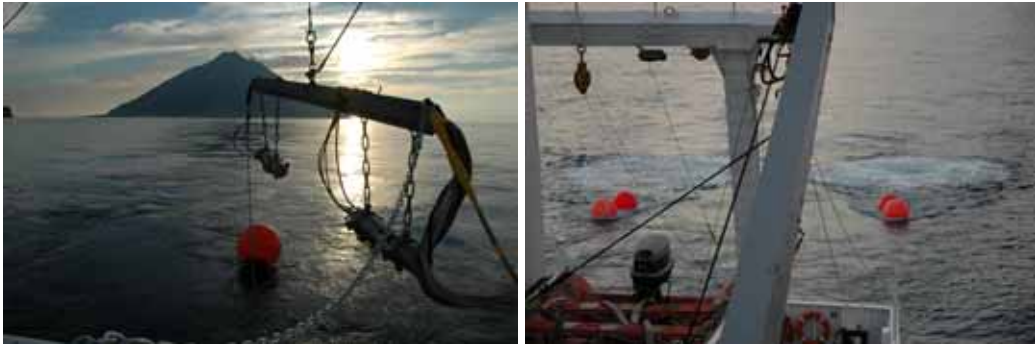


Figure 9: R/V *Urania* , GI-GUN arrays off the stern.



Figure 10: R/V *Urania* .ISMAR's GUN synchronizer.

4.4 SEISMIC NETWORK

Fig.11 shows the location of the deployed land stations (permanent and mobile) and of the OBS.

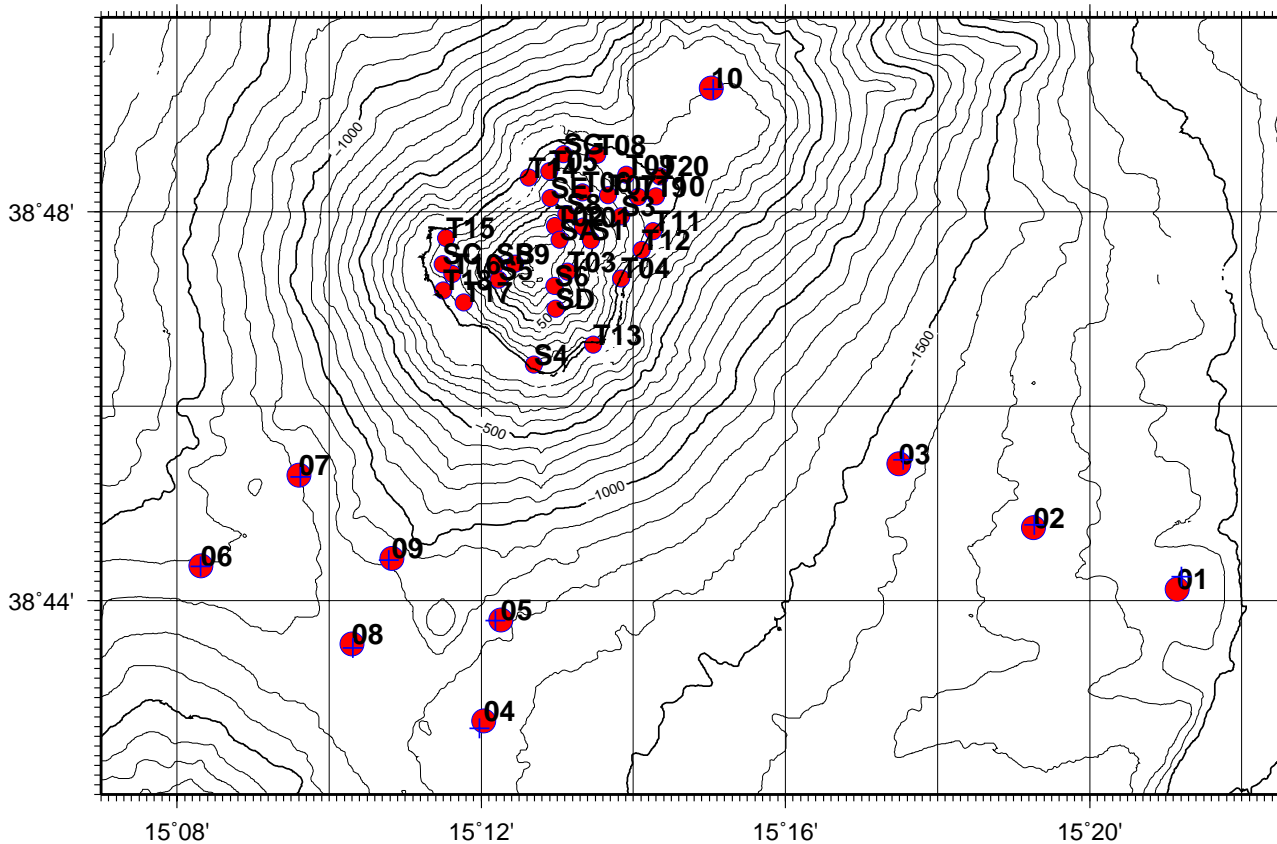


Figure 11: LAND Stations and OBS deployment positions. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

4.1 LAND

The seismic network on the Island employed 13 permanent and 20 mobile 3D component digital seismic stations, equipped with short period or broad band seismometers and GPS receivers, and was installed and monitored by INGV and University of Florence personnel. The mobile stations were located aiming to achieve the best coverage on the volcano, despite of accessibility difficulties. Tables 7, ??, 9 and 10 report the instrumental characteristics and settings of each station. Figures 12 and 13 show some of the deployed stations. The data of the permanent stations are transmitted in real-time, via radio-modem UHF or Wi-Fi, to the San Vincenzo Observatory located in Stromboli and sent by the Internet (GARR) to INGV in Catania and Osservatorio Vesuviano in Napoli, whereas the mobile stations recorded the data locally on flash memory and optical and hard disks.

The network was tested and checked in advance and during the experiment at the Advanced Operating Center (DPC-INGV) of the San Vincenzo Observatory, and the real time data availability resulted extremely useful for calibrating and running of the seismic shooting operations at sea.

STA_ID	TYPE	LON	LAT	EAST	NORTH	H	DIGITIZER	ORG
	WGS-84	WGS-84	UTM-33	UTM-33	A.S.L.			
TS01	LAND	38.797475	15.222333	519307	1000000	560	CMG-DM24	UNIFI
TS02	LAND	38.797540	15.216196	518774	1000000	750	CMG-DM24	UNIFI
TS03	LAND	38.789767	15.218890	519010	1000000	610	CMG-DM24	UNIFI
TS04	LAND	38.788537	15.230676	520034	1000000	20	CMG-DM24	UNIFI
TS05	LAND	38.806960	15.214911	518660	1000000	207	130	INGV-CNT
TS06	LAND	38.803324	15.222156	519290	1000000	196	130	INGV-CNT
TS07	LAND	38.802853	15.227740	519775	1000000	112	130	INGV-CNT
TS08	LAND	38.809833	15.225424	519572	1000000	11	130	INGV-CNT
TS09	LAND	38.806387	15.231747	520122	1000000	39	MARSlite	INGV-OV
TS10	LAND	38.802715	15.238265	520689	1000000	43	MARSlite	INGV-OV
TS11	LAND	38.796688	15.237658	520638	1000000	10	MARSlite	INGV-OV
TS12	LAND	38.793512	15.235160	520422	1000000	25	MARSlite	INGV-OV
TS13	LAND	38.777185	15.224584	519508	1000000	43	TAURUS	INGV-CT
TS14	LAND	38.805914	15.210370	518266	1000000	37	TAURUS	INGV-CT
TS15	LAND	38.795482	15.192318	516701	1000000	105	TAURUS	INGV-CT
TS16	LAND	38.789325	15.193637	516817	1000000	170	TAURUS	INGV-CT
TS17	LAND	38.784500	15.196169	517038	1000000	159	TAURUS	INGV-CT
TS18	LAND	38.786499	15.191661	516646	1000000	103	TAURUS	INGV-CT
TS19	LAND	38.802567	15.234350	520349	1000000	70	130	INGV-CNT
TS20	LAND	38.806129	15.239175	520767	1000000	1	MARSlite	INGV-OV
STR1	LAND	38.795100	15.224050	519457	1000000	561	GAIA	INGV-OV
STR3	LAND	38.799267	15.230633	520027	1000000	236	GAIA	INGV-OV
STR4	LAND	38.773850	15.211500	518372	1000000	86	GAIA-1	INGV-OV
STR5	LAND	38.788400	15.203750	517696	1000000	654	GAIA-1	INGV-OV
STR6	LAND	38.787350	15.215983	518758	1000000	808	GAIA-2	INGV-OV
STR8	LAND	38.799610	15.218650	518987	1000000	569	GAIA-1	INGV-OV
STR9	LAND	38.791117	15.207367	518009	1000000	782	GAIA-1	INGV-OV
STRA	LAND	38.795233	15.217117	518855	1000000	842	GAIA-1	INGV-OV
STRB	LAND	38.791067	15.203167	517644	1000000	632	GAIA-1	INGV-OV
STRC	LAND	38.791033	15.191567	516637	1000000	183	GAIA-1	INGV-OV
STRD	LAND	38.783383	15.216333	518790	1000000	559	GAIA-1	INGV-OV
STRE	LAND	38.802369	15.215164	518683	1000000	436	GAIA-1	INGV-OV
STRG	LAND	38.809906	15.218000	518927	1000000	118	GAIA-2	INGV-OV
OBS01	OBS	38.735278	15.352477	530635	1000000	-1834	SEDIS-V	NULL
OBS02	OBS	38.745815	15.321006	527896	1000000	-1740	SEDIS-V	NULL
OBS03	OBS	38.756781	15.291523	525330	1000000	-1561	SEDIS-V	NULL
OBS04	OBS	38.712601	15.200574	517438	1000000	-1333	SEDIS-V	NULL
OBS05	OBS	38.729928	15.204264	517755	1000000	-1266	SEDIS-V	NULL
OBS06	OBS	38.739221	15.138557	512042	1000000	-1385	SEDIS-V	NULL
OBS07	OBS	38.754779	15.159988	513901	1000000	-1294	SEDIS-V	NULL
OBS08	OBS	38.725843	15.171652	514921	1000000	-1282	SEDIS-V	NULL
OBS09	OBS	38.740514	15.180400	515678	1000000	-1176	SEDIS-V	NULL
OBS10	OBS	38.821289	15.250381	521735	1000000	-98	SEDIS-V	NULL

Table 5: Station Data.

STA_ID	DATE_S	TIME_S	DATE_E	TIME_E	DIGITIZER	SENSOR	P	S_F	C_F
							s	Hz	$\mu V / m/s$
OBS01	2006-11-29	05:26:44	2006-12-02	08:27:57	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS02	2006-11-29	05:58:24	2006-12-02	09:50:49	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS03	2006-11-29	06:29:22	2006-12-02	12:59:24	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS04	2006-11-29	07:13:50	2006-12-02	14:23:35	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS05	2006-11-29	07:29:24	2006-12-02	15:19:44	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS06	2006-11-29	07:56:28	2006-12-02	17:36:13	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS07	2006-11-29	08:11:52	2006-12-02	19:15:56	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS08	2006-11-29	08:34:12	2006-12-02	16:45:27	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS09	2006-11-29	08:46:16	2006-12-02	16:07:09	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
OBS10	2006-11-29	09:41:58	2006-12-02	20:37:20	SEDIS-V	SM6-B-Coil	4.50	250.00	0.0028115
STR1	2006-11-29	00:00:00	2006-12-02	12:00:00	GAIA	CMG-40T	60.00	50.00	2.3000000
STR3	2006-11-29	00:00:00	2006-12-02	12:00:00	GAIA	CMG-40T	60.00	50.00	2.3000000
STR4	2006-11-29	00:00:00	2006-12-02	12:30:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STR5	2006-11-29	00:00:00	2006-12-02	23:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STR6	2006-11-29	00:00:00	2006-12-02	23:00:00	GAIA-2	CMG-40T	60.00	50.00	2.3000000
STR8	2006-11-29	00:00:00	2006-12-02	12:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STR9	2006-11-29	00:00:00	2006-12-02	23:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRA	2006-11-29	00:00:00	2006-12-02	12:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRB	2006-11-29	00:00:00	2006-12-02	23:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRC	2006-11-29	00:00:00	2006-12-02	12:30:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRD	2006-11-29	00:00:00	2006-12-02	23:00:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRE	2006-11-29	00:00:00	2006-12-02	12:30:00	GAIA-1	CMG-40T	60.00	50.00	2.3000000
STRG	2006-11-29	00:00:00	2006-12-02	12:30:00	GAIA-2	CMG-40T	60.00	50.00	2.3000000
TS01	2006-11-29	00:00:00	2006-12-02	09:00:00	CMG-DM24	LE-3D/5	5.00	100.00	3.2000000
TS02	2006-11-29	00:00:00	2006-12-02	10:00:00	CMG-DM24	LE-3D/5	5.00	100.00	3.2000000
TS03	2006-11-29	00:00:00	2006-12-02	11:00:00	CMG-DM24	LE-3D/5	5.00	100.00	3.2000000
TS04	2006-11-29	00:00:00	2006-12-02	13:00:00	CMG-DM24	LE-3D/5	5.00	100.00	3.2000000
TS05	2006-11-29	19:00:00	2006-12-01	09:00:00	130	LE-3Dlite	1.00	125.00	1.5000000
TS06	2006-11-29	19:00:00	2006-12-01	23:00:00	130	LE-3Dlite	1.00	125.00	1.5000000
TS07	2006-11-29	19:00:00	2006-12-02	06:00:00	130	LE-3Dlite	1.00	125.00	1.5000000
TS08	2006-11-29	19:00:00	2006-12-01	01:00:00	130	LE-3Dlite	1.00	125.00	1.5000000
TS09	2006-11-27	16:09:16	2006-12-02	11:00:00	MARSlite	LE-3Dlite	1.00	125.00	32.000000
TS10	2006-11-26	13:56:40	2006-12-02	10:00:00	MARSlite	LE-3Dlite	1.00	125.00	32.000000
TS11	2006-11-26	09:40:52	2006-12-02	09:00:00	MARSlite	LE-3Dlite	1.00	125.00	32.000000
TS12	1899-12-30	00:00:00	1899-12-30	00:00:00	MARSlite	LE-3Dlite	1.00	125.00	32.000000
TS13	2006-11-26	10:00:00	2006-12-02	06:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS14	2006-11-26	08:00:00	2006-12-01	23:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS15	2006-11-25	11:00:00	2006-12-01	23:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS16	2006-11-27	10:00:00	2006-12-02	08:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS17	2006-11-26	09:00:00	2006-12-02	08:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS18	2006-11-25	10:00:00	2006-12-01	23:00:00	TAURUS	LE-3D/20	20.00	100.00	1.0000000
TS19	2006-11-29	19:00:00	2006-12-02	06:00:00	130	LE-3Dlite	1.00	125.00	1.5000000
TS20	2006-11-29	08:58:08	2006-12-02	10:00:00	MARSlite	LE-3Dlite	1.00	125.00	32.000000

Table 6: Station Data.

STA	LON	LAT	EAST	NORTH	H	DIGITIZER	ORG
	WGS-84	WGS-84	UTM-33	UTM-33	A.S.L.		
TS01	1513.34000	3847.84848	519307	4294326	560	CMG-DM24	UNIFI
TS02	1512.97174	3847.85242	518774	4294332	750	CMG-DM24	UNIFI
TS03	1513.13337	3847.38604	519010	4293470	610	CMG-DM24	UNIFI
TS04	1513.84058	3847.31222	520034	4293336	20	CMG-DM24	UNIFI
TS05	1512.89467	3848.41759	518660	4295377	207	RFTK130	INGV-CNT
TS06	1513.32934	3848.19942	519290	4294975	196	RFTK130	INGV-CNT
TS07	1513.66438	3848.17120	519775	4294924	112	RFTK130	INGV-CNT
TS08	1513.52543	3848.58997	519572	4295698	11	RFTK130	INGV-CNT
TS09	1513.90484	3848.38322	520122	4295317	39	MARSlite	INGV-OV
TS10	1514.29592	3848.16291	520689	4294911	43	MARSlite	INGV-OV
TS11	1514.25948	3847.80126	520638	4294242	10	MARSlite	INGV-OV
TS12	1514.10961	3847.61069	520422	4293889	25	MARSlite	INGV-OV
TS13	1513.47505	3846.63111	519508	4292075	43	TAURUS	INGV-CT
TS14	1512.62222	3848.35483	518266	4295260	37	TAURUS	INGV-CT
TS15	1511.53908	3847.72894	516701	4294099	105	TAURUS	INGV-CT
TS16	1511.61823	3847.35951	516817	4293416	170	TAURUS	INGV-CT
TS17	1511.77012	3847.06998	517038	4292881	159	TAURUS	INGV-CT
TS18	1511.49964	3847.18993	516646	4293102	103	TAURUS	INGV-CT
TS19	1514.06100	3848.15400	520349	4294894	70	RFTK130	INGV-CNT
TS20	1514.35050	3848.36772	520767	4295290	1	MARSlite	INGV-OV
STR1	1513.44300	3847.70600	519457	4294063	561	GAIA	INGV-OV
STR3	1513.83800	3847.95600	520027	4294527	236	GAIA	INGV-OV
STR4	1512.69000	3846.43100	518372	4291702	86	GAIA-1	INGV-OV
STR5	1512.22500	3847.30400	517696	4293315	654	GAIA-1	INGV-OV
STR6	1512.95900	3847.24100	518758	4293201	808	GAIA-2	INGV-OV
STR8	1513.11900	3847.97660	518987	4294562	569	GAIA-1	INGV-OV
STR9	1512.44200	3847.46700	518009	4293617	782	GAIA-1	INGV-OV
STRA	1513.02700	3847.71400	518855	4294076	842	GAIA-1	INGV-OV
STRB	1512.19000	3847.46400	517644	4293611	632	GAIA-1	INGV-OV
STRC	1511.49400	3847.46200	516637	4293605	183	GAIA-1	INGV-OV
STRD	1512.98000	3847.00300	518790	4292761	559	GAIA-1	INGV-OV
STRE	1512.90983	3848.14217	518683	4294868	436	GAIA-1	INGV-OV
STRG	1513.08000	3848.59433	518927	4295705	118	GAIA-2	INGV-OV

Table 7: Land Station Data.

STATION	START	END	DIGITIZER	SENSOR	P	S/R
					s	Hz
TS01	39049.45833333333	39053.375	CMG-DM24	LE-3D/5	5	100
TS02	39049.5	39053.4166666667	CMG-DM24	LE-3D/5	5	100
TS03	39049.58333333333	39053.45833333333	CMG-DM24	LE-3D/5	5	100
TS04	39049.6666666667	39053.5416666667	CMG-DM24	LE-3D/5	5	100
TS05	39048	39052.375	RFTK130	LE-3Dlite	1	125
TS06	39048.5	39052.95833333333	RFTK130	LE-3Dlite	1	125
TS07	39048.5416666667	39053.375	RFTK130	LE-3Dlite	1	125
TS08	39048	39052.0416666667	RFTK130	LE-3Dlite	1	125
TS09	39048.6666666667	39053.45833333333	MARSlite	LE-3Dlite	1	125
TS10	39047.58333333333	39053.4166666667	MARSlite	LE-3Dlite	1	125
TS11	39047.4166666667	39053.375	MARSlite	LE-3Dlite	1	125
TS12			MARSlite	LE-3Dlite	1	125
TS13	39047.4166666667	39053.33333333333	TAURUS	LE-3D/20	20	100
TS14	39047.4166666667	39052.375	TAURUS	LE-3D/20	20	100
TS15	39046.45833333333	39052.375	TAURUS	LE-3D/20	20	100
TS16	39048.4166666667	39053.33333333333	TAURUS	LE-3D/20	20	100
TS17	39047.4166666667	39053.33333333333	TAURUS	LE-3D/20	20	100
TS18	39046.4166666667	39052.375	TAURUS	LE-3D/20	20	100
TS19	39049.6666666667	39053.45833333333	RFTK130	LE-3Dlite	1	125
TS20	39050.375	39053.4166666667	MARSlite	LE-3Dlite	1	125
STR1	39050	39053.6666666667	GAIA	-CMG-40T	60	50
STR3	39050	39053.6666666667	GAIA	-CMG-40T	60	50
STR4	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STR5	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STR6	39050	39053.6666666667	GAIA-2	-CMG-40T	60	50
STR8	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STR9	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRA	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRB	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRC	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRD	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRE	39050	39053.6666666667	GAIA-1	-CMG-40T	60	50
STRG	39050	39053.6666666667	GAIA-2	-CMG-40T	60	50

Table 8: Land Station Data.

Model	CMG-40T	LE-3D/5s	LE-3D/20s	LE-3Dlite MkII
Manufacturer	Guralp	Lennartz	Lennartz	Lennartz
Sensors	orth.(Z,N,E)	orth.(Z,N,E)	orth.(Z,N,E)	orth.(Z,N,E)
Eigenfreq., upper freq.limit	0.0333 Hz, 50 Hz	0.2 Hz, 40 Hz	0.05 Hz, 40 Hz	1 Hz, 80 Hz
Vel.output bandwidth	60s/50Hz			
Vel.output sens. (V/m/s)	800	400	1000	400
RMS noise @1Hz		1 nm/s	< 2 nm/s	3 nm/s
Dynamic range(typical)		140 dB	136 dB	136 dB
Poles	-0.1481/0.1481j - 0.1481/-0.1481	-0.885/+0.887j -0.885/-0.887j -0.427/0.000j	-0.220/+0.235j -0.220/-0.235j -0.230/0.000j	-4.210/+4.660j -4.210/-4.660j -2.105/0.000j
Zeros	Double Zero at origin	Triple zero at the origin		

Table 9: Seismic sensor characteristics.

Station Model	GAIA-1	CMG-DM24	REFTEK 130	MARSLite	TAURUS
Sampling rate (Hz)	50	100	125	125	100
Period (s)	60	5	1	1	20
Number of channels	3	3	3	3	3
Type of recording	continuous	continuous	continuous	continuous	continuous
chan.(123-V-H1-H2)	CMG-40T	LE-3D/5	LE-3Dlite	LE-3Dlite	LE-3D/20
Vel.out.sens. V m/s	800	400	400	400	1000
Input range(Vref)	$\pm 20V$	$\pm 27V$	$\pm 10V$	$\pm 1.05V$	$\pm 8V$
Gain (1,2,3)			1		1
Digitizer Res.(bits)	24(1,2,3)	24(1,2,3)	24(1,2,3)	20(1,2,3)	24(1,2,3)
Digitizer Span					
Conv.Factor (V/C)	2.300E-6	3.20E-6	1.500E-6	32.00E-6	1.00E-6
Cutoff Freq.-3dB					
Cutoff Freq.-130dB					

Table 10: Data Acquisition parameters, geophone characteristics and settings.

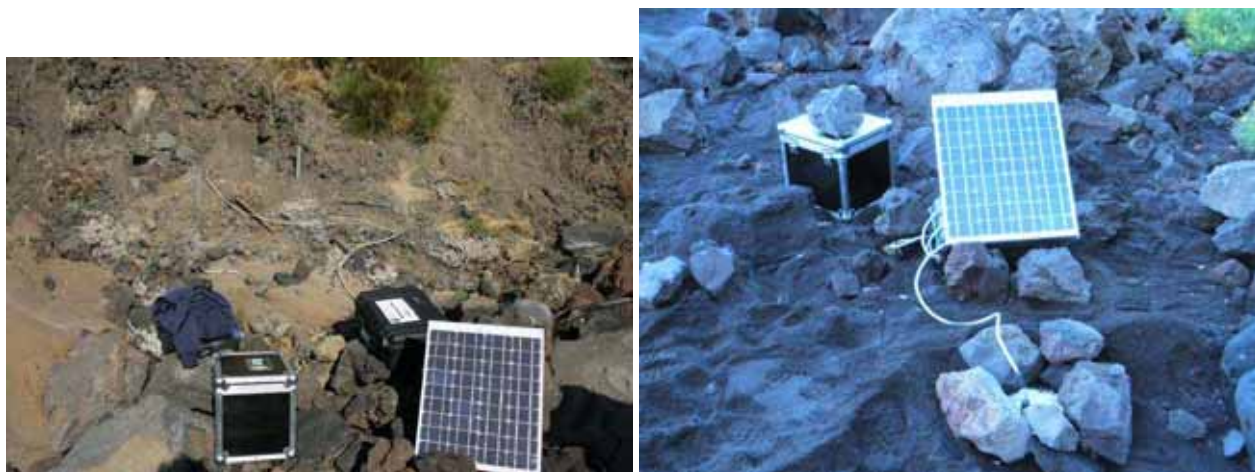


Figure 12: Mobile Stations (INGV, Catania).



Figure 13: Mobile Stations (INGV, Catania).

4.2 MARINE

A number of 10 SEDIS-V OBS by GEOPRO were deployed at sea from 2006-11-29 to 2006-12-02 (Fig.11). The instruments (Table 11, Figures 14 and 15) employed INPUT/OUTPUT SM-6, B-Coil broad band geophones and hydrophones, and high performance, low-drift clocks. The system recorded the vertical and horizontal components on channels 1,2 and 3, respectively. Due to lack of compass, the true orientation for the horizontal channels will possibly be obtained by analysis. The hydrophone data were recorded and channel 6. Table 12 shows the instrumental settings and characteristics. Appendix 7.4 reports the coordinates of deployment of the OBS stations (Tables 15).

From tables 11, 12 and 13 the conversion factor is

- Velocity = $N \text{ Vref} / \text{Digitizer_span} / \text{Gain} / \text{sensor_sensitivity}$ (V/m/s), that is
- Velocity = $N \cdot 4.5 / 5242878 / 10.6 / 28.8 = N \cdot 2.81154092^{-9}$ (m/s), where N is signal amplitude in counts.

True ground motion can be obtained by deconvolving with transfer function of geophone, that can be found from 2 Zeroes (0,0) ; (0,0) and 2 Poles (-15.83362697,23.42507659) (-15.83362697,-23.42507659).

Analogue inputs	6 differential channels
Input signal range (Vref)	+/- 4.5 V
Over voltage protection	+/- 40 V
A/D converter	High performance Delta-Sigma CS 5321 on each channel
Digital filters	CS 5322, cut-off frequencies: 500 Hz, 250 Hz,125 Hz, 62.5 Hz
Dynamic range	120 dB @ 250 Hz
Clock oscillator	TCXO, 0.01 PPM, 0-50 C
Main processor,Onboard memory	Intel XScall PXA255, 64 Mbytes DRAM
Data storage interface	PCMCIA, CF memory card Radio, Modem telemetry
Power supply, Consumption	voltage:9-36VDC; standby:1.2 W,recording:2.1 W 6 channels

Table 11: GEOPRO's SEDIS-V OBS characteristics.

Sampling rate	4 msec
Number of channels per OBS	4
Type of recording	continuously recording
Start recording	08:00:00 29/11/2006 UTC
End recording	12:00:00 05/12/2006 UTC
channel 1 (Vertical)	SM6 B-Coil (4.5Hz, 28.8 V/m/s +/-5%)
channel 2 (Horizontal 1)	SM6 B-Coil (4.5Hz, 28.8 V/m/s +/- 5%)
channel 3 (Horizontal 2)	SM6 B-Coil (4.5Hz, 28.8 V/m/s +/-5%)
channel 6 (Hydrophone)	HTI-1
Sedis V Gain	10.6 (1,2,3) 50.4 (6)
Digitizer Resolution	24 bits (1,2,3,6)
Cutoff Frequencies	93.6 - 102.9 (-3dB) - 125 (-130dB) Hz

Table 12: Data Acquisition parameters, geophone characteristics and settings.

Voltage	Sedis reading (Hex)	Sedis reading (Dec)
+VREF	4FFFFFF(H)	+5242879
0V	000000(H)	0
-VREF	500000(H)	-5242880

Table 13: GEOPRO's SEDIS-V Digitizer span.

Upon recovery, the OBS data were downloaded and a QC check was performed.

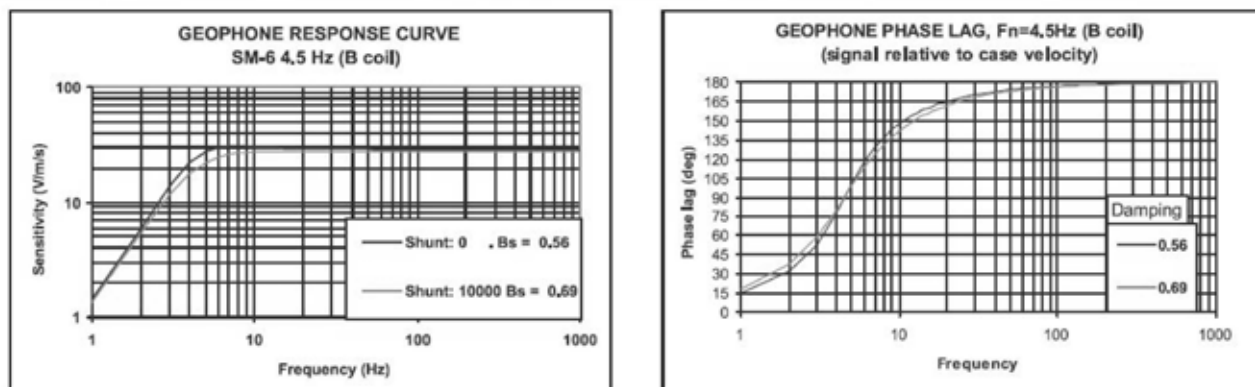


Figure 14: OBS frequency and phase lag response.



Figure 15: R/V *Urania* : (left) Assembling of an OBS inside a 17” glass Benthosphere; (right) Release procedure of an OBS off *Urania*.

4.5 MISCELLANEOUS

The datum was set to WGS84 and the UTM, zone 33 was chosen for navigation, display, and data acquisition. The time zone was set to the UTC for the instrumental data acquisition. The positioning maps and bathymetric images were produced with GMT [Wessel and Smith (1995)]. The multibeam data were pre processed on board by the PDS2000 and GMT software and ISMAR's routines and scripts, using the PDS-2000 production DTMS or XYZ ASCII converted data.

ISMAR's computing center employed two INTEL based PC running the GNU-Linux and the Microsoft Windows 2000 O.S., in addition to portable computer for data acquisition and personal processing.

Photographs and video were taken by digital cameras and video-camera.

5 INITIAL RESULTS

Initial results are presented, in order to address the importance of the preliminary findings and processing sequence of the data acquired.

5.1 WIDE ANGLE REFRACTION SEISMIC

5.1 MARINE

Figures 18,19,20,21 show the pattern of the seismic stations shot during the cruise (Table 19). The shooting mode was based on time (every 9-120 s) rather than on distance, since the compressor's air delivery could have been more easily controlled. Direct communications with INGV people monitoring the on-land network was able to provide information for fine tuning of the shooting lines.

OBS were recovered 2006-12-02. Appendix 7.4 reports the coordinates of release and overboard recovery of the OBS stations (Tables 16, 17) and the clock drifts (Table 18).

Figures 16, and 17 show the locations of OBS 1,2 and 3, derived from trilateration of range measurements by pinger.

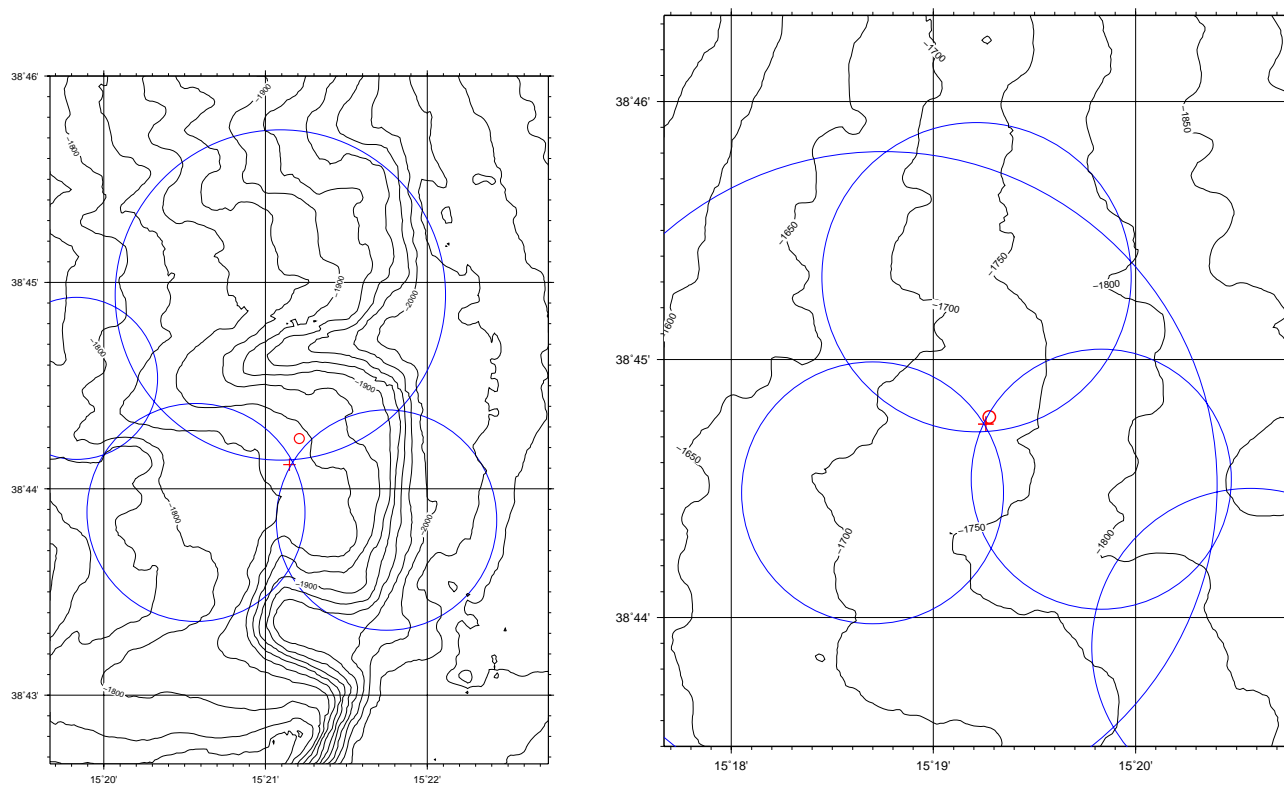


Figure 16: Positioning of OBS 1 (left) and 2 (right) by Range-Range measurements. Red crosses and circles are the positions of release and recovery overboard, respectively. The intersection of the 3 ranges locates the OBS on the bottom. The observed data were corrected for speed of sound against mean value of 1500 m/s to get true inclined and planimetric ranges. Bathymetry from this cruise data.

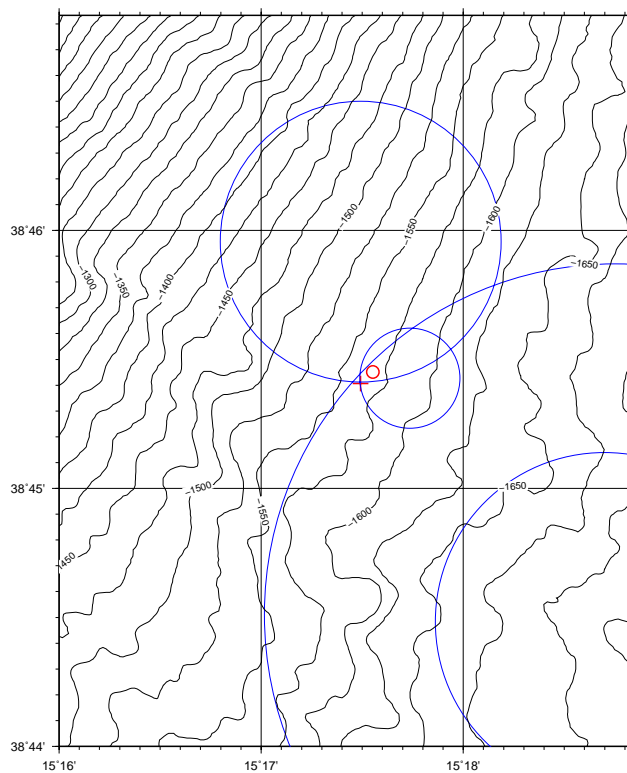


Figure 17: Positioning of OBS 3 by Range-Range measurements. Caption is the same as Fig.??.

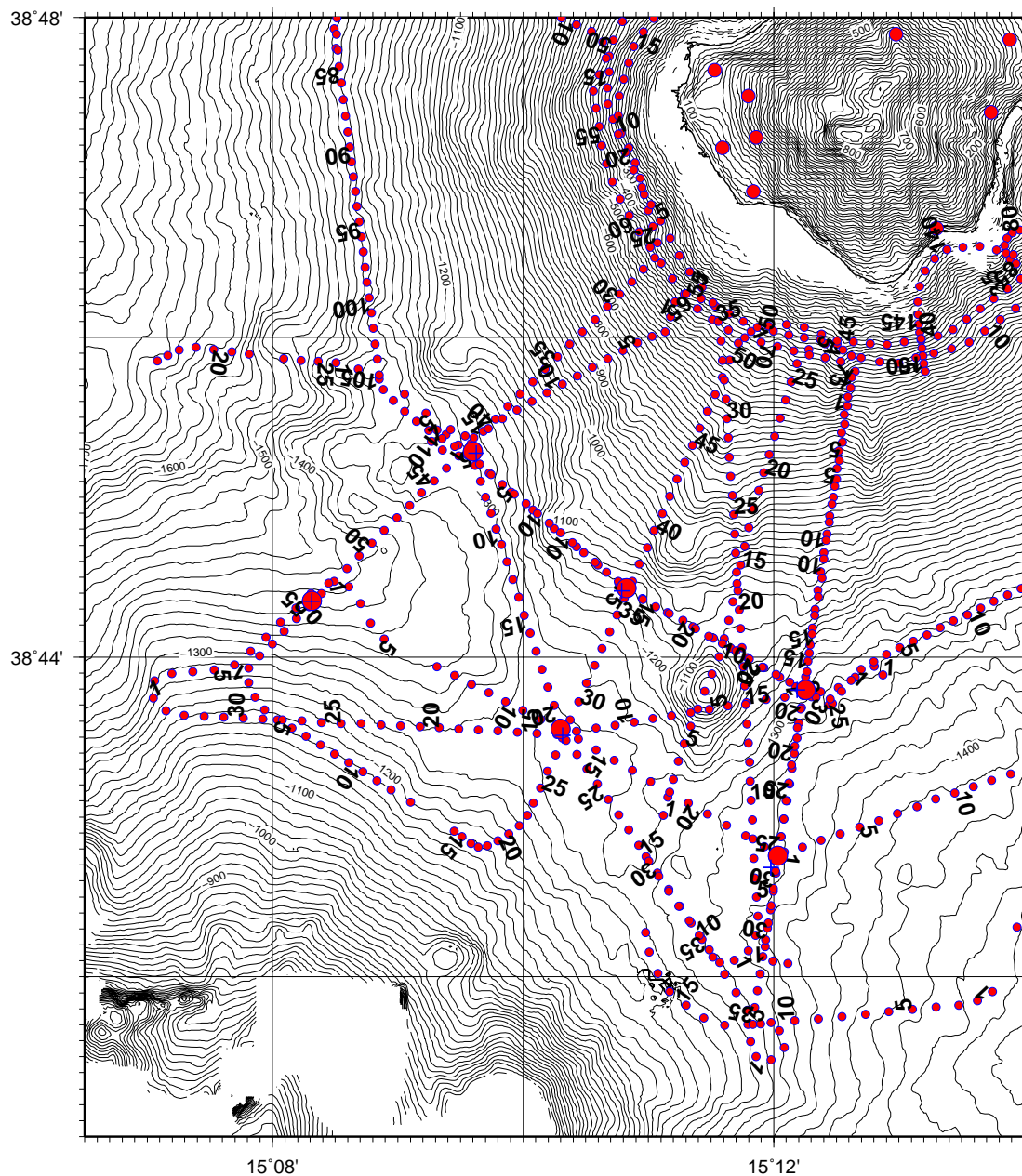


Figure 18: Shots map in the SW sector of Stromboli. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

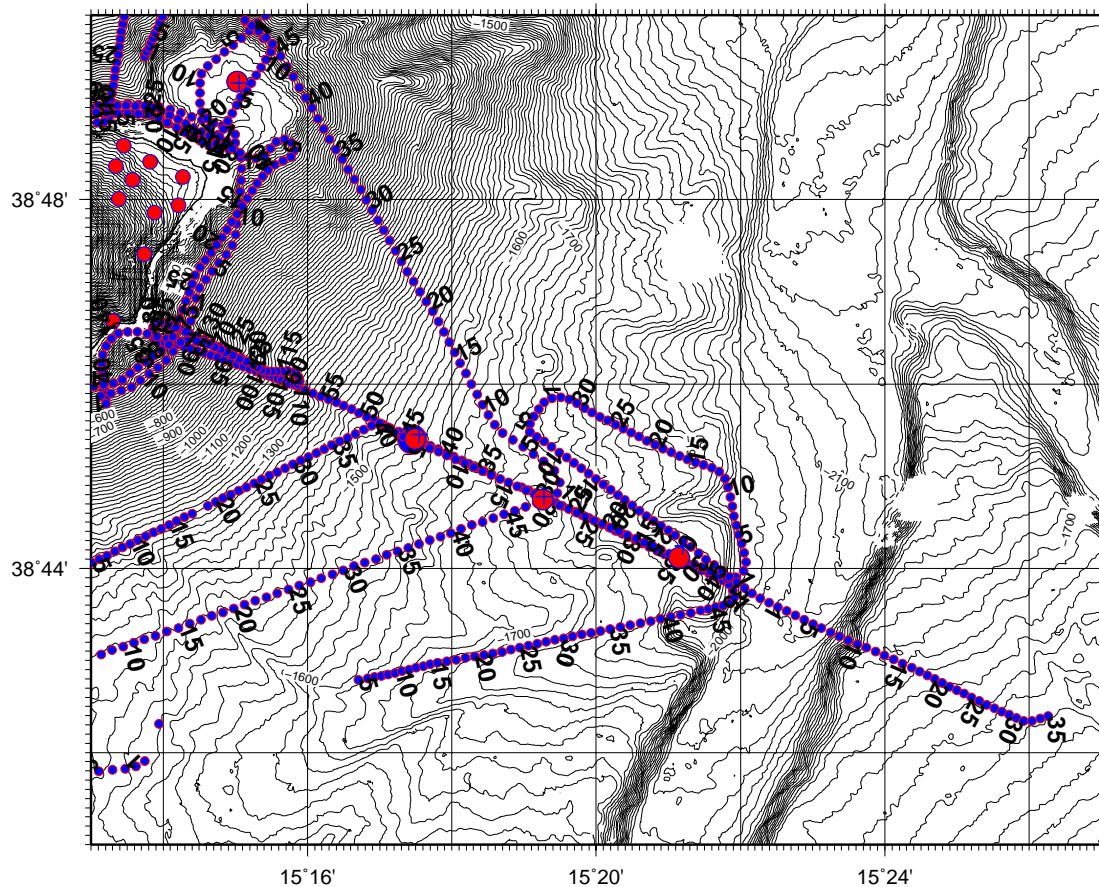


Figure 19: Shots map in the SE sector of Stromboli. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

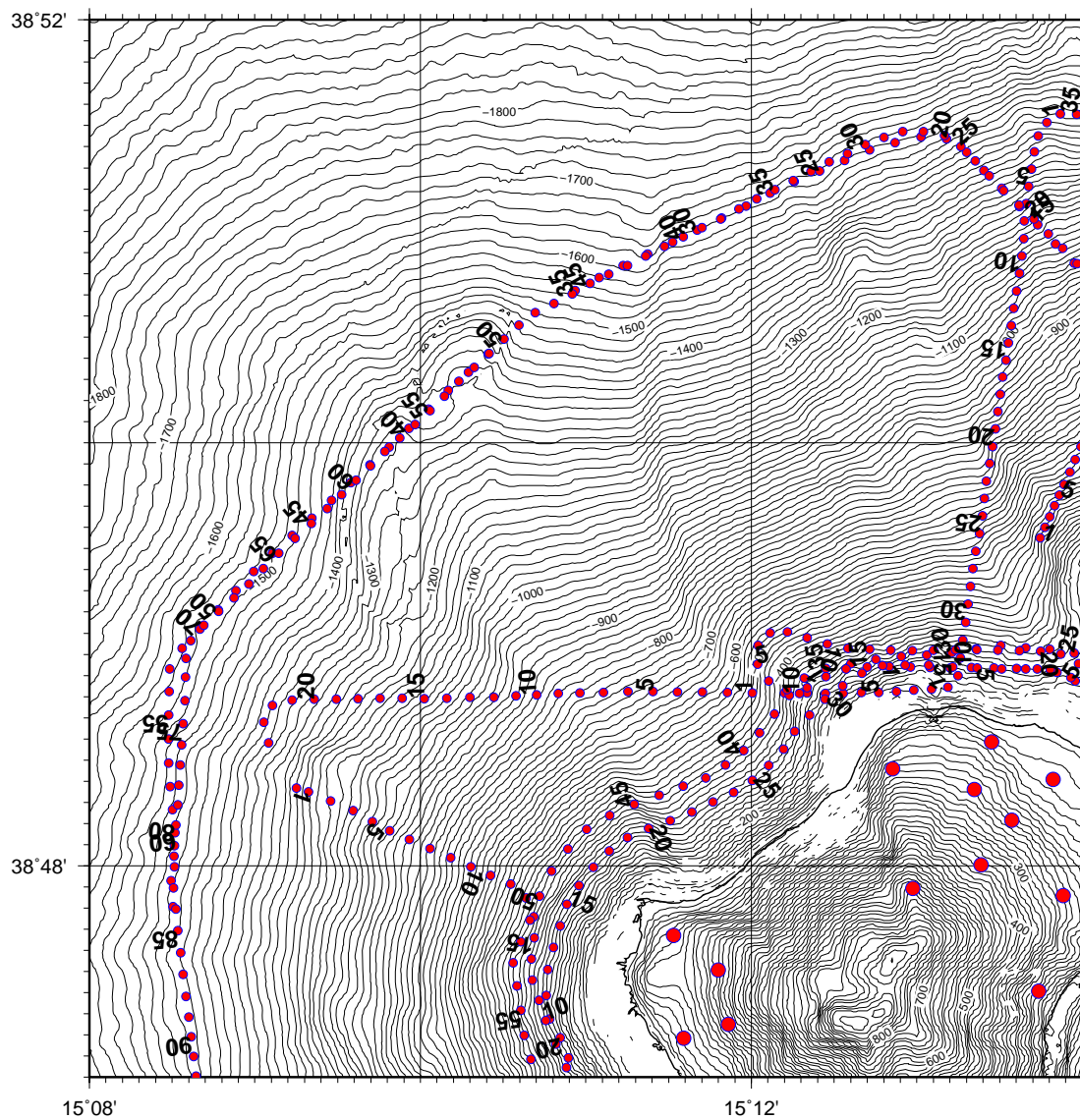


Figure 20: Shots map in the NW sector of Stromboli. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

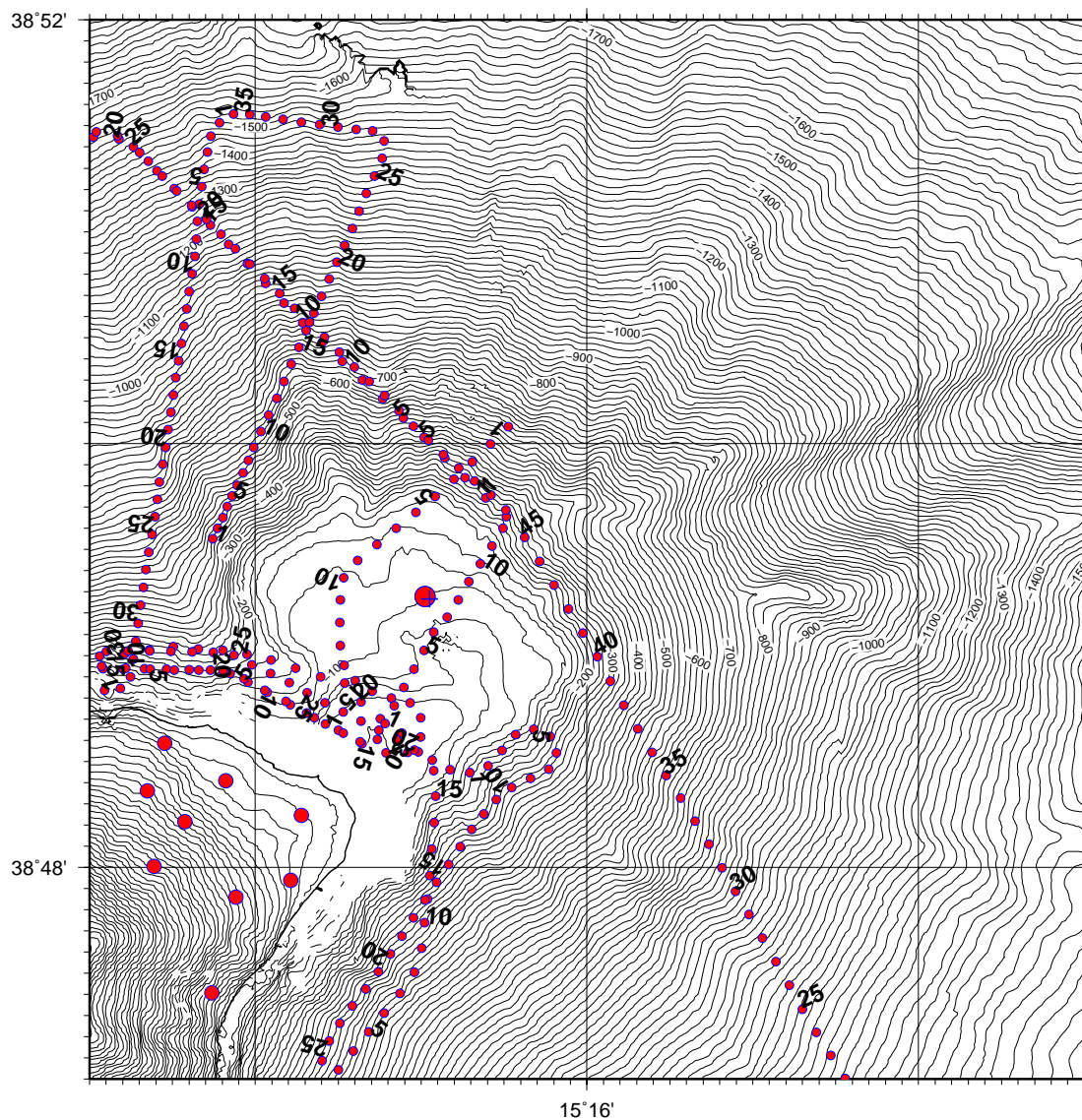


Figure 21: Shots map in the NE sector of Stromboli. Bathymetry from this cruise data and [Marani, Gamberi and Bonatti(2004)], [Bortoluzzi et al.(1999)] deeper than 2200 m. Topography from SRTM.

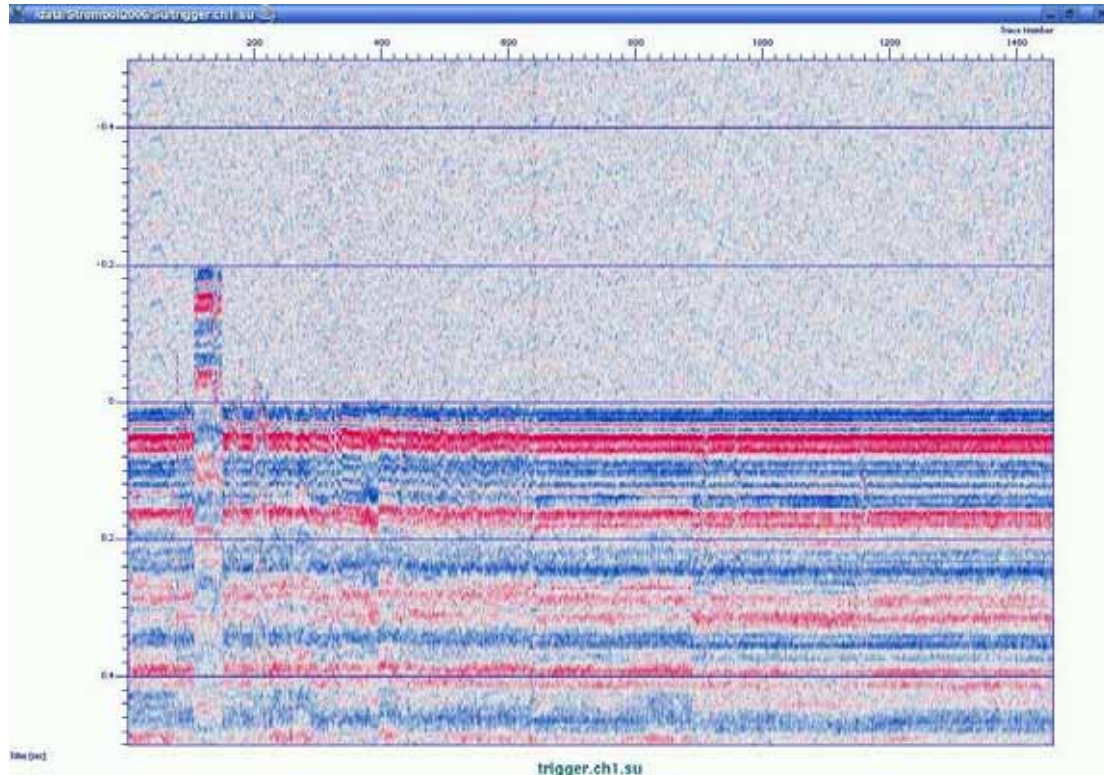


Figure 22: Trigger table from on-board seismograph.

The analysis of the recording of shots made by a seismometer on board (Fig. 22) and its comparison with shots table was able to evidence some problems in timing and signature quality for days 29 and 30 november. The data downloaded from each OBS after their recovery on board were checked for clock drifts and assembled in chunks of 40 s long records in the SEG-Y format, starting at the whole second of every Seismic Shot. Other SEG-Y files accomodated the entire OBS data set. Appendix 7.4 gives further details and description of the conversion procedure to the SAC format ([SAC (2006)], [Goldstein et al. (2003)]). All OBS well recorded seismic data except for OBS06, due to hardware failure.

In Figure 24 the vertical component seismograms recorded by 9 OBS after shot 5/L39 (2006-12-02T01:46:38.090, ESE of Stromboli, fig.19 and 23) are presented. Planar distances from the source to the nearest (03) and the farthest (07) OBS range between few m (nearly vertical) and 11 km, while distance from source to the Stromboli craters area is about 8 km. See in table 14 the distances from the recording stations. Recording conditions (signal-to-noise ratio "S/N") were almost good enough to allow all OBS to detect the signals, while data quality from the different OBS is variable, depending on the distance from seismic source. OBS data close to source are generally of good quality (Fig. 24), left), and in several cases clear second and third (exceptionally up to fourth) arrivals can be identified (Fig. 25 , right). Most of the records display an impulsive first arrival recorded only at close distances from the shot site. On distant shots data quality is poorer, however picking procedure of incoming waves is still possible on the emergent phases by applying a filter. From the pattern of recorded seismograms, we may deduce that the data quality of each OBS is probably depending on the local geology and considerably affected by the presence of the volcanic structures. These latter are characterised by remarkable velocity variations in the lateral direction, and are likely to influence the spreading of seismic phases.

SHOT	Lon	Lat	Depth	Date	Time			
5-39	15.290816	38.756682	-6.0	2006-12-02	01:46:38.090			
OBS	PTime	PCode	IDist	PDist	PAzim	Depth	ETime	TDiff
OBS03	01:46:39.086	IP_0	1557	62	79	-1561	01:46:39.113	0.027
OBS02	01:46:40.388	IP_0	3369	2888	114	-1739	01:46:40.301	-0.087
OBS01	01:46:42.258	IP_0	6141	5863	113	-1834	01:46:42.123	-0.135
OBS10	01:46:41.841	EP_2	7987	7986	333	-98	01:46:43.350	1.509
OBS05	01:46:43.361	IP_0	8187	8089	248	-1265	01:46:43.481	0.120
OBS04	01:46:44.118	IPD0	9341	9247	238	-1333	01:46:44.239	0.121
OBS09	01:46:44.753	_P_1	9834	9765	259	-1176	01:46:44.567	-0.186
OBS08	01:46:45.531	IP_0	10985	10911	251	-1282	01:46:45.324	-0.207
OBS07	01:46:43.687	_P_2	11446	11374	268	-1293	01:46:45.627	1.940

Table 14: Shot 5/39. Picking time of arrivals and goodness codes, distances (inclined,planar), azimuth from Recording Stations, difference between picked and expected time of arrivals, calculated by integrating travelled distances with sound velocity profile of fig.30. Picking codes: 1234 1=start time of phase (Impulsive,Emerging); 2=Phase (P,S); 4=goodness of picking (0 +/- 0.05s).

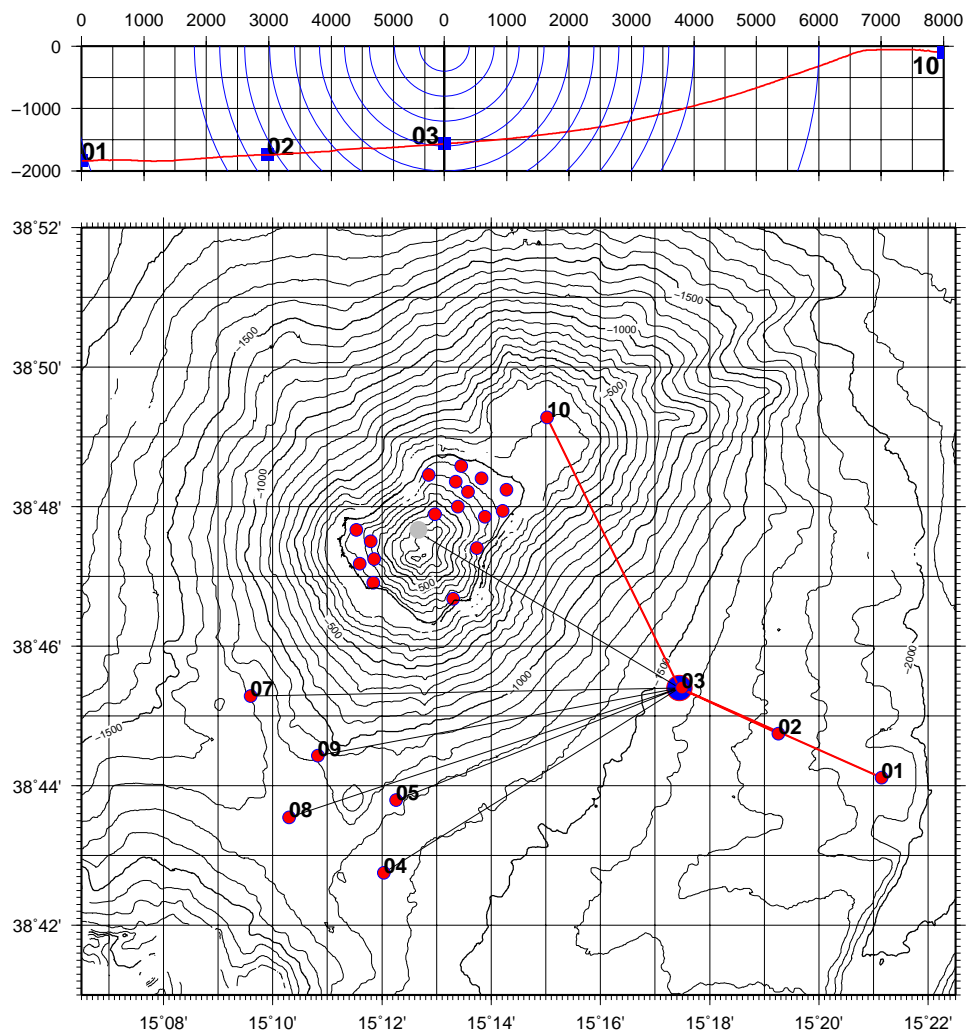


Figure 23: Shot 5/39, OBS and Land Stations (also shown the 'Craters' point, NW of Stromboli top (925m), height 750m). On top the X-Z plot of OBS 01,02,03 and 10 and of the bathymetry; horizontal and vertical scales are the same.

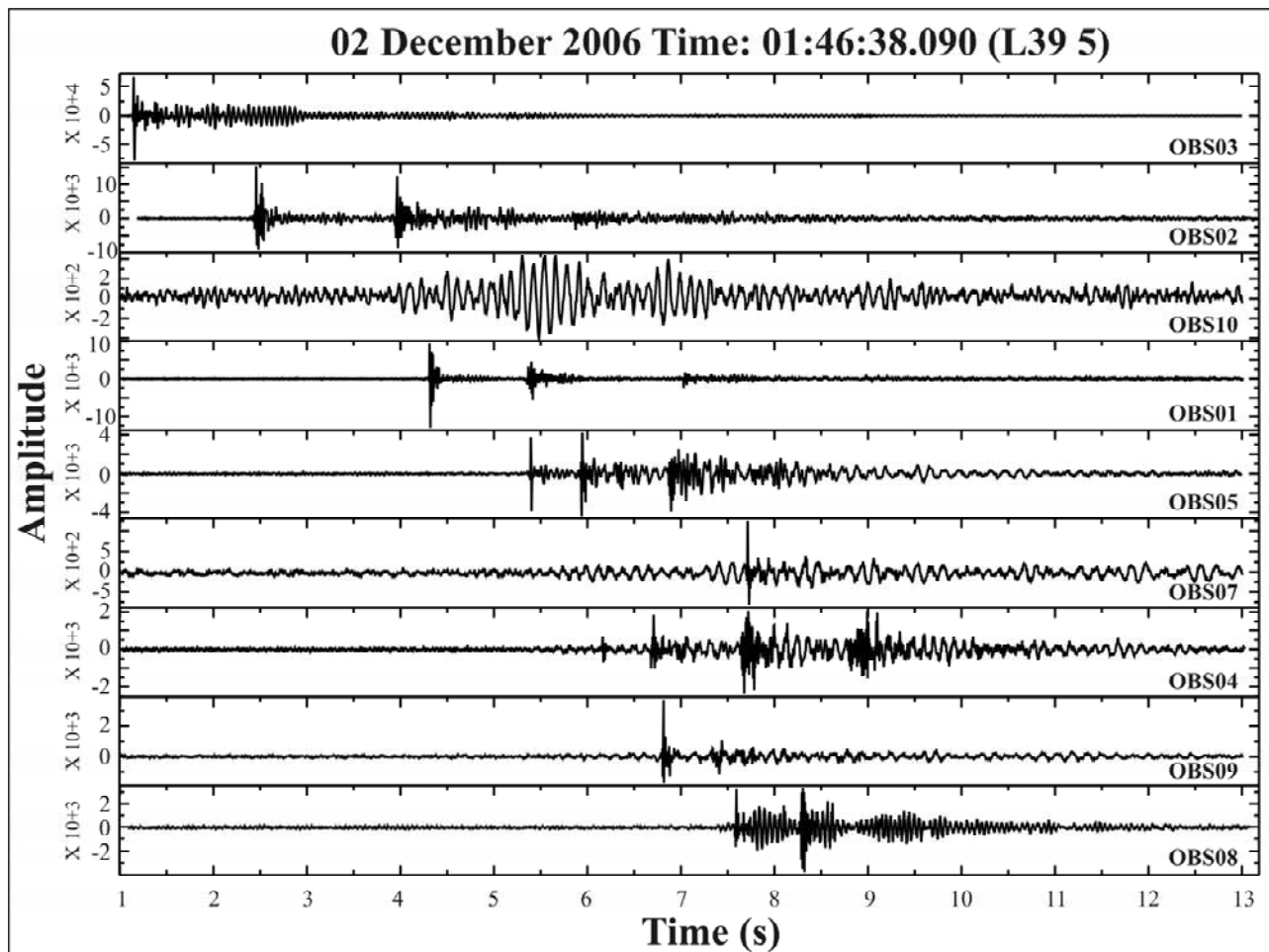


Figure 24: Example of one shot gather from OBS data recordings (vertical component).

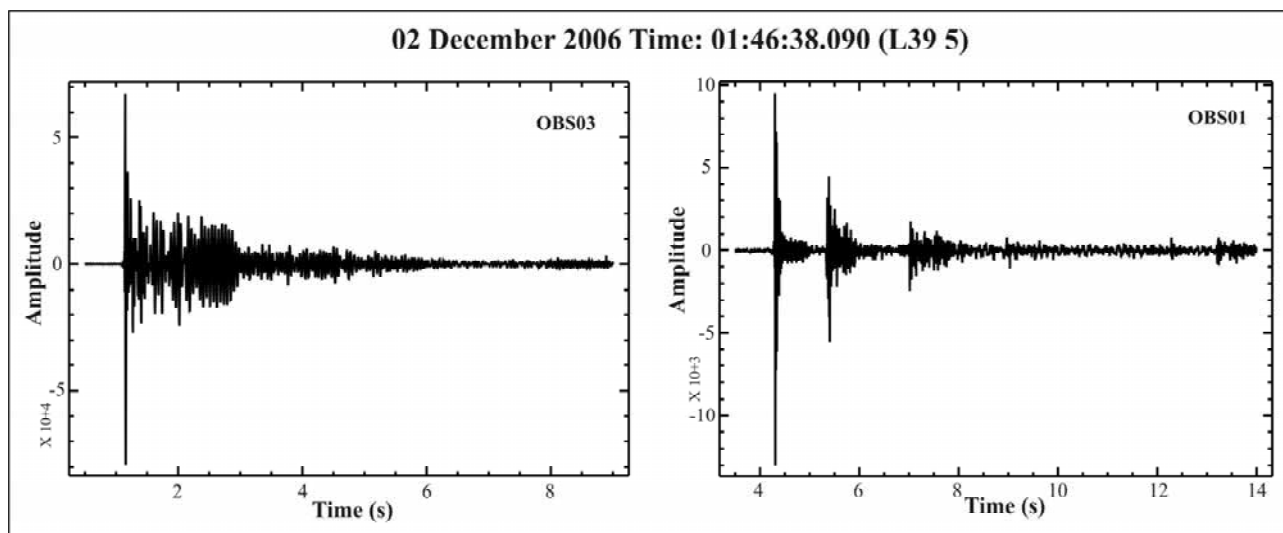


Figure 25: Vertical component seismograms from OBS01 (right) and OBS03(left).

5.2 LAND

An example of seismic signal recorded by onshore station STRA4 during the experiment is shown in fig. 28. The peaks on the seismographs (indicated as A in fig. 28) are produced by shot events during the experiment. Random seismic noise (indicated as B in fig. 28) is probably due to gas activity in the area.

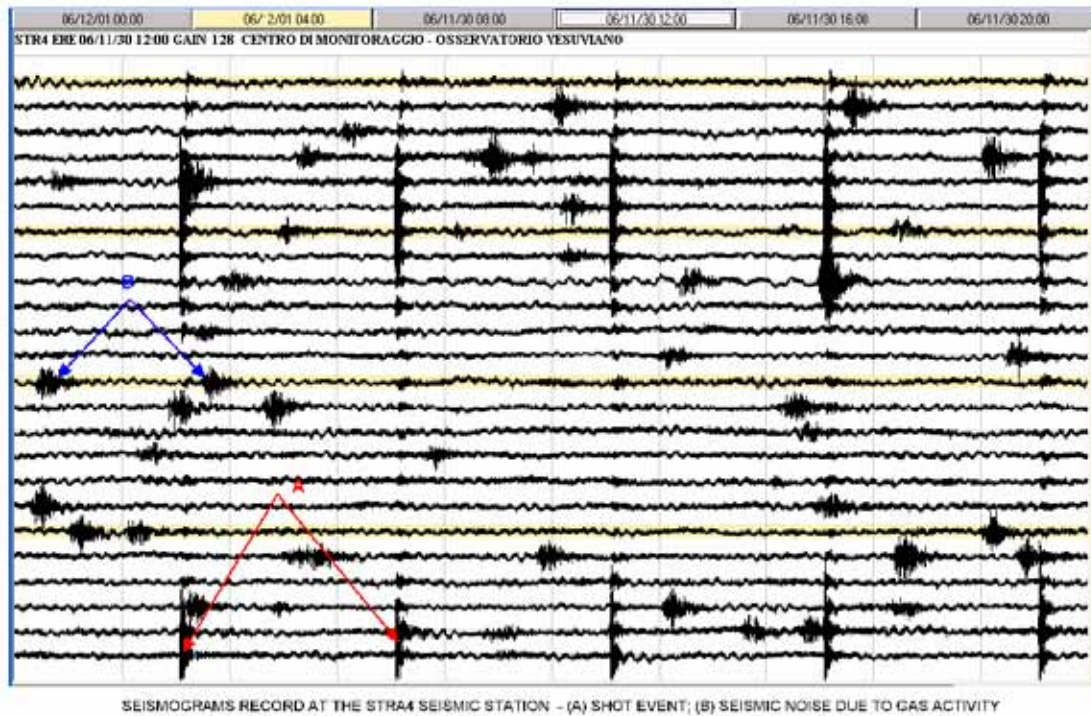


Figure 26:

5.2 BATHYMETRY

A surface of approximately 290 km² was investigated during the cruise. Mapping on board was performed by using the PDS-2000 production DTM, converted to ASCII, filtered by ISMAR's routine `filter_bat`, gridded by the `nearneighbor` GMT routine. The obtained grids were used for navigation, planning, geomorphological and structural analysis. The whole submerged portion of the volcano was mapped. Particular attention was put on the 'Sciara del fuoco' area, trying to collect as much data as possible on the area of the submarine slide of 2002-12-30. (Figure 27 shows the variations occurred in the area by comparing the 1999-03, 2003-01 and 2006-11 the DTM data, showing that the scarp built by the slide was refilled down to 250m water depth by the continuous effusive episodes up to mid 2003.). Figures 28 and 29 show examples of the acquired bathymetric data from the filtered 20 m resolution PDS-2000 production DTM.

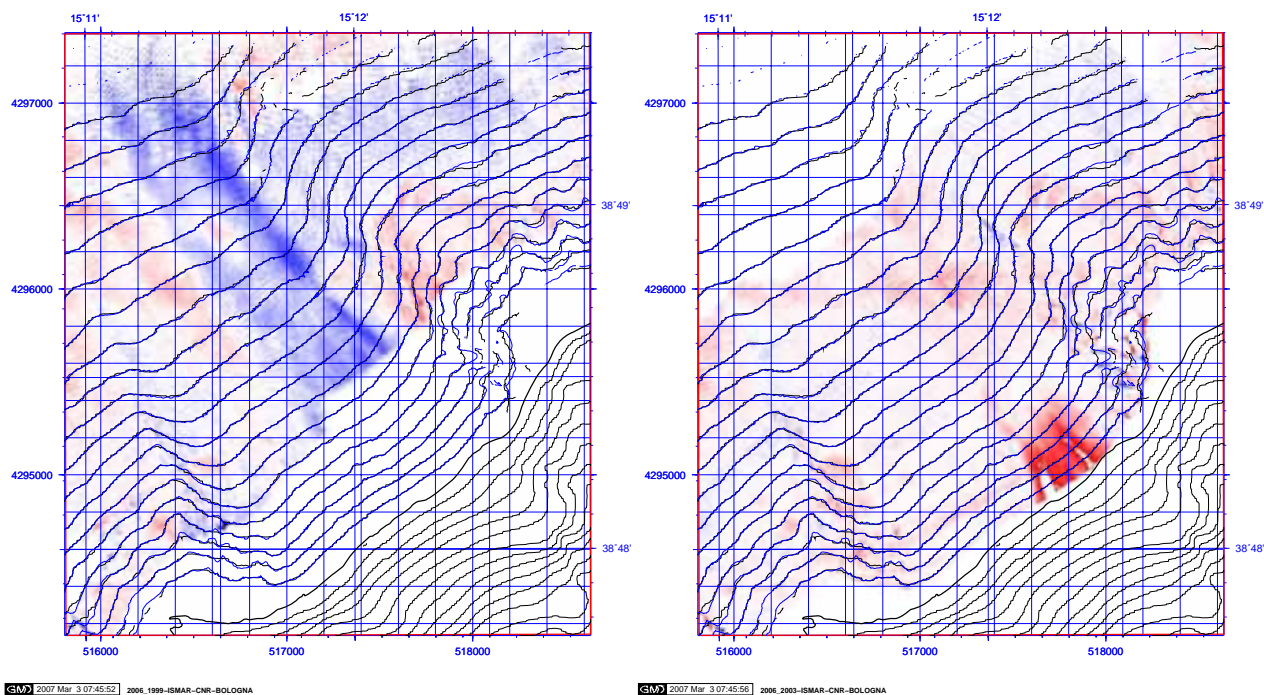


Figure 27: Comparison of the bathymetric data in the Sciara del Fuoco. Blue grades are lower areas, red ones are higher areas. In the DTM on left in the figure note the occurrence of a wide slide scarp (represented in blue) of the 2003. In the DTM on right in the figure, produced based on the Multibeam data collected during the STRO-06 cruise note the flat morphology of the sea bottom in correspondence to the slide area, indicating that the scar has been already infilled by volcanic and volcanoclastic products related to the Stromboli island. A deposit (represented in red) produced by the lava front is also evident.

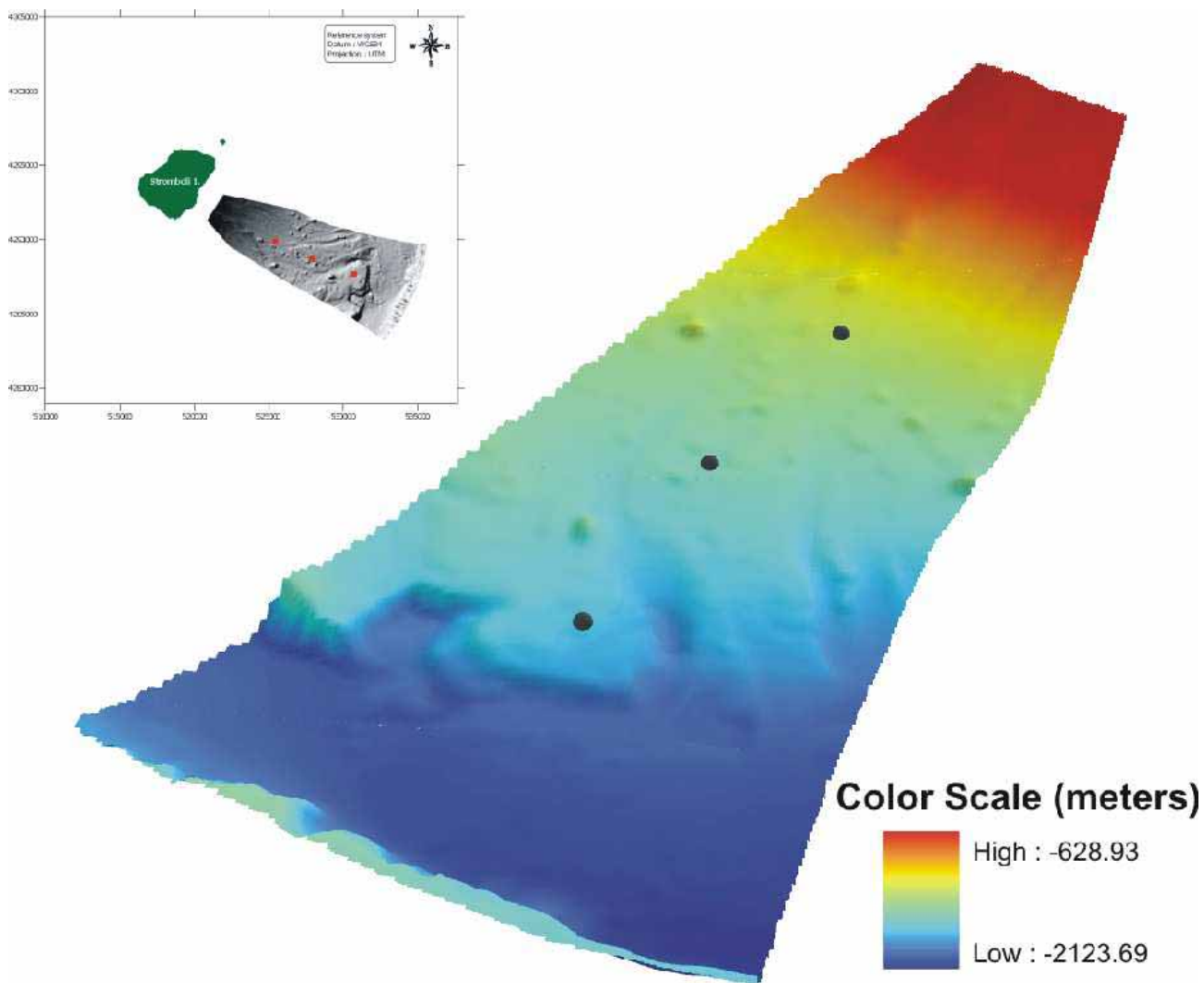


Figure 28: 3-D view of the area on the S-SE flanks of Stromboli. The OBS locations are also reported. Note the irregular sea bottom morphology in correspondence to the flank of the volcano, where several outcrops of volcanic basement are evident, separated by NE-SW trending lineaments, probably resulting from channelised flows of volcanoclastic deposits towards the slope and bathyal plain.

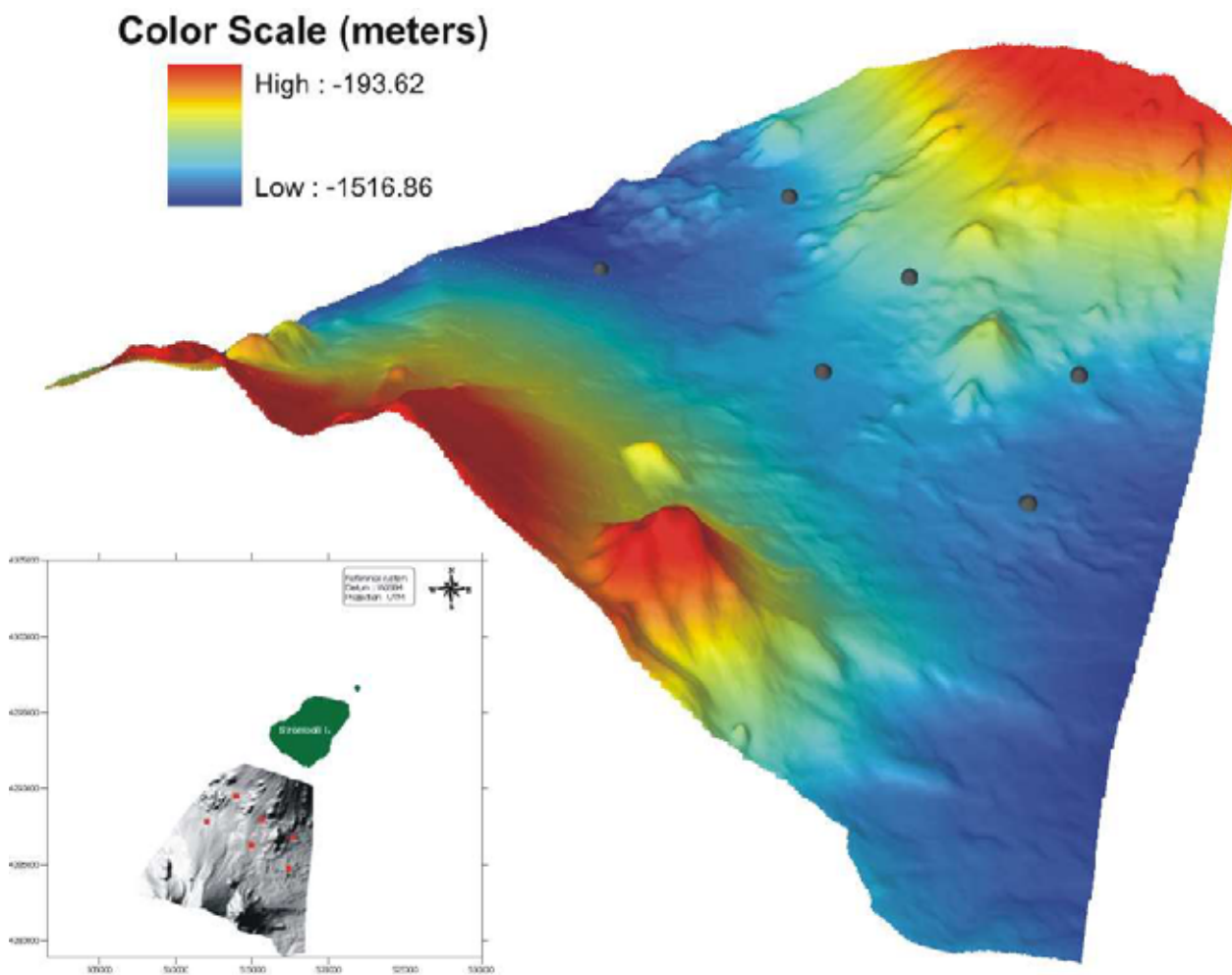


Figure 29: 3-D view of the area connecting the SW flanks of Stromboli to Panarea. The OBS locations are also reported. Note that the SW submerged flank of the volcanic edifice shows a more regular morphology with respect to the SE one (shown in fig. 25). Rounded-shaped morphologies could alternatively represent volcanic blocks deposited after mass wasting along the slope or outcrops of volcanic basement. E-W trending lineaments show the occurrence of a drainage pattern joining at the Stromboli canyon, located at the foot of the slope at water depths of about ? 2000 m.

5.3 CTD

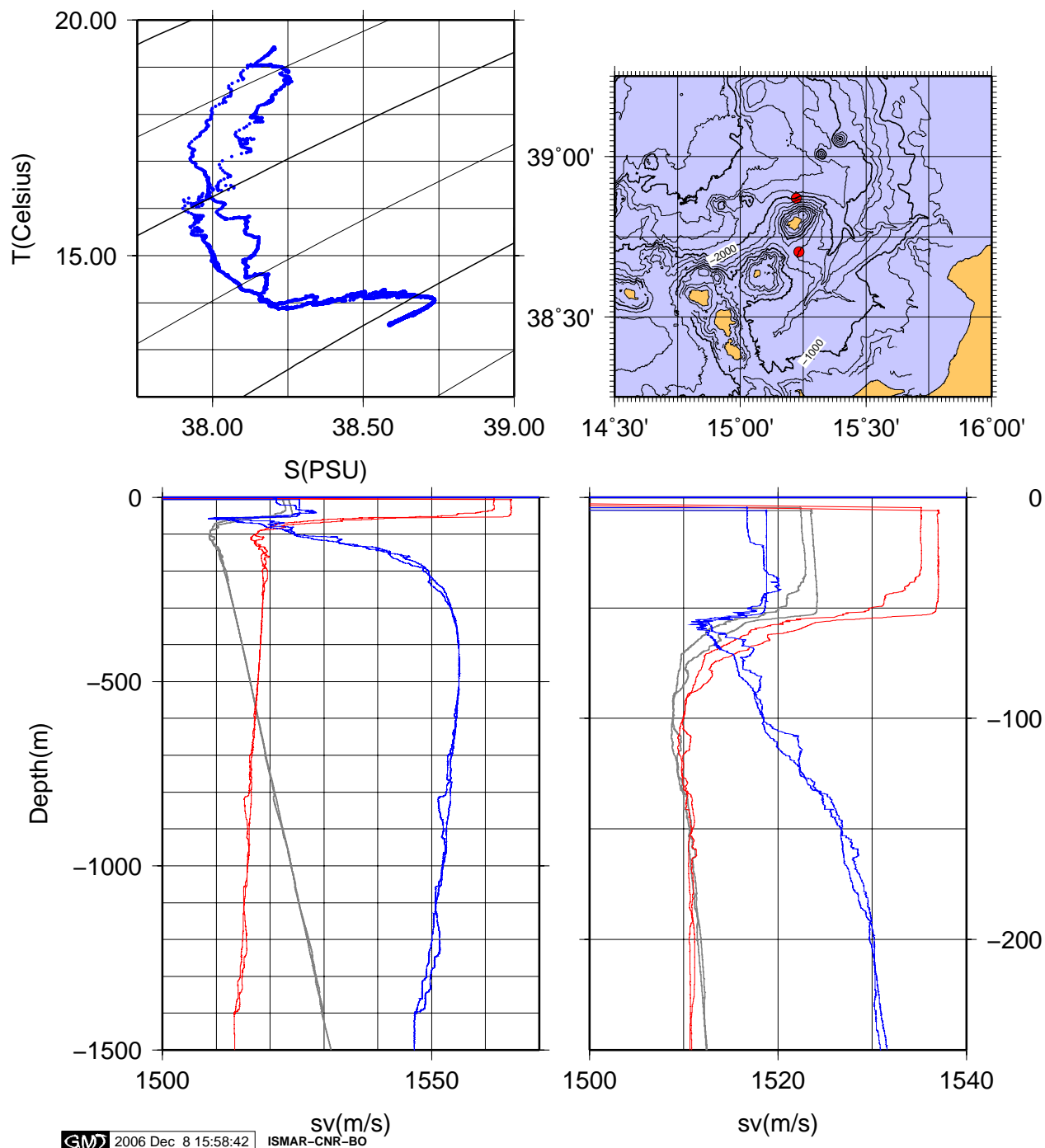
Figure 30 shows the SV, temperature and salinity profiles, the TS diagram and location of the CTD casts. The principal water masses are clearly identified (MAW, LIW, TDW) by their temperature/salinity characteristics. The LIW waters are present down to 600-700 m, where they start to mix with the TDW. Also evident are the staircase formations in the TDW.

CRUISE STR06 R/V URANIA

CTD DATA SBE911 Plus

DATE START: 2006-11-28

DATE END: 2006-12-06



GM 2006 Dec 8 15:58:42

ISMAR-CNR-BO

Figure 30: Cruise STR06 CTD casts data. Lower left,right: Sound Velocity (gray), T (red,10-20°C), S (blue, 37.75-39PSU). Upper left: TS diagram.

6 CONCLUSIONS

During the 5 days cruise (of a total of 7 days including transits) around the Stromboli Island we obtained:

- 1529 shooting stations, recorded by 9 of 10 OBS deployed on the seafloor and by the 33 permanent and temporary land stations of the Seismic Network on the Island
- high resolution bathymetric images and DTMs of the investigated areas (approximately 290 km² from 2500 to 5 m depth).
- SBP lines
- 2 CTD casts

Analysis of the data collected during the STR06 expedition is under process, and will continue during the forthcoming several months and we expect to have new insights into the geology of the investigated areas and into the regional geodynamic processes.

No problems were encountered regarding neither the people nor the environment during the cruise.

References

- [Astraldi and Gasparini(1994)] Astraldi M. and Gasparini G.P., *The seasonal Characteristics of the Circulation in the Tyrrhenian Sea*, 1994, in *Seasonal and Interannual Variability of the Western Mediterranean Sea*, Coastal and Estuarine Studies, Vol.46, 115-134.
- [Astraldi et al.(2001)] Astraldi M., Gasparini G. P., Gervasio L. and Salusti E., *Dense Water Dynamics along the Strait of Sicily (Mediterranean Sea)*, 2001, *Journal of Phys.Oceanogr.*, Vol. 31, No. 12, pp. 3457-3475.
- [Barberi et al.(1974)] Barberi F., Innocenti F., Ferrara G., Keller J. and Villari L., *Evolution of Aeolian arc volcanism (Southern Tyrrhenian Sea)*, 1974, *Earth Planet. Sci. Lett.*, 21, 269-276.
- [Barberi et al.(1993)] Barberi, F., Rosi M. , and Sodi A. , *Volcanic hazard assessment at Stromboli based on review of historical. data*, 1993, *Acta Vulcanologica* 3, 173-187.
- [Beccaluva et al.(1985)] Beccaluva L., Gabbianelli G., Lucchini F., Rossi P.L., and Savelli C., *Petrology and K/Ar age of volcanics dredged from the Aeolian seamounts: implications for geodynamics evolution of the southern Tyrrhenian basin*, 1985. . *Earth Planet. Sci. Letters*, 74, 187-208.
- [Bonaccorso(1998)] Bonaccorso A., *Evidence of a dyke-sheet intrusion at Stromboli volcano inferred through continuous tilt*, 1998, *Geophys. Res. Lett.*, 25, 4225-4228.
- [Bonaccorso et al.(1996)] Bonaccorso A., Cardaci C., Coltelli M., Del Carlo P., Falsaperla S., Panucci S., Pompilio M. and Villari L., *Volcanic activity on Stromboli in 1993*, 1996, In: *Annual Report of the World Volcanic Eruptions in 1993*. *Bull. Volc. Eruptions*, 33, 7-13.
- [Bonaccorso et al.(2003)] Bonaccorso A., Calvari S., Garfi' G., Lodanto L. and Patane' D., *Dynamics of the December 2002 flank failure and tsunami at Stromboli volcano inferred by volcanological and geophysical observations*, 2003, *Geophys. Res. Lett.*, 30, NO. 18, 1941, doi: 10.1029/2003gl017702.
- [Bortoluzzi et al.(1999)] Bortoluzzi G., Carrara G., Fabretti P., Gamberi F., Marani M., Penitenti D., Tonani M., Zitellini N., Bonazzi C., Lippolis S., Musacchio M., Stanghellini G. (IGM), Daviddi A., Diroma G., Ferrarini A., Leotta A. (IIM), Gilod D., Nikaronenkov B. (MSU), Efimov V., Erofeev S. (GIN), *Swath bathymetry and geophysical survey of the Tyrrhenian sea. Report on bathymetric, magnetic and gravimetric investigations during cruises TIR96 and TIR99*, 1999, ISMAR Technical Report, N.52, doc.bo.ismar.cnr.it/CRUISE.REPORTS/tir96_99_rep/index.html.
- [Chiocci et al.(1998)] Chiocci F.L., Budillon F., de Alteriis G., Marani M., Gamberi F., Romagnoli C., Martorelli E., Bosman A., Cammaroto S., Cammarano D., Celia Magno M., Falese F.G., Imbe' G., Jacobs J.L., Wallace R.F., Matthew D., Flewellen C., *Prime immagini TOBI nei mari italiani. Rilievo sonar ad alta definizione e grande copertura di elementi geologici primari del Tirreno meridionale*, 1998. *Atti del 49° Congresso della Societa' Geologica Italiana*, Palermo, Settembre 1998.
- [Cimini(1999)] Cimini G.B., *P-wave deep velocity structure of the Southern Tyrrhenian Subduction Zone from nonlinear teleseismic traveltime tomography*, 1999, *Geophys. Res. Lett.*, 26, 3709-3712.
- [Cimini(2004)] Cimini G.B., *Tomographic studies of the deep structure of the Tyrrhenian-Apennine system*, 2004, *Mem. Descr. Carta Geol. d'It.*, Vol. LXIV, pp.15-28.
- [Cohen and Stockwell (2006)] Cohen, J. K. and Stockwell, Jr. J. W., *CWP/SU: Seismic Unix Release 39: a free package for seismic research and processing*, Center for Wave Phenomena, 2000. Colorado School of Mines. <http://www.cwp.mines.edu/cwpcodes/>
- [Collins (1999)] Collins, M.D., *User Guide for RAM version 1.0 and 1.0p*, 1999, Naval Research Laboratory, Washington DC.

- [Di Fiore et al. (2006)] Di Fiore V., Aiello G., Beranzoli L., Bortoluzzi G., Castellano M., D'Anna G., Favali P., Marsella E. and Patane' D., *Studio di utilizzazione di sorgenti sismiche marine tipo Airgun nell'esplorazione sismica tomografica di vulcani attivi: l'esempio del Vulcano Stromboli*, 2006. GNGTS 2006, Consiglio Nazionale delle Ricerche, Roma, 26-28 novembre 2006, Abstract Volume.
- [Favalli et al.(2005)] Favalli M., Karatson D., Mazzuoli R., Pareschi M.T. and Ventura G., *Volcanic geomorphology and tectonics of the Aeolian archipelago (Southern Italy) based on integrated DEM data*, 2005, Bull. Volcanol, 68: 157-170.
- [Goldstein et al. (2003)] Goldstein, P., Dodge D., Firpoand M. and Lee Minner, *SAC2000: Signal processing and analysis tools for seismologists and engineers*, 2003, Invited contribution to "The IASPEI International Handbook of Earthquake and Engineering Seismology", Edited by WHK Lee, H. Kanamori, P.C. Jennings, and C. Kisslinger, Academic Press, London.
- [Hedlin and Orcutt(1989)] Hedlin M. A. and Orcutt J. A., *A comparative study of island, seafloor and subseafloor ambient noise levels*,1989. Bull. Seism. Soc. Am., 79 (1), 172-179.
- [Hirahara and Hasemi (1993)] Hirahara K. and Hasemi A., *Tomography of subduction zones using local and regional earthquakes and teleseismic*, 1993, in: Iyer H.M. and Hirahara K. (Eds.): *Seismic Tomography: Theory and Practice*. Champan and Hall, London, 519-562.
- [Lucente et al.(1999)] Lucente F.P., Chiarabba C., Cimini G.B. and Giardini D., *Tomographic constraints on the geodynamic evolution of the Italian region*, 1999. J. Geophys. Res., 104, No B9, 20,307-20,327.
- [Marani, Gamberi and Bonatti(2004)] Marani M., Gamberi F. and Bonatti E., *From seafloor to deep mantle: architecture of the Tyrrhenian backarc basin*, 2004, Mem.Descr.Carta geol.d'Italia, Vol.LXIV.
- [Masini and Ligi (1995)] Masini L. and Ligi M., *Sistema di controllo e sincronizzazione cannoni sismici ad aria compressa*, 1995, Rapporto Tecnico IGM N.37, 126pp.
- [Millot C.(1987)] Millot C., *Circulation in the West Mediterranean Sea*, 1987, Oceanologica Acta, Vol.10, 143-149, 1987.
- [Montuori (2004)] Montuori C., *Caratterizzazione geodinamica del bacino tirrenico meridionale (Geodynamic characteristics of the South Tyrrhenian basin) (in Italian)*, 2004. Research post-graduation Thesis, University of Chieti, Italy, Faculty of Mathematics, Physics and Natural Sciences, pp.118.
- [Panza et al.(2004)] Panza G.F., Pontevivo A., Sarao A., Aoudia A., Peccerillo A., *Structure of the lithosphere-asthenosphere and volcanism in thje Tyrrhenian Sea and surroundings*, 2004. Mem. Descr. Carta Geol.d'Italia, LXIV, Marani M.P., Gamberi F., Bonatti E. (Ed.), 29-56.
- [Pasquare' et al.(1993)] Pasquare' G., Francalanci L., Garduno V. H. and Tibaldi A. *Structure and geologic evolution of the Stromboli volcano, Aeolian Islands, Italy*, 1993. Acta Vulcanologica, 3, 79-89, 1993.
- [Perl (2006)] <http://www.perl.org/>.
- [Piromallo and Morelli(1997)] Piromallo C. and Morelli A. *Imaging the Mediterranean upper mantle by P-wave travel time tomography*, 1997. Ann. Geof., 40, 963-979, 1997.
- [SAC (2006)] Goldstein P. et al., 2006, SAC - Seismic Analysis Code, www.iris.edu/manuals/sac/manual.htm, The Regents of the University of California.
- [Sparnocchia et al.(1999)] Sparnocchia S., Gasparini G.P., Astraldi M. Borghini M. and Pistek P., *Dynamics and mixing of the Eastern Mediterranean Outflow in the Tyrrhenian Basin*, 1999, Journal of Marine Systems.

- [Stanghellini and Bortoluzzi(2004)] Stanghellini G. and Bortoluzzi G. *DAPHNE: A client server data acquisition and distribution software package application with load cells and accurate event timestamping on oceanographic ships*, 2004, ISMAR Technical Report.
- [Tibaldi(2001)] Tibaldi A. *Multiple sector collapses at Stromboli volcano, Italy: How they work*, 2001. Bull. Volcanol., 63, 112-125.
- [Tinti et al.(2005)] Tinti S., Manucci A., Pagnoni G., Armigliato A., Zaniboni F., *The 30th December 2002 tsunami in Stromboli: sequence of the events reconstructed from the eyewitness accounts*, 2005. Natural Hazards and Earth System Sciences, 5, 763-775.
- [Waite (2002)] Waite, A.D., *Sonar for Practising Engineers*, 2002. III edition, Wiley, p54.
- [Webb (1998)] Webb S. C., 1998. *Broadband seismology and noise under the ocean*. Rev. Geophys., 36 (1), 105-142.
- [Wessel and Smith (1995)] Wessel P. and Smith W.H.F., *New version of the Generic Mapping Toolreleased*, EOS Trans. AGU, p.329, 1995.
- [Zodiatis and Gasparini(1995)] Zodiatis G. and Gasparini G.P., *Thermoaline staircase formations in the Tyrrhenian sea*, Deep Sea Research, Vol. 43(5), 655-678.

7 APPENDIX

7.1 DIARY OF OPERATIONS

- 2006-11-27 Mobilization of equipment and personnel on R/V *Urania* docked in the Naples harbour, berth 22.
- 2006-11-28 At 10:00 localtime R/V *Urania* sailed from Napoli, heading SSE to Stromboli, where it arrived 22:00. A CTD cast was performed at a water depth of 1500 m on the northern flanks of the volcano, and immediately input on the PDS2000 software for multibeam operations. The GEOPRO team prepared the 10 OBS for deployment, whilst IAMC and ISMAR teams prepared the air-gun arrays and compressors.
- 2006-11-29 From midnight to 06:00 multibeam mapping was performed in order to decide the OBS deployment sites, basing also upon available ISMAR data. From 06:00 to 12:00 the 10 OBS were deployed on the NE, S and SW flanks of the volcano, at maximum depths and distance of 1500 m and 2 NM, respectively. At 15:30 the seismic arrays were deployed and at 16:30 seismic operations started for quality control and tuning, shooting the guns at 140-190 bars by using the full delivery of 2500 L/min by the diesel and electrical compressors. At 20:00 contacts with the INGV teams in Stromboli reported that the entire land seismic network showed signals from the seismic shots when ship came closer than 1-1.5 km from shore. At 22:00 the diesel compressor showed very bad performance on the High Pressure 4th stage with oil spills and automatic equipment turnoff. Therefore we were forced to put it out of operations until repair.
- 2006-11-30 At 05:00 the outer gun of the starboard array was found to be defective and was taken off the array. After two hours of work with three guns, and test of the array in Air-Gun mode, at 10:00 the array was recovered, the defective gun was recovered and the spare one was installed. At 11:45 the array was redeployed and normal operations were restored. At 13:00 a circle at 500 m from shore started. At 19:00 problems electrical compressor were found. The pressure regulator was bypassed being defective. Multibeam acquisition continues during the interruption of seismic refraction acquisition covering water depths up to 1200 m. Shooting restarted 23:00.
- 2006-12-01 Starboard string was recovered. Multibeam acquisition continues during the interruption of seismic refraction acquisition covering water depths up to 1500 m.
- 2006-12-02 End shooting 05:43. Recovery OBS. At 21:00 CTD cast was performed on the SW flanks.
- 2006-12-03 CTD data were input on the PDS2000 software and we started a Multibeam acquisition following circles around the island down to a depth of about 1900 m. At 07:00 the acquisition was stopped to permit the landing of some members of the personal aboard. At 10:00 the acquisition restarted following circles around the island.
- 2006-12-04 At the 8:00 we changed the area to investigate the 'Sciara del Fuoco' nearshore till a depth of 15 m . At 11:00 we acquired six Multibeam calibration lines using as a target a seamount in order to calibrate heave, roll and pitch parameters. At 14:37 Multibeam acquisition restarted following circular routes around the island investigating till a depth of about 2200 m.
- 2006-12-05 At 03:00 data acquisition was stopped and ship started transit to Naples, docking at 18:00
- 2006-12-06 Demob in Naples

7.2 MODELING OF WAVE PROPAGATION

The loss of energy of the wave front in water is due to (a) geometrical spreading, proportional to distance from source, (b) absorption due to medium viscosity, proportional to frequency squared, and (c) molecular relaxation induced by sound wave pressure. We used an algorithm based on parabolic equation that handles efficiently 'Range Dependent' ocean acoustic propagation problems [Collins (1999)].

The propagator is determined by

$$\frac{\partial^2 p}{\partial r^2} + \rho \frac{\partial}{\partial z} \left(\frac{1}{\rho} \frac{\partial p}{\partial z} \right) + k^2 p = 0 \quad (1)$$

where ρ is density, $k = (1 + i\eta\beta)\omega/c$ wave number, ω angular frequency, c speed of sound in water, β attenuation (dB/Km), $\eta = (40\pi \log(e))^{-1}$.

By solving, we obtain

$$p(r + \Delta r, z) = \exp(ik_0 \Delta r) \left(1 + \sum_{j=1}^n \frac{\gamma_{j,n} X}{1 + \beta_{j,n} X} \right) p(r, z) \quad (2)$$

pressure variation between r and $(\Delta r, z)$, where z is depth.

7.3 OBS DATA HANDLING AND CONVERSION

The OBS data just downloaded upon recovery were checked for clock drifts and reorganized against the shot table. Two separate datasets in the SEG-Y IBM floating point big-endian format were provided: (a) continuous data and (b) shot ensembles (40s duration). The trace headers were also populated with clock drifts.

In order to convert the SEG-Y files into the SAC format [SAC (2006)], [Goldstein et al. (2003)], a shell/Perl [Perl (2006)] procedure was built that:

- converts the SEG-Y files into the Seismic Unix format [Cohen and Stockwell (2006)] (.su), since they were not easily readable by public domain routines; a partial reformat of the headers was necessary;
- dumps in the ascii format the .su files and produces the SAC Ascii datasets applying the clock drifts and the shot UTC absolute time including the milliseconds read by the shot table.

The procedure was used to produce SAC shot ensembles (60 s) and 1 hour continuous data. The SAC Ascii data were converted to binary using the SAC software for ease of handling and better I/O performance. The above routine will be able to produce the SAC binary straightforwardly with some updates and changes that are undergoing.

The code listings of the bash wrapper and of the perl procedure are presented hereinafter.

```
#!/bin/sh
#
#

function segy2su () {
# remapping of d1 keyword
  REMAP_BYTE=117s
  segyread tape=${f}.segy \
    format=1 over=1 endian=0 remap=d1 byte=$REMAP_BYTE > ${f}.su
#| bzip2 -c > ${f}.su.bz2
  mv header ${f}.hdr
  mv binary ${f}.bin
  echo "Done with ${f}..."
}

function su2sac () {
  STATION='echo $f|echo $f|perl -ne 's/\.\+/\/ch//g;print;'
  suascii < ${f}.su bare=0 | ./suascii2sac.pl -station="${STATION}" --cruise="STR06"
#   gzip -c > ${f}.sac.asc.gz
  echo "Done with ${f}..."
}

function sutest () {
#   suascii < ${f}.su bare=2 | ./join_headers.pl > ${f}.headers
  awk 'NR==1{print}' ${f}.headers
  awk '{}END{print $0}' ${f}.headers
  echo "Done with ${f}..."
}

function make_zips_SAC_ASC () {
  ASC="01_02_03_04_05_07_08_09_10"
  for a in $ASC ; do
    zip OBS_${a}_SHOTS.zip pos *.headers
    zip -g OBS_${a}_SHOTS.zip *_OBS${a}_CH1.SAC_ASC
    zip -g OBS_${a}_SHOTS.zip *_OBS${a}_CH2.SAC_ASC
    zip -g OBS_${a}_SHOTS.zip *_OBS${a}_CH3.SAC_ASC
  done
}
```

```
        zip -g OBS_${a}_SHOTS.zip *_OBS${a}_CH6.SAC_ASC
    done
}

function rm_zips_SAC_ASC () {
    ASC="01_02_03_04_05_07_08_09_10"
    for a in $ASC ; do
        rm -fr *_OBS${a}_CH1.SAC_ASC
        rm -fr *_OBS${a}_CH2.SAC_ASC
        rm -fr *_OBS${a}_CH3.SAC_ASC
        rm -fr *_OBS${a}_CH6.SAC_ASC
    done
}

SEGY_FILES='ls pos10.ch*.seggy |sed s/\.seggy//'

#rm -f FIRST_LAST_OBS.SHOTS
for f in $SEGY_FILES ; do
#     segy2su
#     sutest >> FIRST_LAST_OBS.SHOTS
    echo $f
#     su2sac
done

make_zips_SAC_ASC
#rm_zips_SAC_ASC
```

```

#!/usr/bin/perl
#
# suascii trid=trace id code 43=?? udse=data use (1=production)
# counit=coordinate units 1=m
# gstat=group static (ms) delrt=delay recording time, time in ms between
# d1=sample spacing for non-seismic data
#
# It reads the dump of a Seismic Unix OBS data file and writes SAC ascii
# for different time spans (1H)
#
# Usage: suascii < file_obs.su bare=0 | suascii2sac_all.pl

use Statistics::Descriptive;
use Getopt::Long;
use IO::Handle;
use Date::Calc qw (Day_of_Year Date_to_Time Time_to_Date Date_to_Days
                  Localtime Gmtime Add_Delta_Days);
use Tplib;

##### SUBROUTINES #####
sub get_shot_data {
    open (SH,"<STR06_SHOTS_WITH_DEPTHS.DAT") or die "Cannot_open_SHOT_data...";
    my ($year,$month,$day,$hour,$min,$sec,$msec,$doy,$time,$ntime,$nmsec,$nmsec);
    my ($Year,$Month,$Day,$Hour,$Min,$Sec,$Doy,$Dow,$dst);
    my ($key,$lon,$lat,$wdepth,$line,$shot);
    while ($_=<SH>) {
        next if not /\d+/;
        @D = split;
        ($date,$time) = split (/T/, $D[0]);
        $lon = $D[1];
        $lat = $D[2];
        $line = $D[3];
        $shot = $D[4];
        $wdepth = sprintf "%.1f", $D[5];
        ($year,$month,$day) = split (/\/, $date);
        ($hour,$min,$sec,$msec) = split (/\.|/, $time);
        $doy = Day_of_Year($year,$month,$day);
        $time = 0+(Date_to_Time($year,$month,$day,$hour,$min,$sec)."$.msec");
        # CONTROLLARE PERCHE' BISOGNA AGGIUNGERE QUI E ANCHE NEL MAIN !!
        $ntime = $time + 0.010;
        $nmsec = $ntime - int($ntime);
        $ntime = int $ntime;
        ($Year,$Month,$Day,$Hour,$Min,$Sec,$Doy,$Dow,$dst) = Gmtime($ntime);
        $key = sprintf ("%d-%0003dT%002d:%002d:%002d", $year,$doy,$hour,$min,$sec);
        $$SHOTS{$key} = "$ntime_.$nmsec_.$lon_.$lat_.$wdepth_.$line_.$shot";
    }
    print "$key -> $$SHOTS{$key} \n";
}
close SH;
}
sub get_OBS_data {
    open (OBS,"<STR06_OBS_DEPLOYMENT.DAT") or die "Cannot_open_OBS_data...";
    my ($lon,$lat,$wdepth);
    while ($_=<OBS>) {
        next if not /\d+/;
        @D = split;
        $lon = $D[0];

```

```

    $lat = $D[1];
    $obs = sprintf "%d", $D[7];
    $wdepth = sprintf "%.1f", $D[9]*(-1);
    $OBS{$obs}="$lon_.$lat_.$wdepth";
}
close OBS;
}
sub get_header_vars {
    my $i,$name,$val;
    my $gain,$gstat,$delrt,$ns,$dt,$year,$day,$hour,$minute,$sec;
    sub fill_vars {
        my @A = split /\s+/;
        for ($i=0;$i<=#A;$i++) { ($name,$val) = split (/\/=/, $A[$i]);
            ${$name} = $val;
        }
        return;
    }
    fill_vars;
    while ($_=<>) {
        fill_vars;
        $sec = 0 if (/year/ and not /sec/);
        $minute = $sec = 0 if (/year/ and not /minute/);
        $hour = $minute = $sec = 0 if (/year/ and not /hour/
            and not /minute/ and not /sec/);
        last if /dl/;
    }
    print "++>_.$gain,$gstat,$delrt,$ns,$dt,$year,$day,$hour,$minute,$sec\n";
    return ($delrt,$ns,$dt,$year,$day,$hour,$minute,$sec) ;
}
##### MAIN
my $i,$j;

$SHOT_DELAY_MSEC = 0.010;          # shot delay (sec) for gun synchronization

@optl = ("s|station:s","c|cruise:s","v|verbose","o|output:s","d|divide:s");
GetOptions @optl;

$STATION=$opt_s; $CRUISE=$opt_c;
$STATION="UNKNOWN" unless $STATION;
$CRUISE="UNKNOWN" unless $CRUISE;
$HOURS_TO_DIV = $opt_d;
$HOURS_TO_DIV = 1 unless $HOURS_TO_DIV;          # how many hours to split

$SAC_FILE=$opt_o;
$SAC_FILE=ASCII unless $SAC_FILE;
#sysopen (SAC,$SAC_FILE,O_RDWR|O_TRUNC|O_CREAT) or die
# "cannot open file $SAC_FILE ..." if $SAC_FILE ne "ASCII";
#get_shot_data;
get_OBS_data;

($OBS_POS,$OBS_CH) = $STATION =~ /pos(\d+)\.ch(\d)/;
($STLO,$STLA,$STDP) = split (/\/s+/, $OBS{$OBS_POS});
$KSTNM = $STATION;
$KSTNM = sprintf "ALL_%002d_%d", $OBS_POS, $OBS_CH;
$KEVNM = "-12345";
print "($STLO,$STLA,$STDP)_.$KSTNM_.$KEVNM\n";

```

```

while ($_=<>) {
    last if eof();
    next if (/^$/);
#    gets header and skips up to whole hour
    ($delrt,$ns,$dt,$year,$doy,$hour,$minute,$sec) =
        get_header_vars if (/tracl|delrt|year/);
    next if ($minute != 0);
    $BEGIN = 0;
    $total_to_read = $ns * $HOURS_TO_DIV * 60;
    $lNpt = $total_to_read;
    $DELRT = $delrt * 1.e-03;
    $sample_interval = $dt * 1.e-6;
    $END = $sample_interval * $ns * ($HOURS_TO_DIV * 60);
    ($year,$month,$day) = Add_Delta_Days ($year,1,1,$doy-1);
    print "($year,_$doy,_$month,_$day,_$hour,_$minute,$sec)\n";
    $ut = (Date_to_Time($year,$month,$day,$hour,$minute,$sec)) + $DELRT;
    $milli = sprintf "%003d", ($ut - int($ut))*1.e03;
    ($YEAR,$MONTH,$DAY,$HOUR,$MIN,$SEC) = Time_to_Date ( int($ut) );
    $DOY = Day_of_Year ($YEAR,$MONTH,$DAY);
    print "+>_$milli,$ut,$YEAR,$MONTH,$DAY,_$HOUR,$MIN,$SEC,$DOY,$DOW,$DST\n";
    $stat = Statistics::Descriptive::Full->new();
    $count = 0;
    while ($count < $total_to_read) {
        $_=<>;
        ($seq,$amp) = split;
        if (not /\=|^\\s*$/) {
            $AMP[$count]=$amp;
            $count +=1;
        }
    }
    $stat->add_data(@AMP);
    $mean_amp = $stat->mean();
    $min_amp = $stat->min();
    $max_amp = $stat->max();    ## INSERIRE IN HEADER !!
    if ($SAC_FILE eq 'ASCII') {
    $DATE = sprintf "%d%002d%002dT%002d_ALL",
        $YEAR,$MONTH,$DAY,$hour;
    $event = "-${LINE}-${SHOT}-";
    $OBS_NAME = sprintf "OBS%002d_CH%d", $OBS_POS,$OBS_CH;
    $FILE_NAME = $DATE.$OBS_NAME.".SAC_ASCII";
    open (SAC_ASCII,">$FILE_NAME");
    &print_header_ascii_SAC;
    for ($i = 0; $i < $total_to_read; $i++)
    {
        printf SAC_ASCII ( "%15.7f", $AMP[$i]);
        printf SAC_ASCII ( "\n") if ( ( (($i+1)%5) == 0) && ($i > 0) );
    }
    close SAC_ASCII;
    print "Wrote_file_$FILE_NAME...\n";
    } else {
    &print_header_bin_SAC;
    }
}

exit;

```

```

sub print_header_ascii_SAC {
my ($linx, $nx, $compo, $XXX, $iftype, $LEVEN, $LPSPOL, $LOVROK, $LCALDA, $TRUE, $i);
$nx = $LPSPOL = $LCALDA = 0;
$XXX = -12345;
$iftype = $LEVEN = $LOVROK = $TRUE = 1;
$IEVTYP = 44;
$compo = "XX"; $compo = "LH" if ($dt >= 1);
$compo = "MH" if ($dt < 1 && $dt >= 0.2);
$compo = "BH" if ($dt < 0.2);
for( $i = 1; $i <= 30; $i++)
{
    if ( $i < 15 ) {
        $linx = sprintf ("%15d%15d%15d%15d%15d", $XXX, $XXX, $XXX, $XXX, $XXX);
    }
    if ( $i >= 17 && $i < 22 ) {
        $linx = sprintf ("%10d%10d%10d%10d%10d", $XXX, $XXX, $XXX, $XXX, $XXX);
    }
    if ( $i >= 24 ) {
        $linx = sprintf ("%8s%8s%8s", $XXX, $XXX, $XXX);
    }
    $linx = sprintf ("%15.7f%15.7f%15.7f%15d%15d",
        $sample_interval, $min_amp, $max_amp, $XXX, $XXX) if ($i == 1);
    $linx = sprintf( "%15d%15f%15d%15d%15d",
        $BEGIN, $END, $XXX, $XXX, $XXX) if ($i == 2);
    $linx = sprintf( "%15d%15.7f%15.7f%15.7f%15d",
        $XXX, $STLA, $STLO, $XXX, $STDP) if ($i == 7);
    $linx = sprintf( "%15d%15.7f%15.7f%15.7f%15d",
        $XXX, $EVLA, $EVLO, $XXXL, $EVDP) if ($i == 8);
    $linx = sprintf( "%15d%15.7f%15d%15d%15d",
        $XXX, $mean_amp, $XXX, $XXX, $XXX) if ($i == 12);
    if ($i == 15) {
        $linx = sprintf("%10d%10d%10d%10d%10d", $YEAR, $DOY, $HOUR, $MIN, $SEC);
    }
    if ($i == 16) {
        $linx = sprintf ("%10d%10d%10d%10d%10ld", $milli, 6, $XXX, $XXX, $INpt);
    }
    $linx = sprintf ("%10d%10d%10d%10d%10d",
        $iftype, $XXX, $XXX, $XXX, $XXX) if ($i == 18);
    $linx = sprintf ("%10d%10d%10d%10d%10d",
        $XXX, $XXX, $IEVTYP, $XXX, $XXX) if ($i == 19);
    $linx = sprintf ("%10d%10d%10d%10d%10d",
        $LEVEN, $LPSPOL, $LOVROK, $LCALDA, $XXX) if ($i == 22);
    if ($i == 23) {
        $linx = sprintf ("%8s%16s", $KSTNM, $KEVNM);
    }
    if ($i == 29) {
        $linx = sprintf ("%8s%8s", $XXX, $compo);
    }
    if ($i == 30) {
        $linx = sprintf ("%8s%8s%8s", $CRUISE, $XXX, 'SEDIS-V');
    }
    $nn = sprintf "%0004d", $i;
    printf SAC_ASCII ("%s\n", $linx);
}
}

```

7.4 SEISMIC STATIONS

OBS	Date Time	Lon WGS84	Lat	Easting UTM33	Northing	Depth
01	2006-11-29T05:26:44+0000	15.352477	38.735278	530635.07	4287459.76	-1834.4
02	2006-11-29T05:58:24+0000	15.321006	38.745815	527895.67	4288618.92	-1739.7
03	2006-11-29T06:29:22+0000	15.291523	38.756781	525329.67	4289827.20	-1561.4
04	2006-11-29T07:13:50+0000	15.200574	38.712601	517438.11	4284903.52	-1333.2
05	2006-11-29T07:29:24+0000	15.204264	38.729928	517754.65	4286826.89	-1265.5
06	2006-11-29T07:56:28+0000	15.138557	38.739221	512041.82	4287847.41	-1384.9
07	2006-11-29T08:11:52+0000	15.159988	38.754779	513901.32	4289576.82	-1293.7
08	2006-11-29T08:34:12+0000	15.171652	38.725843	514920.87	4286367.82	-1282.5
09	2006-11-29T08:46:16+0000	15.180400	38.740514	515678.07	4287997.20	-1176.2
10	2006-11-29T09:41:58+0000	15.250381	38.821289	521735.39	4296974.91	-98.3

Table 15: OBS deployment data.

OBS	Released UTC	Lon WGS84	Lat	Easting UTM33	Northing
01	2006-12-02T08:27:57+0000	15.342951	38.731712	529809	4287061
02	2006-12-02T09:50:49+0000	15.311625	38.741436	527082	4288130
03	2006-12-02T12:59:24+0000	15.295535	38.757129	525678	4289867
04	2006-12-02T14:23:35+0000	15.212010	38.721766	518430	4285923
05	2006-12-02T15:19:44+0000	15.203292	38.722321	517672	4285983
09	2006-12-02T16:07:09+0000	15.177056	38.733753	515389	4287246
08	2006-12-02T16:45:27+0000	15.176531	38.733260	515343	4287192
06	2006-12-02T17:36:13+0000	15.148527	38.749631	512906	4289004
07	2006-12-02T19:15:56+0000	15.150414	38.748553	513071	4288885
10	2006-12-02T20:37:20+0000	15.247732	38.822776	521505	4297139

Table 16: OBS Release data.

OBS	Date Time UTC	Lon WGS84	Lat	Easting UTM33	Northing	Depth
1	2006-12-02T09:08:14	15.353486	38.737394	530721.87	4287694.84	-1839.1
2	2006-12-02T10:25:23	15.321262	38.746278	527917.75	4288670.37	-1739.6
3	2006-12-02T13:37:18	15.292544	38.757516	525418.20	4289909.09	-1565.3
4	2006-12-02T14:58:25	15.199630	38.711398	517356.32	4284769.86	-1327.3
5	2006-12-02T15:48:59	15.203113	38.729912	517654.61	4286824.95	-1257.9
9	2006-12-02T16:30:35	15.179778	38.740245	515624.06	4287967.24	-1181.7
8	2006-12-02T17:13:27	15.171910	38.725191	514943.39	4286295.46	-1282.9
6	2006-12-02T18:04:16	15.138537	38.739154	512040.13	4287840.02	-1384.4
7	2006-12-02T19:44:02	15.160426	38.754572	513939.44	4289554.01	-1291.2
10	2006-12-02T20:46:48	15.250851	38.821098	521776.22	4296953.80	-95.9

Table 17: OBS recovery positions overboard.

OBS	SYNCHRONIZATION UTC	RECOVERY UTC	DRIFT ms
Trigger	29.11.2006 16:38:32	02.12.2006 07:04:12	99.7
1	28.11.2006T00:20:00	02.12.2006T09:30:54	3.78
2	28.11.2006T09:25:00	02.12.2006T10:48:39	190.9
3	28.11.2006T08:28:00	02.12.2006T13:57:21	-10.7
4	28.11.2006T10:41:29	02.12.2006T15:16:57	22.5
5	28.11.2006T12:45:17	02.12.2006T16:15:52	-16.5
6	28.11.2006T14:02:58	No-data-power-plug-brokenT	
7	28.11.2006T15:05:32	02.12.2006T20:08:14	-5.55
8	28.11.2006T16:34:30	02.12.2006T17:33:48	96.1
9	28.11.2006T19:11:34	02.12.2006T16:57:32	-4.57
10	28.11.2006T20:52:04	02.12.2006T21:29:00	-8.69

Table 18: OBS clock drifts.

7.5 SHOT TABLE

Table 19: STR06 Shot Table.

DATE TIME UTC	EVT	LON WGS84	LAT	EASTING UTM33	NORTHING	LINE	SHOT
2006-11-29T19:56:00.471	3295	15.229060	38.825331	519860.04	4297418.53	L01	1
2006-11-29T19:57:10.475	3296	15.229552	38.826178	519900.86	4297512.62	L01	2
2006-11-29T19:58:20.478	3297	15.230048	38.827021	519943.68	4297606.27	L01	3
2006-11-29T19:59:30.482	3298	15.230515	38.827862	519987.02	4297699.71	L01	4
2006-11-29T20:00:40.486	3299	15.230991	38.828714	520029.58	4297794.36	L01	5
2006-11-29T20:01:50.490	3300	15.231505	38.829572	520069.44	4297889.67	L01	6
2006-11-29T20:03:10.494	3301	15.232081	38.830524	520122.21	4297995.45	L01	7
2006-11-29T20:04:30.498	3302	15.232624	38.831511	520166.02	4298105.09	L01	8
2006-11-29T20:05:50.503	3303	15.233182	38.832538	520213.03	4298219.17	L01	9
2006-11-29T20:07:15.507	3304	15.233905	38.833780	520275.96	4298357.15	L01	10
2006-11-29T20:08:40.511	3305	15.234675	38.835075	520342.42	4298501.03	L01	11
2006-11-29T20:10:05.516	3306	15.235467	38.836407	520409.82	4298649.01	L01	12
2006-11-29T20:11:30.520	3307	15.236207	38.837743	520474.62	4298797.43	L01	13
2006-11-29T20:12:55.525	3308	15.236942	38.839076	520539.42	4298945.52	L01	14
2006-11-29T20:14:20.529	3309	15.237692	38.840410	520604.12	4299093.72	L01	15
2006-11-29T20:15:45.533	3310	15.238443	38.841750	520668.91	4299242.59	L01	16
2006-11-29T20:17:10.538	3311	15.239200	38.843096	520732.83	4299392.12	L01	17
2006-11-29T20:18:35.542	3312	15.239973	38.844429	520800.91	4299540.22	L01	18
2006-11-29T20:20:00.547	3313	15.240740	38.845771	520867.08	4299689.32	L01	19
2006-11-29T20:21:25.551	3314	15.241516	38.847108	520934.03	4299837.86	L01	20
2006-11-29T20:22:50.556	3315	15.242300	38.848448	520999.50	4299986.73	L01	21
2006-11-29T20:24:15.560	3316	15.243078	38.849758	521071.05	4300132.29	L01	22
2006-11-29T20:25:40.564	3317	15.243762	38.851105	521130.01	4300281.92	L01	23
2006-11-29T20:27:10.569	3318	15.244508	38.852508	521193.11	4300437.78	L01	24
2006-11-29T20:28:40.574	3319	15.245297	38.853897	521258.73	4300592.09	L01	25
2006-11-29T20:30:10.578	3320	15.246094	38.855276	521327.47	4300745.31	L01	26
2006-11-29T20:31:40.583	3321	15.246282	38.856629	521385.20	4300895.60	L01	27
2006-11-29T20:33:10.588	3322	15.245117	38.857842	521327.14	4301030.05	L01	28
2006-11-29T20:34:40.592	3323	15.243463	38.858007	521184.10	4301047.98	L01	29
2006-11-29T20:36:10.597	3324	15.241653	38.858182	521027.01	4301066.98	L01	30
2006-11-29T20:37:40.601	3325	15.239802	38.858309	520865.50	4301080.65	L01	31
2006-11-29T20:39:10.606	3326	15.237954	38.858547	520705.70	4301106.64	L01	32
2006-11-29T20:40:40.611	3327	15.236117	38.858722	520545.57	4301125.64	L01	33
2006-11-29T20:42:10.615	3328	15.234368	38.858949	520394.27	4301150.44	L01	34
2006-11-29T20:43:40.620	3329	15.232772	38.859124	520255.66	4301169.50	L01	35
2006-11-29T20:45:10.624	3330	15.231119	38.859357	520111.57	4301194.99	L02	1
2006-11-29T20:46:40.629	3331	15.229736	38.858906	519980.51	4301144.61	L02	2
2006-11-29T20:48:10.634	3332	15.228863	38.858053	519873.42	4301049.69	L02	3
2006-11-29T20:49:40.638	3333	15.228519	38.856782	519840.89	4300908.56	L02	4
2006-11-29T20:51:10.643	3334	15.228204	38.855445	519813.93	4300760.13	L02	5
2006-11-29T20:52:40.648	3335	15.227921	38.854091	519785.84	4300609.81	L02	6
2006-11-29T20:54:10.652	3336	15.227681	38.852717	519762.45	4300457.28	L02	7
2006-11-29T20:55:40.657	3337	15.227497	38.851345	519743.65	4300304.98	L02	8
2006-11-29T20:57:10.661	3338	15.227422	38.849979	519734.40	4300153.37	L02	9
2006-11-29T20:58:40.666	3339	15.227239	38.848597	519727.58	4300000.00	L02	10
2006-11-29T21:00:10.671	3340	15.226975	38.847219	519705.66	4299847.03	L02	11
2006-11-29T21:01:40.675	3341	15.226704	38.845838	519685.56	4299693.73	L02	12
2006-11-29T21:03:10.680	3342	15.226420	38.844476	519661.29	4299542.53	L02	13
2006-11-29T21:04:40.684	3343	15.226162	38.843114	519636.23	4299391.33	L02	14
2006-11-29T21:06:10.689	3344	15.225904	38.841753	519614.22	4299240.24	L02	15
2006-11-29T21:07:40.694	3345	15.225641	38.840393	519591.77	4299089.27	L02	16
2006-11-29T21:09:10.698	3346	15.225319	38.839046	519563.58	4298939.73	L02	17

2006-11-29T21:10:40.703	3347	15.225061	38.837682	519542.17	4298788.31	L02	18
2006-11-29T21:12:10.708	3348	15.224831	38.836323	519522.58	4298637.46	L02	19
2006-11-29T21:13:40.712	3349	15.224557	38.834962	519495.79	4298486.36	L02	20
2006-11-29T21:15:10.717	3350	15.224304	38.833592	519474.64	4298334.28	L02	21
2006-11-29T21:16:40.721	3351	15.223998	38.832225	519455.22	4298182.54	L02	22
2006-11-29T21:18:10.726	3352	15.223677	38.830867	519423.91	4298031.77	L02	23
2006-11-29T21:19:40.731	3353	15.223476	38.829500	519406.83	4297880.03	L02	24
2006-11-29T21:21:10.735	3354	15.223262	38.828125	519385.25	4297727.40	L02	25
2006-11-29T21:22:40.740	3355	15.222972	38.826725	519363.84	4297571.99	L02	26
2006-11-29T21:24:10.744	3356	15.222619	38.825335	519336.61	4297417.68	L02	27
2006-11-29T21:25:40.749	3357	15.222318	38.823952	519307.21	4297264.14	L02	28
2006-11-29T21:27:10.754	3358	15.222064	38.822559	519282.76	4297109.50	L02	29
2006-11-29T21:28:40.758	3359	15.221819	38.821149	519264.65	4296952.99	L02	30
2006-11-29T21:30:10.763	3360	15.221565	38.819741	519242.98	4296796.69	L02	31
2006-11-29T21:31:40.767	3361	15.221304	38.818329	519224.35	4296639.96	L02	32
2006-11-29T21:33:10.772	3362	15.221066	38.816927	519200.42	4296484.32	L02	33
2006-11-29T21:34:40.777	3363	15.220792	38.815527	519180.65	4296328.92	L02	34
2006-11-29T21:36:10.781	3364	15.219766	38.814232	519136.98	4296185.11	L03	1
2006-11-29T21:37:40.786	3365	15.218163	38.813979	519000.66	4296156.71	L03	2
2006-11-29T21:39:10.790	3366	15.216377	38.813889	518845.62	4296146.35	L03	3
2006-11-29T21:40:40.795	3367	15.214597	38.813739	518691.21	4296129.34	L03	4
2006-11-29T21:42:10.800	3368	15.212842	38.813648	518538.87	4296118.89	L03	5
2006-11-29T21:43:40.804	3369	15.211068	38.813661	518384.85	4296119.97	L03	6
2006-11-29T21:45:10.809	3370	15.209263	38.813637	518228.06	4296116.95	L03	7
2006-11-29T21:46:40.813	3371	15.207450	38.813597	518070.76	4296112.15	L03	8
2006-11-29T21:48:10.818	3372	15.205606	38.813606	517910.66	4296112.78	L03	9
2006-11-29T21:48:47.756	3373	15.204848	38.813600	517844.85	4296111.97	L03	10
2006-11-29T21:50:01.521	3380	15.203346	38.813608	517714.45	4296112.56	L03	11
2006-11-29T21:52:40.840	3381	15.200085	38.813631	517431.33	4296114.49	L04	1
2006-11-29T21:54:40.960	3434	15.197573	38.813706	517213.14	4296122.34	L04	2
2006-11-29T21:56:40.858	3452	15.195065	38.813712	516995.48	4296122.53	L04	3
2006-11-29T21:58:40.860	3484	15.192564	38.813710	516778.35	4296121.85	L04	4
2006-11-29T22:00:40.861	3516	15.190062	38.813692	516561.05	4296119.39	L04	5
2006-11-29T22:02:40.945	3562	15.187561	38.813774	516343.89	4296128.04	L04	6
2006-11-29T22:04:40.870	3581	15.185107	38.813704	516130.86	4296119.84	L04	7
2006-11-29T22:06:40.865	3612	15.182736	38.813677	515924.93	4296116.43	L04	8
2006-11-29T22:08:40.883	3643	15.180533	38.813671	515733.15	4296115.38	L04	9
2006-11-29T22:10:40.884	3675	15.178393	38.813522	515547.91	4296098.48	L04	10
2006-11-29T22:12:40.892	3707	15.176288	38.813464	515364.65	4296091.69	L04	11
2006-11-29T22:14:40.892	3739	15.174074	38.813234	515172.74	4296065.80	L04	12
2006-11-29T22:16:40.887	3769	15.171660	38.813283	514963.59	4296070.84	L04	13
2006-11-29T22:18:40.890	3800	15.169310	38.813255	514759.48	4296067.35	L04	14
2006-11-29T22:20:40.890	3831	15.167061	38.813179	514564.33	4296058.55	L04	15
2006-11-29T22:22:40.891	3862	15.164806	38.813156	514368.47	4296055.64	L04	16
2006-11-29T22:24:40.893	3893	15.162587	38.813197	514175.89	4296059.85	L04	17
2006-11-29T22:26:40.909	3927	15.160381	38.813166	513984.38	4296056.07	L04	18
2006-11-29T22:28:40.901	3957	15.158190	38.813145	513794.16	4296053.40	L04	19
2006-11-29T22:30:40.903	3988	15.155978	38.813113	513602.12	4296049.52	L04	20
2006-11-29T22:32:40.899	4019	15.153764	38.813036	513409.92	4296040.65	L04	21
2006-11-29T22:34:40.899	4051	15.151746	38.812995	513220.40	4296035.78	L04	22
2006-11-29T22:36:40.901	4083	15.150903	38.811844	513105.06	4295907.87	L04	23
2006-11-29T22:38:40.910	4115	15.151362	38.810178	513119.69	4295723.02	L04	24
2006-11-29T22:43:35.490	4209	15.154191	38.806319	513331.21	4295295.15	L05	1
2006-11-29T22:44:40.931	4242	15.155406	38.806048	513438.06	4295265.25	L05	2
2006-11-29T22:46:40.939	4272	15.157637	38.805364	513634.33	4295189.69	L05	3
2006-11-29T22:48:40.962	4304	15.159893	38.804515	513826.30	4295095.81	L05	4

2006-11-29T22:50:40.957	4333	15.161849	38.803800	514003.75	4295016.78	L05	5
2006-11-29T22:52:40.958	4364	15.163548	38.802987	514146.75	4294926.81	L05	6
2006-11-29T22:54:40.981	4395	15.165544	38.802285	514319.07	4294849.22	L05	7
2006-11-29T22:56:40.977	4425	15.167615	38.801548	514497.75	4294767.76	L05	8
2006-11-29T22:58:41.199	4488	15.169708	38.800952	514686.65	4294701.97	L05	9
2006-11-29T23:00:41.201	4518	15.171749	38.800157	514858.83	4294614.07	L05	10
2006-11-29T23:02:41.202	4550	15.173747	38.799439	515031.52	4294534.72	L05	11
2006-11-29T23:04:41.201	4581	15.175751	38.798768	515206.64	4294460.60	L05	12
2006-11-29T23:06:41.233	4613	15.177293	38.797934	515367.73	4294368.36	L05	13
2006-11-29T23:08:41.239	4647	15.178101	38.796498	515456.18	4294209.18	L05	14
2006-11-29T23:10:41.241	4682	15.178129	38.794852	515478.24	4294026.57	L05	15
2006-11-29T23:12:41.239	4715	15.177855	38.793192	515445.51	4293842.30	L05	16
2006-11-29T23:14:41.238	4748	15.177947	38.791499	515443.19	4293654.43	L05	17
2006-11-29T23:16:41.239	4782	15.178623	38.789872	515486.79	4293473.97	L05	18
2006-11-29T23:18:41.244	4816	15.179686	38.788380	515575.09	4293308.58	L05	19
2006-11-29T23:20:41.245	4850	15.180725	38.786957	515683.01	4293150.89	L05	20
2006-11-29T23:22:41.243	4884	15.181558	38.785353	515745.37	4292973.02	L05	21
2006-11-29T23:24:41.248	4918	15.182215	38.783744	515813.12	4292794.61	L05	22
2006-11-29T23:26:41.250	4952	15.182781	38.782058	515859.53	4292607.61	L05	23
2006-11-29T23:28:41.248	4985	15.183354	38.780404	515912.79	4292424.17	L05	24
2006-11-29T23:30:41.249	5017	15.183946	38.778725	515961.46	4292237.96	L05	25
2006-11-29T23:32:41.253	5050	15.184511	38.777065	516017.16	4292053.86	L05	26
2006-11-29T23:34:41.257	5083	15.184158	38.775370	516034.05	4291865.81	L05	27
2006-11-29T23:36:41.256	5116	15.182655	38.774171	515907.49	4291732.50	L05	28
2006-11-29T23:38:41.257	5148	15.181167	38.772843	515778.53	4291584.88	L05	29
2006-11-29T23:40:41.258	5181	15.179541	38.771541	515639.21	4291440.13	L05	30
2006-11-29T23:42:41.263	5215	15.177857	38.770277	515491.55	4291299.57	L05	31
2006-11-29T23:44:41.264	5248	15.176246	38.768933	515351.63	4291150.16	L05	32
2006-11-29T23:46:41.260	5280	15.174563	38.767619	515207.61	4291004.08	L05	33
2006-11-29T23:48:41.266	5314	15.172863	38.766356	515058.54	4290863.64	L05	34
2006-11-29T23:50:41.268	5347	15.171234	38.765022	514919.38	4290715.35	L05	35
2006-11-29T23:52:41.282	5381	15.169598	38.763733	514775.17	4290572.04	L05	36
2006-11-29T23:54:41.283	5414	15.167946	38.762385	514637.13	4290422.20	L05	37
2006-11-29T23:56:41.244	5439	15.166284	38.761154	514488.03	4290285.33	L05	38
2006-11-29T23:58:41.283	5478	15.164654	38.759813	514350.25	4290136.27	L05	39
2006-11-30T00:00:41.258	5503	15.163024	38.758540	514206.97	4289994.75	L05	40
2006-11-30T00:02:41.292	5544	15.161373	38.757270	514062.12	4289853.57	L05	41
2006-11-30T00:04:41.159	5557	15.159766	38.756004	513920.82	4289712.84	L05	42
2006-11-30T00:06:41.265	5603	15.158133	38.754665	513784.67	4289564.01	L05	43
2006-11-30T00:08:41.144	5618	15.156469	38.753402	513638.41	4289423.61	L05	44
2006-11-30T00:10:41.291	5673	15.154867	38.752031	513502.77	4289271.24	L05	45
2006-11-30T00:12:41.144	5683	15.153130	38.750871	513348.75	4289142.26	L05	46
2006-11-30T00:14:41.294	5740	15.151549	38.749568	513206.22	4288997.44	L05	47
2006-11-30T00:16:41.293	5772	15.149873	38.748217	513067.61	4288847.29	L05	48
2006-11-30T00:18:41.299	5835	15.148202	38.746977	512915.85	4288709.44	L05	49
2006-11-30T00:20:41.301	5867	15.146583	38.745608	512779.14	4288557.31	L05	50
2006-11-30T00:22:41.299	5901	15.144887	38.744295	512633.64	4288411.38	L05	51
2006-11-30T00:24:41.143	5909	15.143253	38.742973	512490.22	4288264.45	L05	52
2006-11-30T00:26:41.121	5936	15.141561	38.741664	512341.57	4288118.97	L05	53
2006-11-30T00:28:41.123	5969	15.139844	38.740356	512195.62	4287973.60	L05	54
2006-11-30T00:30:41.118	6001	15.138226	38.739003	512054.02	4287823.24	L05	55
2006-11-30T00:32:41.122	6034	15.136524	38.737705	511909.35	4287678.99	L05	56
2006-11-30T00:34:41.120	6066	15.134899	38.736393	511766.95	4287533.19	L05	57
2006-11-30T00:36:41.122	6100	15.133290	38.735077	511629.23	4287386.96	L05	58
2006-11-30T00:38:41.139	6134	15.131639	38.733880	511482.37	4287253.92	L05	59
2006-11-30T00:40:41.140	6166	15.130181	38.732653	511342.80	4287117.56	L06	1

2006-11-30T00:42:41.156	6202	15.130167	38.731180	511295.23	4286954.04	L06	2
2006-11-30T00:44:41.143	6232	15.131029	38.729630	511358.58	4286782.13	L06	3
2006-11-30T00:46:41.144	6262	15.132293	38.728221	511457.89	4286625.93	L06	4
2006-11-30T00:48:41.145	6295	15.133998	38.726998	511591.69	4286490.41	L06	5
2006-11-30T00:50:41.159	6329	15.135918	38.726236	511762.79	4286406.10	L06	6
2006-11-30T00:52:41.237	6368	15.137807	38.725346	511927.14	4286307.59	L06	7
2006-11-30T00:54:41.165	6392	15.139714	38.724472	512094.97	4286210.86	L06	8
2006-11-30T00:56:41.166	6424	15.141602	38.723550	512258.29	4286108.79	L06	9
2006-11-30T00:58:41.180	6457	15.143494	38.722621	512423.96	4286005.96	L06	10
2006-11-30T01:00:41.181	6488	15.145367	38.721668	512585.90	4285900.47	L06	11
2006-11-30T01:02:41.176	6521	15.147226	38.720729	512748.54	4285796.53	L06	12
2006-11-30T01:04:41.178	6552	15.149096	38.719775	512910.40	4285690.93	L06	13
2006-11-30T01:07:28.883	6590	15.151695	38.718511	513136.57	4285551.04	L06	14
2006-11-30T01:16:13.363	6614	15.157516	38.715526	513646.92	4285220.66	L06	15
2006-11-30T01:18:13.437	6648	15.158518	38.714974	513734.14	4285159.56	L06	16
2006-11-30T01:20:41.182	6678	15.159725	38.714263	513839.21	4285080.84	L06	17
2006-11-30T01:22:41.184	6709	15.160732	38.713581	513914.37	4285005.30	L06	18
2006-11-30T01:24:41.242	6748	15.161894	38.713464	514019.59	4284992.50	L06	19
2006-11-30T01:26:41.206	6774	15.163326	38.713921	514146.26	4285043.43	L06	20
2006-11-30T01:28:41.318	6824	15.164780	38.714585	514274.88	4285117.34	L06	21
2006-11-30T01:30:41.205	6838	15.166126	38.715367	514398.44	4285204.34	L06	22
2006-11-30T01:32:41.224	6870	15.167245	38.716342	514512.82	4285312.74	L06	23
2006-11-30T01:34:41.223	6901	15.167998	38.717645	514579.76	4285457.45	L06	24
2006-11-30T01:36:41.246	6932	15.169013	38.719198	514670.81	4285629.95	L06	25
2006-11-30T01:38:41.257	6964	15.169920	38.720950	514746.69	4285824.50	L06	26
2006-11-30T01:40:41.259	6995	15.170965	38.722628	514837.19	4286010.87	L06	27
2006-11-30T01:42:41.260	7027	15.171877	38.724372	514921.15	4286204.55	L06	28
2006-11-30T01:44:41.277	7059	15.172940	38.726319	515004.10	4286420.76	L06	29
2006-11-30T01:46:41.278	7091	15.174079	38.728188	515109.32	4286628.36	L06	30
2006-11-30T01:48:41.279	7124	15.175104	38.730117	515194.36	4286842.57	L06	31
2006-11-30T01:50:41.281	7156	15.176208	38.731961	515292.27	4287047.38	L06	32
2006-11-30T01:52:41.282	7189	15.177172	38.733762	515371.07	4287247.38	L06	33
2006-11-30T01:54:41.283	7220	15.178209	38.735458	515465.44	4287435.77	L06	34
2006-11-30T01:56:41.285	7251	15.179146	38.737245	515542.67	4287634.21	L06	35
2006-11-30T01:58:41.286	7281	15.180147	38.738999	515633.11	4287829.03	L06	36
2006-11-30T02:00:41.287	7311	15.181184	38.740747	515721.54	4288023.17	L06	37
2006-11-30T02:02:41.289	7342	15.182108	38.742536	515801.45	4288221.85	L06	38
2006-11-30T02:04:41.290	7372	15.183191	38.744255	515896.49	4288412.79	L06	39
2006-11-30T02:06:41.297	7403	15.184127	38.746060	515975.08	4288613.24	L06	40
2006-11-30T02:08:41.308	7433	15.185215	38.747823	516065.50	4288809.06	L06	41
2006-11-30T02:10:41.309	7465	15.186140	38.749610	516151.56	4289007.53	L06	42
2006-11-30T02:12:41.382	7507	15.187122	38.751394	516235.19	4289205.67	L06	43
2006-11-30T02:14:41.318	7528	15.188190	38.753162	516325.07	4289402.04	L06	44
2006-11-30T02:16:41.340	7558	15.189194	38.754909	516417.03	4289596.09	L06	45
2006-11-30T02:18:41.441	7607	15.190157	38.756694	516498.99	4289794.33	L06	46
2006-11-30T02:20:41.316	7622	15.191192	38.758451	516587.21	4289989.49	L06	47
2006-11-30T02:22:41.362	7662	15.192201	38.760211	516675.77	4290184.97	L06	48
2006-11-30T02:24:41.319	7686	15.193159	38.761998	516761.20	4290383.45	L06	49
2006-11-30T02:26:41.320	7717	15.194174	38.763791	516844.01	4290582.59	L06	50
2006-11-30T02:28:41.322	7749	15.195269	38.765570	516932.72	4290780.19	L06	51
2006-11-30T02:30:41.355	7784	15.196996	38.767066	517058.60	4290946.47	L07	1
2006-11-30T02:32:41.324	7814	15.199266	38.767724	517251.82	4291019.90	L07	2
2006-11-30T02:34:41.353	7846	15.201681	38.767968	517460.52	4291047.43	L07	3
2006-11-30T02:36:41.378	7881	15.204062	38.767876	517670.26	4291037.69	L07	4
2006-11-30T02:38:41.344	7911	15.206348	38.767225	517871.88	4290965.90	L07	5
2006-11-30T02:40:41.360	7946	15.208445	38.766265	518060.64	4290859.80	L07	6

2006-11-30T02:42:41.346	7977	15.210354	38.765148	518235.98	4290736.25	L07	7
2006-11-30T02:44:41.354	8010	15.210823	38.763650	518329.24	4290570.23	L08	1
2006-11-30T02:46:41.361	8044	15.210237	38.761925	518277.99	4290378.69	L08	2
2006-11-30T02:48:41.362	8078	15.209797	38.760068	518236.67	4290172.53	L08	3
2006-11-30T02:50:41.352	8111	15.209454	38.758177	518207.87	4289962.63	L08	4
2006-11-30T02:52:41.561	8178	15.209127	38.756276	518179.42	4289751.61	L08	5
2006-11-30T02:54:41.384	8183	15.208708	38.754371	518146.36	4289540.15	L08	6
2006-11-30T02:56:41.380	8214	15.208363	38.752455	518111.13	4289327.45	L08	7
2006-11-30T02:58:41.357	8238	15.207962	38.750527	518081.73	4289113.44	L08	8
2006-11-30T03:00:41.359	8263	15.207484	38.748603	518041.46	4288899.85	L08	9
2006-11-30T03:02:41.360	8281	15.207064	38.746677	518005.45	4288686.05	L08	10
2006-11-30T03:04:41.377	8293	15.206641	38.744743	517966.83	4288471.35	L08	11
2006-11-30T03:06:41.378	8295	15.206242	38.742778	517932.12	4288253.22	L08	12
2006-11-30T03:08:41.379	8297	15.205881	38.740811	517904.11	4288034.89	L08	13
2006-11-30T03:10:41.381	8299	15.205504	38.738860	517868.44	4287818.31	L08	14
2006-11-30T03:12:41.382	8301	15.205160	38.736898	517819.13	4287600.48	L08	15
2006-11-30T03:14:41.384	8303	15.204848	38.735119	517814.01	4287403.06	L08	16
2006-11-30T03:16:41.391	8306	15.204534	38.733457	517787.91	4287218.57	L08	17
2006-11-30T03:18:41.392	8308	15.204249	38.731839	517756.24	4287038.96	L08	18
2006-11-30T03:20:41.394	8310	15.203975	38.730213	517736.65	4286858.48	L08	19
2006-11-30T03:22:41.395	8312	15.203683	38.728607	517719.67	4286680.23	L08	20
2006-11-30T03:24:41.390	8313	15.203371	38.727009	517687.64	4286502.84	L08	21
2006-11-30T03:26:41.392	8315	15.203074	38.725414	517659.00	4286325.78	L08	22
2006-11-30T03:28:41.408	8317	15.202743	38.723838	517631.13	4286150.84	L08	23
2006-11-30T03:30:41.410	8319	15.202438	38.722277	517608.48	4285977.57	L08	24
2006-11-30T03:32:41.411	8321	15.202103	38.720656	517578.98	4285797.63	L08	25
2006-11-30T03:34:41.418	8324	15.201752	38.718871	517548.29	4285599.48	L08	26
2006-11-30T03:36:41.420	8326	15.201370	38.717007	517515.54	4285392.57	L08	27
2006-11-30T03:38:41.418	8328	15.200996	38.715130	517485.74	4285184.22	L08	28
2006-11-30T03:40:41.416	8330	15.200654	38.713265	517450.81	4284977.19	L08	29
2006-11-30T03:42:41.418	8332	15.200320	38.711361	517427.89	4284765.86	L08	30
2006-11-30T03:44:41.419	8334	15.199967	38.709449	517394.35	4284553.62	L08	31
2006-11-30T03:46:41.420	8336	15.199577	38.707537	517361.43	4284341.38	L08	32
2006-11-30T03:48:41.428	8339	15.199188	38.705610	517333.64	4284127.49	L08	33
2006-11-30T03:50:41.423	8340	15.198858	38.703684	517288.10	4283913.67	L09	1
2006-11-30T03:52:41.450	8344	15.199886	38.701910	517329.14	4283716.91	L09	2
2006-11-30T03:54:41.442	8345	15.201892	38.701376	517495.35	4283658.01	L09	3
2006-11-30T04:21:53.736	8348	15.232392	38.705051	520147.74	4284072.08	L09	4
2006-11-30T04:59:53.772	8349	15.278399	38.712981	524146.44	4284963.16	L09	5
2006-11-30T05:01:53.783	8351	15.280544	38.713157	524339.74	4284983.28	L09	6
2006-11-30T05:03:23.784	8353	15.282130	38.713588	524468.70	4285031.50	L09	7
2006-11-30T05:04:53.785	8355	15.283718	38.713802	524606.68	4285055.68	L09	8
2006-11-30T05:06:23.786	8357	15.285297	38.713988	524744.77	4285076.74	L09	9
2006-11-30T05:07:53.787	8359	15.286898	38.714205	524884.93	4285101.26	L09	10
2006-11-30T05:09:23.788	8361	15.288499	38.714562	525023.73	4285141.31	L09	11
2006-11-30T05:10:53.789	8363	15.290128	38.714910	525164.45	4285180.37	L09	12
2006-11-30T05:12:23.790	8365	15.291762	38.715235	525306.22	4285216.88	L09	13
2006-11-30T05:13:53.797	8368	15.293393	38.715508	525448.61	4285247.63	L09	14
2006-11-30T05:15:23.798	8369	15.295044	38.715831	525591.16	4285283.93	L09	15
2006-11-30T05:16:53.809	8371	15.296686	38.716129	525733.28	4285317.46	L09	16
2006-11-30T05:18:53.810	8372	15.298868	38.716404	525923.58	4285348.59	L09	17
2006-11-30T05:20:53.812	8373	15.301028	38.716741	526110.46	4285386.60	L09	18
2006-11-30T05:22:53.828	8374	15.303182	38.717033	526297.70	4285419.61	L09	19
2006-11-30T05:24:53.830	8376	15.305306	38.717270	526482.96	4285446.53	L09	20
2006-11-30T05:26:53.831	8378	15.307408	38.717701	526664.49	4285494.96	L09	21
2006-11-30T05:28:53.832	8380	15.309508	38.717786	526848.07	4285505.01	L09	22

2006-11-30T05:30:53.834	8382	15.311583	38.718097	527028.51	4285540.13	L09	23
2006-11-30T05:32:53.851	8384	15.313628	38.718495	527205.97	4285584.90	L09	24
2006-11-30T05:34:53.868	8386	15.315690	38.718877	527385.26	4285627.90	L09	25
2006-11-30T05:36:53.875	8389	15.317720	38.719275	527560.71	4285672.67	L09	26
2006-11-30T05:38:53.876	8391	15.319747	38.719646	527736.78	4285714.46	L09	27
2006-11-30T05:40:53.878	8393	15.321771	38.719993	527912.60	4285753.58	L09	28
2006-11-30T05:42:53.879	8395	15.323795	38.720263	528089.31	4285784.16	L09	29
2006-11-30T05:44:53.874	8396	15.325816	38.720871	528266.06	4285852.25	L09	30
2006-11-30T05:46:53.876	8398	15.327901	38.720905	528446.00	4285856.67	L09	31
2006-11-30T05:48:53.893	8400	15.330012	38.721235	528629.20	4285893.94	L09	32
2006-11-30T05:50:53.894	8402	15.332134	38.721531	528813.73	4285927.45	L09	33
2006-11-30T05:52:53.895	8404	15.334304	38.721830	529002.77	4285961.32	L09	34
2006-11-30T05:54:53.896	8406	15.336583	38.722267	529199.22	4286010.53	L09	35
2006-11-30T05:56:53.898	8408	15.338900	38.722631	529400.49	4286051.66	L09	36
2006-11-30T05:58:53.899	8410	15.341218	38.722938	529602.48	4286086.48	L09	37
2006-11-30T06:00:53.900	8412	15.343546	38.723298	529804.70	4286127.18	L09	38
2006-11-30T06:02:53.902	8414	15.345874	38.723618	530008.58	4286163.46	L09	39
2006-11-30T06:04:53.903	8416	15.348218	38.724015	530212.17	4286208.28	L09	40
2006-11-30T06:06:53.907	8419	15.350536	38.724395	530412.56	4286251.21	L09	41
2006-11-30T06:08:53.912	8420	15.352849	38.724763	530613.46	4286292.82	L09	42
2006-11-30T06:10:53.913	8423	15.355153	38.725163	530813.74	4286337.98	L09	43
2006-11-30T06:12:53.914	8424	15.357459	38.725543	531014.29	4286380.92	L09	44
2006-11-30T06:14:23.931	8427	15.359196	38.725846	531164.89	4286415.14	L09	45
2006-11-30T06:15:53.926	8428	15.360921	38.726144	531314.70	4286448.79	L09	46
2006-11-30T06:17:23.933	8431	15.362634	38.726480	531462.59	4286486.66	L09	47
2006-11-30T06:18:53.937	8434	15.364291	38.726710	531616.69	4286512.79	L10	1
2006-11-30T06:20:23.935	8436	15.365183	38.727557	531736.53	4286607.26	L10	2
2006-11-30T06:21:53.930	8437	15.364860	38.728848	531738.74	4286750.53	L10	3
2006-11-30T06:23:23.931	8439	15.363948	38.730080	531675.01	4286886.99	L10	4
2006-11-30T06:24:53.938	8442	15.362518	38.730936	531563.03	4286981.53	L10	5
2006-11-30T06:26:23.933	8443	15.360949	38.731618	531428.44	4287056.68	L10	6
2006-11-30T06:27:53.934	8445	15.359302	38.732153	531284.09	4287115.48	L10	7
2006-11-30T06:29:23.935	8447	15.357632	38.732725	531140.08	4287178.39	L10	8
2006-11-30T06:30:53.936	8449	15.355962	38.733247	530994.71	4287235.75	L10	9
2006-11-30T06:32:23.937	8451	15.354293	38.733771	530848.55	4287293.33	L10	10
2006-11-30T06:33:53.944	8454	15.352590	38.734330	530698.90	4287354.78	L10	11
2006-11-30T06:35:13.939	8455	15.350856	38.734982	530548.26	4287426.55	L10	12
2006-11-30T06:36:33.940	8457	15.349140	38.735636	530398.49	4287498.55	L10	13
2006-11-30T06:37:53.941	8459	15.347406	38.736289	530248.55	4287570.44	L10	14
2006-11-30T06:39:13.963	8462	15.345619	38.736939	530092.53	4287641.98	L10	15
2006-11-30T06:40:33.959	8463	15.343949	38.737587	529947.90	4287713.34	L10	16
2006-11-30T06:41:53.960	8465	15.342388	38.738185	529811.98	4287779.19	L10	17
2006-11-30T06:43:13.960	8467	15.340859	38.738753	529678.43	4287841.72	L10	18
2006-11-30T06:44:33.961	8469	15.339336	38.739334	529546.26	4287905.70	L10	19
2006-11-30T06:45:53.962	8471	15.337817	38.739860	529411.42	4287963.57	L10	20
2006-11-30T06:47:13.963	8473	15.336299	38.740476	529281.42	4288031.45	L10	21
2006-11-30T06:48:33.963	8475	15.334763	38.741047	529147.69	4288094.32	L10	22
2006-11-30T06:49:53.974	8479	15.333234	38.741579	529013.12	4288152.86	L10	23
2006-11-30T06:51:13.974	8482	15.331696	38.742172	528880.70	4288218.18	L10	24
2006-11-30T06:52:33.973	8484	15.330155	38.742720	528745.95	4288278.51	L10	25
2006-11-30T06:53:54.989	8486	15.328594	38.743297	528610.67	4288342.05	L10	26
2006-11-30T06:55:13.984	8487	15.327074	38.743865	528478.78	4288404.60	L10	27
2006-11-30T06:56:34.000	8491	15.325499	38.744421	528341.25	4288465.81	L10	28
2006-11-30T06:57:53.985	8492	15.323963	38.744949	528206.09	4288523.92	L10	29
2006-11-30T06:59:13.986	8494	15.322391	38.745504	528069.26	4288585.02	L10	30
2006-11-30T07:00:33.987	8496	15.320816	38.746064	527932.17	4288646.68	L10	31

2006-11-30T07:01:54.994	8498	15.319228	38.746667	527795.85	4288713.12	L10	32
2006-11-30T07:03:14.000	8500	15.317685	38.747212	527661.12	4288773.13	L10	33
2006-11-30T07:04:34.000	8502	15.316170	38.747757	527529.26	4288833.15	L10	34
2006-11-30T07:09:54.993	8510	15.309217	38.750063	526923.84	4289086.97	L10	35
2006-11-30T07:11:14.000	8513	15.307481	38.750700	526773.18	4289157.15	L10	36
2006-11-30T07:12:34.001	8515	15.305736	38.751338	526621.31	4289227.43	L10	37
2006-11-30T07:13:54.002	8517	15.303962	38.751991	526467.36	4289299.38	L10	38
2006-11-30T07:15:14.013	8518	15.302206	38.752635	526314.10	4289370.34	L10	39
2006-11-30T07:16:34.013	8519	15.300425	38.753294	526159.11	4289442.95	L10	40
2006-11-30T07:17:54.014	8520	15.298631	38.753945	526002.20	4289514.68	L10	41
2006-11-30T07:19:14.015	8521	15.296837	38.754614	525846.86	4289588.41	L10	42
2006-11-30T07:20:34.016	8522	15.295021	38.755268	525688.83	4289660.47	L10	43
2006-11-30T07:21:54.026	8524	15.293222	38.755928	525533.07	4289733.21	L10	44
2006-11-30T07:23:14.027	8526	15.291388	38.756555	525372.71	4289802.27	L10	45
2006-11-30T07:24:34.028	8528	15.289553	38.757266	525216.23	4289880.67	L10	46
2006-11-30T07:25:54.025	8530	15.287683	38.757831	525050.34	4289942.84	L10	47
2006-11-30T07:27:14.029	8532	15.285809	38.758465	524886.52	4290012.68	L10	48
2006-11-30T07:28:34.027	8534	15.283956	38.759158	524725.28	4290089.08	L10	49
2006-11-30T07:29:54.031	8536	15.282100	38.759844	524565.00	4290164.71	L10	50
2006-11-30T07:31:14.032	8538	15.280315	38.760518	524409.68	4290239.02	L10	51
2006-11-30T07:32:34.031	8540	15.278544	38.761207	524255.58	4290315.01	L10	52
2006-11-30T07:33:54.047	8542	15.276807	38.761847	524102.28	4290385.56	L10	53
2006-11-30T07:35:14.049	8544	15.275081	38.762525	523952.61	4290460.35	L10	54
2006-11-30T07:36:34.048	8546	15.273300	38.763228	523801.38	4290537.90	L10	55
2006-11-30T07:37:54.049	8548	15.271478	38.763691	523641.98	4290588.80	L10	56
2006-11-30T07:39:14.066	8550	15.269670	38.764206	523484.73	4290645.49	L10	57
2006-11-30T07:40:34.066	8552	15.267904	38.764761	523330.78	4290706.62	L10	58
2006-11-30T07:41:54.083	8554	15.266139	38.765336	523176.82	4290769.98	L10	59
2006-11-30T07:43:14.100	8556	15.264435	38.765917	523027.38	4290834.01	L10	60
2006-11-30T07:44:34.100	8558	15.262728	38.766544	522878.88	4290903.16	L10	61
2006-11-30T07:45:54.104	8560	15.261082	38.767201	522733.67	4290975.65	L10	62
2006-11-30T07:47:14.103	8562	15.259444	38.767943	522592.61	4291057.59	L10	63
2006-11-30T07:48:34.103	8564	15.257794	38.768617	522448.28	4291131.97	L10	64
2006-11-30T07:49:54.105	8566	15.256125	38.769283	522304.38	4291205.47	L10	65
2006-11-30T07:51:14.105	8568	15.254479	38.769924	522161.19	4291276.20	L10	66
2006-11-30T07:52:34.107	8570	15.252850	38.770568	522018.96	4291347.27	L10	67
2006-11-30T07:53:54.107	8572	15.251180	38.771233	521872.90	4291420.66	L10	68
2006-11-30T07:55:14.108	8574	15.249498	38.771933	521726.57	4291497.93	L10	69
2006-11-30T07:56:34.109	8575	15.247815	38.772608	521581.47	4291572.44	L10	70
2006-11-30T07:57:54.109	8578	15.246126	38.773246	521434.99	4291642.84	L10	71
2006-11-30T07:59:14.110	8580	15.244415	38.773860	521285.75	4291710.58	L10	72
2006-11-30T08:00:34.127	8582	15.242701	38.774454	521136.68	4291776.09	L10	73
2006-11-30T08:01:54.128	8583	15.241019	38.775098	520991.60	4291847.17	L10	74
2006-11-30T08:03:14.123	8585	15.239315	38.775654	520842.20	4291908.48	L10	75
2006-11-30T08:04:34.124	8587	15.237712	38.776213	520705.06	4291970.15	L10	76
2006-11-30T08:05:54.130	8589	15.236384	38.776599	520587.50	4292012.68	L10	77
2006-11-30T08:07:14.131	8592	15.235109	38.777037	520477.15	4292061.00	L10	78
2006-11-30T08:08:34.126	8593	15.233760	38.777493	520360.36	4292111.30	L10	79
2006-11-30T08:09:34.127	8595	15.232706	38.777920	520272.86	4292158.46	L10	80
2006-11-30T08:10:34.127	8597	15.231755	38.777886	520179.40	4292154.45	L10	81
2006-11-30T08:11:34.134	8600	15.231034	38.777420	520103.36	4292102.54	L10	82
2006-11-30T08:12:34.135	8602	15.230740	38.776767	520042.82	4292029.93	L10	83
2006-11-30T08:13:34.129	8603	15.230928	38.775945	520035.93	4291938.70	L10	84
2006-11-30T08:14:34.139	8607	15.231458	38.775155	520064.38	4291851.10	L10	85
2006-11-30T08:15:34.137	8609	15.232269	38.774594	520124.48	4291789.00	L10	86
2006-11-30T08:17:04.138	8611	15.233706	38.774191	520241.08	4291744.58	L10	87

2006-11-30T08:18:34.139	8613	15.235248	38.774177	520375.55	4291743.37	L10	88
2006-11-30T08:20:04.140	8615	15.236778	38.773934	520510.35	4291716.75	L10	89
2006-11-30T08:21:34.141	8616	15.238279	38.773536	520640.85	4291672.92	L10	90
2006-11-30T08:23:04.142	8619	15.239809	38.773167	520773.87	4291632.32	L10	91
2006-11-30T08:24:34.137	8620	15.241331	38.772834	520907.48	4291595.72	L10	92
2006-11-30T08:26:04.144	8622	15.242851	38.772326	521036.37	4291539.69	L10	93
2006-11-30T08:27:34.144	8625	15.244379	38.772054	521172.48	4291509.87	L10	94
2006-11-30T08:29:04.161	8627	15.245899	38.771618	521303.35	4291461.83	L10	95
2006-11-30T08:30:34.162	8629	15.247416	38.771258	521437.07	4291422.25	L10	96
2006-11-30T08:32:04.163	8631	15.248940	38.770847	521569.58	4291377.00	L10	97
2006-11-30T08:33:34.158	8632	15.250430	38.770379	521697.68	4291325.41	L10	98
2006-11-30T08:35:04.166	8635	15.251909	38.770001	521827.76	4291283.82	L10	99
2006-11-30T08:36:34.182	8637	15.253372	38.769559	521954.98	4291235.12	L10	100
2006-11-30T08:38:04.198	8639	15.254842	38.769075	522081.01	4291181.77	L10	101
2006-11-30T08:39:04.199	8640	15.255840	38.768829	522167.79	4291154.71	L10	102
2006-11-30T08:40:04.200	8643	15.256833	38.768567	522254.48	4291125.88	L10	103
2006-11-30T08:41:04.201	8645	15.257812	38.768323	522340.65	4291099.04	L10	104
2006-11-30T08:42:04.204	8647	15.258800	38.768006	522425.19	4291064.10	L10	105
2006-11-30T08:43:04.205	8649	15.259751	38.767785	522509.70	4291039.82	L10	106
2006-11-30T08:44:04.205	8651	15.260716	38.767508	522593.62	4291009.32	L10	107
2006-11-30T08:45:04.203	8653	15.261684	38.767187	522676.34	4290973.93	L10	108
2006-11-30T08:46:04.219	8655	15.262651	38.766963	522762.42	4290949.32	L10	109
2006-11-30T08:47:04.223	8657	15.263623	38.766576	522842.38	4290906.61	L10	110
2006-11-30T08:48:04.236	8659	15.264456	38.766368	522925.41	4290883.77	L10	111
2006-11-30T08:49:04.237	8661	15.264840	38.766666	522998.81	4290917.05	L10	112
2006-11-30T08:50:04.238	8663	15.264696	38.767387	523022.30	4290997.12	L10	113
2006-11-30T08:51:04.238	8665	15.264066	38.768148	522990.08	4291081.48	L10	114
2006-11-30T08:52:04.239	8667	15.263102	38.768649	522914.52	4291136.85	L10	115
2006-11-30T08:53:04.240	8669	15.261999	38.768948	522820.69	4291169.76	L10	116
2006-11-30T08:54:04.240	8671	15.260804	38.768992	522716.86	4291174.35	L10	117
2006-11-30T08:55:04.241	8673	15.259601	38.768993	522612.09	4291174.16	L10	118
2006-11-30T08:56:04.242	8675	15.258385	38.768877	522506.75	4291160.99	L10	119
2006-11-30T08:57:04.242	8677	15.257164	38.768924	522400.84	4291165.90	L10	120
2006-11-30T08:58:04.258	8679	15.256096	38.768921	522300.41	4291165.29	L10	121
2006-11-30T08:59:04.260	8681	15.255165	38.769350	522217.58	4291212.66	L10	122
2006-11-30T09:00:04.254	8682	15.254171	38.769830	522133.60	4291265.69	L10	123
2006-11-30T09:01:34.261	8685	15.252615	38.770422	521997.29	4291331.01	L10	124
2006-11-30T09:03:04.256	8686	15.251012	38.771062	521860.88	4291401.65	L10	125
2006-11-30T09:04:34.258	8688	15.249362	38.771611	521717.37	4291462.18	L10	126
2006-11-30T09:06:04.258	8690	15.247874	38.772097	521586.23	4291515.75	L10	127
2006-11-30T09:07:34.281	8693	15.246531	38.772651	521470.53	4291576.91	L10	128
2006-11-30T09:09:04.297	8695	15.245235	38.773142	521356.67	4291631.09	L10	129
2006-11-30T09:10:34.314	8697	15.243912	38.773622	521240.82	4291684.05	L10	130
2006-11-30T09:12:04.315	8699	15.242545	38.774172	521127.64	4291744.78	L10	131
2006-11-30T09:13:34.316	8701	15.241001	38.774415	520995.01	4291771.39	L10	132
2006-11-30T09:15:04.317	8703	15.238850	38.774499	520808.23	4291780.22	L10	133
2006-11-30T09:16:34.318	8705	15.236503	38.774575	520604.07	4291788.12	L10	134
2006-11-30T09:18:04.319	8707	15.234151	38.774775	520398.84	4291809.79	L10	135
2006-11-30T09:19:34.320	8709	15.231873	38.775163	520199.98	4291852.33	L10	136
2006-11-30T09:21:04.336	8711	15.229667	38.775638	520008.74	4291904.56	L10	137
2006-11-30T09:22:34.331	8712	15.227437	38.776076	519816.04	4291952.68	L10	138
2006-11-30T09:24:04.339	8715	15.225167	38.776105	519618.85	4291955.41	L10	139
2006-11-30T09:25:34.339	8717	15.223035	38.775968	519430.65	4291939.74	L10	140
2006-11-30T09:27:04.340	8718	15.221404	38.775271	519271.01	4291862.01	L10	141
2006-11-30T09:28:34.341	8721	15.220142	38.774031	519153.47	4291724.13	L10	142
2006-11-30T09:30:04.336	8722	15.219412	38.772506	519072.13	4291554.71	L10	143

2006-11-30T09:31:34.343	8725	15.219199	38.770895	519047.45	4291375.88	L10	144
2006-11-30T09:33:04.339	8726	15.219222	38.769575	519044.24	4291229.39	L10	145
2006-11-30T09:34:34.346	8728	15.219303	38.768585	519046.85	4291119.54	L10	146
2006-11-30T09:36:04.341	8730	15.219438	38.767745	519059.15	4291026.36	L10	147
2006-11-30T09:37:34.341	8732	15.219580	38.766916	519071.36	4290934.40	L10	148
2006-11-30T09:39:04.358	8734	15.219706	38.766080	519076.88	4290841.64	L10	149
2006-11-30T09:40:34.359	8736	15.219862	38.765283	519095.77	4290753.24	L10	150
2006-11-30T09:42:04.360	8738	15.219998	38.764472	519108.33	4290663.28	L10	151
2006-11-30T09:43:34.361	8740	15.220150	38.763657	519116.10	4290572.86	L10	152
2006-11-30T11:07:34.436	8743	15.229134	38.698841	519968.96	4283382.53	L11	1
2006-11-30T11:09:34.423	8745	15.227101	38.697698	519804.40	4283255.28	L11	2
2006-11-30T11:11:34.419	8746	15.224606	38.697142	519590.55	4283193.06	L11	3
2006-11-30T11:13:34.442	8749	15.221592	38.696915	519329.64	4283167.23	L11	4
2006-11-30T11:15:34.443	8751	15.218441	38.696687	519055.17	4283141.27	L11	5
2006-11-30T11:17:34.439	8752	15.215315	38.696426	518783.58	4283111.66	L11	6
2006-11-30T11:19:34.461	8755	15.212208	38.696152	518513.81	4283080.63	L11	7
2006-11-30T11:21:34.463	8757	15.209080	38.695883	518242.04	4283050.15	L11	8
2006-11-30T11:23:34.464	8759	15.205929	38.695672	517967.90	4283026.12	L11	9
2006-11-30T11:25:34.460	8760	15.202792	38.695437	517695.33	4282999.43	L11	10
2006-11-30T11:27:34.467	8763	15.199673	38.695242	517424.15	4282977.19	L11	11
2006-11-30T11:29:34.468	8765	15.196567	38.695080	517153.91	4282958.63	L11	12
2006-11-30T11:31:34.469	8766	15.193479	38.694883	516885.41	4282936.20	L11	13
2006-11-30T11:33:34.471	8769	15.190730	38.695422	516639.10	4282995.49	L11	14
2006-11-30T11:35:34.472	8771	15.188341	38.696696	516427.49	4283136.42	L11	15
2006-11-30T11:37:34.473	8773	15.186165	38.698071	516230.56	4283288.59	L11	16
2006-11-30T11:39:34.490	8775	15.184623	38.699885	516083.28	4283489.59	L11	17
2006-11-30T11:41:34.492	8777	15.183460	38.702056	515973.58	4283730.27	L11	18
2006-11-30T11:43:34.493	8779	15.182955	38.704092	515914.44	4283956.08	L11	19
2006-11-30T11:45:34.494	8781	0.000000	L11	20			
2006-11-30T11:47:37.970	8782	0.000000	L11	21			
2006-11-30T11:55:31.604	8784	15.185348	38.716328	516101.16	4285314.24	L12	1
2006-11-30T11:57:31.606	8785	15.185954	38.718237	516140.11	4285526.15	L12	2
2006-11-30T11:59:31.607	8786	15.186653	38.720079	516208.11	4285730.69	L12	3
2006-11-30T12:01:31.609	8787	15.187343	38.721948	516272.10	4285938.22	L12	4
2006-11-30T12:03:31.619	8789	15.188080	38.723792	516331.32	4286142.96	L12	5
2006-11-30T12:05:31.618	8791	15.188964	38.725616	516405.05	4286345.52	L12	6
2006-11-30T12:07:31.621	8793	15.189908	38.727425	516486.69	4286546.42	L12	7
2006-11-30T12:09:31.620	8795	15.190824	38.729248	516563.29	4286748.87	L12	8
2006-11-30T12:11:31.621	8797	15.191807	38.731063	516645.96	4286950.45	L12	9
2006-11-30T12:13:31.622	8799	15.192728	38.732874	516733.24	4287151.59	L12	10
2006-11-30T12:15:31.618	8800	15.193416	38.734751	516795.38	4287360.01	L12	11
2006-11-30T12:17:31.625	8803	15.194004	38.736662	516844.21	4287572.17	L12	12
2006-11-30T12:19:31.621	8804	15.194570	38.738563	516903.73	4287783.24	L12	13
2006-11-30T12:21:31.622	8806	15.195101	38.740490	516943.34	4287997.16	L12	14
2006-11-30T12:23:31.629	8809	15.195630	38.742420	516990.34	4288211.43	L12	15
2006-11-30T12:25:31.630	8811	15.196167	38.744374	517033.06	4288428.35	L12	16
2006-11-30T12:27:31.632	8813	15.196686	38.746311	517077.70	4288643.39	L12	17
2006-11-30T12:29:31.627	8814	15.197323	38.748239	517128.95	4288857.44	L12	18
2006-11-30T12:31:31.629	8816	15.197992	38.750166	517187.58	4289071.40	L12	19
2006-11-30T12:33:31.636	8819	15.198692	38.752040	517249.00	4289279.49	L12	20
2006-11-30T12:35:31.637	8821	15.199410	38.753925	517307.37	4289488.79	L12	21
2006-11-30T12:37:31.633	8822	15.200130	38.755841	517362.86	4289701.52	L12	22
2006-11-30T12:39:31.634	8824	15.200861	38.757693	517435.05	4289907.19	L12	23
2006-11-30T12:41:31.635	8826	15.201611	38.759592	517499.75	4290118.06	L12	24
2006-11-30T12:43:31.643	8829	15.202335	38.761487	517562.19	4290328.48	L12	25
2006-11-30T12:45:31.500	8830	15.203081	38.763412	517624.01	4290542.23	L12	26

2006-11-30T12:47:31.514	8832	15.204654	38.765150	517725.23	4290735.31	L12	27
2006-11-30T12:49:31.524	8836	15.206855	38.766051	517911.01	4290835.71	L13	1
2006-11-30T12:51:31.517	8837	15.209236	38.765551	518123.20	4290780.71	L13	2
2006-11-30T12:53:31.518	8839	15.211640	38.764719	518330.18	4290688.86	L13	3
2006-11-30T12:55:31.520	8841	15.214129	38.764136	518543.01	4290624.66	L13	4
2006-11-30T12:57:31.521	8843	15.216638	38.763887	518762.01	4290597.54	L13	5
2006-11-30T12:59:31.522	8845	15.218961	38.764376	518964.74	4290652.28	L13	6
2006-11-30T13:01:31.530	8848	15.221283	38.764844	519166.35	4290704.70	L13	7
2006-11-30T13:03:31.531	8850	15.223641	38.765335	519370.73	4290759.68	L13	8
2006-11-30T13:05:31.533	8852	15.226044	38.765907	519582.90	4290823.67	L13	9
2006-11-30T13:07:31.534	8854	15.228057	38.766978	519765.39	4290942.97	L13	10
2006-11-30T13:09:31.538	8856	15.230107	38.768191	519941.06	4291078.01	L13	11
2006-11-30T13:11:31.531	8857	15.232166	38.769359	520120.56	4291208.08	L13	12
2006-11-30T13:13:31.538	8860	15.234102	38.770542	520301.27	4291339.81	L13	13
2006-11-30T13:15:31.539	8862	15.235675	38.772208	520430.67	4291525.01	L13	14
2006-11-30T13:17:31.540	8863	15.237322	38.773777	520579.98	4291699.51	L13	15
2006-11-30T13:19:31.536	8865	15.238515	38.775567	520694.21	4291898.44	L13	16
2006-11-30T13:21:31.537	8867	15.239657	38.777501	520792.85	4292113.31	L13	17
2006-11-30T13:23:31.560	8870	15.240366	38.779535	520870.43	4292339.22	L14	1
2006-11-30T13:25:31.561	8872	15.240952	38.781633	520914.90	4292572.14	L14	2
2006-11-30T13:27:31.557	8873	15.241678	38.783585	520961.49	4292788.88	L14	3
2006-11-30T13:29:31.558	8875	15.243182	38.785090	521084.04	4292956.21	L14	4
2006-11-30T13:31:31.559	8877	15.244712	38.786598	521216.47	4293123.90	L14	5
2006-11-30T13:33:31.561	8879	15.246296	38.788096	521353.60	4293290.50	L14	6
2006-11-30T13:35:31.587	8883	15.247890	38.789637	521493.40	4293461.88	L14	7
2006-11-30T13:37:31.579	8884	15.249342	38.791272	521622.22	4293643.66	L14	8
2006-11-30T13:39:31.586	8887	15.250056	38.793108	521707.03	4293847.63	L14	9
2006-11-30T13:41:31.582	8888	15.250331	38.795092	521733.09	4294067.86	L14	10
2006-11-30T13:43:31.583	8890	15.250621	38.796937	521757.28	4294272.66	L14	11
2006-11-30T13:45:31.584	8892	15.250856	38.798803	521780.77	4294479.79	L14	12
2006-11-30T13:47:31.592	8895	15.251085	38.800873	521800.11	4294709.55	L14	13
2006-11-30T13:49:31.593	8896	15.251304	38.802970	521815.53	4294942.30	L14	14
2006-11-30T13:51:31.588	8898	15.251446	38.805049	521830.10	4295173.04	L14	15
2006-11-30T13:53:31.590	8900	15.251267	38.807136	521843.70	4295404.67	L14	16
2006-11-30T13:55:31.591	8902	15.249711	38.808669	521721.68	4295574.45	L14	17
2006-11-30T13:57:31.592	8904	15.248055	38.810237	521584.97	4295748.07	L14	18
2006-11-30T13:59:31.600	8907	15.245912	38.811379	521399.53	4295874.30	L14	19
2006-11-30T14:01:31.601	8909	15.243951	38.812608	521220.40	4296010.20	L14	20
2006-11-30T14:03:31.603	8911	15.242290	38.814196	521086.75	4296186.06	L14	21
2006-11-30T14:05:31.606	8913	15.239893	38.814873	520885.39	4296260.65	L14	22
2006-11-30T14:07:31.605	8915	15.237383	38.815467	520665.31	4296325.99	L14	23
2006-11-30T14:09:31.601	8916	15.234907	38.816165	520452.15	4296402.89	L14	24
2006-11-30T14:11:31.603	8917	15.232504	38.816668	520244.00	4296458.18	L14	25
2006-11-30T14:13:31.603	8918	15.230067	38.817048	520033.28	4296499.81	L14	26
2006-11-30T14:15:31.605	8919	15.227604	38.817116	519819.09	4296506.82	L14	27
2006-11-30T14:17:31.606	8920	15.225098	38.817369	519601.90	4296534.35	L14	28
2006-11-30T14:19:31.607	8921	15.222644	38.817215	519387.77	4296516.74	L14	29
2006-11-30T14:21:31.609	8922	15.220190	38.816892	519174.99	4296480.38	L14	30
2006-11-30T14:23:31.610	8923	15.217661	38.816637	518956.37	4296451.56	L14	31
2006-11-30T14:25:31.620	8925	15.215105	38.816499	518734.59	4296435.72	L14	32
2006-11-30T14:27:31.619	8927	15.212544	38.816376	518511.42	4296421.54	L14	33
2006-11-30T14:29:31.614	8928	15.210007	38.816041	518291.17	4296383.86	L14	34
2006-11-30T14:31:31.615	8930	15.207518	38.815651	518075.10	4296340.09	L14	35
2006-11-30T14:33:31.617	8932	15.205337	38.815155	517871.81	4296284.58	L14	36
2006-11-30T14:35:31.622	8934	15.203822	38.813835	517734.62	4296137.80	L14	37
2006-11-30T14:37:31.625	8937	15.202326	38.812382	517603.02	4295976.27	L14	38

2006-11-30T14:39:31.630	8940	15.200809	38.810940	517465.93	4295815.95	L14	39
2006-11-30T14:41:31.622	8941	15.199215	38.809365	517347.37	4295640.92	L14	40
2006-11-30T14:43:31.630	8943	15.197374	38.808309	517181.01	4295523.37	L14	41
2006-11-30T14:45:31.631	8945	15.195385	38.807087	517021.37	4295387.42	L14	42
2006-11-30T14:47:31.632	8948	15.193138	38.806483	516825.54	4295319.98	L14	43
2006-11-30T14:49:31.634	8950	15.190729	38.805764	516616.89	4295239.76	L14	44
2006-11-30T14:51:31.635	8952	15.188212	38.805009	516398.86	4295155.52	L14	45
2006-11-30T14:53:31.636	8954	15.185754	38.804200	516183.54	4295065.31	L14	46
2006-11-30T14:55:31.637	8956	15.183385	38.803180	515973.55	4294951.69	L14	47
2006-11-30T14:57:31.639	8958	15.181512	38.801749	515798.29	4294792.55	L14	48
2006-11-30T14:59:31.634	8959	15.179868	38.800030	515650.79	4294601.50	L14	49
2006-11-30T15:01:31.635	8961	15.178668	38.798128	515537.02	4294390.22	L14	50
2006-11-30T15:03:31.643	8964	15.177679	38.796241	515450.33	4294180.65	L14	51
2006-11-30T15:05:31.638	8965	15.176776	38.794537	515370.63	4293991.41	L14	52
2006-11-30T15:07:31.639	8967	15.176023	38.792884	515292.82	4293807.83	L14	53
2006-11-30T15:09:31.641	8969	15.176392	38.791070	515304.67	4293606.56	L14	54
2006-11-30T15:11:31.642	8971	15.176789	38.789148	515345.12	4293393.36	L14	55
2006-11-30T15:13:31.643	8973	15.177101	38.787176	515371.51	4293174.58	L14	56
2006-11-30T15:15:31.648	8976	15.177782	38.785265	515425.68	4292962.63	L14	57
2006-11-30T15:17:31.649	8978	15.178532	38.783361	515485.76	4292751.46	L14	58
2006-11-30T15:19:31.647	8979	15.179552	38.781540	515565.98	4292549.55	L14	59
2006-11-30T15:21:31.649	8981	15.180758	38.779837	515676.49	4292360.78	L14	60
2006-11-30T15:23:31.659	8985	15.182116	38.778107	515783.53	4292169.02	L14	61
2006-11-30T15:25:31.651	8986	15.183583	38.776504	515913.05	4291991.40	L14	62
2006-11-30T15:27:31.653	8988	15.185027	38.774854	516038.85	4291808.56	L14	63
2006-11-30T15:29:31.654	8990	15.186530	38.773210	516169.78	4291626.39	L14	64
2006-11-30T15:31:31.658	8993	15.188088	38.771570	516301.93	4291444.68	L14	65
2006-11-30T15:33:31.657	8995	15.189825	38.770051	516447.62	4291276.42	L14	66
2006-11-30T15:35:31.658	8998	15.191878	38.768806	516619.82	4291138.62	L14	67
2006-11-30T15:37:31.659	9000	15.193976	38.767707	516799.13	4291017.04	L14	68
2006-11-30T15:39:31.661	9002	15.196165	38.766799	516985.08	4290916.68	L14	69
2006-11-30T15:41:31.662	9004	15.198342	38.766251	517172.60	4290856.27	L14	70
2006-11-30T15:43:31.669	9006	15.200504	38.765846	517361.05	4290811.74	L14	71
2006-11-30T15:45:31.671	9009	15.202651	38.765406	517547.68	4290763.33	L14	72
2006-11-30T15:47:31.683	9010	15.204748	38.764900	517728.33	4290707.58	L14	73
2006-11-30T15:49:31.690	9013	15.206829	38.764641	517910.06	4290679.24	L14	74
2006-11-30T15:51:31.706	9015	15.208879	38.764404	518094.91	4290653.36	L14	75
2006-11-30T15:53:31.701	9016	15.210344	38.763033	518264.32	4290501.61	L14	76
2006-11-30T15:55:31.708	9019	15.209859	38.761005	518250.07	4290276.54	L15	1
2006-11-30T15:57:31.704	9020	15.209381	38.759143	518200.76	4290069.81	L15	2
2006-11-30T15:59:31.705	9022	15.209005	38.757252	518171.44	4289859.90	L15	3
2006-11-30T16:01:31.713	9025	15.208691	38.755386	518139.33	4289652.76	L15	4
2006-11-30T16:03:31.714	9026	15.208413	38.753528	518118.08	4289446.54	L15	5
2006-11-30T16:05:31.709	9028	15.208108	38.751679	518092.04	4289241.30	L15	6
2006-11-30T16:07:31.718	9031	15.207748	38.749812	518064.10	4289034.06	L15	7
2006-11-30T16:09:31.727	9032	15.207370	38.747936	518029.38	4288825.81	L15	8
2006-11-30T16:11:31.735	9035	15.206993	38.746027	517997.09	4288613.90	L15	9
2006-11-30T16:13:31.736	9037	15.206646	38.744104	517966.38	4288400.44	L15	10
2006-11-30T16:15:31.731	9038	15.206415	38.742128	517946.80	4288181.12	L15	11
2006-11-30T16:17:31.739	9041	15.205926	38.740186	517902.09	4287965.53	L15	12
2006-11-30T16:19:31.740	9043	15.205487	38.738203	517871.21	4287745.41	L15	13
2006-11-30T16:21:31.735	9044	15.205111	38.736265	517835.45	4287530.28	L15	14
2006-11-30T16:23:31.737	9046	15.204759	38.734311	517805.35	4287313.38	L15	15
2006-11-30T16:25:31.760	9049	15.204410	38.732360	517774.97	4287096.82	L15	16
2006-11-30T16:27:31.761	9051	15.204008	38.730416	517741.04	4286881.02	L15	17
2006-11-30T16:29:31.756	9052	15.203601	38.728464	517700.06	4286664.32	L15	18

2006-11-30T16:31:31.758	9054	15.203181	38.726502	517672.99	4286446.55	L15	19
2006-11-30T16:33:31.780	9057	15.202775	38.724576	517638.86	4286232.75	L15	20
2006-11-30T16:35:31.776	9058	15.202368	38.722647	517603.18	4286018.62	L15	21
2006-11-30T16:37:31.777	9060	15.201990	38.720766	517565.47	4285809.80	L15	22
2006-11-30T16:39:31.785	9063	15.201674	38.718874	517541.51	4285599.80	L15	23
2006-11-30T16:41:31.786	9065	15.201353	38.717005	517514.06	4285392.35	L15	24
2006-11-30T16:43:31.782	9066	15.200996	38.715165	517480.08	4285188.09	L15	25
2006-11-30T16:45:31.783	9068	15.200634	38.713335	517452.44	4284984.96	L15	26
2006-11-30T16:47:31.805	9071	15.200287	38.711531	517419.32	4284784.71	L15	27
2006-11-30T16:49:31.801	9072	15.199971	38.709726	517395.68	4284584.36	L15	28
2006-11-30T16:51:31.802	9073	15.199648	38.707942	517368.03	4284386.34	L15	29
2006-11-30T16:53:31.803	9074	15.199319	38.706168	517336.81	4284189.42	L15	30
2006-11-30T16:55:31.805	9075	15.198948	38.704384	517311.07	4283991.40	L15	31
2006-11-30T16:57:31.806	9076	15.198583	38.702623	517277.32	4283795.91	L15	32
2006-11-30T16:59:31.823	9077	15.198200	38.700845	517244.44	4283598.54	L15	33
2006-11-30T17:01:31.830	9079	15.197825	38.699088	517212.25	4283403.51	L15	34
2006-11-30T17:03:31.832	9082	15.197458	38.697344	517180.76	4283209.91	L15	35
2006-11-30T17:05:31.833	9084	15.197209	38.695562	517155.88	4283012.12	L15	36
2006-11-30T17:07:31.844	9085	15.196933	38.693759	517132.31	4282812.00	L15	37
2006-11-30T17:09:31.851	9088	15.197636	38.692045	517145.85	4282621.83	L16	1
2006-11-30T17:11:31.853	9090	15.199674	38.691204	517306.85	4282528.86	L16	2
2006-11-30T17:13:31.848	9091	15.201391	38.692091	517496.14	4282627.70	L16	3
2006-11-30T17:15:31.855	9093	15.200729	38.694082	517506.96	4282848.65	L16	4
2006-11-30T17:17:31.851	9095	15.198273	38.694834	517294.58	4282931.64	L16	5
2006-11-30T17:19:31.873	9098	15.196498	38.696045	517114.20	4283065.63	L16	6
2006-11-30T17:21:31.869	9099	15.195022	38.697929	516992.79	4283274.43	L16	7
2006-11-30T17:23:31.870	9101	15.193493	38.699790	516859.39	4283480.65	L16	8
2006-11-30T17:25:31.872	9103	15.191917	38.701570	516710.89	4283677.86	L16	9
2006-11-30T17:27:31.873	9105	15.190477	38.703432	516596.03	4283884.24	L16	10
2006-11-30T17:29:31.874	9107	15.188994	38.705193	516468.41	4284079.38	L16	11
2006-11-30T17:31:31.884	9111	15.187515	38.707060	516353.21	4284286.32	L16	12
2006-11-30T17:33:31.892	9112	15.186053	38.708657	516211.91	4284463.24	L16	13
2006-11-30T17:35:31.903	9116	15.184540	38.710376	516079.97	4284653.73	L16	14
2006-11-30T17:37:31.917	9118	15.183032	38.712111	515948.56	4284845.99	L16	15
2006-11-30T21:14:47.573	9120	15.118011	38.763981	510198.78	4290592.37	L16	16
2006-11-30T21:15:47.577	9122	15.119414	38.764527	510320.59	4290653.12	L16	17
2006-11-30T21:16:50.947	9123	15.120886	38.765114	510447.17	4290718.42	L16	18
2006-11-30T21:18:20.954	9129	15.123148	38.765668	510638.74	4290780.15	L16	19
2006-11-30T21:19:50.955	9132	15.125536	38.765454	510846.50	4290756.69	L16	20
2006-11-30T21:21:20.972	9134	15.127922	38.765212	511053.91	4290730.12	L16	21
2006-11-30T21:22:50.973	9136	15.130237	38.764927	511254.47	4290698.77	L16	22
2006-11-30T21:25:50.975	9140	15.134828	38.764544	511653.99	4290656.85	L16	23
2006-11-30T21:27:20.970	9141	15.137126	38.764312	511853.33	4290631.40	L16	24
2006-11-30T21:28:50.971	9142	15.139437	38.764173	512053.87	4290616.28	L16	25
2006-11-30T21:30:20.972	9143	15.141752	38.764063	512255.27	4290604.38	L17	1
2006-11-30T21:32:20.973	9144	15.144714	38.763592	512518.25	4290552.52	L17	2
2006-11-30T21:34:20.974	9145	15.147552	38.762563	512764.99	4290438.73	L17	3
2006-11-30T21:36:50.976	9146	15.150882	38.761090	513060.22	4290275.75	L17	4
2006-11-30T21:39:20.978	9147	15.153754	38.759122	513316.37	4290057.80	L17	5
2006-11-30T21:41:50.979	9148	15.156409	38.756923	513548.68	4289814.17	L17	6
2006-11-30T21:44:20.981	9149	15.159239	38.754798	513789.85	4289578.78	L17	7
2006-11-30T21:46:50.983	9150	15.162167	38.752831	514044.65	4289360.96	L17	8
2006-11-30T21:49:20.985	9151	15.165073	38.750890	514298.50	4289146.02	L17	9
2006-11-30T21:51:51.002	9152	15.167950	38.749014	514548.88	4288938.30	L17	10
2006-11-30T21:54:21.004	9153	15.170801	38.747092	514797.02	4288725.48	L17	11
2006-11-30T21:56:51.005	9154	15.173751	38.745175	515052.30	4288513.24	L17	12

2006-11-30T21:59:21.007	9155	15.176598	38.743297	515301.15	4288305.32	L17	13
2006-11-30T22:01:51.008	9156	15.179416	38.741399	515545.42	4288095.18	L17	14
2006-11-30T22:04:21.010	9157	15.182517	38.739649	515807.56	4287901.50	L17	15
2006-11-30T22:06:51.012	9158	15.185837	38.738265	516100.32	4287748.51	L17	16
2006-11-30T22:09:21.014	9159	15.189232	38.736745	516392.51	4287580.44	L17	17
2006-11-30T22:11:21.015	9160	15.191947	38.735589	516629.87	4287452.65	L17	18
2006-11-30T22:13:21.016	9161	15.194260	38.734523	516830.89	4287334.78	L17	19
2006-11-30T22:15:21.018	9162	15.196496	38.733531	517025.47	4287225.12	L17	20
2006-11-30T22:17:21.019	9163	15.198660	38.732551	517216.14	4287116.78	L17	21
2006-11-30T22:19:21.020	9164	15.200806	38.731550	517403.77	4287006.11	L17	22
2006-11-30T22:21:21.022	9165	15.202943	38.730539	517588.03	4286894.33	L17	23
2006-11-30T22:23:21.023	9166	15.205026	38.729527	517771.07	4286782.44	L17	24
2006-11-30T22:25:21.024	9167	15.207317	38.728225	517961.32	4286638.39	L17	25
2006-11-30T22:27:21.026	9168	15.207826	38.728223	518010.95	4286638.28	L17	26
2006-11-30T22:32:00.394	9169	15.214555	38.730955	518645.73	4286942.90	L18	1
2006-11-30T22:33:45.264	9170	15.213369	38.732390	518605.55	4287102.04	L18	2
2006-11-30T22:35:45.266	9171	15.210844	38.731563	518375.34	4287009.74	L18	3
2006-11-30T22:37:45.267	9172	15.208602	38.730312	518188.70	4286870.49	L18	4
2006-11-30T22:39:45.268	9173	15.206241	38.729820	517985.69	4286815.43	L18	5
2006-11-30T22:41:45.285	9174	15.203891	38.729424	517782.13	4286771.03	L19	1
2006-11-30T22:43:45.302	9175	15.201469	38.729263	517571.04	4286752.70	L19	2
2006-11-30T22:45:45.304	9176	15.198995	38.728978	517356.68	4286720.60	L19	3
2006-11-30T22:47:45.305	9177	15.196412	38.728668	517131.71	4286685.72	L19	4
2006-11-30T22:49:45.306	9178	15.193889	38.728374	516912.48	4286652.62	L19	5
2006-11-30T22:51:45.308	9179	15.191425	38.727997	516698.39	4286610.34	L19	6
2006-11-30T22:53:45.309	9180	15.188957	38.727594	516484.48	4286565.17	L19	7
2006-11-30T22:55:45.311	9181	15.186438	38.727338	516264.97	4286536.31	L19	8
2006-11-30T22:57:45.312	9182	15.183934	38.727013	516047.48	4286499.81	L19	9
2006-11-30T22:59:45.313	9183	15.181424	38.726669	515829.29	4286461.20	L19	10
2006-11-30T23:01:45.315	9184	15.178885	38.726315	515608.75	4286421.48	L19	11
2006-11-30T23:03:45.316	9185	15.176363	38.725980	515390.21	4286383.88	L19	12
2006-11-30T23:05:45.317	9186	15.173795	38.725703	515166.09	4286352.71	L19	13
2006-11-30T23:07:45.319	9187	15.171150	38.725318	514937.47	4286309.56	L19	14
2006-11-30T23:09:45.320	9188	15.168530	38.725329	514709.72	4286310.36	L19	15
2006-11-30T23:11:45.321	9189	15.165920	38.725467	514482.82	4286325.25	L19	16
2006-11-30T23:13:45.323	9190	15.163290	38.725585	514253.83	4286337.93	L19	17
2006-11-30T23:15:45.324	9191	15.160682	38.725734	514027.53	4286354.07	L19	18
2006-11-30T23:17:45.325	9192	15.158129	38.725793	513805.26	4286360.22	L19	19
2006-11-30T23:19:45.327	9193	15.155528	38.725990	513579.47	4286381.70	L19	20
2006-11-30T23:21:45.328	9194	15.152962	38.726056	513356.33	4286388.64	L19	21
2006-11-30T23:23:45.329	9195	15.150360	38.726132	513130.13	4286396.70	L19	22
2006-11-30T23:25:45.331	9196	15.147741	38.726224	512902.46	4286406.54	L19	23
2006-11-30T23:27:45.348	9197	15.145114	38.726396	512674.17	4286425.26	L19	24
2006-11-30T23:29:45.365	9198	15.142468	38.726462	512444.07	4286432.22	L19	25
2006-11-30T23:31:45.382	9199	15.139838	38.726493	512215.45	4286435.30	L19	26
2006-11-30T23:33:45.384	9200	15.137248	38.726649	511990.29	4286452.27	L19	27
2006-11-30T23:35:45.385	9201	15.134655	38.726765	511764.97	4286464.81	L19	28
2006-11-30T23:37:45.401	9202	15.132062	38.726875	511539.55	4286476.68	L19	29
2006-11-30T23:39:45.403	9203	15.129454	38.726929	511312.76	4286482.35	L19	30
2006-11-30T23:41:45.404	9204	15.126837	38.727045	511085.26	4286494.90	L19	31
2006-11-30T23:43:45.405	9205	15.124212	38.727136	510857.08	4286504.69	L19	32
2006-11-30T23:45:45.407	9206	15.121602	38.727263	510630.27	4286518.47	L19	33
2006-11-30T23:47:45.408	9207	15.119179	38.727478	510411.02	4286542.04	L19	34
2006-11-30T23:49:45.410	9208	15.117473	38.728572	510238.06	4286663.21	L20	1
2006-11-30T23:51:55.411	9209	15.117660	38.730426	510187.82	4286868.88	L20	2
2006-11-30T23:54:05.412	9210	15.119919	38.731599	510362.97	4286999.27	L20	3

2006-11-30T23:56:15.414	9211	15.122722	38.731740	510606.84	4287015.24	L20	4
2006-11-30T23:58:25.415	9212	15.125563	38.731953	510853.83	4287039.20	L20	5
2006-12-01T00:00:35.418	9213	15.128302	38.732288	511098.01	4287076.72	L20	6
2006-12-01T00:02:45.434	9214	15.130416	38.733538	511293.03	4287215.70	L20	7
2006-12-01T00:04:55.435	9215	15.132451	38.735041	511468.27	4287382.73	L20	8
2006-12-01T00:07:05.437	9216	15.134423	38.736561	511642.55	4287551.65	L20	9
2006-12-01T00:09:15.438	9217	15.136464	38.738097	511814.82	4287722.35	L20	10
2006-12-01T00:11:25.440	9218	15.138480	38.739570	511994.65	4287886.07	L20	11
2006-12-01T00:13:35.441	9219	15.140828	38.740910	512180.32	4288035.05	L21	1
2006-12-01T00:15:45.443	9220	15.143450	38.741008	512418.51	4288046.29	L21	2
2006-12-01T00:17:55.444	9221	15.145042	38.739402	512577.49	4287868.33	L21	3
2006-12-01T00:20:05.446	9222	15.146386	38.737353	512698.22	4287641.15	L21	4
2006-12-01T00:22:15.447	9223	15.148172	38.735478	512826.49	4287433.30	L21	5
2006-12-01T00:28:45.451	9224	15.155180	38.732572	513433.77	4287111.83	L21	6
2006-12-01T00:30:55.453	9225	15.157547	38.731653	513639.16	4287010.20	L21	7
2006-12-01T00:33:05.454	9226	15.159825	38.730741	513837.85	4286909.34	L21	8
2006-12-01T00:35:15.456	9227	15.162078	38.729812	514031.60	4286806.59	L21	9
2006-12-01T00:37:25.457	9228	15.164320	38.728968	514231.25	4286713.29	L21	10
2006-12-01T00:39:35.459	9229	15.166608	38.728039	514427.97	4286610.56	L21	11
2006-12-01T00:41:45.460	9230	15.169011	38.727109	514638.60	4286507.74	L21	12
2006-12-01T00:43:55.462	9231	15.171537	38.726066	514857.08	4286392.41	L21	13
2006-12-01T00:46:05.463	9232	15.174007	38.725080	515073.29	4286283.40	L21	14
2006-12-01T00:48:15.465	9233	15.176362	38.723933	515278.86	4286156.52	L21	15
2006-12-01T00:50:25.466	9234	15.178767	38.722820	515487.55	4286033.42	L21	16
2006-12-01T00:52:35.467	9235	15.181220	38.721793	515701.88	4285919.87	L21	17
2006-12-01T00:54:45.469	9236	15.183627	38.720623	515910.68	4285790.46	L21	18
2006-12-01T00:56:55.470	9237	15.186139	38.719549	516129.30	4285671.72	L21	19
2006-12-01T00:59:05.472	9238	15.188620	38.718404	516346.63	4285545.11	L21	20
2006-12-01T01:01:15.473	9239	15.191193	38.717265	516569.88	4285419.18	L21	21
2006-12-01T01:03:25.475	9240	15.193722	38.715963	516784.48	4285275.15	L21	22
2006-12-01T01:05:35.476	9241	15.196273	38.714938	517009.89	4285161.89	L21	23
2006-12-01T01:07:45.478	9242	15.198746	38.713845	517226.63	4285041.07	L21	24
2006-12-01T01:09:55.479	9243	15.201411	38.713055	517450.95	4284953.89	L22	1
2006-12-01T01:12:05.481	9244	15.203839	38.713353	517664.92	4284987.43	L22	2
2006-12-01T01:14:15.482	9245	15.206331	38.714055	517881.14	4285065.81	L22	3
2006-12-01T01:16:25.483	9246	15.208868	38.714752	518101.27	4285143.65	L22	4
2006-12-01T01:18:35.485	9247	15.211423	38.715423	518323.14	4285218.62	L22	5
2006-12-01T01:20:45.486	9248	15.213965	38.716120	518543.78	4285296.47	L22	6
2006-12-01T01:22:55.488	9249	15.216487	38.716835	518764.24	4285376.33	L22	7
2006-12-01T01:25:05.490	9250	15.219051	38.717550	518986.95	4285456.20	L22	8
2006-12-01T01:27:15.491	9251	15.221552	38.718322	519204.52	4285542.39	L22	9
2006-12-01T01:29:25.492	9252	15.224090	38.719028	519422.45	4285621.26	L22	10
2006-12-01T01:31:35.494	9253	15.226558	38.719667	519638.13	4285692.69	L22	11
2006-12-01T01:33:45.495	9254	15.228985	38.720323	519847.80	4285766.01	L22	12
2006-12-01T01:35:55.512	9255	15.231518	38.720969	520068.43	4285838.25	L22	13
2006-12-01T01:38:05.514	9256	15.234193	38.721703	520300.93	4285920.28	L22	14
2006-12-01T01:40:15.516	9257	15.236857	38.722364	520533.54	4285994.23	L22	15
2006-12-01T01:42:25.516	9258	15.239440	38.723152	520756.64	4286082.25	L22	16
2006-12-01T01:44:35.518	9259	15.242058	38.723812	520984.28	4286156.08	L22	17
2006-12-01T01:46:45.519	9260	15.244600	38.724550	521205.12	4286238.56	L22	18
2006-12-01T01:48:55.521	9261	15.247148	38.725223	521426.06	4286313.84	L22	19
2006-12-01T01:51:05.522	9262	15.249670	38.725921	521645.08	4286391.88	L22	20
2006-12-01T01:53:15.524	9263	15.252169	38.726578	521862.45	4286465.38	L22	21
2006-12-01T01:55:25.525	9264	15.254649	38.727289	522077.46	4286544.87	L22	22
2006-12-01T01:57:35.527	9265	15.257169	38.727951	522296.12	4286618.94	L22	23
2006-12-01T01:59:45.528	9266	15.259678	38.728648	522514.17	4286696.90	L22	24

2006-12-01T02:01:55.531	9267	15.262237	38.729327	522736.13	4286772.88	L22	25
2006-12-01T02:04:05.531	9268	15.264756	38.730036	522955.46	4286852.18	L22	26
2006-12-01T02:06:15.537	9269	15.267306	38.730704	523176.89	4286926.95	L22	27
2006-12-01T02:08:25.534	9270	15.269841	38.731386	523397.01	4287003.27	L22	28
2006-12-01T02:10:35.551	9271	15.272386	38.732017	523619.23	4287073.95	L22	29
2006-12-01T02:12:45.552	9272	15.274900	38.732774	523837.48	4287158.60	L22	30
2006-12-01T02:14:55.554	9273	15.277398	38.733518	524054.35	4287241.82	L22	31
2006-12-01T02:17:05.555	9274	15.279924	38.734243	524271.14	4287322.93	L22	32
2006-12-01T02:19:15.557	9275	15.282457	38.734805	524493.27	4287385.97	L22	33
2006-12-01T02:21:25.558	9276	15.284943	38.735575	524708.21	4287472.08	L22	34
2006-12-01T02:23:35.560	9277	15.287454	38.736236	524926.22	4287546.11	L22	35
2006-12-01T02:25:45.562	9278	15.289971	38.736879	525144.40	4287618.15	L22	36
2006-12-01T02:27:55.563	9279	15.292411	38.737549	525358.23	4287693.17	L22	37
2006-12-01T02:30:05.564	9280	15.294854	38.738328	525567.76	4287780.29	L22	38
2006-12-01T02:32:15.566	9281	15.297326	38.738890	525783.26	4287843.35	L22	39
2006-12-01T02:34:25.567	9282	15.299798	38.739493	525997.89	4287910.96	L22	40
2006-12-01T02:36:35.569	9283	15.302169	38.740222	526206.20	4287992.54	L22	41
2006-12-01T02:38:45.570	9284	15.304615	38.740967	526415.98	4288075.90	L22	42
2006-12-01T02:40:55.582	9285	15.307131	38.741464	526636.11	4288131.79	L22	43
2006-12-01T02:43:05.589	9286	15.309541	38.742240	526845.26	4288218.60	L22	44
2006-12-01T02:45:15.590	9287	15.312022	38.742937	527058.96	4288296.67	L22	45
2006-12-01T02:47:25.592	9288	15.314535	38.743510	527279.65	4288361.01	L22	46
2006-12-01T02:49:35.593	9289	15.317037	38.744275	527494.53	4288446.64	L22	47
2006-12-01T02:51:45.594	9290	15.319567	38.744934	527715.10	4288520.53	L22	48
2006-12-01T02:53:55.596	9291	15.322015	38.745729	527928.39	4288609.50	L22	49
2006-12-01T02:56:05.597	9292	15.324378	38.746507	528145.86	4288696.60	L23	1
2006-12-01T02:58:15.599	9293	15.324975	38.748359	528249.41	4288902.48	L23	2
2006-12-01T03:00:25.600	9294	15.323635	38.750619	528165.36	4289152.97	L23	3
2006-12-01T03:02:35.602	9295	15.321233	38.752310	527961.37	4289339.89	L23	4
2006-12-01T03:04:45.603	9296	15.318783	38.753687	527749.51	4289491.95	L23	5
2006-12-01T03:06:55.605	9297	15.316427	38.754998	527544.98	4289636.72	L23	6
2006-12-01T03:09:05.606	9298	15.314088	38.756244	527339.62	4289774.28	L23	7
2006-12-01T03:11:15.607	9299	15.311757	38.757503	527135.74	4289913.29	L23	8
2006-12-01T03:13:25.609	9300	15.309868	38.758828	526956.78	4290059.71	L23	9
2006-12-01T03:15:35.610	9301	15.308500	38.760598	526832.74	4290255.71	L23	10
2006-12-01T03:17:45.612	9302	15.307147	38.762432	526714.24	4290458.82	L23	11
2006-12-01T03:19:55.613	9303	15.305811	38.764329	526599.46	4290668.95	L23	12
2006-12-01T03:22:05.615	9304	15.304506	38.766182	526481.40	4290874.18	L23	13
2006-12-01T03:24:15.618	9305	15.303221	38.768096	526370.54	4291086.20	L23	14
2006-12-01T03:26:25.618	9306	15.301941	38.769982	526257.95	4291295.11	L23	15
2006-12-01T03:28:35.619	9307	15.300696	38.771883	526150.67	4291505.71	L23	16
2006-12-01T03:30:45.621	9308	15.299434	38.773756	526040.36	4291713.19	L23	17
2006-12-01T03:32:55.639	9309	15.298176	38.775631	525928.06	4291920.89	L23	18
2006-12-01T03:35:05.639	9310	15.296900	38.777501	525817.32	4292128.04	L23	19
2006-12-01T03:37:15.641	9311	15.295596	38.779364	525704.95	4292334.41	L23	20
2006-12-01T03:39:25.642	9312	15.294108	38.781121	525575.68	4292528.97	L23	21
2006-12-01T03:41:35.644	9313	15.292631	38.782898	525446.15	4292725.74	L23	22
2006-12-01T03:43:45.645	9314	15.291157	38.784723	525319.65	4292927.85	L23	23
2006-12-01T03:45:55.647	9315	15.289700	38.786587	525200.18	4293134.32	L23	24
2006-12-01T03:48:05.648	9316	15.288306	38.788325	525064.87	4293326.75	L23	25
2006-12-01T03:50:15.649	9317	15.286995	38.790379	524971.13	4293554.39	L23	26
2006-12-01T03:52:25.651	9318	15.285663	38.792147	524843.20	4293750.18	L23	27
2006-12-01T03:54:35.652	9319	15.284300	38.793963	524717.26	4293951.30	L23	28
2006-12-01T03:56:45.669	9320	15.282954	38.795806	524601.21	4294155.46	L23	29
2006-12-01T03:58:55.671	9321	15.281591	38.797642	524482.22	4294358.83	L23	30
2006-12-01T04:01:05.672	9322	15.280262	38.799509	524371.99	4294565.67	L23	31

2006-12-01T04:03:15.673	9323	15.278946	38.801303	524247.56	4294764.37	L23	32
2006-12-01T04:05:25.675	9324	15.277520	38.803195	524134.47	4294973.97	L23	33
2006-12-01T04:07:35.676	9325	15.276089	38.804965	524004.15	4295169.99	L23	34
2006-12-01T04:09:45.678	9326	15.274643	38.806762	523875.82	4295369.02	L23	35
2006-12-01T04:11:55.679	9327	15.273212	38.808584	523753.14	4295570.83	L23	36
2006-12-01T04:14:05.681	9328	15.271784	38.810420	523628.55	4295774.20	L23	37
2006-12-01T04:16:15.682	9329	15.270372	38.812230	523494.51	4295974.66	L23	38
2006-12-01T04:18:25.684	9330	15.269029	38.814188	523388.12	4296191.62	L23	39
2006-12-01T04:20:35.685	9331	15.267686	38.816085	523268.74	4296401.78	L23	40
2006-12-01T04:22:45.686	9332	15.266265	38.817967	523146.93	4296610.26	L23	41
2006-12-01T04:24:55.688	9333	15.264807	38.819866	523023.65	4296820.63	L23	42
2006-12-01T04:27:05.705	9334	15.263357	38.821723	522891.11	4297026.32	L23	43
2006-12-01T04:29:15.706	9335	15.261919	38.823603	522764.11	4297234.58	L23	44
2006-12-01T04:31:25.708	9336	15.260422	38.825509	522640.94	4297445.73	L23	45
2006-12-01T04:33:35.709	9337	15.258561	38.827186	522485.81	4297631.38	L23	46
2006-12-01T04:35:45.711	9338	15.256500	38.828714	522308.95	4297800.44	L24	1
2006-12-01T04:37:55.712	9339	15.254424	38.830261	522125.76	4297971.60	L24	2
2006-12-01T04:40:05.714	9340	15.252377	38.831836	521948.90	4298145.88	L24	3
2006-12-01T04:42:15.715	9341	15.250286	38.833422	521765.28	4298321.38	L24	4
2006-12-01T04:44:25.717	9342	15.248232	38.835004	521590.00	4298496.45	L24	5
2006-12-01T04:46:35.718	9343	15.246146	38.836475	521407.12	4298659.19	L24	6
2006-12-01T04:48:45.719	9344	15.244106	38.837965	521229.62	4298824.06	L24	7
2006-12-01T04:50:55.736	9345	15.242056	38.839417	521049.54	4298984.70	L24	8
2006-12-01T04:53:05.738	9346	15.240029	38.840921	520876.31	4299151.14	L24	9
2006-12-01T04:55:15.739	9347	15.238114	38.842405	520703.17	4299315.37	L24	10
2006-12-01T04:57:25.741	9348	15.236229	38.843999	520540.95	4299491.83	L24	11
2006-12-01T04:59:35.742	9349	15.234368	38.845566	520380.91	4299665.30	L24	12
2006-12-01T05:01:45.744	9350	15.232516	38.847092	520219.33	4299834.23	L24	13
2006-12-01T05:03:55.745	9351	15.230646	38.848599	520054.98	4300001.04	L24	14
2006-12-01T05:06:05.747	9352	15.228822	38.850120	519897.93	4300169.43	L24	15
2006-12-01T05:08:15.748	9353	15.226981	38.851559	519738.21	4300328.71	L24	16
2006-12-01T05:10:25.750	9354	15.225188	38.852991	519582.24	4300487.24	L24	17
2006-12-01T05:12:35.767	9355	15.223437	38.854392	519428.27	4300642.32	L24	18
2006-12-01T05:14:45.768	9356	15.221693	38.855816	519276.30	4300799.97	L24	19
2006-12-01T05:16:55.769	9357	15.219638	38.857172	519116.11	4300950.06	L24	20
2006-12-01T05:19:05.771	9358	15.217064	38.857521	518893.47	4300988.25	L24	21
2006-12-01T05:21:15.772	9359	15.214459	38.857153	518665.11	4300946.88	L24	22
2006-12-01T05:23:25.774	9360	15.211891	38.856659	518439.56	4300891.53	L24	23
2006-12-01T05:25:35.775	9361	15.209401	38.855769	518225.91	4300792.27	L24	24
2006-12-01T05:27:45.777	9362	15.206872	38.854967	518004.94	4300702.77	L24	25
2006-12-01T05:29:55.778	9363	15.204332	38.854119	517785.63	4300608.17	L24	26
2006-12-01T05:32:05.780	9364	15.201872	38.853270	517569.61	4300513.48	L24	27
2006-12-01T05:34:15.797	9365	15.199460	38.852276	517359.87	4300402.71	L24	28
2006-12-01T05:36:25.798	9366	15.197009	38.851285	517149.60	4300292.29	L24	29
2006-12-01T05:38:35.799	9367	15.194516	38.850304	516934.80	4300182.96	L24	30
2006-12-01T05:40:45.801	9368	15.192052	38.849507	516711.20	4300094.05	L24	31
2006-12-01T05:42:55.802	9369	15.189571	38.848443	516504.84	4299975.54	L24	32
2006-12-01T05:45:05.804	9370	15.187095	38.847452	516293.59	4299865.14	L24	33
2006-12-01T05:47:15.805	9371	15.184677	38.846619	516078.39	4299772.26	L24	34
2006-12-01T05:49:25.807	9372	15.182264	38.845590	515869.92	4299657.65	L24	35
2006-12-01T05:58:05.812	9373	15.173480	38.840724	515099.48	4299116.17	L24	36
2006-12-01T06:00:15.829	9374	15.171482	38.839277	514925.95	4298955.27	L24	37
2006-12-01T06:02:25.831	9375	15.169475	38.837815	514753.89	4298792.72	L24	38
2006-12-01T06:04:35.832	9376	15.167494	38.836290	514585.92	4298623.18	L24	39
2006-12-01T06:06:45.834	9377	15.165489	38.834862	514407.15	4298464.39	L24	40
2006-12-01T06:08:55.835	9378	15.163521	38.833404	514234.90	4298302.29	L24	41

2006-12-01T06:11:05.837	9379	15.161575	38.831938	514071.93	4298139.32	L24	42
2006-12-01T06:13:15.854	9380	15.159655	38.830592	513900.25	4297989.65	L24	43
2006-12-01T06:15:25.855	9381	15.157694	38.829153	513733.70	4297829.68	L24	44
2006-12-01T06:17:35.857	9382	15.155742	38.827769	513563.92	4297675.80	L24	45
2006-12-01T06:19:45.858	9383	15.153767	38.826392	513392.75	4297522.71	L24	46
2006-12-01T06:21:55.859	9384	15.151776	38.825022	513218.79	4297370.39	L24	47
2006-12-01T06:24:05.861	9385	15.149898	38.823618	513051.07	4297214.31	L24	48
2006-12-01T06:26:15.862	9386	15.148087	38.822059	512899.18	4297041.07	L24	49
2006-12-01T06:28:25.864	9387	15.146292	38.820561	512742.15	4296874.58	L24	50
2006-12-01T06:30:35.881	9388	15.144475	38.819036	512584.69	4296705.11	L24	51
2006-12-01T06:32:45.882	9389	15.142663	38.817536	512425.74	4296538.40	L24	52
2006-12-01T06:34:55.884	9390	15.141390	38.816043	512278.41	4296372.50	L24	53
2006-12-01T06:37:05.886	9391	15.141347	38.814289	512271.42	4296177.85	L24	54
2006-12-01T06:39:15.887	9392	15.141330	38.812417	512270.26	4295970.12	L24	55
2006-12-01T06:41:25.889	9393	15.141317	38.810528	512269.46	4295760.50	L24	56
2006-12-01T06:43:35.889	9394	15.141330	38.808645	512267.78	4295551.54	L24	57
2006-12-01T06:45:45.907	9395	15.141439	38.806759	512270.71	4295342.26	L24	58
2006-12-01T06:47:55.910	9396	15.141701	38.804951	512300.37	4295141.68	L24	59
2006-12-01T06:50:05.909	9397	15.141936	38.803126	512317.27	4294939.19	L24	60
2006-12-01T06:52:15.912	9398	15.141837	38.801281	512322.54	4294734.46	L24	61
2006-12-01T06:54:25.912	9399	15.141559	38.799362	512295.34	4294521.47	L24	62
2006-12-01T06:56:35.914	9400	15.141758	38.797294	512297.69	4294291.99	L24	63
2006-12-01T12:20:47.175	12271	15.258774	38.835072	522500.26	4298506.53	L25	1
2006-12-01T12:22:47.177	12272	15.256948	38.833687	522342.21	4298352.39	L25	2
2006-12-01T12:24:47.178	12273	15.255128	38.832274	522186.24	4298195.15	L25	3
2006-12-01T12:26:47.179	12274	15.253290	38.830888	522030.26	4298040.91	L25	4
2006-12-01T12:28:47.181	12275	15.251420	38.829542	521868.36	4297891.10	L25	5
2006-12-01T12:30:47.182	12276	15.249481	38.828269	521700.45	4297749.37	L25	6
2006-12-01T12:32:47.183	12277	15.247489	38.827013	521529.74	4297609.53	L25	7
2006-12-01T12:34:47.185	12278	15.245527	38.825753	521356.60	4297469.24	L25	8
2006-12-01T12:36:47.186	12279	15.243619	38.824489	521192.74	4297328.54	L25	9
2006-12-01T12:38:37.187	12280	15.242235	38.823268	521052.30	4297192.67	L25	10
2006-12-01T12:40:27.188	12281	15.241876	38.821597	520999.67	4297007.11	L25	11
2006-12-01T12:42:17.190	12282	15.241801	38.819792	520990.99	4296806.78	L25	12
2006-12-01T12:44:07.194	12283	15.241855	38.817970	520996.22	4296604.61	L25	13
2006-12-01T12:45:47.192	12284	15.242240	38.816370	521005.45	4296427.09	L25	14
2006-12-01T12:47:27.193	12285	15.243372	38.815054	521084.24	4296281.26	L25	15
2006-12-01T12:49:07.194	12286	15.245046	38.814107	521221.95	4296176.54	L25	16
2006-12-01T12:50:47.195	12287	15.247018	38.813370	521385.65	4296095.20	L25	17
2006-12-01T12:52:27.197	12288	15.248869	38.813286	521560.01	4296086.35	L25	18
2006-12-01T12:54:07.198	12289	15.249932	38.812271	521682.90	4295974.05	L25	19
2006-12-01T12:55:47.199	12290	15.249951	38.810765	521723.21	4295807.04	L25	20
2006-12-01T12:57:27.200	12291	15.248651	38.809285	521642.91	4295642.59	L26	1
2006-12-01T12:59:07.201	12292	15.246470	38.808835	521456.98	4295592.15	L26	2
2006-12-01T13:00:47.202	12293	15.244030	38.809482	521241.47	4295663.36	L26	3
2006-12-01T13:02:27.219	12294	15.241684	38.810512	521036.78	4295777.12	L27	1
2006-12-01T13:04:07.236	12295	15.239260	38.811499	520824.82	4295886.08	L27	2
2006-12-01T13:05:47.252	12296	15.236848	38.812515	520615.81	4295998.28	L27	3
2006-12-01T13:07:27.253	12297	15.234527	38.813513	520414.71	4296108.51	L27	4
2006-12-01T13:09:07.254	12298	15.232593	38.814312	520245.62	4296196.74	L27	5
2006-12-01T13:10:47.271	12299	15.230776	38.815072	520092.61	4296280.69	L27	6
2006-12-01T13:12:27.288	12300	15.228804	38.815491	519924.07	4296326.76	L27	7
2006-12-01T13:14:07.305	12301	15.226691	38.815548	519740.70	4296332.62	L27	8
2006-12-01T13:15:47.306	12302	15.224417	38.815595	519543.26	4296337.35	L27	9
2006-12-01T13:17:27.307	12303	15.222165	38.815619	519347.75	4296339.54	L27	10
2006-12-01T13:19:07.324	12304	15.220054	38.815640	519164.39	4296341.42	L27	11

2006-12-01T13:20:47.325	12305	15.218016	38.815592	518987.47	4296335.67	L27	12
2006-12-01T13:22:27.326	12306	15.215999	38.815614	518812.35	4296337.69	L27	13
2006-12-01T13:24:07.327	12307	15.213870	38.815686	518627.59	4296345.25	L27	14
2006-12-01T13:25:47.328	12308	15.211654	38.815705	518435.11	4296346.91	L27	15
2006-12-01T13:27:27.329	12309	15.209519	38.815619	518248.31	4296336.93	L27	16
2006-12-01T13:29:07.330	12310	15.207483	38.815218	518063.75	4296292.01	L28	1
2006-12-01T13:30:47.331	12311	15.205593	38.814267	517904.16	4296186.12	L28	2
2006-12-01T13:32:27.333	12312	15.203568	38.813781	517732.64	4296131.80	L28	3
2006-12-01T13:34:07.334	12313	15.201741	38.814216	517559.24	4296179.69	L28	4
2006-12-01T13:35:47.335	12314	15.200610	38.815378	517431.43	4296308.35	L28	5
2006-12-01T13:37:27.336	12315	15.200673	38.816868	517397.99	4296473.62	L28	6
2006-12-01T13:39:07.337	12316	15.201880	38.818123	517471.47	4296613.05	L28	7
2006-12-01T13:40:47.354	12317	15.203642	38.818532	517619.56	4296658.76	L28	8
2006-12-01T13:42:27.355	12318	15.205596	38.818150	517791.02	4296616.75	L28	9
2006-12-01T13:44:07.356	12319	15.207635	38.817657	517967.90	4296562.44	L28	10
2006-12-01T13:45:47.358	12320	15.209724	38.817229	518147.71	4296515.36	L28	11
2006-12-01T13:47:27.359	12321	15.211885	38.817058	518334.41	4296496.81	L28	12
2006-12-01T13:49:07.359	12322	15.214043	38.817036	518521.84	4296494.81	L28	13
2006-12-01T13:50:47.360	12323	15.216210	38.816997	518709.98	4296490.92	L28	14
2006-12-01T13:52:27.362	12324	15.218353	38.816944	518896.04	4296485.48	L28	15
2006-12-01T13:54:07.363	12325	15.220552	38.817019	519086.84	4296494.26	L28	16
2006-12-01T13:55:47.364	12326	15.222713	38.816984	519274.54	4296490.83	L28	17
2006-12-01T13:57:27.365	12327	15.224844	38.816991	519459.45	4296492.06	L28	18
2006-12-01T13:59:07.367	12328	15.226994	38.816941	519646.12	4296486.97	L28	19
2006-12-01T14:00:47.367	12329	15.229117	38.816883	519830.53	4296480.99	L28	20
2006-12-01T14:02:27.368	12330	15.231174	38.816873	520013.36	4296480.34	L28	21
2006-12-01T14:04:07.370	12331	15.232966	38.816200	520171.73	4296406.06	L28	22
2006-12-01T14:05:47.386	12332	15.234876	38.815495	520336.53	4296328.25	L28	23
2006-12-01T14:07:27.387	12333	15.236729	38.814773	520498.13	4296248.54	L28	24
2006-12-01T14:09:07.388	12334	15.238528	38.814007	520656.97	4296163.95	L28	25
2006-12-01T14:10:47.389	12335	15.240321	38.813184	520810.79	4296073.03	L28	26
2006-12-01T14:12:27.390	12336	15.242147	38.812438	520968.67	4295990.66	L28	27
2006-12-01T14:14:07.392	12337	15.243953	38.811735	521126.19	4295913.07	L28	28
2006-12-01T14:15:47.393	12338	15.245750	38.811020	521281.90	4295834.14	L28	29
2006-12-01T14:17:27.394	12339	15.247543	38.810303	521439.87	4295755.00	L28	30
2006-12-01T14:19:07.395	12340	15.249322	38.809506	521594.57	4295666.98	L28	31
2006-12-01T14:20:47.396	12341	15.251111	38.808706	521750.14	4295578.63	L28	32
2006-12-01T14:22:27.397	12342	15.252924	38.808014	521912.02	4295502.29	L28	33
2006-12-01T14:24:07.398	12343	15.254875	38.807383	522069.98	4295432.70	L29	1
2006-12-01T14:25:47.399	12344	15.256745	38.807688	522242.15	4295467.03	L29	2
2006-12-01T14:27:27.400	12345	15.258144	38.808727	522385.35	4295582.73	L29	3
2006-12-01T14:29:07.402	12346	15.259477	38.810146	522478.58	4295740.45	L29	4
2006-12-01T14:30:47.403	12347	15.261346	38.810896	522630.37	4295824.11	L29	5
2006-12-01T14:32:27.404	12348	15.262979	38.810662	522788.90	4295798.60	L29	6
2006-12-01T14:34:07.405	12349	15.263608	38.809532	522890.49	4295673.50	L29	7
2006-12-01T14:35:47.406	12350	15.262831	38.808061	522866.31	4295510.19	L29	8
2006-12-01T14:37:27.407	12351	15.260993	38.807175	522717.33	4295411.45	L29	9
2006-12-01T14:39:07.408	12352	15.259116	38.806561	522549.08	4295342.83	L29	10
2006-12-01T14:40:47.410	12353	15.257527	38.805678	522406.53	4295244.44	L29	11
2006-12-01T14:42:27.411	12354	15.256268	38.804646	522286.77	4295129.59	L29	12
2006-12-01T14:44:07.412	12355	15.255089	38.803421	522186.69	4294993.37	L29	13
2006-12-01T14:45:47.429	12356	15.253905	38.802083	522080.47	4294844.60	L29	14
2006-12-01T14:47:27.430	12357	15.252749	38.800671	521980.87	4294687.63	L29	15
2006-12-01T14:49:07.431	12358	15.251573	38.799274	521879.18	4294532.33	L29	16
2006-12-01T14:50:47.432	12359	15.250407	38.797880	521778.36	4294377.36	L29	17
2006-12-01T14:52:27.433	12360	15.249205	38.796478	521672.41	4294221.50	L29	18

2006-12-01T14:54:07.434	12361	15.248071	38.795032	521578.01	4294060.78	L29	19
2006-12-01T14:55:47.435	12362	15.246902	38.793644	521473.70	4293906.47	L29	20
2006-12-01T14:57:27.436	12363	15.245676	38.792225	521371.04	4293748.73	L29	21
2006-12-01T14:59:07.437	12364	15.244433	38.790846	521263.50	4293595.42	L29	22
2006-12-01T15:00:47.439	12365	15.243077	38.789535	521146.13	4293449.63	L29	23
2006-12-01T15:02:27.440	12366	15.241802	38.788183	521033.97	4293299.30	L29	24
2006-12-01T15:04:07.441	12367	15.240750	38.786854	520923.10	4293151.53	L29	25
2006-12-01T15:05:47.443	12368	15.240039	38.785277	520871.36	4292976.40	L29	26
2006-12-01T15:07:27.443	12369	15.239302	38.783724	520805.20	4292803.89	L29	27
2006-12-01T15:09:07.444	12370	15.238588	38.782151	520742.51	4292629.17	L29	28
2006-12-01T15:10:47.445	12371	15.237851	38.780545	520681.39	4292450.80	L29	29
2006-12-01T15:12:27.446	12372	15.237086	38.778958	520612.97	4292274.52	L29	30
2006-12-01T15:14:07.447	12373	15.236293	38.777360	520546.98	4292097.02	L29	31
2006-12-01T15:15:47.450	12374	15.235554	38.775744	520480.82	4291917.52	L29	32
2006-12-01T15:17:27.450	12375	15.234592	38.774128	520422.21	4291738.05	L29	33
2006-12-01T15:19:07.451	12376	15.232878	38.773075	520278.75	4291620.83	L29	34
2006-12-01T15:20:47.452	12377	15.231075	38.772046	520122.41	4291506.25	L29	35
2006-12-01T15:22:27.453	12378	15.229269	38.770997	519965.82	4291389.45	L29	36
2006-12-01T15:24:07.470	12379	15.227471	38.769959	519808.26	4291273.87	L29	37
2006-12-01T15:25:47.471	12380	15.225668	38.768868	519653.58	4291152.42	L29	38
2006-12-01T15:27:27.472	12381	15.223864	38.767779	519498.03	4291031.20	L29	39
2006-12-01T15:29:07.473	12382	15.221861	38.7666914	519333.55	4290934.81	L29	40
2006-12-01T15:30:47.474	12383	15.219630	38.766638	519139.20	4290903.71	L29	41
2006-12-01T15:32:27.475	12384	15.217365	38.766302	518943.21	4290865.96	L29	42
2006-12-01T15:34:07.476	12385	15.215090	38.765992	518745.65	4290831.09	L29	43
2006-12-01T15:35:47.477	12386	15.212826	38.765930	518549.50	4290823.75	L29	44
2006-12-01T15:37:27.479	12387	15.210612	38.766112	518357.10	4290843.50	L29	45
2006-12-01T15:39:07.480	12388	15.208406	38.766238	518165.34	4290857.04	L29	46
2006-12-01T15:40:47.499	12389	15.206233	38.766382	517976.52	4290872.59	L29	47
2006-12-01T15:42:27.498	12390	15.204078	38.766541	517789.35	4290889.81	L29	48
2006-12-01T15:44:07.499	12391	15.201996	38.766777	517606.85	4290915.59	L29	49
2006-12-01T15:45:47.500	12392	15.199942	38.767210	517428.48	4290963.25	L29	50
2006-12-01T15:47:27.501	12393	15.197854	38.767563	517246.82	4291002.02	L29	51
2006-12-01T15:49:07.502	12394	15.195935	38.768106	517076.16	4291061.91	L29	52
2006-12-01T15:50:47.503	12395	15.194080	38.768876	516912.66	4291147.01	L29	53
2006-12-01T15:52:27.504	12396	15.192221	38.769716	516753.57	4291239.88	L29	54
2006-12-01T15:54:07.505	12397	15.190314	38.770511	516589.54	4291327.76	L29	55
2006-12-01T15:55:47.506	12398	15.188373	38.771258	516424.06	4291410.31	L29	56
2006-12-01T15:57:37.507	12399	15.186893	38.770842	516260.49	4291363.81	L30	1
2006-12-01T15:59:27.509	12400	15.186273	38.769318	516199.94	4291194.57	L30	2
2006-12-01T16:01:17.511	12401	15.185536	38.767632	516157.58	4291007.39	L30	3
2006-12-01T16:03:07.511	12402	15.183796	38.766848	516027.01	4290920.13	L30	4
2006-12-01T16:04:57.512	12403	15.181896	38.766390	515854.05	4290868.96	L30	5
2006-12-01T16:06:47.514	12404	15.179932	38.765500	515686.49	4290769.87	L30	6
2006-12-01T16:08:37.515	12405	15.177916	38.764676	515510.05	4290678.08	L30	7
2006-12-01T16:10:27.516	12406	15.175899	38.763785	515335.61	4290578.87	L30	8
2006-12-01T16:12:17.517	12407	15.173885	38.762922	515159.52	4290482.77	L30	9
2006-12-01T16:14:07.518	12408	15.171867	38.762048	514984.38	4290385.45	L30	10
2006-12-01T16:15:57.520	12409	15.169852	38.761162	514810.19	4290286.81	L30	11
2006-12-01T16:17:47.521	12410	15.167862	38.760268	514636.78	4290187.28	L30	12
2006-12-01T16:19:37.522	12411	15.165841	38.759365	514462.07	4290086.76	L30	13
2006-12-01T16:21:27.523	12412	15.163890	38.758494	514288.56	4289989.80	L30	14
2006-12-01T16:23:17.525	12413	15.162034	38.757471	514126.81	4289875.99	L30	15
2006-12-01T16:25:07.526	12414	15.160081	38.756453	513963.66	4289762.74	L30	16
2006-12-01T16:26:57.527	12415	15.158018	38.755680	513784.56	4289676.65	L30	17
2006-12-01T16:28:47.528	12416	15.155907	38.754901	513606.84	4289589.90	L30	18

2006-12-01T16:30:37.529	12417	15.154490	38.755291	513436.64	4289632.88	L31	1
2006-12-01T16:32:27.531	12418	15.155194	38.756731	513431.59	4289792.67	L31	2
2006-12-01T16:34:17.532	12419	15.157038	38.757153	513585.48	4289839.76	L31	3
2006-12-01T16:36:07.534	12420	15.158945	38.756765	513766.28	4289797.01	L31	4
2006-12-01T16:37:57.550	12421	15.159646	38.755477	513855.24	4289654.24	L31	5
2006-12-01T16:39:47.551	12422	15.160303	38.753843	513910.90	4289473.02	L31	6
2006-12-01T16:41:37.552	12423	15.161018	38.752172	513967.01	4289287.69	L31	7
2006-12-01T16:43:27.554	12424	15.161690	38.750445	514017.40	4289096.14	L31	8
2006-12-01T16:45:17.555	12425	15.162383	38.748858	514098.96	4288920.18	L31	9
2006-12-01T16:47:07.556	12426	15.163055	38.747203	514154.12	4288736.63	L31	10
2006-12-01T16:48:57.558	12427	15.163764	38.745562	514210.58	4288554.63	L31	11
2006-12-01T16:50:47.565	12428	15.164543	38.743808	514284.97	4288360.13	L31	12
2006-12-01T16:52:37.560	12429	15.165281	38.741947	514347.74	4288153.74	L31	13
2006-12-01T16:54:27.561	12430	15.166080	38.740098	514417.55	4287948.68	L31	14
2006-12-01T16:56:17.562	12431	15.166797	38.738225	514481.11	4287740.96	L31	15
2006-12-01T16:58:07.563	12432	15.167611	38.736347	514548.93	4287532.69	L31	16
2006-12-01T16:59:57.565	12433	15.168366	38.734460	514618.24	4287323.42	L31	17
2006-12-01T17:01:47.566	12434	15.169186	38.732566	514685.55	4287113.37	L31	18
2006-12-01T17:03:37.567	12435	15.169973	38.730713	514763.55	4286907.90	L31	19
2006-12-01T17:05:27.569	12436	15.170776	38.728843	514830.51	4286700.52	L31	20
2006-12-01T17:07:17.570	12437	15.171518	38.726965	514892.88	4286492.24	L31	21
2006-12-01T17:09:07.571	12438	15.172387	38.725115	514953.33	4286287.06	L31	22
2006-12-01T17:10:57.572	12439	15.173830	38.723652	515076.98	4286124.95	L31	23
2006-12-01T17:12:47.573	12440	15.175183	38.722093	515193.10	4285952.18	L31	24
2006-12-01T17:14:37.575	12441	15.176560	38.720551	515316.61	4285781.30	L31	25
2006-12-01T17:16:27.578	12442	15.177976	38.718944	515436.57	4285603.21	L31	26
2006-12-01T17:18:17.577	12443	15.179383	38.717360	515561.06	4285427.68	L31	27
2006-12-01T17:20:07.578	12444	15.180740	38.715743	515675.82	4285248.48	L31	28
2006-12-01T17:21:57.580	12445	15.182056	38.714163	515797.70	4285073.39	L31	29
2006-12-01T17:23:47.581	12446	15.183368	38.712509	515906.74	4284890.07	L31	30
2006-12-01T17:25:37.582	12447	15.184743	38.710967	516032.02	4284719.21	L31	31
2006-12-01T17:27:27.583	12448	15.186064	38.709383	516145.32	4284543.67	L31	32
2006-12-01T17:29:17.585	12449	15.187387	38.707818	516259.05	4284370.24	L31	33
2006-12-01T17:31:07.586	12450	15.188751	38.706305	516377.99	4284202.59	L31	34
2006-12-01T17:32:57.587	12451	15.190088	38.704799	516496.67	4284035.72	L31	35
2006-12-01T17:34:47.588	12452	15.191401	38.703214	516600.25	4283860.05	L31	36
2006-12-01T17:36:37.589	12453	15.192824	38.701753	516713.45	4283698.17	L31	37
2006-12-01T17:38:27.591	12454	15.194773	38.701464	516883.00	4283666.46	L32	1
2006-12-01T17:40:17.592	12455	15.196601	38.702329	517051.13	4283762.80	L32	2
2006-12-01T17:42:07.593	12456	15.197576	38.703821	517165.21	4283928.61	L32	3
2006-12-01T17:43:57.594	12457	15.197876	38.705759	517205.18	4284143.75	L32	4
2006-12-01T17:45:47.596	12458	15.197747	38.707752	517191.31	4284364.87	L32	5
2006-12-01T17:47:37.597	12459	15.197497	38.709770	517173.87	4284588.76	L32	6
2006-12-01T17:49:27.598	12460	15.197363	38.711795	517154.78	4284813.43	L32	7
2006-12-01T17:51:17.599	12461	15.197255	38.713811	517144.56	4285037.12	L32	8
2006-12-01T17:53:07.601	12462	15.197147	38.715837	517141.91	4285261.93	L32	9
2006-12-01T17:54:57.602	12463	15.197009	38.717855	517132.12	4285485.84	L32	10
2006-12-01T17:56:47.619	12464	15.196890	38.719858	517118.69	4285708.07	L32	11
2006-12-01T17:58:37.620	12465	15.196788	38.721859	517106.74	4285930.09	L32	12
2006-12-01T18:00:27.621	12466	15.196626	38.723846	517097.40	4286150.56	L32	13
2006-12-01T18:02:17.622	12467	15.196445	38.725838	517081.19	4286371.57	L32	14
2006-12-01T18:04:07.624	12468	15.196263	38.727836	517067.42	4286593.25	L32	15
2006-12-01T18:05:57.625	12469	15.196117	38.729821	517049.21	4286813.48	L32	16
2006-12-01T18:07:47.626	12470	15.195966	38.731814	517040.39	4287034.62	L32	17
2006-12-01T18:09:37.627	12471	15.195806	38.733795	517023.50	4287254.41	L32	18
2006-12-01T18:11:27.628	12472	15.195616	38.735761	517009.30	4287472.54	L32	19

2006-12-01T18:13:17.645	12473	15.195403	38.737719	516987.80	4287689.77	L32	20
2006-12-01T18:15:07.646	12474	15.195232	38.739693	516972.47	4287908.78	L32	21
2006-12-01T18:16:57.647	12475	15.195060	38.741661	516954.45	4288127.13	L32	22
2006-12-01T18:18:47.649	12476	15.194939	38.743644	516943.38	4288347.15	L32	23
2006-12-01T18:20:37.650	12477	15.194824	38.745632	516935.61	4288567.74	L32	24
2006-12-01T18:22:27.651	12478	15.194693	38.747636	516921.15	4288790.08	L32	25
2006-12-01T18:24:17.652	12479	15.194492	38.749635	516903.21	4289011.87	L32	26
2006-12-01T18:26:07.669	12480	15.194265	38.751639	516885.62	4289234.21	L32	27
2006-12-01T18:27:57.670	12481	15.194072	38.753640	516865.68	4289456.21	L32	28
2006-12-01T18:29:47.672	12482	15.193940	38.755647	516853.83	4289678.90	L32	29
2006-12-01T18:31:37.673	12483	15.193810	38.757667	516841.97	4289903.02	L32	30
2006-12-01T18:33:27.674	12484	15.193643	38.759682	516832.20	4290126.60	L32	31
2006-12-01T18:35:17.675	12485	15.193396	38.761694	516807.49	4290349.82	L32	32
2006-12-01T18:37:07.676	12486	15.193155	38.763728	516788.85	4290575.48	L32	33
2006-12-01T18:38:57.678	12487	15.192987	38.765753	516773.78	4290800.16	L32	34
2006-12-01T18:40:47.679	12488	15.192626	38.767782	516749.42	4291025.26	L32	35
2006-12-01T18:42:37.680	12489	15.191930	38.769792	516699.78	4291248.20	L32	36
2006-12-01T18:44:27.697	12490	15.190431	38.771474	516581.42	4291434.60	L33	1
2006-12-01T18:46:17.699	12491	15.188821	38.773055	516438.07	4291609.74	L33	2
2006-12-01T18:48:07.700	12492	15.187407	38.774724	516306.52	4291794.68	L33	3
2006-12-01T18:49:57.701	12493	15.186232	38.776529	516205.34	4291994.77	L33	4
2006-12-01T18:51:47.702	12494	15.184981	38.778294	516098.19	4292190.41	L33	5
2006-12-01T18:53:37.703	12495	15.183713	38.780032	515985.75	4292383.04	L33	6
2006-12-01T18:55:27.705	12496	15.182475	38.781787	515877.83	4292577.57	L33	7
2006-12-01T18:57:17.706	12497	15.181380	38.783594	515778.94	4292777.89	L33	8
2006-12-01T18:59:07.707	12498	15.180305	38.785443	515685.16	4292982.89	L33	9
2006-12-01T19:00:57.568	12499	15.179306	38.787303	515593.65	4293189.11	L33	10
2006-12-01T19:02:47.569	12500	15.179353	38.789223	515571.52	4293402.12	L33	11
2006-12-01T19:04:37.585	12501	15.179476	38.791277	515584.10	4293630.07	L33	12
2006-12-01T19:06:27.587	12502	15.180062	38.793042	515619.15	4293826.00	L33	13
2006-12-01T19:08:17.588	12503	15.180736	38.794734	515681.13	4294013.88	L33	14
2006-12-01T19:10:07.590	12504	15.181405	38.796472	515729.81	4294206.84	L33	15
2006-12-01T19:11:57.590	12505	15.182645	38.798005	515826.82	4294377.14	L33	16
2006-12-01T19:13:47.592	12506	15.184072	38.799467	515945.20	4294539.61	L33	17
2006-12-01T19:15:37.593	12507	15.185699	38.800845	516076.80	4294692.79	L33	18
2006-12-01T19:17:27.594	12508	15.187535	38.801976	516231.71	4294818.61	L33	19
2006-12-01T19:19:17.595	12509	15.189628	38.802747	516409.45	4294904.53	L33	20
2006-12-01T19:21:07.597	12510	15.191817	38.803373	516599.38	4294974.40	L33	21
2006-12-01T19:22:57.599	12511	15.194002	38.804008	516790.70	4295045.26	L33	22
2006-12-01T19:24:47.615	12512	15.196113	38.804791	516973.29	4295132.54	L33	23
2006-12-01T19:26:37.616	12513	15.198214	38.805529	517157.54	4295214.83	L33	24
2006-12-01T19:28:27.617	12514	15.200117	38.806370	517329.69	4295308.53	L33	25
2006-12-01T19:30:17.618	12515	15.201768	38.807536	517474.67	4295438.23	L33	26
2006-12-01T19:32:07.620	12516	15.203240	38.808700	517617.55	4295567.72	L33	27
2006-12-01T19:33:57.621	12517	15.204337	38.810157	517707.84	4295729.60	L33	28
2006-12-01T19:35:47.622	12518	15.205842	38.811483	517828.89	4295877.01	L33	29
2006-12-01T19:37:37.623	12519	15.207410	38.812783	517961.31	4296021.57	L33	30
2006-12-01T19:39:27.625	12520	15.209189	38.813900	518110.62	4296145.86	L33	31
2006-12-01T19:41:17.626	12521	15.211122	38.814851	518280.80	4296251.78	L33	32
2006-12-01T19:43:07.627	12522	15.213213	38.815744	518450.12	4296351.27	L34	1
2006-12-01T19:44:57.628	12523	15.215489	38.815815	518647.61	4296359.61	L34	2
2006-12-01T19:46:47.629	12524	15.217868	38.815830	518854.23	4296361.76	L34	3
2006-12-01T19:48:37.631	12525	15.220292	38.815664	519064.63	4296343.84	L34	4
2006-12-01T19:50:27.632	12526	15.222756	38.815582	519278.56	4296335.26	L34	5
2006-12-01T19:52:17.633	12527	15.225189	38.815524	519489.80	4296329.34	L34	6
2006-12-01T19:54:07.635	12528	15.227629	38.815504	519701.64	4296327.64	L34	7

2006-12-01T19:55:57.636	12529	15.230079	38.815509	519914.43	4296328.73	L34	8
2006-12-01T19:57:47.637	12530	15.232196	38.815083	520104.50	4296281.94	L34	9
2006-12-01T19:59:37.638	12531	15.234264	38.814178	520284.64	4296181.97	L34	10
2006-12-01T20:01:27.639	12532	15.236405	38.813269	520469.39	4296081.57	L34	11
2006-12-01T20:03:17.641	12533	15.238497	38.812398	520653.87	4295985.40	L34	12
2006-12-01T20:04:57.642	12534	15.240356	38.811541	520814.91	4295890.72	L34	13
2006-12-01T20:06:37.643	12535	15.242154	38.810790	520970.98	4295807.79	L34	14
2006-12-01T20:08:17.644	12536	15.243874	38.810014	521115.85	4295722.06	L34	15
2006-12-01T20:09:57.645	12537	15.245581	38.809722	521276.99	4295690.09	L34	16
2006-12-01T20:11:37.646	12538	15.246349	38.810838	521362.36	4295814.16	L35	1
2006-12-01T20:13:17.647	12539	15.247282	38.812238	521441.20	4295969.73	L35	2
2006-12-01T20:14:57.648	12540	15.248255	38.813702	521521.51	4296132.41	L35	3
2006-12-01T20:16:37.650	12541	15.249292	38.815141	521611.10	4296292.33	L35	4
2006-12-01T20:18:17.651	12542	15.250284	38.816573	521705.21	4296451.50	L35	5
2006-12-01T20:19:57.652	12543	15.251248	38.818132	521769.41	4296624.67	L35	6
2006-12-01T20:21:37.653	12544	15.252631	38.819228	521896.09	4296746.64	L35	7
2006-12-01T20:23:17.654	12545	15.253740	38.820570	521997.76	4296895.84	L35	8
2006-12-01T20:24:57.655	12546	15.254809	38.822029	522086.03	4297057.99	L35	9
2006-12-01T20:26:37.656	12547	15.255976	38.823416	522186.91	4297212.19	L35	10
2006-12-01T20:28:17.657	12548	15.257091	38.824831	522283.26	4297369.48	L35	11
2006-12-01T20:29:57.659	12549	15.258204	38.826224	522381.34	4297524.34	L35	12
2006-12-01T20:31:37.660	12550	15.258502	38.827642	522464.49	4297681.92	L35	13
2006-12-01T20:33:17.661	12551	15.257025	38.828950	522356.19	4297826.77	L36	1
2006-12-01T20:34:57.662	12552	15.255360	38.830027	522210.20	4297945.87	L36	2
2006-12-01T20:36:37.663	12553	15.253754	38.831085	522072.30	4298062.89	L36	3
2006-12-01T20:38:17.664	12554	15.252207	38.832100	521932.76	4298175.14	L36	4
2006-12-01T20:39:57.665	12555	15.250709	38.833221	521803.70	4298299.18	L36	5
2006-12-01T20:41:37.666	12556	15.249203	38.834329	521671.35	4298421.77	L36	6
2006-12-01T20:43:17.668	12557	15.247762	38.835519	521545.92	4298553.48	L36	7
2006-12-01T20:44:57.669	12558	15.246313	38.836720	521419.80	4298686.41	L36	8
2006-12-01T20:46:37.670	12559	15.244789	38.837857	521290.32	4298812.23	L36	9
2006-12-01T20:48:17.686	12560	15.243271	38.838993	521157.63	4298937.94	L36	10
2006-12-01T20:49:57.688	12561	15.241762	38.840124	521023.82	4299063.09	L36	11
2006-12-01T20:51:37.689	12562	15.240276	38.841297	520894.51	4299192.91	L36	12
2006-12-01T20:53:17.690	12563	15.238796	38.842485	520766.50	4299324.41	L36	13
2006-12-01T20:54:57.691	12564	15.237255	38.843615	520633.40	4299449.46	L36	14
2006-12-01T20:56:37.692	12565	15.235782	38.844763	520501.94	4299576.51	L36	15
2006-12-01T20:58:17.693	12566	15.234296	38.845985	520379.14	4299711.80	L36	16
2006-12-01T20:59:57.694	12567	15.232786	38.847076	520242.77	4299832.51	L36	17
2006-12-01T21:01:37.696	12568	15.231342	38.848218	520112.19	4299958.91	L36	18
2006-12-01T21:03:17.697	12569	15.229895	38.849415	519989.76	4300091.43	L36	19
2006-12-01T21:04:57.698	12570	15.228436	38.850583	519864.31	4300220.72	L36	20
2006-12-01T21:06:37.699	12571	15.226928	38.851728	519736.35	4300347.46	L36	21
2006-12-01T21:08:17.700	12572	15.225407	38.852828	519602.67	4300469.20	L36	22
2006-12-01T21:09:57.701	12573	15.223971	38.853948	519472.82	4300593.16	L36	23
2006-12-01T21:11:37.702	12574	15.222551	38.855176	519354.22	4300729.14	L36	24
2006-12-01T21:13:17.703	12575	15.221083	38.856287	519223.51	4300852.11	L36	25
2006-12-01T21:14:57.704	12576	15.219461	38.857428	519100.60	4300978.43	L36	26
2006-12-01T21:16:37.706	12577	15.217322	38.857769	518915.35	4301015.83	L36	27
2006-12-01T21:18:17.707	12578	15.215244	38.857995	518733.78	4301040.47	L36	28
2006-12-01T21:19:57.708	12579	15.213340	38.857563	518567.91	4300992.14	L36	29
2006-12-01T21:21:37.709	12580	15.211459	38.857078	518401.36	4300937.94	L36	30
2006-12-01T21:23:17.710	12581	15.209669	38.856366	518246.23	4300858.57	L36	31
2006-12-01T21:24:57.711	12582	15.207836	38.855700	518087.36	4300784.30	L36	32
2006-12-01T21:26:37.728	12583	15.206021	38.854974	517930.06	4300703.38	L36	33
2006-12-01T21:28:17.729	12584	15.204209	38.854263	517772.14	4300624.12	L36	34

2006-12-01T21:29:57.730	12585	15.202379	38.853531	517614.40	4300542.54	L36	35
2006-12-01T21:31:37.731	12586	15.200531	38.852831	517452.66	4300464.50	L36	36
2006-12-01T21:33:17.733	12587	15.198727	38.852043	517296.32	4300376.72	L36	37
2006-12-01T21:34:57.734	12588	15.196913	38.851232	517140.67	4300286.38	L36	38
2006-12-01T21:36:37.735	12589	15.195035	38.850519	516977.88	4300206.91	L36	39
2006-12-01T21:38:17.736	12590	15.193132	38.849792	516813.96	4300125.89	L36	40
2006-12-01T21:39:57.737	12591	15.191238	38.849089	516647.87	4300047.53	L36	41
2006-12-01T21:41:37.738	12592	15.189380	38.848352	516484.46	4299965.40	L36	42
2006-12-01T21:43:17.739	12593	15.187499	38.847555	516324.63	4299876.63	L36	43
2006-12-01T21:44:57.740	12594	15.185618	38.846842	516162.08	4299797.18	L36	44
2006-12-01T21:46:37.742	12595	15.183751	38.846156	515998.14	4299720.72	L36	45
2006-12-01T21:48:17.742	12596	15.181948	38.845334	515841.86	4299629.19	L36	46
2006-12-01T21:49:57.744	12597	15.180106	38.844559	515684.26	4299542.87	L36	47
2006-12-01T21:51:37.745	12598	15.178247	38.843837	515521.88	4299462.44	L36	48
2006-12-01T21:53:17.746	12599	15.176581	38.843001	515368.11	4299369.37	L36	49
2006-12-01T21:54:57.747	12600	15.175104	38.841858	515241.56	4299242.28	L36	50
2006-12-01T21:56:37.748	12601	15.173584	38.840740	515110.49	4299117.97	L36	51
2006-12-01T21:58:17.765	12602	15.172066	38.839655	514976.99	4298997.32	L36	52
2006-12-01T21:59:57.766	12603	15.170555	38.838569	514842.78	4298876.55	L36	53
2006-12-01T22:01:37.769	12604	15.169106	38.837386	514720.56	4298745.05	L36	54
2006-12-01T22:03:17.785	12605	15.167639	38.836218	514596.69	4298615.21	L36	55
2006-12-01T22:04:57.785	12606	15.166143	38.835167	514463.86	4298498.34	L36	56
2006-12-01T22:06:37.802	12607	15.164607	38.834103	514330.76	4298380.03	L36	57
2006-12-01T22:08:17.803	12608	15.163097	38.833036	514198.17	4298261.38	L36	58
2006-12-01T22:09:57.804	12609	15.161644	38.831895	514072.63	4298134.55	L36	59
2006-12-01T22:11:37.805	12610	15.160198	38.830756	513947.35	4298007.93	L36	60
2006-12-01T22:13:17.806	12611	15.158757	38.829668	513820.57	4297886.98	L36	61
2006-12-01T22:14:57.807	12612	15.157285	38.828529	513694.58	4297760.36	L36	62
2006-12-01T22:16:37.809	12613	15.155698	38.827331	513559.58	4297627.19	L36	63
2006-12-01T22:18:17.810	12614	15.154036	38.826197	513414.31	4297501.11	L36	64
2006-12-01T22:19:57.811	12615	15.152385	38.825001	513271.22	4297368.15	L36	65
2006-12-01T22:21:37.812	12616	15.150836	38.823803	513135.68	4297234.98	L36	66
2006-12-01T22:23:17.813	12617	15.149388	38.822614	513010.20	4297102.84	L36	67
2006-12-01T22:24:57.814	12618	15.147914	38.821456	512885.58	4296974.13	L36	68
2006-12-01T22:26:37.815	12619	15.146336	38.820426	512747.47	4296859.61	L36	69
2006-12-01T22:28:17.816	12620	15.144843	38.819333	512616.24	4296738.11	L36	70
2006-12-01T22:29:57.817	12621	15.143534	38.818280	512478.65	4296621.05	L36	71
2006-12-01T22:31:37.819	12622	15.143080	38.816894	512424.55	4296467.16	L36	72
2006-12-01T22:33:17.820	12623	15.143016	38.815395	512416.12	4296300.81	L36	73
2006-12-01T22:34:57.821	12624	15.142947	38.813563	512414.97	4296097.51	L36	74
2006-12-01T22:36:37.822	12625	15.142769	38.811724	512398.01	4295893.41	L36	75
2006-12-01T22:38:17.823	12626	15.142600	38.810082	512389.61	4295711.19	L36	76
2006-12-01T22:39:57.824	12627	15.142473	38.808487	512372.87	4295534.17	L36	77
2006-12-01T22:41:37.825	12628	15.142347	38.806905	512359.51	4295358.60	L36	78
2006-12-01T22:43:17.826	12629	15.142226	38.805331	512354.83	4295183.93	L36	79
2006-12-01T22:44:57.828	12630	15.142041	38.803744	512339.39	4295007.80	L36	80
2006-12-01T22:46:37.829	12631	15.141883	38.802120	512320.05	4294827.56	L36	81
2006-12-01T22:48:17.830	12632	15.141896	38.800464	512321.46	4294643.80	L36	82
2006-12-01T22:49:57.847	12633	15.141809	38.798779	512316.89	4294456.81	L36	83
2006-12-01T22:51:37.848	12634	15.142021	38.797114	512327.34	4294272.07	L36	84
2006-12-01T22:53:17.849	12635	15.142229	38.795414	512345.69	4294083.45	L36	85
2006-12-01T22:54:57.850	12636	15.142530	38.793691	512366.83	4293892.29	L36	86
2006-12-01T22:56:37.851	12637	15.142747	38.791966	512385.19	4293700.90	L36	87
2006-12-01T22:58:17.852	12638	15.143063	38.790236	512416.32	4293508.97	L36	88
2006-12-01T22:59:57.853	12639	15.143335	38.788601	512439.79	4293327.58	L36	89
2006-12-01T23:01:37.855	12640	15.143589	38.787055	512464.47	4293156.06	L36	90

2006-12-01T23:03:17.856	12641	15.143818	38.785497	512485.06	4292983.20	L36	91
2006-12-01T23:04:57.857	12642	15.144069	38.783930	512504.36	4292809.35	L36	92
2006-12-01T23:06:37.858	12643	15.144379	38.782384	512537.29	4292637.85	L36	93
2006-12-01T23:08:17.859	12644	15.144577	38.780826	512551.80	4292464.98	L36	94
2006-12-01T23:09:57.860	12645	15.144840	38.779244	512569.19	4292289.46	L36	95
2006-12-01T23:11:37.861	12646	15.145181	38.777687	512601.43	4292116.73	L36	96
2006-12-01T23:13:17.862	12647	15.145417	38.776108	512622.21	4291941.55	L36	97
2006-12-01T23:14:57.863	12648	15.145670	38.774515	512650.81	4291764.82	L36	98
2006-12-01T23:16:37.865	12649	15.145910	38.772906	512662.56	4291586.30	L36	99
2006-12-01T23:18:17.866	12650	15.146214	38.771318	512692.29	4291410.13	L36	100
2006-12-01T23:19:57.867	12651	15.146506	38.769737	512718.46	4291234.73	L36	101
2006-12-01T23:21:37.868	12652	15.146706	38.768135	512738.98	4291056.99	L36	102
2006-12-01T23:23:17.869	12653	15.146991	38.766517	512764.03	4290877.49	L36	103
2006-12-01T23:24:57.870	12654	15.147300	38.764915	512791.16	4290699.77	L36	104
2006-12-01T23:26:37.871	12655	15.147534	38.763291	512827.68	4290519.61	L36	105
2006-12-01T23:28:17.872	12656	15.148060	38.761685	512832.57	4290341.41	L36	106
2006-12-01T23:29:57.874	12657	15.149411	38.760419	512935.41	4290201.09	L36	107
2006-12-01T23:31:37.875	12658	15.150917	38.759346	513069.75	4290082.24	L36	108
2006-12-01T23:33:17.876	12659	15.152477	38.758224	513199.85	4289957.95	L36	109
2006-12-01T23:34:57.877	12660	15.154122	38.757264	513342.26	4289851.66	L36	110
2006-12-01T23:36:37.894	12661	15.155849	38.756397	513489.70	4289755.70	L36	111
2006-12-01T23:38:17.895	12662	15.157577	38.755596	513640.95	4289667.08	L37	1
2006-12-01T23:39:57.896	12663	15.159267	38.754740	513789.78	4289572.35	L37	2
2006-12-01T23:41:37.897	12664	15.160897	38.753825	513934.63	4289471.06	L37	3
2006-12-01T23:43:17.898	12665	15.162372	38.752713	514061.79	4289347.89	L37	4
2006-12-01T23:44:57.899	12666	15.163921	38.751675	514196.60	4289232.95	L37	5
2006-12-01T23:46:37.900	12667	15.165485	38.750678	514333.91	4289122.56	L37	6
2006-12-01T23:48:17.902	12668	15.167061	38.749705	514471.06	4289014.84	L37	7
2006-12-01T23:49:57.903	12669	15.168567	38.748644	514600.92	4288897.34	L37	8
2006-12-01T23:51:37.904	12670	15.170120	38.747662	514737.29	4288788.62	L37	9
2006-12-01T23:53:17.905	12671	15.171652	38.746645	514870.63	4288676.02	L37	10
2006-12-01T23:54:57.906	12672	15.173200	38.745648	515008.66	4288565.64	L37	11
2006-12-01T23:56:37.907	12673	15.174730	38.744593	515139.93	4288448.82	L37	12
2006-12-01T23:58:17.908	12674	15.176242	38.743548	515268.94	4288333.11	L37	13
2006-12-01T23:59:57.909	12675	15.177748	38.742511	515398.22	4288218.28	L37	14
2006-12-02T00:01:37.910	12676	15.179332	38.741546	515535.13	4288111.47	L37	15
2006-12-02T00:03:17.912	12677	15.180956	38.740664	515680.45	4288013.88	L37	16
2006-12-02T00:04:57.913	12678	15.182570	38.739644	515815.21	4287900.96	L37	17
2006-12-02T00:06:37.914	12679	15.184321	38.738829	515965.22	4287810.82	L37	18
2006-12-02T00:08:17.915	12680	15.186104	38.738109	516120.34	4287731.24	L37	19
2006-12-02T00:09:57.916	12681	15.187895	38.737416	516277.72	4287654.66	L37	20
2006-12-02T00:11:37.917	12682	15.189620	38.736592	516429.48	4287563.54	L37	21
2006-12-02T00:13:17.918	12683	15.191395	38.735758	516581.60	4287471.30	L37	22
2006-12-02T00:14:57.919	12684	15.193210	38.735017	516739.52	4287389.41	L37	23
2006-12-02T00:16:37.920	12685	15.194998	38.734248	516895.80	4287304.41	L37	24
2006-12-02T00:18:17.921	12686	15.196775	38.733430	517052.09	4287213.97	L37	25
2006-12-02T00:19:57.923	12687	15.198530	38.732564	517203.18	4287118.20	L37	26
2006-12-02T00:21:37.939	12688	15.200314	38.731791	517358.43	4287032.76	L37	27
2006-12-02T00:23:17.940	12689	15.202109	38.730999	517513.95	4286945.21	L37	28
2006-12-02T00:24:57.942	12690	15.203903	38.730250	517672.41	4286862.45	L37	29
2006-12-02T00:26:37.943	12691	15.205665	38.729412	517824.38	4286769.80	L37	30
2006-12-02T00:28:17.944	12692	15.207514	38.728798	517979.43	4286702.01	L37	31
2006-12-02T00:29:57.945	12693	15.209005	38.729379	518125.92	4286766.82	L37	32
2006-12-02T00:31:37.946	12694	15.210286	38.730484	518238.89	4286889.69	L38	1
2006-12-02T00:33:17.947	12695	15.211618	38.731657	518349.42	4287020.11	L38	2
2006-12-02T00:34:57.948	12696	15.213296	38.732601	518485.03	4287125.18	L38	3

2006-12-02T00:36:37.965	12697	15.215032	38.733361	518635.72	4287209.86	L38	4
2006-12-02T00:38:17.966	12698	15.216785	38.734092	518787.89	4287291.34	L38	5
2006-12-02T00:39:57.967	12699	15.218597	38.734744	518945.21	4287364.06	L38	6
2006-12-02T00:41:37.968	12700	15.220407	38.735308	519109.24	4287427.04	L38	7
2006-12-02T00:43:17.969	12701	15.222157	38.736179	519252.76	4287524.04	L38	8
2006-12-02T00:44:57.970	12702	15.223923	38.736893	519405.62	4287603.64	L38	9
2006-12-02T00:46:37.972	12703	15.225749	38.737508	519565.45	4287672.27	L38	10
2006-12-02T00:48:17.973	12704	15.227528	38.738180	519722.06	4287747.23	L38	11
2006-12-02T00:49:57.974	12705	15.229312	38.738907	519875.34	4287828.28	L38	12
2006-12-02T00:51:37.975	12706	15.231117	38.739613	520030.53	4287907.02	L38	13
2006-12-02T00:53:17.976	12707	15.232920	38.740277	520186.61	4287981.09	L38	14
2006-12-02T00:54:57.977	12708	15.234696	38.740970	520340.76	4288058.38	L38	15
2006-12-02T00:56:37.978	12709	15.236463	38.741621	520496.66	4288131.02	L38	16
2006-12-02T00:58:17.979	12710	15.238240	38.742318	520650.28	4288208.77	L38	17
2006-12-02T00:59:57.980	12711	15.240052	38.743002	520806.08	4288285.07	L38	18
2006-12-02T01:03:18.014	12713	15.243639	38.744337	521119.50	4288434.04	L38	19
2006-12-02T01:04:58.015	12714	15.245399	38.745052	521271.62	4288513.79	L38	20
2006-12-02T01:06:38.032	12715	15.247167	38.745757	521425.06	4288592.43	L38	21
2006-12-02T01:08:18.033	12716	15.248970	38.746369	521584.77	4288660.77	L38	22
2006-12-02T01:09:58.050	12717	15.250775	38.747078	521738.80	4288739.87	L38	23
2006-12-02T01:11:38.051	12718	15.252560	38.747675	521899.99	4288806.56	L38	24
2006-12-02T01:13:18.052	12719	15.254330	38.748493	522045.21	4288897.73	L38	25
2006-12-02T01:14:58.053	12720	15.256090	38.749188	522197.93	4288975.28	L38	26
2006-12-02T01:16:38.054	12721	15.257899	38.749831	522356.41	4289047.07	L38	27
2006-12-02T01:18:18.055	12722	15.259696	38.750518	522511.73	4289123.75	L38	28
2006-12-02T01:19:58.056	12723	15.261483	38.751250	522665.48	4289205.41	L38	29
2006-12-02T01:21:38.057	12724	15.263271	38.751895	522823.16	4289277.44	L38	30
2006-12-02T01:23:18.058	12725	15.265080	38.752597	522978.91	4289355.78	L38	31
2006-12-02T01:24:58.059	12726	15.266894	38.753256	523136.32	4289429.37	L38	32
2006-12-02T01:26:38.061	12727	15.268693	38.753920	523293.03	4289503.51	L38	33
2006-12-02T01:28:18.062	12728	15.270482	38.754635	523448.25	4289583.31	L38	34
2006-12-02T01:29:58.063	12729	15.272266	38.755380	523601.54	4289666.43	L38	35
2006-12-02T01:31:38.064	12730	15.274097	38.756065	523759.97	4289742.92	L38	36
2006-12-02T01:33:18.065	12731	15.275945	38.756724	523921.62	4289816.53	L38	37
2006-12-02T01:34:58.066	12732	15.277783	38.757453	524079.78	4289897.90	L38	38
2006-12-02T01:36:38.067	12733	15.279614	38.758156	524240.54	4289976.40	L38	39
2006-12-02T01:38:18.068	12734	15.281455	38.758885	524401.81	4290057.79	L38	40
2006-12-02T01:39:58.070	12735	15.283371	38.759558	524560.32	4290132.96	L39	1
2006-12-02T01:41:38.071	12736	15.285181	38.759239	524730.72	4290098.09	L39	2
2006-12-02T01:43:18.072	12737	15.286877	38.758212	524875.48	4289984.57	L39	3
2006-12-02T01:44:58.089	12738	15.288816	38.757330	525037.66	4289887.21	L39	4
2006-12-02T01:46:38.090	12739	15.290816	38.756682	525213.31	4289815.86	L39	5
2006-12-02T01:48:18.096	12740	15.292826	38.755981	525388.20	4289738.63	L39	6
2006-12-02T01:49:58.107	12741	15.294860	38.755270	525563.54	4289660.29	L39	7
2006-12-02T01:51:38.127	12742	15.296888	38.754651	525742.06	4289592.18	L39	8
2006-12-02T01:53:18.141	12743	15.298904	38.753956	525916.61	4289515.62	L39	9
2006-12-02T01:54:58.142	12744	15.300933	38.753246	526093.17	4289437.41	L39	10
2006-12-02T01:56:38.143	12745	15.302980	38.752537	526271.30	4289359.32	L39	11
2006-12-02T01:58:18.145	12746	15.305029	38.751859	526450.81	4289284.68	L39	12
2006-12-02T01:59:58.146	12747	15.307060	38.751095	526625.14	4289200.48	L39	13
2006-12-02T02:01:38.148	12748	15.309085	38.750434	526803.00	4289127.73	L39	14
2006-12-02T02:02:03.18.163	12749	15.311102	38.749728	526978.53	4289049.98	L39	15
2006-12-02T02:04:58.164	12750	15.313126	38.749043	527153.80	4288974.56	L39	16
2006-12-02T02:06:38.165	12751	15.315132	38.748378	527330.02	4288901.37	L39	17
2006-12-02T02:08:18.167	12752	15.317116	38.747609	527500.29	4288816.62	L39	18
2006-12-02T02:09:58.167	12753	15.319079	38.747000	527672.76	4288749.64	L39	19

2006-12-02T02:11:38.169	12754	15.321036	38.746310	527844.48	4288673.67	L39	20
2006-12-02T02:13:18.170	12755	15.322979	38.745610	528012.21	4288596.59	L39	21
2006-12-02T02:14:58.171	12756	15.324933	38.744944	528182.71	4288523.28	L39	22
2006-12-02T02:16:38.172	12757	15.326915	38.744273	528353.91	4288449.43	L39	23
2006-12-02T02:18:18.173	12758	15.328885	38.743564	528524.18	4288371.36	L39	24
2006-12-02T02:19:58.190	12759	15.330834	38.742900	528695.90	4288298.30	L39	25
2006-12-02T02:21:38.191	12760	15.332810	38.742244	528868.33	4288226.13	L39	26
2006-12-02T02:23:18.192	12761	15.334763	38.741584	529038.32	4288153.51	L39	27
2006-12-02T02:24:58.193	12762	15.336693	38.740855	529204.61	4288073.22	L39	28
2006-12-02T02:26:38.194	12763	15.338618	38.740216	529373.90	4288002.93	L39	29
2006-12-02T02:28:18.195	12764	15.340558	38.739570	529542.77	4287931.87	L39	30
2006-12-02T02:29:58.196	12765	15.342503	38.738911	529712.69	4287859.38	L39	31
2006-12-02T02:31:38.197	12766	15.344425	38.738176	529878.12	4287778.44	L39	32
2006-12-02T02:33:18.214	12767	15.346391	38.737539	530049.26	4287708.39	L39	33
2006-12-02T02:34:58.215	12768	15.348320	38.736935	530219.08	4287642.01	L39	34
2006-12-02T02:36:38.232	12769	15.350213	38.736235	530385.46	4287564.97	L39	35
2006-12-02T02:38:18.233	12770	15.352117	38.735471	530547.79	4287480.81	L39	36
2006-12-02T02:39:58.250	12771	15.354090	38.734886	530719.96	4287416.56	L39	37
2006-12-02T02:41:38.266	12772	15.356027	38.734298	530888.56	4287351.96	L39	38
2006-12-02T02:43:18.268	12773	15.357914	38.733651	531052.42	4287280.80	L39	39
2006-12-02T02:44:58.269	12774	15.359737	38.733051	531216.25	4287214.86	L39	40
2006-12-02T02:46:38.270	12775	15.361522	38.732243	531368.54	4287125.80	L39	41
2006-12-02T02:48:18.271	12776	15.363504	38.731571	531535.89	4287051.89	L39	42
2006-12-02T02:49:58.272	12777	15.365618	38.731461	531725.77	4287040.44	L40	1
2006-12-02T02:51:38.273	12778	15.367332	38.732445	531888.65	4287150.28	L40	2
2006-12-02T02:53:18.274	12779	15.367958	38.733912	531990.47	4287313.48	L40	3
2006-12-02T02:54:58.276	12780	15.367502	38.735579	531956.87	4287498.33	L40	4
2006-12-02T02:56:38.306	12781	15.366913	38.737264	531905.89	4287685.11	L40	5
2006-12-02T02:58:18.293	12782	15.366264	38.738922	531852.48	4287868.88	L40	6
2006-12-02T02:59:58.295	12783	15.365649	38.740581	531797.08	4288052.75	L40	7
2006-12-02T03:01:38.296	12784	15.365138	38.742258	531740.11	4288238.62	L40	8
2006-12-02T03:03:18.297	12785	15.364822	38.744009	531715.00	4288432.82	L40	9
2006-12-02T03:04:58.298	12786	15.364368	38.745720	531680.01	4288622.55	L40	10
2006-12-02T03:06:38.299	12787	15.363813	38.747416	531630.16	4288810.56	L40	11
2006-12-02T03:08:18.300	12788	15.363048	38.749079	531572.07	4288994.87	L40	12
2006-12-02T03:09:58.301	12789	15.361706	38.750498	531480.38	4289151.97	L40	13
2006-12-02T03:11:38.303	12790	15.359986	38.751346	531336.11	4289245.50	L40	14
2006-12-02T03:13:18.304	12791	15.358149	38.751966	531179.78	4289313.69	L40	15
2006-12-02T03:14:58.305	12792	15.356281	38.752309	531014.19	4289351.10	L40	16
2006-12-02T03:16:38.305	12793	15.354428	38.752903	530855.26	4289416.40	L40	17
2006-12-02T03:18:18.322	12794	15.352573	38.753392	530690.22	4289470.02	L40	18
2006-12-02T03:19:58.323	12795	15.350697	38.754094	530526.91	4289547.29	L40	19
2006-12-02T03:21:38.324	12796	15.348797	38.754775	530361.96	4289622.23	L40	20
2006-12-02T03:23:18.325	12797	15.346902	38.755413	530195.99	4289692.40	L40	21
2006-12-02T03:24:58.327	12798	15.345074	38.756155	530035.29	4289774.13	L40	22
2006-12-02T03:26:38.328	12799	15.343255	38.756917	529877.61	4289858.09	L40	23
2006-12-02T03:28:18.329	12800	15.341417	38.757655	529717.87	4289939.39	L40	24
2006-12-02T03:29:58.330	12801	15.339601	38.758354	529558.66	4290016.36	L40	25
2006-12-02T03:31:38.331	12802	15.337787	38.759099	529402.49	4290098.45	L40	26
2006-12-02T03:33:18.332	12803	15.335960	38.759794	529242.59	4290174.99	L40	27
2006-12-02T03:34:58.333	12804	15.334167	38.760476	529085.14	4290250.09	L40	28
2006-12-02T03:36:38.334	12805	15.332423	38.761257	528933.30	4290336.20	L40	29
2006-12-02T03:38:18.335	12806	15.330673	38.762082	528781.62	4290427.20	L40	30
2006-12-02T03:39:58.336	12807	15.328912	38.762861	528625.79	4290513.08	L40	31
2006-12-02T03:41:38.338	12808	15.327117	38.763719	528475.06	4290607.75	L40	32
2006-12-02T03:43:18.339	12809	15.325129	38.764236	528307.01	4290664.52	L41	1

2006-12-02T03:44:58.340	12810	15.323091	38.764228	528127.87	4290663.00	L41	2
2006-12-02T03:46:38.341	12811	15.321348	38.763712	527964.91	4290605.16	L41	3
2006-12-02T03:48:18.342	12812	15.320046	38.762612	527840.93	4290482.66	L41	4
2006-12-02T03:49:58.359	12813	15.318952	38.761319	527739.95	4290338.83	L41	5
2006-12-02T03:51:38.360	12814	15.318005	38.759960	527647.43	4290187.70	L41	6
2006-12-02T03:53:18.361	12815	15.318058	38.758447	527612.65	4290019.69	L41	7
2006-12-02T03:54:58.362	12816	15.319582	38.757340	527712.91	4289897.19	L41	8
2006-12-02T03:56:38.363	12817	15.321358	38.756524	527869.01	4289807.19	L41	9
2006-12-02T03:58:18.364	12818	15.323057	38.755584	528020.22	4289703.41	L41	10
2006-12-02T03:59:58.365	12819	15.324786	38.754603	528170.83	4289595.08	L41	11
2006-12-02T04:01:38.367	12820	15.326497	38.753640	528319.88	4289488.75	L41	12
2006-12-02T04:03:18.368	12821	15.328176	38.752693	528467.11	4289384.19	L41	13
2006-12-02T04:04:58.369	12822	15.329885	38.751765	528619.63	4289281.76	L41	14
2006-12-02T04:06:38.370	12823	15.331575	38.750765	528764.36	4289171.31	L41	15
2006-12-02T04:08:18.371	12824	15.333268	38.749801	528910.56	4289064.87	L41	16
2006-12-02T04:09:58.372	12825	15.334969	38.748837	529057.80	4288958.43	L41	17
2006-12-02T04:11:38.389	12826	15.336650	38.747853	529202.80	4288849.77	L41	18
2006-12-02T04:13:18.390	12827	15.338313	38.746940	529350.99	4288749.00	L41	19
2006-12-02T04:14:58.391	12828	15.339988	38.745994	529495.28	4288644.56	L41	20
2006-12-02T04:16:38.393	12829	15.341632	38.745046	529640.19	4288539.90	L41	21
2006-12-02T04:18:18.393	12830	15.343272	38.744098	529784.93	4288435.24	L41	22
2006-12-02T04:19:58.394	12831	15.344915	38.743094	529925.61	4288324.36	L41	23
2006-12-02T04:21:38.395	12832	15.346585	38.742095	530066.47	4288214.03	L41	24
2006-12-02T04:23:18.396	12833	15.348280	38.741334	530219.48	4288130.16	L41	25
2006-12-02T04:24:58.413	12834	15.349954	38.740460	530362.81	4288033.72	L41	26
2006-12-02T04:26:38.414	12835	15.351572	38.739616	530504.66	4287940.61	L41	27
2006-12-02T04:28:18.415	12836	15.353332	38.738618	530660.39	4287830.46	L41	28
2006-12-02T04:29:58.417	12837	15.355223	38.737581	530826.83	4287716.03	L41	29
2006-12-02T04:31:38.418	12838	15.356981	38.736444	530981.24	4287590.46	L41	30
2006-12-02T04:33:18.419	12839	15.358695	38.735287	531130.19	4287462.65	L41	31
2006-12-02T04:34:58.420	12840	15.360569	38.734224	531291.36	4287345.32	L41	32
2006-12-02T04:36:38.421	12841	15.362386	38.733142	531447.15	4287225.87	L41	33
2006-12-02T04:38:18.422	12842	15.364111	38.732143	531599.35	4287115.61	L41	34
2006-12-02T04:39:58.423	12843	15.365832	38.731111	531748.43	4287001.69	L41	35
2006-12-02T04:41:38.425	12844	15.367582	38.730101	531901.95	4286890.22	L41	36
2006-12-02T04:43:18.426	12845	15.369322	38.729135	532057.70	4286783.66	L41	37
2006-12-02T04:44:58.427	12846	15.371258	38.728182	532216.33	4286678.54	L41	38
2006-12-02T04:46:38.428	12847	15.373248	38.727376	532391.06	4286589.81	L42	1
2006-12-02T04:48:18.429	12848	15.375265	38.726585	532564.57	4286502.74	L42	2
2006-12-02T04:49:58.430	12849	15.377320	38.725856	532745.45	4286422.59	L42	3
2006-12-02T04:51:38.431	12850	15.379373	38.725020	532921.94	4286330.55	L42	4
2006-12-02T04:53:18.432	12851	15.381366	38.724257	533095.97	4286246.60	L42	5
2006-12-02T04:54:58.433	12852	15.383359	38.723530	533271.47	4286166.66	L42	6
2006-12-02T04:56:38.437	12853	15.385377	38.722714	533444.92	4286076.83	L42	7
2006-12-02T04:58:18.436	12854	15.387416	38.721972	533623.73	4285995.25	L42	8
2006-12-02T04:59:58.437	12855	15.389488	38.721240	533803.76	4285914.78	L42	9
2006-12-02T05:01:38.440	12856	15.391555	38.720542	533983.00	4285838.09	L42	10
2006-12-02T05:03:18.439	12857	15.393635	38.719865	534164.57	4285763.74	L42	11
2006-12-02T05:04:58.440	12858	15.395706	38.719151	534344.17	4285685.28	L42	12
2006-12-02T05:06:38.441	12859	15.397806	38.718465	534527.84	4285609.95	L42	13
2006-12-02T05:08:18.442	12860	15.399901	38.717746	534709.88	4285530.96	L42	14
2006-12-02T05:09:58.459	12861	15.402016	38.717034	534893.75	4285452.75	L42	15
2006-12-02T05:11:38.460	12862	15.404118	38.716312	535077.19	4285373.44	L42	16
2006-12-02T05:13:18.462	12863	15.406222	38.715619	535261.66	4285297.35	L42	17
2006-12-02T05:14:58.463	12864	15.408051	38.714874	535421.30	4285215.39	L42	18
2006-12-02T05:16:38.463	12865	15.409774	38.714212	535572.03	4285142.60	L42	19

2006-12-02T05:18:18.465	12866	15.411476	38.713525	535719.39	4285067.02	L42	20
2006-12-02T05:19:58.466	12867	15.413184	38.712856	535868.22	4284993.45	L42	21
2006-12-02T05:21:38.467	12868	15.414870	38.712190	536015.48	4284920.21	L42	22
2006-12-02T05:23:18.468	12869	15.416551	38.711529	536162.57	4284847.53	L42	23
2006-12-02T05:24:58.469	12870	15.418283	38.710869	536312.88	4284774.98	L42	24
2006-12-02T05:26:38.486	12871	15.419984	38.710225	536461.71	4284704.19	L42	25
2006-12-02T05:28:18.487	12872	15.421732	38.709565	536613.42	4284631.65	L42	26
2006-12-02T05:29:58.488	12873	15.423480	38.708933	536767.29	4284562.22	L42	27
2006-12-02T05:31:38.490	12874	15.425250	38.708292	536920.55	4284491.80	L42	28
2006-12-02T05:33:18.491	12875	15.427013	38.707669	537074.16	4284423.38	L42	29
2006-12-02T05:34:58.491	12876	15.428721	38.707058	537221.42	4284356.27	L42	30
2006-12-02T05:36:38.493	12877	15.430409	38.706499	537368.48	4284294.92	L42	31
2006-12-02T05:38:18.494	12878	15.432109	38.705874	537512.79	4284226.25	L42	32
2006-12-02T05:39:58.495	12879	15.433970	38.705654	537673.85	4284202.59	L42	33
2006-12-02T05:41:38.496	12880	15.435859	38.705960	537840.46	4284237.34	L42	34
2006-12-02T05:43:18.497	12881	15.437730	38.706604	537999.67	4284309.56	L42	35