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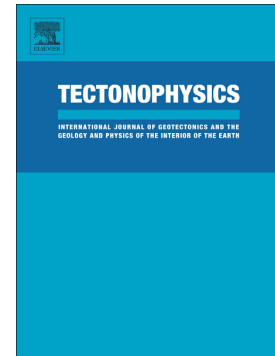
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Pre-Variscan tectonic setting of the south margin of Armorica: Insights from detrital zircon ages distribution and Hf isotopic composition of the S^t-Georges-sur-Loire Unit (S. Armorican Massif, France)

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Abstract

The Armorican Massif experienced a poly-orogenic evolution, represented by the Neoproterozoic Cadomian and the Devonian-Carboniferous Variscan tectonothermal events. In the southernmost part of the Armorican Domain (or Armorica microcontinent), the S^t-Georges-sur-Loire Unit consists of a block-in-matrix subunit, and a turbiditic subunit in the South and North, respectively. The S^t-Georges-sur Loire unit is interpreted as a remnant back-arc basin formed in Silurian-Early Devonian (ca. 440-400 Ma), and was deformed during the

Variscan orogeny. Most of the sedimentary and magmatic blocks enclosed in clastic matrix are olistoliths derived from an assumed southern area called the "missing domain", presently exposed as the Variscan Mauges Nappe composed of the Cadomian rocks and Early Paleozoic sedimentary cover. The "missing domain" was subducted beneath the Armorican massif during the Variscan collision. Detrital zircon age spectra from sandstones and siltstones from the olistostrome matrix reveal Neoproterozoic and Early Paleozoic age clusters, and less abundant Paleoproterozoic and Archean ages. Hf isotopic compositions of detrital zircons indicate dominantly negative $\epsilon_{\text{Hf}}(t)$ values which are in agreement with a recycled continental source. Minor positive values correspond to a juvenile component that was formed during the Neoproterozoic Cadomian orogeny or Archean-Paleoproterozoic events. The Cambrian and Early Ordovician ages can be related to the pre-Variscan rifting of the Pannotia megacontinent that separated the Armorica microcontinent from Gondwana. Neoproterozoic ages imply a source of the magmatic rocks exposed in the Cadomian belt of the northern part of the Armorica microcontinent, and in the Mauges Nappe.

Key words: U-Pb-Hf of detrital zircons, Provenance, Cadomian belt, Variscan belt, Armorica microcontinent

1. Introduction

Detrital zircon U-Pb dating is a powerful tool to assess the provenance of clastic formations (e.g. Fedo et al., 2003; Cawood et al., 2007, 2012; Dickinson and Gerhels, 2009). Combined with in-situ Hf-isotope analysis, this approach can also provide useful information for reconstruction of the tectonic evolution of continental blocks, and discrimination of crust or mantle contributions (Griffin et al., 2000; Condie et al., 2009). This method has been widely applied in various orogenic belts, for instance the Variscan-Appalachian orogen

(Henderson et al., 2016), the Himalaya, and the Alps (Gehrels et al., 2011; Cai et al., 2016; Chu et al., 2016; Lin et al., 2018). The European Variscan belt is well investigated in Iberia (e.g. Martínez Catalán et al., 2008, 2009), the Bohemian massif (e.g. Henderson et al., 2016; Linneman et al., 2004, 2007), and Corsica (Avigad et al., 2018). In the French Variscan orogen, a few studies deal with detrital zircon age distributions of the French Massif Central, namely in its western part, or Limousin (Melleton et al., 2010), and its southern part, in Montagne Noire, where the turbiditic foreland basin is well exposed (Lin et al., 2016). In the Armorican Massif, investigations on detrital zircon age distribution have only been carried out in the Central Armorican Domain (Ballouard et al., 2018), the Early Carboniferous Ancenis Basin, and the Late Carboniferous "coal trough" (Ducassou et al., 2014). This paper aims to provide new data on the age distribution and Hf isotopic composition of the detrital zircons in the matrix of the olistostrome of the S^t-Georges sur Loire unit on the southern margin of the Armorica microcontinent, in order to discuss the provenance of the rocks in the unit, and to clarify the tectonic relationships between the different units of the Ligerian Domain during Variscan subduction. The sources of the detrital zircons and their Hf isotopic signatures with respect to the Neoproterozoic Cadomian orogen, and the basement of the Armorican Massif, are also discussed.

2. Geological outline of the Armorican Massif

The French Armorican Massif experienced poly-orogenic superimposition, namely, the Late Neoproterozoic Cadomian orogeny, and the Late Paleozoic Variscan orogeny (Chantraine et al., 2001; Ballèvre et al., 2009, and references therein). The Armorican Massif is the only place in France that records the structural relationships between the Armorica microcontinent to the north, and the North Gondwana Margin to the south. In the Armorican massif, three domains are separated by ophiolitic sutures, and they correspond to different

microcontinents with Gondwana affinities (e.g. Faure et al., 2005, 2008; Ballèvre et al., 2009; Fig. 1). From north to south, these domains are: i) the Léon Domain formed by N-directed metamorphic nappes (Rolet et al., 1994; Faure et al., 2010); ii) the North-and-Central Armorican Domain that consists of deformed and metamorphosed Neoproterozoic rocks related to the ca. 650-540 Ma Cadomian orogeny, and weakly deformed Paleozoic sedimentary cover (e.g. Chantraine et al., 2001); iii) the South Armorican Domain that includes a stack of S-directed metamorphic nappes. In terms of Variscan geodynamics, the Léon, North-and-Central Armorican, and South Armorican domains belong to the Mid-German Crystalline Rise, Armorica, and North Gondwana margin, respectively. All these domains were rifted from Gondwana during the Early Ordovician and subsequently assembled together during the Variscan orogeny.

The Léon domain is not described here as it is not relevant to our study. The North-and-Central Armorican Domain contains an isolated fragment of the Cadomian belt (Fig. 1). This Neoproterozoic accretionary orogen has been subdivided into several NE-SW trending units that verge to the SE (e. g. Dissler et al., 1988; Chantraine et al., 2001 and references therein). To the NW, the Trégor Unit includes a Paleoproterozoic basement, also known as the Icartian basement, with ca. 2035 ± 35 Ma orthogneiss, and amphibolites, and a calc-alkaline volcanic-plutonic complex (Chantraine et al., 2001). These magmatic rocks yielding Ediacaran ages (ca 615 Ma) are interpreted as formed in a magmatic arc. To the SE, S^t-Briec Unit is formed by a bimodal volcanic suite dated at ca 588 ± 11 Ma, and a volcanic-clastic series intruded by 590-580 Ma gabbro-dioritic, dioritic or gabbroic plutons. The lower part of the S^t-Briec Unit is underlain by a 750-650 Ma orthogneiss (Egal et al., 1996; Chantraine et al., 2001). The S^t-Briec Unit is interpreted as a back-arc basin opened within an Eo-Cadomian arc (Dissler et al., 1988; Chantraine et al., 2001). The Guingamp and S^t-Malo Units are characterized by high temperature gneiss, and migmatites developed at the expense of

Cryogenian to Ediacaran metasediments. The S^t-Malo migmatite and the Cancale leucogranite yield zircon U-Pb ages at 541 ± 5 Ma and 555 ± 16 Ma, respectively (Peucat, 1986; Egal et al., 1996). Lastly, the southeasternmost Fougères Unit consists of turbidites intruded by Early Cambrian (ca. 540 Ma, Pasteels and Doré, 1982) peraluminous granites, referred to as the Mancellian batholith (Graviou et al., 1988; Guerrot and Peucat, 1990). The Fougères Unit, devoid of metamorphism and ductile deformation, is interpreted as the Cadomian foreland basin filled by eroded material supplied from the Trégor and S^t-Brieuc units. Below the Early Ordovician unconformity, the Neoproterozoic rocks that crop out in Central Brittany consist of graywackes, sandstone and mudstone with volcanic intercalations. Their precise age and structure are poorly documented. A recent study combining trace fossils and detrital zircon age investigations were indicative of an Ediacaran-Fortunian age (Gougeon et al., 2018). These formations are considered as the southern distal extension of the Fougères Unit.

The Conquet and Nort-sur Erdre faults correspond to the ophiolitic sutures that separate the three domains (Fig. 1). In addition to these major paleogeodynamic boundaries, the Armorican Massif is cut by West-East to NW-SE striking dextral strike-slip faults of the North Armorican Shear Zone, North branch of the South Armorican Shear Zone, and the South Branch of the South Armorican Shear Zone (Jégouzo, 1980).

In the SE part of the Armorican Massif, on the two sides of the Nort-sur Erdre fault, the Variscan deformation both affected the southern margin of Armorica, and the northernmost part of the North Gondwana margin. The triangular area located between the north and south branches the South Armorican Shear Zone is also referred to as the Ligerian Domain (Cavet et al., 1970, 1978; Lardeux and Cavet, 1994; Cartier et al., 2001; Cartier and Faure, 2004; Ducassou et al., 2009, 2011, 2014; Figs. 2 and 3). Several lithotectonic units form the Ligerian domain (Figs. 2 and 3). Within this domain, the Lanvaux Unit consists of the Neoproterozoic to the Early Ordovician sedimentary and volcanic rocks intruded by the

Early Ordovician alkaline granites (Vidal, 1980; Ballèvre et al., 2009), now deformed as orthogneiss, exposed near Redon and Angers. The S^t-Georges-sur-Loire Unit is a clastic unit subdivided into a northern turbiditic sub-unit, and a southern olistostrome sub-unit (cf. details below). The Nort-sur-Erdre fault is the southern boundary of the S^t-Georges-sur-Loire Unit and represents the Eo-Variscan suture (Faure et al., 2005, 2008). Thus, together with the Lanvaux Unit, the S^t-Georges-sur-Loire Unit belongs to the North and Central Armorican Domain (i.e. Armorica). The age of the suture is still disputed; some authors argue for 360 Ma (e.g. Ballèvre et al., 2008, Paquette et al., 2017), whereas others propose a ca 400 Ma age (Pin, 1990; Faure et al., 2005, 2009).

South of the Nort-sur-Erdre fault (i.e. the Eo-Variscan suture), several litho-tectonic units occur. Adjacent to the fault, the Late Carboniferous sandstone with coal measures forms the "Sillon Houiller de la Basse-Loire" (Lower Loire coal trough). Early Carboniferous (Tournaisian-Visean) clastic rocks filled the Ancenis Basin. As indicated by the kinematics of the boundary fault and drag folds, the spindle-shaped Ancenis Basin opened as a left-lateral pull apart superimposed upon the Mauges Nappe (Diot and Blaise, 1978). Neoproterozoic metapelite, greywacke, and basalt are the main constituents of the Mauges Nappe. The metamorphic volcanic-sedimentary series is unconformably overlain by Cambrian conglomerate, sandstone and rhyolitic lava flows, and Ordovician sandstone. The Mauges Nappe overthrusts to the S (SW) an ophiolitic nappe composed of an assemblage of amphibolite, metagabbro, serpentinite (referred to as the Drain Unit), and chloritoid-chlorite-garnet metapelite called the Hâvre unit (Marchand, 1981; Ballèvre et al., 2009). A mylonitic metagabbro yields a zircon U-Pb age at 381.8 ± 2.3 Ma, interpreted as the magmatic crystallization age of this gabbro (Paquette et al., 2017). This nappe overthrusts the Champtoceaux complex formed by imbricated thrust sheets of high pressure rocks with mafic eclogites, orthogneiss, and paragneiss and locally migmatite. The mafic eclogites are

commonly retrogressed to garnet amphibolite enclosed in variously melted metapelites and orthogneisses. Monazite from a migmatitic leucosome yields a U-Th-Pb chemical age of 387 ± 6 Ma (Cocherie et al., 2005). The lowermost part of the stack of nappes comprises the Mauves Unit, which consists of paragneiss and micaschists that did not experience the HP metamorphism characteristic of the Champtoceaux complex (Marchand, 1981; Ballèvre et al., 2009). The nappe pile was folded to form an E-W trending upright antiform, the core of which is occupied by late Carboniferous two mica plutons. Most of these leucogranites develop S-C structures coeval with the dextral shearing of the southern branch of the South Armorican Shear Zone (Berthé et al., 1978; Jégouzo, 1980).

3. The S^t-Georges-sur-Loire Unit

North of the Nort-sur-Erdre fault, the southern part of the S^t-Georges-sur-Loire Unit is interpreted as a "block-in-matrix" formation, or olistostrome (Dubreuil, 1986; Cartier et al., 2001; Cartier and Faure, 2004; Fig. 4A, B). The main blocks consist of Silurian black chert (Fig. 4G), Late Silurian to Middle Devonian limestone (Fig. 4D), sandstone (Fig. 4C), spilitized mafic lava (Fig. 4H) with porphyritic basalt, pillow basalt, dolerite, gabbro, rhyolite, microgranite, andesite and trachyte (see details in Cartier and Faure, 2004). Geochemical analyses suggest that the mafic rocks were formed either in an active continental margin or in a back-arc basin partly floored by oceanic crust (Carpentier et al., 1982; Cabanis, 1986; Cartier and Faure, 2004). The matrix of the olistostrome commonly consists of pelite, silt or sandstone, and is described as a flysch deposit (Lardeux and Cavet, 1994; Fig. 4A, B, E, and F). Pebbly mudstones, with mm- to cm-sized clasts, are also representative of a gravity-driven, chaotic sedimentation deposited in a tectonically active region. Both the olistostrome and the sandstone-pelite sub-units experienced three phases of ductile deformation (Cartier and Faure, 2004).

The source of the olistoliths is controversial. A northern origin from the North-and-Central Armorican Domain is ruled out by the lithological and paleontological differences of the Paleozoic successions between the two domains (Dubreuil, 1986; Lardeux and Cavet, 1994). However, the formations exposed to the South of the Nort-sur-Erdre fault are only represented by metamorphic rocks, except for the Cambrian-Ordovician sedimentary cover of the Mauges Nappe. In particular, the Cambrian rhyolite that overlies the Neoproterozoic micaschist might have supplied blocks to the S^t-Georges-sur-Loire Unit. The southern boundary of the Carboniferous Ancenis Basin contains Ordovician to Emsian clastic formations (Ducassou et al., 2009, 2011), but magmatic rocks are absent there. Therefore, following a previous interpretation (Dubreuil, 1986), the possibility of a "missing domain" located between the S^t-Georges-sur-Loire Unit and the Mauges Nappe has been proposed (Faure et al., 2008). In this interpretation, a magmatic arc developed upon a Neoproterozoic Cadomian basement was separated from Armorica by a back-arc basin. During the Variscan tectonics, a part of the back-arc basin, represented by the S^t-Georges-sur-Loire Unit, was folded and thrust to the N or NW upon the Lanvaux Unit. The South Armorican nappe stack was formed by the Mauges Nappe, the ophiolitic nappe, and the Champtoceaux Complex resulted from the North-directed continental subduction of the North Gondwana margin. The reduced lithosphere thickness, below the back-arc basin, played a role in the breakup of the upper plate. This tectonic regime led to the subduction of the magmatic arc, and a great part of the back-arc basin. Consequently, the present S^t-Georges-sur-Loire Unit, and the Mauges Nappe are the only remnants of this back-arc system developed along the active margin of the southern Armorica microcontinent.

4. Petrography of the analyzed samples

Detrital zircon U-Pb age spectra and isotopic Lu-Hf proved to be an exceedingly useful tool to identify a geological history of sedimentary basins in orogenic belts due to the robustness of zircon to later thermal events and surface processes (Gehrels and Dickinson, 1995; Bruguier et al., 1997; Fedo et al., 2003). Since the proportion of zircons with different ages does not change drastically during sediment transport, owing to the inherent stability of zircon, they can reveal the history of the source area eroded continental crust and sedimentary regime in an ancient arc-trench system. In order to reveal the pre-Variscan lithological history of the south margin of Armorica block, eight samples from the St-Georges-sur-Loire Unit have been analyzed for zircon dating. Their locations are presented in Fig. 2, and the GPS coordinates are provided in Table 1. Seven samples (13FR12, 13FR18-1, 13FR19, 13FR21, OUT, MB2, RO2) are sandstone or siltstone from the olistostrome matrix. Sample 13FR13 is a rhyolitic block enclosed in the sandstone matrix of the olistostrome. The clastic matrix consists dominantly of rounded quartz grains, although recrystallization developed during the ductile deformation led to a smoothed grain boundary with pressure shadows. Other clasts found in the sandstone are plagioclase and muscovite (Fig. 5). In thin section, quartz grain embayments are indicative of a volcanic or hypovolcanic source (Fig. 5B).

5. Analytical procedures

5.1. Zircon U-Pb dating

Zircons were separated from each sample of ca. 2 kg in weight using standard heavy liquid and magnetic separation techniques. Zircon grains, together with standard 91500 and Temora zircons were cast in an epoxy mount, which were then polished to reveal the grain interiors for analysis. These grains were randomly selected in different sizes to avoid any age bias based on grain size. Zircon structures were documented with transmitted and reflected

light micrographs, and cathodoluminescence (CL) images were obtained by a CAMECA electron microscope in order to reveal their internal structures.

On the basis of these analyzed photographs, various grains were selected for analysis. Zircon U-Pb dating for seven sandstones (13FR12, 13FR18-1, 13FR19, 13FR21, OUT, MB2, RO2) and one rhyolite (13FR13) sample was analyzed using a quadrupole ICP-MS (Agilent 7500a) equipped with a 193 nm laser-ablation system (Analyte G2) at the Institute of Geology and Geophysics, Chinese Academy of Sciences in Beijing. U-Th-Pb ratios and absolute abundances were determined relative to the standard zircon. Detailed analytical procedures are described by Xie et al. (2008). The spot diameter is 40 μm in size. Correction of common lead was applied following the method described by Andersen (2002). The GLITTER program was used for data processing (van Achterbergh et al., 2001). Data plotting was carried out using the Density Plotter program (Vermeesch, 2012). LA-ICPMS zircon U-Pb analytical data are presented in Table 2. Uncertainties on individual analyses in data tables are reported at a 1σ level. Analyses that are $>15\%$ discordant (by comparison of $^{206}\text{Pb}/^{238}\text{U}$ and ^{207}Pb - ^{206}Pb ages) are excluded (Table 2). Zircon ages younger than 1000 Ma were based on $^{206}\text{Pb}/^{238}\text{U}$ ratios, and ages older than 1000 Ma were based on $^{207}\text{Pb}/^{206}\text{Pb}$ ratios.

5.2. Zircon Lu-Hf isotopes

Zircon Lu-Hf isotopic analysis was carried out in situ on a Neptune multi-collector ICP-MS equipped with a Geolas-193 laser ablation system at the Institute of Geology and Geophysics, Chinese Academy of Sciences. Previously analyzed zircon grains for U-Pb isotopes were chosen for Lu-Hf isotopic analyses, with ablation pits of 44 or 60 μm in diameter, ablation time of 26 seconds, repetition rate of 10 Hz, and laser beam energy density of 10 J/cm^2 . The detailed analytical procedures are similar to those described by Wu et al.

(2006). Measured $^{176}\text{Hf}/^{177}\text{Hf}$ ratios were normalized to $^{179}\text{Hf}/^{177}\text{Hf} = 0.7325$. Zircon standards Mud Tank and GJ-1 were analyzed alternately with the unknowns. During the course of this study, we obtained $^{176}\text{Hf}/^{177}\text{Hf}$ ratio of 0.282504 ± 0.000032 (2σ , $n=58$) and 0.282022 ± 0.000051 (2σ , $n=58$) for Mud Tank and GJ-1, respectively, in good agreement within errors with the recommended values (Woodhead and Hergt, 2005; Morel et al., 2008).

6. Zircon U-Pb and Lu-Hf analytical results

Representative CL images of the dated zircons are shown in Fig. 6. All analyzed samples, yield zircon grains with a wide range in size from 50 μm to 200 μm (Fig. 6). Except for a few prismatic crystals, most of the grains possess a rounded shape with abraded crystallographic faces, indicating long fluvial transportation. Most of the grains exhibit a zonal structure, sometimes with an inner core surrounded by recrystallization rims with clear oscillatory zoning.

Lu-Hf isotopes were obtained on dated zircon grains, with analytical spots adjacent to those for U-Pb dating, or in the same growth domain as inferred from CL imagery (Fig. 6). U-Pb ages and $\epsilon_{\text{Hf}}(t)$ results of individual samples are plotted in Figs. 7 and 8. Diagrams of $\epsilon_{\text{Hf}}(t)$ values are presented in Fig. 12, and data are summarized in Table 3. The zircon two-stage model Hf age (T_{DM}^2) are presented in Figs. 9 and 10.

6.1. 13FR12

Sample 13FR12, from Champtocé (Figs. 2, 4A, Table 1), is a middle- to fine-grained sandstone. The grain size is around 0.18-0.40 mm and commonly 0.25-0.35mm (Fig. 5A). Major components are quartz, plagioclase, muscovite, and lithic fragments. In thin section,

poorly rounded quartz with undulatory extinction represents 75-78% of the detrital component. Plagioclase and muscovite, less than 1%, are rarely observed (Fig. 5A).

In this sample, a total of 100 points on 100 grains were analyzed, and 94 analyses were concordant (Table 2). Concentric zoning is distinctly demonstrated in euhedral zircon grains with 70 to 250 μm in length, rounded or prismatic shape, and length-width ratios of 1:1 to 2.5:1. Th/U ratios range from 0.01 to 2.52. Except one grain, Th/U ratios are higher than 0.1 (Table 2). Combined with the CL images, these compositions and morphometric features of the zircons are indicative of a magmatic origin (Fig. 6). The measured apparent ages range from 3300 Ma to 458 Ma (Table 2). Two major age groups occur at 760-450 Ma and 2210-1560 Ma, and one subordinate group at 2850-2500 Ma (Fig. 7). Two dominant age peaks are around 1865 Ma and 595 Ma, with a subordinate age peak at ca. 2050 Ma. A low background of dispersed ages from Mesoarchean to the Neoarchean is also demonstrated (Fig. 7).

Forty dated zircons were chosen for in situ Hf isotope analyses with $^{176}\text{Hf}/^{177}\text{Hf}$ ratios varying from 0.280867 to 0.282355 (Fig. 6; Table 3). All the analyses have $\epsilon_{\text{Hf}}(t)$ values of +6.3 to -23.9 with the two dominant peaks at -4.5 and -9.9, and a subordinate peak at -18.4 (Fig. 8). In sample 13FR12, zircon two-stage model Hf ages (T_{DM^2}) range from 1.72 to 3.70 Ga with two clusters around 2225 Ma, and 2820 Ma (Fig. 9; Table 3).

6.2. 13FR13

Sample 13FR13 is a rhyolitic block in a siltstone matrix at Epiré, and represents the olistostrome sub-unit of the S^t-Georges-sur-Loire Unit (Fig. 2, Table 1). In thin section, this sample is rich in plagioclase with grain sizes from 0.1 mm to ~5 mm (Fig. 5B). The major components are polycrystalline aggregates of quartz, plagioclase, and orthoclase phenocrysts.

Microcrystalline or aphanitic quartz and plagioclase appear as mesostasis. Opaque minerals are also present. Magmatic minerals are still preserved. No secondary plagioclase was observed in the thin section. Concentric zoning is distinct in euhedral zircon grains with 110 to 300 μm in length, prismatic shape, and length-width ratios of 1.5:1 to 4:1 (Fig. 6). Th/U ratios range from 0.05 to 1.53. Except for two grains, these zircons have Th/U ratios higher than 0.1 (Table 2).

A total of 90 analyses on 90 grains were made, of which 10 analyses are discordant (Table 2). 80 concordant ages range from 2320 Ma to 445 Ma (Table 2). Around 80 percent of these analyses fall within an age range of 600-450 Ma, and 32 analyses yield a mean $^{206}\text{Pb}/^{238}\text{U}$ age of 479.6 ± 3.3 Ma (Fig.7; Table 2), which is interpreted as the eruption age of this rhyolite sample (Fig.7). Precambrian zircons are rare.

Among these 80 concordant ages, 28 “younger” zircons (528-473 Ma) were chosen for in situ Hf isotope determination (Fig. 6). Compared with the highly variable ages of the sandstone or siltstone of the olistostrome matrix, the good concentration of the zircon crystallization ages of these zircons is in agreement with the narrow range of their $^{176}\text{Hf}/^{177}\text{Hf}$ ratios, varying from 0.282134 to 0.282517 (Table 3). All the analyses exhibit $\varepsilon_{\text{Hf}}(t)$ values from +2.8 to -12.5 with a peak at -6.2 (Fig. 8). In this sample, the T_{DM^2} age ranges from 1.25-2.22 Ga with a cluster around 1830 Ma (Fig. 9; Table 3).

6.3. 13FR18-1

Sample 13FR18-1 was collected from the Olistostrome sub-unit of the S^t-Georges-sur-Loire Unit, at Villemoissan (Fig. 2; Table 1), from a lens of coarse sandstone in the siltstone matrix (Fig. 4B). This coarse grained, poorly sorted, and angular or sub-angular sandstone has

grain sizes around 0.3-1.5 mm with a concentration around 0.3-0.7 mm (Fig. 5C). The major detrital components are polycrystalline quartz, plagioclase, muscovite, and lithic fragments. In thin section, poorly rounded quartz grains represent nearly 70% of the detrital component. Plagioclase and muscovite are less than 1%, and lithic fragments nearly 30% (Fig. 5C). Zircons are mostly euhedral to subhedral, transparent and colorless, ranging from 30 to 150 μm in length, and possess length to width ratios between 1.1:1 and 2.5:1. Concentric zoning is common in most crystals in CL images (Fig. 6).

Of the 100 analyses conducted on 100 zircons for this sample, 91 are concordant within uncertainties (Table 2). All zircons have Th/U ratios higher than 0.1. Concordant ages range from 2928 Ma to 563 Ma, with one dominant peak at ca. 610 Ma and one subordinate peak at ca. 1920 Ma. Three low backgrounds of dispersed ages fall into the Mesoarchean, Neoproterozoic, and Neoproterozoic (Fig. 7).

Twenty-eight dated zircons were chosen for in situ Hf isotope analyses among these 91 concordant analyses (Fig. 6; Table 3). The $^{176}\text{Hf}/^{177}\text{Hf}$ ratios vary from 0.280938 to 0.282335. All the analyses have a $\epsilon_{\text{Hf}}(t)$ range from -20.4 to +1.7 with a peak at -5.5 (Fig. 8). The zircon T_{DM}^2 ranges from 3540 to 1700 Ma with clusters around 2270 Ma, 2710 Ma, and 3430 Ma (Fig. 9; Table 3).

6.4. 13FR19

Pervasively deformed muddy sandstone, sample 13FR19, is from Roche Ayrault (Fig. 2). Pressure solution cleavage is well developed in the outcrop and thin section (Figs. 4C and 5D). Fine grain quartz and mica constitute the major components of this sample (Fig. 5D). Zircon grains possess a relatively-round shape, ranging from 30 to 70 μm in size (Fig. 6).

A total of 69 analyses on 69 grains were obtained (Table 2). Among these analyses, 47 have concordant ages from 3109 Ma to 411 Ma. Two dominant age groups are documented at 720-400 Ma with a peak of ca. 600 Ma, and 3150-1550 Ma with a peak around 1975 Ma (Fig. 7). This sample is the only one to yield detrital zircon ages younger than 450 Ma (411 ± 7 Ma, 411 ± 8 Ma, and 426 ± 6 Ma). Th/U ratios of all zircons from this sample are close to or greater than 0.1.

Because of the small size, only 19 dated zircons were measured for in situ Hf isotope determination from the 47 concordant analyses (Fig. 6; Table 3). The $^{176}\text{Hf}/^{177}\text{Hf}$ ratios vary from 0.281296 to 0.282565. All $\epsilon_{\text{Hf}}(t)$ values range from +2.6 to -20.9 with two dominant peaks at -1.4 and -9.5 (Fig. 8). The T_{DM^2} model ages vary from 1.31 to 3.20 Ga with clusters around 2305 Ma, and 2870 Ma (Fig. 9; Table 3).

6.5. 13FR21

To the west of Beaulieu-sur-Layon, the Pierre Bize quarry exposes a schistose-fine grain conglomerate with limestone and volcanic pebbles, which was chosen for detrital zircon analysis (Fig. 4D). A coarse-grained, poorly-sorted sandstone, with angular-subangular shaped, gravel-size clasts has a 0.3-1.5 mm grain size with 0.3-1.1 mm concentration (Fig. 5E). The main detrital components are polycrystalline quartz (~40%), plagioclase (~2%), muscovite (more than 20%), and lithic fragments with carbonate cementation (Fig. 5E).

Zircon grains are mostly euhedral, transparent and colorless, ranging from 70 to 250 μm in length, and with length to width ratios between 1.3:1 and 4:1. A total of 100 analyses of 100 grains from sample 13FR21 were obtained. 94 analyses are concordant within

uncertainties (Table 2). Combined with CL images, the high Th/U ratio (0.07-2.61) is indicative of magmatic origin (Fig. 6). Concordant ages range from 2690 Ma to 399 Ma, with one dominant peak at ~525 Ma. A few ages, between the Neoproterozoic and Paleoproterozoic are recorded with a small peak at 2630 Ma (Fig. 7).

Thirty-five dated zircons were chosen for in situ Hf isotope analyses among these 94 concordant analyses (Fig. 6; Table 3). The Hf isotopic compositions reveal $^{176}\text{Hf}/^{177}\text{Hf}$ ratios varying from 0.281953 to 0.282718. $\varepsilon_{\text{Hf}}(t)$ values range from +9.6 to -18.7 with two dominant peaks at 2.7 and -3.4 (Fig. 8). More than half of the $\varepsilon_{\text{Hf}}(t)$ values of Neoproterozoic to Cambrian zircons are positive (Table 3). The T_{DM^2} model ages range from 3540 to 1700 Ma with a cluster around 1285 Ma (Fig. 9; Table 3).

6.6 RO2

Sample RO2 is a fine-grained siltstone in the clastic matrix of the olistostrome sub-unit, taken from the S^t-Georges-sur-Loire Unit near Rochefort-sur-Loire (Figs. 2, 4E; Table 1). This siltstone is fine grained, poorly-sorted, and angular. Its grain size is around 0.1-0.7 mm with a concentration around 0.2-0.4 mm (Fig. 5F). The major detrital components are quartz, muscovite, and sedimentary lithic fragments. In thin section, poorly rounded quartz represents 78% of the detrital component, and muscovite comprises about 20% (Fig. 5F).

Zircon grain size ranges from 40 to 160 μm with length to width ratios between 1:1 and 2:1 (Fig. 6). A total of 185 analyses of 185 grains were obtained for this sample (Table 2). Among these analyses, 100 concordant ages range from 3300 Ma to 447 Ma with Th/U ratios close to or higher than 0.1 (Table 2). Two dominant age groups occur at 720-460 Ma with a

peak of ca. 590 Ma, and 2200-1900 Ma with two peaks around 2130 Ma and 1910 Ma. A low background of dispersed ages ranges from 3300 Ma to 2500 Ma (Fig. 7).

Forty dated zircons were measured for Hf isotope determination among these 117 concordant analyses (Fig. 6; Table 3). $^{176}\text{Hf}/^{177}\text{Hf}$ ratios vary from 0.280543 to 0.282664. All the analyses reveal a $\epsilon_{\text{Hf}}(t)$ range from -31.3 to +30.9 with two dominant peaks at +6.5 and -1.7 (Fig. 8). T_{DM^2} model ages range from 0.63 to 3.95 Ga with clusters around 2970 Ma, and 2255 Ma (Fig. 9; Table 3).

6.7 OUT

The sandstone sample OUT was collected to the NW of the S¹-Georges-sur-Loire Unit (Fig. 2; Table 1). In the fine-grained, poorly sorted, and angular matrix-supported sandstone, grain size is around 0.1-0.5 mm with a concentration around 0.2-0.4 mm (Fig. 5G). The major detrital components are quartz, muscovite and sedimentary lithic fragments. In thin section, poorly rounded to subangular gravel-size quartz represents 92% of the detrital component, muscovite is less than 1%, and lithic fragmented about 7% (Fig. 5G). As a fine grained sandstone, the zircon grains range from 50 to 250 μm with length to width ratio between 1:1.2 and 2.5:1 (Fig. 6).

A total of 100 analyses from 100 grains were obtained for this sample (Table 2). Among these analyses, 71 are concordant within uncertainties, ranging from 2998 Ma to 299 Ma. Only one grain is younger than 480 Ma (Fig. 7). The Th/U ratios of almost all zircons are greater than 0.1, except for one grain (Table 2). Two dominant age groups are at 680-490 Ma with a peak of 595 Ma, and 2200-1890 Ma with a peak around 1930 Ma (Fig. 7).

Seventy-one dated zircons were chosen for in situ Hf isotope analyses among these 71 concordant analyses (Fig. 6; Table 3). The $^{176}\text{Hf}/^{177}\text{Hf}$ ratio varies from 0.280793 to 0.282602. $\epsilon_{\text{Hf}}(t)$ values range from +24.1 to -25.8 with two dominant peaks at -4.0 and -7.8 and also with two subordinate peaks at 7.6 and -16.7 (Fig. 8). The T_{DM^2} model ages range from 0.98 to 3.62 Ga with clusters around 1200 Ma, 1870 Ma, and 2945 Ma (Fig. 9; Table 3).

6.8 MB2

Sample MB2 is a deformed sandstone from the matrix of the olistostrome subunit of the S^t-Georges-sur-Loire Unit, Moulin de Beaupreau (Fig. 2; Table 1). In this fine-grained, angular to subangular sandstone, grain size is around 0.1-0.7 mm with a concentration around 0.3-0.5 mm (Fig. 5H). The major detrital components are quartz, muscovite and sedimentary lithic fragments. In thin section, deformed quartz grains represent 78% of the detrital component, muscovite and sedimentary lithic fragments are more than 7%, and 15%, respectively (Fig. 5H). The zircon grains range from 70 to 150 μm with length-to-width ratios between 1:1 and 1.7:1 (Fig. 6).

A total of 100 analyses on 100 grains were carried out (Table 2), and 74 are concordant, ranging in age from 2717 Ma to 280 Ma. The Th/U ratios of all zircons are greater than 0.1 (Table 2). Two dominant age groups are documented at 680-520 Ma with a peak of ca. 615 Ma, and 2230-1855 Ma with a peak around ca. 1940 Ma (Fig. 7). Two grains are younger than 470 Ma (Fig. 7).

Hf isotope determination of seventy-two dated zircons from 74 concordant analyses shows $^{176}\text{Hf}/^{177}\text{Hf}$ ratios vary from 0.280781 to 0.282567 (Fig. 6; Table 3). All the analyses exhibit $\epsilon_{\text{Hf}}(t)$ values from -27.4 to +8.0 with one dominant peak at -5.1. Several subordinate

peaks can be identified at +6.4, -10.5, -16.2, and -22.9 respectively (Fig. 8). The T_{DM}^2 range from 1.11 to 4.29 Ga with clusters around 1810 Ma, 2300Ma, and 2830 Ma (Fig. 9; Table 3).

7. Provenance of the detrital zircons in St-Georges-sur-Loire Unit

The S^t-Georges-sur-Loire Unit has been interpreted as a remnant back-arc basin deformed during the Variscan orogeny (Carpenter et al., 1982; Cabanis, 1986; Cartier and Faure, 2004; Fig. 1). Most of the sedimentary and magmatic blocks enclosed in a clastic matrix are interpreted as olistoliths derived from a southern area called the "missing domain", presently exposed as the Variscan Mauges Nappe composed of Cadomian rocks and its Early Paleozoic sedimentary cover (Dubreuil, 1986; Ducassou et al., 2009, 2011, 2014). The "missing domain" is interpreted to have been subducted below Armorica during the Early Devonian (Faure et al., 2008) or the Middle Devonian Variscan collision (Ducassou et al., 2014; Paquette et al., 2017). Eight samples have been analyzed for zircon geochronology in the S^t-Georges-sur-Loire Unit (Fig. 2); seven samples of them are sandstone or siltstone in the olistostrome matrix, and one is a rhyolitic block as an olistolith. Our new detrital zircon U-Pb ages exhibit age peaks from the Neoproterozoic to Early Paleozoic at 2650 Ma, 2065 Ma, 1910 Ma, 625 Ma, 595 Ma and 490 Ma (Fig. 11A). Statistically, the Neoproterozoic (Cadomian) age cluster is the dominant one that contains nearly half ($45.2 \pm 2.8\%$) of all zircon ages (Fig. 11A), similar to the detrital zircon age distribution from the Late Paleozoic sedimentary sequences of the Montagne Noire area of French Massif Central, Corsica and West Avalonia (Ganderia and Notre Dame Subzone) (Fig. 13; Henderson et al., 2016, 2018; Lin et al., 2016; Avigad et al., 2018). A secondary Paleoproterozoic age peak (with $27.4 \pm 1.7\%$ of measured zircon grains) range from 2100 Ma to 1900 Ma (Lin et al., 2016). Nearly 20% of the

analytical results constitute a 490 Ma peak that was related to Late Cambrian rifting (Fig.11A).

7.1. Provenance of Paleozoic zircons

Early Paleozoic ages around 490 Ma and 525 Ma (Early Cambrian) were identified in the contributions of the 13FR13 Epiré rhyolite, and in the 13FR21 Pierre Bize sandstone (Figs. 7, 11A). Cambrian-Ordovician alkaline magmatism is widespread in the pre-Mesozoic European basement. It can be divided into two distinct rifting events, a Cambrian one at ca. 520 Ma represents a failed rift stage, and an Early-Middle Ordovician one at ca. 480-460 Ma that corresponds to the main stage responsible for the break-up of the Pannotia megacontinent and the opening of the Early Paleozoic oceans (e.g. Matte, 2001; Winchester et al., 2002; Linneman et al., 2004, 2007; Murphy et al., 2006). In the Armorican Massif, Cambrian magmatism is well recorded in the North Armorican Domain (Doré, 1994; Le Gall, 1993), and in the South Armorican Domain, for example, the protolith of the migmatitic orthogneisses from the Champtoceaux Unit (Cocherie et al., 2005), or the Cambrian rhyolite in the Mauges Nappe (Thiéblemont et al., 2001). Early Ordovician magmatism is also well preserved in the Armorican Massif (Auvray et al., 1980; Paquette et al., 1984, 2017; Janjou et al., 1998; Ballèvre et al., 2002, 2012; Galerne et al., 2006; Diot et al., 2007; Casas and Murphy, 2018), and the French Massif Central (e.g. Alexandrov et al., 2001; Melleton et al., 2010; Lin et al., 2016). In contrast, Late Paleozoic ages are rarely recorded in the detrital zircon populations (Figs. 7 and 11A; Table 2), but limited zircon grains in sample 13FR19 demonstrate three ages at 411 ± 7 Ma, 411 ± 8 Ma, and 426 ± 6 Ma, respectively. Although these results may not be sufficient to directly prove the existence of the Variscan magmatic arc as previously proposed (Table 2; Dubreuil, 1986; Cartier and Faure, 2004; Faure et al., 2008;

Ducassou et al., 2014), however, considering detrital mica $^{40}\text{Ar}/^{39}\text{Ar}$ ages at 430-425 Ma reported in the Ancenis Basin, and detrital zircon U-Pb ages from our samples, it implies a Variscan thermo-tectonic event recorded in the sediments of the Ancenis Basin and the S^t-Georges-sur-Loire Unit (Ducassou et al., 2014; Fig. 13; Table 2).

A possible geodynamic reconstruction of the Silurian-Devonian geodynamic setting is proposed in Fig. 14. During the Silurian-Early Devonian (ca 440-400 Ma,) the Medio-European Ocean located between Armorica and Gondwana was closed by north-directed subduction (Faure et al., 2008). The southern continental margin of Armorica was a magmatic arc-back arc system. Detrital zircon analyses from the S^t-Georges-sur-Loire Unit document Early Paleozoic, Neoproterozoic and Paleoproterozoic-Archean sources. Presently, the Icartian basement, Cadomian orogenic belt and Early Paleozoic magmatic rocks are exposed in North-and Central Armorica, and to a lesser extent, in the basement of the magmatic arc that is only preserved in the Mauges nappe. Therefore, both northern and southern provenances must be considered.

Nearly 10% of the detrital zircons from the S^t-Georges-sur-Loire yield Ediacaran-Early Cambrian ages, around 540 Ma. These ages correspond to that of peraluminous magmatism of the Mancellian granites in the Fougères Unit, and migmatization in the S^t-Malo and Guingamp Units (Fig. 1). Both rock types record late Cadomian crustal melting (Egal et al., 1996; Chantraine et al., 2001).

Detrital zircons clustering between 480 and 560 Ma have mostly negative $\varepsilon_{\text{Hf}}(t)$ values in agreement with old continental crustal sources. A few positive $\varepsilon_{\text{Hf}}(t)$ values is indicative of an addition of juvenile material from a depleted mantle during the Cambrian and Ordovician rifting (Kröner et al., 2014; Fig. 13). The late-orogenic Cadomian magmatism at 550-540 Ma is typical of crustal reworking (Fig. 9; Table 3). The Early to Middle Cambrian (ca 520 Ma),

and the Early to Middle Ordovician (490-460 Ma) rifting events might have been associated with a crustal reworking along with a minor mantle input (Auvray et al., 1980; Paquette et al., 1984; Doré, 1994; Le Gall, 1993; Ballèvre et al., 2002; Linneman et al., 2004, 2007; Cocherie et al., 2005; Murphy et al., 2006).

7.2. Provenance of Neoproterozoic zircons

A main Ediacaran peak, between 625 Ma and 595 Ma, is prominently marked in most samples (Figs. 7 and 11A), indicating that the provenance of the S^t-Georges-sur-Loire Unit material may be from a Neoproterozoic basement, such as the Cadomian belt exposed in the S^t-Brieuc and Trégor Units of the north Armorican massif (Chantraine et al., 2001). There, a large number of plutons yield Ediacaran ages at ca. 615-570 Ma (Adams, 1976; Ruffet et al., 1990, 1991; Dallmeyer et al., 1991; Egal et al., 1996). Thus, eroded plutons and volcanic rocks might have a significant role as sources providing detrital zircons to the S^t-Georges-sur-Loire Unit. In the Pierre Bize coarse sandstone (sample 13FR21), the 525 Ma peak suggest a possible source from plutons equivalent to the Thouars microgranite and the Mouclerie granodiorite that crop out in the Mauges Nappe of the S. Armorican Domain (Fig. 1; Thiéblemont et al., 2001), and the Mauges Nappe represents the only exposure of the "missing domain" at the south S^t-Georges-sur-Loire Unit before the Variscan orogeny (Dubreuil, 1986; Cartier and Faure, 2004; Faure et al., 2008). Thus the provenance of the Cadomian zircons of the matrix of the S^t-Georges-sur-Loire olistostrome might be supplied from the Neoproterozoic basement of the Mauges Nappe and/or its equivalent, or alternatively, from the Cadomian orogen exposed in the Central-North Armorican Domain (Fig. 13). Although a northern provenance cannot be ruled out, a southern origin would be in better

agreement with the sedimentological features of the olistoliths (Dubreuil, 1986; Cartier and Faure, 2004).

7.3. Inherited Neoproterozoic and Paleoproterozoic zircons from the Icartian basement

One peak at 2090-2040 Ma is obtained from samples 13FR12 and 13FR21 (Fig. 11A). This age group well recorded in the Trégor Unit of the North Armorican Domain characterizes the Icartian basement (Fig. 1; Calvez and Vidal, 1978), which is an equivalent of the Eburnean basement of the West African Craton (Allègre and Ben Othman, 1980). Similar ages are also discovered from inherited zircons in the Late Carboniferous (320-300 Ma) peraluminous granites (Ballouard et al., 2018). The notable peak at ca. 1910 Ma, marked in most samples, indicate a major source from an ancient Icartian continental crust. In the Carboniferous Ancenis Basin deposited on the Mauges Unit, and in the Late Carboniferous coal-bearing basin, a background of dispersed ages ranges from Neoproterozoic to Paleoproterozoic with three peaks about 2650 Ma, 2065 Ma and 1910 Ma (Fig. 11B; Ducassou et al., 2014). Thus, these grains might either be reworked in the vicinity of the S^t-Georges-sur-Loire Unit, or directly supplied from a northern Icartian source.

Recycled zircons from Archean-Paleoproterozoic magmatic and metamorphic sources are documented in the Iberian massif (Fernández-Suárez et al., 2000, 2002, 2003; Martínez Catalán et al., 2004, 2008, 2009), the French Massif Central (Lin et al., 2016), Cadomian metasedimentary rocks in Corsica (Avigad et al., 2018), and Central European Variscan Massifs (Friedl et al., 2000; Linneman et al., 2004).

7.4. Interpretation of the Hf isotopes

Hf isotopic data show the predominance of crustal vs. mantle-derived sources in felsic to intermediate magmatism. As indicated by Condie et al. (2009), 75-80% of juvenile continental crust had been extracted from the mantle during the Archean and the Paleoproterozoic. Detrital zircon $\varepsilon_{\text{Hf}}(t)$ values in the S^t-Georges-sur-Loire Unit record a relatively wide variation from -12 to +4, with a peak at -5 (Fig. 10A). Hf crustal model ages (T_{DM^2}) range from 3.5 to 1.0 Ga, with peaks at ~1.28, 1.98, 2.20, and 2.86 Ga (Fig. 10B). The Hf isotopic composition for detrital zircons clustering between 480 and 650 Ma demonstrate a relatively large range of $\varepsilon_{\text{Hf}}(t)$ values from -25 to +10 (Fig. 12B). Despite two anomalous $\varepsilon_{\text{Hf}}(t)$ values higher than the depleted mantle line, only a few points reach the depleted mantle line, and points with $\varepsilon_{\text{Hf}}(t)$ value lower than -20 are also rare (Figs. 10A and 12A). Combined with the calculated T_{DM^2} ages for most of the Phanerozoic zircons that range from 1.2 Ga to 3.0 Ga (Figs. 10B and 12A), these results are comparable with the previous geochemical studies on the mafic complexes that range in age from ca. 400 Ma to 330 Ma, which are characterized by high ε_{Nd} values related to the lithosphere of the Rheic Ocean (Murphy et al., 2011, 2014).

8. Conclusion

Detrital zircon ages of the clastic matrix in the S^t-Georges-sur-Loire olistostrome display predominant Neoproterozoic to Early Paleozoic (625-490 Ma) populations. These zircons are related to Cambrian aborted rifting at ca. 525 Ma, and Early Ordovician rifting around 480-470 Ma that separated the Armorica microcontinent from Gondwana. Poorly constrained Silurian to Early Devonian magmatic rocks that yield a whole rock Rb-Sr age at ca. 400 ± 24 Ma (Carpenter et al., 1982) are found as olistoliths in the S^t-Georges-sur-Loire

Unit. However, this age peak is not documented in our study, as well as in the late Ancenis and Coal basins. On the contrary, the Neoproterozoic age population corresponds well to the Cadomian orogeny exposed on both sides of the S^t-Georges-sur-Loire Unit. A southern provenance, from the Mauges Nappe and the "missing domain" is in better agreement with sedimentological data (e.g. Dubreuil, 1986; Cartier et al., 2001), however a northern one supplied by the Cadomian belt of the North-Central Armorican domain cannot be ruled out. Most of the grains record negative Hf isotopic values, indicating that crustal melting played a major role in the evolution of the Armorica microcontinent. Positive $\epsilon_{\text{Hf}}(t)$ values are related to the Neoproterozoic Cadomian orogeny in which subduction-related juvenile magma are recognized.

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Figure captions

Fig. 1. Tectonic map of the Armorican Massif (modified from Faure et al., 2005).

A: Location of the S^t-Georges-sur-Loire Unit and suture zones in the French Variscan belt.

Fig. 2. Structural map of the Ligerian domain with sample locations. (SG: S^t-Georges-sur-Loire).

Fig. 3. Schematic cross section of the Ligerian domain (located in Fig. 2). Diamond: eclogites. Star: migmatitic leucosome with monazite U-Th-Pb chemical age at 387 ± 6 Ma (from Faure et al., 2008).

Fig. 4. Field photos and photomicrographs of the olistostrome sub-unit of the S^t-Georges-sur-Loire Unit.

A: Highly mature quartz-sandstone (Champtocé, 13FR12)

B: Lenticular coarse sandstone in a well-cleaved siltstone matrix of the olistostrome of S^t-Georges-sur-Loire (Villemoissan, sample 13FR18-1);

C: Chert enclosed in a cleaved siltstone matrix (Roche Airault, sample 13FR19);

D: Limestone and volcanic pebbles in a well-cleaved coarse sandstone conglomerate (Pierre Bize, sample 13FR21)

E: Well-bedded siltstone (Rochefort-sur-Loire, sample RO2);

F: Silty matrix with bedding (S_0) and cleavage (S_1) intersection in a normal limb of a N-verging fold (Villemoissan);

G: Elongated radiolarian with pressure shadows in a chert olistolith, Millé, location E in Fig. 2;

H: Volcaniclastic chlorite schist with shear bands, Faye d'Anjou, location F in Fig. 2.

Fig. 5. Photomicrographs of thin sections of dated rocks: A: Sandstone with detrital muscovite (ms) and plagioclase (pl) in sample 13FR12, Champtocé; B: Volcanic clasts in a

rhyolitic block in sandstone, sample 13FR13, Epiré; C: coarse-grained sandstone of sample 13FR18-1, Villemoissan; D: Well-developed cleavage in muddy sandstone, sample 13FR19, Roche Airault; E: Polymictic sandstone with calcite (cal) cement, sample 13FR21, Pierre Bize; F: Muddy siltstone with detrital muscovite (ms) and plagioclase (pl), sample RO2, Rochefort-sur-Loire; G: Coarse-grained sandstone with detrital muscovite, sample OUT, N of St Georges; H: sandstone with deformed quartz grain with pressure shadows, and detrital zircon (zr), sample MB2, Moulin de Beaupréau.

Fig. 6. Representative cathodoluminescence (CL) images of selected detrital zircons from the olistostrome sub-unit of the S^t-Georges-sur-Loire. The solid and dashed circles represent U-Pb and Lu-Hf isotopic analytical sites, respectively. Analytical results are presented in Tables 2 and 3.

Fig. 7. Probability diagrams of U-Pb ages of the detrital zircons from the olistostrome sub-unit of the S^t-Georges-sur-Loire. See Fig. 2 for sample locations, and Table 2 for zircon ages.

Fig. 8. Diagrams of $\epsilon_{\text{Hf}}(t)$ values from the same samples as those analyzed for detrital zircons in the S^t-Georges-sur-Loire olistostrome unit.

Fig. 9. Diagrams of T_{DM}^2 values from the same samples as those analyzed for detrital zircons in the St-Georges-sur-Loire olistostrome unit.

Fig. 10. A: Diagram of $\epsilon_{\text{Hf}}(t)$. B: Diagram of the two-stage model Hf age (T_{DM}^2) versus age plots for detrital zircons, manifesting the source of zircons. Zircon Hf model ages are older

than their crystallization ages, revealing a formation from re-melting of older crustal rocks crystallized during the previous events.

Fig. 11. A. Synthesis and comparison of cumulative probability plots of detrital zircon U-Pb ages from the olistostrome sub-unit of S^t-Georges-sur-Loire; B. Ancenis Basin, and Late Carboniferous coal-bearing basin of Basse Loire (from Ducassou et al., 2014). Histograms only include concordant detrital zircon ages obtained in this study.

Fig. 12. (A) Temporal variations of $\epsilon_{\text{HF}}(t)$ values at 0-4.0 Ga of this study. The crustal evolution range comes from Linnemann et al. (2014). Dashed lines demonstrate evolution of zircons with depleted mantle model ages between 1.2 Ga, 1.8 Ga and 2.8 Ga. Half of the zircons plots in the crustal evolution zone between 1.2 Ga and 1.8 Ga, but Archean data are consistent with the range of the Archean crust. (B) Diagram of $\epsilon_{\text{HF}}(t)$ value versus age for younger zircons at 800-400 Ma.

Fig. 13. Synthetic and comparison of the cumulative probability plots of detrital zircon U-Pb ages from the olistostrome sub-unit of the S^t-Georges-sur-Loire Unit (this study), Ancenis Basin and Coal-bearing basin of the Basse-Loire (Ducassou et al., 2014), Late Paleozoic sedimentary sequences of the recumbent folds and the foreland basin of the Montagne Noire (Lin et al., 2016), Cadomian metasediments and Ordovician sandstone of Corsica (Avigad et al., 2018), and West Avalonia (Henderson et al., 2016, 2018).

Fig. 14. Schematic model of the Silurian-Early Devonian (ca. 440-400 Ma) oceanic convergence between Armorica and Gondwana that led to the closure of the Medio-European Ocean (modified from Faure et al., 2008). The southern continental margin of Armorica is a

magmatic arc-back arc system. Detrital zircon analyses from the S^t-Georges-sur-Loire Unit indicate Early Paleozoic, Neoproterozoic and Paleoproterozoic-Archean sources. Presently, the Icartian basement, Cadomian orogenic belt and Early Paleozoic magmatic rocks are exposed in North-and Central Armorica and to a lesser extent, in the basement of the magmatic arc now only preserved in the Mauges nappe.

Table 1: Summary of the analyzed samples from the olistostrome of the sub-unit of the S^t-Georges-sur-Loire Unit.

Table 2: Detrital Zircon U-Pb analytical data. Discordance (%) is calculated as (1) $100\% * (^{207}\text{Pb}/^{206}\text{Pb} \text{ age} - ^{206}\text{Pb}/^{238}\text{U} \text{ age}) / (^{207}\text{Pb}/^{206}\text{Pb} \text{ age})$, if the $^{206}\text{Pb}/^{238}\text{U}$ age is older than 1000 Ma; (2) $100\% * (^{207}\text{Pb}/^{235}\text{U} \text{ age} - ^{206}\text{Pb}/^{238}\text{U} \text{ age}) / (^{206}\text{Pb}/^{238}\text{U} \text{ age})$, if the $^{206}\text{Pb}/^{238}\text{U}$ age is younger than 1000 Ma.

Table 3: LA-ICP-MS zircon Lu-Hf isotopic data. Age is the same from Table 2
T(DM) and T(DM2) are one-stage and two-stage Hf model ages, respectively.

$^{176}\text{Hf}/^{177}\text{Hf}(\text{CHUR}, t) = 0.282772 - 0.0332 * (\text{EXP}(0.01867 * \text{Age}/1000) - 1)$. $^{176}\text{Hf}/^{177}\text{Hf}(\text{DM}, t) = 0.28325 - 0.0384 * (\text{EXP}(0.01867 * \text{Age}/1000) - 1)$. $T_{\text{DM1}} = (1/0.01867) * \text{LN}(1 + ((^{176}\text{Hf}/^{177}\text{Hf} - 0.28325) / (^{176}\text{Lu}/^{177}\text{Hf} - 0.0384)))$. $T_{\text{DM2}} = \text{Age}/1000 + (1/0.01867) * \text{LN}(1 + (^{176}\text{Hf}/^{177}\text{Hf}(\sigma, t) - ^{176}\text{Hf}/^{177}\text{Hf}(\text{DM}, t)) / (0.015 - 0.0384))$.

Table 1

Stratigraphic Age	Sample n°	GPS location	Petrography	Tectonic position
	13FR12	47° 24'45.44" N 00° 51'37.60" W	Sandstone (matrix)	Olistostrome sub-unit of the St-Georges-sur-Loire
	13FR13	47° 23'43.71" N 00° 38' 39.38" W	Rhyolite block in siltstone matrix	Rhyolite blocks in the olistostrome sub-unit of the St-Georges-sur-Loire
	13FR18-1	47° 27'40.95" N 00° 53' 18.69" W	Lenticular coarse sandstone in siltstone matrix	Olistostrome sub-unit of the St-Georges-sur-Loire
	13FR19	47° 20'47.81" N 00° 40' 48.54" W	Muddy sandstone matrix	Olistostrome sub-unit of the St-Georges-sur-Loire
	13 FR 21	47° 28'56.51" N 00° 36' 51.39" W	Sandstone matrix	Olistostrome sub-unit of the St-Georges-sur-Loire
	RO2	47°20'54.02" N 0°38'3.33" W	Sandstone	Olistostrome sub-unit of the St-Georges-sur-Loire
	OUT	47°26'09.17" N 0°45'25.15" W	Sandstone	Olistostrome sub-unit of the St-Georges-sur-Loire
	MB2	47°24'3.04" N 0°39'13.74" W	Sandstone	Olistostrome sub-unit of the St-Georges-sur-Loire

Table 2. LA-ICPMA Zircon U-Pb analytical data

Sample#spot	Th (ppm)	U (ppm)	Th/U	Isotopic ratios						Ages (Ma)				Disconcordance		
				$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 1\sigma$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 1\sigma$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\sigma$	$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 1\sigma$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 1\sigma$		$^{206}\text{Pb}/^{238}\text{U}$	$\pm 1\sigma$
13FR12																
13FR12#01	148	196	0.76	0.12772	0.00245	6.31550	0.11545	0.35880	0.00527	2067	15	2021	16	1976	25	4.61%
13FR12#02	211	440	0.48	0.05647	0.00303	0.66073	0.03389	0.08490	0.00178	471	76	515	21	525	11	-1.90%
13FR12#03	250	285	0.88	0.05868	0.00260	0.82831	0.03507	0.10243	0.00190	555	60	613	19	629	11	-2.54%
13FR12#04	138	795	0.17	0.17388	0.00184	12.10762	0.12494	0.50527	0.00612	2595	9	2613	10	2636	26	-1.56%
13FR12#05	210	216	0.97	0.06366	0.00350	0.98154	0.05142	0.11188	0.00251	730	73	694	26	684	15	1.46%
13FR12#06	172	236	0.73	0.06973	0.00351	1.05612	0.05036	0.10989	0.00239	920	62	732	25	672	14	8.93%
13FR12#07	54	271	0.20	0.06969	0.00224	1.54184	0.04714	0.16052	0.00260	919	37	947	19	960	14	-1.35%
13FR12#08	144	297	0.49	0.13628	0.00227	7.75121	0.12398	0.41269	0.00577	2180	12	2203	14	2227	26	-2.11%
13FR12#09	157	187	0.84	0.05992	0.00340	0.83377	0.04508	0.10096	0.00225	601	78	616	25	620	13	-0.65%
13FR12#10	79	177	0.45	0.12964	0.00258	7.23401	0.13839	0.40488	0.00616	2093	15	2141	17	2191	28	-4.47%
13FR12#11	144	167	0.86	0.11373	0.00285	5.29023	0.12620	0.33750	0.00562	1860	21	1867	20	1875	27	-0.80%
13FR12#12	111	232	0.48	0.11458	0.00233	5.32998	0.10328	0.33750	0.00498	1873	16	1874	17	1875	24	-0.11%
13FR12#13	80	102	0.78	0.11319	0.00347	5.49727	0.16100	0.35237	0.00677	1851	27	1900	25	1946	32	-4.88%
13FR12#14	102	108	0.94	0.11413	0.00328	5.09502	0.13904	0.32391	0.00588	1866	25	1835	23	1809	29	3.15%

13FR12#15	51	83	0.6 1	0.11423	0.003 93	5.3303 8	0.174 47	0.3385 7	0.007 05	1868	31	1874	28	1880	3 4	-0.64%
13FR12#16	388	400	0.9 7	0.11323	0.001 89	5.2054 4	0.083 11	0.3335 4	0.004 46	1852	13	1854	14	1856	2 2	-0.22%
13FR12#17	253	373	0.6 8	0.05723	0.002 45	0.7319 4	0.029 98	0.0927 9	0.001 66	500	59	558	18	572	1 0	-2.45%
13FR12#18	154	201	0.7 7	0.05940	0.002 87	0.7881 1	0.036 34	0.0962 6	0.001 90	582	66	590	21	592	1 1	-0.34%
13FR12#19	298	549	0.5 4	0.05815	0.001 84	0.7044 6	0.021 32	0.0879 0	0.001 32	535	40	541	13	543	8	-0.37%
13FR12#20	106	202	0.5 2	0.18067	0.002 55	12.946 09	0.178 06	0.5198 7	0.007 17	2659	10	2676	13	2699	3 0	-1.48%
13FR12#21	69	52	1.3 3	0.06497	0.005 92	0.8894 0	0.076 98	0.0993 1	0.003 44	773	12 4	646	41	610	2 0	5.90%
13FR12#22	151	80	1.8 7	0.05756	0.004 66	0.8236 0	0.064 06	0.1038 0	0.002 94	513	12 1	610	36	637	1 7	-4.24%
13FR12#23	60	86	0.6 9	0.06338	0.004 99	0.7903 9	0.059 22	0.0904 7	0.002 68	721	10 9	591	34	558	1 6	5.91%
13FR12#24	240	371	0.6 5	0.06232	0.002 92	0.8907 1	0.039 68	0.1037 0	0.002 05	685	61	647	21	636	1 2	1.73%
13FR12#25	148	100	1.4 7	0.12563	0.003 24	6.4086 8	0.157 39	0.3700 8	0.006 50	2038	21	2033	22	2030	3 1	0.39%
13FR12#26	177	181	0.9 8	0.05986	0.003 04	0.8066 2	0.039 08	0.0977 6	0.001 98	599	70	601	22	601	1 2	0.00%
13FR12#27	218	388	0.5 6	0.06369	0.002 29	0.9121 7	0.031 25	0.1039 0	0.001 72	731	45	658	17	637	1 0	3.30%
13FR12#28	113	283	0.4 0	0.05884	0.002 77	0.7660 1	0.034 31	0.0944 5	0.001 83	561	64	577	20	582	1 1	-0.86%
13FR12#29	109	43	2.5 2	0.11598	0.005 13	5.8357 6	0.246 84	0.3650 2	0.009 25	1895	41	1952	37	2006	4 4	-5.53%
13FR12#30	391	662	0.5 9	0.11630	0.004 21	1.6568 3	0.054 95	0.1033 5	0.002 04	1900	32	992	21	634	1 2	56.47%
13FR12#31	161	182	0.8 9	0.12360	0.002 37	6.4115 4	0.117 54	0.3763 3	0.005 51	2009	15	2034	16	2059	2 6	-2.43%
13FR12#32	132	257	0.5	0.05858	0.002	0.6405	0.028	0.0793	0.001	552	63	503	17	492	9	2.24%

13FR12#33	72	81	2 0.8 9	0.05642	71 0.004 61	0 0.7150 0	21 0.055 98	2 0.0919 3	50 0.002 62	469	12 3	548	33	567	1 5	-3.35%
13FR12#34	73	147	0.5 0	0.11415	0.002 63	4.8728 5	0.106 43	0.3096 8	0.004 86	1867	19	1798	18	1739	2 4	7.36%
13FR12#35	79	114	0.6 9	0.26888	0.003 61	24.517 40	0.327 84	0.6614 6	0.009 70	3300	10	3289	13	3273	3 8	0.82%
13FR12#36	321	522	0.6 1	0.06598	0.002 01	0.7515 7	0.021 72	0.0826 3	0.001 25	806	36	569	13	512	7	11.13%
13FR12#37	77	242	0.3 2	0.12664	0.002 37	6.3769 7	0.113 83	0.3652 8	0.005 29	2052	14	2029	16	2007	2 5	2.24%
13FR12#38	114	126	0.9 1	0.11283	0.002 65	5.3551 9	0.119 86	0.3443 1	0.005 50	1845	20	1878	19	1907	2 6	-3.25%
13FR12#39	129	230	0.5 6	0.11583	0.002 23	5.2898 4	0.096 97	0.3312 8	0.004 75	1893	15	1867	16	1845	2 3	2.60%
13FR12#40	26	53	0.4 9	0.12969	0.004 40	6.7873 1	0.219 53	0.3796 4	0.008 25	2094	29	2084	29	2075	3 9	0.92%
13FR12#41	186	186	1.0 0	0.12854	0.002 16	6.6779 7	0.107 40	0.3768 6	0.005 20	2078	13	2070	14	2062	2 4	0.78%
13FR12#42	188	231	0.8 1	0.12335	0.002 12	6.1992 4	0.101 91	0.3645 7	0.005 04	2005	13	2004	14	2004	2 4	0.05%
13FR12#43	37	36	1.0 3	0.13250	0.009 58	5.9789 8	0.407 55	0.3273 2	0.013 62	2131	64	1973	59	1825	6 6	16.77%
13FR12#44	28	51	0.5 6	0.11606	0.004 29	5.3030 9	0.186 37	0.3314 4	0.007 34	1896	33	1869	30	1845	3 6	2.76%
13FR12#45	29	49	0.6 0	0.11635	0.004 24	5.1131 3	0.176 46	0.3187 6	0.006 93	1901	33	1838	29	1784	3 4	6.56%
13FR12#46	140	154	0.9 1	0.11923	0.002 51	6.1709 3	0.124 21	0.3754 0	0.005 74	1945	17	2000	18	2055	2 7	-5.35%
13FR12#47	97	103	0.9 4	0.13789	0.003 28	7.4513 6	0.169 26	0.3919 8	0.006 73	2201	19	2167	20	2132	3 1	3.24%
13FR12#48	217	139	1.5 7	0.06223	0.003 26	1.0934 7	0.054 70	0.1274 6	0.002 74	682	70	750	27	773	1 6	-2.98%
13FR12#49	88	95	0.9 3	0.06088	0.003 49	1.0482 6	0.057 46	0.1248 9	0.002 86	635	79	728	28	759	1 6	-4.08%

13FR12#50	38	110	0.3 5	0.19224	0.003 07	14.350 59	0.222 86	0.5414 5	0.008 07	2761	11	2773	15	2790	3 4	-1.04%
13FR12#51	138	150	0.9 2	0.12638	0.002 61	6.6697 6	0.132 02	0.3827 8	0.005 88	2048	16	2069	17	2089	2 7	-1.96%
13FR12#52	36	92	0.3 9	0.05532	0.003 49	0.8428 3	0.050 87	0.1105 0	0.002 62	425	92	621	28	676	1 5	-8.14%
13FR12#53	142	498	0.2 9	0.18163	0.001 60	12.994 11	0.112 18	0.5188 9	0.005 95	2668	9	2679	8	2694	2 5	-0.97%
13FR12#54	174	231	0.7 6	0.10147	0.010 28	4.1532 5	0.410 35	0.2968 5	0.006 59	1651	19 5	1665	81	1676	3 3	-1.49%
13FR12#55	96	125	0.7 6	0.05769	0.003 39	0.7147 3	0.040 07	0.0898 6	0.002 02	518	84	548	24	555	1 2	-1.26%
13FR12#56	110	51	2.1 5	0.06573	0.004 64	0.9849 4	0.066 10	0.1086 9	0.002 99	798	95	696	34	665	1 7	4.66%
13FR12#57	62	197	0.3 1	0.11294	0.002 99	5.0567 3	0.113 22	0.3247 3	0.004 61	1847	49	1829	19	1813	2 2	1.88%
13FR12#58	96	130	0.7 4	0.11460	0.002 47	5.2066 3	0.106 85	0.3295 1	0.005 01	1874	18	1854	17	1836	2 4	2.07%
13FR12#59	205	449	0.4 6	0.15162	0.002 23	6.9470 4	0.096 65	0.3323 0	0.004 39	2364	11	2105	12	1850	2 1	27.78%
13FR12#60	276	389	0.7 1	0.06022	0.001 81	0.8005 0	0.022 89	0.0964 1	0.001 42	611	37	597	13	593	8	0.67%
13FR12#61	69	83	0.8 4	0.06099	0.004 23	0.8180 7	0.054 23	0.0972 8	0.002 53	639	98	607	30	598	1 5	1.51%
13FR12#62	71	458	0.1 5	0.05673	0.001 94	0.5755 9	0.018 82	0.0735 8	0.001 14	481	45	462	12	458	7	0.87%
13FR12#63	277	306	0.9 0	0.11409	0.001 84	5.6505 2	0.087 26	0.3591 9	0.004 75	1866	12	1924	13	1978	2 3	-5.66%
13FR12#64	64	90	0.7 1	0.10059	0.004 66	3.9629 3	0.169 47	0.2857 4	0.005 13	1635	88	1627	35	1620	2 6	0.93%
13FR12#65	59	90	0.6 6	0.11555	0.005 24	5.0507 6	0.207 71	0.3170 2	0.006 06	1888	84	1828	35	1775	3 0	6.37%
13FR12#66	48	62	0.7 7	0.12001	0.003 59	5.5290 2	0.157 08	0.3341 1	0.006 33	1956	26	1905	24	1858	3 1	5.27%
13FR12#67	41	102	0.4	0.12781	0.002	6.6466	0.132	0.3771	0.005	2068	16	2066	18	2063	2	0.24%

			0		66	6	02	5	81						7	
13FR12#68	29	84	0.3 5	0.05874	0.004 25	0.6899 7	0.047 87	0.0851 8	0.002 18	557	10 7	533	29	527	1 3	1.14%
13FR12#69	91	192	0.4 7	0.20341	0.002 81	15.193 63	0.204 46	0.5416 8	0.007 53	2854	10	2827	13	2790	3 1	2.29%
13FR12#70	101	236	0.4 3	0.05987	0.002 30	0.7312 9	0.026 81	0.0885 7	0.001 50	599	50	557	16	547	9	1.83%
13FR12#71	66	355	0.1 9	0.12583	0.001 77	6.1763 9	0.083 31	0.3559 4	0.004 52	2041	11	2001	12	1963	2 1	3.97%
13FR12#72	89	80	1.1 1	0.12217	0.003 07	6.0527 4	0.145 22	0.3592 7	0.006 12	1988	21	1983	21	1979	2 9	0.45%
13FR12#73	55	62	0.8 9	0.11761	0.003 60	5.7147 1	0.166 51	0.3523 7	0.006 80	1920	27	1934	25	1946	3 2	-1.34%
13FR12#74	119	181	0.6 6	0.05479	0.002 25	0.7185 9	0.028 22	0.0951 0	0.001 64	404	57	550	17	586	1 0	-6.14%
13FR12#75	63	106	0.6 0	0.19552	0.003 57	13.417 26	0.235 65	0.4976 2	0.007 98	2789	13	2709	17	2604	3 4	7.10%
13FR12#76	83	155	0.5 4	0.06214	0.002 84	0.8235 4	0.035 82	0.0961 0	0.001 84	679	60	610	20	592	1 1	3.04%
13FR12#77	62	78	0.8 0	0.07045	0.005 39	1.0146 4	0.073 43	0.1044 3	0.003 21	941	98	711	37	640	1 9	11.09%
13FR12#78	118	171	0.6 9	0.06215	0.003 15	0.8123 3	0.039 21	0.0947 8	0.001 96	679	68	604	22	584	1 2	3.42%
13FR12#79	59	96	0.6 2	0.18180	0.003 13	12.556 04	0.209 10	0.5008 0	0.007 64	2669	12	2647	16	2617	3 3	1.99%
13FR12#80	85	143	0.6 0	0.13351	0.002 22	7.3870 5	0.117 77	0.4012 1	0.005 56	2145	12	2159	14	2175	2 6	-1.38%
13FR12#81	37	31	1.2 1	0.11283	0.004 51	5.2872 9	0.201 28	0.3397 9	0.007 88	1845	37	1867	33	1886	3 8	-2.17%
13FR12#82	107	338	0.3 2	0.06048	0.001 88	0.8445 1	0.025 04	0.1012 4	0.001 52	621	38	622	14	622	9	0.00%
13FR12#83	63	72	0.8 8	0.06557	0.003 67	1.0331 5	0.055 03	0.1142 5	0.002 61	793	73	721	27	697	1 5	3.44%
13FR12#84	22	50	0.4 5	0.06515	0.004 80	0.9352 4	0.065 56	0.1040 8	0.002 95	779	10 0	670	34	638	1 7	5.02%

13FR12#85	22	28	0.7 8	0.11674	0.005 31	5.2398 4	0.226 06	0.3254 3	0.008 47	1907	42	1859	37	1816	4 1	5.01%
13FR12#86	18	18	0.9 8	0.05573	0.008 66	0.7063 5	0.106 28	0.0919 0	0.004 19	442	25 4	543	63	567	2 5	-4.23%
13FR12#87	216	250	0.8 6	0.06134	0.002 35	0.8037 1	0.029 37	0.0950 0	0.001 61	651	50	599	17	585	9	2.39%
13FR12#88	19	23	0.8 0	0.11739	0.005 22	5.5060 5	0.232 77	0.3400 6	0.008 79	1917	41	1902	36	1887	4 2	1.59%
13FR12#89	83	156	0.5 3	0.10149	0.003 59	3.7147 6	0.118 49	0.2654 6	0.004 06	1652	67	1575	26	1518	2 1	8.83%
13FR12#90	66	108	0.6 1	0.23108	0.003 06	18.819 25	0.244 12	0.5904 6	0.008 22	3060	10	3033	13	2991	3 3	2.31%
13FR12#91	4	558	0.0 1	0.12383	0.001 24	6.4366 9	0.062 60	0.3768 6	0.004 31	2012	9	2037	9	2062	2 0	-2.42%
13FR12#92	122	95	1.2 9	0.11288	0.004 09	4.9835 8	0.171 46	0.3200 9	0.006 85	1846	33	1817	29	1790	3 3	3.13%
13FR12#93	798	458	1.7 4	0.06272	0.004 89	0.7120 1	0.054 18	0.0823 3	0.001 38	699	17 1	546	32	510	8	7.06%
13FR12#94	537	223	2.4 0	0.06250	0.002 24	0.8302 1	0.028 32	0.0963 0	0.001 58	691	45	614	16	593	9	3.54%
13FR12#95	101	112	0.9 0	0.09064	0.004 41	0.9322 2	0.042 16	0.0745 6	0.001 68	1439	52	669	22	464	1 0	44.18%
13FR12#96	181	238	0.7 6	0.05923	0.001 95	0.8087 0	0.025 41	0.0989 8	0.001 53	576	42	602	14	608	9	-0.99%
13FR12#97	259	171	1.5 2	0.06082	0.002 94	0.9369 2	0.043 20	0.1116 7	0.002 24	633	65	671	23	682	1 3	-1.61%
13FR12#98	61	69	0.8 9	0.11759	0.003 55	5.3568 7	0.153 46	0.3302 6	0.006 24	1920	26	1878	25	1840	3 0	4.35%
13FR12#99	163	298	0.5 5	0.06246	0.001 75	0.8233 0	0.021 93	0.0955 6	0.001 37	690	33	610	12	588	8	3.74%
13FR12#10 0	25	67	0.3 7	0.10819	0.002 86	4.9571 2	0.124 76	0.3321 7	0.005 62	1769	23	1812	21	1849	2 7	-4.33%
13FR13																
13FR13#01	161	371	0.4 3	0.05983	0.001 11	0.6750 1	0.011 47	0.0818 1	0.001 08	597	46	524	7	507	6	3.35%

13FR13#02	105	154	0.6 9	0.06094	0.001 42	0.8698 2	0.018 61	0.1034 9	0.001 55	637	55	635	10	635	9	0.00%
13FR13#03	89	923	0.1 0	0.05441	0.000 65	0.5921 4	0.006 63	0.0789 2	0.000 90	388	35	472	4	490	5	-3.67%
13FR13#04	42	860	0.0 5	0.05926	0.000 91	0.6856 2	0.009 70	0.0838 9	0.001 03	577	40	530	6	519	6	2.12%
13FR13#05	286	818	0.3 5	0.11466	0.001 63	3.9176 8	0.035 54	0.2478 2	0.002 72	1874	26	1617	7	1427	1 4	31.32%
13FR13#06	122	196	0.6 2	0.05894	0.002 03	0.6693 4	0.021 14	0.0823 6	0.001 52	565	79	520	13	510	9	1.96%
13FR13#07	125	343	0.3 6	0.13054	0.001 36	6.3151 3	0.061 42	0.3508 1	0.004 30	2105	23	2021	9	1938	2 1	8.62%
13FR13#08	114	218	0.5 2	0.05474	0.002 46	0.5647 9	0.023 78	0.0748 3	0.001 19	402	10 3	455	15	465	7	-2.15%
13FR13#09	143	705	0.2 0	0.05919	0.000 92	0.6735 7	0.009 65	0.0825 2	0.001 02	574	40	523	6	511	6	2.35%
13FR13#10	247	1030	0.2 4	0.05393	0.000 75	0.5851 3	0.007 51	0.0786 9	0.000 93	368	39	468	5	488	6	-4.10%
13FR13#11	255	584	0.4 4	0.05415	0.000 78	0.5857 3	0.007 85	0.0784 5	0.000 93	377	40	468	5	487	6	-3.90%
13FR13#12	129	405	0.3 2	0.05960	0.000 87	0.7878 8	0.010 68	0.0958 8	0.001 16	589	38	590	6	590	7	0.00%
13FR13#13	170	269	0.6 3	0.11683	0.000 98	5.4368 4	0.043 27	0.3375 0	0.003 82	1908	21	1891	7	1875	1 8	1.76%
13FR13#14	110	759	0.1 5	0.05696	0.000 70	0.5975 9	0.006 82	0.0760 8	0.000 87	490	35	476	4	473	5	0.63%
13FR13#15	125	492	0.2 5	0.05805	0.000 81	0.6026 9	0.007 77	0.0753 0	0.000 90	532	38	479	5	468	5	2.35%
13FR13#16	471	1504	0.3 1	0.05784	0.001 04	0.7287 1	0.010 34	0.0913 7	0.001 01	524	40	556	6	564	6	-1.42%
13FR13#17	64	245	0.2 6	0.05649	0.004 80	0.5834 9	0.046 00	0.0749 2	0.002 69	472	19 2	467	29	466	1 6	0.21%
13FR13#18	197	702	0.2 8	0.05779	0.001 37	0.5692 4	0.011 54	0.0714 4	0.000 88	522	53	458	7	445	5	2.92%
13FR13#19	127	271	0.4	0.05969	0.001	0.6764	0.011	0.0821	0.001	592	46	525	7	509	7	3.14%

13FR13#20	81	787	0.1 0	0.05452	0.000 65	0.5740 7	0.006 42	0.0763 7	0.000 87	393	35	461	4	474	5	-2.74%
13FR13#21	85	161	0.5 3	0.06185	0.001 39	0.7803 3	0.015 93	0.0915 1	0.001 35	669	53	586	9	564	8	3.90%
13FR13#22	380	907	0.4 2	0.05736	0.000 78	0.5893 1	0.007 40	0.0745 1	0.000 88	505	37	470	5	463	5	1.51%
13FR13#23	367	733	0.5 0	0.05678	0.000 65	0.5853 0	0.006 29	0.0747 6	0.000 85	483	34	468	4	465	5	0.65%
13FR13#24	136	650	0.2 1	0.05671	0.000 68	0.6149 7	0.006 83	0.0786 6	0.000 90	480	35	487	4	488	5	-0.20%
13FR13#25	107	341	0.3 1	0.07758	0.001 71	1.5315 8	0.028 13	0.1431 8	0.001 75	1136	45	943	11	863	1 0	9.27%
13FR13#26	142	764	0.1 9	0.09406	0.000 75	1.9573 4	0.014 60	0.1509 4	0.001 65	1509	24	1101	5	906	9	21.52%
13FR13#27	80	597	0.1 3	0.05616	0.000 95	0.6422 6	0.010 05	0.0829 5	0.001 06	459	44	504	6	514	6	-1.95%
13FR13#28	147	462	0.3 2	0.05665	0.000 77	0.5953 9	0.007 47	0.0762 4	0.000 90	478	37	474	5	474	5	0.00%
13FR13#29	48	419	0.1 1	0.14037	0.002 34	2.9261 8	0.032 80	0.1511 9	0.001 87	2232	30	1389	8	908	1 0	52.97%
13FR13#30	78	545	0.1 4	0.05433	0.000 70	0.5732 7	0.006 87	0.0765 4	0.000 89	385	37	460	4	475	5	-3.16%
13FR13#31	227	360	0.6 3	0.05645	0.000 81	0.6053 8	0.008 02	0.0777 9	0.000 93	470	39	481	5	483	6	-0.41%
13FR13#32	82	719	0.1 1	0.05835	0.000 63	0.6122 4	0.006 22	0.0761 1	0.000 86	543	33	485	4	473	5	2.54%
13FR13#33	119	679	0.1 7	0.05695	0.000 79	0.6365 1	0.008 21	0.0810 7	0.000 97	490	38	500	5	503	6	-0.60%
13FR13#34	325	301	1.0 8	0.11468	0.000 85	5.1355 5	0.036 86	0.3248 4	0.003 59	1875	20	1842	6	1813	1 7	3.42%
13FR13#35	88	636	0.1 4	0.09032	0.001 25	2.2081 1	0.019 03	0.1773 2	0.001 93	1432	27	1184	6	1052	1 1	36.12%
13FR13#36	46	414	0.1 1	0.10202	0.001 60	1.7396 6	0.018 61	0.1236 7	0.001 42	1661	30	1023	7	752	8	36.04%

13FR13#37	174	801	0.2 2	0.05690	0.000 86	0.5855 7	0.008 15	0.0746 6	0.000 92	488	40	468	5	464	6	0.86%
13FR13#38	91	402	0.2 3	0.05588	0.000 86	0.6191 6	0.008 83	0.0803 7	0.000 99	448	41	489	6	498	6	-1.81%
13FR13#39	186	188	0.9 9	0.11695	0.000 99	5.1375 7	0.041 42	0.3186 5	0.003 64	1910	21	1842	7	1783	1 8	7.12%
13FR13#40	31	257	0.1 2	0.06042	0.001 29	0.6728 1	0.011 72	0.0807 7	0.001 00	619	47	522	7	501	6	4.19%
13FR13#41	52	411	0.1 3	0.05679	0.000 81	0.6592 6	0.008 75	0.0842 1	0.001 02	483	39	514	5	521	6	-1.34%
<i>13FR13#42</i>	<i>440</i>	<i>1242</i>	<i>0.3 5</i>	<i>0.07698</i>	<i>0.001 62</i>	<i>0.6340 1</i>	<i>0.011 02</i>	<i>0.0597 4</i>	<i>0.000 70</i>	<i>1121</i>	<i>43</i>	<i>499</i>	<i>7</i>	<i>374</i>	<i>4</i>	<i>33.42%</i>
13FR13#43	256	291	0.8 8	0.05473	0.001 25	0.6415 6	0.013 49	0.0850 4	0.001 24	401	56	503	8	526	7	-4.37%
13FR13#44	237	422	0.5 6	0.06329	0.000 74	0.8365 7	0.009 15	0.0958 9	0.001 12	718	33	617	5	590	7	4.58%
<i>13FR13#45</i>	<i>69</i>	<i>344</i>	<i>0.2 0</i>	<i>0.16455</i>	<i>0.002 20</i>	<i>6.1105 4</i>	<i>0.046 05</i>	<i>0.2693 3</i>	<i>0.002 98</i>	<i>2503</i>	<i>23</i>	<i>1992</i>	<i>7</i>	<i>1537</i>	<i>1 5</i>	<i>62.85%</i>
13FR13#46	101	755	0.1 3	0.05673	0.000 77	0.6348 8	0.007 99	0.0811 8	0.000 97	481	38	499	5	503	6	-0.80%
13FR13#47	56	534	0.1 1	0.05633	0.000 71	0.6032 3	0.007 09	0.0776 9	0.000 91	465	36	479	4	482	5	-0.62%
13FR13#48	108	287	0.3 8	0.05709	0.001 15	0.6348 9	0.011 75	0.0806 8	0.001 10	495	50	499	7	500	7	-0.20%
13FR13#49	122	246	0.5 0	0.06024	0.001 24	0.7803 5	0.014 74	0.0939 8	0.001 33	612	50	586	8	579	8	1.21%
13FR13#50	312	561	0.5 6	0.05867	0.001 46	0.7385 3	0.016 10	0.0913 0	0.001 10	555	56	562	9	563	7	-0.18%
13FR13#51	168	291	0.5 8	0.05831	0.000 73	0.8629 1	0.010 10	0.1073 6	0.001 26	541	35	632	6	657	7	-3.81%
<i>13FR13#52</i>	<i>271</i>	<i>469</i>	<i>0.5 8</i>	<i>0.07070</i>	<i>0.000 75</i>	<i>0.7569 4</i>	<i>0.007 44</i>	<i>0.0776 7</i>	<i>0.000 89</i>	<i>949</i>	<i>30</i>	<i>572</i>	<i>4</i>	<i>482</i>	<i>5</i>	<i>18.67%</i>
13FR13#53	242	435	0.5 6	0.05441	0.000 65	0.5856 3	0.006 59	0.0780 9	0.000 90	388	36	468	4	485	5	-3.51%
13FR13#54	207	400	0.5	0.05627	0.000	0.6093	0.007	0.0785	0.000	463	36	483	4	487	5	-0.82%

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13FR13#55	325	299	1.0 9	0.06249	0.000 95	0.9694 6	0.013 70	0.1125 5	0.001 42	691	39	688	7	688	8	0.00%
13FR13#56	102	137	0.7 4	0.05660	0.001 02	0.7906 1	0.013 22	0.1013 4	0.001 33	476	46	592	7	622	8	-4.82%
13FR13#57	105	665	0.1 6	0.05836	0.000 56	0.6349 4	0.005 75	0.0789 3	0.000 88	543	31	499	4	490	5	1.84%
13FR13#58	169	416	0.4 1	0.05739	0.000 66	0.6093 1	0.006 58	0.0770 3	0.000 89	507	34	483	4	478	5	1.05%
13FR13#59	68	95	0.7 2	0.12465	0.001 24	6.3396 3	0.059 67	0.3689 6	0.004 50	2024	22	2024	8	2025	2 1	-0.05%
13FR13#60	156	425	0.3 7	0.05651	0.000 90	0.6575 1	0.009 70	0.0844 0	0.001 06	472	42	513	6	522	6	-1.72%
13FR13#61	156	311	0.5 0	0.05671	0.000 69	0.6665 3	0.007 55	0.0852 7	0.000 99	480	35	519	5	528	6	-1.70%
13FR13#62	82	311	0.2 6	0.05774	0.001 02	0.6486 3	0.010 51	0.0815 0	0.001 07	520	45	508	6	505	6	0.59%
13FR13#63	77	118	0.6 5	0.06186	0.001 35	0.6931 7	0.013 87	0.0812 9	0.001 18	669	52	535	8	504	7	6.15%
13FR13#64	396	630	0.6 3	0.08626	0.000 72	1.1628 8	0.009 17	0.0978 0	0.001 09	1344	26	783	4	602	6	30.07%
13FR13#65	56	519	0.1 1	0.05482	0.000 56	0.6154 4	0.005 98	0.0814 4	0.000 92	405	33	487	4	505	5	-3.56%
13FR13#66	66	421	0.1 6	0.05420	0.000 63	0.5732 1	0.006 22	0.0767 3	0.000 88	379	35	460	4	477	5	-3.56%
13FR13#67	79	543	0.1 5	0.10645	0.001 00	0.8694 3	0.007 41	0.0592 5	0.000 68	1739	26	635	4	371	4	71.16%
13FR13#68	34	347	0.1 0	0.05791	0.000 89	0.6631 2	0.009 45	0.0830 8	0.001 04	526	41	517	6	514	6	0.58%
13FR13#69	57	292	0.2 0	0.05632	0.000 82	0.6255 4	0.008 48	0.0805 8	0.000 99	465	40	493	5	500	6	-1.40%
13FR13#70	171	528	0.3 2	0.05769	0.000 71	0.6154 2	0.007 09	0.0773 9	0.000 91	518	36	487	4	481	5	1.25%
13FR13#71	60	89	0.6 7	0.05759	0.001 35	0.6124 1	0.013 28	0.0771 4	0.001 13	514	57	485	8	479	7	1.25%

13FR13#72	162	530	0.3 1	0.05884	0.000 58	0.6421 9	0.005 99	0.0791 8	0.000 89	561	31	504	4	491	5	2.65%
13FR13#73	61	311	0.2 0	0.05657	0.000 77	0.6000 0	0.007 57	0.0769 5	0.000 92	475	38	477	5	478	6	-0.21%
13FR13#74	164	265	0.6 2	0.12474	0.000 78	6.4023 2	0.040 20	0.3723 6	0.004 07	2025	19	2033	6	2040	1 9	-0.74%
13FR13#75	137	177	0.7 8	0.06209	0.001 09	0.8843 6	0.014 35	0.1033 3	0.001 37	677	43	643	8	634	8	1.42%
13FR13#76	75	609	0.1 2	0.05705	0.000 74	0.6172 3	0.007 48	0.0785 0	0.000 93	493	37	488	5	487	6	0.21%
13FR13#77	64	375	0.1 7	0.05771	0.000 90	0.5992 1	0.008 62	0.0753 3	0.000 94	519	41	477	5	468	6	1.92%
13FR13#78	63	96	0.6 6	0.07539	0.001 29	1.8060 6	0.028 43	0.1738 1	0.002 40	1079	39	1048	10	1033	1 3	4.45%
13FR13#79	79	304	0.2 6	0.05924	0.000 62	0.8271 5	0.008 13	0.1013 1	0.001 16	576	32	612	5	622	7	-1.61%
13FR13#80	107	70	1.5 3	0.11205	0.001 35	4.7725 5	0.053 62	0.3090 2	0.003 99	1833	26	1780	9	1736	2 0	5.59%
13FR13#81	167	454	0.3 7	0.05562	0.000 60	0.5962 6	0.006 05	0.0777 7	0.000 89	437	33	475	4	483	5	-1.66%
13FR13#82	112	165	0.6 8	0.12920	0.001 01	6.1666 4	0.046 68	0.3462 7	0.003 97	2087	20	2000	7	1917	1 9	8.87%
13FR13#83	154	235	0.6 5	0.11175	0.000 84	4.7687 1	0.034 94	0.3095 9	0.003 49	1828	21	1779	6	1739	1 7	5.12%
13FR13#84	26	131	0.2 0	0.05640	0.000 97	0.6722 6	0.010 71	0.0864 7	0.001 12	468	45	522	7	535	7	-2.43%
13FR13#85	59	492	0.1 2	0.05417	0.000 55	0.5993 9	0.005 81	0.0802 8	0.000 91	378	33	477	4	498	5	-4.22%
13FR13#86	194	250	0.7 7	0.05600	0.000 89	0.6095 5	0.009 01	0.0789 7	0.001 00	452	42	483	6	490	6	-1.43%
13FR13#87	260	407	0.6 4	0.14776	0.002 47	8.3931 5	0.096 74	0.4119 8	0.004 98	2320	29	2274	10	2224	2 3	4.32%
13FR13#88	80	419	0.1 9	0.05727	0.000 75	0.6263 6	0.007 64	0.0793 5	0.000 95	502	37	494	5	492	6	0.41%
13FR13#89	42	488	0.0	0.05534	0.000	0.6040	0.006	0.0791	0.000	426	35	480	4	491	5	-2.24%

13FR13#90	48	83	9 0.5 8	0.05913	64 0.002 64	2 0.7810 2	58 0.032 44	9 0.0958 0	92 0.001 57	572	10 0	586	18	590	9	-0.68%
13FR18-1																
13FR18-1#01	201	282	0.7 1	0.15735	0.000 92	10.483 56	0.062 70	0.4832 2	0.005 35	2427	11	2478	6	2541	2 3	-4.49%
13FR18-1#02	361	450	0.8 0	0.06213	0.000 57	0.8889 8	0.007 72	0.1037 6	0.001 18	679	11	646	4	636	7	1.57%
13FR18-1#03	163	245	0.6 6	0.10995	0.000 74	4.7686 2	0.031 98	0.3145 4	0.003 53	1799	11	1779	6	1763	1 7	2.04%
13FR18-1#04	67	174	0.3 9	0.17198	0.001 08	10.513 76	0.066 59	0.4434 0	0.004 99	2577	11	2481	6	2366	2 2	8.92%
13FR18-1#05	93	81	1.1 5	0.06375	0.001 27	0.8925 2	0.016 31	0.1015 5	0.001 45	733	18	648	9	623	8	4.01%
13FR18-1#06	113	141	0.8 0	0.12098	0.000 92	5.8950 3	0.043 80	0.3534 2	0.004 07	1971	11	1961	6	1951	1 9	1.03%
13FR18-1#07	69	41	1.7 1	0.11559	0.001 34	6.2162 4	0.068 33	0.3900 6	0.005 08	1889	11	2007	10	2123	2 4	-11.02%
13FR18-1#08	130	140	0.9 3	0.06035	0.000 92	0.8399 1	0.011 87	0.1009 4	0.001 29	616	14	619	7	620	8	-0.16%
13FR18-1#09	146	185	0.7 9	0.12171	0.000 85	6.0036 7	0.041 54	0.3578 0	0.004 06	1981	11	1976	6	1972	1 9	0.46%
13FR18-1#10	85	147	0.5 8	0.17218	0.001 14	11.794 54	0.078 63	0.4968 7	0.005 67	2579	10	2588	6	2600	2 4	-0.81%
13FR18-1#11	67	93	0.7 1	0.05783	0.001 12	0.7875 4	0.014 11	0.0987 8	0.001 37	523	18	590	8	607	8	-2.80%
13FR18-1#12	12	17	0.7 2	0.17223	0.002 36	12.122 60	0.158 82	0.5105 6	0.007 80	2579	11	2614	12	2659	3 3	-3.01%
13FR18-1#13	93	195	0.4 8	0.11951	0.000 83	5.8375 0	0.040 19	0.3543 1	0.004 01	1949	11	1952	6	1955	1 9	-0.31%
13FR18-1#14	69	228	0.3 0	0.05918	0.000 75	0.7747 5	0.009 19	0.0949 6	0.001 15	574	12	582	5	585	7	-0.51%
13FR18-1#15	82	154	0.5 3	0.10488	0.000 85	4.3248 9	0.033 95	0.2991 2	0.003 46	1712	11	1698	6	1687	1 7	1.48%
13FR18-	166	207	0.8	0.05858	0.000	0.8280	0.009	0.1025	0.001	552	12	613	5	629	7	-2.54%

1#16			0		74	1	75	3	24							
13FR18-1#17	115	144	0.8	0.11106	0.002	4.8588	0.101	0.3173	0.004	1817	45	1795	18	1777	2	2.25%
13FR18-1#18	142	410	0.3	0.06231	0.000	0.9981	0.009	0.1162	0.001	685	11	703	5	709	8	-0.85%
13FR18-1#19	208	326	0.6	0.06430	0.000	1.1160	0.010	0.1259	0.001	752	11	761	5	765	8	-0.52%
13FR18-1#20	74	98	0.7	0.16554	0.003	9.2089	0.138	0.4034	0.005	2513	34	2359	14	2185	2	15.01%
13FR18-1#21	39	40	0.9	0.13466	0.001	7.4279	0.082	0.4001	0.005	2160	11	2164	10	2170	2	-0.46%
13FR18-1#22	196	205	0.9	0.06552	0.003	0.8306	0.036	0.0919	0.001	791	99	614	20	567	8	8.29%
13FR18-1#23	197	372	0.5	0.05833	0.000	0.7811	0.007	0.0971	0.001	542	11	586	5	598	7	-2.01%
13FR18-1#24	47	68	0.6	0.06434	0.001	0.9793	0.018	0.1104	0.001	753	18	693	9	675	9	2.67%
13FR18-1#25	414	394	1.0	0.06087	0.000	0.8574	0.008	0.1022	0.001	635	11	629	5	627	7	0.32%
13FR18-1#26	148	205	0.7	0.06049	0.000	0.8418	0.010	0.1009	0.001	621	12	620	6	620	7	0.00%
13FR18-1#27	177	404	0.4	0.06012	0.000	0.8455	0.008	0.1020	0.001	608	11	622	5	626	7	-0.64%
13FR18-1#28	112	136	0.8	0.06163	0.000	0.9161	0.013	0.1078	0.001	661	14	660	7	660	8	0.00%
13FR18-1#29	95	104	0.9	0.11430	0.000	5.3019	0.044	0.3365	0.003	1869	10	1869	7	1870	1	-0.05%
13FR18-1#30	61	79	0.7	0.21297	0.001	17.879	0.134	0.6091	0.007	2928	10	2983	7	3067	2	-4.53%
13FR18-1#31	87	107	0.8	0.05998	0.001	0.9677	0.017	0.1170	0.001	603	18	687	9	714	9	-3.78%
13FR18-1#32	701	536	1.3	0.06806	0.000	0.7425	0.007	0.0791	0.000	870	11	564	4	491	5	14.87%
13FR18-1#33	87	179	0.4	0.11733	0.002	4.6480	0.069	0.2873	0.003	1916	36	1758	13	1628	1	17.69%
			8		28	1	74	0	55					8		

13FR18-1#34	164	197	0.8 3	0.05783	0.000 83	0.7586 1	0.010 19	0.0951 9	0.001 19	523	13	573	6	586	7	-2.22%
13FR18-1#35	219	226	0.9 7	0.05970	0.000 75	0.8048 4	0.009 48	0.0978 3	0.001 18	593	12	600	5	602	7	-0.33%
13FR18-1#36	46	93	0.5 0	0.06180	0.001 52	0.8364 6	0.018 86	0.0982 2	0.001 54	667	24	617	10	604	9	2.15%
13FR18-1#37	261	212	1.2 3	0.06055	0.000 83	0.8476 0	0.010 87	0.1015 8	0.001 26	623	12	623	6	624	7	-0.16%
13FR18-1#38	273	352	0.7 8	0.05856	0.000 90	0.7572 0	0.010 80	0.0938 3	0.001 20	551	14	572	6	578	7	-1.04%
13FR18-1#39	92	68	1.3 5	0.06271	0.001 58	0.8894 2	0.020 59	0.1029 2	0.001 65	698	24	646	11	631	1 0	2.38%
13FR18-1#40	532	570	0.9 3	0.08221	0.001 32	0.5448 8	0.007 84	0.0481 0	0.000 65	1251	13	442	5	303	4	45.87%
13FR18-1#41	41	49	0.8 4	0.11882	0.001 38	5.6922 2	0.062 22	0.3476 6	0.004 54	1939	11	1930	9	1923	2 2	0.83%
13FR18-1#42	70	149	0.4 7	0.07640	0.001 32	1.0602 2	0.016 56	0.1007 1	0.001 39	1106	14	734	8	619	8	18.58%
13FR18-1#43	133	208	0.6 4	0.11695	0.001 10	5.3388 3	0.047 81	0.3313 1	0.004 02	1910	10	1875	8	1845	1 9	3.52%
13FR18-1#44	118	215	0.5 5	0.05939	0.001 08	0.8704 1	0.014 63	0.1063 7	0.001 44	581	17	636	8	652	8	-2.45%
13FR18-1#45	24	41	0.5 8	0.13091	0.001 55	7.7008 8	0.087 01	0.4269 1	0.005 75	2110	11	2197	10	2292	2 6	-7.94%
13FR18-1#46	59	102	0.5 8	0.05796	0.001 13	0.8488 8	0.015 40	0.1063 0	0.001 47	528	19	624	8	651	9	-4.15%
13FR18-1#47	77	117	0.6 6	0.06087	0.001 12	0.8093 8	0.013 72	0.0965 0	0.001 32	635	17	602	8	594	8	1.35%
13FR18-1#48	122	118	1.0 3	0.06206	0.000 97	0.9095 7	0.013 14	0.1063 8	0.001 38	676	14	657	7	652	8	0.77%
13FR18-1#49	48	155	0.3 1	0.06033	0.001 04	0.8612 6	0.013 72	0.1036 1	0.001 38	615	16	631	7	636	8	-0.79%
13FR18-1#50	47	44	1.0 8	0.10702	0.001 45	4.5805 8	0.057 78	0.3106 4	0.004 24	1749	11	1746	11	1744	2 1	0.29%
13FR18-	139	317	0.4	0.07132	0.000	1.5642	0.015	0.1592	0.001	967	11	956	6	952	1	0.42%

1#51			4		73	6	26	0	88							
13FR18-1#52	98	72	1.3	0.06076	0.001	0.8491	0.018	0.1014	0.001	631	24	624	10	623	9	0.16%
13FR18-1#53	145	248	0.5	0.05707	0.000	0.7641	0.009	0.0971	0.001	494	13	576	6	598	7	-3.68%
13FR18-1#54	445	152	2.9	0.06092	0.006	0.8799	0.089	0.1047	0.001	636	23	641	48	642	1	-0.16%
13FR18-1#55	296	359	0.8	0.11542	0.000	5.4278	0.034	0.3413	0.003	1886	11	1889	5	1893	1	-0.37%
13FR18-1#56	87	103	0.8	0.05996	0.001	0.7868	0.014	0.0952	0.001	602	18	589	8	587	8	0.34%
13FR18-1#57	81	155	0.5	0.11224	0.000	5.1558	0.039	0.3334	0.003	1836	11	1845	6	1855	1	-1.02%
13FR18-1#58	180	356	0.5	0.05803	0.000	0.7688	0.007	0.0961	0.001	531	11	579	4	592	7	-2.20%
13FR18-1#59	115	121	0.9	0.06870	0.001	1.3043	0.018	0.1378	0.001	890	13	848	8	832	1	1.92%
13FR18-1#60	86	95	0.9	0.06092	0.001	0.8427	0.017	0.1004	0.001	636	21	621	9	617	9	0.65%
13FR18-1#61	86	293	0.2	0.11704	0.000	5.5237	0.036	0.3425	0.003	1912	11	1904	6	1899	1	0.68%
13FR18-1#62	55	93	0.6	0.11962	0.001	5.7360	0.057	0.3480	0.004	1951	10	1937	9	1925	2	1.35%
13FR18-1#63	138	297	0.4	0.10814	0.001	4.5510	0.058	0.3052	0.003	1768	32	1740	11	1717	1	2.97%
13FR18-1#64	36	59	0.6	0.11042	0.001	4.9767	0.047	0.3271	0.004	1806	10	1815	8	1825	2	-1.04%
13FR18-1#65	182	169	1.0	0.07097	0.000	1.5870	0.015	0.1623	0.001	957	11	965	6	970	1	-0.52%
13FR18-1#66	252	385	0.6	0.05936	0.000	0.8733	0.008	0.1068	0.001	580	11	637	4	654	7	-2.60%
13FR18-1#67	53	166	0.3	0.05961	0.001	0.8388	0.020	0.1020	0.001	589	61	619	11	627	8	-1.28%
13FR18-1#68	97	147	0.6	0.11535	0.001	5.4673	0.046	0.3440	0.004	1885	10	1895	7	1906	2	-1.10%
			6		03	1	89	7	11						0	

13FR18-1#69	119	132	0.9 0	0.06109	0.000 93	0.8474 5	0.011 94	0.1007 1	0.001 29	642	14	623	7	619	8	0.65%
13FR18-1#70	230	255	0.9 0	0.06165	0.001 09	0.8462 9	0.013 75	0.0996 6	0.001 35	662	16	623	8	612	8	1.80%
13FR18-1#71	88	159	0.5 5	0.05981	0.000 89	0.8034 7	0.011 19	0.0975 2	0.001 24	597	13	599	6	600	7	-0.17%
13FR18-1#72	106	226	0.4 7	0.08279	0.000 72	2.4288 1	0.020 30	0.2129 8	0.002 46	1264	11	1251	6	1245	1 3	1.53%
13FR18-1#73	38	67	0.5 6	0.07084	0.001 13	1.4313 9	0.021 17	0.1467 0	0.001 95	953	13	902	9	882	1 1	2.27%
13FR18-1#74	110	72	1.5 2	0.06231	0.001 47	0.9106 6	0.019 68	0.1061 1	0.001 64	685	22	657	10	650	1 0	1.08%
13FR18-1#75	159	53	3.0 1	0.12264	0.001 15	6.1328 4	0.055 33	0.3630 5	0.004 43	1995	10	1995	8	1997	2 1	-0.10%
13FR18-1#76	95	143	0.6 7	0.11908	0.001 01	5.6966 0	0.046 90	0.3473 2	0.004 11	1942	10	1931	7	1922	2 0	1.04%
13FR18-1#77	128	171	0.7 5	0.21004	0.001 59	16.004 78	0.121 73	0.5532 3	0.006 65	2906	10	2877	7	2839	2 8	2.36%
13FR18-1#78	43	315	0.1 4	0.12747	0.000 82	6.0657 3	0.039 27	0.3454 8	0.003 87	2063	11	1985	6	1913	1 9	7.84%
13FR18-1#79	133	497	0.2 7	0.11746	0.000 76	4.8246 3	0.031 43	0.2982 1	0.003 34	1918	11	1789	5	1682	1 7	14.03%
13FR18-1#80	64	69	0.9 3	0.11823	0.001 33	5.6774 7	0.060 29	0.3486 7	0.004 50	1930	10	1928	9	1928	2 2	0.10%
13FR18-1#81	88	187	0.4 7	0.17989	0.001 07	12.617 20	0.077 76	0.5092 5	0.005 70	2652	11	2652	6	2653	2 4	-0.04%
13FR18-1#82	209	324	0.6 5	0.05958	0.000 64	0.8075 6	0.008 19	0.0984 1	0.001 15	588	11	601	5	605	7	-0.66%
13FR18-1#83	148	347	0.4 3	0.05770	0.000 60	0.7511 0	0.007 45	0.0945 2	0.001 10	518	11	569	4	582	6	-2.23%
13FR18-1#84	109	106	1.0 2	0.06175	0.001 14	0.8622 8	0.014 73	0.1013 9	0.001 39	665	17	631	8	623	8	1.28%
13FR18-1#85	108	279	0.3 9	0.05983	0.001 51	0.7532 4	0.016 62	0.0913 1	0.001 11	597	56	570	10	563	7	1.24%
13FR18-	338	269	1.2	0.11798	0.000	5.5169	0.041	0.3395	0.003	1926	11	1903	6	1884	1	2.23%

1#86			6		90	7	18	3	92						9	
13FR18-1#87	60	101	0.5 9	0.11776	0.001 13	5.5624 8	0.051 00	0.3429 9	0.004 19	1923	10	1910	8	1901	2 0	1.16%
13FR18-1#88	94	215	0.4 4	0.06041	0.000 72	0.8359 4	0.009 39	0.1004 8	0.001 20	618	12	617	5	617	7	0.00%
13FR18-1#89	75	53	1.4 2	0.11587	0.001 54	5.4541 6	0.068 07	0.3417 9	0.004 71	1893	11	1893	11	1895	2 3	-0.11%
13FR18-1#90	47	336	0.1 4	0.10113	0.000 67	4.0422 6	0.027 03	0.2902 3	0.003 25	1645	11	1643	5	1643	1 6	0.12%
13FR18-1#91	149	178	0.8 4	0.07302	0.000 80	1.6974 8	0.017 53	0.1688 0	0.002 03	1015	11	1008	7	1005	1 1	1.00%
13FR18-1#92	151	216	0.7 0	0.11484	0.000 97	5.3428 1	0.043 90	0.3378 2	0.003 99	1877	10	1876	7	1876	1 9	0.05%
13FR18-1#93	168	140	1.2 0	0.05877	0.000 93	0.7705 9	0.011 31	0.0952 1	0.001 22	559	14	580	6	586	7	-1.02%
13FR18-1#94	122	212	0.5 7	0.12307	0.002 69	5.1608 8	0.091 68	0.3041 4	0.003 88	2001	40	1846	15	1712	1 9	16.88%
13FR18-1#95	66	101	0.6 5	0.11066	0.000 96	4.9308 0	0.041 27	0.3235 7	0.003 83	1810	10	1808	7	1807	1 9	0.17%
13FR18-1#96	409	493	0.8 3	0.10330	0.000 82	1.4573 4	0.011 00	0.1024 5	0.001 17	1684	11	913	5	629	7	45.15%
13FR18-1#97	84	38	2.1 9	0.11893	0.001 57	5.7287 5	0.070 75	0.3497 8	0.004 81	1940	11	1936	11	1934	2 3	0.31%
13FR18-1#98	271	272	1.0 0	0.06003	0.000 73	0.8018 0	0.009 14	0.0969 9	0.001 16	605	12	598	5	597	7	0.17%
13FR18-1#99	60	63	0.9 6	0.06159	0.001 80	0.7818 3	0.020 88	0.0921 8	0.001 60	660	29	587	12	568	9	3.35%
13FR18-1#100	192	168	1.1 4	0.05854	0.000 80	0.7864 6	0.010 06	0.0975 6	0.001 20	550	13	589	6	600	7	-1.83%
13FR19																
13FR19#01	164	282	0.5 8	0.11587	0.000 89	4.9118 6	0.036 71	0.3073 6	0.003 50	1893	10	1804	6	1728	1 7	9.55%
13FR19#02	136	230	0.5 9	0.12259	0.000 85	5.3285 5	0.036 49	0.3151 9	0.003 53	1994	11	1873	6	1766	1 7	12.91%
13FR19#03	161	122	1.3	0.11557	0.001	3.9483	0.033	0.2477	0.002	1889	10	1624	7	1427	1	32.38%

13FR19#04	275	514	0.5 3	0.20453	0.001 09	13.514 02	0.074 85	0.4791 7	0.005 18	2863	10	2716	5	2524	2 3	13.43%
13FR19#05	50	105	0.4 8	0.12700	0.000 96	6.5830 4	0.048 92	0.3759 3	0.004 30	2057	10	2057	7	2057	2 0	0.00%
13FR19#06	73	134	0.5 4	0.11486	0.000 86	5.3677 6	0.039 21	0.3389 3	0.003 84	1878	11	1880	6	1882	1 8	-0.21%
13FR19#07	91	132	0.6 9	0.10910	0.002 36	4.4754 7	0.079 64	0.2975 2	0.003 67	1784	40	1726	15	1679	1 8	6.25%
13FR19#08	320	637	0.5 0	0.06385	0.000 55	0.8096 2	0.006 63	0.0919 8	0.001 03	737	11	602	4	567	6	6.17%
13FR19#09	36	99	0.3 6	0.13298	0.001 02	7.1024 1	0.053 36	0.3874 3	0.004 46	2138	10	2124	7	2111	2 1	1.28%
13FR19#10	96	346	0.2 8	0.18626	0.001 34	13.405 39	0.095 78	0.5220 7	0.006 05	2709	10	2709	7	2708	2 6	0.04%
13FR19#11	133	242	0.5 5	0.05941	0.000 97	0.7639 2	0.011 55	0.0932 9	0.001 21	582	15	576	7	575	7	0.17%
13FR19#12	255	342	0.7 5	0.06161	0.000 70	0.8597 6	0.009 14	0.1012 4	0.001 19	661	11	630	5	622	7	1.29%
13FR19#13	467	807	0.5 8	0.08323	0.002 24	0.8720 1	0.020 68	0.0759 8	0.000 97	1275	54	637	11	472	6	34.96%
13FR19#14	171	385	0.4 5	0.06188	0.000 67	0.7800 5	0.007 90	0.0914 6	0.001 06	670	11	586	5	564	6	3.90%
13FR19#15	29	46	0.6 2	0.12303	0.001 97	6.1928 4	0.092 10	0.3652 0	0.005 59	2001	12	2003	13	2007	2 6	-0.30%
13FR19#16	146	532	0.2 7	0.05857	0.000 70	0.8079 2	0.009 04	0.1000 9	0.001 18	551	12	601	5	615	7	-2.28%
13FR19#17	192	649	0.3 0	0.15369	0.000 83	6.7290 9	0.037 16	0.3176 8	0.003 42	2387	11	2076	5	1778	1 7	34.25%
13FR19#18	38	61	0.6 2	0.06398	0.002 01	0.9298 8	0.026 56	0.1054 6	0.001 97	741	31	668	14	646	1 1	3.41%
13FR19#19	26	59	0.4 4	0.05520	0.003 43	0.5004 3	0.029 88	0.0657 5	0.001 13	420	14 3	412	20	411	7	0.24%
13FR19#20	155	117	1.3 3	0.12792	0.001 03	6.0967 6	0.046 92	0.3458 2	0.004 00	2070	10	1990	7	1915	1 9	8.09%

13FR19#21	237	514	0.4 6	0.05912	0.000 72	0.8027 7	0.009 06	0.0985 4	0.001 16	572	12	598	5	606	7	-1.32%
13FR19#22	192	191	1.0 0	0.06000	0.000 77	0.7880 8	0.009 38	0.0953 2	0.001 14	604	12	590	5	587	7	0.51%
13FR19#23	291	269	1.0 8	0.06101	0.001 25	0.8823 4	0.016 65	0.1049 4	0.001 50	640	19	642	9	643	9	-0.16%
13FR19#24	40	239	0.1 7	0.12329	0.001 10	6.4053 3	0.054 76	0.3770 1	0.004 50	2004	10	2033	8	2062	2 1	-2.81%
13FR19#25	78	65	1.2 0	0.19077	0.001 96	15.096 90	0.151 91	0.5742 9	0.007 72	2749	10	2821	10	2925	3 2	-6.02%
13FR19#26	473	319	1.4 9	0.06281	0.001 20	0.9954 4	0.017 47	0.1150 0	0.001 61	702	17	701	9	702	9	-0.14%
13FR19#27	171	316	0.5 4	0.05393	0.000 95	0.7537 4	0.012 31	0.1014 2	0.001 33	368	17	570	7	623	8	-8.51%
13FR19#28	21	48	0.4 4	0.11485	0.002 21	5.3974 1	0.095 56	0.3410 3	0.005 73	1878	14	1884	15	1892	2 8	-0.74%
13FR19#29	183	182	1.0 0	0.12901	0.001 15	7.1977 0	0.061 26	0.4048 6	0.004 85	2085	10	2136	8	2191	2 2	-4.84%
13FR19#30	471	721	0.6 5	0.05933	0.000 72	0.7633 4	0.008 55	0.0933 7	0.001 10	579	11	576	5	575	6	0.17%
13FR19#31	41	162	0.2 5	0.11294	0.001 38	5.4873 4	0.062 72	0.3525 8	0.004 66	1847	11	1899	10	1947	2 2	-5.14%
13FR19#32	43	454	0.1 0	0.05964	0.001 00	0.7928 8	0.012 17	0.0964 7	0.001 26	591	15	593	7	594	7	-0.17%
13FR19#33	229	423	0.5 4	0.05866	0.000 82	0.8090 3	0.010 46	0.1000 8	0.001 23	555	13	602	6	615	7	-2.11%
13FR19#34	113	332	0.3 4	0.11256	0.000 83	5.5573 9	0.039 55	0.3582 8	0.004 04	1841	11	1910	6	1974	1 9	-6.74%
13FR19#35	633	440	1.4 4	0.06082	0.000 92	0.8632 0	0.011 98	0.1029 9	0.001 30	633	13	632	7	632	8	0.00%
13FR19#36	143	119	1.2 0	0.23841	0.001 60	20.406 76	0.137 55	0.6211 3	0.007 19	3109	10	3111	7	3114	2 9	-0.16%
13FR19#37	40	428	0.0 9	0.16246	0.001 12	10.236 16	0.068 96	0.4572 1	0.005 19	2481	10	2456	6	2427	2 3	2.22%
13FR19#38	66	100	0.6	0.05490	0.001	0.7026	0.022	0.0928	0.001	408	39	540	14	572	1	-5.59%

			6		94	3	71	6	79								
13FR19#39	307	339	0.9 1	0.05793	0.000 89	0.9241 2	0.013 05	0.1157 6	0.001 47	527	14	665	7	706	8	-5.81%	
13FR19#40	181	616	0.2 9	0.05827	0.000 71	0.8321 9	0.009 42	0.1036 3	0.001 23	540	12	615	5	636	7	-3.30%	
13FR19#41	42	79	0.5 3	0.06037	0.004 25	0.5485 9	0.036 98	0.0659 1	0.001 35	617	15 7	444	24	411	8	8.03%	
13FR19#42	180	266	0.6 7	0.05923	0.000 97	0.8467 5	0.012 71	0.1037 3	0.001 35	576	15	623	7	636	8	-2.04%	
13FR19#43	52	93	0.5 6	0.09745	0.001 83	3.4293 6	0.058 48	0.2553 2	0.004 02	1576	14	1511	13	1466	2 1	7.50%	
<i>N13FR19# 01</i>	238	366	0.6 5	0.08168	0.001 63	0.9630 5	0.049 56	0.0851 3	0.001 11	1238	38	685	26	527	7	30.04%	
<i>N13FR19# 02</i>	1120	672	1.6 7	0.08144	0.001 13	0.9401 3	0.034 95	0.0785 2	0.000 83	1232	27	673	18	487	5	38.11%	
<i>N13FR19# 03</i>	335	413	0.8 1	0.06219	0.000 93	0.9511 5	0.039 22	0.1059 0	0.001 12	681	32	679	20	649	7	4.59%	
<i>N13FR19# 04</i>	913	965	0.9 5	0.13907	0.001 62	1.3485 8	0.046 85	0.0628 2	0.000 65	2216	20	867	20	393	4	120.70%	
<i>N13FR19# 05</i>	394	377	1.0 4	0.09165	0.001 66	1.1571 1	0.059 19	0.0922 8	0.001 17	1460	34	781	28	569	7	37.19%	
<i>N13FR19# 06</i>	228	276	0.8 3	0.09289	0.001 28	1.7382 6	0.081 43	0.1411 6	0.001 55	1486	26	1023	30	851	9	20.16%	
<i>N13FR19# 07</i>	169	407	0.4 2	0.06426	0.001 13	0.6861 2	0.030 03	0.0749 2	0.000 86	750	37	531	18	466	5	13.91%	
<i>N13FR19# 08</i>	248	789	0.3 1	0.09873	0.001 17	1.1271 0	0.041 33	0.0763 8	0.000 77	1600	22	766	20	475	5	61.52%	
<i>N13FR19# 09</i>	172	682	0.2 5	0.06504	0.000 93	0.8101 6	0.032 70	0.0852 8	0.000 89	776	30	603	18	528	5	14.22%	
<i>N13FR19# 10</i>	176	334	0.5 3	0.08437	0.001 65	0.7661 9	0.038 13	0.0680 7	0.000 88	1301	38	578	22	425	5	36.07%	
<i>N13FR19# 11</i>	175	236	0.7 4	0.07342	0.001 18	1.4044 8	0.074 30	0.1374 0	0.001 58	1026	32	891	31	830	9	7.34%	
<i>N13FR19# 12</i>	210	207	1.0 1	0.12646	0.021 04	1.1750 5	0.506 21	0.1577 0	0.017 52	2049	26 8	789	23 6	944	9 8	-16.42%	

N13FR19# 13	253	695	0.3 6	0.06405	0.000 89	0.7850 9	0.032 71	0.0831 3	0.000 85	743	29	588	19	515	5	14.30%
N13FR19# 14	412	423	0.9 7	0.18964	0.001 47	9.9468 5	0.481 75	0.3856 7	0.003 66	2739	13	2430	45	2103	1 7	30.26%
N13FR19# 15	162	222	0.7 3	0.12633	0.001 21	6.1543 0	0.338 16	0.3576 5	0.003 62	2048	17	1998	48	1971	1 7	3.88%
N13FR19# 16	103	687	0.1 5	0.10668	0.000 78	4.3426 3	0.175 30	0.2712 2	0.002 38	1744	13	1702	33	1547	1 2	12.70%
N13FR19# 17	229	305	0.7 5	0.07381	0.001 00	1.8197 1	0.097 39	0.1777 0	0.001 90	1036	27	1053	35	1054	1 0	-1.73%
N13FR19# 18	639	1094	0.5 8	0.08694	0.001 10	0.8012 8	0.034 10	0.0593 6	0.000 61	1359	24	598	19	372	4	60.77%
N13FR19# 19	50	57	0.8 7	0.14706	0.002 27	7.2712 9	0.679 26	0.4001 7	0.005 73	2312	26	2145	83	2170	2 6	6.56%
N13FR19# 20	508	278	1.8 3	0.08653	0.001 41	1.2407 7	0.069 34	0.1028 0	0.001 22	1350	31	819	31	631	7	29.87%
N13FR19# 21	19	186	0.1 0	0.15700	0.001 46	9.1085 2	0.577 57	0.4200 9	0.004 34	2424	16	2349	58	2261	2 0	7.20%
N13FR19# 22	54	66	0.8 2	0.11705	0.002 12	4.7812 8	0.459 47	0.2860 9	0.004 20	1912	32	1782	81	1622	2 1	17.86%
N13FR19# 23	775	280	2.7 7	0.08916	0.001 71	1.0232 5	0.063 55	0.0830 1	0.001 09	1408	36	716	32	514	6	39.20%
N13FR19# 24	605	438	1.3 8	0.09248	0.001 07	2.1699 6	0.120 61	0.1764 6	0.001 80	1477	22	1172	39	1048	1 0	41.01%
N13FR19# 25	139	250	0.5 6	0.05695	0.001 41	0.5477 7	0.035 91	0.0683 5	0.000 95	489	54	444	24	426	6	4.06%
N13FR19# 26	219	431	0.5 1	0.05819	0.000 96	0.7759 4	0.044 56	0.0908 2	0.001 00	536	36	583	25	560	6	4.07%
13FR21																
13FR21#01	41	201	0.2 0	0.06186	0.001 63	0.9247 4	0.022 28	0.1083 7	0.001 76	669	26	665	12	663	1 0	0.30%
13FR21#02	44	91	0.4 8	0.16170	0.002 60	10.016 29	0.150 82	0.4490 3	0.007 29	2474	12	2436	14	2391	3 2	3.47%
13FR21#03	31	315	0.1 0	0.05924	0.001 31	0.7801 6	0.015 86	0.0954 6	0.001 39	576	21	586	9	588	8	-0.34%

13FR21#04	41	88	0.4 7	0.18202	0.002 61	12.391 74	0.168 42	0.4935 1	0.007 68	2671	12	2635	13	2586	3 3	3.29%
13FR21#05	65	108	0.6 1	0.06240	0.002 45	0.7845 2	0.028 03	0.0911 5	0.001 94	688	41	588	16	562	1 1	4.63%
13FR21#06	85	341	0.2 5	0.17434	0.002 14	11.402 12	0.132 74	0.4741 3	0.006 67	2600	11	2557	11	2502	2 9	3.92%
13FR21#07	96	256	0.3 8	0.18403	0.001 95	12.401 14	0.125 87	0.4885 2	0.006 44	2690	10	2635	10	2564	2 8	4.91%
13FR21#08	114	367	0.3 1	0.06557	0.001 27	1.0615 7	0.018 82	0.1173 8	0.001 64	793	17	735	9	715	9	2.80%
13FR21#09	53	109	0.4 9	0.07197	0.005 42	0.8540 7	0.061 04	0.0860 6	0.002 05	985	15 8	627	33	532	1 2	17.86%
13FR21#10	62	75	0.8 2	0.11599	0.002 23	5.6285 9	0.099 95	0.3517 9	0.005 85	1895	14	1920	15	1943	2 8	-2.47%
13FR21#11	113	233	0.4 8	0.05895	0.001 99	0.7028 5	0.021 72	0.0864 3	0.001 62	565	36	540	13	534	1 0	1.12%
13FR21#12	115	200	0.5 7	0.17548	0.001 96	12.191 51	0.130 32	0.5036 7	0.006 78	2611	10	2619	10	2630	2 9	-0.72%
13FR21#13	48	198	0.2 4	0.05712	0.001 76	0.6342 6	0.017 96	0.0805 0	0.001 40	496	33	499	11	499	8	0.00%
13FR21#14	61	120	0.5 1	0.05869	0.002 50	0.6292 9	0.024 44	0.0777 4	0.001 72	556	47	496	15	483	1 0	2.69%
13FR21#15	61	210	0.2 9	0.07139	0.002 44	1.4844 4	0.045 25	0.1508 1	0.002 32	969	71	924	18	906	1 3	1.99%
13FR21#16	82	91	0.9 0	0.06546	0.003 24	0.7895 2	0.035 62	0.0874 4	0.002 24	789	53	591	20	540	1 3	9.44%
13FR21#17	20	55	0.3 7	0.05817	0.003 28	0.7317 3	0.037 93	0.0912 0	0.002 49	536	67	558	22	563	1 5	-0.89%
13FR21#18	78	168	0.4 7	0.05699	0.002 31	0.6419 3	0.023 80	0.0816 6	0.001 73	491	46	504	15	506	1 0	-0.40%
13FR21#19	66	84	0.7 8	0.05999	0.003 69	0.7980 9	0.044 85	0.0964 5	0.002 96	603	70	596	25	594	1 7	0.34%
13FR21#20	90	330	0.2 7	0.05903	0.001 37	0.7918 8	0.016 88	0.0972 5	0.001 46	568	23	592	10	598	9	-1.00%
13FR21#21	95	83	1.1	0.12602	0.002	6.3298	0.114	0.3641	0.006	2043	14	2023	16	2002	2	2.05%

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13FR21#22	44	62	0.7 0	0.12935	0.002 79	6.7094 2	0.133 62	0.3760 6	0.006 96	2089	16	2074	18	2058	3 3	1.51%
13FR21#23	34	98	0.3 4	0.16495	0.002 81	10.305 03	0.164 45	0.4529 4	0.007 66	2507	13	2463	15	2408	3 4	4.11%
13FR21#24	166	172	0.9 7	0.14251	0.001 88	7.9592 9	0.098 41	0.4049 4	0.005 67	2258	11	2226	11	2192	2 6	3.01%
13FR21#25	20	285	0.0 7	0.05843	0.001 66	0.6951 9	0.018 07	0.0862 6	0.001 43	546	30	536	11	533	8	0.56%
13FR21#26	35	110	0.3 2	0.05541	0.002 16	0.6722 6	0.023 98	0.0879 7	0.001 81	429	44	522	15	544	1 1	-4.04%
13FR21#27	208	481	0.4 3	0.05803	0.001 33	0.7224 0	0.015 22	0.0902 6	0.001 33	531	23	552	9	557	8	-0.90%
13FR21#28	77	77	0.9 9	0.06547	0.003 57	0.7966 5	0.039 30	0.0882 2	0.002 49	789	58	595	22	545	1 5	9.17%
13FR21#29	326	471	0.6 9	0.07518	0.001 48	0.8692 6	0.015 42	0.0838 3	0.001 20	1073	16	635	8	519	7	22.35%
13FR21#30	52	147	0.3 6	0.05708	0.002 39	0.6232 2	0.023 88	0.0791 6	0.001 71	495	48	492	15	491	1 0	0.20%
13FR21#31	146	230	0.6 3	0.05730	0.002 18	0.6138 1	0.021 43	0.0776 7	0.001 55	503	43	486	13	482	9	0.83%
13FR21#32	64	115	0.5 5	0.17137	0.002 44	11.380 78	0.153 59	0.4815 2	0.007 35	2571	11	2555	13	2534	3 2	1.46%
13FR21#33	100	305	0.3 3	0.06042	0.001 56	0.8045 7	0.018 97	0.0965 5	0.001 53	619	26	599	11	594	9	0.84%
13FR21#34	58	91	0.6 4	0.05737	0.002 77	0.6906 9	0.030 72	0.0873 0	0.002 09	506	57	533	18	540	1 2	-1.30%
13FR21#35	83	130	0.6 4	0.06077	0.002 37	0.7646 1	0.027 16	0.0912 3	0.001 91	631	42	577	16	563	1 1	2.49%
13FR21#36	173	168	1.0 3	0.06280	0.002 34	0.7199 8	0.024 37	0.0831 3	0.001 70	701	39	551	14	515	1 0	6.99%
13FR21#37	102	415	0.2 5	0.06220	0.001 31	0.9466 4	0.018 30	0.1103 5	0.001 59	681	20	676	10	675	9	0.15%
13FR21#38	50	192	0.2 6	0.05657	0.002 06	0.6052 3	0.020 23	0.0775 8	0.001 49	475	41	481	13	482	9	-0.21%

13FR21#39	38	137	0.2 7	0.05733	0.002 50	0.6425 5	0.025 64	0.0812 7	0.001 82	504	50	504	16	504	1 1	0.00%
13FR21#40	21	183	0.1 1	0.05805	0.001 87	0.6748 4	0.019 86	0.0843 0	0.001 51	532	35	524	12	522	9	0.38%
13FR21#41	735	281	2.6 1	0.17835	0.001 84	11.905 44	0.117 29	0.4840 5	0.006 23	2638	10	2597	9	2545	2 7	3.65%
13FR21#42	319	386	0.8 3	0.05772	0.001 51	0.6133 4	0.014 74	0.0770 5	0.001 21	519	27	486	9	478	7	1.67%
13FR21#43	33	113	0.3 0	0.05625	0.004 06	0.6021 9	0.041 16	0.0776 5	0.001 82	462	16 5	479	26	482	1 1	-0.62%
13FR21#44	290	348	0.8 3	0.06023	0.001 50	0.7286 3	0.016 61	0.0877 2	0.001 36	612	25	556	10	542	8	2.58%
13FR21#45	48	144	0.3 3	0.05698	0.002 59	0.6159 9	0.025 58	0.0783 9	0.001 80	491	52	487	16	487	1 1	0.00%
13FR21#46	294	599	0.4 9	0.05988	0.001 24	0.7372 5	0.013 96	0.0892 8	0.001 25	599	19	561	8	551	7	1.81%
13FR21#47	40	118	0.3 4	0.06328	0.003 38	0.6914 7	0.033 54	0.0792 4	0.002 14	718	58	534	20	492	1 3	8.54%
13FR21#48	29	60	0.4 9	0.05792	0.003 11	0.7021 9	0.034 53	0.0879 1	0.002 34	527	62	540	21	543	1 4	-0.55%
13FR21#49	30	92	0.3 2	0.05707	0.002 81	0.6118 4	0.027 63	0.0777 5	0.001 90	494	58	485	17	483	1 1	0.41%
13FR21#50	276	280	0.9 9	0.05972	0.001 49	0.7782 6	0.017 74	0.0945 0	0.001 46	593	25	584	10	582	9	0.34%
13FR21#51	125	199	0.6 3	0.06114	0.001 64	0.8541 0	0.021 03	0.1013 0	0.001 66	644	27	627	12	622	1 0	0.80%
13FR21#52	329	372	0.8 8	0.05438	0.001 67	0.4793 7	0.013 52	0.0639 2	0.001 08	387	34	398	9	399	7	-0.25%
13FR21#53	62	187	0.3 3	0.05822	0.001 91	0.6803 0	0.020 48	0.0847 5	0.001 54	538	36	527	12	524	9	0.57%
13FR21#54	53	164	0.3 3	0.05828	0.002 06	0.6418 2	0.020 76	0.0798 7	0.001 51	540	39	503	13	495	9	1.62%
13FR21#55	94	338	0.2 8	0.05719	0.001 55	0.6343 9	0.015 76	0.0804 5	0.001 29	499	28	499	10	499	8	0.00%
13FR21#56	45	128	0.3	0.05740	0.002	0.6182	0.025	0.0781	0.001	507	53	489	16	485	1	0.82%

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13FR21#57	524	297	1.7 7	0.06177	0.001 79	0.8578 2	0.022 75	0.1007 2	0.001 73	666	29	629	12	619	1 0	1.62%
13FR21#58	90	218	0.4 1	0.09894	0.001 83	2.1080 8	0.034 73	0.1545 2	0.002 28	1604	14	1151	11	926	1 3	24.30%
13FR21#59	106	109	0.9 7	0.05907	0.002 98	0.7418 8	0.034 20	0.0910 9	0.002 33	570	57	564	20	562	1 4	0.36%
13FR21#60	56	89	0.6 3	0.10810	0.002 41	4.6946 1	0.096 01	0.3149 6	0.005 60	1768	17	1766	17	1765	2 7	0.17%
13FR21#61	26	32	0.8 1	0.08642	0.004 08	2.7092 5	0.116 57	0.2273 6	0.006 68	1348	41	1331	32	1321	3 5	2.04%
13FR21#62	158	191	0.8 2	0.05778	0.001 79	0.7403 2	0.021 07	0.0929 2	0.001 63	521	33	563	12	573	1 0	-1.75%
13FR21#63	52	242	0.2 1	0.05847	0.001 87	0.6504 3	0.019 02	0.0806 9	0.001 44	547	34	509	12	500	9	1.80%
13FR21#64	52	164	0.3 2	0.05926	0.002 73	0.7587 9	0.032 07	0.0928 7	0.002 19	577	52	573	19	572	1 3	0.17%
13FR21#65	424	285	1.4 9	0.05841	0.001 81	0.7095 2	0.020 18	0.0881 1	0.001 55	545	33	544	12	544	9	0.00%
13FR21#66	52	153	0.3 4	0.06145	0.001 81	0.8876 4	0.023 94	0.1047 7	0.001 81	655	30	645	13	642	1 1	0.47%
13FR21#67	30	40	0.7 5	0.06548	0.004 25	0.8195 0	0.048 31	0.0907 8	0.002 95	790	71	608	27	560	1 7	8.57%
13FR21#68	175	293	0.6 0	0.06247	0.001 58	0.8332 4	0.019 27	0.0967 4	0.001 52	690	25	615	11	595	9	3.36%
13FR21#69	56	179	0.3 2	0.05874	0.002 02	0.7178 7	0.022 66	0.0886 4	0.001 67	557	37	549	13	547	1 0	0.37%
13FR21#70	35	165	0.2 1	0.05778	0.003 38	0.6194 9	0.034 11	0.0777 6	0.001 55	522	13 2	490	21	483	9	1.45%
13FR21#71	23	74	0.3 1	0.12760	0.002 97	6.4975 5	0.139 69	0.3693 5	0.007 16	2065	17	2046	19	2026	3 4	1.92%
13FR21#72	72	69	1.0 4	0.05944	0.003 12	0.7181 0	0.034 78	0.0876 3	0.002 21	583	62	550	21	542	1 3	1.48%
13FR21#73	58	217	0.2 7	0.09834	0.002 53	1.9966 2	0.042 75	0.1472 6	0.002 11	1593	49	1114	14	886	1 2	25.73%

13FR21#74	36	126	0.2 9	0.06134	0.002 60	0.6846 6	0.026 38	0.0809 6	0.001 80	651	46	530	16	502	1 1	5.58%
13FR21#75	66	111	0.5 9	0.06056	0.002 53	0.8300 7	0.031 75	0.0994 2	0.002 18	624	46	614	18	611	1 3	0.49%
13FR21#76	126	133	0.9 4	0.12436	0.001 83	6.5303 9	0.089 40	0.3809 1	0.005 45	2020	11	2050	12	2081	2 5	-2.93%
13FR21#77	71	146	0.4 9	0.05433	0.002 08	0.6004 4	0.021 18	0.0801 7	0.001 57	385	45	478	13	497	9	-3.82%
13FR21#78	80	89	0.9 0	0.05726	0.002 52	0.6924 6	0.027 92	0.0877 2	0.001 97	502	50	534	17	542	1 2	-1.48%
13FR21#79	44	329	0.1 3	0.05614	0.001 28	0.5901 0	0.012 35	0.0762 5	0.001 10	458	23	471	8	474	7	-0.63%
13FR21#80	39	79	0.5 0	0.13279	0.002 86	6.8521 3	0.136 00	0.3743 1	0.006 92	2135	16	2092	18	2050	3 2	4.15%
13FR21#81	57	80	0.7 1	0.05986	0.002 85	0.6934 1	0.030 18	0.0840 3	0.002 02	599	54	535	18	520	1 2	2.88%
13FR21#82	206	494	0.4 2	0.06054	0.001 10	0.8163 0	0.013 67	0.0978 1	0.001 30	623	17	606	8	602	8	0.66%
13FR21#83	132	351	0.3 8	0.07721	0.001 06	2.0873 9	0.026 60	0.1961 3	0.002 45	1127	12	1145	9	1154	1 3	-2.34%
13FR21#84	20	67	0.3 0	0.15464	0.002 88	9.3793 4	0.163 04	0.4399 8	0.007 72	2398	14	2376	16	2351	3 5	2.00%
13FR21#85	166	352	0.4 7	0.17881	0.002 92	11.816 81	0.132 15	0.4793 1	0.005 70	2642	28	2590	10	2524	2 5	4.68%
13FR21#86	1531	836	1.8 3	0.06733	0.001 05	0.6584 2	0.009 33	0.0709 4	0.000 89	848	13	514	6	442	5	16.29%
13FR21#87	127	108	1.1 7	0.06406	0.002 51	0.8195 2	0.029 35	0.0928 1	0.001 95	744	42	608	16	572	1 2	6.29%
13FR21#88	64	43	1.4 8	0.06766	0.003 37	1.3349 9	0.060 71	0.1431 5	0.003 88	858	51	861	26	862	2 2	-0.12%
13FR21#89	266	305	0.8 7	0.06099	0.001 30	0.7411 3	0.014 50	0.0881 5	0.001 25	639	20	563	8	545	7	3.30%
13FR21#90	92	177	0.5 2	0.05777	0.002 40	0.6320 5	0.024 02	0.0793 7	0.001 70	521	47	497	15	492	1 0	1.02%
13FR21#91	94	203	0.4	0.05871	0.001	0.6835	0.018	0.0844	0.001	556	31	529	11	523	9	1.15%

13FR21#92	90	303	0.3 0	0.11050	6 74 0.002 17	5 3.2976 3	53 0.050 17	7 0.2164 5	43 0.002 70	1808	37	1480	12	1263	1 4	43.15%
13FR21#93	76	177	0.4 3	0.05811	0.001 89	0.6681 3	0.019 89	0.0834 1	0.001 50	534	35	520	12	516	9	0.78%
13FR21#94	52	181	0.2 9	0.05853	0.001 78	0.7391 7	0.020 67	0.0916 2	0.001 58	550	32	562	12	565	9	-0.53%
13FR21#95	47	113	0.4 1	0.05926	0.002 26	0.7798 6	0.027 17	0.0954 9	0.001 95	577	42	585	16	588	1 1	-0.51%
13FR21#96	22	81	0.2 7	0.05788	0.003 00	0.6218 2	0.029 78	0.0779 4	0.001 92	525	63	491	19	484	1 1	1.45%
13FR21#97	37	106	0.3 5	0.05868	0.002 52	0.6081 6	0.023 82	0.0752 0	0.001 66	555	48	482	15	467	1 0	3.21%
13FR21#98	309	322	0.9 6	0.06108	0.001 25	0.7307 5	0.013 70	0.0868 0	0.001 20	642	19	557	8	537	7	3.72%
13FR21#99	288	188	1.5 3	0.06033	0.001 72	0.8241 5	0.021 53	0.0991 2	0.001 66	615	29	610	12	609	1 0	0.16%
13FR21#100	90	338	0.2 7	0.06574	0.001 98	1.2062 9	0.032 44	0.1330 8	0.001 82	798	65	803	15	805	1 0	-0.25%
OUT																
OUT#01	146	168	0.8 7	0.06182	0.003 64	0.7835 1	0.044 00	0.0919 1	0.002 05	668	82	587	25	567	1 2	3.53%
OUT#02	83	66	1.2 6	0.06237	0.005 84	0.9063 5	0.081 23	0.1053 8	0.003 56	687	13 4	655	43	646	2 1	1.39%
OUT#03	50	77	0.6 5	0.11789	0.004 17	5.6075 0	0.190 53	0.3449 2	0.007 25	1924	32	1917	29	1910	3 5	0.73%
OUT#04	442	875	0.5 1	0.07002	0.007 21	0.7487 0	0.074 35	0.0775 5	0.002 11	929	22 0	567	43	482	1 3	17.63%
OUT#05	182	309	0.5 9	0.06050	0.002 81	0.7639 2	0.033 81	0.0915 7	0.001 67	622	64	576	19	565	1 0	1.95%
OUT#06	34	37	0.9 0	0.18798	0.006 84	12.667 53	0.449 65	0.4886 9	0.013 09	2725	27	2655	33	2565	5 7	6.24%
OUT#07	242	426	0.5 7	0.07499	0.003 72	1.3831 8	0.065 01	0.1337 7	0.002 87	1068	60	882	28	809	1 6	9.02%
OUT#08	487	646	0.7	0.17785	0.001	12.359	0.126	0.5039	0.005	2633	8	2632	10	2631	2	0.08%

			5		90	28	85	6	45					3		
OUT#09	104	271	0.3 9	0.05919	0.003 19	0.6764 9	0.034 82	0.0828 8	0.001 68	574	77	525	21	513	1 0	2.34%
OUT#10	63	99	0.6 4	0.12194	0.003 65	5.7260 8	0.164 05	0.3405 4	0.006 30	1985	26	1935	25	1889	3 0	5.08%
OUT#11	189	187	1.0 1	0.11810	0.002 69	5.4946 3	0.119 78	0.3374 4	0.005 05	1928	19	1900	19	1874	2 4	2.88%
OUT#12	221	248	0.8 9	0.06854	0.004 02	0.8459 4	0.047 03	0.0895 1	0.002 09	885	76	622	26	553	1 2	12.48%
OUT#13	77	144	0.5 4	0.06905	0.012 08	0.7938 6	0.134 86	0.0833 8	0.003 50	900	39 0	593	76	516	2 1	14.92%
OUT#14	100	108	0.9 2	0.07866	0.007 52	1.0478 0	0.094 78	0.0966 2	0.003 63	1164	12 0	728	47	595	2 1	22.35%
OUT#15	133	342	0.3 9	0.06470	0.002 92	0.7862 6	0.033 67	0.0881 4	0.001 61	765	59	589	19	545	1 0	8.07%
OUT#16	173	329	0.5 3	0.05740	0.004 38	0.6332 7	0.046 89	0.0800 1	0.001 47	507	17 3	498	29	496	9	0.40%
OUT#17	54	107	0.5 0	0.06786	0.004 21	1.2763 6	0.075 57	0.1364 3	0.003 40	864	81	835	34	824	1 9	1.33%
OUT#18	54	71	0.7 7	0.10532	0.007 77	4.0942 2	0.283 60	0.2819 4	0.007 18	1720	14 0	1653	57	1601	3 6	7.43%
OUT#19	72	73	0.9 8	0.06463	0.006 57	0.7848 1	0.076 16	0.0880 9	0.003 19	762	14 4	588	43	544	1 9	8.09%
OUT#20	111	231	0.4 8	0.06801	0.003 61	0.8366 9	0.042 19	0.0892 3	0.001 89	869	69	617	23	551	1 1	11.98%
OUT#21	112	178	0.6 3	0.11986	0.002 73	5.4659 8	0.118 64	0.3308 1	0.004 95	1954	19	1895	19	1842	2 4	6.08%
OUT#22	92	107	0.8 5	0.11334	0.003 56	4.6623 4	0.139 58	0.2984 0	0.005 51	1854	29	1761	25	1683	2 7	10.16%
OUT#23	60	114	0.5 3	0.05691	0.004 46	0.7449 6	0.056 00	0.0949 6	0.002 61	488	11 7	565	33	585	1 5	-3.42%
OUT#24	48	54	0.8 8	0.04991	0.013 47	0.5544 4	0.146 82	0.0805 7	0.004 16	191	47 0	448	96	500	2 5	-10.40%
OUT#25	157	279	0.5 6	0.06676	0.002 61	1.2157 9	0.045 36	0.1321 2	0.002 26	830	49	808	21	800	1 3	1.00%

OUT#26	86	145	0.6 0	0.06484	0.004 94	0.8492 1	0.061 58	0.0950 2	0.002 73	769	10 4	624	34	585	1 6	6.67%
OUT#27	145	71	2.0 5	0.13101	0.006 12	5.6786 6	0.252 06	0.3144 4	0.008 61	2112	41	1928	38	1763	4 2	19.80%
OUT#28	432	622	0.6 9	0.06070	0.003 46	0.7319 7	0.040 24	0.0874 6	0.001 29	628	12 6	558	24	541	8	3.14%
OUT#29	70	32	2.1 6	0.05019	0.009 33	0.6904 2	0.124 44	0.0998 0	0.005 44	204	28 4	533	75	613	3 2	-13.05%
OUT#30	46	324	0.1 4	0.05944	0.002 87	0.7562 2	0.034 87	0.0923 0	0.001 74	583	67	572	20	569	1 0	0.53%
OUT#31	183	350	0.5 2	0.06282	0.002 82	0.9311 8	0.039 82	0.1075 5	0.001 97	702	60	668	21	659	1 1	1.37%
OUT#32	229	179	1.2 8	0.22239	0.003 32	17.568 58	0.258 27	0.5731 7	0.007 99	2998	11	2966	14	2921	3 3	2.64%
OUT#33	81	79	1.0 3	0.07687	0.008 26	1.1186 5	0.113 74	0.1055 9	0.004 50	1118	13 5	762	55	647	2 6	17.77%
OUT#34	67	196	0.3 4	0.07149	0.003 95	1.1329 1	0.059 34	0.1149 8	0.002 63	971	70	769	28	702	1 5	9.54%
OUT#35	64	92	0.6 9	0.11756	0.004 89	5.4351 9	0.216 35	0.3354 6	0.008 10	1919	38	1890	34	1865	3 9	2.90%
OUT#36	45	156	0.2 9	0.21104	0.004 11	16.367 23	0.314 41	0.5627 4	0.009 42	2914	14	2898	18	2878	3 9	1.25%
OUT#37	46	161	0.2 8	0.12590	0.003 90	5.5708 6	0.164 46	0.3210 8	0.006 15	2041	27	1912	25	1795	3 0	13.70%
OUT#38	96	131	0.7 3	0.06906	0.009 23	0.8230 3	0.106 86	0.0864 4	0.002 72	901	29 2	610	60	534	1 6	14.23%
OUT#39	77	28	2.8 0	0.12691	0.007 13	5.6552 0	0.302 85	0.3233 5	0.010 47	2056	51	1925	46	1806	5 1	13.84%
OUT#40	56	76	0.7 3	0.06094	0.005 84	0.9431 4	0.086 50	0.1123 0	0.003 91	637	13 8	675	45	686	2 3	-1.60%
OUT#41	165	261	0.6 3	0.06314	0.002 97	0.8883 5	0.039 87	0.1021 0	0.001 94	713	63	645	21	627	1 1	2.87%
OUT#42	63	90	0.7 0	0.11900	0.003 58	5.4870 6	0.157 64	0.3346 1	0.006 18	1941	27	1899	25	1861	3 0	4.30%
OUT#43	39	50	0.7	0.10418	0.005	4.4940	0.217	0.3130	0.008	1700	50	1730	40	1756	4	-3.19%

			8		25	9	20	6	46						2	
OUT#44	105	100	1.0 5	0.06157	0.004 96	0.8008 1	0.061 65	0.0943 8	0.002 77	659	11 5	597	35	581	1 6	2.75%
OUT#45	100	286	0.3 5	0.10643	0.002 27	4.4361 2	0.090 12	0.3024 9	0.004 18	1739	19	1719	17	1704	2 1	2.05%
OUT#46	73	92	0.7 9	0.07070	0.009 22	0.9352 9	0.115 97	0.0960 1	0.004 65	949	17 6	670	61	591	2 7	13.37%
OUT#47	27	37	0.7 4	0.11755	0.015 02	4.0689 3	0.486 00	0.2510 4	0.011 39	1919	24 0	1648	97	1444	5 9	32.89%
OUT#48	194	269	0.7 2	0.05782	0.002 86	0.7741 3	0.036 65	0.0971 7	0.001 86	523	70	582	21	598	1 1	-2.68%
OUT#49	258	655	0.3 9	0.10485	0.004 10	1.2009 5	0.043 31	0.0831 3	0.001 61	1712	38	801	20	515	1 0	55.53%
OUT#50	68	101	0.6 7	0.10465	0.008 05	4.4019 7	0.316 21	0.3050 9	0.008 37	1708	14 6	1713	59	1716	4 1	-0.47%
OUT#51	284	248	1.1 5	0.06388	0.002 74	1.0896 8	0.044 57	0.1238 2	0.002 23	738	56	748	22	753	1 3	-0.66%
OUT#52	277	274	1.0 1	0.13142	0.008 98	5.5943 7	0.360 70	0.3087 3	0.006 97	2117	12 3	1915	56	1734	3 4	22.09%
OUT#53	111	221	0.5 0	0.13582	0.002 64	7.1681 6	0.133 53	0.3831 1	0.005 43	2175	15	2133	17	2091	2 5	4.02%
OUT#54	102	154	0.6 7	0.06809	0.003 39	1.3101 9	0.062 20	0.1396 8	0.002 94	871	64	850	27	843	1 7	0.83%
OUT#55	102	77	1.3 3	0.06563	0.012 51	0.8409 9	0.157 04	0.0929 4	0.003 60	794	42 8	620	87	573	2 1	8.20%
OUT#56	69	131	0.5 3	0.05769	0.004 12	0.8280 7	0.056 59	0.1041 9	0.002 69	518	10 5	613	31	639	1 6	-4.07%
OUT#57	78	70	1.1 1	0.11860	0.004 53	5.3964 1	0.197 05	0.3303 2	0.007 43	1935	35	1884	31	1840	3 6	5.16%
OUT#58	86	78	1.1 1	0.05727	0.005 68	0.7502 2	0.071 45	0.0951 1	0.003 17	502	15 2	568	41	586	1 9	-3.07%
OUT#59	54	135	0.4 0	0.12899	0.004 79	5.6651 5	0.184 63	0.3185 3	0.005 65	2084	67	1926	28	1783	2 8	16.88%
OUT#60	278	226	1.2 3	0.05843	0.003 17	0.7517 4	0.038 95	0.0934 0	0.001 93	546	77	569	23	576	1 1	-1.22%

OUT#61	152	345	0.4 4	0.13741	0.002 45	7.4628 0	0.127 70	0.3943 2	0.005 32	2195	14	2169	15	2143	2 5	2.43%
OUT#62	261	385	0.6 8	0.15211	0.002 36	8.4804 7	0.126 41	0.4047 9	0.005 15	2370	11	2284	14	2191	2 4	8.17%
OUT#63	72	132	0.5 5	0.06137	0.004 40	0.7721 2	0.052 78	0.0913 5	0.002 46	652	10 0	581	30	564	1 5	3.01%
OUT#64	189	211	0.9 0	0.06223	0.003 26	0.7913 5	0.039 48	0.0923 3	0.001 90	682	71	592	22	569	1 1	4.04%
OUT#65	75	110	0.6 8	0.13219	0.003 47	7.4321 8	0.188 01	0.4082 6	0.007 21	2127	22	2165	23	2207	3 3	-3.62%
OUT#66	85	132	0.6 5	0.06987	0.003 61	1.4178 4	0.069 78	0.1473 4	0.003 21	925	65	896	29	886	1 8	1.13%
OUT#67	139	247	0.5 6	0.07537	0.003 49	1.3407 6	0.058 89	0.1291 7	0.002 63	1078	56	864	26	783	1 5	10.34%
OUT#68	100	638	0.1 6	0.08231	0.002 56	1.5570 0	0.043 67	0.1371 9	0.001 85	1253	62	953	17	829	1 0	14.96%
OUT#69	142	166	0.8 6	0.06509	0.003 74	0.9238 9	0.050 51	0.1030 7	0.002 34	777	77	664	27	632	1 4	5.06%
OUT#70	178	568	0.3 1	0.05870	0.002 17	0.6369 7	0.022 47	0.0788 1	0.001 22	556	50	500	14	489	7	2.25%
OUT#71	70	90	0.7 8	0.10720	0.004 11	3.9867 6	0.145 17	0.2701 0	0.005 74	1752	37	1632	30	1541	2 9	13.69%
OUT#72	302	367	0.8 2	0.06324	0.002 35	0.9241 4	0.032 69	0.1061 4	0.001 71	716	48	665	17	650	1 0	2.31%
OUT#73	35	39	0.9 0	0.12664	0.010 49	4.2292 3	0.329 31	0.2425 4	0.010 67	2052	77	1680	64	1400	5 5	46.57%
OUT#74	252	375	0.6 7	0.05957	0.004 89	0.7238 8	0.057 78	0.0881 3	0.001 67	588	18 4	553	34	544	1 0	1.65%
OUT#75	146	176	0.8 3	0.17771	0.003 70	11.822 83	0.239 11	0.4832 1	0.007 94	2632	15	2590	19	2541	3 5	3.58%
OUT#76	22	127	0.1 7	0.05226	0.013 30	0.3423 5	0.085 50	0.0475 1	0.002 30	297	46 6	299	65	299	1 4	0.00%
OUT#77	237	393	0.6 0	0.06023	0.003 85	0.8500 4	0.052 36	0.1023 7	0.001 73	612	14 2	625	29	628	1 0	-0.48%
OUT#78	309	195	1.5	0.06300	0.003	0.8895	0.044	0.1025	0.002	708	70	646	24	629	1	2.70%

			8		28	8	05	7	13					2		
OUT#79	365	302	1.2 1	0.08200	0.003 55	1.0864 6	0.044 22	0.0962 5	0.001 88	1246	49	747	22	592	1 1	26.18%
OUT#80	21	30	0.6 8	0.12079	0.007 88	4.9962 6	0.309 58	0.3004 5	0.010 89	1968	61	1819	52	1694	5 4	16.17%
OUT#81	109	124	0.8 8	0.11652	0.003 28	4.9981 3	0.133 96	0.3116 1	0.005 38	1904	25	1819	23	1749	2 6	8.86%
OUT#82	57	49	1.1 7	0.05681	0.006 71	0.7537 9	0.085 61	0.0964 0	0.003 80	484	18 2	570	50	593	2 2	-3.88%
OUT#83	440	167	2.6 4	0.06501	0.003 58	0.9676 4	0.050 71	0.1081 4	0.002 37	775	73	687	26	662	1 4	3.78%
OUT#84	60	74	0.8 2	0.10029	0.004 23	3.9073 7	0.157 16	0.2830 7	0.006 39	1629	42	1615	33	1607	3 2	1.37%
OUT#85	309	702	0.4 4	0.05901	0.003 92	0.6499 2	0.041 60	0.0798 8	0.001 41	568	14 9	508	26	495	8	2.63%
OUT#86	104	84	1.2 4	0.06123	0.004 95	0.8384 4	0.064 68	0.0994 9	0.002 95	647	11 5	618	36	611	1 7	1.15%
OUT#87	22	39	0.5 7	0.04605	0.025 60	0.3119 4	0.171 01	0.0491 3	0.004 56		93 1	276	13 2	309	2 8	-10.68%
OUT#88	128	252	0.5 1	0.07066	0.003 32	1.0352 7	0.046 10	0.1064 6	0.002 12	948	59	722	23	652	1 2	10.74%
OUT#89	124	190	0.6 5	0.06086	0.003 16	0.9465 0	0.046 96	0.1130 1	0.002 31	634	72	676	24	690	1 3	-2.03%
OUT#90	84	114	0.7 4	0.07226	0.005 65	1.1785 8	0.087 29	0.1185 1	0.003 74	993	99	791	41	722	2 2	9.56%
OUT#91	151	178	0.8 5	0.07130	0.003 26	1.2880 8	0.055 92	0.1312 9	0.002 60	966	56	840	25	795	1 5	5.66%
OUT#92	59	91	0.6 5	0.06472	0.004 82	0.8821 7	0.062 60	0.0990 5	0.002 80	765	10 2	642	34	609	1 6	5.42%
OUT#93	389	409	0.9 5	0.05971	0.005 16	0.8067 4	0.067 98	0.0979 9	0.001 88	593	19 4	601	38	603	1 1	-0.33%
OUT#94	180	238	0.7 6	0.23136	0.006 73	13.464 34	0.321 45	0.4220 8	0.007 01	3061	48	2713	23	2270	3 2	34.85%
OUT#95	119	122	0.9 7	0.07883	0.006 53	1.6268 1	0.127 94	0.1499 8	0.005 16	1168	10 2	981	49	901	2 9	8.88%

<i>OUT#96</i>	224	344	0.6 5	0.17391	0.004 63	8.0572 9	0.180 79	0.3360 1	0.004 83	2596	45	2237	20	1867	2 3	39.05%
<i>OUT#97</i>	172	192	0.9 0	0.11606	0.002 84	5.0573 6	0.118 07	0.3167 1	0.004 95	1896	21	1829	20	1774	2 4	6.88%
<i>OUT#98</i>	23	676	0.0 3	0.12719	0.002 00	6.2915 7	0.072 98	0.3587 7	0.003 82	2059	28	2017	10	1976	1 8	4.20%
<i>OUT#99</i>	114	535	0.2 1	0.05839	0.001 92	0.8046 3	0.025 28	0.1001 6	0.001 45	544	43	599	14	615	8	-2.60%
<i>OUT#100</i>	49	111	0.4 4	0.13410	0.003 44	7.4594 3	0.184 47	0.4043 2	0.007 03	2152	21	2168	22	2189	3 2	-1.69%
MB2																
<i>MB2#01</i>	249	346	0.7 2	0.07367	0.007 52	0.8162 7	0.080 76	0.0803 6	0.002 01	1032	21 5	606	45	498	1 2	21.69%
<i>MB2#02</i>	38	33	1.1 5	0.12039	0.007 49	5.4559 7	0.323 81	0.3288 1	0.011 43	1962	58	1894	51	1833	5 5	7.04%
<i>MB2#03</i>	167	160	1.0 5	0.06003	0.003 65	0.7844 2	0.045 57	0.0948 2	0.002 16	605	86	588	26	584	1 3	0.68%
<i>MB2#04</i>	116	229	0.5 1	0.11447	0.002 41	5.2473 6	0.105 67	0.3326 2	0.004 77	1872	18	1860	17	1851	2 3	1.13%
<i>MB2#05</i>	437	616	0.7 1	0.05932	0.003 83	0.7384 0	0.046 23	0.0902 7	0.001 44	579	14 5	561	27	557	9	0.72%
<i>MB2#06</i>	59	59	0.9 9	0.11067	0.009 24	3.7846 5	0.298 02	0.2480 3	0.006 89	1810	15 7	1589	63	1428	3 6	26.75%
<i>MB2#07</i>	33	37	0.8 9	0.06717	0.008 24	0.9757 5	0.113 87	0.1053 9	0.004 82	843	16 8	691	59	646	2 8	6.97%
<i>MB2#08</i>	169	122	1.3 8	0.12259	0.003 20	6.2336 7	0.155 88	0.3689 5	0.006 30	1994	22	2009	22	2024	3 0	-1.48%
<i>MB2#09</i>	51	47	1.0 9	0.10564	0.005 13	4.5206 2	0.209 62	0.3104 9	0.008 14	1725	48	1735	39	1743	4 0	-1.03%
<i>MB2#10</i>	43	64	0.6 7	0.06414	0.006 54	0.8002 8	0.078 05	0.0905 3	0.003 23	746	14 6	597	44	559	1 9	6.80%
<i>MB2#11</i>	46	64	0.7 2	0.13943	0.008 47	6.6314 7	0.383 13	0.3450 8	0.012 50	2220	53	2064	51	1911	6 0	16.17%
<i>MB2#12</i>	206	349	0.5 9	0.06191	0.002 53	0.7972 4	0.031 06	0.0934 3	0.001 60	671	54	595	18	576	9	3.30%

MB2#13	91	92	1.0 0	0.06799	0.005 57	1.0002 5	0.078 02	0.1067 4	0.003 34	868	11 0	704	40	654	1 9	7.65%
MB2#14	123	303	0.4 1	0.05604	0.002 81	0.6047 8	0.029 02	0.0783 0	0.001 48	454	73	480	18	486	9	-1.23%
MB2#15	129	123	1.0 5	0.12108	0.004 08	4.7407 1	0.151 21	0.2840 9	0.005 68	1972	30	1774	27	1612	2 9	22.33%
MB2#16	65	85	0.7 7	0.14039	0.004 18	7.8450 3	0.224 53	0.4054 3	0.008 08	2232	24	2213	26	2194	3 7	1.73%
MB2#17	73	147	0.4 9	0.07314	0.003 61	1.3640 2	0.063 97	0.1353 1	0.002 89	1018	61	874	27	818	1 6	6.85%
MB2#18	96	133	0.7 2	0.06148	0.003 89	0.8837 3	0.053 40	0.1042 9	0.002 52	656	88	643	29	640	1 5	0.47%
MB2#19	109	228	0.4 8	0.12924	0.002 37	6.6341 5	0.116 19	0.3724 5	0.005 09	2088	14	2064	15	2041	2 4	2.30%
MB2#20	141	123	1.1 5	0.06312	0.003 78	1.0506 7	0.060 06	0.1207 8	0.002 83	712	82	729	30	735	1 6	-0.82%
MB2#21	77	138	0.5 6	0.05700	0.003 62	0.7590 2	0.046 13	0.0966 2	0.002 27	492	93	573	27	595	1 3	-3.70%
MB2#22	17	18	0.9 4	0.05080	0.010 38	0.6734 5	0.133 39	0.0961 8	0.005 67	232	30 3	523	81	592	3 3	-11.66%
MB2#23	75	107	0.7 0	0.07277	0.004 81	1.0384 1	0.064 97	0.1035 3	0.002 79	1008	83	723	32	635	1 6	13.86%
MB2#24	190	150	1.2 6	0.06770	0.003 51	0.9801 4	0.048 28	0.1050 4	0.002 21	859	67	694	25	644	1 3	7.76%
MB2#25	88	85	1.0 3	0.12180	0.004 08	5.8260 5	0.186 32	0.3470 4	0.007 10	1983	30	1950	28	1920	3 4	3.28%
MB2#26	166	113	1.4 7	0.05884	0.003 73	0.8435 3	0.051 15	0.1040 2	0.002 48	561	91	621	28	638	1 4	-2.66%
MB2#27	85	130	0.6 5	0.05987	0.003 95	0.8559 6	0.054 05	0.1037 3	0.002 52	599	95	628	30	636	1 5	-1.26%
MB2#28	30	57	0.5 3	0.08668	0.009 03	2.7108 1	0.270 91	0.2268 3	0.006 64	1353	20 9	1331	74	1318	3 5	2.66%
MB2#29	85	88	0.9 7	0.12787	0.003 77	6.6644 5	0.188 29	0.3781 6	0.007 18	2069	25	2068	25	2068	3 4	0.05%
MB2#30	82	79	1.0	0.11959	0.004	5.0671	0.164	0.3074	0.006	1950	31	1831	28	1728	3	12.85%

			4		09	4	75	3	23						1	
MB2#31	96	142	0.6 7	0.12026	0.002 83	5.4266 4	0.121 80	0.3273 9	0.005 07	1960	20	1889	19	1826	2 5	7.34%
MB2#32	307	279	1.1 0	0.07030	0.003 24	0.8970 8	0.039 15	0.0925 8	0.001 81	937	58	650	21	571	1 1	13.84%
MB2#33	174	465	0.3 7	0.06133	0.002 02	0.8855 8	0.027 84	0.1047 6	0.001 55	651	42	644	15	642	9	0.31%
MB2#34	98	184	0.5 3	0.11634	0.004 16	4.0938 5	0.138 09	0.2553 0	0.005 22	1901	33	1653	28	1466	2 7	29.67%
MB2#35	87	161	0.5 4	0.11733	0.002 75	5.6657 8	0.127 06	0.3503 6	0.005 43	1916	20	1926	19	1936	2 6	-1.03%
MB2#36	79	83	0.9 5	0.06671	0.004 68	1.0859 3	0.072 91	0.1181 0	0.003 10	829	96	747	35	720	1 8	3.75%
MB2#37	112	135	0.8 3	0.06219	0.004 14	0.9441 4	0.060 12	0.1101 5	0.002 76	681	93	675	31	674	1 6	0.15%
MB2#38	417	551	0.7 6	0.06887	0.004 03	0.8306 7	0.046 88	0.0874 8	0.001 37	895	12 4	614	26	541	8	13.49%
MB2#39	56	91	0.6 1	0.11348	0.003 80	4.8371 5	0.154 31	0.3092 7	0.006 09	1856	31	1791	27	1737	3 0	6.85%
MB2#40	206	178	1.1 6	0.13953	0.006 70	7.5547 2	0.332 59	0.3926 9	0.007 50	2221	85	2180	39	2135	3 5	4.03%
MB2#41	67	80	0.8 4	0.05733	0.004 50	0.9913 4	0.074 77	0.1254 6	0.003 55	504	11 6	699	38	762	2 0	-8.27%
MB2#42	68	44	1.5 5	0.04605	0.011 77	0.4187 7	0.103 53	0.0659 6	0.004 29		41 7	355	74	412	2 6	-13.83%
MB2#43	151	59	2.5 6	0.05661	0.006 07	0.7728 9	0.079 42	0.0990 6	0.003 66	476	16 3	581	45	609	2 1	-4.60%
MB2#44	85	97	0.8 8	0.11556	0.006 46	5.1223 0	0.265 81	0.3214 8	0.006 71	1889	10 3	1840	44	1797	3 3	5.12%
MB2#45	34	27	1.2 5	0.08968	0.012 22	1.1131 6	0.142 31	0.0900 6	0.004 98	1419	16 1	760	68	556	2 9	36.69%
MB2#46	67	69	0.9 8	0.12392	0.004 16	6.5759 7	0.212 44	0.3850 0	0.008 06	2013	30	2056	28	2100	3 8	-4.14%
MB2#47	90	102	0.8 8	0.10096	0.006 44	4.0196 0	0.241 30	0.2887 6	0.006 23	1642	12 2	1638	49	1635	3 1	0.43%

MB2#48	139	341	0.4 1	0.06158	0.002 83	0.8098 2	0.035 48	0.0954 1	0.001 78	660	62	602	20	587	1 0	2.56%
MB2#49	133	150	0.8 9	0.06271	0.003 63	0.9539 0	0.052 76	0.1103 6	0.002 47	698	80	680	27	675	1 4	0.74%
MB2#50	41	93	0.4 4	0.06645	0.004 43	1.2461 6	0.079 57	0.1360 7	0.003 52	821	90	822	36	822	2 0	0.00%
MB2#51	177	120	1.4 7	0.06495	0.004 13	0.8610 0	0.052 14	0.0961 8	0.002 35	773	86	631	28	592	1 4	6.59%
MB2#52	64	105	0.6 1	0.10982	0.003 44	4.6165 0	0.137 90	0.3049 9	0.005 63	1796	29	1752	25	1716	2 8	4.66%
MB2#53	57	110	0.5 2	0.17957	0.003 55	12.797 26	0.246 82	0.5170 4	0.008 30	2649	14	2665	18	2687	3 5	-1.41%
MB2#54	106	160	0.6 6	0.06394	0.003 34	0.9463 5	0.047 03	0.1073 8	0.002 25	740	70	676	25	658	1 3	2.74%
MB2#55	137	348	0.3 9	0.06205	0.003 65	0.8147 6	0.045 90	0.0952 4	0.001 62	676	12 9	605	26	586	1 0	3.24%
MB2#56	88	46	1.9 0	0.11408	0.005 36	5.6356 6	0.254 45	0.3584 1	0.009 58	1865	45	1922	39	1975	4 5	-5.57%
MB2#57	178	181	0.9 8	0.05870	0.006 93	0.7240 9	0.083 57	0.0894 7	0.002 24	556	26 7	553	49	552	1 3	0.18%
MB2#58	198	279	0.7 1	0.06161	0.002 63	0.8994 4	0.036 59	0.1059 2	0.001 87	661	57	651	20	649	1 1	0.31%
MB2#59	66	97	0.6 8	0.13866	0.003 77	7.7291 0	0.201 98	0.4044 0	0.007 43	2211	22	2200	23	2189	3 4	1.01%
MB2#60	91	55	1.6 6	0.06180	0.006 35	0.8813 8	0.086 68	0.1034 8	0.003 76	667	14 9	642	47	635	2 2	1.10%
MB2#61	89	145	0.6 1	0.11423	0.003 05	5.1673 5	0.131 84	0.3281 9	0.005 47	1868	24	1847	22	1830	2 7	2.08%
MB2#62	137	89	1.5 5	0.12462	0.006 19	5.1835 1	0.244 26	0.3017 7	0.008 53	2023	45	1850	40	1700	4 2	19.00%
MB2#63	228	464	0.4 9	0.18713	0.002 21	13.653 75	0.156 69	0.5293 5	0.006 19	2717	9	2726	11	2739	2 6	-0.80%
MB2#64	60	37	1.6 1	0.12179	0.006 56	5.3039 5	0.271 70	0.3159 6	0.009 64	1983	50	1869	44	1770	4 7	12.03%
MB2#65	289	497	0.5	0.06227	0.002	0.8807	0.029	0.1026	0.001	683	45	641	16	630	9	1.75%

			8		17	7	17	1	58							
MB2#66	54	79	0.6 8	0.12042	0.004 63	5.7771 1	0.212 28	0.3480 5	0.007 97	1962	35	1943	32	1925	3 8	1.92%
MB2#67	117	100	1.1 7	0.05850	0.004 76	0.7934 7	0.061 78	0.0984 0	0.002 89	549	11 9	593	35	605	1 7	-1.98%
MB2#68	120	226	0.5 3	0.06291	0.003 22	0.8498 0	0.041 41	0.0980 0	0.001 99	705	69	625	23	603	1 2	3.65%
MB2#69	44	61	0.7 2	0.09240	0.011 90	2.4382 4	0.301 77	0.1913 8	0.006 81	1476	25 7	1254	89	1129	3 7	30.74%
MB2#70	80	116	0.6 9	0.12111	0.003 36	5.7408 6	0.152 43	0.3439 1	0.006 03	1973	24	1938	23	1905	2 9	3.57%
MB2#71	161	199	0.8 1	0.06196	0.003 15	0.8060 7	0.039 08	0.0943 8	0.001 88	673	70	600	22	581	1 1	3.27%
MB2#72	356	738	0.4 8	0.13109	0.002 81	5.2619 1	0.094 61	0.2911 2	0.003 40	2113	38	1863	15	1647	1 7	28.29%
MB2#73	67	92	0.7 3	0.11685	0.003 61	5.3706 2	0.158 70	0.3334 4	0.006 25	1909	28	1880	25	1855	3 0	2.91%
MB2#74	14	47	0.3 0	0.13114	0.005 66	6.7053 1	0.277 39	0.3709 4	0.009 76	2113	38	2073	37	2034	4 6	3.88%
MB2#75	129	192	0.6 8	0.06204	0.003 62	0.8955 7	0.049 91	0.1047 3	0.002 34	675	81	649	27	642	1 4	1.09%
MB2#76	394	617	0.6 4	0.06330	0.004 51	0.6713 7	0.046 21	0.0769 3	0.001 40	718	15 6	522	28	478	8	9.21%
MB2#77	50	118	0.4 2	0.06306	0.004 68	0.8026 3	0.056 84	0.0923 4	0.002 52	710	10 4	598	32	569	1 5	5.10%
MB2#78	62	85	0.7 3	0.10021	0.013 56	1.4486 8	0.182 64	0.1048 8	0.006 18	1628	14 8	909	76	643	3 6	41.37%
MB2#79	49	45	1.1 0	0.11893	0.004 89	6.2106 3	0.245 76	0.3788 5	0.009 25	1940	38	2006	35	2071	4 3	-6.33%
MB2#80	44	53	0.8 3	0.05467	0.017 64	0.6335 6	0.200 70	0.0840 5	0.005 18	399	59 6	498	12 5	520	3 1	-4.23%
MB2#81	208	135	1.5 4	0.06611	0.003 91	0.9200 3	0.051 63	0.1009 6	0.002 37	810	78	662	27	620	1 4	6.77%
MB2#82	16	107	0.1 5	0.06162	0.004 28	0.9374 1	0.062 29	0.1103 6	0.002 87	661	98	672	33	675	1 7	-0.44%

MB2#83	85	109	0.7 8	0.07001	0.005 49	0.8177 6	0.060 82	0.0847 4	0.002 52	929	10 4	607	34	524	1 5	15.84%
MB2#84	90	88	1.0 2	0.12261	0.005 75	5.4918 0	0.245 49	0.3249 6	0.008 74	1995	43	1899	38	1814	4 3	9.98%
MB2#85	26	80	0.3 3	0.05894	0.006 43	0.8168 1	0.085 96	0.1005 0	0.002 89	565	24 7	606	48	617	1 7	-1.78%
MB2#86	6	18	0.3 3	0.22792	0.013 88	14.162 84	0.701 44	0.4506 9	0.015 96	3037	10 0	2761	47	2398	7 1	26.65%
MB2#87	240	341	0.7 0	0.07079	0.003 33	0.8729 8	0.038 84	0.0894 7	0.001 77	951	59	637	21	552	1 0	15.40%
MB2#88	116	420	0.2 8	0.04605	0.005 48	0.2823 5	0.032 25	0.0444 7	0.001 49		23 6	253	26	280	9	-9.64%
MB2#89	368	312	1.1 8	0.07407	0.003 73	1.1462 4	0.054 58	0.1122 7	0.002 40	1043	62	775	26	686	1 4	12.97%
MB2#90	17	21	0.7 9	0.08888	0.025 12	3.0782 0	0.849 88	0.2511 9	0.015 24	1402	61 4	1427	21 2	1445	7 8	-2.98%
MB2#91	92	141	0.6 5	0.06518	0.004 73	0.8210 7	0.056 63	0.0913 9	0.002 51	780	99	609	32	564	1 5	7.98%
MB2#92	37	50	0.7 4	0.11343	0.004 71	5.2079 0	0.207 00	0.3330 7	0.007 88	1855	39	1854	34	1853	3 8	0.11%
MB2#93	244	317	0.7 7	0.05522	0.016 42	0.4037 8	0.118 74	0.0530 3	0.002 32	421	55 7	344	86	333	1 4	3.30%
MB2#94	52	87	0.6 0	0.05268	0.004 63	0.7528 8	0.063 72	0.1036 9	0.003 03	315	13 9	570	37	636	1 8	-10.38%
MB2#95	317	325	0.9 8	0.07903	0.003 89	0.9506 8	0.044 01	0.0872 6	0.001 84	1173	58	678	23	539	1 1	25.79%
MB2#96	53	52	1.0 3	0.04605	0.019 56	0.3389 1	0.141 72	0.0533 8	0.003 97		70 3	296	10 7	335	2 4	-11.64%
MB2#97	154	210	0.7 3	0.09529	0.003 64	2.7053 3	0.097 64	0.2059 6	0.004 03	1534	39	1330	27	1207	2 2	27.09%
MB2#98	114	331	0.3 4	0.06005	0.002 39	0.7922 2	0.030 05	0.0957 1	0.001 58	605	54	592	17	589	9	0.51%
MB2#99	693	423	1.6 4	0.05835	0.007 80	0.6858 2	0.090 24	0.0852 4	0.001 99	543	30 4	530	54	527	1 2	0.57%
MB2#100	82	82	1.0	0.07126	0.005	0.9228	0.064	0.0939	0.002	965	95	664	34	579	1	14.68%

			0		28	2	59	5	78						6	
RO2																
RO2#01	47	38	1.2 3	0.13523	0.005 53	7.3652 7	0.289 21	0.3950 8	0.010 15	2167	35	2157	35	2146	4 7	0.98%
RO2#02	245	387	0.6 3	0.13641	0.002 73	6.1182 9	0.116 10	0.3253 5	0.004 69	2182	15	1993	17	1816	2 3	20.15%
RO2#03	318	707	0.4 5	0.06035	0.003 04	0.7366 6	0.035 62	0.0885 4	0.001 26	616	11 2	560	21	547	7	2.38%
RO2#04	277	536	0.5 2	0.06737	0.004 13	0.7317 9	0.043 05	0.0787 8	0.001 35	849	13 1	558	25	489	8	14.11%
RO2#05	68	146	0.4 6	0.12608	0.003 02	6.9386 5	0.159 90	0.3991 9	0.006 52	2044	20	2104	20	2165	3 0	-5.59%
RO2#06	63	53	1.2 0	0.07199	0.015 09	0.9288 6	0.190 37	0.0935 8	0.004 13	986	46 6	667	10 0	577	2 4	15.60%
RO2#07	70	90	0.7 8	0.06093	0.009 49	0.7933 7	0.120 68	0.0944 3	0.003 16	637	34 9	593	68	582	1 9	1.89%
RO2#08	45	75	0.6 1	0.07040	0.005 08	1.0710 0	0.073 58	0.1103 4	0.003 10	940	95	739	36	675	1 8	9.48%
RO2#09	108	240	0.4 5	0.07345	0.004 58	1.1370 3	0.067 21	0.1122 8	0.002 87	1026	78	771	32	686	1 7	12.39%
RO2#10	62	90	0.6 8	0.11705	0.003 80	5.4614 0	0.169 29	0.3384 2	0.006 65	1912	29	1895	27	1879	3 2	1.76%
RO2#11	250	297	0.8 4	0.06188	0.002 62	0.8103 1	0.032 63	0.0949 7	0.001 66	670	56	603	18	585	1 0	3.08%
RO2#12	76	100	0.7 6	0.05603	0.004 47	0.7086 5	0.054 21	0.0917 3	0.002 55	454	12 1	544	32	566	1 5	-3.89%
RO2#13	197	360	0.5 5	0.10653	0.003 09	4.1843 6	0.108 39	0.2848 7	0.003 70	1741	54	1671	21	1616	1 9	7.74%
RO2#14	149	183	0.8 1	0.08042	0.010 49	1.2119 9	0.153 18	0.1093 0	0.003 51	1207	27 1	806	70	669	2 0	20.48%
RO2#15	190	91	2.0 9	0.11788	0.003 62	5.8486 1	0.172 24	0.3598 3	0.006 84	1924	27	1954	26	1981	3 2	-2.88%
RO2#16	87	85	1.0 2	0.08036	0.007 64	1.2329 5	0.110 95	0.1112 7	0.004 19	1206	11 8	816	50	680	2 4	20.00%
RO2#17	37	45	0.8	0.26896	0.006	23.588	0.584	0.6360	0.014	3300	17	3252	24	3173	5	4.00%

			2		66	42	77	5	22					6		
RO2#18	135	172	0.7 8	0.17843	0.003 61	13.630 62	0.271 16	0.5540 2	0.009 20	2638	15	2724	19	2842	3 8	-7.18%
RO2#19	380	138	2.7 6	0.06783	0.004 48	1.0634 2	0.066 72	0.1136 9	0.002 98	863	87	736	33	694	1 7	6.05%
RO2#20	99	87	1.1 4	0.08376	0.010 28	1.2025 6	0.139 29	0.1041 2	0.005 11	1287	15 0	802	64	639	3 0	25.51%
RO2#21	88	38	2.3 0	0.10122	0.021 53	2.7555 9	0.570 46	0.1974 5	0.009 68	1647	44 1	1344	15 4	1162	5 2	41.74%
RO2#22	96	99	0.9 7	0.09710	0.006 44	1.8728 4	0.116 25	0.1398 7	0.004 29	1569	71	1072	41	844	2 4	27.01%
RO2#23	114	114	1.0 0	0.18770	0.010 03	7.4951 7	0.370 34	0.2895 7	0.010 09	2722	40	2172	44	1639	5 0	66.08%
RO2#24	203	376	0.5 4	0.07347	0.005 32	0.8425 8	0.058 54	0.0831 8	0.001 71	1027	15 1	621	32	515	1 0	20.58%
RO2#25	17	30	0.5 6	0.13984	0.007 26	6.6490 1	0.328 36	0.3447 8	0.010 79	2225	45	2066	44	1910	5 2	16.49%
RO2#26	192	297	0.6 5	0.06207	0.004 36	0.9028 7	0.061 20	0.1055 0	0.001 92	676	15 5	653	33	647	1 1	0.93%
RO2#27	412	277	1.4 9	0.07527	0.003 58	1.0036 6	0.045 11	0.0967 0	0.001 97	1076	58	706	23	595	1 2	18.66%
RO2#28	88	79	1.1 1	0.08034	0.018 89	0.8175 6	0.188 24	0.0738 1	0.003 53	1205	52 1	607	10 5	459	2 1	32.24%
RO2#29	61	40	1.5 2	0.18624	0.009 81	10.911 45	0.549 02	0.4248 5	0.015 55	2709	40	2516	47	2282	7 0	18.71%
RO2#30	67	49	1.3 7	0.08613	0.027 00	0.7559 7	0.231 29	0.0636 6	0.004 34	1341	68 3	572	13 4	398	2 6	43.72%
RO2#31	117	176	0.6 6	0.07826	0.004 94	1.0976 2	0.065 45	0.1016 9	0.002 66	1153	77	752	32	624	1 6	20.51%
RO2#32	54	51	1.0 4	0.11688	0.008 94	2.3232 2	0.164 49	0.1441 2	0.005 44	1909	74	1219	50	868	3 1	40.44%
RO2#33	2	52	0.0 3	0.05645	0.005 30	1.0703 3	0.096 80	0.1374 8	0.004 56	470	14 2	739	47	830	2 6	-10.96%
RO2#34	133	286	0.4 6	0.08017	0.003 31	1.0363 6	0.040 21	0.0937 3	0.001 76	1201	47	722	20	578	1 0	24.91%

RO2#35	108	179	0.6 0	0.11173	0.002 77	4.7507 1	0.112 32	0.3082 8	0.004 83	1828	22	1776	20	1732	2 4	5.54%
RO2#36	255	306	0.8 3	0.07499	0.006 78	0.8421 5	0.073 67	0.0814 4	0.001 84	1068	18 8	620	41	505	1 1	22.77%
RO2#37	206	186	1.1 1	0.08385	0.005 70	1.0444 9	0.066 64	0.0903 2	0.002 58	1289	80	726	33	557	1 5	30.34%
RO2#38	200	325	0.6 1	0.07042	0.004 94	0.9922 5	0.066 06	0.1021 6	0.002 83	941	91	700	34	627	1 7	11.64%
RO2#39	160	179	0.9 0	0.09386	0.007 37	1.2095 9	0.088 39	0.0934 3	0.003 23	1505	86	805	41	576	1 9	39.76%
RO2#40	81	59	1.3 7	0.18131	0.012 90	5.7947 4	0.376 00	0.2317 2	0.010 15	2665	54	1946	56	1344	5 3	98.29%
RO2#41	195	278	0.7 0	0.08281	0.002 92	2.2862 3	0.076 54	0.2001 5	0.003 53	1265	38	1208	24	1176	1 9	7.57%
RO2#42	203	166	1.2 2	0.07339	0.016 39	0.9506 7	0.208 02	0.0939 4	0.004 18	1025	49 5	678	10 8	579	2 5	17.10%
RO2#43	174	85	2.0 5	0.07390	0.025 09	1.6174 0	0.540 33	0.1587 3	0.009 60	1039	71 4	977	21 0	950	5 3	2.84%
RO2#44	100	57	1.7 5	0.11641	0.004 56	5.4583 5	0.204 62	0.3399 2	0.007 79	1902	36	1894	32	1886	3 7	0.85%
RO2#45	63	57	1.1 2	0.16958	0.014 82	6.6702 7	0.542 39	0.2851 6	0.015 24	2554	70	2069	72	1617	7 6	57.95%
RO2#46	112	74	1.5 2	0.06681	0.005 80	0.9757 0	0.080 80	0.1058 8	0.003 44	832	11 9	691	42	649	2 0	6.47%
RO2#47	61	49	1.2 4	0.08980	0.027 68	0.8825 4	0.264 89	0.0712 8	0.005 01	1421	67 0	642	14 3	444	3 0	44.59%
RO2#48	93	96	0.9 7	0.05939	0.004 48	0.7857 9	0.056 50	0.0959 2	0.002 67	581	10 8	589	32	590	1 6	-0.17%
RO2#49	115	109	1.0 6	0.09406	0.007 76	1.5750 2	0.121 68	0.1213 9	0.004 40	1509	92	960	48	739	2 5	29.91%
RO2#50	240	493	0.4 9	0.05221	0.007 93	0.5165 9	0.077 28	0.0717 7	0.001 89	294	31 9	423	52	447	1 1	-5.37%
RO2#51	290	215	1.3 5	0.07090	0.014 09	0.8748 7	0.170 30	0.0894 9	0.003 56	955	44 0	638	92	553	2 1	15.37%
RO2#52	109	197	0.5	0.06999	0.003	0.9334	0.047	0.0966	0.002	928	68	669	25	595	1	12.44%

			5		74	2	25	7	11						2	
RO2#53	49	96	0.5 1	0.13280	0.003 56	7.3031 3	0.188 30	0.3986 3	0.007 15	2135	22	2149	23	2163	3 3	-1.29%
RO2#54	214	238	0.9 0	0.08258	0.005 64	0.9739 2	0.062 44	0.0854 9	0.002 45	1259	81	690	32	529	1 5	30.43%
RO2#55	393	411	0.9 6	0.07921	0.005 37	1.1089 0	0.070 95	0.1014 7	0.002 85	1177	82	758	34	623	1 7	21.67%
RO2#56	106	189	0.5 6	0.04742	0.011 09	0.6024 5	0.138 77	0.0921 5	0.003 70	70	39 4	479	88	568	2 2	-15.67%
RO2#57	163	251	0.6 5	0.06445	0.004 57	0.9152 0	0.061 86	0.1029 3	0.002 77	756	97	660	33	632	1 6	4.43%
RO2#58	57	108	0.5 2	0.14187	0.003 51	7.8330 3	0.186 06	0.4002 0	0.006 88	2250	20	2212	21	2170	3 2	3.69%
RO2#59	126	598	0.2 1	0.06073	0.002 86	0.7422 4	0.033 15	0.0886 4	0.001 31	630	10 4	564	19	547	8	3.11%
RO2#60	150	259	0.5 8	0.07352	0.004 08	0.8756 3	0.045 90	0.0863 3	0.001 98	1028	69	639	25	534	1 2	19.66%
RO2#61	41	43	0.9 4	0.16495	0.005 85	8.8082 5	0.297 81	0.3870 4	0.009 29	2507	28	2318	31	2109	4 3	18.87%
RO2#62	213	315	0.6 8	0.12004	0.004 18	4.6845 1	0.148 32	0.2830 3	0.004 12	1957	64	1764	26	1607	2 1	21.78%
RO2#63	368	786	0.4 7	0.05837	0.003 13	0.6839 7	0.035 45	0.0849 9	0.001 19	544	12 1	529	21	526	7	0.57%
RO2#64	76	38	2.0 1	0.12417	0.005 93	5.4560 8	0.247 62	0.3184 6	0.008 76	2017	43	1894	39	1782	4 3	13.19%
RO2#65	83	170	0.4 9	0.06281	0.003 48	0.8224 4	0.043 35	0.0949 0	0.002 06	702	75	609	24	584	1 2	4.28%
RO2#66	134	463	0.2 9	0.08312	0.005 02	1.7412 7	0.100 00	0.1519 4	0.002 83	1272	12 1	1024	37	912	1 6	12.28%
RO2#67	319	255	1.2 5	0.07246	0.010 79	0.9883 9	0.143 79	0.0989 3	0.003 16	999	32 3	698	73	608	1 9	14.80%
RO2#68	134	496	0.2 7	0.14539	0.003 85	5.8637 2	0.130 26	0.2925 1	0.004 22	2292	47	1956	19	1654	2 1	38.57%
RO2#69	395	544	0.7 3	0.06925	0.004 09	0.9818 8	0.055 87	0.1028 3	0.001 64	906	12 5	695	29	631	1 0	10.14%

RO2#70	164	453	0.3 6	0.08950	0.006 62	1.0100 3	0.069 63	0.0817 9	0.002 60	1415	84	709	35	507	1 5	39.84%
RO2#71	58	74	0.7 9	0.13109	0.004 26	6.5056 4	0.202 08	0.3596 3	0.007 35	2113	28	2047	27	1980	3 5	6.72%
RO2#72	47	42	1.1 1	0.07479	0.009 37	0.9292 6	0.110 39	0.0900 4	0.004 21	1063	16 5	667	58	556	2 5	19.96%
RO2#73	566	683	0.8 3	0.13483	0.001 60	6.7193 1	0.075 72	0.3611 4	0.003 96	2162	9	2075	10	1988	1 9	8.75%
RO2#74	76	138	0.5 5	0.12919	0.003 07	6.5868 4	0.149 95	0.3694 9	0.005 94	2087	20	2058	20	2027	2 8	2.96%
RO2#75	315	343	0.9 2	0.07486	0.007 78	0.8121 7	0.082 18	0.0786 8	0.001 85	1065	21 8	604	46	488	1 1	23.77%
RO2#76	36	70	0.5 2	0.06998	0.007 02	1.0724 3	0.102 08	0.1110 5	0.004 31	928	13 2	740	50	679	2 5	8.98%
RO2#77	30	46	0.6 5	0.12743	0.005 74	6.4356 3	0.277 55	0.3659 6	0.009 82	2063	40	2037	38	2010	4 6	2.64%
RO2#78	158	192	0.8 2	0.05913	0.003 22	0.7910 5	0.041 23	0.0969 4	0.002 00	572	77	592	23	596	1 2	-0.67%
RO2#79	71	89	0.8 0	0.11726	0.004 55	5.1567 8	0.190 58	0.3186 7	0.007 17	1915	36	1846	31	1783	3 5	7.40%
RO2#80	212	255	0.8 3	0.06321	0.007 36	0.8198 9	0.093 22	0.0940 7	0.002 32	715	25 9	608	52	580	1 4	4.83%
RO2#81	77	112	0.6 9	0.06087	0.004 15	0.8656 2	0.056 30	0.1030 4	0.002 63	635	96	633	31	632	1 5	0.16%
RO2#82	42	210	0.2 0	0.16716	0.002 74	10.026 31	0.157 42	0.4346 1	0.005 87	2529	12	2437	14	2326	2 6	8.73%
RO2#83	33	46	0.7 3	0.12124	0.005 46	5.8001 5	0.249 77	0.3466 4	0.009 02	1975	41	1946	37	1919	4 3	2.92%
RO2#84	56	76	0.7 4	0.14983	0.008 08	7.1306 5	0.364 55	0.3448 3	0.011 40	2344	45	2128	46	1910	5 5	22.72%
RO2#85	157	193	0.8 1	0.06892	0.009 71	0.8063 5	0.110 63	0.0848 5	0.002 71	896	30 9	600	62	525	1 6	14.29%
RO2#86	87	103	0.8 4	0.06789	0.006 17	0.8681 0	0.074 84	0.0926 4	0.003 18	865	12 2	635	41	571	1 9	11.21%
RO2#87	267	175	1.5	0.13716	0.002	7.5604	0.148	0.3993	0.005	2192	16	2180	18	2166	2	1.20%

			3		80	7	34	8	91						7	
RO2#88	152	145	1.0 5	0.06106	0.003 88	0.8520 3	0.051 75	0.1011 0	0.002 41	641	90	626	28	621	1 4	0.81%
RO2#89	79	101	0.7 8	0.12046	0.003 62	5.2227 8	0.149 40	0.3141 3	0.005 77	1963	26	1856	24	1761	2 8	11.47%
RO2#90	119	186	0.6 4	0.04605	0.006 39	0.4768 0	0.064 87	0.0751 0	0.002 07		25 4	396	45	467	1 2	-15.20%
RO2#91	42	70	0.6 0	0.11801	0.004 73	4.9153 2	0.187 36	0.3017 7	0.006 92	1926	37	1805	32	1700	3 4	13.29%
RO2#92	58	103	0.5 7	0.12783	0.003 59	6.6089 4	0.178 01	0.3745 5	0.006 80	2068	24	2061	24	2051	3 2	0.83%
RO2#93	118	96	1.2 3	0.18972	0.012 56	2.3284 5	0.135 13	0.0889 2	0.003 37	2740	49	1221	41	549	2 0	122.40%
RO2#94	85	73	1.1 6	0.10124	0.007 79	1.4997 3	0.107 23	0.1073 2	0.003 75	1647	81	930	44	657	2 2	41.55%
RO2#95	101	268	0.3 8	0.10816	0.004 83	2.4730 1	0.100 83	0.1658 2	0.003 01	1769	84	1264	29	989	1 7	27.81%
NRO2#01	109	252	0.4 3	0.06070	0.001 49	0.7760 0	0.044 05	0.0926 9	0.001 31	629	52	583	25	571	8	2.07%
NRO2#02	64	109	0.5 9	0.06360	0.001 70	0.9606 6	0.065 02	0.1076 8	0.001 65	729	56	684	34	659	1 0	3.69%
NRO2#03	322	261	1.2 3	0.06025	0.001 08	0.8695 9	0.037 69	0.1030 1	0.001 20	613	38	635	20	632	7	0.52%
NRO2#04	128	230	0.5 5	0.07168	0.001 07	1.5126 6	0.067 21	0.1540 2	0.001 71	977	30	936	27	924	1 0	1.30%
NRO2#05	362	451	0.8 0	0.09332	0.001 10	1.2074 7	0.036 79	0.0926 6	0.000 94	1494	22	804	17	571	6	40.76%
NRO2#06	156	453	0.3 4	0.06559	0.000 86	0.8760 2	0.027 09	0.0954 8	0.000 96	793	27	639	15	588	6	8.66%
NRO2#07	229	539	0.4 2	0.10193	0.001 24	1.1979 4	0.037 06	0.0840 1	0.000 87	1660	22	800	17	520	5	53.77%
NRO2#08	235	428	0.5 5	0.06165	0.000 92	0.7973 8	0.027 40	0.0925 4	0.000 98	662	32	595	15	571	6	4.36%
NRO2#09	167	314	0.5 3	0.10511	0.001 55	1.4197 6	0.057 77	0.0942 4	0.001 09	1716	27	897	24	581	6	54.55%

NRO2#10	201	434	0.4 6	0.09452	0.001 14	1.2421 6	0.038 95	0.0933 2	0.000 96	1519	23	820	18	575	6	42.57%
NRO2#11	103	194	0.5 3	0.06137	0.001 55	0.8090 4	0.048 15	0.0949 9	0.001 37	652	53	602	27	585	8	2.89%
NRO2#12	207	527	0.3 9	0.05901	0.000 80	0.7699 1	0.023 82	0.0925 2	0.000 93	568	29	580	14	570	6	1.63%
NRO2#13	185	257	0.7 2	0.06549	0.001 82	0.8312 6	0.054 69	0.0931 8	0.001 47	790	57	614	30	574	9	6.97%
NRO2#14	1019	656	1.5 5	0.14884	0.001 58	1.6515 2	0.047 33	0.0785 2	0.000 80	2333	18	990	18	487	5	103.18%
NRO2#15	1096	384	2.8 6	0.18774	0.002 30	2.2183 2	0.081 29	0.0822 5	0.000 93	2723	20	1187	26	510	6	132.93%
NRO2#16	154	383	0.4 0	0.06278	0.001 05	0.8394 8	0.033 30	0.0951 6	0.001 07	701	35	619	18	586	6	5.61%
NRO2#17	133	238	0.5 6	0.11750	0.001 13	4.8771 2	0.208 72	0.3013 4	0.003 01	1919	17	1798	36	1698	1 5	12.99%
NRO2#18	212	249	0.8 5	0.06454	0.001 14	0.8759 9	0.037 13	0.1000 5	0.001 17	760	37	639	20	615	7	3.92%
NRO2#19	93	228	0.4 1	0.17918	0.001 56	7.9964 1	0.351 34	0.3123 3	0.003 12	2645	14	2231	40	1752	1 5	50.97%
NRO2#20	147	281	0.5 3	0.06002	0.001 01	0.8111 8	0.031 98	0.0964 6	0.001 08	604	36	603	18	594	6	1.60%
NRO2#21	182	384	0.4 8	0.06343	0.000 99	0.8332 5	0.030 74	0.0948 6	0.001 03	723	33	615	17	584	6	5.34%
NRO2#22	210	268	0.7 8	0.07470	0.001 36	1.1910 7	0.058 61	0.1169 9	0.001 44	1061	36	797	27	713	8	11.68%
NRO2#23	81	167	0.4 8	0.06107	0.001 26	0.8188 1	0.040 09	0.0983 8	0.001 24	642	44	607	22	605	7	0.41%
NRO2#24	456	920	0.5 0	0.11164	0.001 01	1.4594 9	0.034 63	0.0942 1	0.000 88	1826	16	914	14	580	5	57.44%
NRO2#25	85	214	0.4 0	0.13303	0.001 13	7.3552 3	0.315 52	0.4018 7	0.003 91	2138	15	2156	38	2178	1 8	-1.80%
NRO2#26	51	111	0.4 6	0.15972	0.001 69	7.8794 9	0.452 79	0.3405 8	0.003 76	2453	18	2217	52	1890	1 8	29.81%
NRO2#27	231	246	0.9	0.06319	0.001	0.8681	0.038	0.0989	0.001	715	39	635	21	608	7	4.31%

			4		17	6	96	7	18							
<i>NRO2#28</i>	490	292	1.6 7	0.09259	0.001 37	1.1905 9	0.046 00	0.0886 6	0.001 00	1480	28	796	21	548	6	45.40%
<i>NRO2#29</i>	188	197	0.9 5	0.06050	0.001 25	0.8615 7	0.043 15	0.1013 7	0.001 28	621	44	631	24	622	7	1.38%
<i>NRO2#30</i>	36	245	0.1 5	0.12327	0.001 06	6.5247 7	0.272 77	0.3728 9	0.003 60	2004	15	2049	37	2043	1 7	-1.90%
<i>NRO2#31</i>	60	82	0.7 3	0.11579	0.001 73	4.2469 0	0.292 61	0.2510 7	0.003 16	1892	27	1683	57	1444	1 6	31.04%
<i>NRO2#32</i>	134	144	0.9 4	0.08512	0.001 84	1.0895 3	0.060 19	0.0910 8	0.001 27	1318	41	748	29	562	8	33.17%
<i>NRO2#33</i>	83	165	0.5 1	0.24753	0.001 81	23.098 34	1.172 63	0.6427 9	0.006 33	3169	12	3231	49	3200	2 5	-0.97%
<i>NRO2#34</i>	138	309	0.4 5	0.06397	0.001 10	0.8331 0	0.033 86	0.0914 4	0.001 04	741	36	615	19	564	6	9.10%
<i>NRO2#35</i>	138	299	0.4 6	0.05791	0.000 99	0.7676 5	0.030 29	0.0960 0	0.001 07	526	37	578	17	591	6	-2.13%
<i>NRO2#36</i>	171	230	0.7 4	0.15579	0.001 55	4.7344 7	0.200 42	0.2191 9	0.002 26	2411	17	1773	35	1278	1 2	88.67%
<i>NRO2#37</i>	171	458	0.3 7	0.06207	0.000 81	0.8162 2	0.025 17	0.0925 0	0.000 93	676	28	606	14	570	5	6.24%
<i>NRO2#38</i>	217	567	0.3 8	0.06106	0.000 83	0.8462 7	0.027 37	0.0977 8	0.000 99	642	29	623	15	601	6	3.53%
<i>NRO2#39</i>	187	290	0.6 5	0.06095	0.001 05	0.7497 3	0.029 62	0.0931 3	0.001 06	638	37	568	17	574	6	-1.03%
<i>NRO2#40</i>	48	90	0.5 3	0.07180	0.001 68	1.2759 3	0.084 35	0.1204 7	0.001 74	980	47	835	38	733	1 0	13.87%
<i>NRO2#41</i>	521	562	0.9 3	0.06260	0.000 91	0.8591 4	0.030 17	0.0975 8	0.001 02	695	31	630	16	600	6	4.92%
<i>NRO2#42</i>	57	712	0.0 8	0.11128	0.001 13	1.4421 0	0.040 07	0.0903 0	0.000 88	1820	18	907	17	557	5	62.68%
<i>NRO2#43</i>	202	518	0.3 9	0.05863	0.000 94	0.7946 0	0.030 00	0.0946 7	0.001 03	554	35	594	17	583	6	1.84%
<i>NRO2#44</i>	340	550	0.6 2	0.06899	0.000 89	0.8874 2	0.027 87	0.0913 1	0.000 92	898	26	645	15	563	5	14.50%

NRO2#45	83	126	0.6 6	0.11753	0.001 36	5.6456 0	0.327 39	0.3493 3	0.003 89	1919	21	1923	50	1931	1 9	-0.64%
NRO2#46	125	318	0.3 9	0.05941	0.000 99	0.7536 8	0.029 18	0.0942 8	0.001 05	582	36	570	17	581	6	-1.79%
NRO2#47	135	147	0.9 2	0.07129	0.001 20	1.6601 9	0.088 39	0.1701 2	0.002 03	966	34	993	34	1013	1 1	-4.64%
NRO2#48	38	50	0.7 6	0.05859	0.002 44	0.8114 7	0.081 10	0.1001 8	0.002 11	552	89	603	45	616	1 2	-1.98%
NRO2#49	123	290	0.4 2	0.06472	0.001 08	0.9297 9	0.038 88	0.1038 3	0.001 18	765	35	668	20	637	7	4.82%
NRO2#50	70	70	1.0 0	0.06470	0.002 04	0.9450 3	0.075 28	0.1031 4	0.001 80	765	65	676	39	633	1 1	6.75%
NRO2#51	54	127	0.4 2	0.10238	0.001 45	3.3808 9	0.196 84	0.2385 9	0.002 82	1668	26	1500	46	1379	1 5	20.92%
NRO2#52	150	267	0.5 6	0.05910	0.001 11	0.7497 0	0.032 48	0.0917 4	0.001 08	571	40	568	19	566	6	0.39%
NRO2#53	100	278	0.3 6	0.17074	0.001 26	11.064 96	0.446 79	0.4795 1	0.004 52	2565	12	2529	38	2525	2 0	1.58%
NRO2#54	87	383	0.2 3	0.16503	0.001 24	9.5664 9	0.370 96	0.3990 2	0.003 73	2508	13	2394	36	2165	1 7	15.87%
NRO2#55	76	73	1.0 4	0.18740	0.002 05	13.079 10	0.963 66	0.5319 8	0.006 44	2720	18	2685	70	2750	2 7	-1.10%
NRO2#56	126	207	0.6 1	0.07294	0.001 09	1.6885 3	0.080 37	0.1665 6	0.001 86	1012	30	1004	30	993	1 0	1.12%
NRO2#57	62	199	0.3 1	0.06470	0.001 28	0.8931 6	0.043 44	0.1006 8	0.001 25	765	41	648	23	618	7	4.80%
NRO2#58	187	281	0.6 6	0.11460	0.001 65	1.5601 0	0.064 96	0.0927 2	0.001 07	1874	26	955	26	572	6	66.99%
NRO2#59	153	185	0.8 2	0.06553	0.002 42	0.8080 8	0.070 28	0.0963 7	0.001 92	791	76	601	39	593	1 1	1.40%
NRO2#60	30	205	0.1 4	0.12879	0.001 25	5.9904 1	0.284 65	0.3299 2	0.003 37	2082	17	1975	41	1838	1 6	13.25%
NRO2#61	507	634	0.8 0	0.11898	0.001 24	1.4018 0	0.040 61	0.0846 7	0.000 84	1941	19	890	17	524	5	69.79%
NRO2#62	305	486	0.6	0.07600	0.000	0.9456	0.031	0.0898	0.000	1095	26	676	16	554	5	21.92%

			3		99	8	24	0	92							
NRO2#63	61	97	0.6 3	0.06527	0.001 65	1.1847 5	0.082 94	0.1242 3	0.001 84	783	52	794	39	755	1 1	5.11%
NRO2#64	48	96	0.5 0	0.24565	0.002 23	23.106 10	1.671 36	0.6375 4	0.007 21	3157	14	3231	70	3179	2 8	-0.70%
NRO2#65	85	242	0.3 5	0.06025	0.001 15	0.8219 0	0.038 02	0.1000 7	0.001 20	612	41	609	21	615	7	-0.93%
NRO2#66	229	233	0.9 8	0.05851	0.001 15	0.8561 3	0.041 82	0.0984 7	0.001 20	549	42	628	23	605	7	3.73%
NRO2#67	56	131	0.4 3	0.13420	0.001 42	7.3241 3	0.426 51	0.3925 7	0.004 28	2154	18	2152	52	2135	2 0	0.89%
NRO2#68	156	280	0.5 6	0.07992	0.001 61	1.1035 8	0.059 12	0.0988 6	0.001 31	1195	39	755	29	608	8	24.26%
NRO2#69	122	50	2.4 5	0.11634	0.002 02	5.4042 0	0.485 35	0.3541 7	0.005 16	1901	31	1886	77	1955	2 5	-2.75%
NRO2#70	156	254	0.6 1	0.09942	0.001 54	1.4874 1	0.067 77	0.1110 3	0.001 32	1613	29	925	28	679	8	36.33%
NRO2#71	143	303	0.4 7	0.06126	0.000 98	0.9276 4	0.037 93	0.1074 2	0.001 18	648	34	666	20	658	7	1.32%
NRO2#72	105	168	0.6 2	0.06311	0.001 81	0.7640 1	0.051 39	0.0885 3	0.001 41	712	60	576	30	547	8	5.40%
NRO2#73	57	391	0.1 5	0.22101	0.001 78	7.0343 4	0.257 52	0.2229 7	0.002 15	2988	13	2116	33	1298	1 1	130.29%
NRO2#74	65	277	0.2 3	0.17099	0.001 25	11.534 58	0.470 70	0.4912 0	0.004 61	2567	12	2567	38	2576	2 0	-0.33%
NRO2#75	127	200	0.6 3	0.23415	0.001 70	19.491 91	0.930 56	0.6227 5	0.006 06	3081	12	3067	46	3121	2 4	-1.29%
NRO2#76	385	747	0.5 2	0.13996	0.001 38	1.7190 1	0.050 87	0.0851 3	0.000 84	2227	17	1016	19	527	5	92.84%
NRO2#77	352	571	0.6 2	0.10340	0.001 20	1.3045 2	0.042 58	0.0922 2	0.000 94	1686	21	848	19	569	6	49.09%
NRO2#78	22	51	0.4 3	0.16297	0.002 28	10.163 42	0.929 23	0.4711 5	0.006 54	2487	23	2450	85	2489	2 9	-0.08%
NRO2#79	147	292	0.5 0	0.06007	0.001 07	0.8039 9	0.034 77	0.0973 5	0.001 12	606	38	599	20	599	7	0.03%

NRO2#80	199	434	0.4 6	0.11356	0.000 99	4.5884 0	0.174 54	0.2849 2	0.002 71	1857	16	1747	32	1616	1 4	14.92%
NRO2#81	248	320	0.7 8	0.19167	0.002 23	2.9062 7	0.118 77	0.1101 6	0.001 23	2757	19	1384	31	674	7	105.36%
NRO2#82	59	199	0.3 0	0.06055	0.001 29	0.8157 5	0.042 66	0.0963 2	0.001 24	623	45	606	24	593	7	2.18%
NRO2#83	39	312	0.1 3	0.20049	0.001 38	14.395 56	0.570 25	0.5367 6	0.004 97	2830	11	2776	38	2770	2 1	2.18%
NRO2#84	82	164	0.5 0	0.06774	0.001 46	1.0096 1	0.056 96	0.1089 1	0.001 46	861	44	709	29	666	8	6.35%
NRO2#85	268	270	0.9 9	0.06373	0.001 11	0.8868 0	0.039 14	0.1009 0	0.001 17	733	36	645	21	620	7	4.03%
NRO2#86	162	257	0.6 3	0.12412	0.001 13	5.7473 6	0.252 00	0.3434 1	0.003 39	2016	16	1939	38	1903	1 6	5.95%
NRO2#87	120	421	0.2 8	0.19829	0.001 34	10.931 23	0.377 87	0.3965 8	0.003 58	2812	11	2517	32	2153	1 7	30.60%
NRO2#88	62	85	0.7 3	0.06421	0.001 61	1.1160 1	0.076 70	0.1289 2	0.001 90	749	52	761	37	782	1 1	-2.64%
NRO2#89	79	296	0.2 7	0.11911	0.000 98	6.0427 1	0.240 52	0.3674 1	0.003 47	1943	15	1982	35	2017	1 6	-3.68%
NRO2#90	174	416	0.4 2	0.06201	0.000 89	0.9081 9	0.034 29	0.1068 7	0.001 12	675	30	656	18	655	7	0.24%

Table 3. LA-MC-ICPMS zircon Lu-Hf isotopic data

Sample#spot	t (Ma)	$^{176}\text{Yb}/^{177}\text{Hf}$	$^{176}\text{Lu}/^{177}\text{Hf}$	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\epsilon_{\text{Hf}}(t)$	2σ	T_{DM1}	2σ	T_{DM^2}	2σ
13FR12												
13FR12#02	525	0.058483	0.002305	0.282355	0.000017	0.282332	-4.30	0.61	1311.6	24.97	1738.36	38.51
13FR12#03	629	0.021926	0.001011	0.282244	0.000020	0.282233	-5.51	0.70	1421.5	27.47	1895.25	43.89
13FR12#09	620	0.017693	0.000783	0.282107	0.000014	0.282098	-	0.50	1602.9	19.60	2199.98	31.51
13FR12#11	1860	0.017425	0.000751	0.281487	0.000014	0.281460	10.47	0.51	2451.8	19.45	2812.20	31.29
13FR12#12	1873	0.013933	0.000547	0.281469	0.000015	0.281449	-4.89	0.54	2463.0	20.37	2827.38	32.95
13FR12#13	1851	0.017211	0.000688	0.281315	0.000019	0.281291	-4.97	0.68	2679.7	25.70	3186.53	41.41
13FR12#14	1866	0.017989	0.000725	0.281587	0.000016	0.281562	-	0.56	2312.9	21.61	2585.58	34.80
13FR12#15	1868	0.018340	0.000725	0.281457	0.000015	0.281432	-1.14	0.55	2489.9	21.00	2869.26	33.81
13FR12#17	572	0.040271	0.001534	0.282324	0.000015	0.282308	-5.72	0.54	1328.6	21.45	1763.97	33.80
13FR12#18	592	0.012470	0.000473	0.282108	0.000015	0.282102	-4.13	0.53	1589.5	20.67	2208.72	33.51
13FR12#20	2659	0.012327	0.000485	0.281083	0.000012	0.281058	-	0.44	2976.9	16.40	3174.15	26.57
13FR12#21	610	0.016534	0.000742	0.281809	0.000017	0.281801	-0.59	0.59	2011.1	22.98	2864.76	36.98
13FR12#22	637	0.008194	0.000322	0.282154	0.000018	0.282150	21.23	0.65	1519.8	25.22	2073.63	41.04
13FR12#23	558	0.032691	0.001382	0.282041	0.000020	0.282027	-8.25	0.70	1721.0	27.56	2397.83	43.60
13FR12#24	636	0.020878	0.000852	0.282154	0.000017	0.282144	-	0.58	1541.3	22.88	2088.72	36.72
13FR12#29	1895	0.018377	0.000714	0.281323	0.000014	0.281297	-8.50	0.51	2671.3	19.58	3145.21	31.53
13FR12#33	567	0.020792	0.000858	0.281791	0.000016	0.281782	-9.87	0.56	2041.8	21.90	2933.06	35.14
							22.85					

13FR12#37	2052	0.021722	0.000901	0.281684	0.000016	0.281649	6.27	0.58	2190.7	22.53	2274.32	36.10
13FR12#38	1845	0.021268	0.000865	0.281458	0.000015	0.281428	-6.37	0.52	2497.6	19.84	2891.74	31.82
13FR12#43	2131	0.010655	0.000432	0.281229	0.000014	0.281211	-7.46	0.51	2778.0	19.39	3180.86	31.47
13FR12#44	1896	0.001300	0.000041	0.281430	0.000016	0.281429	-5.17	0.58	2482.5	21.80	2857.38	35.74
13FR12#47	2201	0.019036	0.000762	0.281443	0.000017	0.281411	1.27	0.61	2511.3	23.17	2700.17	37.26
13FR12#50	2761	0.011582	0.000473	0.280998	0.000019	0.280973	-1.23	0.67	3089.4	24.92	3293.20	40.40
13FR12#53	2668	0.014857	0.000643	0.281005	0.000014	0.280973	-3.43	0.48	3093.1	18.24	3353.88	29.43
13FR12#55	555	0.034573	0.001320	0.281988	0.000021	0.281974	-	0.73	1792.6	28.77	2516.17	45.58
13FR12#59	2364	0.013666	0.000551	0.281262	0.000014	0.281237	-1.14	0.50	2742.4	18.88	2975.99	30.53
13FR12#64	1635	0.012507	0.000526	0.281478	0.000017	0.281461	-	0.60	2449.4	22.95	2953.20	37.14
13FR12#69	2854	0.013977	0.000540	0.280867	0.000019	0.280838	-3.86	0.67	3269.3	24.98	3525.85	40.42
13FR12#70	547	0.039044	0.001434	0.282351	0.000018	0.282336	-3.67	0.62	1287.0	24.83	1715.96	39.22
13FR12#74	586	0.024285	0.000955	0.281752	0.000020	0.281741	-	0.69	2101.1	26.93	3010.46	43.09
13FR12#75	2789	0.007174	0.000292	0.281076	0.000018	0.281060	23.86	0.66	2972.1	24.51	3087.14	39.91
13FR12#76	592	0.017024	0.000674	0.281943	0.000018	0.281935	-	0.63	1824.7	24.48	2579.42	39.47
13FR12#78	584	0.021893	0.000901	0.282170	0.000018	0.282160	16.87	0.62	1520.6	24.49	2084.88	39.24
13FR12#79	2669	0.019236	0.000731	0.281032	0.000017	0.280994	-9.08	0.61	3064.9	23.16	3306.38	37.28
13FR12#86	567	0.009473	0.000403	0.282068	0.000017	0.282063	-2.63	0.60	1641.2	23.18	2311.24	37.64
13FR12#92	1846	0.016506	0.000691	0.281079	0.000017	0.281055	-	0.61	2998.2	22.95	3702.80	36.98
13FR12#93	510	0.023526	0.000959	0.282246	0.000016	0.282237	12.89	0.55	1417.2	21.70	1961.61	34.72
13FR12#94	593	0.015383	0.000743	0.282093	0.000017	0.282085	-	0.61	1621.2	23.60	2247.63	37.98

							11.56					
13FR12#95	464	0.024426	0.000927	0.281976	0.000017	0.281968	- 18.58	0.61	1790.9	23.88	2588.96	38.25
13FR12#96	608	0.022748	0.000891	0.282062	0.000015	0.282052	- 12.38	0.55	1670.1	21.38	2310.51	34.27
13FR13												
13FR13#3	490	0.048002	0.001922	0.282358	0.000016	0.282340	-4.82	0.58	1294.5	23.42	1744.09	36.51
13FR13#6	510	0.024506	0.000947	0.282527	0.000017	0.282518	1.92	0.62	1024.2	24.54	1333.02	39.28
13FR13#10	488	0.040156	0.001608	0.282307	0.000016	0.282292	-6.57	0.57	1356.2	22.96	1853.06	36.10
13FR13#11	487	0.042767	0.001698	0.282413	0.000017	0.282398	-2.84	0.59	1207.3	23.58	1616.73	36.99
13FR13#14	473	0.056597	0.002214	0.282402	0.000016	0.282382	-3.72	0.55	1241.4	22.56	1661.22	34.89
13FR13#20	474	0.023911	0.000965	0.282141	0.000016	0.282133	- 12.52	0.55	1563.5	21.77	2217.01	34.82
13FR13#24	488	0.043704	0.001699	0.282475	0.000017	0.282460	-0.64	0.62	1119.1	24.97	1477.91	39.16
13FR13#27	514	0.052257	0.002058	0.282324	0.000015	0.282304	-5.56	0.52	1347.9	21.23	1809.12	32.97
13FR13#33	503	0.060344	0.002393	0.282353	0.000015	0.282330	-4.88	0.55	1318.5	22.43	1757.87	34.51
13FR13#41	521	0.076177	0.002906	0.282253	0.000017	0.282225	-8.21	0.60	1483.7	24.97	1981.19	37.87
13FR13#43	526	0.034296	0.001333	0.282394	0.000018	0.282381	-2.56	0.62	1222.5	24.92	1629.25	39.47
13FR13#46	503	0.037833	0.001573	0.282286	0.000015	0.282271	-6.96	0.53	1383.6	21.17	1888.95	33.33
13FR13#48	500	0.036132	0.001446	0.282248	0.000015	0.282235	-8.32	0.54	1432.5	21.67	1972.68	34.22
13FR13#53	485	0.038727	0.001535	0.282293	0.000015	0.282279	-7.09	0.52	1372.5	20.68	1883.15	32.58
13FR13#54	487	0.045178	0.001740	0.282396	0.000017	0.282380	-3.46	0.59	1233.2	23.83	1656.06	37.34
13FR13#58	478	0.039401	0.001562	0.282335	0.000017	0.282321	-5.77	0.59	1314.4	23.65	1794.67	37.23
13FR13#61	528	0.030247	0.001274	0.282134	0.000016	0.282122	- 11.70	0.56	1586.0	22.21	2206.64	35.24

13FR13#63	504	0.029805	0.001142	0.282545	0.000016	0.282534	2.37	0.56	1004.0	22.18	1300.11	35.31
13FR13#66	477	0.035408	0.001422	0.282304	0.000015	0.282291	-6.85	0.53	1353.6	21.06	1862.22	33.28
13FR13#68	514	0.021178	0.000899	0.282216	0.000015	0.282207	-8.99	0.52	1457.4	20.32	2025.84	32.56
13FR13#69	500	0.023006	0.000951	0.282250	0.000013	0.282241	-8.09	0.47	1411.1	18.31	1958.04	29.30
13FR13#70	481	0.052137	0.002090	0.282410	0.000015	0.282391	-3.21	0.55	1225.0	22.33	1635.45	34.65
13FR13#71	479	0.023622	0.000921	0.282571	0.000017	0.282563	2.83	0.61	961.2	24.33	1251.35	38.96
13FR13#73	478	0.037503	0.001475	0.282435	0.000015	0.282422	-2.18	0.53	1168.9	21.11	1568.23	33.31
13FR13#76	487	0.052935	0.002092	0.282326	0.000015	0.282307	-6.05	0.54	1345.6	21.98	1819.26	34.11
13FR13#77	468	0.012285	0.000537	0.282213	0.000019	0.282208	-9.98	0.69	1447.3	26.72	2052.65	43.23
13FR13#86	490	0.049110	0.001928	0.282327	0.000023	0.282310	-5.90	0.81	1338.3	32.69	1812.19	50.95
13FR13#88	492	0.068383	0.002670	0.282406	0.000017	0.282381	-3.33	0.59	1251.1	24.30	1651.14	37.11
13FR18-1												
13FR18-1#01	2427	0.047797	0.001659	0.281161	0.000017	0.281084	-5.09	0.61	2961.7	23.57	3266.52	37.01
13FR18-1#04	2577	0.017211	0.000715	0.281132	0.000017	0.281097	-1.14	0.59	2928.7	22.26	3143.49	35.85
13FR18-1#05	623	0.015443	0.000610	0.282276	0.000015	0.282269	-4.37	0.54	1363.5	21.19	1818.81	34.22
13FR18-1#08	620	0.020319	0.000851	0.282173	0.000018	0.282163	-8.19	0.65	1515.3	25.32	2056.67	40.63
13FR18-1#10	2579	0.009882	0.000397	0.280977	0.000016	0.280958	-6.04	0.56	3111.1	20.87	3443.14	33.89
13FR18-1#12	2579	0.017287	0.000686	0.281005	0.000016	0.280971	-5.56	0.57	3096.9	21.38	3413.73	34.46
13FR18-1#13	1949	0.014748	0.000620	0.281336	0.000017	0.281313	-8.05	0.61	2646.8	23.00	3075.61	37.14
13FR18-1#21	2160	0.026575	0.001075	0.281495	0.000024	0.281451	1.72	0.87	2461.3	33.42	2640.54	53.31
13FR18-1#25	627	0.031397	0.001300	0.281891	0.000017	0.281876	-	0.61	1926.8	23.98	2687.89	38.02
							18.19					
13FR18-1#26	620	0.027157	0.001117	0.281831	0.000020	0.281818	-	0.70	2001.1	27.29	2820.47	43.48
							20.40					

13FR18-1#27	626	0.014099	0.000573	0.282061	0.000015	0.282054	- 11.90	0.53	1658.1	20.53	2294.45	33.19
13FR18-1#30	2928	0.055861	0.002095	0.280938	0.000022	0.280820	-2.74	0.79	3307.0	30.73	3515.96	47.68
13FR18-1#37	624	0.020492	0.000910	0.282028	0.000014	0.282017	- 13.24	0.50	1717.9	19.69	2376.63	31.55
13FR18-1#41	1939	0.014026	0.000587	0.281121	0.000015	0.281099	- 15.89	0.54	2934.4	20.49	3547.57	33.11
13FR18-1#52	623	0.028488	0.001115	0.282028	0.000020	0.282015	- 13.34	0.73	1726.9	28.50	2381.97	45.42
13FR18-1#60	617	0.011639	0.000503	0.282090	0.000015	0.282084	- 11.03	0.53	1614.8	20.68	2233.00	33.49
13FR18-1#62	1951	0.013482	0.000568	0.281469	0.000016	0.281448	-3.22	0.56	2464.0	21.43	2780.42	34.65
13FR18-1#67	627	0.016313	0.000773	0.282099	0.000014	0.282090	- 10.60	0.50	1613.8	19.65	2213.86	31.59
13FR18-1#69	619	0.026613	0.001125	0.282245	0.000019	0.282232	-5.76	0.66	1425.2	26.06	1903.27	41.51
13FR18-1#76	1942	0.013132	0.000530	0.281406	0.000018	0.281386	-5.63	0.64	2547.2	24.23	2921.50	39.21
13FR18-1#77	2906	0.035235	0.001363	0.280958	0.000018	0.280882	-1.05	0.65	3215.9	24.71	3396.52	39.11
13FR18-1#80	1930	0.011248	0.000458	0.281517	0.000015	0.281500	-1.84	0.53	2391.8	20.10	2678.87	32.59
13FR18-1#81	2652	0.017811	0.000705	0.280991	0.000016	0.280955	-4.42	0.56	3117.5	21.17	3401.82	34.10
13FR18-1#84	623	0.031966	0.001368	0.281932	0.000019	0.281916	- 16.87	0.66	1873.8	26.05	2602.41	41.23
13FR18-1#86	1926	0.017259	0.000680	0.281394	0.000018	0.281369	-6.61	0.64	2573.2	24.55	2969.19	39.57
13FR18-1#87	1923	0.015045	0.000596	0.281381	0.000019	0.281360	-7.00	0.68	2584.1	25.73	2991.06	41.56
13FR18-1#88	617	0.023436	0.000915	0.282335	0.000018	0.282325	-2.51	0.62	1291.3	24.57	1697.20	39.37
13FR18-1#97	1940	0.012570	0.000512	0.281286	0.000016	0.281267	-9.91	0.57	2707.5	21.40	3182.72	34.66
13FR19												
13FR19#01	1728	0.038841	0.001466	0.281455	0.000017	0.281407	-9.82	0.60	2542.1	23.39	3012.90	36.93

13FR19#05	2057	0.003785	0.000134	0.281386	0.000014	0.281381	-3.14	0.51	2547.2	19.20	2858.57	31.40
13FR19#06	1882	0.017779	0.000665	0.281509	0.000018	0.281485	-3.48	0.63	2415.6	23.97	2742.55	38.65
13FR19#07	1679	0.015611	0.000644	0.281503	0.000015	0.281482	-8.26	0.54	2423.0	20.53	2879.42	33.12
13FR19#08	567	0.042033	0.001591	0.282203	0.000016	0.282186	-8.55	0.57	1502.4	22.73	2038.36	35.76
13FR19#09	2111	0.011361	0.000434	0.281403	0.000015	0.281385	-1.74	0.55	2544.7	20.66	2814.64	33.52
13FR19#16	615	0.011173	0.000466	0.282216	0.000015	0.282211	-6.58	0.54	1439.8	21.13	1952.17	34.26
13FR19#18	646	0.017295	0.000592	0.282138	0.000026	0.282131	-8.71	0.93	1552.1	36.11	2109.94	58.34
13FR19#20	1915	0.021449	0.000827	0.281296	0.000032	0.281266	-10.50	1.15	2714.9	43.81	3199.47	70.35
13FR19#22	587	0.024604	0.001003	0.282053	0.000028	0.282042	-13.21	1.00	1688.0	39.18	2346.56	62.61
13FR19#23	643	0.030660	0.001324	0.281805	0.000019	0.281789	-20.90	0.67	2047.8	26.41	2868.85	41.84
13FR19#26	702	0.043480	0.001571	0.282070	0.000017	0.282049	-10.37	0.61	1689.7	24.09	2256.59	37.92
13FR19#27	623	0.026821	0.001099	0.282162	0.000021	0.282149	-8.60	0.76	1540.1	29.93	2084.91	47.70
13FR19#28	1892	0.008432	0.000315	0.281651	0.000023	0.281640	2.24	0.81	2202.5	30.69	2397.39	49.94
13FR19#29	2191	0.016676	0.000698	0.281377	0.000023	0.281348	-1.22	0.82	2596.9	31.22	2845.04	50.31
13FR19#30	575	0.029657	0.001207	0.282096	0.000022	0.282083	-12.02	0.76	1636.9	30.08	2262.88	47.82
13FR19#37	2427	0.035105	0.001464	0.281369	0.000019	0.281302	2.63	0.68	2659.9	26.30	2794.59	41.51
13FR19#38	572	0.024347	0.000962	0.282073	0.000024	0.282062	-12.81	0.84	1658.4	33.04	2310.16	52.86
13FR19#41	411	0.019623	0.000815	0.282565	0.000031	0.282558	1.14	1.10	968.0	43.56	1305.58	69.97
13FR21												
13FR21#11	534	0.020750	0.000870	0.282555	0.000014	0.282546	3.45	0.49	983.3	19.42	1254.64	31.15
13FR21#13	499	0.050845	0.001993	0.282604	0.000016	0.282586	4.08	0.58	941.6	23.83	1187.68	37.08

13FR21#14	483	0.036855	0.001428	0.282657	0.000017	0.282644	5.77	0.60	852.9	24.00	1067.37	37.91
13FR21#16	540	0.030997	0.001443	0.282610	0.000018	0.282595	5.34	0.63	919.6	25.45	1139.60	40.20
13FR21#25	533	0.003303	0.000171	0.282522	0.000014	0.282520	2.53	0.48	1010.3	18.73	1312.82	30.60
13FR21#26	544	0.008824	0.000377	0.282515	0.000015	0.282511	2.45	0.54	1025.6	21.21	1326.50	34.47
13FR21#28	545	0.027906	0.001293	0.282672	0.000017	0.282659	7.70	0.59	827.6	23.53	993.15	37.32
13FR21#30	491	0.050671	0.001938	0.282431	0.000016	0.282413	-2.22	0.56	1190.3	22.68	1580.73	35.34
13FR21#31	482	0.033574	0.001306	0.282606	0.000016	0.282594	3.99	0.56	922.1	22.57	1179.68	35.79
13FR21#34	540	0.013126	0.000540	0.282527	0.000016	0.282522	2.74	0.57	1012.5	22.26	1304.51	36.01
13FR21#38	482	0.031201	0.001258	0.282403	0.000015	0.282392	-3.16	0.52	1207.3	20.51	1633.29	32.55
13FR21#39	504	0.046133	0.001821	0.282563	0.000013	0.282546	2.79	0.46	996.1	18.73	1273.26	29.28
13FR21#43	482	0.032090	0.001282	0.282522	0.000015	0.282510	1.03	0.52	1040.5	20.92	1367.87	33.19
13FR21#44	542	0.031041	0.001216	0.282703	0.000016	0.282690	8.74	0.56	782.7	22.55	924.54	35.84
13FR21#45	487	0.039174	0.001561	0.282559	0.000015	0.282545	2.38	0.55	994.7	22.12	1286.29	34.82
13FR21#46	551	0.042025	0.001790	0.282632	0.000016	0.282614	6.24	0.57	896.0	23.04	1090.77	36.05
13FR21#47	492	0.019574	0.000787	0.281953	0.000020	0.281946	-18.72	0.72	1815.4	27.92	2619.28	44.88
13FR21#48	543	0.009367	0.000384	0.282519	0.000016	0.282515	2.56	0.57	1020.2	22.16	1318.32	35.99
13FR21#49	483	0.036219	0.001421	0.282556	0.000017	0.282544	2.23	0.59	995.2	23.66	1292.46	37.38
13FR21#54	495	0.066900	0.002523	0.282380	0.000015	0.282356	-4.14	0.51	1284.0	21.20	1704.64	32.50
13FR21#55	499	0.054656	0.002113	0.282436	0.000018	0.282417	-1.91	0.64	1187.6	26.02	1566.78	40.35
13FR21#56	485	0.026082	0.000943	0.282281	0.000015	0.282272	-7.32	0.53	1367.9	20.74	1898.36	33.19
13FR21#63	500	0.013121	0.000465	0.282254	0.000015	0.282250	-7.78	0.55	1387.6	21.26	1938.95	34.46
13FR21#65	544	0.059450	0.002319	0.282214	0.000016	0.282191	-8.90	0.58	1515.8	23.62	2042.51	36.42

13FR21#69	547	0.013950	0.000634	0.282718	0.000017	0.282711	9.60	0.59	749.6	23.35	873.99	37.69
13FR21#70	483	0.021603	0.000920	0.282523	0.000016	0.282515	1.20	0.55	1029.1	21.76	1357.76	34.85
13FR21#72	542	0.022195	0.000957	0.282316	0.000015	0.282306	-4.86	0.54	1320.0	21.30	1786.87	34.08
13FR21#74	502	0.027179	0.001120	0.282041	0.000014	0.282030	-15.51	0.51	1709.5	19.91	2425.79	31.72
13FR21#77	497	0.037966	0.001500	0.282576	0.000016	0.282562	3.18	0.56	970.0	22.46	1242.81	35.42
13FR21#78	542	0.016332	0.000692	0.282441	0.000015	0.282434	-0.33	0.52	1136.9	20.49	1500.71	33.02
13FR21#8	715	0.008944	0.000401	0.282203	0.000014	0.282198	-4.79	0.49	1455.2	18.88	1916.95	30.65
13FR21#89	545	0.030526	0.001286	0.282080	0.000016	0.282066	-13.27	0.58	1663.0	22.97	2318.21	36.43
13FR21#90	492	0.022906	0.000884	0.282286	0.000013	0.282278	-6.98	0.47	1359.1	18.59	1882.13	29.80
13FR21#96	484	0.035261	0.001386	0.282556	0.000015	0.282543	2.23	0.53	995.4	21.23	1293.00	33.58
13FR21#98	537	0.026501	0.000978	0.282392	0.000016	0.282382	-2.27	0.57	1214.1	22.44	1619.84	35.89
OUT												
OUT#01	567	0.022677	0.000740	0.281909	0.000049	0.281901	-18.65	1.74	1874.4	67.25	2671.22	108.24
OUT#02	646	0.020079	0.000688	0.281802	0.000052	0.281794	-20.67	1.85	2018.2	71.40	2857.42	115.07
OUT#03	1924	0.019889	0.000696	0.281369	0.000062	0.281344	-7.55	2.19	2607.5	83.53	3025.25	134.59
OUT#05	565	0.020777	0.000697	0.282378	0.000051	0.282371	-2.05	1.80	1224.4	70.59	1627.43	113.75
OUT#06	2725	0.023026	0.000782	0.280956	0.000050	0.280916	-4.12	1.79	3170.0	67.62	3440.43	108.71
OUT#08	2633	0.042064	0.001323	0.280936	0.000051	0.280870	-7.91	1.82	3242.1	69.61	3598.04	110.29
OUT#09	513	0.046021	0.001497	0.282246	0.000052	0.282232	-8.14	1.83	1437.5	73.16	1970.94	115.38
OUT#10	1985	0.018426	0.000603	0.281293	0.000047	0.281271	-8.73	1.66	2703.3	63.04	3145.18	101.82
OUT#11	1928	0.029810	0.000990	0.281341	0.000047	0.281305	-8.84	1.68	2665.9	64.28	3107.67	102.77

OUT#15	545	0.045771	0.001684	0.282203	0.000060	0.282186	-9.04	2.13	1505.6	85.23	2052.24	133.73
OUT#16	496	0.021393	0.000705	0.282002	0.000046	0.281995	-16.89	1.63	1744.7	63.39	2507.47	102.12
OUT#17	824	0.036017	0.001344	0.282518	0.000051	0.282497	8.26	1.79	1047.8	71.58	1178.38	113.36
OUT#18	1720	0.023858	0.000785	0.281314	0.000049	0.281289	-14.19	1.76	2687.5	66.94	3275.27	107.61
OUT#19	544	0.020847	0.000793	0.282144	0.000051	0.282136	-10.84	1.79	1552.8	69.87	2165.20	112.29
OUT#21	1954	0.023032	0.000778	0.282245	0.000047	0.282216	24.12	1.68	1412.7	65.45	1083.70	105.23
OUT#23	585	0.035320	0.001132	0.282066	0.000044	0.282053	-12.84	1.57	1675.3	61.70	2321.48	98.27
OUT#25	800	0.039878	0.001550	0.282600	0.000045	0.282577	10.55	1.60	935.9	64.41	1013.95	101.43
OUT#26	585	0.017435	0.000607	0.282054	0.000050	0.282047	-13.07	1.78	1669.4	69.13	2336.33	111.65
OUT#28	541	0.024558	0.000861	0.281824	0.000047	0.281816	-22.24	1.67	1996.3	64.95	2875.65	104.19
OUT#30	569	0.014808	0.000527	0.282212	0.000043	0.282206	-7.79	1.52	1448.7	59.13	1992.83	95.70
OUT#31	659	0.034401	0.001213	0.282251	0.000045	0.282236	-4.70	1.60	1419.3	63.24	1867.22	100.50
OUT#32	2998	0.021793	0.000720	0.280793	0.000048	0.280751	-3.54	1.70	3383.8	63.64	3619.19	102.48
OUT#99	615	0.019161	0.000898	0.281779	0.000046	0.281769	-22.24	1.63	2060.2	63.16	2931.16	101.23
OUT#34	702	0.031024	0.001207	0.282225	0.000046	0.282209	-4.70	1.63	1456.3	64.35	1900.87	102.28
OUT#35	1919	0.020141	0.000718	0.281396	0.000041	0.281370	-6.74	1.47	2572.7	56.13	2971.71	90.39
OUT#36	2914	0.013784	0.000490	0.280875	0.000045	0.280848	-2.08	1.58	3254.1	59.14	3464.99	95.82
OUT#40	686	0.005939	0.000211	0.282257	0.000044	0.282254	-3.47	1.56	1375.4	60.16	1811.15	98.18
OUT#41	627	0.026727	0.001036	0.282193	0.000047	0.282181	-7.39	1.68	1494.3	66.17	2011.83	105.66
OUT#42	1941	0.024359	0.000843	0.281436	0.000044	0.281405	-4.98	1.58	2526.7	60.36	2881.07	96.88

OUT#43	1700	0.012944	0.000452	0.281418	0.000042	0.281404	- 10.57	1.49	2525.1	56.58	3038.02	91.76
OUT#44	581	0.033202	0.001279	0.281704	0.000052	0.281690	- 25.79	1.84	2185.3	72.11	3126.00	114.39
OUT#45	1739	0.022115	0.000755	0.281780	0.000041	0.281755	2.79	1.46	2052.3	56.27	2243.04	90.52
OUT#48	598	0.022045	0.000822	0.281863	0.000045	0.281854	- 19.60	1.60	1940.9	62.10	2754.52	99.72
OUT#50	1708	0.019002	0.000715	0.281271	0.000051	0.281248	- 15.93	1.82	2741.8	69.11	3372.84	111.30
OUT#51	753	0.024068	0.000962	0.282488	0.000038	0.282474	5.83	1.35	1079.9	53.57	1276.06	85.71
OUT#53	2175	0.010703	0.000475	0.281503	0.000040	0.281483	3.23	1.41	2412.0	53.42	2559.19	86.58
OUT#54	843	0.017495	0.000682	0.282463	0.000043	0.282452	7.10	1.51	1105.9	59.23	1266.83	95.48
OUT#98	2059	0.034965	0.001206	0.281582	0.000051	0.281535	2.37	1.81	2349.5	70.09	2520.80	111.41
OUT#97	1896	0.024131	0.000886	0.281278	0.000052	0.281246	- 11.65	1.83	2744.0	69.93	3255.43	112.11
OUT#55	573	0.020714	0.000708	0.281967	0.000050	0.281959	- 16.45	1.77	1793.3	68.52	2538.62	110.37
OUT#56	639	0.031494	0.001010	0.282407	0.000044	0.282395	0.47	1.55	1194.2	61.31	1526.08	97.97
OUT#61	2195	0.022630	0.000819	0.281381	0.000044	0.281347	-1.16	1.58	2599.7	60.24	2844.96	96.75
OUT#57	1935	0.026001	0.000913	0.281467	0.000043	0.281433	-4.11	1.53	2488.9	58.73	2822.41	94.09
OUT#58	586	0.034488	0.001181	0.281954	0.000045	0.281941	- 16.78	1.58	1832.7	62.11	2568.89	98.79
OUT#62	2370	0.032075	0.001292	0.281344	0.000052	0.281286	0.74	1.84	2682.6	71.14	2865.73	112.82
OUT#60	576	0.031211	0.001146	0.282105	0.000044	0.282093	- 11.64	1.56	1620.8	61.26	2239.35	97.53
OUT#63	564	0.013354	0.000539	0.282206	0.000046	0.282200	-8.12	1.64	1457.5	63.79	2009.64	103.21
OUT#64	569	0.018154	0.000653	0.281939	0.000046	0.281932	- 17.51	1.62	1829.1	62.62	2601.62	101.01
OUT#65	2127	0.013426	0.000489	0.281374	0.000046	0.281355	-2.46	1.64	2586.5	62.17	2871.38	100.73

OUT#66	886	0.028647	0.001096	0.282584	0.000045	0.282566	12.09	1.60	947.7	63.79	984.38	101.70
OUT#69	632	0.020252	0.000743	0.282403	0.000046	0.282394	0.29	1.61	1191.0	63.33	1531.52	101.91
OUT#70	489	0.038551	0.001429	0.282423	0.000049	0.282410	-2.36	1.73	1184.3	69.24	1587.61	109.40
OUT#72	650	0.012297	0.000419	0.282175	0.000047	0.282170	-7.26	1.66	1495.2	64.28	2021.94	104.34
OUT#74	544	0.018104	0.000612	0.282046	0.000041	0.282040	- 14.24	1.45	1679.8	56.15	2378.10	90.67
OUT#75	2632	0.026002	0.000915	0.281026	0.000053	0.280980	-4.02	1.90	3087.4	71.85	3361.56	115.10
OUT#76	299	0.012151	0.000449	0.282233	0.000056	0.282230	- 12.98	1.97	1416.9	76.65	2112.11	124.32
OUT#77	628	0.031051	0.001038	0.282150	0.000045	0.282138	-8.88	1.60	1554.0	62.95	2106.44	100.50
OUT#78	629	0.020074	0.000684	0.282099	0.000045	0.282091	- 10.52	1.60	1609.8	62.30	2209.94	100.41
OUT#81	1904	0.024953	0.000851	0.281421	0.000050	0.281391	-6.34	1.77	2546.8	67.75	2935.48	108.71
OUT#82	593	0.025706	0.000901	0.281833	0.000048	0.281823	- 20.81	1.69	1986.3	65.61	2825.84	105.13
OUT#83	662	0.018852	0.000629	0.282331	0.000046	0.282323	-1.57	1.64	1288.0	64.06	1672.38	103.40
OUT#84	1629	0.025816	0.000880	0.281633	0.000046	0.281606	-5.03	1.62	2260.2	62.32	2641.14	99.92
OUT#85	495	0.041533	0.001380	0.282379	0.000049	0.282367	-3.77	1.74	1245.1	69.39	1681.75	109.79
OUT#86	611	0.024518	0.000798	0.282478	0.000041	0.282469	2.45	1.46	1088.9	57.39	1378.96	92.23
OUT#89	690	0.023111	0.000780	0.282568	0.000050	0.282558	7.39	1.78	962.3	70.20	1127.76	112.86
OUT#90	722	0.013453	0.000521	0.282458	0.000049	0.282451	4.32	1.73	1108.4	67.76	1347.41	109.69
OUT#91	795	0.053931	0.001822	0.282602	0.000045	0.282574	10.33	1.61	941.2	65.35	1023.56	102.15
OUT#92	609	0.027019	0.000897	0.282204	0.000050	0.282194	-7.32	1.77	1473.0	69.58	1993.68	111.52
OUT#93	603	0.027858	0.000904	0.282373	0.000046	0.282363	-1.49	1.62	1238.6	64.01	1621.55	102.56
OUT#95	1168	0.047493	0.001714	0.282469	0.000061	0.282431	13.71	2.18	1128.7	87.84	1106.43	137.71

OUT#100	2152	0.012875	0.000422	0.281262	0.000047	0.281244	-5.80	1.68	2733.4	63.33	3095.65	102.79
MB2												
MB2#2	1962	0.014090	0.000474	0.281275	0.000044	0.281257	-9.75	1.57	2719.6	59.21	3189.94	95.96
MB2#3	584	0.016724	0.000535	0.281821	0.000048	0.281816	-21.28	1.71	1983.6	65.83	2848.77	106.52
MB2#4	1872	0.015299	0.000483	0.281283	0.000051	0.281266	-11.50	1.80	2708.8	67.99	3227.88	110.17
MB2#5	557	0.034845	0.001005	0.282295	0.000046	0.282284	-5.30	1.63	1351.3	64.21	1826.34	102.61
MB2#7	646	0.016550	0.000590	0.282307	0.000041	0.282299	-2.76	1.45	1320.0	56.59	1735.05	91.44
MB2#8	1994	0.008175	0.000269	0.281056	0.000048	0.281046	-16.51	1.71	2996.5	63.79	3627.56	103.95
MB2#9	1725	0.007678	0.000246	0.281462	0.000046	0.281454	-8.20	1.64	2452.6	61.90	2911.39	100.93
MB2#10	559	0.012864	0.000418	0.282081	0.000046	0.282077	-12.58	1.62	1623.1	62.38	2286.12	101.25
MB2#12	576	0.021837	0.000703	0.282303	0.000047	0.282295	-4.48	1.65	1329.0	64.46	1789.16	103.85
MB2#13	654	0.030648	0.001017	0.281914	0.000049	0.281901	-16.68	1.74	1881.3	68.01	2614.68	108.65
MB2#14	486	0.022402	0.000800	0.282321	0.000046	0.282314	-5.85	1.61	1307.5	63.24	1806.01	101.62
MB2#16	2232	0.016221	0.000607	0.281381	0.000045	0.281356	0.01	1.61	2584.9	60.99	2802.02	98.50
MB2#17	818	0.028990	0.001056	0.282505	0.000046	0.282489	7.83	1.63	1057.9	64.57	1200.93	103.05
MB2#18	640	0.010474	0.000339	0.282321	0.000045	0.282317	-2.26	1.59	1291.1	61.76	1699.10	100.46
MB2#19	2088	0.028988	0.001054	0.281377	0.000046	0.281335	-4.05	1.64	2620.9	63.10	2938.43	100.71
MB2#20	735	0.018397	0.000637	0.282035	0.000049	0.282026	-10.42	1.73	1695.8	66.93	2285.53	108.01
MB2#21	595	0.020980	0.000683	0.282303	0.000052	0.282295	-4.05	1.85	1328.4	72.14	1777.14	116.27
MB2#24	644	0.016611	0.000584	0.282398	0.000049	0.282391	0.43	1.72	1193.6	67.26	1532.27	108.69
MB2#25	1983	0.024827	0.000809	0.281421	0.000049	0.281391	-4.52	1.76	2544.6	67.10	2885.15	107.80

MB2#26	638	0.017119	0.000552	0.282238	0.000043	0.282231	-5.36	1.53	1413.7	59.36	1892.63	96.01
MB2#27	636	0.042009	0.001380	0.282220	0.000057	0.282203	-6.39	2.03	1470.5	80.62	1956.20	127.55
MB2#28	1353	0.017748	0.000592	0.281442	0.000039	0.281426	-	1.39	2502.6	52.83	3210.39	85.35
MB2#29	2069	0.012646	0.000422	0.281499	0.000045	0.281483	0.75	1.60	2413.7	60.69	2628.43	98.49
MB2#31	1960	0.018208	0.000591	0.281444	0.000048	0.281422	-3.93	1.71	2499.3	65.12	2831.40	105.22
MB2#33	642	0.020353	0.000697	0.282478	0.000051	0.282470	3.18	1.81	1085.5	71.01	1356.57	114.41
MB2#35	1916	0.016123	0.000537	0.281435	0.000044	0.281415	-5.19	1.58	2508.1	59.85	2874.03	96.84
MB2#36	720	0.019549	0.000761	0.282567	0.000046	0.282556	8.00	1.63	963.9	64.26	1112.30	103.36
MB2#37	674	0.023196	0.000820	0.282182	0.000046	0.282172	-6.64	1.64	1500.5	64.16	2001.36	103.04
MB2#39	1856	0.021572	0.000769	0.281547	0.000052	0.281520	-2.87	1.85	2371.2	70.83	2684.53	113.91
MB2#40	2221	0.019654	0.000677	0.281399	0.000043	0.281370	0.26	1.53	2566.3	58.13	2777.72	93.70
MB2#41	762	0.014601	0.000521	0.282535	0.000039	0.282528	7.94	1.38	1001.4	54.13	1149.46	87.62
MB2#43	609	0.033812	0.001187	0.282210	0.000052	0.282196	-7.23	1.83	1476.3	72.13	1988.23	114.70
MB2#44	1889	0.022299	0.000783	0.281482	0.000042	0.281454	-4.44	1.51	2460.1	57.76	2807.06	92.86
MB2#46	2013	0.026153	0.000863	0.281500	0.000050	0.281467	-1.10	1.76	2440.3	67.55	2698.53	108.36
MB2#47	1642	0.013672	0.000527	0.281805	0.000042	0.281788	1.74	1.51	2006.2	57.79	2231.53	93.53
MB2#48	587	0.012174	0.000445	0.282069	0.000048	0.282064	-	1.72	1640.8	66.27	2296.26	107.49
MB2#49	675	0.020773	0.000724	0.282044	0.000052	0.282035	-	1.86	1687.9	72.18	2305.88	116.22
MB2#50	822	0.029464	0.001036	0.282440	0.000047	0.282424	5.63	1.66	1148.3	65.84	1343.05	105.13
MB2#51	592	0.040027	0.001397	0.281922	0.000044	0.281907	-	1.55	1888.1	61.15	2641.60	96.70
MB2#52	1796	0.012833	0.000420	0.281448	0.000040	0.281433	17.87	1.43	2483.4	54.34	2911.67	88.19

MB2#53	2649	0.028095	0.000952	0.281067	0.000046	0.281019	-2.22	1.62	3034.4	61.67	3265.81	98.70
MB2#54	658	0.014850	0.000533	0.282364	0.000042	0.282357	-0.44	1.49	1238.8	57.96	1597.96	93.79
MB2#55	586	0.016824	0.000692	0.282160	0.000049	0.282152	-9.32	1.72	1526.6	67.17	2101.76	108.24
MB2#56	1865	0.021591	0.000720	0.281290	0.000040	0.281265	- 11.70	1.42	2715.4	53.92	3234.37	86.83
MB2#57	552	0.032831	0.001126	0.282003	0.000048	0.281991	- 15.77	1.69	1762.4	66.42	2480.06	105.80
MB2#58	649	0.031234	0.001139	0.281969	0.000045	0.281955	- 14.90	1.59	1811.1	62.29	2499.44	99.19
MB2#59	2211	0.014084	0.000490	0.281254	0.000043	0.281233	-4.83	1.54	2748.8	58.08	3082.34	94.09
MB2#60	635	0.034871	0.001284	0.282299	0.000047	0.282284	-3.56	1.67	1354.8	66.38	1776.79	105.29
MB2#61	1868	0.015793	0.000561	0.281451	0.000047	0.281431	-5.73	1.68	2487.6	63.77	2869.89	103.11
MB2#63	2717	0.018748	0.000645	0.281075	0.000044	0.281042	0.18	1.56	2999.9	58.79	3173.38	94.86
MB2#65	630	0.026389	0.000967	0.282240	0.000049	0.282229	-5.61	1.74	1425.6	68.60	1902.65	109.74
MB2#66	1962	0.014551	0.000531	0.281286	0.000047	0.281266	-9.43	1.65	2708.8	62.55	3170.52	101.23
MB2#67	605	0.025540	0.000878	0.282055	0.000041	0.282045	- 12.70	1.44	1679.7	56.12	2328.37	89.99
MB2#68	603	0.023021	0.000826	0.282156	0.000040	0.282147	-9.13	1.40	1537.2	54.72	2103.12	87.86
MB2#70	1973	0.016320	0.000596	0.281383	0.000044	0.281361	-5.81	1.56	2581.8	59.25	2956.50	95.73
MB2#71	581	0.038149	0.001385	0.281756	0.000052	0.281741	- 24.00	1.84	2119.5	72.41	3014.64	114.54
MB2#73	1909	0.016952	0.000623	0.281446	0.000047	0.281423	-5.07	1.66	2498.8	63.09	2861.21	101.85
MB2#74	2113	0.006606	0.000265	0.281368	0.000043	0.281357	-2.69	1.53	2580.3	57.50	2874.62	93.70
MB2#75	642	0.027574	0.001025	0.281739	0.000050	0.281727	- 23.12	1.79	2122.2	69.45	3006.21	110.93
MB2#77	569	0.015860	0.000672	0.282196	0.000051	0.282189	-8.40	1.81	1475.8	70.47	2031.09	113.61
MB2#79	1940	0.008649	0.000316	0.281238	0.000045	0.281226	-	1.59	2757.5	59.69	3270.47	97.15

							11.34					
MB2#80	520	0.025291	0.000932	0.282058	0.000063	0.282049	- 14.44	2.22	1676.9	86.99	2372.43	139.28
MB2#81	620	0.009581	0.000317	0.282116	0.000046	0.282113	-9.95	1.62	1571.0	62.26	2167.75	101.32
MB2#82	675	0.079184	0.002936	0.282534	0.000053	0.282496	4.87	1.87	1071.3	78.10	1275.58	118.37
MB2#84	1995	0.033797	0.001088	0.280781	0.000133	0.280739	- 27.37	4.72	3432.2	178.65	4286.72	284.87
MB2#85	617	0.025475	0.001071	0.281924	0.000049	0.281911	- 17.15	1.73	1870.0	67.71	2615.83	108.01
MB2#90	1402	0.017195	0.000585	0.281416	0.000046	0.281401	- 17.49	1.64	2536.3	62.40	3235.04	100.83
MB2#91	564	0.023081	0.000766	0.282009	0.000038	0.282001	- 15.18	1.36	1738.1	52.98	2452.34	85.22
MB2#92	1855	0.024221	0.000826	0.281454	0.000046	0.281425	-6.24	1.62	2500.4	61.94	2891.37	99.46
MB2#93	333	0.025852	0.000921	0.282152	0.000050	0.282147	- 15.18	1.78	1546.1	69.90	2276.00	111.96
MB2#98	589	0.021586	0.000786	0.282372	0.000045	0.282363	-1.78	1.58	1236.1	62.02	1629.20	99.69
MB2#99	527	0.043596	0.001716	0.282168	0.000049	0.282151	- 10.69	1.73	1557.4	69.10	2142.34	108.33
RO2												
RO2#1	2167	0.018198	0.000588	0.281274	0.000047	0.281250	-5.26	1.68	2728.4	63.44	3074.18	102.51
RO2#3	547	0.031018	0.001027	0.282121	0.000052	0.282110	- 11.68	1.84	1594.5	72.06	2220.07	115.08
RO2#5	2044	0.023164	0.000754	0.281456	0.000044	0.281426	-1.84	1.55	2494.0	59.35	2767.95	95.48
RO2#7	582	0.039113	0.001484	0.282664	0.000048	0.282647	8.13	1.71	844.1	69.04	995.45	108.91
RO2#8	675	0.016657	0.000583	0.282595	0.000047	0.282588	8.10	1.65	919.9	64.95	1070.73	104.96
RO2#10	1912	0.010263	0.000344	0.281303	0.000044	0.281291	-9.71	1.55	2672.4	58.53	3148.69	95.19
RO2#11	585	0.022630	0.000736	0.281990	0.000046	0.281982	- 15.36	1.64	1762.2	63.59	2479.84	102.35

RO2#12	566	0.036324	0.001212	0.282425	0.000047	0.282412	-0.56	1.65	1175.2	65.74	1534.18	104.48
RO2#13	1741	0.031242	0.001074	0.281682	0.000049	0.281647	-1.01	1.75	2204.0	67.94	2479.49	108.38
RO2#14	1924	0.039966	0.001590	0.282483	0.000068	0.282425	30.86	2.40	1104.6	96.28	634.94	151.46
RO2#15	1924	0.036936	0.001299	0.281404	0.000044	0.281356	-7.09	1.57	2601.0	60.80	2997.40	96.40
RO2#17	3300	0.016168	0.000548	0.280543	0.000043	0.280508	-5.05	1.55	3699.9	57.28	3946.84	92.66
RO2#18	2638	0.022313	0.000700	0.281078	0.000048	0.281042	-1.65	1.72	3000.8	65.09	3222.55	104.86
RO2#26	647	0.020229	0.000781	0.282144	0.000043	0.282135	-8.57	1.53	1551.9	59.61	2101.75	95.84
RO2#35	1828	0.016683	0.000570	0.281789	0.000047	0.281769	5.35	1.65	2029.7	63.36	2154.11	102.44
RO2#41	1265	0.035987	0.001244	0.282145	0.000054	0.282115	4.73	1.90	1569.5	75.03	1748.46	119.14
RO2#43	950	0.034820	0.000872	0.281822	0.000324	0.281806	-	11.47	2000.7	443.03	2635.05	710.51
RO2#44	1902	0.018597	0.000681	0.281336	0.000044	0.281312	-9.19	1.56	2651.0	59.48	3109.29	95.88
RO2#46	649	0.030006	0.001163	0.282386	0.000047	0.282372	-0.12	1.66	1228.5	65.86	1571.10	104.81
RO2#48	590	0.018412	0.000665	0.281970	0.000043	0.281962	-	1.51	1787.3	58.51	2520.72	94.36
RO2#50	447	0.046705	0.001603	0.282114	0.000078	0.282101	-	2.75	1628.1	109.49	2304.34	172.17
RO2#53	2135	0.014022	0.000523	0.281371	0.000045	0.281350	-2.44	1.59	2593.1	60.39	2876.55	97.75
RO2#57	632	0.023949	0.000868	0.282144	0.000045	0.282134	-8.94	1.59	1555.6	62.29	2113.37	99.92
RO2#58	2250	0.008765	0.000341	0.281363	0.000043	0.281349	0.18	1.53	2591.6	57.85	2805.58	94.08
RO2#59	547	0.126595	0.004627	0.282430	0.000058	0.282382	-2.05	2.04	1285.6	88.97	1612.99	128.41
RO2#63	526	0.054199	0.001806	0.282145	0.000052	0.282127	-	1.84	1593.8	73.88	2195.86	115.54
RO2#65	584	0.013194	0.000468	0.281539	0.000047	0.281534	-	1.65	2362.9	63.09	3467.70	102.26
RO2#71	2113	0.029633	0.001055	0.281281	0.000066	0.281239	-6.91	2.35	2752.1	90.09	3133.03	143.78

RO2#73	2162	0.035157	0.001179	0.281351	0.000039	0.281302	-3.52	1.40	2665.8	53.98	2963.36	85.86
RO2#76	679	0.018786	0.000623	0.282196	0.000048	0.282188	-5.95	1.69	1473.7	65.63	1961.89	105.96
RO2#77	2063	0.016134	0.000586	0.281437	0.000048	0.281414	-1.85	1.70	2509.0	64.80	2783.75	104.71
RO2#78	596	0.019816	0.000742	0.282180	0.000043	0.282172	-8.41	1.53	1500.8	59.66	2052.05	96.01
RO2#79	1915	0.017743	0.000612	0.281458	0.000046	0.281436	-4.47	1.65	2481.1	62.86	2829.19	101.51
RO2#80	580	0.034153	0.001180	0.282093	0.000047	0.282080	-	1.67	1639.5	65.76	2265.24	104.59
RO2#81	632	0.022725	0.000808	0.281801	0.000048	0.281791	12.00	1.69	2025.7	65.55	2870.93	105.30
RO2#82	2529	0.010309	0.000359	0.280974	0.000044	0.280957	21.06	1.57	3111.8	58.46	3476.50	95.04
RO2#83	1975	0.014028	0.000458	0.281422	0.000050	0.281405	-7.23	1.77	2520.3	67.18	2859.12	108.93
RO2#87	2192	0.072759	0.002466	0.281351	0.000053	0.281248	-4.20	1.87	2757.7	74.62	3060.67	114.58
RO2#88	621	0.021816	0.000728	0.281661	0.000045	0.281652	-4.73	1.60	2213.1	61.71	3184.15	99.34
RO2#92	2068	0.019264	0.000663	0.281478	0.000047	0.281452	-	1.68	2457.4	64.15	2696.00	103.46

Highlights:

- In the St-Georges-sur-Loire block-in-matrix unit, detrital zircon ages spectra and their Hf isotopic composition predominantly indicate Early Paleozoic and Neoproterozoic populations.
- The analyzed zircon grains are preferentially derived from a southern source, but a northern one cannot be discarded.
- Most of the grains record negative Hf isotopic values indicating that crustal melting played a major role in the Neoproterozoic and Paleozoic evolution of Armorica microcontinent.

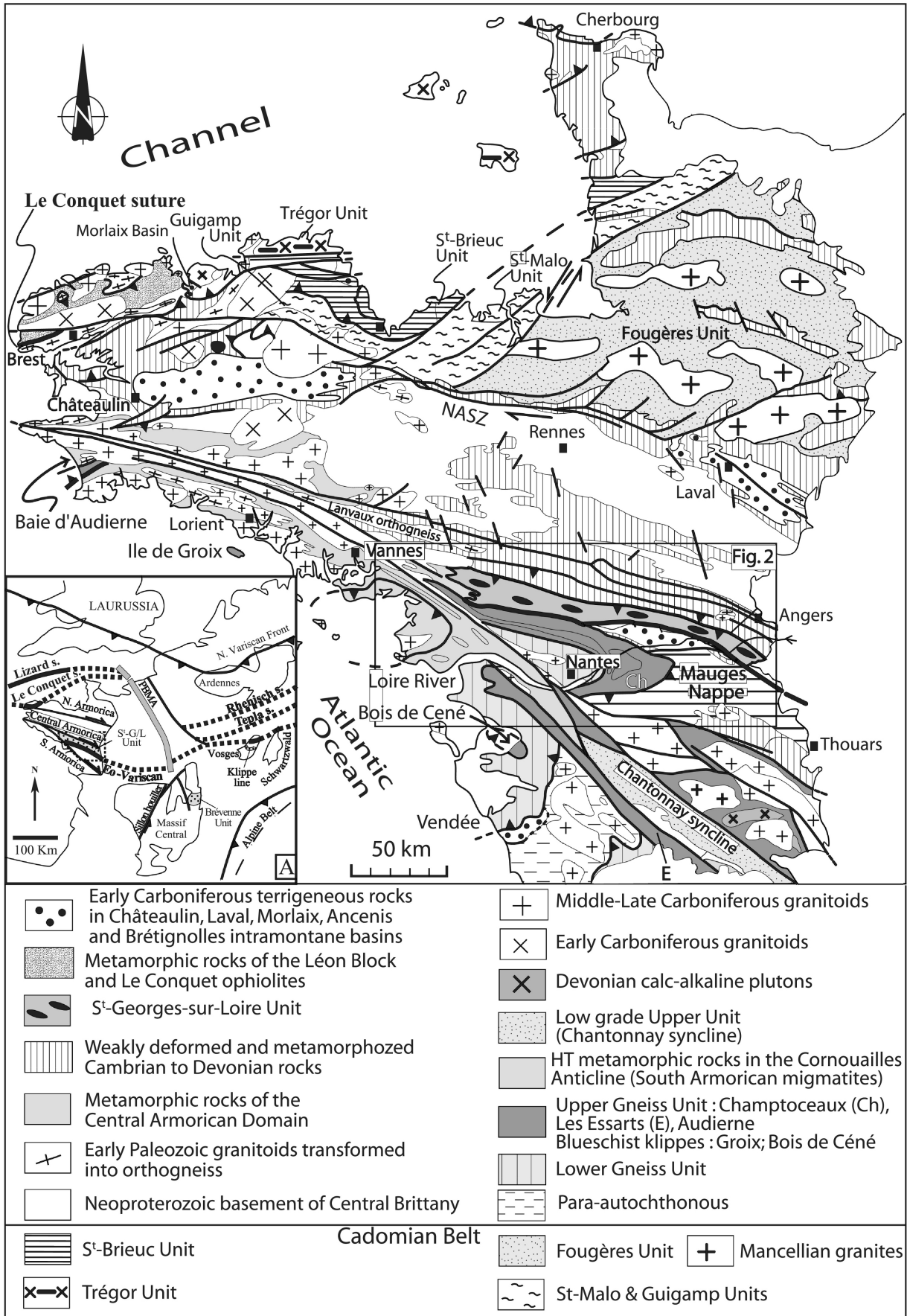


Figure 1

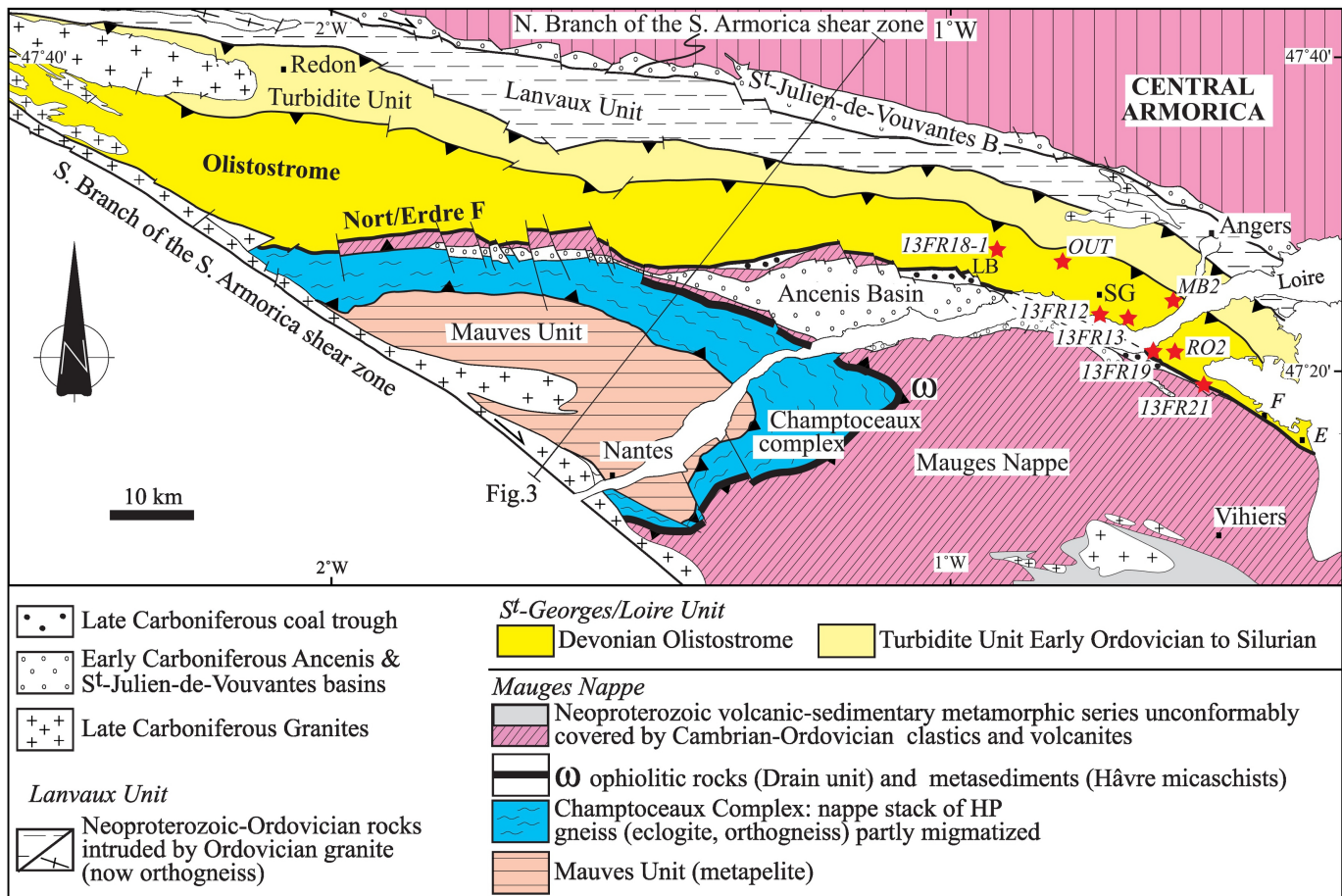


Figure 2

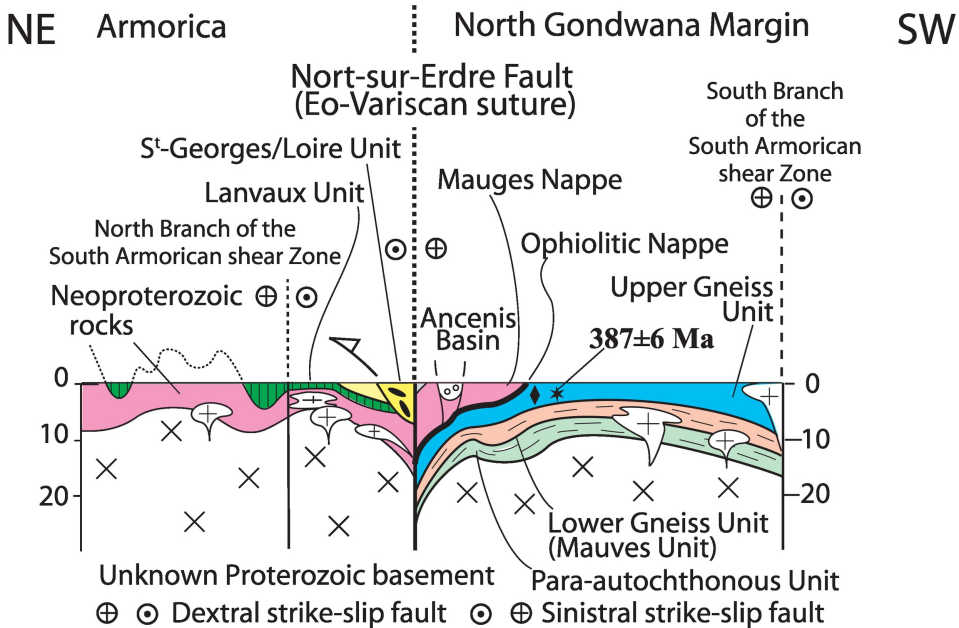


Figure 3

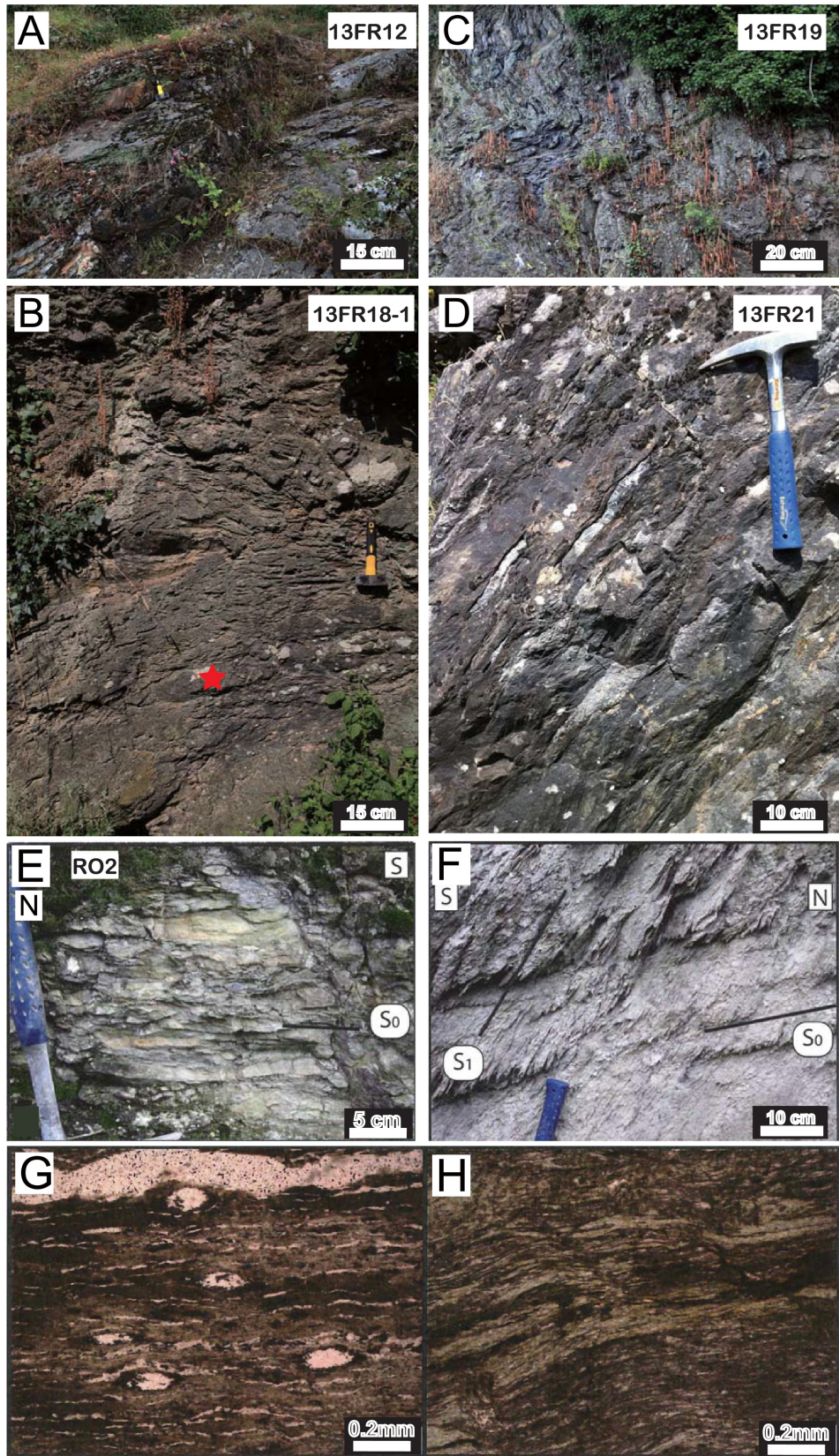


Figure 4

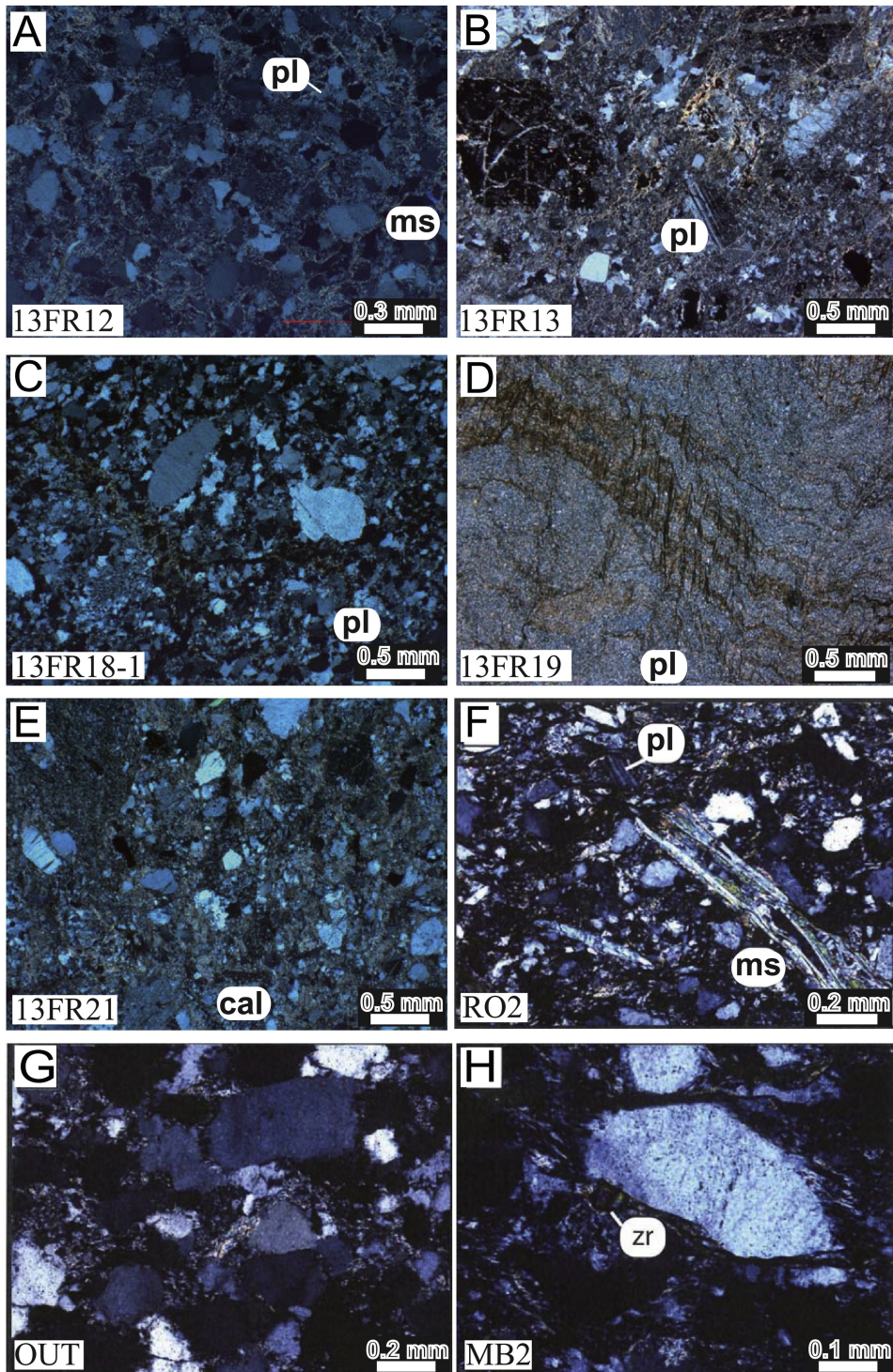


Figure 5

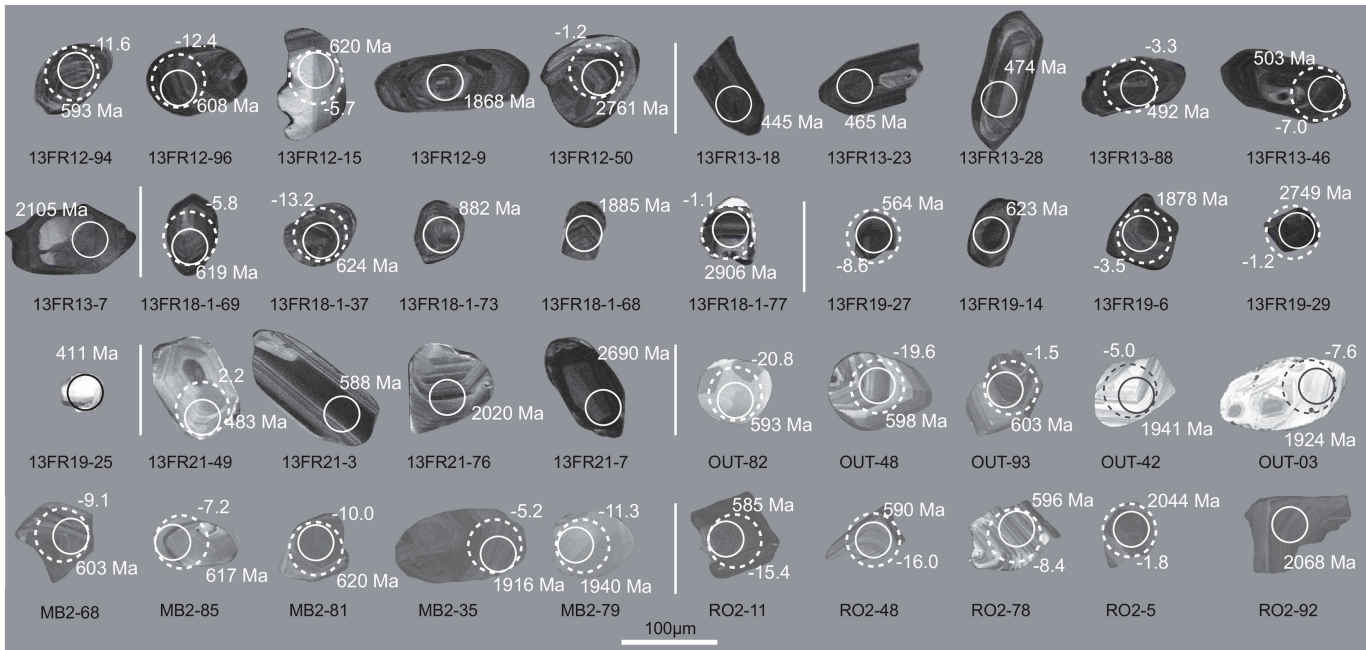


Figure 6

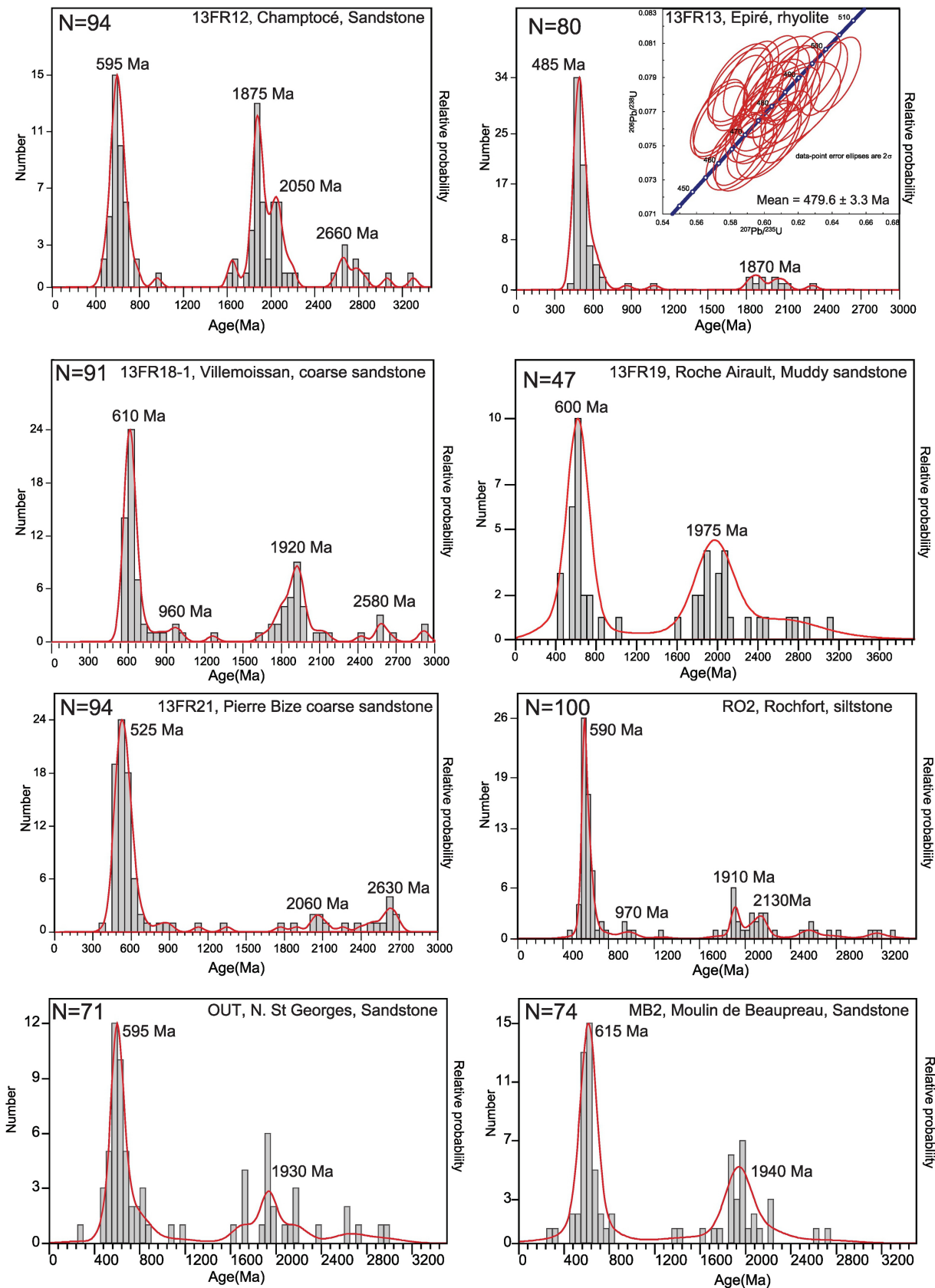


Figure 7

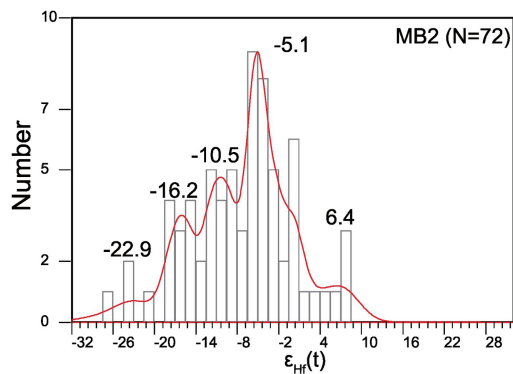
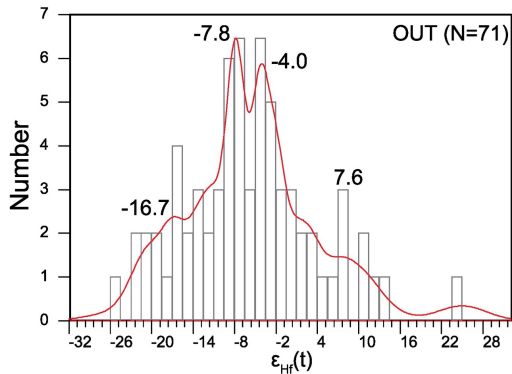
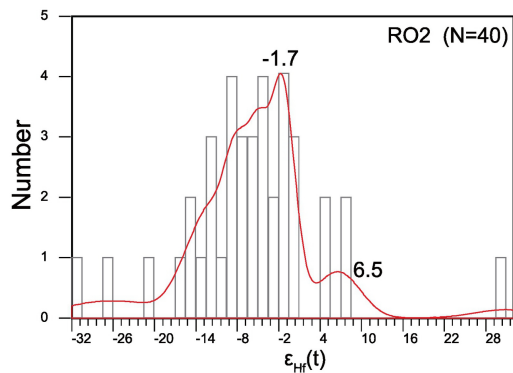
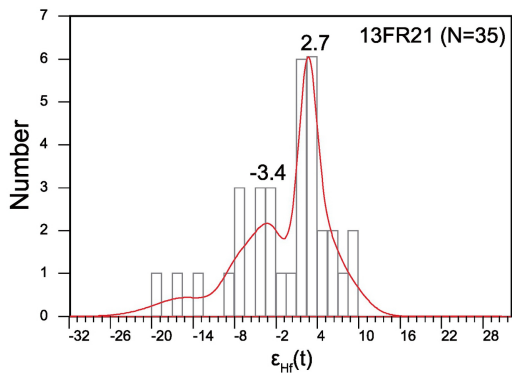
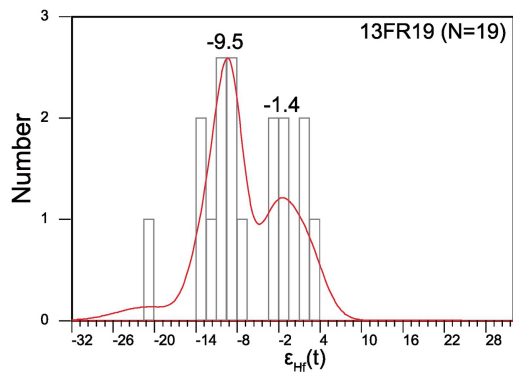
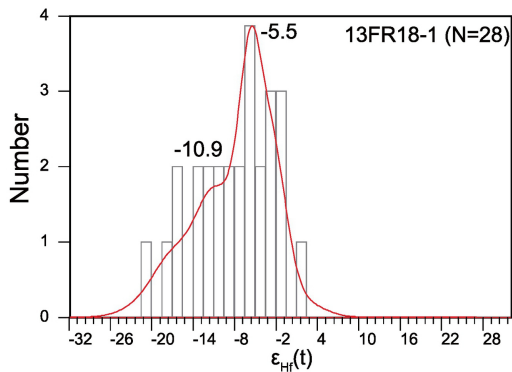
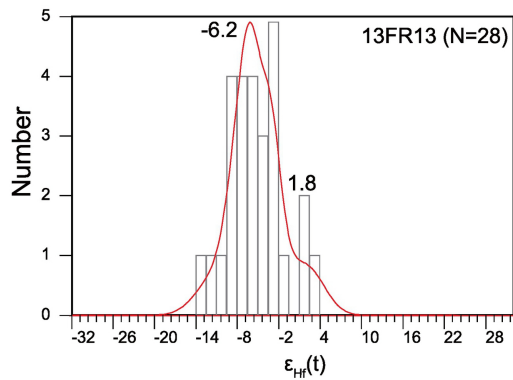
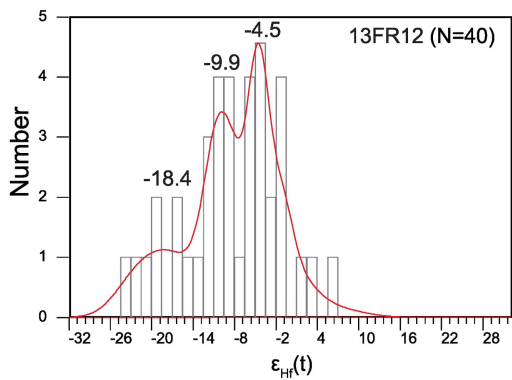


Figure 8

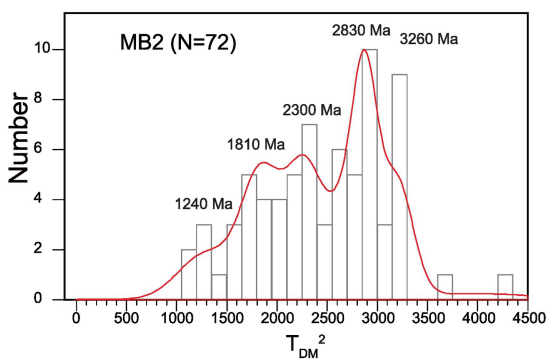
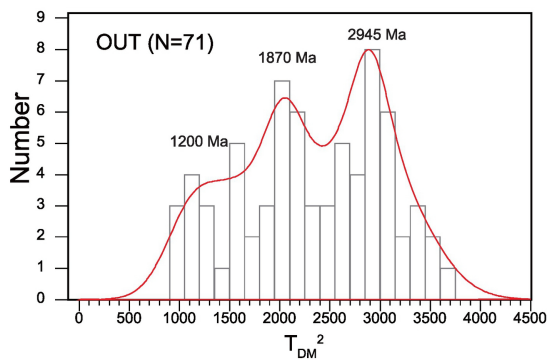
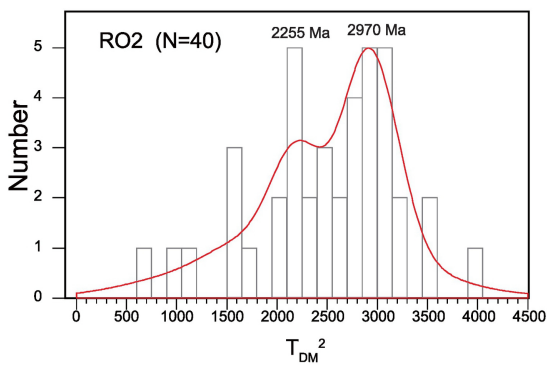
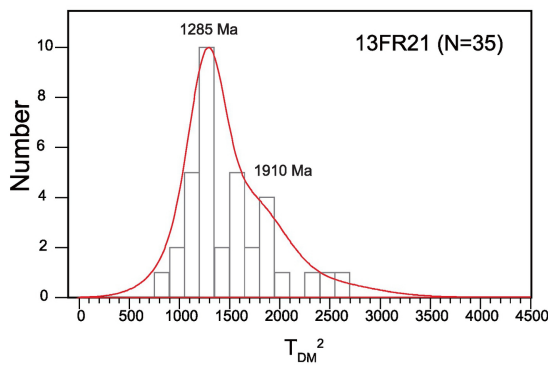
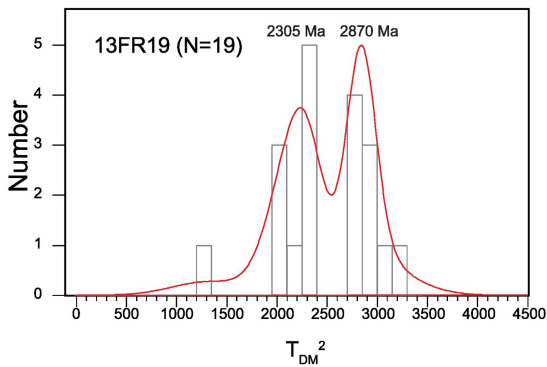
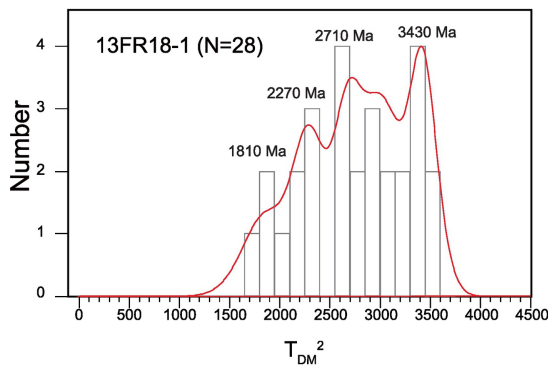
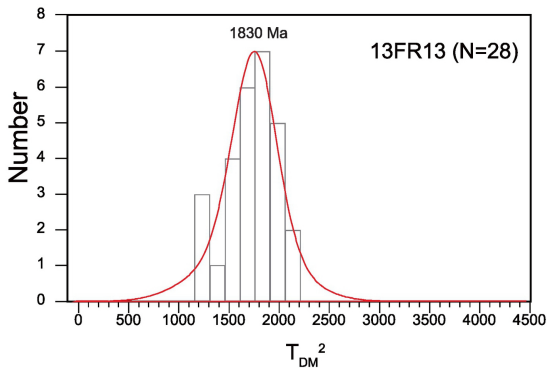
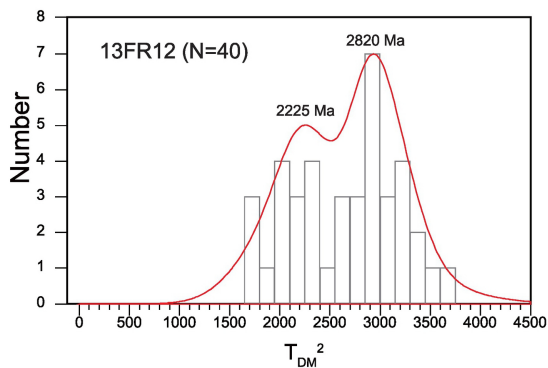


Figure 9

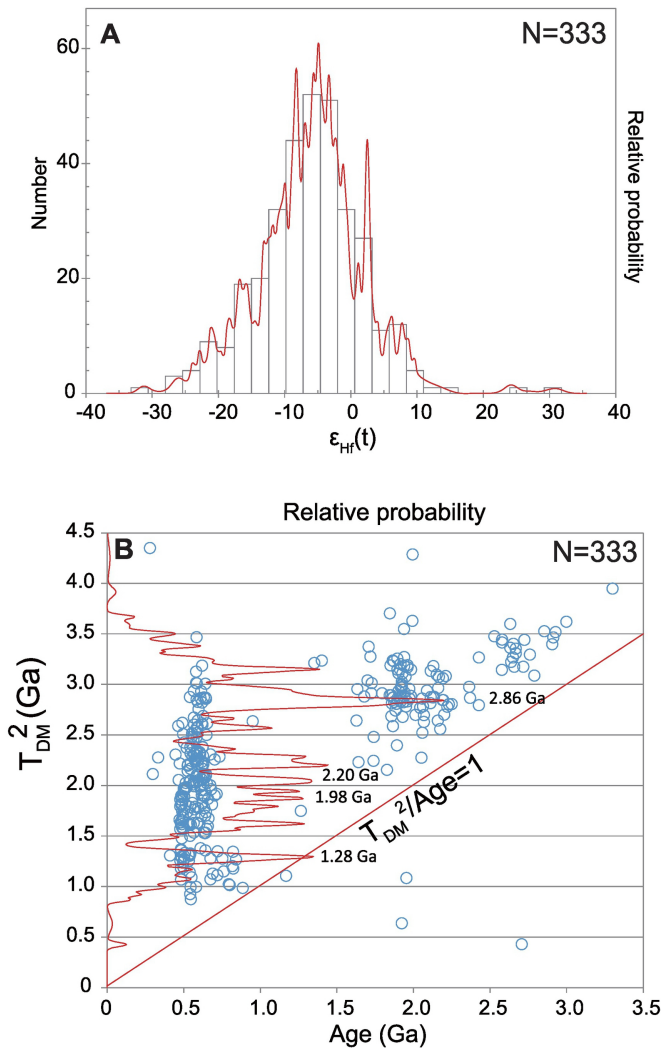


Figure 10

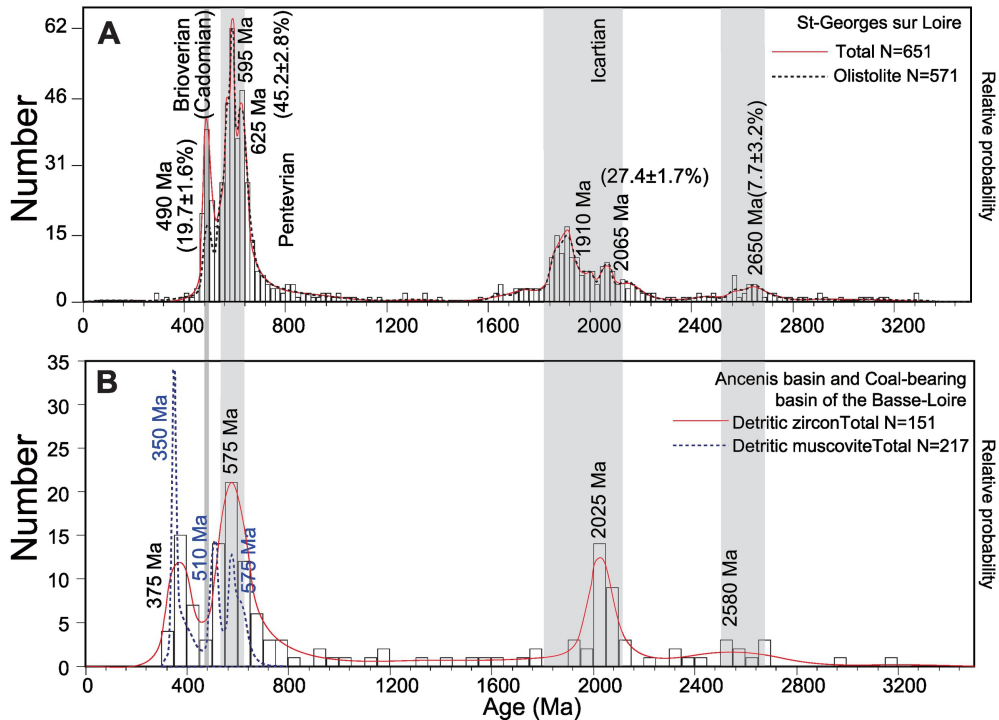


Figure 11

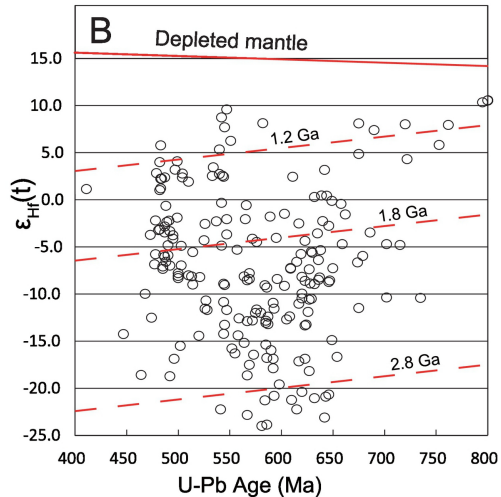
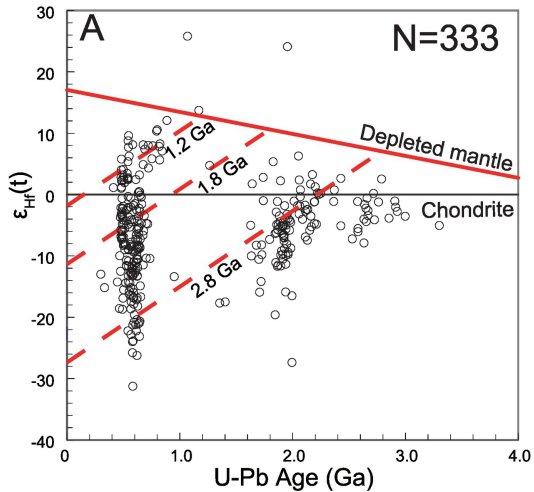


Figure 12

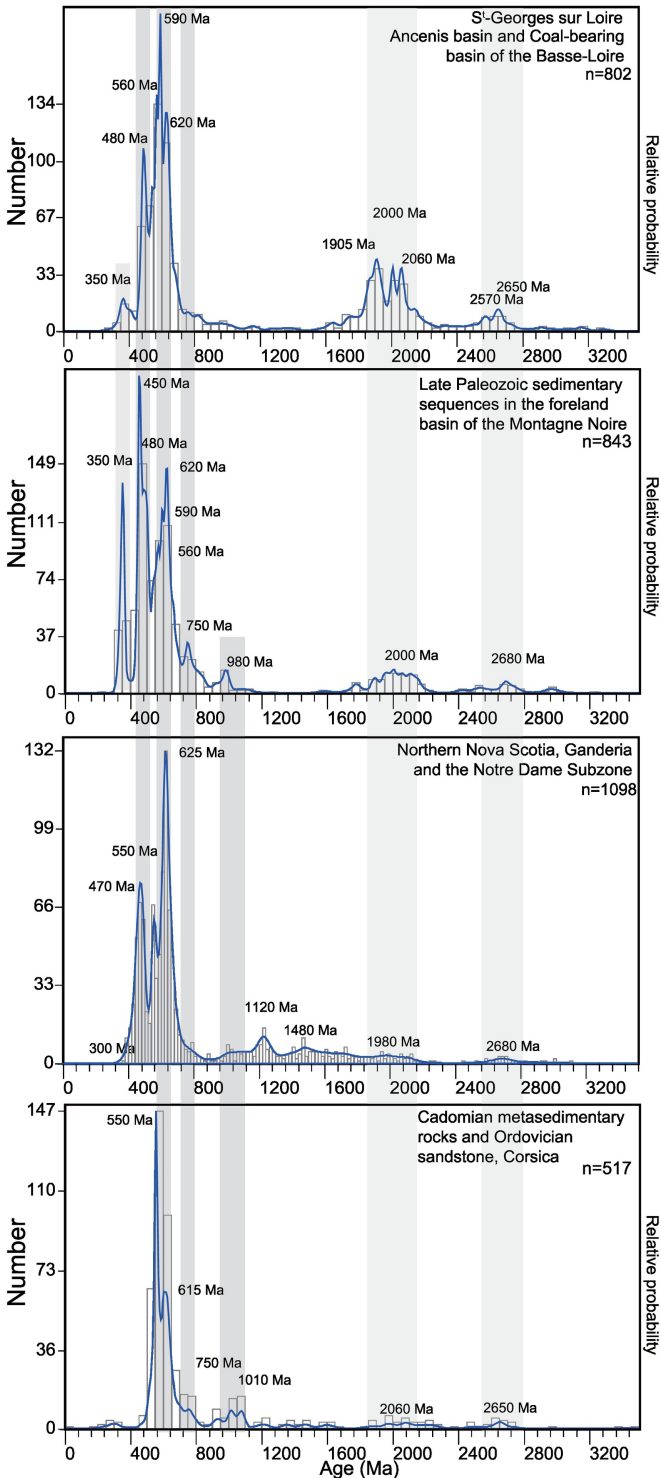


Figure 13

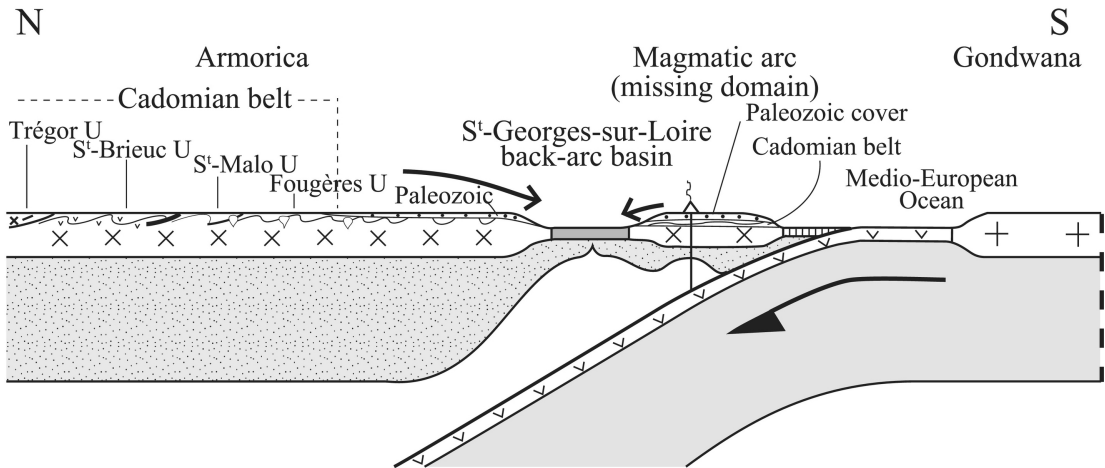


Figure 14