7 Lists

7.1 Leg M43/1

7.1.1 Dredge Protocol With Brief Description of Rocks Dredged

Abbrevations
DD: drum dredge
CDBD: chain dredge-Burkhardt dredge
CDRD: chain dredge-Russian dredge
CDWS: chain dredge-white shark
RO: Rosette (water sampling system)
NR: no revovery
c.: circa
phc: phenocrysts
ol: olivine
cpx: clinopyroxene
opx: orthopyroxene
amph: amphibole
fsp: feldspar
alkfsp: alkalifeldspar
anor: anorthoclase
hau: hauyne
mt: magnetite
phl: phlogopite
tit: titanite
zr: zirkon
sideromelane = basaltic glass
felsite = highly evolved volcanic rock, probably mostly trachyte, in some cases possibly phonolite
Weight of dredge hauls crudely estimated: one fishbox measures 70x40x15 cm (around 15-30kg)

1. South La Palma Ridge

Date/Station number *29.11.1998*	On bottom	Water depth	Off bottom	Water depth	Dredge type
Station # 636 Weak link broken, NR	28°26,1 N, 17°51,3 W	630m	28°26,5 N, 17°51,0 W	412,7m	DD
Station # 637 Weak link broken, NR	28°26,4 N, 17°51,0 W	498m	28°26,5 N, 17°51,0 W	430m	DD
Station # 637b NR	28°26,5 N, 17°51,1 W	510m	28°26,5 N, 17°51,0 W	441m	DD
Station # 637c NR	28°26,5 N, 17°51,1 W	472m	28°26,5 N, 17°51,1 W	390m	DD
Station # 637d NR, 6 teeth broken	28°26,5 N, 17°51,1 W	513m	28°26,5 N, 17°51,0 W	411m	CDBD
Station # 638	28°25,5 N, 17°51,7 W	924m	28°25,6 N, 17°51,6 W	780m	DD

Around 20 pieces of irregularly shaped, ol- and cpx-phyric (<5 vol.%) basalt up to 20 cm in diameter, held together by a lithified calcilutitic to arenitic matrix. A few calcilutites with minor glassy clasts and possibly crystals. About 30 to 50% lapillistones. Lapilli (vesicularity 50-60 vol.%) are up to 4cm in diameter, most varying widely in morphology. Some red oxidized lapilli have round, others primary blocky shapes and glassy groundmass. The blocky-shaped lapillistones are dominantly clast-supported. Mixing of blocky-shaped lapillistones with fine-grained carbonates results in a typical salt and pepper structure. Dense basalts with glassy crusts are up to 5cm or more in diameter. Some grainstones and rudstones contain thick-shelled fossils (Lamellibranchiata, Gastropoda). Many fragments are coated by zeolite, possibly phillipsite.

Dredge Protocol Leg M43/1 (continued)

Station # 639	28°23,9 N, 17°51,9 W	1091m	28°24,0 N, 17°51,7 W	868m	DD

At least 30 kg of basically three rock types. One piece of half a metre and several up to 35cm in diameter. One fresh black tube-like vesicular (10-15 vol.%) basalt with a glassy crust. Groundmass very fine-grained to glassy. Vesicle size (1-3mm in diameter) and distribution uneven. Phc: cpx (c. 5 vol.%, <4mm in size) and probably some ol. Reddish, poorly consolidated basaltic lapillistones with lapilli (0.5-1mm in diameter) having thick walls of fresh sideromelane. They are set in a yellowish-brownish matrix composed of smaller, vesicular, more strongly altered lapilli. Fresh ol and cpx phc are abundant in the matrix and in the lapilli, probably totaling < 10 vol.%. The third lithology is a grey-green calcareous soft sediment, some with larger

Station # 640	28°23,0 N, 17°52,6 W	1681m	28°22,9 N, 17°52,6 W	1681m	DD

NR

Station # 641	28°21,52 N, 17°54,3 W	2735m	28°21,4 N, 17°54,2 W	2550m	DD

Grayish-brown hemipelagic sediment, bioturbated.

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Station # 642	28°21,8 N, 17°52,1 W	1572m	28°21,8 N, 17°52,0 W	1422m	DD

NR

Station # 643	28°18,2 N, 17°48,2 W	1628m	28°18,1 N, 17°48,2 W	1709m	DD

NR, 6 teeth broken

Station # 644	28°18,3 N, 17°45,8 W	1505m	28°18,3 N, 17°45,8 W	1382m	DD

Coral debris, altered glassy sediment.

Station # 645	28°18,3 N, 17°45,8 W	1398m	28°18,5 N, 17°45,9 W	1260m	DD

Carbonate crusts.

Station # 646	28°18,2 N, 17°45,8 W	1550m	28°18,2 N, 17°45,9 W	1620m	CDBD

Four pieces of basalt with manganese crusts, carbonate crusts and coral debris.

Station # 647	28°18,4 N, 17°45,8 W	1340m	28°18,5 N, 17°45,6 W	1201m	CDBD

Coral debris.

Station # 648	28°18,7 N, 17°46,7 W	1443m	28°18,8 N, 17°46,6 W	1374m	CDBD

Two vesicular pieces of basalt with manganese crusts and carbonate-filled vesicles. Coral debris.

Station # 649	28°18,8 N, 17°46,5 W	1361m	28°19,0 N, 17°46,5 W	1225m	CDBD

Coral debris.

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Station # 650	28°19,7 N, 17°47,8 W	1142m	28°20,0 N, 17°47,5 W	870m	CDBD

Coral debris, siliceous sponges.

Station # 651	28°19,2 N, 17°48,2 W	1334m	28°19,1 N, 17°48,4 W	1245m	CDBD

Minor carbonate sediments with volcaniclastic fragments.

Station # 652	28°19,2 N, 17°48,2 W	1054m	28°19,3 N, 17°48,1 W	916m	CDRD

NR

Station # 653	28°19,3 N, 17°48,3 W	1002m	28°19,3 N, 17°48,2 W	919m	DD

Two specimen of lapillistones, coral debris.

Station # 654	28°19,4 N, 17°48,1 W	910m	28°19,4 N, 17°48,1 W	965m	CDRD

Carbonate with manganese crusts.

Station # 655	28°20,4 N, 17°49,2 W	1254m	28°20,3 N, 17°49,1 W	1266m	CDRD

Coral debris.

Station # 656	28°20,6 N, 17°49,7 W	1236m	28°20,8 N, 17°49,4 W	1019m	CDRD

Carbonate crusts and coral debris.

Station # 657	28°21,9 N, 17°51,1 W	1247m	28°22,0 N, 17°50,8W	1246m	CDRD

At least 50 kg. Basically 2 rock types. Fresh, highly vesicular (70-80 vol.%, 0.5-10mm in diameter) cpx-phyric (1-2 vol.%) basalt with glassy to fine-grained groundmass. The second lithology is brownish scoria (vesicle volume 60->85 vol.%). Coral debris, manganese crusts, limestone breccias and calcarenites.

Station # 658	28°23,0 N, 17°51,8 W	1251m	28°23,2 N, 17°51,6 W	1112m	CDRD

Basaltic pillow lava fragments including one 30cm long pillow tube. Mostly dark, vesicular basalt with a fine-grained to glassy groundmass and a thin well-preserved glassy rind. Size and amount of vesicles (up to 50 vol.%) increase towards the glassy crust. Some rocks show two generations of vesicles: larger round ones (1-5mm) and smaller ones (< 0,5mm). Phc: ol and cpx (c. 5-15 vol.%), some intergrowth.

Station # 659	28°23,6 N, 17°53,2 W	1325m	28°23,4 N, 17°51,9 W	1019m	CDRD

NR

Station # 660	28°24,0 N, 17°51,7 W	924m	28°24,2 N, 17°51,6 W	969m	CDRD

Glassy to fine-grained, ol-, cpx- and fsp-phyric (c. 5-15 vol.%) tachylitic basalt with more than 50 vol.% vesicles of at least two generations, some up to 5mm in diameter and commonly unfilled. More altered, brownish basalts show large vesicles filled by clay minerals and/or carbonate or zeolites.

02.12.1998

Station # 661	28°23,9 N, 17°50,6 W	1052m	28°24,0 N, 17°50,4 W	890m	CDRD

Coral debris, sediments attached to corals.

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Station # 662	28°23,5 N, 17°50,0 W	1202m	28°23,6 N, 17°49,8 W	1079m	CDRD

Gray green, medium-grained felsite with Mn-crust. Phc: c. 20 vol.% alkfsp (up to 1cm in length), 1-2 vol.% amph, mt and phl.

Station # 663	28°22,1 N, 17°45,6 W	2072m	28°22,2 N, 17°45,5 W	1950m	CDRD

Half a dozen pieces of volcaniclastic sediment. Relativly well-sorted calcareous tuffs. Dominantly small, round, vesicular, phonolitic lapilli, with abundant hau, clear fsp (anor?), phl, tit and amph mixed with ol, cpx and altered sideromelane.

Station # 664	28°25,7 N, 17°49,7 W	719m	28°25,9 N, 17°49,7 W	469m	CDRD

Mostly reddish, angular, cpx- and ol- phyric basaltic breccias. Vesicular lapilli and ash cemented by carbonate and zeolites. Vesicular basalt and fine-grained, cpx- and amph-phyric intermediate rocks minor. Some fine-grained, basaltic hyaloclastites contain biogenic fragments.

Station # 665	28°26,3 N, 017°50,8 W	372m	28°26,3 N, 017°50,6 W	381m	CDRD

Four pieces of dark-gray cpx-rich, ol-bearing vesicular basalt and one 30cm slab of a basaltic sheet flow with glassy crust.

Station # 666	28°23,6 N, 017°50,0 W	1233m	28°23,9 N, 17°49,9 W	1245m	CDRD

Basically three rock types. Six pieces of dense trachyte up to 15cm in diameter with fresh anor, phl and minor amph in a greenish groundmass. Three calcarenite pieces with volcanic particles. The third rock type is vesicular dark gray-brownish basalt. A dozen subround fragments (< 15cm) are ol- and cpx-phyric commonly glassy basalts. Pillow tubes about 20cm in diameter. Vesicularity in the centre up to 50 vol.%, decreasing towards the margin. The tube surface shows some ribbon-type structure lacking in a pronounced glassy crust.

Station # 667	28°18,9 N, 17°44,5 W	1996m	28°19,1 N, 17°44,4 W	1892m	CDRD

Vesicular (20 to >50 vol.%), cpx- and ol-phyric basalt clasts and lapilli cemented by carbonatic sediments. Vesicles and fractures commonly filled by clayey, lutitic sediments. All specimen coated by manganese crusts.

2. South Hierro Ridge

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
03.12.1998					
Station # 668	27°36,5 N, 18°00,2 W	757m	27°36,6 N, 18°00,1 W	686m	CDRD

Around ten pieces of basalt and sediment up to 20cm in diameter. Three fresh and vesicular (20-30 vol%) picrites (5-10 vol% ol), one fresh, black, fine-grained, very vesicular (70 vol%) basalt, one basaltic bomb, four specimen of fine- to medium-grained ol-phyric (traces) volcaniclastic sediment (one with carbonate crust) and one large (20cm in diameter) piece of reddish brown lapillistone breccia.

Station # 669	27°35,9 N, 18°00,1 W	595m	27°35,9 N, 18°00,1 W	429m	CDRD

At least 50kg. Large blocks of basalt up to 60cm in diameter and 20-30cm high. Most of the matrial clastic, but also some basalt plates. Vesicular (<70 vol%, vesicles up to 5cm in diameter) basalt alternating with sometimes layered volcaniclastic breccia of coarse-grained lapilli and bombs set in a carbonate matrix.

Station # 670	27°35,9 N, 17°59,1 W	346m	27°36,0 N, 17°59,0 W	281m	CDRD

Basaltic, clast-supported lapillstones (25-40cm in size) cemented by carbonate.

Station # 671	27°34,3 N, 17°58,6 W	902m	27°34,5 N, 17°58,6 W	660m	CDRD

Five pieces of round, glassy, black/red oxidized, vesicular basalt up to 5cm. Some fine-grained tuffaceous sediments with calcareous crusts.

Station # 672	27°35,1 N, 17°58,9 W	554m	27°35,2 N, 17°58,8 W	524m	CDRD

One piece (diameter 10 cm) of clast-supported, volcaniclastic, calcareous sandstone. Many carbonate crust and unlithified micrites. Coral debris.

Station # 673	27°33,6 N, 17°58,3 W	898m	27°33,8 N, 17°58,2 W	694m	CDRD

One piece of glassy, vesicular basalt, brown carbonate crust with corals, and strongly altered volcanics.

Station # 674	27°33,4 N, 17°58,9 W	964m	27°33,6 N, 17°58,6 W	960m	CDRD

Black, vesicular ol-, px-phyric lapilli in a carbonate matrix and cream-colored carbonate crusts with borings containing fragments of shell debris and dark mafic volcanics.

Station # 675	27°32,0 N, 17°58,9 W	975m	27°32,1 N, 17°58,9 W	879m	CDRD

Mostly coral debris, two large pieces of fine-grained, vesicular, px-phyric basalt. Vesicles unfilled. Some highly altered volcanic rock.

Station # 676	27°27,7 N, 18°00,0 W	1689m	27°27,7 N, 18°59,8 W	1620m	CDRD

Mostly dark colored coral debris. Some large pieces (up to 30cm in diameter, altogether about 6kg) of reddish, vesicular, aphyric pillow basalt fragments with some fresh glassy crusts. Many pieces coated with up to 8cm thick manganese crusts.

04.12.1998					
Station # 677	27°26,8 N, 18°00,4 W	1539m	27°26,9 N, 18°00,2 W	1495m	CDRD

Manganese crust with globular surface texture on calcareous sediments. Coral debris.

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Station # 678	27°25,7 N, 18°01,1 W	1694m	27°25,8 N, 18°00,9 W	1621m	CDRD
Fine-grained, pumice-rich lapillistones containing subround dense and pumiceous gray to pink felsite fragments.					
Station # 679	27°23,0 N, 18°02,0 W	2173m	27°23,2 N, 18°01,9 W	2033m	CDRD
Coarse-grained, pumice-rich lapillistones up to 15cm in diameter with subround dense and pumiceous felsite fragments. Some lapilli show dark, fine-grained rims and moderate vesicularity in the interior.					
Station # 680	27°22,1 N, 18°02,4 W	2403m	27°22,3 N, 18°02,5 W	2240m	CDRD
Twenty kg of pink, hemipelagic, clayey-calcareous sediment with manganese crusts.					
Station # 681	27°21,3 N, 18°03,0 W	2638m	27°22,3 N, 18°02,5 W	2520m	CDRD
Fifty kg of pink, hemipelagic, clayey-calcareous sediment with manganese crusts.					
Station # 682	27°22,6 N, 18°03,8 W	3120m	27°22,8 N, 18°04,2 W	3056m	CDRD
Two bedded, well- to moderately-sorted volcaniclastic sediments (40cm in diameter) with glass-rich, ol- and cpx-phyric layers and intercalations of carbonatic, foram-rich layers. Some moderately vesicular (c. 40 vol.%) basaltic lapilli.					
Station # 683	27°23,2 N, 18°00,3 W	2871m	27°23,5 N, 18°00,5 W	2586m	CDRD
Fifteen kg of pink, hemipelagic, clayey-calcareous sediment with manganese crusts.					
Station # 684	27°23,9 N, 18°00,6 W	2319m	27°24,1 N, 18°00,6 W	2213m	CDRD
Two pieces (40cm in diameter) of hemipelagic, clayey-calcareous sediments with 2-20 vol.% of greenish, irregularly shaped, mt-, amph-, and fsp-phyric (<1 vol.%) pumice clasts. One specimen of vesicular (30 vol.%), plag-phyric basalt. Vesicles partly filled with hydroxides and clayey-micrites.					
Station # 685	Dredge not on bottom.				
Station # 686	27°20,0 N, 18°04,3 W	2654m	27°20,0 N, 18°04,4 W	2599m	CDRD
Ten specimen of manganese crusts with concentric layering.					

3. Las Hijas Seamount

Date/Station number *05.12.1998*	On bottom	Water depth	Off bottom	Water depth	Dredge type
Station # 687	27°06,6 N, 18°36,7 W	2631m	27°06,9 N, 18°36,7 W	2382m	CDRD
About 25 kg of fresh, relatively well-crystallised, alkfsp-phyric (<1 vol.%), volcanic to subvolcanic felsites up to 60cm in diameter. Some fsp-pyhric (+ minor mafic phc) felsites are more vesicular (10-15 vol.%). Some vesicles filled with secondary minerals.					
Station # 688	27°07,2 N, 18°36,2 W	2434m	27°07,5 N, 17°36,5 W	2278m	CDRD
One large (1m in length and 40cm thick) light-coloured, semi-consolidated, hemipelagic limestone with manganese crust.					
Station # 689	27°06,1 N, 18°36,6 W	2862m	27°06,5 N, 18°36,9 W	2400m	CDRD
More than 50 kg of pumiceous felsite up to 1m in length and 40cm thick. The rocks range from moderately vesicular (50 vol.%), alkfsp-phyric (+ minor mafic phc) felsites with trachytic textures to slightly vesicular (<5 vol.%), alkfsp- and mafic phc-phyric felsites. Some clast-supported breccias consist of angular, blueish clasts alternating with roundish, white to greenish, vesicular shards. Fine-grained, mt-, fsp-, amph- and hau-phyric (<1 vol.%) felsic rocks minor.					

4. Tropic Seamount

Date/Station number *07.12.1998*	On bottom	Water depth	Off bottom	Water depth	Dredge type
Station # 690	23°47,7 N, 20°47,5 W	3603m	27°47,7 N, 20°47,2 W	3596m	CDRD
NR					
Station # 691	23°48,1 N, 20°45,9 W	3077m	27°48,4 N, 20°45,5 W	2680m	CDRD
Fifteen kg of hemipelagic, light-coloured and semi-consolidated carbonates with minor manganese crust.					
Station # 692	23°50,0 N, 20°45,1 W	1875m	23°50,3 N, 20°44,9 W	1584m	CDRD
Twenty kg of mostly hemipelagic, light-coloured and semi-consolidated carbonates with thin manganese crust and three altered basalt pebbles. Two vesicular (c. 20 vol.%), cpx-phyric (c.3 vol.%) basalt pebbles with reddish, dark 'schlieren'. One pebble is an intermediate, alkfsp-, amph-, mica-, tit-, and cpx-phyric (c.2-3 vol.%) felsite with trachytic texture.					
Station # 693	23°50,5 N, 20°44,7 W	1339m	23°50,6 N, 20°44,5 W	1048m	CDRD
Several pieces of hemipelagic, light-coloured and semi-consolidated carbonates with thin manganese crust and two pieces (around 10 cm in diameter) of altered, vesicular (10 vol.%), cpx- and ol-phyric (c. 2 vol.%) basalt and conglomerate with fine-grained, amph-and fsp-phyric, felsic pebbles.					
Station # 694	23°51,5 N, 20°48,8 W	2770m	27°51,6 N, 20°48,6 W	2575m	CDRD
Several pieces (one around 50 cm in diameter) of vesicular (c. 25 vol.%), relatively well-crystallized, cpx- and ol-phyric (c. 2 vol.%) basalt, coated by thick manganese crust.					
Station # 695	23°51,9 N, 20°48,1 W	2000m	23°52,0 N, 20°47,8 W	1870m	CDRD
Coral debris with two internal generations of manganese coating.					

Dredge Protocol Leg M43/1 (continued)

Station # 696	23°52,0 N, 20°47,9 W	1872m	23°52,2 N, 20°47,7 W	1756m	CDRD
Coral debris and hemipelagic, clayey, light-coloured and semi-consolidated carbonates.					
08.12.1998					
Station # 697	23°52,5 N, 20°47,4 W	1477m	27°52,8 N, 20°47,1 W	1219m	CDRD
Fine-grained felsite breccia and dense limestone strongly coated by manganese crust.					
Station # 698	23°47,0 N, 20°44,4 W	2447m	23°47,2 N, 20°44,3 W	2226m	CDRD
Coral debris and hemipelagic, clayey, light-coloured and semi-consolidated carbonates.					
Station # 699	23°47,3 N, 20°44,2 W	2057m	27°47,5 N, 20°44,1 W	1953m	CDRD
Ten pieces (up to 40cm in diameter) of fine-grained, alkfsp- and amph-phyric felsites, brecciated felsite (up to 10cm in diameter), basalt, conglomerate, and hemipelagic limestones.					
Station # 700	23°48,1 N, 20°43,7 W	1454m	23°48,2 N, 20°43,5 W	1181m	CDRD
Fifty kg of coral debris and hemipelagic, light-coloured and semi-consolidated carbonates.					
Station # 701	23°47,3 N, 20°44,3 W	2010m	23°47,5 N, 20°44,2 W	2037m	CDRD
NR					
Station # 702	23°47,4 N, 20°44,1 W	2054m	23°47,6 N, 20°44,0 W	1947m	CDRD
65m of rope cut. One fishbox of samples. Mostly limestone and manganese crust, three fist size pieces of trachyte. Fine-grained, cream-coloured alkfsp-phyric (1 vol%) felsite with traces of mafic phc.					
Station # 703	23°47,4 N, 20°44,3 W	2052m	23°47,6 N, 20°44,0 W	1880m	CDRD
Dredge completely full with some large rocks up to 1m, mostly manganese-encrusted limestones but also 1-2 boxes with trachytes (?) and moderately lithified tuffs. Carbonate-cemented, bedded to graded, well-sorted, fine to coarse-grained, vesicular (c. 50 vol%) tuff and lapillistone of intermediate-felsic composition. Clasts angular to round and strongly altered to yellowish layer silicate. Locally some fresh glass preserved. Phc: rare cpx, possibly some former ol and/or fsp. Gray-green, dense alkfsp-phyric (c. 1 vol%) felsite (trachyte?)					
Station # 704	23°47,6 N, 20°44,3 W	2077m	23°47,8 N, 20°44,2 W	1908m	CDRD
Two pieces of manganese-coated rock.					

5. Paps Seamount

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
09.12.1998					
Station # 705	25°38,3 N, 20°08,0 W	2297m	25°38,5 N, 20°07,6 W	2004m	CDRD
One block (c. 40cm in diameter) of layered manganese crust with some brecciated material. One fist-sized piece of greenish, highly vesicular lapillistone (hyaloclastite). Altered, yellowish, earthy zeolite-bearing tuff. Thick-stemmed coral debris.					
Station # 706	25°38,9 N, 20°08,0 W	2105m	25°38,5 N, 20°07,6 W	2004m	CDRD
Highly vesicular, green altered, alkfsp-bearing felsitic lapilli in a pink matrix.					
Station # 707	25°37,8 N, 20°07,9 W	2312m	25°38,1 N, 20°07,7 W	2113m	CDWS
Eight fishboxes. One with volcaniclastic rocks. Vesicular lapillistone and highly altered pillow basalt all coated with manganese crusts. Black material is not only manganese crusts but there are some very dense (Fe-rich) pieces.					
Station # 708	25°50,4 N, 20°21,1 W	2579m	25°50,7 N, 20°21,0 W	2340m	CDWS
NR					
Station # 709	25°50,4 N, 20°21,1 W	2582m	25°50,6 N, 20°21,3 W	2417m	CDWS
Light pinky clay with manganese crusts.					
10.12.1998					
Station # 710	23°49,9 N, 20°19,5 W	2991m	23°49,7 N, 20°19,5 W	2649m	CDWS
One piece of volcaniclastic sediment.					
Station # 711	25°58,0 N, 20°22,1 W	2038m	25°57,99 N, 20°21,89 W	1974m	CDWS
One piece of vesicular, extremely fresh, 'dark melt' with 'partially melted' material and one piece (2 cm thick, 15 cm long) of vesicular, glassy material (slags).					
Station # 712	25°59,5 N, 20°22,9 W	2321m	25°59,6 N, 20°22,5 W	2069m	CDWS
NR					
Station # 713	25°58,0 N, 20°22,2 W	2048m	25°58,2 N, 20°21,7 W	1903m	CDRD
Twenty kg of manganese crusts and some small pieces of bioclastic, well-sorted carbonates.					
Station # 714	25°57,9 N, 20°23,0 W	2168m	27°57,9 N, 20°22,5 W	2066m	CDRD
Seventy kg of hemipelagic, light-coloured and semi-consolidated carbonates with thin manganese crusts and one piece of vesicular lapillistone.					

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6. Endeavour Seamount

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
11.12.1998					
Station # 715	25°21,6 N, 19°32,8 W	2077m	25°21,6 N, 19°32,6 W	1880m	CDRD
Three pieces (up to 20cm in diameter) of vesicular, cpx-pyric basalt, mixed volcaniclastic-calcarenitic sandstone and altered lapillistone.					
Station # 716	25°21,6 N, 19°32,5 W	1817m	25°21,7 N, 19°32,2 W	1796m	CDRD
Twentyfive kg of lapillistones with large clasts of cpx-phyric basalt (up to 10cm in diameter) and some pieces of thick manganese crusts.					
Station # 717	25°21,5 N, 19°31,4 W	1429m	25°21,4 N, 19°31,1 W	1214m	CDRD
One piece of vesicular intermediate rock with brown, cpx-phyric groundmass.					
Station # 718	25°21,5 N, 19°30,9 W	1000m	27°21,5 N, 19°30,7 W	910m	CDRD
One piece of vesicular basalt (up to 10cm in diameter), coral debris, manganese crusts and hemipelagic limestone.					
Station # 719	25°21,5 N, 19°30,5 W	698m	25°21,5 N, 19°30,3 W	609m	CDRD
Coral debris and hemipelagic limestone.					
Station # 720	25°21,4 N, 19°30,2 W	532m	25°21,5 N, 19°29,9 W	504m	CDRD
One piece of hemipelagic, light coloured and semi-consolidated carbonate with thin manganese crust.					

7. Hierro Seamount

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
11.12.1998					
Station # 721	25°59,1 N, 18°42,9 W	2440m	25°59,2 N, 18°42,7 W	2311m	CDRD
Some pieces of relatively well-crystallized, vesicular (10-20 vol.%) dolerite coated by manganese crusts. Vesicles filled with clay minerals.					
12.12.1998					
Station # 722	25°59,7 N, 18°41,9 W	1953m	25°59,8 N, 18°41,6 W	1798m	CDRD
Fifty kg of hemipelagic, light coloured and semi-consolidated carbonate rocks with thin manganese crust.					
Station # 723	25°59,9 N, 18°41,2 W	1574m	26°00,0 N, 18°40,8 W	1393m	CDRD
Thirty kg of manganese crusts					
Station # 724	26°00,3 N, 18°40,2 W	1138m	26°00,5 N, 18°40,0 W	1045m	CDRD
Fifty kg of hemipelagic, yellowish carbonate rocks, manganese crusts and coral debris.					

8. Kiel Seamount

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
12.12.1999					
Station # 725	27°19,4 N, 17°48,1 W	3525m	27°19,6 N, 17°47,3 W	3288m	CDRD
NR					
Station # 726	27°18,4 N, 17°46,4 W	3385m	27°18,9 N, 17°46,1 W	3214m	CDRD
Two pieces of aphyric, vesicular basalt coated by manganese crust.					

9. Los Gigantes

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
13.12.1998					
Station # 727	28°15,9 N, 16°55,2 W	818m	28°16,1 N, 16°54,8 W	693m	CDRD
Five kg of amph- and fsp-phyric, felsite, dense ol- and plag-phyric basalt and calcareous crusts.					
Station # 728	28°16,2 N, 16°54,6 W	700m	28°16,2 N, 16°54,6 W	499m	CDRD
Fifteen kg of coral debris, bioclastic carbonates and some pieces of pumiceous rocks.					
Station # 729	28°16,1 N, 16°54,6 W	617m	28°16,2 N, 16°54,4 W	501m	CDRD
Coral debris and sponges					
Station # 730	28°16,2 N, 16°54,5 W	520m	28°16,3 N, 16°54,5 W	415m	CDWS
Ten kg of lithified bioclastic carbonates and some sponges.					
Station # 731	28°16,3 N, 16°54,5 W	367m	28°16,4 N, 16°54,6 W	401m	CDWS
One piece of dense, cpx- and ol-phyric basalt.					

Dredge Protocol Leg M43/1 (continued)

10. Punta de la Rasca

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
13.12.1999					
Station # 732	27°51,7 N, 16°44,6 W	2503m	27°51,8 N, 16°44,3 W	2339m	CDRD
Hemipelagic, clayey, calcareous sediment.					
14.12.1998					
Station # 733	27°52,1 N, 16°43,6 W	1932m	27°52,0 N, 16°43,6 W	1980m	CDRD
Fourty kg of manganese-coated basalt and volcaniclastics. Fresh, vesicular (c. 30-40 vol.%), fsp- (c. 2 vol.%), cpx- (c. 1 vol.%), ol- (c. 1 vol.%) phyric basalt with a glassy crust. Fine-grained cpx- (c. 1 vol.%), fsp- (c. 2 vol.% microphenocrysts) phyric basalt with irregular to elongate vesicles. Brownish bedded volcaniclastic sediment, probably felsic tuff layers with crystals of fsp, dark mica, tit					
Station # 734	27°53,1 N, 16°43,3 W	1942m	27°53,1 N, 16°42,9 W	1742m	CDRD
Dark vesicular basalt (15cm in diameter) with thin manganese crust.					

11. Off Barranco de Veneguera and Tasartico

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
14.12.1998					
Station # 735	27°47,0 N, 15°53,7 W	1596m	27°46,9 N, 15°53,4 W	1390m	CDWS
Two fish boxes of brownish, hemipelagic sediment with some light coloured lenses, probably tuffaceous.					
Station # 736	27°46,8 N, 15°52,9 W	954m	27°46,8 N, 15°52,6 W	833m	CDRD
Four bread-crusted specimen of fresh, dense, glassy, quenched fsp-phyric rhyolite with minor cpx, opx, mt and zr. Also one slightly more crystallized piece.					
Station # 737	27°46,7 N, 15°51,5 W	593m	27°46,7 N, 15°51,5 W	566m	CDRD
Half a fishbox of carbonate crusts with some crystals, rock fragments, and probably glass shards. One piece of conglomerate with well-rounded types of 'lava', ignimbrites and carbonate. One piece of mini-walnut-sized, gray ignimbrite.					
Station # 738	27°46,7 N, 15°51,0 W	450m	27°46,8 N, 15°50,8 W	339m	CDRD
NR					
Station # 739	27°48,9 N, 15°53,7 W	1173m	27°49,0 N, 15°53,5 W	844m	CDRD
Two pieces of dark grey, cpx-, plag-phyric, poorly vesicular, mugearitic lava.					
Station # 740	27°49,0 N, 15°53,5 W	929m	27°49,1 N, 15°53,4 W	670m	CDRD
Three fishboxes of brown, hemipelagic, clayey-calcareous sediment.					
Station # 741	27°48,8 N, 15°53,5 W	1000m	27°49,0 N, 15°53,2 W	708m	CDRD
Three fishboxes of brown, hemipelagic, clayey-calcareous sediment with some bioclastic fragments.					
15.12.1998					
Station # 742	27°48,5 N, 15°52,7 W	973m	27°48,6 N, 15°52,7 W	783m	CDRD
NR					
Station # 743	27°48,5 N, 15°52,7 W	854m	27°18,5 N, 15°52,7 W	793m	CDRD
Two big pieces (30cm in diameter) of dark grey, non- to moderately vesicular, ol- and cpx-phyric (c. 5 vol.%) basalt.					
Station # 744	27°51,1 N, 15°56,8 W	1286m	27°51,2 N, 15°56,7 W	1104m	CDRD
One fishbox of dense, ol-, cpx- and fsp-phyric (c. 10-20 vol.%) basalts and some pieces of brecciated hyaloclastites.					
Station # 745	27°51,2 N, 15°56,7 W	1056m	27°52,3 N, 15°56,6 W	950m	CDRD
NR					
Station # 746	27°51,2 N, 15°56,5 W	881m	27°51,2 N, 15°56,5 W	880m	CDRD
NR					
Station # 747	27°51,2 N, 15°56,6 W	1008m	27°51,5 N, 15°56,4 W	928m	CDRD
One fishbox of coral debris					
Station # 748	27°54,2 N, 16°00,1 W	1247m	27°54,3 N, 15°59,7 W	992m	CDRD
One fishbox of poorly vesicular, cpx-phyric glassy basalts, calcareous crusts with volcaniclastic fragments, coral debris and probably some coal pieces.					
Station # 749	27°54,5 N, 15°58,7 W	974m	27°54,6 N, 15°58,4 W	646m	CDRD
Half a fishbox of round, greenish, aphyric basalts. Some basalts slightly more crystallized, ol-, cpx- and plag-pyhric.					

Dredge Protocol Leg M43/1 (continued)

12. Off Barranco de Güigüi Grande and GüiGüi Chico

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
15.12.1998					
Station # 750	27°59,4 N, 16°01,5 W	1685m	27°59,4 N, 16°01,1 W	1494m	CDRD
One fishbox of quenched, dark and in part glassy ignimbrites, coral debris and white, bioclastic limestones.					
Station # 751	27°59,2 N, 16°01,0 W	1405m	27°59,2 N, 16°00,7 W	1138m	CDRD
One 20 cm sized piece of ignimbrite. Coral debris.					
16.12.1998					
Station # 752	28°00,0 N, 16°01,5 W	1706m	27°59,9 N, 16°01,2 W	1725m	CDRD
NR					
Station # 753	27°59,2 N, 16°08,5 W	2171m	27°59,2 N, 16°08,4 W	1788m	CDRD
NR					
Station # 754	27°59,3 N, 16°08,3 W	1901m	27°59,3 N, 16°08,2 W	1776m	CDRD
Three fishboxes of coral debris.					

13. Hijo de Tenerife

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
16.12.1998					
Station # 755	28°05,0 N, 16°10,7 W	2100m	28°05,2 N, 16°10,6 W	1980m	CDRD
Two fishboxes with gray-green bomb shaped, microvesicular (0-30 vol.%), fsp-, mica-, and amph-phyric (only traces) fragments (35-2cm in diameter) with thin manganese coatings. Large variety of angular rock fragments (e.g. pumice-lapilli, one ol-megacryst).					
Station # 756	27°05,2 N, 16°10,4 W	1966m	27°05,2 N, 16°10,4 W	1891m	CDRD
Two fishboxes of similar fragments as in the previous dredge. Coral debris.					
Station # 757	27°05,2 N, 16°10,4 W	1893m	27°05,4 N, 16°10,1 W	1631m	DD with net inside
Ten pieces of pumiceous volcaniclastics.					
Station # 758	28°05,4 N, 16°10,1 W	1667m			RO
Water sampling					
Station # 759	28°05,4 N, 16°10,1 W	1660m	28°05,4 N, 16°10,1 W	1630m	CDRD
Ten pieces of volcaniclastites, lapillistone and one fishbox of coral debris.					

14. Submarine flank Gran Canaria off Agaete

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
16.12.1998					
Station # 760	28°08,1 N, 15°55,2 W	1576m	28°08,2 N, 15°54,8 W	1332m	CDRD
Some fishboxes of brown, hemipelagic calcareous ooze.					
Station # 761	28°08,2 N, 15°54,8 W	1368m	28°08,2 N, 15°54,5 W	1136m	CDRD
Some fishboxes of brown, hemipelagic calcareous ooze.					
17.12.1998					
Station # 762	28°08,2 N, 15°54,5 W	1093m	28°08,2 N, 15°54,3 W	711m	CDRD
Two small pieces of round basalt.					
Station # 763	28°09,0 N, 15°55,9 W	1768m	28°09,0 N, 15°55,6 W	1535m	CDRD
Three fist-sized pieces of dense ol- and cpx-phyric basalt and some coral debris.					
Station # 764	28°09,1 N, 15°55,6 W	1378m	28°09,1 N, 15°55,5 W	1129m	CDRD
NR					
Station # 765	28°09,2 N, 15°55,4 W	1073m	28°09,3 N, 15°55,3 W	938m	CDRD
Two fishboxes of dense, cpx- and ol-phyric basalt, basalt breccia with angluar fragments up to 7cm and coral debris.					
Station # 766	28°09,4 N, 15°57,5 W	2548m	28°09,5 N, 15°57,3 W	2231m	CDRD
Only some corals.					
Station # 767	28°09,7 N, 15°56,6 W	1796m	28°09,7 N, 15°56,6 W	1659m	CDRD
One piece (c. 25 cm in diameter) of cpx- and ol-pyric (c. 5 vol.%) basalt coated by manganese crust and some coral debris.					

Dredge Protocol Leg M43/1 (continued)

15. Submarine flank off Güimar and Anaga

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
17.12.1998					
Station # 768	28°13,4 N, 16°18,4 W	988m	28°13,7 N, 16°18,1 W	653m	CDRD
One large piece (c. 1m in diameter) and some smaller pieces (5-20cm in diameter) of gray, microvesicular, cpx- and ol-phyric basalt and some carbonate matrix-supported, vesicular (>50 vol.%) lapillistone. All samples coated by very thin manganese crust.					
Station # 769	28°19,2 N, 16°44,4 W	1153m	28°19,3 N, 16°14,2 W	952m	CDRD
Calcareous, ooze and one coral.					
Station # 770	28°36,3 N, 16°00,6 W	2305m	28°36,7 N, 16°00,6 W	1883m	CDRD
One fist-size piece of relatively heavy scoria with irregular surface and some consolidated mudstones with volcaniclastic particles.					
18.12.1998					
Station # 771	28°37,0 N, 15°56,4 W	2970m	28°37,0 N, 15°56,1 W	2705m	CDRD
One piece of vesicular, ol- and cpx-pyhric basalt coated with manganese crust.					
Station # 772	28°34,4 N, 15°59,8 W	2386m	28°34,6 N, 15°59,8 W	2161m	CDRD
Dredge full of brown, hemipelagic mud.					
Station # 773	28°32,8 N, 16°00,8 W	2176m	28°33,0 N, 16°00,1 W	1947m	CDRD
Half a fishbox with brown, round, vesicular (<10 vol.%) glassy lapillstone, two pieces of glassy, vesicular (up to 50 vol.%) clasts and some calcareous, lutitic sediments with round lapilli.					
Station # 774	28°30,6 N, 16°05,0 W	1273m	28°31,1 N, 16°05,0 W	1149m	CDRD
One large block of slightly vesicular basalt, some small lapillstones and some semi-consolidated lutites with volcaniclastic particles.					
Station # 775	28°29,3 N, 16°08,3 W	541m	28°29,5 N, 16°08,3 W	380m	CDRD
One kg of dark, dense, ol- and plag-phyric basalt with glassy rim and some arenitic sediments.					
Station # 776	28°29,4 N, 16°08,3 W	436m	28°29,3 N, 16°08,2 W	538m	CDRD
About two fishboxes of very fresh, dark, cavernous, non-vesicular, cpx-, ol-, amph- and fsp-phyric basalt. Some pieces of semi-consolidated, arenitic sediments.					
Station # 777	28°28,2 N, 16°07,8 W	1172m	28°28,6 N, 16°07,8 W	944m	CDRD
Dredge full of brown, hemipelagic ooze.					

16. ODP Site 954

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
19.12.1998					
Station # 778	28°26,2 N, 15°31,9 W	3486			RO

17. Submarine flank Gran Canaria off Galdar

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
19.12.1998					
Station # 779	28°14,0 N, 15°43,0 W	1268m	28°14,1 N, 15°42,8 W	1142m	CDRD
Around three kg of mostly very fine-grained, quenched, non-vesicular, aphyric (< 1 vol.% cpx and ol) basalt and minor cpx-(10 vol.%) and ol-phyric (c. 2-3 vol.%) basalt.					
Station # 780	28°13,8 N, 15°42,9 W	965m	28°13,7 N, 15°42,9 W	1013m	CDRD
Around two kg of cpx-, amph-, ol- and plag-phyric basalt and one piece of cpx- and ol-phyric lapillistone.					
Station # 781	28°14,5 N, 15°40,8 W	1617m	28°14,2 N, 15°40,8 W	1440m	CDRD
Dredge full of brown, hemipelagic ooze.					

Dredge Protocol Leg M43/1 (continued)

18. Gran Canaria off Isleta

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
19.12.1998					
Station # 782	28°14,2 N, 15°40,8 W	1446m	28°14,1 N, 15°40,7 W	1283m	CDRD
NR					
Station # 783	28°12,9 N, 15°28,8 W	772m	28°12,8 N, 15°25,5 W	666m	CDRD
About five pieces of carbonate matrix-supported, cpx- and ol-phyric (2-3 vol.%) lapillistone-breccia with rounded clasts. Some specimen coated by fine-grained lapillistone and tuffs.					
Station # 784	28°13,6 N, 15°24,1 W	1293m	28°13,5 N, 15°24,0 W	1289m	CDRD
Dredge full of brown, hemipelagic ooze.					
Station # 785	28°15,3 N, 15°23,9 W	1932m	28°15,1 N, 15°23,7 W	1805m	CDRD
Dredge full of brown, hemipelagic ooze.					
Station # 786	28°16,5 N, 15°23,9 W	2801m	28°16,2 N, 15°23,6 W	2692m	CDRD
Dredge full of brown, hemipelagic ooze.					
20.12.1998					
Station # 787	28°15,7 N, 15°23,0 W	2162m	28°15,6 N, 15°22,8 W	1967m	CDRD
Dredge full of brown, hemipelagic ooze.					
Station # 788	28°18,7 N, 15°20,4 W	3078m	28°18,7 N, 15°20,1 W	2883m	CDRD
Dredge full of brown, hemipelagic ooze.					
Station # 789	28°09,8 N, 15°17,7 W	1882m	28°09,8 N, 15°17,4 W	1677m	CDRD
One piece (c. 10cm in diameter) of red, ol- and cpx-phyric (traces) tachylitic lapillistone.					
Station # 790	28°06,9 N, 15°18,0 W	1228m	28°07,2 N, 15°18,1 W	1040m	CDRD
One fishbox of basalt and ol-cpx-phyric picrites with round bizarre shapes. Five fishboxes of coral debris.					
Station # 791	28°05,6 N, 15°09,3 W	1467m	28°05,8 N, 15°09,1 W	1226m	CDRD
One piece of limestone. Manganese crusts and coral debris.					
Station # 792	28°05,8 N, 15°09,0 W	1305m	28°06,0 N, 15°08,8 W	1127m	CDRD
Half a fishbox of coral debris.					
Station # 793	27°56,4 N, 15°06,5 W	1603m	27°56,6 N, 15°06,4 W	1463m	CDRD
Four pieces of vesicular, cpx-, ol-phyric, manganese-coated basalt with minor glass crusts. Some pieces of manganese crust.					
Station # 794	27°57,7 N, 15°01,4 W	1637m	27°58,0 N, 15°01,4 W	1434m	CDRD
Two fishboxes of manganese-coated fsp-phyric phonolite breccia (up to 40cm in diameter), several types of volcanic breccia, minor vesicular basalt, one fishbox of coral debris.					
21.12.1998					
Station # 795	27°56,1 N, 15°03,9 W	1606m	27°56,3 N, 15°03,9 W	1565m	CDRD
Half a fishbox of manganese crusts.					
Station # 796	27°51,8 N, 15°12,3 W	1413m	27°51,9 N, 15°12,4 W	1304m	CDRD
One fishbox with one big plate (0,6x0,1 m) of manganese-coated bioclastic sandstone with scattered alkfsp crystals and < 1vol.% volcanic clasts, some corals.					
Station # 797	27°51,2 N, 15°13,8 W	1214m	27°51,1 N, 15°14,0 W	1102m	CDRD
Brown hemipelagic ooze.					
Station # 798	27°45,8 N, 15°16,5 W	1275m	27°46,0 N, 15°16,8 W	1087m	CDRD
One fishbox, several pieces of dark, highly vesicular and reddish slag, some manganese-coated limestone crusts with fsp and cpx (2-3 vol.%).					
Station # 799	27°40,7 N, 15°27,2 W	1515m	27°41,0 N, 15°27,0 W	1406m	CDRD
Brown hemipelagic ooze.					

19. Gran Canaria off SE coast

Date/Station number	On bottom	Water depth	Off bottom	Water depth	Dredge type
21.12.1999					
Station # 800	27°41,2 N, 15°26,2 W	1144m	27°41,6 N, 15°26,6 W	855m	CDRD
One fishbox of manganese-coated glass-rich phonolite breccia (up to 50cm in diameter) and brown hemipelagic ooze.					
Station # 801	27°41,1 N, 15°31,1 W	1338m	27°41,3 N, 15°31,4 W	1042m	CDRD
Brown hemipelagic ooze.					

Dredge Protocol Leg M43/1 (continued)

Station # 802	27°39,4 N, 15°38,3 W	1206m	27°39,5 N, 15°38,5 W	890m	CDRD
NR					
Station # 803	27°33,6 N, 15°44,6 W	1455m	27°33,8 N, 15°44,4 W	1289m	CDRD
Two fishboxes with pumice altered glass lapilli (up to 4cm in diameter) in carbonate sediment, one piece of vesicular aphyric basalt, one piece of brownish scoria, one piece of light-colored volcaniclastic (?) sediment with lenticular texture, one fishbox of coral debris, all rocks manganese-coated.					
Station # 804	27°38,3 N, 15°49,2 W	1330m	27°38,6 N, 15°48,7 W	1097m	CDRD
Brown hemipelagic ooze.					
22.12.1998					
Station # 805	27°39,7 N, 15°47,1 W	882m	27°39,7 N, 15°46,7 W	676m	CDRD
Brown hemipelagic ooze.					
Station # 806	27°42,8 N, 15°50,9 W	1227m	27°42,8 N, 15°50,3 W	900m	CDRD
Brown hemipelagic ooze.					
Station # 807	27°44,6 N, 15°51,9 W	1327m	27°44,6 N, 15°51,6 W	1128m	CDRD
NR					
Station # 808	27°46,3 N, 15°53,0 W	1261m	27°46,5 N, 15°52,5 W	968m	CDRD
Half a fishbox with fist-sized pieces of fresh glassy lava. Grayish, crystallized specimen, glassy specimen and brecciated rhyolite, all manganese-coated. Some manganese crusts.					
Station # 809	27°46,8 N, 15°53,0 W	1052m	27°46,9 N, 15°52,6 W	1005m	CDRD
Half a fishbox with three pieces of obsidian, one slightly crystallized, manganese crusts, carbonate sediment and corals.					
Station # 810	27°48,9 N, 15°53,6 W	1051m	27°49,0 N, 15°53,4 W	860m	CDRD
NR					
Station # 811	27°48,6 N, 15°53,9 W	1290m	27°48,9 N, 15°53,6 W	1039m	CDRD
Brown hemipelagic ooze.					

7.1.1 On-board thin section petrography

The following table gives a summary of thin sections made on board (see chpater 5.1.2.1) and a brief description of their petrography.

Abbreviations used in this table are:

Textures:

anh: anhedral
euh: euhedral
subh: subhedral
glcr: glomerocryst
gm: groundmass
skel: skeletal
vf: vesicle filling
mfv: matrix-filled vesicles

Minerals:

ab: albite
alkfsp: alkali feldspar
amph: amphibole
aug: augite
bio: biotite
cpx: clinopyroxene
phl: phlogopite
pl: plagioclase.

Glass alteration:

strong: > 90 vol%
P: palagonite
PA: altered into sheet silicates/Fe-hydroxides

Olivine alteration:

O=Fresh
1=partly iddingsitic
2=pseudomorphs. Olivine pseudomorphs consist of sheet silicates, carbonate, Fe-hydroxides.

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
1. South La Palma Ridge														
638-5	Alkali basalt	> 50	x	Minor(?): P, PA	< 2, euh/anh	0	<1, subh-euh						x	Tachylite. Glassy rim (palagonite). Vf: partly zeolites
638-12	Alkali basalt, lapillistone	80...90		P: strong, PA: minor	< 2, subh	0	<1, subh/anh, glcr			<1, subh/anh			x	Calcarous matrix with components of more evolved composition. Vf: partly zeolites
638-14	Carbonate sediment with volcanic clasts			Strong: P, PA	<<1	0	<1, subh/anh			<<1, euh-subh-anh				Biogenic components. cpx: aug, aegirine-aug, green-core cpx
639-1	Alkali basalt	5...20	x	None	<1, euh	0	5-10, glcr, euh-subh; gm						x	Tachylite. Spherulitic cpx aggregates in gm. Vf: partly Fe-hydroxides
639-2	Basaltic hyaloclastite	80...90	x	Minor: P, PA	<1, euh-anh, gm	0	<1, anh, gm							Spherulitic cpx aggregates in gm
639-3	Grain mount: hauyne-bearing felsic and basaltic components	30-90	x	Minor: P, PA	<1, subh-anh	0	<1, subh-anh, glcr	<1, subh-anh	<1, subh					Two major types of shards (a) glassy (b) tachylite. Shards with cpx spherulites. Hauyne: <<1, subh. Biogenic clasts
645-1	Carbonate sediment with volcanic clasts			Strong: PA	<1, anh	0,1	<1, subh/anh			<1, anh				Crystals in calcareous matrix, rare lapilli. Titanite: <<1, anh. Biogenic components. cpx: aug, aegirine-aug, green-core cpx
646-1a	Alkali basalt	<30	x (?)	Minor(?): P, PA	<10; gm	1,2	<10%; glcr	<10%, gm					x	Tachylite. Vf: clay and carbonate, microfossils
646-1b	Alkali basalt	<50		Strong: P, PA	<10; gm	1,2	<10%; glcr	<10%, gm					x	Tachylite. Vf: clay and carbonate, microfossils
646-1c	Alkali basalt	<20	x	Strong: P	<10, subh, glcr	0,1	Gm	<10, euh, gm					x	Tachylite. Gm olivine
646-4	Calcarenite with volcanic clasts			Strong: PA	<<1, anh	0,1	<<1, anh			<1, sub/anh				
648-1a	Alkali basalt	<60	x	Strong: P	5, subh /euh, glcr	1,2	<<1 euh	2, gm					x	Tachylite. Glassy rim (palagonite). Vf: partly: zeolites, sheet silicates
648-1b	Alkali basalt	<60		Strong: P, PA	<2, euh	1	<1, euh; gm: aug	5...10, euh; gm: Pl					x	Tachylite. Vf: clay and carbonate, microfossils
648-2	Alkali basalt	<30	x	Minor-strong (?): P, PA	<3, euh-subh	1	<1, euh/anh, glcr; gm: aug	15, euh-subh/anh					x	Tachylite. Spherulitic cpx in gm

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
651-1	Carbonate sediment with minor volcanic clasts	>20		Strong: PA	<<1, subh	0;1	<1, euh/anh	<3, euh-subh						Manganese crust
654-1	Carbonate sediment with volcanic clasts			Strong: PA	Gm	0	<<1, gm							
656-1	Carbonate sediment with alkali basaltic clasts		x	Minor: P	<<1, anh	0	<<1, subh-anh			<<1, anh				
656-2	Carbonate sediment with volcanic clasts			Strong: PA	<<1, anh	0	<<1, anh							
657-2	Carbonate sediment with manganese crust and volcanic clasts			Strong: PA	<1, anh	0,1	<1, sub-anh, aug, aegirine-aug (anh)			x, anh				
657-3	Amph-bearing basalt or intermediate rock	<80	x	Minor (P)-none			<1, euh/anh, gm	Gm		<1, sub-euh			x minor	Highly vesicular, gradation in vesicle size. Amph is younger than aug
657-4	Scoriacious alkali basalt	<80	x	Minor: P	<1, euh-subh, gm	0	<10, euh-subh, gm	<10, gm						Tachylite
657-6	Calcarenite with felsic and basaltic volcanic components			Strong: PA	<<1, anh	0	<1, sub-euh	<1, anh		<<1, anh				
658-5	Alkali basalt	<40	x	Minor: P	<5, euh	0	<1, euh-subh						x	Tachylite. Glassy rim
658-6	Alkali basalt	<20	x	Minor: P, PA.	<5, glcr, euh- anh	0	<3, subh. gm: aug						x	Tachylite. Spherulitic cpx aggregates and ol in gm
658-7	Alkali basalt	< 40	x	Minor: P, PA	<1, euh-subh, glcr	0	<1, glcr; gm						x	Tachylite. Glassy rim
658-7-II	Alkali basalt	<40	x	Fresh-minor:P	<5, euh-subh	0	<1; glcr						x	Tachylite. Glassy rim. Spherulitic cpx aggregates in gm
658-8	Alkali basalt	<12	x	Minor-none: P?	<10, subh	1	<5, gm: aug						x	Tachylite
660-1	Alkali basalt	<60	x	Minor: P	<1, euh-subh	0	<1, euh-subh, glcr						x, minor	Tachylite. Glassy rim (palagonite). Spherulitic cpx aggregates in gm
660-1a	Alkali basalt	<60	x	Minor(?): P	<8, euh-subh	0	<2 glcr						x, minor	Tachylite. Vf: partly: zeolites

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
660-2	Alkali basalt	<30	x	Minor: P, PA	<5, euh-subh, glcr	0	2, euh-subh, glcr						x	Spherulitic cpx aggregates in gm. Tachylite. Glassy rim. Vf: partly: zeolites, Fe-hydroxides
662-2	Felsite			Strong: zeolites, sheet silicates					5, euh, glcr	<1, subh-anh	1, bio, euh-subh	<<1		Well crystallized trachytic texture. Titanite? Manganese coating
663-3	Lapillistone with felsic and basaltic clasts		x	Mafic ash particles: minor? P	<1, subh-anh	0	<1	<<1, anh	<2, subh-anh, gm	<1, subh	<1, phl, euh-anh	<<1, euh		Titanite: <<1; cpx: subh aug, Ti-aug, aegirine-aug: subh-anh; aug: gm. Fresh glass basaltic
663-5	Tuff to fine lapilli-stone with felsic and basaltic clasts	variable	x	Variable. Strong: P,PA, minor: P	<2, anh	0, 1	< 2 aug, aegirine-aug; gm	<<1, anh, gm	<1, subh-anh, gm	<1, subh-anh	<1 euh-subh	<1 (tachyl. clasts)	x, minor-none	Hauyne: <<1, subh. Tachylite. Shell debris. Foraminifera
664-2	Alkali basalt		x	Minor: P	<1 euh-subh	0	8	gm						Tachylite. Cpx: aug, Ti-aug, euh-subh, glcr; gm: aug, skel
664-3	Alkali basalt lapillistone with calcareous matrix	Variable: 70-90	x	Minor: P, PA	<1, euh; glcr	0	<8						x, minor	Vf: partly: zeolites, sheet silicates. cpx: aug, Ti-aug, euh-subh, glc, gm.
664-4	Basaltic lapillistone with calcareous matrix		x	Variable: Strong : P, minor: P	<5, subh	0	<5							Clast types (a) glassy (b) tachylite. Vf: partly: zeolites, sheet silicates. cpx: aug, Ti-aug, subh, glcr, green-core cpx. gm: aug
664-8	Alkali basalt	<30	x	Minor: P, PA	<10, euh-subh	0	Ti-aug <1, glcr, gm: aug.	gm					x, minor-none	Tachylite. Some ol with strong undulose extinction, translation lamellae
665-2	Alkali basalt with cpx-hornblendite cumulate	<20	x	Fresh	<1, subh; gm	0	< 5, aug, Ti-aug, green-core cpx; gm: aug.	gm						Tachylite. Glassy rim. Cumulate: aug, amph, apatite, opaque phase, interstitial glass. Vf: partly: zeolites
666-1	Carbonate sediment with volcanic clasts			Strong: PA	<1, subh-anh	0	<1 anh: Aegirine-aug, aug, Ti-aug.	<<1; Lapillus: gm	Lapillus: gm	<1, anh	Lapillus: bio <2			Titanite: <1, anh. Some ol clasts with translation lamellae. Biogenic clasts. Fragments of manganese crusts (?)
666-2	Felsite			Strong. Zeolites, Fe-hydroxides					<5 euh-subh, gm	<1, subh	1, bio, euh-subh	**<1**		Titanite: <<1, subh; apatite: <1, euh
666-3	Alkali basalt	variable 50-30	x	Minor: P	<3, euh; glcr	0	<<1 euh, gm						x, minor	Spherulitic aug aggregates in gm. Gradation in vesicle size

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
667-1	Alkali-basaltic lapilli in carbonate matrix	variable 30-50	x	Variable. Strong PA; Minor P	<1, subh, variable	0,1	<1, subh	<5, euh-subh					x, minor-none	Vf: partly: zeolites
667-2	Alkali basalt	>20	x	Minor (?) P, PA	<1, euh-subh	1	< 1	<3, euh-subh, glcr					x, minor-none	Tachylite. Glassy rim (palagonite). Many vesicles filled with sediment
667-3	Basalt	>20	x	Minor-strong (?) P, PA	<1, euh-subh	1		1, euh-subh, gm					x, minor-none	
2. South Hierro ridge														
668-2	Picritic basalt	<20	x	Fresh	10, euh-subh; gm	0	>10; gm	gm				<1, skel	x, minor-none	Gradation in vesicle size
668-8	Basaltic lapillistone	variable 5-20	x	Minor: P	<1, euh-subh-anh; gm	0	<1, euh-subh, glcr, gm	<1, euh-subh, gm				<1 euh-subh	x, minor-none	Spherulitic cpx in gm
668-9	Basaltic hyaloclastite	variable 30-40	x	Minor: P, PA	<1, euh-subh	0	<1, subh	gm					x, minor-none	Well sorted. Bubble wall shards
669-2a	Basaltic lapillistone with carbonate matrix		x(?)	Lapillus: strong (?) P; others: strong PA	<1, subh/anh	0,1	<1, subh,gm							Lapillus: Tachylite. Spherulitic cpx aggregates in gm. Vf: partly: zeolites
669-2b	Alkali basaltic lapillistone	<70		Strong: P, PA	<1, euh-subh; glcr	0	<1: aug, Ti-aug, euh-subh							
669-3	Alkali basalt	>40	x	Minor: P	<1, euh-subh, gm	0	< 2: aug, Ti-aug, glcr <2; gm: aug		<<1 auh-anh, xenocr.				x	Tachylite. Glassy rim (P). Aug in gm: spherulite-like aggreg. Vf: partly zeolites. Alkfsp xenocr.
670-1	Alkali basaltic lapillistone with carbonate cemented matrix	variable 30-40		Strong: P, PA	<1, euh-subh-anh, glcr	0		<1, euh-subh				<1, subh	x, minor	Vf: partly: zeolites

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
671-2	Alkali basalt	<50	x	Minor: P	<1, subh-anh, gm	0	<1, euh	gm					x, minor	Tachylite. Glassy rim
672-1	Alkali basaltic lapillistone with carbonate matrix	<50	x	Partly: strong P, PA. Clasts with fresh glass.	<1, anh	0	<1, sub/anh, glcr, gm	<1, subh					x, minor	
673-1	Alkali basalt	<30	x	Minor: P	<1, euh-subh; glcr; gm	0	<1 euh-subh; gm: aug	gm					x	Tachylite. Glassy rim (P). Alternating layers of filled/ partly filled vesicles. Spherulitic aug-aggregates in gm. Vf: partly: zeolites
673-3	Hyaloclastite of basaltic to intermediate composition	variable 20-40	x	Minor: P	<<1, anh	0	<<1, anh; gm: aug, Ti-aug	<<1, euh; gm						Biogenic clasts
674-1	Hyaloclastite of basaltic to intermediate composition			Strong: P	<<1, anh	0,1	?	<<1, anh; gm						Biogenic clasts
674-3	Basalt-carbonate breccia	Variable 40-70		Strong: P,PA	<1, euh-subh	0	<1, euh-subh						x	Some clasts: tachylite. Vf: partly: sediment, zeolites
675-2	Alkali basalt		x	Minor: P	<<1, euh	0	<1, gm	<1, gm				<1, subh	x, minor-none	Tachylite. Vf: partly: zeolites
676-2	Alkali basalt	<40		Strong	<3, euh	2	<1, euh-subh	gm						Vf: completely: carbonate; ol: iddingsite, carbonate
677-1	Carbonate sediment													No volcaniclastic components
678-2	Felsic lapillistone with syenite fragments			Strong: zeolites, sheet silicates			<<1, subh-anh		<2, euh-subh-anh	<1, subh-anh	<1, bio, anh	<1, anh		Calcareous matrix. Syenite: alkfsp, bio, cpx, titanite and opaque phases
679-1	Felsic lapillistone	Variable 20-40		Strong:PA					gm				x	Lapilli: zonation in vesicle size, large vesicles in the interior. Matrix: carbonate, partly open pore space
679-2	Felsic tuff with intermediate components	Variable 0-5		Strong: sheet silicates, zeolites			<1, aegirine-aug, aug,anh		<5, anh	<1, anh	<1, bio, subh			Zircon: <<1, subh
682-1	Lapillistone, hyaloclastite with carbonate cement		x	Variable: strong/minor: P, PA	<1, euh-subh-anh	0	<1, subh-anh	<1, euh-subh					x	Some clasts: tachylite. Vf: partly: sediment
684-1	Carbonate sediment with highly altered basaltic ash clasts	Variable 20-40		Strong, chlorite/ serpentine				5						

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
684-2	Intermediate to basaltic rock	<20		Strong, layer silicates and secondary carbonates				pl <4, euh-subh and gm				<<1, euh	x, minor	Ab-rich Pl
684-3	Carbonate sediment with basaltic clasts	<80		Strong: P, PA	<1, subh-anh	0	<1, subh					<1, euh-subh		Vf: partly: sediment, Fe-hydroxides, sheet silicates
3. Las Hijas Seamounts														
687-2a	Felsite			Strong: zeolites, sheet silicates			gm: aegirine-aug		1-2, euh-subh					
687-2b	Felsite with inclusion of intermediate composition			Strong: zeolites, sheet silicates			gm: aegirine-aug		1-2, euh-subh	<<1, subh-anh				Inclusion: vesicle volume <20%, cpx, Fsp (pseudomorphs), opaques, apatite
687-3	Felsite			Strong, zeolites			<<1, subh		1, eu-subh/anh, gm			<1, euh		
687-5	Intermediate	<20	x (?)	Minor: P			<1, euh-subh, glcrst	<1, euh-subh, gm				<1, euh-subh	x, minor	Vf: partly: sheet silicates
687-7	Felsite with manganese crust			Strong: zeolites, sheet silicates			gm		<1, euh-subh, gm					
687-8	Felsite with inclusion of intermediate composition		x (?)	Felsite: strong, zeolites. Inclusion: minor			gm		1, eu-/subh, gm			<1 anh		Inclusion: vesicle volume 5-10%, cpx, pl, opaques, fresh (?) glass
689-1	Felsite	<20		Strong, sheet silicates, Fe-hydroxides					<1, euh, gm					
689-2	Amph-bearing felsite with more mafic inclusion	< 5		Strong, sheet silicates			<1, euh-subh		< 5, euh	<1, euh-subh		<5, skel	x	Inclusion: Phenocrysts: pl <3, gm: pl, cpx; , gm: 2 opaque phases
689-3-a	Felsic clast-supported breccia	Variable 0-5		Strong: Fe-hydroxides, zeolites, layer silicates					<1, euh, gm				x	Apatite: <<1, euh, gm: titanite (product of alteration?). Pore space between fragments only partly filled
689-3-b	Felsite	<15		Strong: Fe-hydroxides, zeolites, layer silicates					<1, euh, gm				x, minor	Vf: partly: Sheet silicates, zeolites, Fe-hydroxides

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
689-3-C	Felsite breccia with manganese crust	Variable 1-20		Strong, zeolites, layer silicates					<1, euh, gm			**<<1**	x, minor	Apatite: <<1, euh, gm: titanite (product of alteration?)
689-4	Felsite		x(?)	Minor (?): zeolites, layer silicates					<1, euh-subh, gm			<1, euh-subh		
689-5	Felsite		x(?)	Minor (?): zeolites, layer silicates			<1, euh-subh		<1, euh-subh, gm					
689-6	Felsite			Strong			<1, euh-subh		<1, euh-subh, gm			<1 euh-subh		Glass alteration: zeolites, analcime(?), layer silicates
4. Tropic Seamount														
692-1	Amph-bearing alkali basalt/intermediate rock	<1	x (?)	Minor (?). P	<1; gm	2	<3, euh-subh	<1, euh, gm		<3, euh-subh, glcr		<1 subh/anh	x	Titanite: <1, subh, opaque corona. Mafic schlieren (higher contents of Fe-Ti oxides in gm); cpx: aug, green-core cpx, Ti-aug, glcr, gm
692-2	Felsite		?	Minor (?): Fe-hydroxides, analcime (?), zeolites			<1 aegirine-aug, euh-subh, gm		<1, euh-subh, gm	<1, pseudo-morphs		<1 euh		Titanite: <1, euh-subh, Amphibole pseudomorphs of opaques + aegirine-aug
692-3	Amph-bearing alkali basalt/intermediate rock	<1	x	Minor (?): P	<1, gm; glcr	2	<3 euh-subh	<1, euh, gm		<3, euh-subh, glcr		<1 subh/anh	x(?)	Cpx: aug, green-core cpx, Ti-aug, glcr, gm. Same rock as sample 692-1
693-1	Alkali basalt tuff	<20		Strong: PA	<5, euh-subh	2	<2, euh-subh, gm					<1, euh	x(?)	Vf: partly: zeolites
693-2a	Felsite			Strong: zeolites, Fe-hydroxides			Aegirine-aegirine aug: gm					<<1, anh		Alkfsp: Spherulitic growth in gm
693-2b	Felsic and mafic lapilli in carbonate cement			Felsic lapilli: strong: zeolites,PA. Mafic lapilli: strong: PA		2	aug <1 euh-subh, gm: Aegirine-aegirine aug		<1, euh-subh, gm	<1, euh-subh		<<1		Tachylite clasts
693-3	Amph-bearing felsite			Strong: zeolites, Fe-hydroxides			<1, aug, Ti-aug, euh-subh, gm		<3, euh, gm	<1, euh-subh				Titanite: <1, euh

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
694-1	Alkali basalt. Pillow fragment?	<20		Strong, ol: carbonate pseudomorphoses	<1, euh	2	<1, euh-subh, glcr, gm	Gm					x	Moderate quench crystallization. Vf: completely: carbonate. Partly: zeolites
694-2	Alkali basalt	<30		Strong, ol: carbonate pseudomorphoses	<1, euh	2	euh-subh, glcr, gm	Gm				<1, subh/anh	x	Moderate quench crystallization. Vf: completely: carbonate
694-3	Basalt	<25		Strong: PA			<1, euh-subh, glcr	Gm				<1, euh-subh		Tachylite
697-2	Carbonate sediment with highly altered volcanic clast			Strong: PA				gm (altered)						
699-1a	amph-bearing felsite	<5		Strong: zeolites			gm		<1, euh, gm	<<1, euh			x	
699-1b	amph-bearing felsite	<5		Strong: zeolites			gm		<1, euh, gm	<<1, euh			x	Vf: partly: zeolites
703-2	Basaltic lapillistone, carbonate cemented matrix	<5	x	Variable: minor-strong, P, PA	<1, euh,	1; 2	<2, Ti-aug, aug, gm						x(?)	Two major types of clasts (a) glassy (b) tachylite. Vf: completely: carbonate
703-4	Alkali basaltic lapillistone. Cement: zeolites +carbonate	Variable 0-10		Strong: PA	<1, euh	2							x, minor	Vf: partly: zeolites, sheet silicates
5. Paps Seamount														
707-1	Alkali basalt	<30		Strong: PA	<1, euh (?)	2		<1, euh, glcr, gm					x	Vf: partly: sheet silicates
711-1a,b,c	Coal slag	Vesicles present												Mullite, sp, graphite
711-2	Coal slag	Vesicles present												Mullite, graphite
6. Endeavour Seamount														
715-1a	Basalt	<25		Strong: P, PA	<1,euh-subh	2	<2, euh, glcr	gm		<1, euh-subh, glcr		<1, subh		Tachylite. Vf: zeolites, carbonate
715-1b	Basalt	<30	x(?)	Minor(?)-strong: P, PA	<1,euh-subh	2	<1, euh	gm		<1, euh-subh		<1, subh		Tachylite. Vf: zeolites, carbonate. Gm: chromite

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
716-1b	Basalt	<30		Strong: P, PA	<1, euh	2	<2, euh-subh, glcr	gm					x	Tachylite. Vf: nearly completely: carbonate, sheet silicates, minor zeolites
716-2	Hyaloclastite, large basalt clast	<15		Strong: PA	<1, euh-subh	2	<1, euh-subh	gm					x, minor	Tachylite. Vf: partly: carbonates, sheet silicates, zeolites
717-1	Basalt	<15		Strong: PA	<1	2	<1, euh-subh	<1				<<1	x	Tachylite. Vf: carbonates
7. Hierro Seamount														
721-1	Strongly altered basalt	<8		Strong: PA				gm (altered)					x	Tachylite
721-2	Strongly altered basalt	<10		Strong: PA				gm (altered)					x	Tachylite
721-3	Basalt	<25		Strong: PA				gm					x	Tachylite
721-5	Basalt	<15		Strong: PA								<<1, euh	x	Tachylite
9. Tenerife, Los Gigantes														
727-1	Felsite	<5		Strong: Sheet silicate					<10, euh-subh, ± altered	<<1, subh	<1, euh-subh		x	
727-2	Carbonate sediment with volcanic clasts		x(?)	Basaltic clast: minor-strong(?)	<<1, anh	0; 1	<<1, anh	<<1, anh		<<1, anh				Ash-sized tachylitic clast. Biogenic debris
727-3	Basalt		x(?)	Minor(?)-strong(?): P	<1, euh-subh; gm	2	<10, euh-subh, glcr; gm	<15, euh-subh; gm				<1, euh-subh-anh		Mafic schlieren (higher contents of Fe-Ti oxides in gm, smaller size of gm crystals)
728-2	Carbonate sediment with volcanic clasts			Strong: PA			<<1, anh	<<1, anh						Biogenic debris
731-1a	Basalt		x	None-minor(?)	<3, euh-subh	0	<3, euh-subh	gm						Mafic schlieren (higher content of Fe-Ti oxides in gm)
731-1b	Basalt		x	None-minor(?)	<3, euh-subh	0	<3, euh-subh	gm						Mafic schlieren (higher content of Fe-Ti oxides in gm)

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
10. Tenerife, Punta de la Rasca														
733-1a	Basalt	<10	x	Minor: P			<1, euh-subh	<1, euh-subh glcr				<1, euh	x	Tachylite. Spherulitic growth of cpx in groundmass
733-1d	Basalt	<15	x	Minor: P			<1, euh	<1, euh-subh					x, minor	Tachylite. Spherulitic growth of cpx in groundmass. Manganese crust
733-2-I	Carbonate sediment with volcanic clasts and altered hyaloclastite			Strong: PA			<<1, subh	<<1, euh-sub-anh; clast: gm		<<1, subh		<1, subh		Biogenic debris
733-2-II	Carbonate sediment with volcanic clasts and altered hyaloclastite			Strong: PA			<<1, subh	<<1, euh-subh-anh; clast: gm		<<1, subh		<1, subh		Biogenic debris
11. Gran Canaria, off Barranco de Veneguera and Barranco de Tasartico														
735 smear slide	Clay sediment with volcanic clasts		x(?)	Strong(?): P			<<1, subh	<<1, subh						
736-4	Rhyolite		x	None/minor?					<1					Opx: <1, euh; zircon: <1, subh; pl: ab-rich, euh-subh, gm
737-1	Carbonate sediment with volcanic clasts			Strong: PA			<<1, subh-anh, aegirine-aug, aug	<<1, anh, gm	gm					
737-2	Carbonate sediment with volcanic clasts			Mafic clasts: strong, PA; felsic clasts: sheet silicates, zeolites(?)	<<1, anh	0	<<1, aug, aegirine-aug, euh-subh/anh		Gm					Mafic, tachylitic basalt and felsite
737-3	Felsite		x(?)	Minor-strong(?): PA, zeolites, carbonate			<1, anh, aegirine-aug; gm: aegirine		<1, euh-subh			<1, sub/anh		Tachylite. Spherulitic cpx aggregates in gm
739-1	Intermediate rock		x	Minor: P, PA			<1, euh-subh, glcr		<2			<<1, subh		Ab-rich pl, euh-subh, glcr, gm
743-1	Basalt	<3	x(?)	Strong? P	<3, euh	2	<1, euh-subh, gm	gm				<<1, subh-anh	x, minor	Vf: sheet silicates, zeolites
743-3	Basaltic lapillistone with carbonate and zeolite matrix	Variable 0-10	?	Strong: variable P, PA			<<1, euh-subh							Tachylite. Vf: carbonate, zeolites

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
744-1a	Basalt		x	Minor: P, PA	<3, euh-subh; glcr	1	<1, euh-subh, glcr; gm	<1, subh, gm				<1, euh-subh		
744-1b	Picritic basalt	<5		Strong: P, PA	<20, euh-subh; glcr	1	<5, euh-subh, glcr; gm	Gm				<1, euh-subh		Tachylite
748-2	Slag (?)	<20	x	Minor: P, PA				<20, euh-subh					x	Tachylite
749-1	Basalt	<5	x	Minor(?)-strong: P	<1, euh	1	<1, euh-subh; gm	<1, euh-subh, gm				<1, euh-subh	x	Mafic schlieren (higher contents of Fe-Ti oxides in gm). Vf: nearly completely: two zeolite phases
749-2	Basalt	<3		Strong: P, PA	<1, euh-subh	2	<1, euh-subh; gm(?)	<1, euh, gm					x	Vf: completely: zeolites
12. Gran Canaria, off Barranco de Güigüi Grande and Güigüi Chico														
750-3	Basalt		x	Minor: P	<1, euh-subh	1	1, euh-subh, glcr	<20, euh-subh; gm				<1, subh		Tachylite. More mafic clasts (more Fe-Ti oxides in gm)
750-4	Basalt		x		<<1, subh	0	1, euh-subh, glcr	<15, euh-subh; gm				<1, subh		
750-6	Volcaniclastic sediment with felsic and mafic clasts		x	Variable: minor-strong: Sheet silicates; P, PA			<1, subh/anh, aegirine-aug, aug	<<1, anh		<1, subh/anh	<1, subh/anh	<1, subh		Felsic glassy and tachylite clasts. Biogenic debris
751-1	Basalt		x	Minor: P				<25, euh-subh; gm				<1, euh-subh		Tachylite
13. Hijo de Tenerife														
755-1	Intermediate rock		x(?)	Sheet silicates			Gm (?)		Gm					
755-2	Mafic to intermediate rock		x	Sheet silicates	<1	0	<1, euh-subh		<1, euh-subh; gm	<1, euh-subh	<1, euh-subh		x	Tachylitic domains
755-4	Felsite to intermediate rock		x				<1, euh-subh-anh	<1 , euh-subh	<<1, anh		<1, euh-subh		x	Tachylitic basalt inclusion: cpx (gm); pl ab-rich

Station no. /rock	Rock type	Vesicles vol	Fresh	Glass alteration	Olivine vol%	Ol alteratio	Cpx vol%	Pl vol%	Alkfsp	Amph vol%	Phl/Bio	Fe-Ti oxides	Mfv: x	Comment
755-5-I	Mafic to intermediate rock	<15	x	Minor: P	<1, subh-anh	0	<1, euh-subh	<1, euh-subh		<1, euh-subh	<1, euh-subh	<1, euh-subh	x	Tachylitic domains
755-5-II	Mafic to intermediate rock	<15	x	Minor: P			<1, euh-subh			<1, euh-subh	<1, euh-subh	<1, euh-subh	x	Tachylitic domains. Spherulitic cpx aggregates
756-1b	Mafic to intermediate rock	<10	x	Minor: P	?<1 subh (inclusion)	2	<1, euh-subh	Gm		<1, euh-subh	<1, euh-subh		x	
756-3	Mafic to intermediate lapillistone	Variable: 0-10	x	Minor: P	<1, subh/anh	0	<1, euh-subh	<1, subh-anh			<1, euh-subh			
756-4	Mafic to intermediate rock	<20	x	Minor: P, PA	<1, subh-anh	0	<1, euh-subh	<1, euh-subh		<1, euh-subh	<1, euh-subh	<1, euh-subh	x	Inclusion of calcareous sandstone
756-4b	Mafic to intermediate rock	<25	x	Minor: P, PA	<1, subh-anh	0	<1, euh-subh, gm	<1, euh-subh		<1, subh	<1, euh-subh; gm		x	Tachylite
757-2	Felsite to intermediate rock	<15	x	Minor: Sheet silicates			<1, euh-subh	<1 euh-subh			<1, euh-subh	<1, euh-subh	x	Mafic inclusions (higher contents of Fe-Ti oxides in gm)
757-3a	Manganese crust with volcanic clasts	Variable 0-15	x	Minor: P, PA	<<1, anh	0	<1, euh-subh; gm	<<1, subh						Tachylitic clasts. Ol grain with strong undulose extinction (translation lamellae)
757-3b	Bbasaltic and intermediate lapillistone; matrix of manganese crust (?)	Variable 0-10	x	Minor: P, PA	<<1, anh	0	<1, euh-subh; gm	<1, euh-subh; gm			<1, euh-subh			
759-3a	Basaltic lapillistone	Variable: 0-20	x	Minor: P, PA	<1, subh-anh	0	<1, euh-subh	<1, subh/anh		<1, subh	<1, euh-subh		x minor	Ol: some grains with strong undulose extinction. Matrix partly filled with manganese crust
759-3b	Basaltic lapillistone	Variable: 0-10	x	Minor: P, PA	<1, anh	0	<1, euh-subh	<1, euh-subh		<1, euh-subh	<1, euh-subh		x minor	Matrix partly filled with manganese crust
14. Submarine flank Gran Canaria, off Agaete														
761-2	Alkali basalt	<5	x	Minor: P, PA	<1, euh	2	<1, euh; gm	<1, euh-subh; gm					x	Tachylite. Mafic schlieren (higher content of Fe-Ti oxides in gm). Vf: zeolites

Station no. /rock no.	Rock type	Vesicles vol %	Fresh glass	Glass alteration	Olivine vol%	Ol alteration O (Fresh)	Cpx vol%	Pl vol%	Alkfsp vol%	Amph vol%	Phl/Bio vol%	Fe-Ti oxides	Mfv: x	Comment
763-1	Alkali basalt	<2	x(?)	Strong: P, PA	<7, euh-subh, glcr; gm	1	<5, euh-subh, glcr; gm	Gm				<1, subh	x	Vf: sheet silicates
765-1	Basalt	<1	x	Minor: P, PA	<1, euh-subh	1	<1, euh-subh						x	Tachylitic basalt. Glassy rim (palagonite). Spherulitic cpx aggregates in gm. Vf: partly: zeolites
767-1	Basalt		x(?)	Strong (?): P, PA	<10, euh-subh	1	<5, euh-subh; gm	Gm						Tachylite. Spherulitic cpx aggregates in gm
15. Submarine flank Tenerife, off Güimar and Anaga														
768-1	Basalt	<25		Strong: P, PA	Gm	0	<1, euh-subh; gm						x	Vf: zeolites, sediment
768-2	Basaltic clasts in carbonate sediment	Variable: 5-15		Strong: P, PA	<1, subh/anh	0		<1, anh; gm						
768-3a-I	Basalt	<20	x	Minor-strong(?): P, PA	<1, euh-subh	0	<1, euh-subh, glcr; gm	<1, euh-subh				<1, euh-subh	x, minor	Strongly tachylitic and less tachylitic domains. Vf: partly zeolites
768-3a-II	Basalt	<20	x	Minor: P, PA	<1, euh-subh	0	<1, euh-subh; gm	<1, euh-subh				<1, euh-subh	x, minor	Strongly tachylitic and less tachylitic domains. Vf: partly zeolites
768-3b-I	Basalt	<20	x	Minor: P, PA	<1, euh-subh	0	<1, euh-subh, glcr; gm	Gm				<1, subh	x	Tachylite. Glassy rim (palagonite). Vf: partly, zeolites
768-3b-II	Basalt	<20	x	Minor: P, PA	<1, euh-subh	0	<1, euh-subh; gm	Gm				<1, subh	x	Tachylite. Glassy rim (palagonite). Vf: partly, zeolites
773-1	Alkali basalt	<40	x	Minor: P			<1, euh-subh, glcr; gm			<1, euh-subh, glcr		<1, subh-anh	x	Tachylite. Glassy rim
773-4-I	Basaltic lapillistone	Variable 20-50	x	Minor: P, PA	<<1, subh-anh	0	<1, euh-subh; gm			<<1 subh		<1, euh-subh	x	Two major types of clasts (a) glassy (b) tachylite. Spherulitic cpx aggregates in gm
773-4-II	Basaltic lapillistone	Variable 20-50	x	Minor: P, PA	<<1, subh-anh	0	<1, euh-subh; gm					<1, euh-subh	x	Two major types of clasts (a) glassy (b) tachylite. Spherulitic cpx aggregates in gm
773-5	Carbonate sediment with volcanic clasts	<20	x	Variable: Minor-strong: P, PA	<<1, anh	0	<<1, subh-euh	<<1, subh					x	Tachylite clasts

Abbreviations

Textures: anh, euh, subh: anhedral, euhedral, subhedral; glcr: glomerocryst; gm: groundmass; skel: skeletal; vf: vesicle filling; mfv: matrix-filled vesicles.
Minerals: Ab: albite; alkfsp: alkali feldspar; amph: amphibole; aug: augite; bio: biotite; cpx: clinopyroxene; phl: phlogopite; pl: plagioclase.
Glass alteration: strong: > 90 vol%; P: palagonite; PA: altered into sheet silicates/Fe-hydroxides
Olivine alteration: O=Fresh; 1=partly iddingsitic; 2=pseudomorphs. Olivine pseudomorphs consist of sheet silicates, carbonate, Fe-hydroxides.

7.2 Leg M43/2

Station List Leg M43/2

Station	Time UTC	Device	Date	Geographical position Latitude	Longitude	Waterdepth uncorrected (m)	Wire length (m)	Comments
1	09:27	CTD 1	1.1	37° 35,2 N	010° 38,0 W	4503m	800m	
	12:24	CTD 2		37° 35,5 N	010° 38,1 W	4504	4000m	
2	08:46	Argos-Drifter 1.	2.1	41° 00,0 N	009° 24,9 W	1000m		
	09:22	Argos-Drifter 2.		40° 59,9 N	009° 27,8 W	1210m		
	09:52	Argos-Drifter 3.		41° 01,8 N	009° 27,8 W	1366m		
	10:29	Argos-Drifter 4.		41° 01,8 N	009° 25,4 W	870m		
3	21:03	CTD 3	2.1	42° 37,8 N	010° 03,8 W	2356m		break off too heavy sea
	23:09	ADCP		42° 40,0 N	010° 05,2 W			profile start rwK 127°
	23:45			42° 37,2 N	009° 59,8 W			course change to rwK 090°
	03:02		3.1	42° 37,5 N	009° 30,3 W			course change to rwK 180°
	04:32			42° 27,5 N	009° 30,0 W			course change to rwK 270°
	07:34			42° 27,5 N	010° 00,0 W			course change to rwK 360°
	08:00			42° 32,3 N	010° 00,0 W			profile end
	15:32	ADCP/		42° 38,8 N	010° 01,9 W			profile start rwK 328°
	19:12	HS / PS		43° oo,o N	010° 20,0 W			course change to rwK 090°
	00:06		4.1	43° 00,0 N	009° 37,2 W			course change to rwK 180°
	01:53			42° 52,1 N	009° 37,0 W			course change torwK 160°
	04:46			42° 37,5 N	009° 30,0 W			profile end
4	09:16 09:36	hydro-phon	4.1	42° 38,4 N	010° 01,7 W		2300m	mooring IM3/2 released
	12:17			42° 38,4 N	010° 00,5 W			mooring IM3/2 complete on deck
5	15:58	hydro-phone Benthos/ Oceano				1454m		mooring IM2/2 released
	15:39			42° 39,3 N	009° 42,2 W			mooring does not ascend
	18:53	hydro-phon		42° 39,4 N	009° 41,9 W	1459m		mooring still at bottom
	19:00			42° 39,4 N	009° 41,9 W			break off
5	19:00	ADCP / PS	4.1	42° 39,4 N	009° 41,9 W			profile start rwK 270°
	08:29		5.1	42° 44,7 N	011° 46,4 W			profile end

Abbreviations:

BWS:	Bottom water sampler
CTD:	Salinity-temperature-water sampling devise with rosette system
GKG:	Box corer
HS:	Hydrosweep
KaL:	Box lead
MUC:	Multicorer
PS:	Parasound
ADCP:	Acoustic Doppler Current Profiler

Station List Leg M43/2 (continued)

Station	Time UTC	Device	Date	Geographical position Latitude	Longitude	Waterdepth uncorrected (m)	Wire length (m)	Comments
6	09:17	hydro-phon		42° 45,0 N	011° 46,2 W			break off of the release of mooring OMEX I
7	02:56	CTD 4	6.1	42° 10,1 N	009° 18,8 W	221m	200m	
	03:14			42° 10,1 N	009° 18,8 W			
	04:21	CTD 5		42° 10,2 N	009° 18,9 W	222m	200m	
8	07:06	CTD 6		42° 09,0 N	009° 27,9 W	1053m	1000m	
	08:02	CTD 7		42° 09,0 N	009° 27,9 W	1056m	300m	
	08:54	CTD 8		42° 09,0 N	009° 27,9 W	1063m	1000m	
9	12:13	MUC 1		42° 10,0 N	009° 46,9 W	2333m	2343m	failure
	14:15	GKG 1		42° 08,5 N	009° 46,6 W	2323m	2326m	bottom contact
	16:06	GKG 2		42° 08,3 N	009° 46,3 W	2314m	2319m	failure
	17:58	GKG 3		42° 09,6 N	009° 46,8 W	2330m	2339m	failure
	19:48	BWS		42° 09,0 N	009° 46,9 W	2334m	618m	failure
10	21:05	CTD 9	6.1	42° 09,0 N	009° 44,4 W	2265m	200m	
	21:37	CTD 10		42° 09,0 N	009° 44,4 W	2266m	150m	
	22:42	CTD 11		42° 09,0 N	009° 44,4 W	2263m	1700m	
	23:54	CTD 12		42° 09,0 N	009° 44,2 W	2256m	900m	
	02:12	CTD 13	7.1	42° 08,8 N	009° 43,7 W	2236m	2200m	
11	04:40	CTD 14		42° 10,5 N	009° 35,7 W	1942m	1900m	
	05:51	CTD 15		42° 10,5 N	009° 35,8 W	1945m	200m	
	06:42	CTD 16		42° 10,5 N	009° 35,7 W	1940m	1400m	
	08:43	GKG 1		42° 10,5 N	009° 36,0 W	1951m	1951m	bottom contact
	10:06	GKG 2		42° 10,6 N	009° 36,0 W	1949m	1952m	failure
	11:20	GKG 3		42° 10,5 N	009° 36,1 W	1951m	1962m	bottom contact
	12:42	GKG 4		42° 10,5 N	009° 36,0 W	1945m	1954m	bottom contact
	14:27	MUC 1		42° 10,5 N	009° 35,9 W	1952m	1952m	bottom contact
	16:05	MUC 2		42° 10,5 N	009° 35,9 W	1947m	1953m	bottom contact
	18:01	BWS		42° 10,5 N	009° 35,9 W	1950m	1973m	bottom contact
12	20:05	CTD 17	7.1	42° 08,8 N	009° 31,1 W	1576m	1532m	
13	22:16	CTD 18	7.1	42° 09,0 N	009° 27,5 W	968m	954m	
	23:03	CTD 19		42° 09,0 N	009° 27,5 W	970m	350m	
14	00:14	CTD 20	8.1	42° 09,0 N	009° 26,2 W	603m	530m	
15	01:33	CTD 21	8.1	42° 09,0 N	009° 23,5 W	269m	230m	
16	02:23	CTD 22	8.1	42° 09,0 N	009° 20,7 W	233m	200m	
17	03:09	CTD 23	8.1	42° 09,0 N	009° 18,0 W	210m	200m	
18	03:53	CTD 24	8.1	42° 09,0 N	009° 15,4 W	187m	178m	
19	04:37	CTD 25	8.1	42° 09,0 N	009° 13,0 W	172m	115m	
	05:00	CTD 26	8.1	42° 08,9 N	009° 13,0 W	171m	160m	
20	06:26	GKG 1	8.1	42° 09,0 N	009° 18,7 W	216m	214m	bottom contact
	06:59	GKG 2		42° 09,0 N	009° 18,7 W	216m	218m	bottom contact
	07:33	GKG 3		42° 09,0 N	009° 18,7 W	217m	219m	bottom contact
	08:10	GKG 4		42° 09,0 N	009° 18,8 W	217m	217m	bottom contact
	08:39	GKG 5		42° 09,0 N	009° 18,7 W	217m	219m	bottom contact
	09:15	MUC 1		42° 09,0 N	009° 18,7 W	217m	222m	bottom contact
	09:55	MUC 2		42° 09,0 N	009° 18,7 W	216m	221m	bottom contact
	10:46	MUC 3		42° 09,0 N	009° 18,7 W	216m	220m	bottom contact
21	11:49	CTD 27	8.1	42° 07,0 N	009° 18,8 W	207m	180m	
	12:22	MUC 1		42° 07,0 N	009° 18,8 W	206m	214m	bottom contact
22	13:19	MUC 1		42° 11,0 N	009° 18,8 W	222m	233m	bottom contact
23	14:52	BWS		42° 09,0 N	009° 18,8 W	216m	226m	bottom contact

Station List Leg M43/2 (continued)

Station	Time UTC	Device	Date	Geographical position Latitude	Longitude	Waterdepth uncorrected (m)	Wire length (m)	Comments
24	20:20	CTD 28	8.1	42° 09,1 N	010° 30,0 W	2762m	300m	
	20:52	CTD 29		42° 09,1 N	010° 29,8 W	2763m	30m	
	21:15	CTD 30		42° 09,0 N	010° 29,8 W	2761m	10m	
	21:51	CTD 31		42° 09,1 N	010° 29,9 W	2762m	1000m	
	22:22	CTD 32		42° 09,0 N	010° 29,9 W	2768m	50m	
	23:18	CTD 33		42° 09,0 N	010° 29,9 W	2763m	2700m	
	01:09	CTD 34	9.1	42° 09,0 N	010° 30,0 W	2763m	2700m	
	02:40	CTD 35		42° 09,0 N	010° 30,0 W	2761m	1000m	
	03:33	CTD 36		42° 09,0 N	010° 30,0 W	2766m	1000m	
	04:25	CTD 37		42° 09,0 N	010° 30,0 W	2764m	1000m	
	05:19	CTD 38		42° 09,0 N	010° 30,0 W	2765m	700m	
	07:23	CTD 39		42° 09,0 N	010° 30,0 W	2766m	2700m	
	09:21	GKG 1		42° 09,0 N	010° 30,0 W	2764m	2768m	bottom contact
	11:01	GKG 2		42° 09,0 N	010° 29,9 W	2763m	2765m	bottom contact
	12:59	MUC 1		42° 09,1 N	010° 30,0 W	2765m	2776m	bottom contact
	13:56	CTD 40		42° 09,0 N	010° 29,9 W	2762m	200m	
	14:55	MUC 2		42° 09,0 N	010° 29,9 W	2762m	2774m	bottom contact
	16:00	CTD 41		42° 09,0 N	010° 30,0 W	2763m	200m	
	16:11	MUC 3		42° 08,9 N	010° 29,9 W	2762m	2780m	bottom contact
	19:04	KaL		42° 09,0 N	010° 30,0 W	2761m	2783m	bottom contact
	21:35	BWS		42° 09,0 N	010° 30,1 W	2766m	2783m	bottom contact
25	13:52	GKG 1		39° 29,8 N	009° 55,3 W	3469m	3505m	failure
	15:53	GKG 2		39° 29,8 N	009° 55,4 W	3612m	3601m	failure
	17:51	GKG 3		39° 29,7 N	009° 55,4 W	3514m	3510m	bottom contact
	20:12	MUC 1		39° 29,7 N	009° 55,5 W	3526m	3549m	bottom contact
	22:37	MUC 2		39° 29,7 N	009° 55,5 W	3554m	3554m	bottom contact
	00:56	MUC 3	11.1	39° 29,7 N	009° 55,5 W	3509m	3562m	bottom contact
	02:28	CTD 42		39° 29,8 N	009° 55,5 W	3456m	900m	
	04:56	CTD 43		39° 29,8 N	009° 55,4 W	3602m	3500m	
	06:14	HS / PS		39° 29,8 N	009° 55,5 W			profile start various courses in the Nazare Canoyn
	08:00			39° 31,8 N	009° 48,5 W			various courses
	08:21			39° 31,7 N	009° 46,1 W			course change to rwK151°
	09:10			39° 29,0 N	009° 45,1 W			profile end
26	09:20	GKG 1	12.1	39° 29,0 N	009° 45,1 W	2816m	2859m	bottom contact
	12:05	GKG 2		39° 29,0 N	009° 45,1 W	2894m	2883m	bottom contact
	14:13	MUC 1		39° 29,0 N	009° 45,1 W	2878m	2890m	bottom contact
	16:14	MUC 2		39° 29,1 N	009° 45,0 W	2898m	2916m	bottom contact
	18:03	MUC 3		39° 29,0 N	009° 45,0 W	2893m	2890m	bottom contact
27	12:57	GKG 1	12.1	39° 34,0 N	010° 10,3 W	4141m	4183m	bottom contact
	16:08	MUC 1		39° 33,9 N	010° 10,0 W	4121m	4176m	bottom contact
	18:54	KaL		39° 33,9 N	010° 09,9 W	4121m	4194m	failure KaL got bent
	21:21	CTD 44		39° 34,0 N	010° 09,9 W	4120m	4000m	
28	17:23	CTD 45	13.1	36° 33,1 N	008° 30,0 W	2260m	300m	
	19:03	CTD 46		36° 33,1 N	008° 30,2 W	2172	2000m	
	00:02	HS / PS	14.1	37° 00,0 N	008° 10,0 W			profile start (Faro) rwK 104°
	01:08			36° 58,0 N	008° 00,0 W			course change to rwK122°
	01:48			36° 55,5 N	007° 55,0 W			course change to rwK058°
	02:17			36° 58,0 N	007° 50,0 W			course change to rwK076°
	03:44			37° 00,0 N	007° 40,0 W			profile end

End of station work, departure to cardiz

8 Concluding Remarks

Meteor Cruise M 43 was very international, with participants from 11 countries and 21 institutions.

The quantity and quality of the rocks dredged during the Meteor cruise M 43/1 exceeded our expectations. Using the Hydrosweep and Hydromap facilities of FS Meteor in addition to previously collected data, bathymetric maps were produced on board of the entire, or at least larger parts, of the survey area. Such maps are an important tool for selecting sampling sites or areas for more detailed data collection. Our understanding of the structure and evolution of oceanic intra-plate volcanic systems and their peripheral sedimentary basins will be greatly advanced.

Meteor cruise M 43/2 was a successful winter cruise providing very important samples for the OMEX project. The results will significantly contribute to construct seasonal budgets for the upwelling area off Portugal and will help to validate physical models of the area.

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The success of our work very much depended on the close co-operation with Captain Kull and his crew especially in view of our frequent change in the program demanding a high degree of flexibility. Working under such professional conditions was a very good experience indeed.

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