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Aucanquilcha Volcanic Cluster Magma Evolution and Magma Plumbing System Architecture During the Gordo Stage (6-4 Ma)

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AUCANQUILCHA VOLCANIC CLUSTER MAGMA EVOLUTION AND MAGMA PLUMBING SYSTEM ARCHITECTURE DURING THE GORDO STAGE (6-4 MA)

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Kasey Lynn Buckley

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ABSTRACT

Aucanquilcha Volcanic Cluster (AVC) is an 11 m.y. volcanic system in the central Andes that is evolving over four distinct stages of activity. Stages include the Aloncha (11-8 Ma), Gordo (6-4 Ma), Polán (4-2 Ma), and Aucanquilcha (<1 Ma) stages. The AVC evolved from a series of magmatic underpinnings during the Aloncha Stage to a larger zone of melting, assimilation, storage, and homogenization (MASH) by the Polán Stage. The transition from smaller underpinnings to MASH zones began during the Gordo Stage. At ~5-2 Ma the AVC reached thermal maturity before beginning its volcanic death during the Aucanquilcha Stage. This study focuses on elucidating the magma plumbing system architecture during the Gordo Stage to better understand the AVC's evolving magmatic processes from 6-4 Ma. Magma evolution was determined by analyzing major and trace element chemistry of whole rock composition, plagioclase phenocrysts, and pyroxene phenocrysts. Populations of plagioclase include plagioclase phenocrysts with variation between Sr and Ba (Type 1), re-equilibrated Sr but not Ba (Type 2), and no variation in Sr or Ba (Type 3). The three types are further split into textural categories with patchy resorption, sieved rims, abundant patchy resorption in the core, or abundant sieving in the cores. All plagioclases have oscillatory zoning throughout and some normal zoning profiles in the outer mantle and rim. Molar % An ranges from ~30-90 and does not have a correlation with Sr/Ba values. Although some variation still exists, An composition across core-to-rim transects becomes more homogenous over time after multiple eruptions, except for one likely isolated eruption. In general pyroxene phenocrysts have MG# values ranging from ~0.45-0.75. Pyroxene populations include clinopyroxenes (Type 1) and orthopyroxenes (Type 2). Pyroxene population types are further classified based on if they have normal zoning, reverse zoning, oscillatory zoning and if they are phenocrysts, antecrysts, or xenocrysts. In addition to determining overlapping plagioclase phenocryst and pyroxene phenocryst populations, the magma plumbing system architecture was determined by analyzing rare earth element (REE) trends. REE trends for plagioclases and pyroxenes represent an open system for AVC magmas containing trends indicative of crystals residing in equilibrium, going through fractional crystallization, and being included from magma mingling. REE core patterns have multiple groupings of different trends that indicate AVC magmas have an interactive system of different source reservoirs in the crust. REE rim patterns have less variation indicating the magmas homogenized, but variation between the cores, mantles, and rims suggest a final magma mixing event triggered eruptions at the AVC. In summary, the AVC is long-lived volcanic system that began to evolve from a series of magmatic underpinnings from ~6-4 Ma to a series of connected, developing MASH reservoirs in the crust at ~15-30 km deep.

KEYWORDS: Aucanquilcha Volcanic Cluster, Gordo, Polán, magma storage, magma plumbing system architecture, plagioclase, pyroxene, central Andes, Chile

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INTRODUCTION

The central Andes is home to many stratovolcanoes that contain evolving magma plumbing systems in the crust that erupt intermediate lava (Hildreth and Moorbath, 1988; Allmendinger et al., 1997). The Aucanquilcha Volcanic Cluster (AVC), which is an 11 Ma volcanic system in northern Chile, provides an excellent study location for the evolution of magmas in thick continental crust (>60 km; Allmendinger et al., 1997; Klemetti, 2005; Grunder et al., 2008; Giles, 2009; Walker, 2011; Ward et al., 2014). Stratovolcanoes, like at the AVC, have poorly constrained magma plumbing system dynamics, geometry, and evolving magma differentiation processes (Viccaro et al., 2012; Zernack et al., 2012; Storm et al., 2014; Viccaro et al., 2016; Coote et al., 2018; Pankhurst et al., 2018; Pizzaro et al., 2019; Caracciolo et al., 2020). However, modern analytical techniques allow for analysis of microscopic igneous material at a greater spatial resolution, accuracy, and precision (Ginibre et al., 2002; Ginibre et al., 2007). Unraveling the petrological record with improved analytical methods can provide the magmatic history of a volcano's plutonic system and add to the current understanding of how complex magmatic systems develop over time (Ginibre et al, 2002; Ginibre et al., 2007). Volcanic rocks preserve mineral textures and chemistry which can be used to determine the petrologic history of the material (Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Viccaro et al., 2012; Zernack et al., 2012; Viccaro et al., 2016; Pankhurst et al., 2018; Pizzaro et al., 2019; Caracciolo et al., 2020). Magmatic systems can be complex and are subject to many crustal processes such as fractional crystallization, assimilation, magma mixing, and changing states of equilibrium in the magma (Grunder et al., 2008; Zou et al., 2010; Walker, 2011; Walker et al., 2013; Storm et al., 2014; Hastie et al., 2015; Yan et al., 2020). These processes are especially abundant in the central Andes and at the AVC (Klemetti, 2005; Grunder et al., 2008; Giles, 2009;

Walker et al., 2010; Walker, 2011; Walker et al., 2013). A detailed petrologic record will provide a characterized occurrence of magmatic processes which may be correlated with monitoring data in the future. Correlating monitoring data with specific magma processes occurring in the magma chamber pre-eruption may be able to provide early warning signals and increase volcanic hazard mitigation (Costa et al., 2020).

Methods for analyzing magma evolution have greatly improved and there is now equipment that can achieve greater spatial resolution to study volcanic material (Ginibre et al., 2002; Ginibre et al., 2007). Electron microprobes (EPMA) offer in-situ analyses of major and trace elements, the ability to take backscatter electron (BSE) images to determine mineral textures, and the ability to obtain quantitative chemical maps (Ginibre et al., 2007; Ramos and Tepley, 2008). Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS) can be used to further analyze trace element concentrations, since the LA-ICPMS is more sensitive to lower concentration elements than the EPMA (Ginibre et al., 2007; Ramos and Tepley, 2008). The EPMA and LA-ICPMS provide a more detailed look into chemical zoning in phenocrysts that can be used to construct a model of past magmatic events (Ginibre et al., 2007; Ramos and Tepley, 2008). Plagioclase and pyroxene phenocryst contents, BSE images, chemical maps, and chemical zoning profiles can be used to build a model of magmatic evolution processes in a magma plumbing system.

As the magma rises decompression and degassing occur which promotes the development of phenocrysts (Ginibre et al., 2007). Phenocrysts that are in equilibrium in magma over long periods of time become larger, euhedral crystals with homogenous chemical compositions. Phenocrysts can record disequilibrium in the magma system, which is caused by a change in magma differentiation processes, such as magma mixing (Davidson et al., 2007).

Changes in the magma are reflected in crystal textures, chemistry, and chemical zoning providing evidence for the mechanisms at work in the magma plumbing system (Ginibre et al., 2002; Costa et al., 2003; Ginibre et al., 2007; Costa et al., 2020). Plagioclase is a useful mineral to analyze for the study of magmatic processes because (1) it is an extremely common igneous mineral that crystalizes over a wide temperature and compositional range, (2) it has identifiable compositional zoning, and (3) plagioclase phenocrysts can grow large enough to have the spatial resolution needed for analysis in the EPMA and LA-ICPMS (Costa et al., 2003). Pyroxene offers a second mineral phase that (1) crystalizes over a narrower temperature and compositional range than plagioclase, but is still a common igneous mineral, and (2) grows into large enough phenocrysts with visible chemical zoning for analysis in the EPMA and LA-ICPMS (Costa et al., 2020). A combined analysis of plagioclase and pyroxene phenocrysts will provide a detailed magmatic history of the AVC.

This study will provide a narrowed analysis of the magmatic evolution at the AVC between ~6-4 Ma, which correlates to a significant transition from multiple magmatic underpinnings to developing mixing, assimilation, storage, and homogenization (MASH) zones (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). This will provide a better understanding of (1) the evolution of magma processes in the crust and (2) the evolution of the magma plumbing system architecture during the transition to developing MASH zones. In general, when melt rises from the mantle to the crust it may pool in reservoirs and begin to cool (Ginibre et al., 2007). In the crust, the stagnated bodies of magma are subject to fractional crystallization, assimilation, storage, and homogenization (Ginibre et al, 2007; Grunder et al., 2008; Walker, 2011; Walker et al., 2013). While the magma is stored it can remain in a complex, connected system of magma reservoirs. As more mafic magma rises from the mantle, it will recharge the silicic magma reservoirs and promote melting as temperatures increase from the hotter mafic magma. Eventually, magma trapped in reservoirs will rise further into the crust, possibly mingling with other intermediate bodies of magma before eruption. Understanding the mechanisms that push magma evolution can elucidate how magma plumbing systems develop, what the magma plumbing system architecture is, and how eruptions are triggered (Ginibre et al, 2007; Klemetti, 2005; Grunder et al, 2008; Giles, 2009; Walker et al., 2010; Walker, 2011; Walker et al., 2013).

This study will present a combination of different analyses of the Gordo Stage lavas using the EPMA and LA-ICPMS. This study will take backscatter images on the EPMA to observe mineral textures of plagioclase and pyroxene phenocrysts, The EMPA will be used to collect major and trace element chemistry of plagioclase and pyroxene phenocryst along core-to-rim transects, and the LA-ICPMS will be used to collect detailed trace element chemistry on the same core-to-rim transects. Mineral textures, major element chemistry, and trace element chemistry will be combined to create a detailed description of the crystal cargo. Once the crystal cargo is analyzed in detail, populations of crystals will be characterized and combined with thermobarometry results to create a 6-4 Ma magma plumbing system model from six new samples of AVC lava.

GEOLOGIC BACKGROUND

Aucanquilcha Volcanic Cluster

The central Andes have received focused attention during the past fifty years as a testing ground for the genesis of arc magmas associated with a continental subduction zone (James, 1971; Isacks, 1988; Davidson et al., 1991; Allmendinger et al., 1997; Lamb and Hoke, 1997; Kay et al., 1999; de Silva and Kay, 2018). The central Andes is divided into physiographic provinces: The Altiplano-Puna Plateau, Eastern Cordillera, Western Cordillera, and Central Volcanic Zone (CVZ). The northern Altiplano plateau (north of 22°S) and the southern Puna plateau (south of 22°S together make up the Altiplano-Puna Plateau; Allmendinger et al., 1997). To the east is the Eastern Cordillera, which is a zone of thick-skinned deformation (Ward et al., 2013). To the west is the Western Cordillera, which consists of a chain of stratovolcanoes north of 27°S in the central Andes. The volcanic chain is considered the modern magmatic front (Allmendinger et al., 1997; Ward et al., 2014).

The CVZ rests in center of the Western Cordillera and is the location of over 1100 northwest trending volcanic centers (Grunder et al., 2008; Fig. 1). Volcanoes in the CVZ are constructed ~135-180 km above the 30°E-dipping Wadati-Benioff Zone (Barazangi and Isacks, 1976). Since the Jurassic, the CVZ volcanic arc has moved east from the present-day Pacific Coast of northern Chile to the modern, higher elevation Andes (de Silva, 1989; Pichowiak, 1994). According to Lucassen et al. (2001) the upper crust is composed of Mesozoic marine sedimentary and igneous rocks, Cretaceous volcaniclastic rocks, and Miocene-to-Holocene volcanic rocks. Damm et al. (1990) suggested that the lower crust is constructed of amphibolite and silicic anhydrous metamorphic rocks, pyroxene gneiss, and gabbro. The CVZ is known for its thick crust (>60 km), crustal contamination, and Pliocene to present volcanic arc of metaluminous, medium-to-high K calc-alkaline andesites and dacites (Harmon et al., 1984; Davidson et al., 1991; Wörner et al., 1994; Zandt et al., 1994; Trumbull et al., 1999; Grunder et al., 2008; Klemetti and Grunder, 2008). Below the CVZ there is a lower velocity zone called the Altiplano-Puna Magma Body (APMB) and it is likely the source of magma for many of the CVZ intermediate stratovolcanoes (Allemendinger et al., 1997; Grunder et al., 2008; Ward et al., 2013; Walker et al., 2014; Ward et al., 2014; Ward et al., 2017; Wörner et al., 2018; Fig. 1).

The Aucanquilcha Volcanic Cluster (AVC) is part of the Western Cordillera of the CVZ. The AVC is an 11 Ma, Andean type volcanic system located in northern Chile and is composed of 20 volcanic centers constructed over previously deposited ignimbrites (Grunder et al., 2008; Walker et al., 2010; Walker, 2011; Walker et al., 2013; Fig. 1). The AVC has been volcanically active over for 11-million-years and has erupted 340 ± 20 km^2 of basaltic andesite to dacite composition lavas covering a space of ~700 km^2 (Grunder et al., 2008; Walker et al., 2010; Walker, 2011; Walker et al., 2013; Fig. 2). Volcanic material records the effects of crustal contamination on the andesites and dacites, which have high $\delta^{18}O$ values, high $^{87}Sr/^{86}Sr$ ratios, and low εNd values (Davidson et al., 1991). The AVC provides a long-lived volcanic system to better understand the magma processes that occur in thick (>60 km) continental crust pre-eruption. The four stages of volcanic activity at the AVC include the Aloncha Stage (11 to 8 Ma), the Gordo Stage (6 to 4 Ma), the Polán Stage (4 to 2 Ma), and the Aucanquilcha Stage (<1 Ma; Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Walker et al., 2013; Fig. 2).

Aloncha Stage (11-8 Ma); Ujina Ignimbrite (~9.4 Ma)

The Aloncha Stage consists of an early section (11 – 7.5 Ma) and a later section (~9 – 7.5 Ma; Walker, 2011; Walker et al., 2013). This stage is constructed of eroded composite cones Cerro Alconcha and Volcán Tuco and five endogenous dome and flow complexes (Grunder et al, 2008). The first part of the Aloncha Stage erupted andesitic to dacitic lavas, and the second part erupted basaltic andesites to dacites (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). In general, mineral assemblages from 11-7.5 Ma include phenocrysts of plagioclase > clinopyroxene > orthopyroxene > amphibole with possible olivine, and from ~9-7.5 Ma there was minor biotite (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). The Ujina Ignimbrite is a small ignimbrite that erupted during the Aloncha Stage at ~9.4 Ma. It is a dacitic ash flow tuff that erupted ~2 km^3 of material. The Ujina Ignimbrite's source is undetermined but is thought to be related to the AVC (Grunder et al., 2008; Walker, 2011). The Ujina Ignimbrite erupted dacitic lava and has a phenocryst mineral assemblage of plagioclase > clinopyroxene > amphibole > potassium feldspar (Walker, 2011).

Gordo Stage (6-4 Ma); Carcote Ignimbrite (5.5 Ma)

The Gordo Stage is constructed of six volcanic centers with ages ranging from 6-4 Ma, including volcanoes Cerro Puquíos-Cerro Negro (5.81±0.21 - 5.28±0.11 Ma), Cerro Gordo (5.49±0.46 Ma), Cerro Paco Paco (4.41±0.09 - 4.27±0.14 Ma), Volcán Pabellón (4.14±0.05 - 4.12±0.08 Ma), Volcán Paco Paco (4.49±0.09 Ma and 4.27±0.14 Ma), a lava flow west of Cerro Gordo (4.9±0.09 Ma), and the Las Bolitas Lava Field (5.13±0.18 – 5.23±0.09 Ma) and are restricted to the southern and western AVC (Klemetti, 2005; Grunder et al., 2008; Walker et al., 2013). Gordo Stage lavas range from basaltic andesite to dacite with phenocrysts of plagioclase >

clinopyroxene > orthopyroxene > amphibole with possible olivine (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). A lava flow to the west of Cerro Gordo that covers the Carcote ignimbrite is classified in the Gordo Stage because the flow direction matches a Cerro Gordo vent (Grunder et al., 2008). Cerro Puquíos and Cerro Negro are the largest volcanoes in the stage, form a ~6 km NW trending ridge, erupt andesitic to dacitic lavas, and have phenocrysts of plagioclase > clinopyroxene > orthopyroxene > olivine with rare occurrences of hornblende (Klemetti, 2005; Grunder et al., 2008). One of the largest centers of the AVC is Cerro Gordo, and on the west side, an exposed crater shows a dozen crudely radial dikes (Klemetti, 2005; Grunder et al., 2008). Both the lava and dikes have an andesitic to dacitic composition and a phenocryst assortment of plagioclase > clinopyroxene > olivine > orthopyroxene > biotite and amphibole more common than at Cerro Puquíos and Cerro Negro (Klemetti, 2005; Grunder et al., 2008).

Volcán Pabellón erupted on the southeastern flanks of Cerro Puquíos and Cerro Negro ridge, with much of its lava overlaying older stratocones (Klemetti, 2005; Grunder et al, 2008). It is the first volcanic center in the AVC to have numerous quenched inclusions; these inclusions range from 55.7 to 60.2 wt% SiO_2 (Klemetti, 2005). Lavas from Volcán Pabellón range from andesite to dacite with phenocrysts of plagioclase > clinopyroxene > orthopyroxene > hornblende with minor biotite and olivine (Klemetti, 2005). Volcán Paco Paco is a ~4 km diameter stratocone located in the northern most section of the Gordo Stage volcanoes (Klemetti, 2005; Grunder et al., 2008). It is constructed of thin agglutinated lavas interlayered with steeply dipping scoria beds from its central crater that is filled with thick lava (Klemetti, 2005; Grunder et al., 2008). Volcán Paco Paco's composition ranges from andesite to dacite, and overall, it is crystal poor with phenocrysts of olivine lesser to plagioclase and clinopyroxene (Klemetti, 2005;

Grunder et al, 2008). Lavas from Las Bolitas erupted from an unknown vent, which is now likely buried under Aucanquilcha Stage lavas (Klemetti, 2005; Grunder et al, 2008). Las Bolitas Lavas have a phenocryst composition of plagioclase > orthopyroxene > clinopyroxene and minor amphibole and biotite (Klemetti, 2005; Grunder et al, 2008). The Carcote Ignimbrite (5.5 Ma) is a rhyolite ignimbrite that erupted during the Gordo Stage (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). Like the Ujina Ignimbrite, Carcote's source is uncertain, but is possibly related to AVC volcanism (Grunder et al., 2008; Walker, 2011). The Carcote Ignimbrite erupted ~100 km^3 of material that has a composition of 76 wt% SiO_2. It contains 15-20% crystals in a welded ignimbrite and has a phenocryst assemblage of plagioclase > biotite > Fe-Ti oxides (Walker, 2011).

Polán Stage (4-2 Ma)

The Polán Stage has ~10 volcanoes with ages ranging from 4-2 Ma, including volcanoes Tres Monos (3.43±0.14 - 2.78±0.04 Ma), La Luna (2.97±0.05 - 2.57±0.11 Ma), Cerro Polán (3.5±0.05 - 3.00±0.03 Ma), Aucanquilcha Platform lavas (~2.7 - 3.6 Ma), and Volcán Chaihuiri (2.39±0.04 Ma; Klemetti, 2005; Grunder et al., 2008). Polán volcanoes are distributed throughout the AVC and represent the largest outpouring of volcanic material (135 km^3; Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Walker et al; 2013). Material erupted from the Polán Stage, in general, is basaltic andesite to dacite with phenocrysts of plagioclase > clinopyroxene > amphiboles > orthopyroxene and possible biotite and olivine phenocrysts (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). The Polán Stage had the greatest output of volcanic material, and a significant portion of the Polán Stage has been thermally altered (Grunder et al., 2008). Volcán Miño (3.54±0.17 - 3.31±0.09 Ma) erupted during the

Polán Stage but is considered separate since it is constructed at the westernmost edge of the AVC (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). Volcán Miño is a symmetrical cone that reaches a height of 5611 meters with lavas that are primarily sourced from a single vent (Klemetti, 2005; Grunder et al., 2008). Lava compositions from Volcán Miño were andesitic with phenocrysts of plagioclase > orthopyroxene > clinopyroxene > amphibole with possible olivine (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). La Luna and Cerro Polán make up an array of ~east-west trending vents. Cerro Polán has ages 3.5±0.05 - 3.00±0.03 Ma at the main edifice, but K-Ar ages of 2.6±0.05 Ma at the western edge (Grunder et al, 2008). Cerro Polán has a phenocryst assemblage of plagioclase > clinopyroxene > orthopyroxene > amphibole > biotite. La Luna, a dome, has lavas with a composition ranging from andesitic to dacitic with subequal phenocrysts of clinopyroxene and orthopyroxene > biotite (Klemetti, 2005; Grunder et al., 2008).

Cerro Tres Monos is an array of six or more vents that trend north (Klemetti, 2005; Grunder et al., 2008). They form three overlapping edifices that create a ~14 km ridge at a ~90º angle to the Volcán Aucanquilcha vent (Klemetti, 2005; Grunder et al., 2008). Tres Monos features local hydrothermal alteration with interlaying of more to less altered lava and pyroclastic deposits. Its phenocryst assemblages include more hydrous phases: plagioclase > clinopyroxene > hornblende > biotite > orthopyroxene (Klemetti, 2005; Grunder et al., 2008). Tres Monos has an andesitic to dacitic lava composition (Klemetti, 2005; Grunder et al., 2008). The Aucanquilcha Platform contains the most productive lava flows from the AVC with ages of ~2.7-3.6 Ma to the north and 3.3±0.2 Ma to the south (Klemetti, 2005; Grunder et al., 2008). Aucanquilcha Platform lava makes up ~1/3 the volume of all AVC lava (Grunder et al., 2008). Part of the platform crops out under Volcán Aucanquilcha and is likely underlying the volcano

(Klemetti, 2005; Grunder et al., 2008). Typical mineralogy of the Aucanquilcha Platform includes phenocrysts of plagioclase > clinopyroxene > orthopyroxene > hornblende > biotite with andesitic to dacitic lavas (Klemetti, 2005; Grunder et al., 2008). Volcán Chaihuiri is a dacitic dome and is the youngest volcanic center in the Polán Stage (Klemetti, 2005; Grunder et al., 2008). It had multiple short lava flows with a composition of 63 wt% SiO_2 and a mafic inclusion with 58.8 wt% SiO_2 (Klemetti, 2005; Grunder et al., 2008). Volcán Chaihuiri has a phenocryst assemblage of plagioclase > biotite > amphibole > clinopyroxene > orthopyroxene > and some quartz (Grunder et al., 2008).

Aucanquilcha Stage (<1 Ma)

The final stage, the Aucanquilcha Stage, was active at <1 Ma (Grunder et al., 2008; Klemetti and Grunder, 2008; Walker, 2011; Walker et al., 2013). The Aucanquilcha Stage is the youngest, most silicic of the four phases and is still active in present day (Grunder et al., 2008; Klemetti and Grunder, 2008). Volcán Aucanquilcha is a large compound volcano that formed from a series of overlapping vents. It contains the highest abundance of biotite with lava ranging from an andesitic to dacitic composition (Grunder et al., 2008; Klemetti and Grunder, 2008; Walker, 2011; Walker et al., 2013). Lavas of Aucanquilcha contain phenocrysts of plagioclase > amphibole > biotite > clinopyroxene > orthopyroxene (Grunder et al., 2008; Klemetti and Grunder, 2008; Walker, 2011; Walker et al., 2013).

Aucanquilcha Volcanic Cluster Magma Plumbing System

Grunder et al. (2008) and Walker (2011) created a model of the magma plumbing system architecture from ~11 Ma to <1 Ma at the AVC. The Aloncha and Aucanquilcha stages coincide with a series of smaller, magmatic underpinnings. However, the Gordo and Polán stages indicate a more developed, thermally mature system. The transition from Gordo to Polán (~6-2 Ma) coincides with a shift in the magma plumbing system architecture from a series of smaller magmatic underpinnings that evolved into larger, mingling bodies of magma (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). In the Gordo Stage these underpinnings began to mature and by the Polán Stage there was at least one large melt, assimilation, storage, and homogenization (MASH) zone (Grunder et al., 2008). During the Gordo and Polán stages the large magma body offered a plutonic buffer to the surrounding upper crustal material, which allowed the magma to heat, reach thermal maturity, and rise to the surface without freezing in the upper crust before erupting (Walker et al., 2013). Both the Gordo and Polán stages coincide with an increased rate of eruptions from ~5-2 Ma (Walker, 2011; Walker et al., 2013). According to Walker et al. (2013), high Fe-Ti oxide and zircon crystallization temperatures (~1000°C and ~900°C, respectively) indicate the magma system was thermally mature. Amphibole temperatures were constrained to ~850°C-1000°C, which suggests their magma sources were narrower (Walker et al., 2013). Walker et al. (2013) used amphibole data to determine the height of eruptions at the top of the magma system were ~7-18 km depth.

Walker (2011) suggested during the Gordo and Polán stages the AVC's dominant magmatic processes were magma mixing and mush remobilization, which helped form a larger batholith in the upper crust. This contrasts with the oldest and youngest stages of the AVC, the Aloncha and Aucanquilcha stages. These two periods of time were characterized by fractional crystallization, which coincided with the volcanic system's immaturity and waning stages (Walker, 2011; Walker et al., 2013). At <1 Ma the AVC enters its waning stage with fractional crystallization as the dominant process, but still maintains plutonic bodies that are forming (Walker, 2011; Grunder et al, 2008; Klemetti and Grunder, 2008).

METHODS

Six polished sections of AVC whole rock samples were used to determine mineral textures, rock type, composition, and petrology of the 6-4 Ma lavas. This study selected six samples with polished sections for mineral major and trace element analysis and whole rock isotope analysis. A description of the samples is published in Table 1.

Whole Rock Major and Trace Elements

AVC samples were prepared and turned into glass pucks for major element analysis by an X-Ray Fluorescence Spectrometer (XRF). A series of precise steps constructed by the University of Iowa were taken to ensure an accurate procedure for determining loss on ignition (L.O.I) and creating the glass pucks. Measurements for glass puck preparation are included in Appendix A. Whole rock major element contents were analyzed on a Rigaku Primus IV Sequential Wavelength Dispersive X-Ray Fluorescence Spectrometer at the University of Iowa. Precision of analysis was better than 1% for major elements. Major elements analyzed included SiO_2, Al_2O_3, FeO, MgO, CaO, Na_2O, and K_2O. Trace elements, including rare earth elements (REE), were determined at Missouri State University using a Agilent 7900 quadrupole ICPMS connected to a ESL NWR213 Nd:YAG laser ablation system. Trace elements included Ti, Mn, P, and Cr. Analyses were carried out using a 30 μm spot size, with a repetition rate of 10 Hz and power setting of 75%. The incident pulse energy was c. 0.020 mJ with an energy density on samples of c. 6.22UJcm^{-2}. Calcium-40 was monitored as an internal standard and corrected based on whole rock Ca content determined by XRF. Four external calibration standards were used to monitor drift and for corrections. NIST610 and NIST612 were used as primary calibration standards.

BHVO-2, AGV-2, and RGM-2 were used as secondary calibration standards. Analytical procedures are like those described in Liu et al. (2008). The precision of these analyses was better than 5%. A summary of all major and trace element whole rock compositions and standard compositions are included in Appendix B.

Whole Rock and Mineral Radiogenic Isotope Analysis

Six new lava samples from the AVC were analyzed for whole rock and mineral radiogenic isotopic ratios. The microdrill at the University of Arkansas was used to prepare material for isotope analysis. Three billets of andesitic to dacitic composition AVC lavas were prepared at Missouri State University. Six to seven spots, depending on crystal size, were drilled in ~3-6 plagioclase phenocrysts in each billet. Drill parameters were: 40 µm depth, ~120 µm cut width, 5 sec dwell time, and 85% drill speed. When drilling, each billet was covered in parafilm, and the drill location was covered with a drop of deionized water. Deionized water was collected using a pipette for each drill location three times to obtain as much sample material as possible. Material was collected for samples: AP2-00-03, AP2-00-42, and AP2-00-88. Sample solution of plagioclase material was used to obtain major and trace element contents. Specifically, Sr was used for isotopic analysis.

Whole rock isotopic analysis was conducted on three whole rock samples of andesitic to dacitic composition lavas from the AVC. Whole rock samples included AP2-00-03, AP2-00-42, and AP2-00-88. Isotopic analysis for Sr whole rock was obtained on the Thermal Ionization Mass Spectrometry (TIMS) on a VG Sector 54 and was analyzed by five Faraday collectors in dynamic mode at the Johnson Mass Spectrometry Laboratory New Mexico State University in Las Cruces, New Mexico. If the sample was >5 mg columns were used for column chemistry, but if the sample was <5 mg microcolumns were used. To monitor the precision of analysis, calibration of $^{87}Sr/^{86}Sr$ ratios was calculated using the $^{86}Sr/^{88}Sr$ ratio analyzed at 3.0 V aiming intensity and normalized to 0.1194 using NBS 987 Standard (0.710298 + 0.000010). Sr was singled out with Sr-Spec resin column chromatography using the method explained in Ramos and Reid (2005). Lead and Nd were analyzed on a ThermoFinnigan Neptune multi-collector ICPMS equipped with nine Faraday collectors and an ion counter. Neodymium was separated with REE resin column chromatography using the digested split of prepared sample for Sr chromatography. Neodymium isotopes were normalized to $^{146}Nd/^{144}Nd = 0.7219$ and results for JNDi-1 were $^{146}Nd/^{144}Nd = 0.512137 \pm 0.000009$ for five analyses. Pb isotopes were separated from the same digested samples used for Sr and Nd isotope ratios. Lead separations used ~2 mL of anion exchange resin in a high-aspect ratio glass column with an eluent of 1N HBr and 7N HNO_3. Purified samples were then dried and re-dissolved in 1 mL of 2% HNO_3 containing 0.01 ppm Tl. The standard NBS 981 ($^{208}Pb/^{204}Pb \approx 36.662 \pm 0.002$, $^{207}Pb/^{204}Pb \approx 15.462 \pm 0.001$, $^{206}Pb/^{204}Pb \approx 16.928 \pm 0.001$) was used for accuracy corrections and to monitor precision of the analyses. The values measured for NBS 981 were within the error of published ratios for NBS 981 (Todt et al., 1996), and therefore, corrections were not applied to unknown samples.

$^{40}Ar/^{39}Ar$ Geochronology

$^{40}Ar/^{39}Ar$ ages for four out six samples of AVC lava were previously determined by Grunder et al. (2008). Two $^{40}Ar/^{39}Ar$ ages of the remaining two lavas were obtained using mineral separates of plagioclase and biotite at New Mexico Institute of Mining and Technology (New Mexico Tech; Schaen et al., 2020). The two AVC rock samples were crushed, disk milled, and sieved to obtain a separate of phenocrysts 250-425 µm in size. Magnetic separation was done by a Frantz Isodynamic Magnetic Separator. Fifty to 100 mg of each mineral phase containing the fewest impurities was handpicked under a binocular microscope. Mineral separates were cleaned of glass by etching in hydrofluoric acid and unwanted minerals were removed from individual phenocrysts. Mineral separates of plagioclase, biotite, and hornblende were loaded into machined Al disks and irradiated for 8 hours (NM-288) at Oregon State University by the New Mexico Tech Geochronology Research Laboratory using methods from Ramos and Heizler (2018) and Zimmerer et al. (2019). Fish Canyon Tuff sanidine (FC-2) was used as a flux monitor and assigned an age of 28.201 Ma (Kuiper et al., 2008). The ^{40}K total decay constant of $5.463e^{-10}$/a was used (Min et al., 2002). Argon isotopes for feldspars were measured using a ThermoScientific ARGUS IV mass spectrometer while biotite was analyzed using a Helix MC plus mass spectrometer. The multi-collector configuration used for the ARGUS VI analyses was: ^{40}Ar-H1, ^{39}Ar-Ax, ^{38}Ar-L1, ^{37}Ar-L2, and ^{36}Ar-L3. Amplifiers used for H1, AX, and L2 Faradays were $1e^{13}$ Ohm, the L1 Faraday was $1e^{14}$ Ohm, and L3 used a CDD ion counter with a deadtime of 14ns. For the Helix, the configuration was ^{40}Ar-H2, ^{39}Ar-H1, ^{38}Ar-AX, ^{37}Ar-L1, and ^{36}Ar-L2. Amplifiers used for H2, H1, AX, L1 Faradays were $1e^{12}$ Ohm, L2 used a CDD ion counter with a deadtime of 20 ns. Feldspars were step-heated or fused for 30-40 seconds using a 75W Photon Machines CO_2 laser whereas the biotite was heated with a 50W Photon Machines diode laser. Reactive gases were removed with various combinations of SAES NP-10, GP-50 and D50 getters. Mass spectrometer sensitivity for the ARGUS VI is $6e^{-17}$ mol/fA and for the Helix $3e^{-16}$ mol/fA. Hornblende separates were step-heated using a diode laser. Extracted gas was cleaned in an all metal, fully automated extraction line fitted with a cold trap and getter pumps operated at different temperatures to remove unwanted gas species. Gas was then measured on a high-resolution ThermoScientific Helix MC Plus mass spectrometer fitted with Faraday collectors at masses 40, 39, 38, and 37, and an ion counting multiplier at mass 36.

Mineral Chemistry and Petrography

Major and trace element compositions of plagioclase and pyroxene phenocrysts were determined on polished thin sections of six lavas from the AVC by JEOL JXA-8230 Superprobe (EPMA) at the University of Iowa. Backscatter electron (BSE) images taken on the EPMA were used to identify mineral textures and characterize zoning. Quantitative chemical maps were collected for major element analysis for select crystals on the EPMA. Chemical maps were processed using the image tool on ImageJ to stack multiple chemical maps together. For example, Ca and Na maps were merged into a single composite map with each element displaying its own color to represent the chemical concentration of that element. This helped distinguish chemical zones in plagioclase, especially if the composition was more homogenous in the backscatter images. Major element data from plagioclase and pyroxene was collected for 20-30 crystals from each polished section. Core-to-rim spot transects of plagioclase and pyroxene phenocrysts were analyzed in polished sections of AVC lava. Each transect contained 2-10 spot analyses depending on crystal textures, chemical zoning, and zone size. Both plagioclases and pyroxenes were analyzed at an accelerating voltage of 15kV, a beam current of 20 nA, and a working distance of 11.1 mm. Reference material used for plagioclase correction included USNM 115900 Plagioclase and USNM 143966 Microcline. Pyroxene calibration used NMNH 122142 Kakanui, New Zealand Augite and NMNH 164905 Ney County, Nevada Augite. All EPMA values obtained for plagioclase and pyroxene were accurate to 5% except for elements in low abundance. Standard error for low abundance elements in plagioclase included

10 ppm for Mg, Ba, and Ti. For pyroxene the standard error was 10 ppm for Na, Ti, Mn, Ni, and Cr, and 20 ppm for Al. Core-to-rim spot transects of plagioclase and pyroxene phenocrysts were analyzed in polished sections of AVC lava.

More detailed core-to-rim transects were analyzed for trace elements by the ThermoIcap Inductively Coupled Plasma Mass Spectrometer with a NWR193 laser ablation system (LA-ICPMS) at the University of Arkansas. Core-to-rim transects were analyzed in two ways: line transects and a series of spots. Both line transects and spot transects used a 50 μm spot size and ~3 J/cm^2 Fluence. Trace elements analyzed in plagioclase included Li, P, Ti, Zn, Ga, Rb, Sr, Y, Zr, Cs, Ba, Pb, and REEs (Rare Earth Elements). Analyzed trace elements in pyroxene included Al, P, Sc, Ti, V, Cr, Mn, Ni, Sr, Y, Zr, Nb, Hf, Ta, and REEs. Line transects used a 10 μm/sec scan speed. Line transects were analyzed for 8-10 plagioclase phenocrysts and 5-7 pyroxene phenocrysts, depending on crystal size. For comparison, spots were plotted next to the line transects. For plagioclase, 2-5 spots were plotted, and 1-3 spots were plotted next to line transects for pyroxenes. If crystals were too small, only spots were plotted on the phenocryst. Standards used to reduce data were NIST612 and NIST610 (Jochum et al., 2011). Iolite was used to reduce trace element data for both line transects and spots. REEs were normalized using chondrite values suggested by McDonough and Sun (1995). Calibration error of analysis was calculated for both standards NIST610 and NIST612. For both plagioclase and pyroxene, NIST610 had an uncertainty of <3% using two standard deviation (2SD). NIST612 had an uncertainty of <5% (2SD), except for the following. Plagioclase had values with greater uncertainty for select elements: Ti 6.6%, Cr 14%, Fe 13%, Ho 5.3%, and Tm 5.7%. Pyroxene also had some values with a larger uncertainty: Mg 16%, P 5.9%, and Ti 6.1%.

RESULTS

This study analyzed six new lava samples from the Aucanquilcha Volcanic Cluster (AVC) and the data was combined with previous studies conducted on the AVC. New samples include six whole rock samples and respective polished sections of lava from the AVC with sample names AP2-00-03, AP2-00-10, AP2-00-42, AP2-00-48, AP2-00-84, and AP2-00-88. Sample compositions include trachy-andesite, basaltic trachyandesite, basaltic andesite, and trachyte (Table 1). Ages range from ~6 to ~4 Ma and occur during the Gordo Stage (Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Walker et al., 2013; Table 1). Samples represent the following volcanic centers: Puquios, Las Bolitas, and Pabellón. Ages of AVC lava samples are 5.81±0.12 Ma (AP2-00-42), 5.23±0.09 Ma (AP2-00-84), 5.13±0.18 Ma (AP2-00-88), and 4.14±0.05 Ma (AP2-00-03; Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Table 1).

New Argon Ages

Four out of six whole rock samples used in this study were previously dated by Klemetti (2005) and Walker (2011) to obtain $^{40}Ar/^{39}Ar$ ages of the lava. Biotite, hornblende, and plagioclase were dated from the remaining two samples. Of the new $^{40}Ar/^{39}Ar$ ages presented, two are from biotite, two are from hornblende, and one is from plagioclase (Figs. 3 & 4). Age spectra are generally flat with precise, individual steps (Figs. 3 & 4). Calculated plateau ages range from 4.39 Ma to 6.30 Ma with error ranging from 0.03 Ma to 0.14 Ma. Calculated integrated ages range from 4.33 Ma to 6.16 Ma while error ranges from 0.02 Ma to 0.14 Ma. Analyses of new, undated AVC plagioclase for sample AP2-00-10 yielded a plateau age of 4.43±0.04 Ma (MSWD = 2.53) and an integrated age of 4.39±0.06 Ma (Fig. 3). Biotite for sample AP2-00-48 yielded a plateau age of 4.39±0.03 Ma (MSWD = 3.69) and an integrated age of 4.33±0.03 Ma (Fig. 4). Hornblende for sample AP2-00-48 yielded plateau ages 4.40±0.14 Ma (MSWD = 1.24) and 6.3±0.2 Ma (MSWD = 2.15; Fig. 4). Integrated ages for hornblende were 4.6±0.02 Ma and 6.16±0.14 Ma, respectively. Sample AP2-00-48 had two reasonable ages of ~4.4 Ma, one from biotite and one from hornblende, that were essentially the same age. The final hornblende integrated age of 6.16±0.14 Ma was considered highly unlikely.

Whole Rock Composition

AVC rock types determined by previous studies include basaltic andesite, andesite, dacite, basaltic trachyandesite, trachy-andesite, and trachyte (Klemetti, 2005; Grunder et al., 2008; Walker, 2011; Table 2; Fig. 5). New whole rock samples in this study include rock compositions of basaltic andesite, basaltic trachyandesite, trachy-andesite, and trachyte. Loss of ignition values (LOI) range from 0.33-1.28 wt%, indicating the magmas are anhydrous. Major elements analyzed for whole rock composition and their ranges include 54.25-62.44 wt% SiO_2, 15.95-18.74 wt% Al_2O_3, 0.60-1.05 wt% TiO_2, 0.08-0.12 wt% MnO, 2.28-4.47 wt% MgO, 5.40-8.06 wt% Fe_2O_3, 4.70-7.79 wt% CaO, 3.54-4.27 wt% Na_2O, 1.35-3.47 wt% K_2O, 0.20-0.27 wt% P_2O_5, and 0-0.01 wt% Cr_2O_3 (Table 2). Trace elements analyzed for whole rock composition include 8-16 ppm Sc, 102-172 ppm V, 31-52 ppm Co, and 10-40 ppm Ni (Table 2). The complete summary of whole rock major and trace element compositions is shown in Table 2.

Whole Rock Isotope Ratios

Aucanquilcha Volcanic Cluster samples range in $^{87}Sr/^{86}Sr$ from 0.705478 to 0.705846, which matches the range of values proposed by Walker (2011; Table 2). $^{84}Sr/^{86}Sr$ ranges from

0.056428 to 0.056439 (Table 2). Values obtained for Pb isotopes are: 18.649 to 18.722 for $^{206}Pb/^{204}Pb$, 15.616 to 15.626 for $^{207}Pb/^{204}Pb$, 38.527 to 38.625 for $^{208}Pb/^{204}Pb$, 2.06311 to 2.06595 for $^{208}Pb/^{206}Pb$, and 0.83467 to 0.83741 $^{207}Pb/^{206}Pb$ (Table 2). Overall, there is no considerable variation in lead isotopic values. Isotopic ratios for whole rock are summarized in Table 2.

Petrography

All samples of AVC lavas have well-zoned, euhedral to subhedral plagioclase, clinopyroxene, and orthopyroxene phenocrysts. Four distinct textures are observed in plagioclase cores: clear and rounded, clear and euhedral, patchy and spongy, and sieved (Fig. 6). Two textures are observed in the rims: sieved and resorbed (Fig. 6). Each plagioclase phenocryst displays oscillatory zoning (Fig. 6). Pyroxene core textures are clear and rounded, clear and euhedral, patchy and spongy, or sieved (Fig. 7). Pyroxene rims are resorbed or sieved (Fig. 7).

Sample AP2-00-42 is 5.81±0.12 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) basaltic andesite with phenocryst percentages 26.1% plagioclase, 9% clinopyroxene, and 3.4% orthopyroxene. Glass makes up 65.4%. Phenocrysts of olivine and Fe-Ti oxides are rare. Fe-Ti oxides are ~20-100 μm while olivine is ~50-300 μm. Plagioclase phenocrysts range from ~50-1000 μm on the c-axis and ~20-300 μm on the a-b axis. Clinopyroxenes range from ~20-500 μm on the c-axis and ~20-200 μm on the a-b axis. Orthopyroxenes range from ~20-400 μm on the c-axis to ~20-300 μm on the a-b axis. This lava samples contains mostly smaller crystals (< 400 μm) with few crystals larger than 400 μm. Olivine, clinopyroxene, and orthopyroxene have minor alteration.

Sample AP2-00-84 is a 5.23±0.09 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) a trachy-andesite with a glass percentage of 61.4%. Phenocryst percentages are 25.4% plagioclase, 6.8% orthopyroxene, 3.4% clinopyroxene, 1.6% amphibole, and 1.4% Fe-Ti oxides. Plagioclase phenocrysts range from ~50-1200 µm on c-axes and ~30-400 µm on a-b axes. Orthopyroxenes range from ~50-800 µm on c-axes to ~30-400 µm on a-b axes. Clinopyroxene range from ~50-600 µm on c-axes and ~30-400 µm on a-b axes. Amphiboles are subhedral to euhedral, range from ~75-600 µm on c-axes, and range from ~50-150 on a-b axes. Fe-Ti oxides are subhedral to euhedral and are ~30-300 µm.

Sample AP2-00-88 is a 5.13±0.18 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) trachyte with a glass percentage of 65.5%. Phenocrysts include 26.3% plagioclase, 6.8% orthopyroxene, 3.4% clinopyroxene, 2.3% amphibole, and 0.96% Fe-Ti oxides. All crystals are subhedral to euhedral except Fe-Ti oxides, which are anhedral to subhedral. Most amphiboles have reaction rims. The lava contains overall fewer, but larger phenocrysts of plagioclase and has multiple glomerocrysts. Plagioclase phenocrysts range from ~50-1900 µm on c-axes and ~30-650 µm on a-b axes. Orthopyroxene phenocrysts range from ~50-400 µm on c-axes and ~30-200 µm on a-b axes. Clinopyroxene phenocrysts range from ~50-500 µm on c-axes while a-b axes are ~30-200 µm. Amphibole phenocrysts have ~50-800 c-axes and ~30-200 µm a-b axes. Fe-Ti oxides have crystals ranging from ~30-500 µm.

Sample AP2-00-10 is a 4.39±0.06 Ma trachy-andesite with 57% glass. Phenocrysts have 38.6% plagioclase, 2.0% orthopyroxene, 1.0% amphibole, 0.6% clinopyroxene, and 0.80% Fe-Ti oxides. All phenocrysts are subhedral to euhedral, except Fe-Ti oxides are anhedral to subhedral. Plagioclase phenocryst sizes range from ~50-1600 on c-axes and ~30-800 µm on a-b axes. Orthopyroxene phenocrysts are ~50-800 µm on the c-axes and ~50-400 µm on the a-b axes.

Clinopyroxene phenocrysts range from ~50-400 µm on c-axes and a-b axes. Amphibole phenocrysts are ~50-800 µm on c-axes and ~50-150 µm on a-b axes. Fe-Ti oxides range from ~30-300 µm.

Sample AP2-00-48 is a 4.33±0.03 Ma basaltic trachyandesite with 66.6% glass. Phenocryst percentages are 28.1% plagioclase, 4.7% clinopyroxene, 0.31% orthopyroxene, 0.16% olivine, and 0.16% Fe-Ti oxides. Fe-Ti oxides are anhedral to subhedral while other phases are subhedral to euhedral. There is abundant alteration in the glass and minor alteration in clinopyroxene, orthopyroxene, and olivine. This sample contains abundant sieving in plagioclase cores. Plagioclase phenocrysts range from ~50-880 µm on c-axes and ~30-500 µm on a-b axes. Clinopyroxene phenocrysts are ~50-500 µm on c-axes and ~30-300 µm on a-b axes. Orthopyroxenes are ~50-400 µm on c-axes and ~30-200 µm on a-b axes. Olivine ranges from ~100-200 µm and Fe-Ti oxides are ~30-100 µm.

Sample AP2-00-03 is a 4.14±0.05 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) trachy-andesite with 61.6% glass. Phenocrysts have 26.9% plagioclase, 6.0% clinopyroxene, 2.0% orthopyroxene, 2.0% amphibole, 0.9% Fe-Ti oxide, and 0.7% olivine. All phenocrysts are subhedral to euhedral and there is minor alteration in plagioclase, clinopyroxene, orthopyroxene, amphibole, and olivine. Plagioclase phenocrysts range from ~50-2000 µm on c-axes and ~30-800 µm on a-b axes. Clinopyroxene phenocrysts range from ~50-700 µm on c-axes and ~30-500 µm on a-b axes. Orthopyroxene phenocrysts range from ~50-600 µm on c-axes and ~30-800 µm on a-b axes. Amphibole phenocrysts are ~50-600 µm on c-axes and ~50-300 µm on a-b axes. Olivine phenocrysts are ~50-400 µm and Fe-Ti oxide phenocrysts are ~30-400 µm.

Major Element Chemistry

AVC lava samples analyzed in this study have plagioclase phenocrysts with molar anorthite (An) ranging from 0.30-0.60 and 0.30-0.90 within a single phenocryst from core-to-rim (Fig. 8). In general, most plagioclase crystals fall between 30-60 molar % An. All plagioclase phenocrysts in AVC samples display oscillatory zoning, however, some phenocrysts have normal zoning in the mantle and rim. The mantle of a phenocryst is the space between the core and rim. Sample AP2-00-88-P10 in Figure 9 is a representative sample that displays an overall decrease in An from the core to the rim. This phenocryst has homogenous values which make it difficult to see the zones in the backscatter image, but its respective chemical maps show the differences between Ca, Na, and Al in its zones. AP2-00-88-P10 has a sodic rim, but many samples from the AVC have a rim higher in Ca. In plagioclase phenocrysts SiO_2 ranges from 47-64 wt%, Al_2O_3 ranges from 20-35 wt%, Na_2O ranges from 1-8 wt%, MgO ranges from 0-0.13 wt%, CaO ranges from 5-18 wt%, K_2O ranges from 0.034-1.30 wt%, BaO ranges from 0-0.14 wt%, FeO ranges from 0.26-1.35 wt%, and TiO_2 ranges from 0-1.14 wt%. Representative plagioclase major element chemistry is shown in Table 3 and a full summary of plagioclase phenocryst major element chemistry is included in Appendix C.

Pyroxene phenocrysts from AVC samples vary in Mg#. Orthopyroxene Mg# ranges from 0.39-0.76, while clinopyroxene Mg# is generally higher and more restricted ranging from 0.59-0.76 (Fig. 10). Aluminum oxide, Na_2O, TiO_2, MnO, Cr_2O_3, and NiO are shown in Figure 10 with magnesium numbers for both clinopyroxene and orthopyroxene. In clinopyroxene phenocrysts SiO_2 ranges from 55.10-64.41wt%, TiO_2 ranges from 0.16-0.99 wt%, Al_2O_3 ranges from 0.70-5.24 wt%, FeO ranges from 5.64-11.02 wt%, MnO ranges from 0.08-0.38 wt%, MgO ranges from 13.80-18.52 wt%, CaO ranges from 20.01-29.62 wt%, Na_2O ranges from 0.27-0.45 wt%, NiO ranges from 0-0.07 wt%, and Cr_2O_3 ranges from 0-0.76 wt%. A summary of all clinopyroxene phenocryst major element chemistry is included in Appendix D. In orthopyroxene phenocrysts SiO_2 ranges from 38.82-67.10 wt%, TiO_2 ranges from 0-0.88 wt%, Al_2O_3 ranges from 0-4.91 wt%, FeO ranges from 9.03-33.60 wt%, MnO ranges from 0.14-0.79 wt%, MgO ranges from 9.20-45.34 wt%, CaO ranges from 0.08-24.71 wt%, Na_2O ranges from 0-1.13 wt%, NiO ranges from 0-0.22 wt%, and Cr_2O_3 ranges from 0-0.39 wt%. A summary of all orthopyroxene phenocryst major element chemistry is included in Appendix E. Totals are unusually high for pyroxenes (up to 116 wt%); this is likely due to instrument error on the EPMA. Representative pyroxene major element chemistry is shown in Table 4.

Trace Element Chemistry

Trace elements were analyzed by Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS). Trace elements are used to determine magma chamber processes, because they partition differently than major elements in a magma. Representative analyses of trace elements in plagioclase are in Table 3 and a full summary of plagioclase phenocryst trace element chemistry is included in Appendix F. Strontium ranges from 791-2358 ppm with an average of 1509 ppm while Ba ranges from 44-1451 ppm with an average of 598 ppm. General trends for Sr include (1) oscillatory zoning with no overall increase or decrease from core-to-rim and (2) oscillatory zoning with an overall increase in Sr from core-to-rim. Figure 11 shows a representative plagioclase phenocryst from that does not have a significant overall increase or decrease in Sr (Fig. 11). Barium mimics Sr trends, but changes in Ba are more drastic. Magnesium ranges from 87-5635 ppm with an average of 480 ppm while Fe ranges from 998-17677 ppm with an average of 2012 ppm. In general Fe and Mg mimic each other for most samples (Fig. 11). However, in some samples there is a greater increase or decrease in Mg than Fe, which may be indicative of a compositional change in the magma. Rare Earth Element (REE) trends for plagioclase have greater concentrations of light rare earth elements (LREE) than heavy rare earth elements (HREE) and positive Eu anomalies (Fig. 11). LREEs are constrained and display distinguishable patterns whereas HREE concentrations are more variable. A representative example of trace element chemistry and REE trends for plagioclase is provided in Figure 11.

Pyroxenes show greater variation in trace element values than plagioclase. For pyroxenes, Cr ranges from 0.004-133792 ppm and Nickel ranges from 0.004-21434 ppm. There are no obvious general trends other than Cr and Ni mimicking each other. Strontium ranges from 0.068-985 ppm and often fluctuates from the core-to-the rim. All pyroxenes have negative Eu anomalies, except for three orthopyroxenes with positive Eu anomalies from sample AP2-00-42. Positive Eu anomalies are likely due to a different oxidative state where iron is Fe^{2+} rather than $Fe^{3+.}$ A representative example of pyroxene REE chemistry is shown in Figure 11 and a full summary of pyroxene phenocryst trace element chemistry is included in Appendix G.

Both plagioclase and pyroxenes show variation in REE patterns in each sample, indicating the samples represent an open system. Across all AVC samples, there are cores with the same REE trends that indicate the same source and there are cores with different REE trends indicating the crystals were inherited. There are mantle and rim REE trends that become similar, indicating homogenization. There are also crystals that contain a variation in the mantle from their core and rim, and a variation in the rim from the mantle and core. This indicates the system had an interruption in the current magmatic process that changed the REE trend from being fully homogenized. While pyroxenes show there was some homogenization, they are not as homogenized as plagioclase crystals. REE trends and their implications will be explored more on a sample basis below.

Phenocryst Populations

There are nine generalized populations of plagioclase phenocrysts found in AVC lava samples in this study. Plagioclase populations have multiple textures and chemical zoning patterns in common (Fig. 12). All populations of plagioclase have oscillatory zoning profiles with resorption textures. Patchy zoning, produced from magma mixing, is common in the cores of plagioclase phenocrysts (Viccaro et al., 2012; Viccaro et al., 2016). It is common to see repeated cycles of normal zoning within the overall oscillatory zoning profiles, especially in the mantles, indicating fractional crystallization. Smaller zones (<10 μm) are likely from temperature and pressure changes, rather than fractional crystallization or resorption (Ginibre et al., 2002; Ginibre et al., 2007). The complexity of the chemical zoning profiles and resorption textures, as well as other distinct textures, vary by population (Fig. 12). Pyroxenes also display various zoning profiles and mineral textures. To determine populations of pyroxenes, phenocrysts were first divided in populations of clinopyroxenes and orthopyroxenes and then further classified based on mineral textures (Fig. 13). Plagioclase and pyroxene populations are discussed in detail below.

Plagioclase phenocrysts are first characterized by their trace element chemistry (in ppm) such as Mg, Sr, or Ba to obtain an estimate of residence times from trace element re-equilibration in plagioclase. Sr and Ba are significant because they can substitute for Ca in the mineral structure of plagioclase due to changes in temperature, pressure, composition, and water content (Blundy and Wood, 1991; Giletti and Casserly, 1994; Browne et al., 2006; Viccaro et al, 2012; Viccaro et al., 2016). Three types of plagioclases were determined: Type 1, Type 2, and Type 3. Type 1 plagioclase have Sr and Ba variation from the core-to-rim. Costa et al. (2020) specified timescales for Mg, Sr, and Ba diffusion in plagioclase. Diffusion timescales can be used as an estimate of re-equilibration status to obtain an estimate of how long the plagioclase phenocrysts resided in the magma before eruption. Type 1 plagioclase are estimated to have residence times of <300 years. These plagioclases have fewer resorption textures than other populations and, in general, are limited to patchy resorption in the cores. Type 1A are as described above and do not contain any zones with sieving. Type 1B plagioclases contain a concentrated zone of sieving that precedes the rim. Type 2 plagioclase are characterized by having core-to-rim profiles of Sr that have re-equilibrated, but Ba core-to-rim profiles have not. This indicates that the plagioclase likely resided in the magma between ~300 years and ~30,000 years (Costa et al., 2020). Type 2A has oscillatory zoning with resorbed cores and mantles. Type 2B is similar to 2A, except it has a sieved zone just before the rim. Type 2C has extreme patchy resorption in the core to the outer mantle. Type 2D has concentrated zones of heavy sieving in the core and mantle. Type 3 plagioclase has fully re-equilibrated Sr and Ba and has the same mineral textures as Type 2. Because of the similar mineral textures, Type 3 is divided into Type 3A, 3B, and 3C. Type 3 plagioclase are estimated to have resided in the magma for ≥30,000 years. Between the three types of plagioclases there are likely multiple overlapping populations with similar textures. This study also determined the rare earth element (REE) trends for plagioclase in each AVC sample and presents examples of representative chemistry for crystals that have each type of REE trend. Plagioclase REE trends that have the same composition from core-to-rim have La/Yb values ranging from ~443.63-563.11, La/Nd values ranging from ~5.55-5.73, and Dy/Dy* values ranging from ~0.37-0.42. Plagioclase crystals that have different mantle trends contain mantles with La/Yb values of ~30.42, La/Nd values of ~2.03, and Dy/Dy* values of ~0.78 while the rest of the crystal has La/Yb values ranging from ~161.61-248.34, La/Nd ranging from ~4.43-6.04, and Dy/Dy* values ranging from ~0.41-0.52. Plagioclases with a different rim trend have a rim with La/Yb values of ~90.88, La/Nd values of ~3.19, and Dy/Dy* values of 0.75, while the rest of the crystal has La/Yb ratios ranging from ~129.75-874.32, La/Nd ratios ranging from ~3.40-3.71, and Dy/Dy* ratios ranging from 0.47-1.87. Plagioclase crystals with a different core composition have core La/Yb ratios of ~27.49, La/Nd ratios of ~3.10, and Dy/Dy* ratios of 0.46 while the rest of the crystal has La/Yb ratios ranging from ~174.67-347.83, La/Nd ratios of ~3.71-4.04, and Dy/Dy* ratios ranging from 2.64-3.68. Plagioclase crystals that increase in REE composition from the core-to-rim have La/Yb ratios ranging from ~106.67-376.80, La/Nd ratios ranging from ~4.42-5.06, and Dy/Dy* ratios ranging from ~1.67-6.30. Plagioclase REE trends that have a lot of variation from core-to-rim have La/Yb ratios ranging from ~40.69-460.38, La/Nd ratios ranging from ~2.69-4.37, and Dy/Dy* ratios ranging from 0.28-0.98.

Pyroxene crystals also have overlapping populations. Both clinopyroxenes (Type 1) and orthopyroxenes (Type 2) are characterized based on mineral textures. Type 1 pyroxenes include phenocrysts and antecrysts. Type 1A are normally zoned phenocrysts, Type 1B are reverse zoned phenocrysts, and Type 1C are oscillatory zoned phenocrysts. Antecrysts are distinguishable by their uneven rims. Uneven rims formed from crystal growth after a state of disequilibrium during the diffusion of chemical zones. Pyroxenes take less time for chemical zones to diffuse, so pyroxenes can record diffusion profiles rather than resorption textures. Type 1D clinopyroxenes are normally zoned antecrysts and Type 1E are reverse zoned antecrysts. Orthopyroxene textures are similar to clinopyroxenes and contain normal zoned phenocrysts (Type 2A), reverse zoned phenocrysts (Type 2B), oscillatory zoned phenocrysts (Type 2C), normal zoned antecrysts (Type

2D), and reverse zone antecrysts (Type 2E). However, another population was identified for orthopyroxenes in AVC samples. Type 2F are normal zoned xenocrysts, which are likely sourced from the wall rock. The xenocrysts have a reaction rim with uneven boarders indicating they are in disequilibrium with the glass. Pyroxene REE trends include four interpretable patterns. Representative examples of each patterns' chemistry are given below. Pyroxenes with decreasing REE compositions from the core-to-rim have La/Yb ratios ranging from ~0.01-2.28, La/Sm ratios ranging from ~0.07-1.99, and Dy/Dy* ratios ranging from ~0.53-1.49. Pyroxenes with highly variable compositions have La/Yb values ranging from ~0.07-6.95, La/Sm values ranging from ~0.26-2.02, and Dy/Dy* values ranging from ~0.62-1.04. Pyroxenes from sample AP2-00-42 have crystals with a different oxidation state and include La/Yb ratios of ~51.78-482.43, La/Sm ratios ranging from ~8.28-12.69, and Dy/Dy* ratios ranging from 0.34-1.10. Pyroxenes with the same trends from the core-to-rim include La/Yb ratios ranging from ~0.85-0.94, La/Sm ratios ranging from ~0.38-0.40, and Dy/Dy* ratios ranging from ~1.38-1.44.

AVC sample AP2-00-42 is a 5.81±0.12 Ma basaltic andesite. Plagioclases in this sample are from populations Type 1A, Type 2A, and Type 3A. Light sieving exists across the phenocrysts but is not concentrated in any specific zone. Sieving is produced from decompression during the volcanic eruption of the material. Plagioclases range in molar % An from 30 to ~95. REE patterns are enriched in light rare earth elements (LREE), contain a positive Eu anomaly, and are depleted in heavy rare earth elements (HREEs). REE trends for plagioclase include core-to-rim transect trends (1) with the same pattern for cores, mantles, and rims, (2) core patterns that are different from the mantles and rim, (3) one mantle pattern that is different from the rest of the crystal, (4) a variation between the core, mantle, and rim that alternates in composition, and (5) the pattern increases in ppm from the core to the rim. All cores from sample AP2-00-42 were plotted together and show there is a group of similar cores, and there are cores that are different from this group. However, when all the rims were compared together, they were similar, indicating the sample has homogenized from the core-to-rim. After analyzing plagioclases, pyroxenes were also analyzed. Only one clinopyroxene was analyzed for major element chemistry in sample AP2-00-42, because the other pyroxenes analyzed were all orthopyroxenes. This euhedral clinopyroxene ranged from 0.72 Mg# in the core to 0.59 Mg# in the rim. Orthopyroxenes for AP2-00-42 range in Mg# from 0.39-0.75. Orthopyroxenes in this sample were from populations 2D, 2E, and 2F. This is the only sample that contained an abundance of xenocrysts and few distinguishable phenocrysts. There were no crystals analyzed that appeared homogenous in backscatter images, rather, distinguishable chemical zones were visible from the core-to-rim. REE trends for orthopyroxenes include (1) cores and rims enriched in LREEs and HREEs with a negative Eu anomaly and higher composition rims, and (2) core and rim patterns enriched in LREEs, depleted in HREEs, and with a large, positive Eu anomaly. The positive Eu anomaly is likely from having a different oxidation condition. When orthopyroxene cores were compared none of them had the same pattern, and when the rims were compared the patterns were still different from each other.

AVC sample AP2-00-84 is a 5.23±0.09 Ma trachy-andesite. Plagioclases in this sample are in populations 1A, 1B, and 3A. Sample AP2-00-84 also includes plagioclases with sieved cores that are either in 2D or 3C, however, their trace element chemistry was not analyzed to know the state of Sr or Ba equilibrium. Of the phenocrysts analyzed, minimal sieving exists, except in Type 1B sieved rims. Plagioclases range in molar % An from 30 to ~85. REE trends for plagioclase include core-to-rim transect trends (1) with the same pattern for cores, mantles, and rims (2) a variation between the core, mantle, and rim that alternates in composition, (3) the pattern increases in ppm from the core to the rim, and (4) the pattern increases in ppm from the core to the rim but has one mantle that is different. Cores from sample AP2-00-84 were plotted together and show a variation of different cores in addition to one group of similar cores. When rims were compared, their REE patterns were more similar than the cores, but there was still a lot of variation. Clinopyroxenes in this sample range in Mg# from 0.61-0.65. Orthopyroxenes range in Mg# from 0.52-0.72, which is a much larger compositional range than clinopyroxenes. Pyroxenes are from populations 1B, 2A, 2B, 2D. Chemical zoning is clearly visible in backscatter images, but there is also an abundance of crystals that are more homogenous, with less variation in Fe and Mg between zones than in sample AP2-00-42. REE trends for clinopyroxenes include (1) cores, mantles, and rims with the same trend, LREEs that become more enriched as they get heavier, negative Eu anomalies, and cores, mantles, and rims that are enriched in HREEs, and (2) trends that decrease from the core-to-rim with LREEs that become more enriched as they get heavier, negative Eu anomalies, and enriched HREEs. Orthopyroxenes include trends that vary from the core-to-rim with negative Eu anomalies and variation between LREEs and HREEs. Cores and rims compared to each other show a large variation in clinopyroxene and orthopyroxene REE patterns. There is minimal homogenization in pyroxene rims.

Sample AP2-00-88 is a 5.13±0.18 Ma trachyte. Plagioclases in this sample are in populations 1A, 1B, 2A, 2B, 2C, 3A, and 3B. Populations 2C and 3B contain heavy patchy resorption in plagioclase cores and mantles. There are minor sieving and spongey textures across the crystals. Plagioclases range in molar % An from 30 to ~75. REE trends for plagioclase include core-to-rim transect patterns (1) with the same trends for cores, mantles, and rims, (2) cores patterns that are different from the mantle and rim, (3) rim pattern that is different from the rest of the crystal, (4) a variation between the core, mantle, and rim that alternates in composition, and (5) the pattern increases in ppm from the core-to-rim. All trends are enriched in LREEs, depleted in HREEs, and have a positive Eu anomaly. Most cores have similar trends, except for crystals that have a different core composition than the rest of the crystal. The rim compositions are similar for plagioclases. Clinopyroxenes in AP2-00-88 range in Mg# from 0.60-0.76. Orthopyroxenes in AP2-00-88 have a larger range in Mg# than the clinopyroxenes. Orthopyroxene phenocrysts range from 0.45-0.76 Mg#. Clinopyroxene populations include 1A and 1D while orthopyroxenes include populations 2A, 2B, 2D, and 2E. Backscatter images and major element chemistry of pyroxenes shows that there is an abundance of crystals that have clear, distinguishable zones and crystals that appear homogenous from core-to-rim. REE patterns for REE trends for clinopyroxenes include (1) trends with variable compositions between the cores, mantles, and rims with LREEs that become more enriched as they get heavier, negative Eu anomalies, and enriched HREEs. Orthopyroxenes include trends that (1) vary from the core-to-rim with negative Eu anomalies and variation between LREEs and HREEs, (2) cores compositions that decrease to the rim composition, and (3) core and rim compositions that are the same. Cores and rims compared to each other show a large variation in clinopyroxene and orthopyroxene REE patterns. There is minimal homogenization in pyroxene rims.

AP2-00-10 is a 4.39±0.06 Ma trachy-andesite. Plagioclases in this sample are in populations 1A, 2A, 2B, and 3A. Minor sieving exists across crystals from core-to-rim in many of the plagioclases that is likely due from decompression during eruption. Molar % An ranges from 30-90 from the core-to-rim, but most crystals range from 30-60 molar % An. Pyroxenes were not analyzed in sample AP2-00-10, since this study analyzed pyroxenes for trachy-andesite in sample AP2-00-03. There are three types of REE patterns for plagioclases in AP2-00-10 and they all have enriched LREEs, depleted HREEs, and positive Eu anomalies. REE trends include (1) the same patterns from core-to-rim, (2) the same patterns from core-to-rim with a different mantle composition, and (3) the same patterns for the core and mantle, but the rim composition in different. Plagioclase cores show three groups of plagioclases with similar patterns, but each group varies from the other. The rims show there was homogenization between some crystals, but other crystals showed less homogenization. In general, this sample showed less homogenization from cores compositions to rim compositions than other AVC lava samples.

Sample AP2-00-48 is a basaltic trachyandesite with an age of 4.33±0.03 Ma. Plagioclases in this sample are in populations 2D, 3A, and 3C. An abundance of populations 2D and 3C are not seen in other samples. There are also populations without the concentrations that would fall in populations 2A or 3A, but the equilibration status of Sr and Ba are unknown. Plagioclases in this sample are different than other samples analyzed. Most samples have higher molar % An. All crystals range from ~40-90 molar % An from the core-to-rim, with most values being >60 molar % An. This sample is the most mafic out of all six samples analyzed in this study. Almost all crystals in this sample fall into populations 2D or 3C. These two populations have abundant sieving in the core and mantle. REE compositions for plagioclases have enriched LREEs, depleted HREEs, and positive Eu anomalies. REE trends include (1) core compositions that are different from the rest of the crystal, (2) the same trends from the core-to-rim, and (3) core-to-rim patterns that vary between the core, mantle, and rim. Plagioclase cores in sample AP2-00-48 have the same REE trends. Almost all plagioclase rims show the same trends, except for one group with a higher composition from the rest.

AP2-00-03 is a trachy-andesite with an age of 4.14±0.05 Ma. Plagioclases in this sample are in populations 1A, 1B, 2B, 2C, and 3A. Backscatter images for this sample appear to have a more homogenous composition, meaning that there is not a large difference in An from each zone to the next. This is especially true for plagioclase mantles. Homogenous appearance in crystals exists in all samples but is consistent with all plagioclase crystals analyzed in sample AP2-00-03. All plagioclases analyzed, except one sample with ~60-85 molar % An, ranges from ~30-60 molar % An. Plagioclase REE compositions have enriched LREEs, depleted HREEs, and positive Eu anomalies. REE patterns include (1) the same pattern from core-to-rim, (2) the same pattern from core-to-rim for LREEs, but not for HREEs, (3) the same core and mantle patterns, but the rim has a different trend, and (4) compositions between the core, mantle, and rim varies. All core compositions are similar, and most crystals become homogenized. However, there are plagioclase that become significantly less homogenized in the rim. Clinopyroxenes in AP2-00-03 have a narrow range in Mg# values from 0.63-0.67. Clinopyroxenes look homogenous in backscatter images, meaning the chemical zoning is not visible. They likely look homogenous from such small chemical variations between zones, since their values only vary in Mg# by ~0.03 at most. Orthopyroxenes generally have a wider range in Mg# than clinopyroxenes. Sample AP2-00-03 ranges in Mg# from 0.52-0.72. Orthopyroxenes also look homogenous in backscatter images and while they do have a larger range in Mg#, Mg# values from each zone to the next have less variation. Pyroxenes in AP2-00-03 have populations of 1A, 1C, 1D, 2A, 2C, and 2D. Antecrysts have a sieved rim <10 μm, but otherwise are no different than the phenocrysts. Clinopyroxene patterns include (1) increasing LREEs from left to right, enriched HREEs, negative Eu anomalies, and a core composition that varies from the mantle and rim, and (2) increasing LREEs from left to right, enriched HREEs, negative Eu anomalies, and a composition that varies from core-to-rim. Orthopyroxene REE trends include (1) a variation in patterns from core-to-rim with variations in LREE enrichment and that are enriched in HREEs, and (2) plagioclase with increasing LREEs, enriched HREEs, negative Eu anomalies, and patterns that decrease in composition from the core-to-rim. Pyroxene cores show a large variation in composition. The rims also have a large variation in composition, but they began to homogenize.

DISCUSSION

Thermobarometry

This study provides additional insight into the thermobarometry of AVC magmas, which was used in trace element modeling. Walker et al. (2013) suggested that pyroxenes consistently had the highest temperatures at the AVC, ranging from 1000-1100 °C while zircon had the lowest temperatures of ~670-900 °C. Amphibole and Fe-Ti oxide temperatures were between zircons and pyroxenes and had temperatures ranging from ~780-1050 °C and ~750-1000 °C, respectively (Giles, 2009; Walker et al., 2013). The AVC reached peak, mature volcanism at ~5-2 Ma, which is marked by the highest temperatures (Walker et al., 2013). Amphibole pressures (~1-5 kbar) converged to 2-4 kbar over the life of the AVC while pyroxene pressures (~3-8 kbars) and increased with time (Walker et al., 2013). Amphibole pressures from Walker et al. (2013) overlap with amphibole pressures of 0.7-6.4 kbar from Giles (2009). The AVC magma was likely not formed from monotonic crystallization, but rather from pluton remobilization and mixing with rising magma (Walker et al., 2013). Mush remobilization and mixing with rising magma would produce different phenocryst populations of multiple phases in the magma and encourage re-equilibration, which is evident in AVC lavas (Walker et al., 2013).

This study uses models to evaluate temperature, pressure, and equilibrium tests from Putirka (2008; Appendix H; Appendix I; Appendix J). Six additional samples were analyzed using whole rock major and trace elements, and the results are included in Figure 14. Pressure calculations are calculated using equation 32b for clinopyroxene, equation 29a for orthopyroxene, and equation 25a for plagioclase, which are discussed in Putirka (2008). We used equations created for anhydrous magmas, because our samples' loss of ignition (LOI) was only

~1.0%. Pyroxenes were analyzed individually because clinopyroxene-orthopyroxene pairs were not found. Our results are consistent with the temperatures and pressures from Walker et al. (2013). Clinopyroxene pressures range from ~4-8 kbars and are in equilibrium with the whole rock composition. Orthopyroxene pressures were lower (~0.1-1.2 kbars) and are in disequilibrium with whole rock compositions. Plagioclases were in disequilibrium with the whole rock composition and because of this, had a large range of pressures (2-15 kbar). Plagioclases that were in equilibrium with the whole rock are consistent with clinopyroxene pressures (~4-8 kbar). Pressures indicate there is an interconnected system of magma bodies in MASH zones at a depth of ~15-30 km.

Temperatures for clinopyroxene ranged from 1130-1170 °C and orthopyroxene temperatures ranged from ~1000-1150 °C. Clinopyroxenes are in equilibrium with the whole rock composition and offer a more reasonable, narrow range of temperatures than orthopyroxene. Pyroxene temperatures are higher than reported in Walker et al. (2013), likely because this study analyzed individual phenocrysts rather than the clinopyroxene-orthopyroxene pairs analyzed in Walker et al. (2013). Plagioclase temperatures are high, ranging from ~1075-1250 °C, but most plagioclase temperatures overlap with pyroxene temperatures. Samples AP2-00-42 (~1150-1200 °C) and AP2-00-48 (1200-1250 °C) were the only lavas to contain the unrealistic higher plagioclase temperatures. These samples were the most mafic samples from this study with molar % An often reaching >60. The higher temperatures are likely due to parts of the model calculations not reflecting real life conditions of plagioclase phenocrysts in the magma as accurately as other lava samples.

Clinopyroxene partitioning coefficients (K_D) values were generally higher for cores than rims. Orthopyroxene core and rim K_D values varied, while plagioclase K_D values were similar for both cores and rims. Putirka (2008) provides ranges of experimental K_D results for plagioclase and pyroxenes to test for equilibrium using K_D values. If the values fall within a calculated range of K_D values, the model tests if the crystals are in equilibrium with the whole rock composition. Plagioclase with temperatures >1050 °C are in equilibrium if the K_D values fall within 0.27±0.05 (Putirka, 2008). Clinopyroxenes are in equilibrium if their K_D values are within 0.27±0.03 while orthopyroxenes are in equilibrium if their K_D are within 0.29±0.06 (Putirka, 2008). Samples in equilibrium are shown in the green box in Figure 14. All clinopyroxene samples are in equilibrium and are considered the most reliable results for both pressure and temperatures. Clinopyroxenes are found in all new AVC lava samples from the Gordo Stage. Determining the temperatures and pressures of the AVC lavas provides insight into the crustal setting of the magma plumbing system.

Evolution of the Magma Plumbing System during the Gordo Stage (~6-4 Ma)

This study builds off the magma plumbing system architecture models of the AVC proposed by Grunder et al. (2008) and Walker (2011) to create its own, narrowed model of the Gordo Stage (Fig. 15). The previous models determined the magma plumbing system over the total life of the AVC from its birth (11-7.5 Ma), flare up (~5-2.5 Ma) and beginning stages of death (<1 Ma; Klemetti et al., 2005; Grunder et al., 2008; Walker, 2011; Walker et al., 2013). This study narrows the focus down to ~6 Ma to 4 Ma to elucidate the magma plumbing system architecture at the time of its maturation, and to give an estimate on the magma storage times.

While more mafic, heterogenous compositions of basaltic andesite and basaltic trachy-andesite exist, this study determines that the Gordo Stage magmas were becoming more homogenous overall. Samples of trachy-andesite and trachyte in this study are more homogenized in their plagioclase and pyroxene compositions, indicating a developing MASH zone. Crystals from multiple samples have overlapping populations of both plagioclase and pyroxene, indicating a system of magma bodies feeding into each other. These magma bodies likely have the same sources feeding into each other after eruption, since their argon ages vary from ~6 Ma to 4 Ma. At the same time, this study suggests there is still a complex magma plumbing system being fed from a minimum of at least three underpinnings (Fig. 15).

The Gordo Stage is proposed to be the beginning of a transition from multiple magmatic underpinnings in the crust to a single, larger body of magma (Grunder et al., 2008; Walker, 2011; Walker et al., 2013). MASH zones that formed were stagnating in the crust, which allowed the magma to reside in an open system and have multiple processes occurring, such as fractional crystallization, assimilation, recharge, and magma mingling, which attributed to the range in whole rock compositions that were erupted (Ginibre et al., 2002; Ginibre et al., 2007; Grunder et al., 2008; Walker, 2011, Walker et al., 2013; Costa et al., 2020). Whole rock isotopes for new Aucanquilcha Volcanic Cluster (AVC) samples align with isotopic ratios found by Walker (2011) and Klemetti (2005) and provide additional evidence of the variation in Sr, Nd, and Pb isotopes that indicate magma mingling was the main process during the Gordo Stage. Walker (2011) determined isotopic changes at the AVC were likely caused by one of two models: (1) influence from a continuously polluted mantle on the main magma bodies, or (2) assimilation of more or different crustal material during evolution. Magma mixing, fractional crystallization, and assimilation are all ubiquitous processes at the AVC during its evolution to a mature magmatic plumbing system, but variable core and rim compositions of An_{90}-An_{30} in plagioclase and Mg# values of 0.45-0.75 in pyroxene indicate there are processes other than fractional crystallization occurring. Magma mixing was the cause for many textures seen at the AVC, such as patchy resorption, reverse zoning in pyroxenes, inclusion of antecrysts with uneven crystal boundaries, and oscillatory zoning (Ginibre et al., 2002; Ginibre et al., 2007; Grunder et al., 2008; Walker, 2011, Walker et al., 2013).

In addition to major element compositions and mineral textures, trace element trends for Sr and Ba also reflect a strong magma mixing influence from ~6-4 Ma (Klemetti, 2005; Walker, 2011; Viccaro et al., 2016). Sr/Ba ratios from the Gordo Stage samples range from 1.22-21.43. These ratios indicate the evolution through time as Sr and Ba attempted to re-equilibrate (Viccaro et al., 2016). Changes in Sr/Ba indicate disequilibrium from a change in magma composition. Mixing with a more mafic magma will increase Ca in the system and plagioclase will more readily substitute Sr into the mineral structures in place of Ca. There is no relation between the An composition and how much Sr or Ba have re-equilibrized. Plagioclase populations contain a variation in An compositions with uncorrelated Sr and Ba variation. Ratios of Sr/Ba for cores and rims combined generally decreased from 5.81±0.12 Ma to 5.13±0.18 Ma, slightly increased by 4.39±0.06 Ma, increased by 4.33±0.03 Ma, and then dramatically decreased by 4.14±0.05 Ma (Fig. 14). However, core ratios increased at 5.23±0.09 Ma instead of decreasing like the overall average (Fig. 14). Rim values followed the same trend as the average of rims and cores (Fig. 14). Lavas erupted at 5.81±0.12 Ma and 4.33±0.03 Ma are the most mafic samples with molar % An commonly >60 and have greater Sr/Ba averages in the rims than the cores. Fluctuation of Sr/Ba values between cores and rims in a single crystal and variation in total averages of Sr/Ba indicate magma mixing was occurring through time (~6-4 Ma). However, there was greater variation in the cores than the rims for each lava sample (Fig. 16). Since Sr/Ba is a ratio, there would need to be more Sr to obtain a larger ratio and greater variation. To decrease the ratio and variation, Ba would need to increase in the system. Since the ratio values of Sr/Ba decrease in the rim, it indicates there is more Ba. Since Ba replaces Na in plagioclase, one way to increase the Ba in a system is to fractionally crystalize albite (Viccaro et al., 2016). To increase Sr, anorthite would need to fractionally crystalize (Viccaro et al., 2016). Figure 16 suggests that there is significant fractional crystallization of albite over time and that fractional crystallization is the dominant magma differentiation process during the Gordo Stage. Fractional crystallization is the dominant process at work and is causing compositions to homogenize, as well as producing normal zoning in plagioclase and pyroxene phenocrysts. Infrequent magma mixing events interrupt cycles of fractional crystallization and changes the chemical composition of plagioclase phenocrysts, pyroxene phenocrysts, and creates mineral textures indicative of magma mixing.

Evolution of Crystal Cargo in Magma Reservoirs

The Gordo Stage is divided into multiple eruptions at different times. Each eruption captured a new chunk of the petrologic record in its crystal cargo. All plagioclases in AVC samples contain oscillatory zoning in the cores and mantles, indicating magma mixing was a ubiquitous process (Ginibre et al., 2002; Ginibre et al., 2007; Viccaro et al., 2016). A large variation in plagioclase major element chemistry with molar % An ranging from 30-90 is also suggestive of magma mixing processes (Viccaro et al., 2016). Smaller oscillatory zones (<10 μm) are likely due to minor fluctuations in temperature, pressure, or chemistry in the system from convective motion or degassing, whereas larger oscillatory zones are from changes in disequilibrium in the system (Ginibre et al., 2002; Ginibre et al., 2007). Plagioclases also contain normal zoning (decrease in An from core-to-rim) in the outer mantles and rims, indicating the crystal cargo went through fractional crystallization during evolution of the magma chambers (Ginibre et al., 2007; Pankhurst et al., 2018). Many plagioclase and pyroxene phenocrysts also contain minor, unconcentrated sieving from the core-to-rim, which indicates decompression during eruption of the material (Trumball et al., 1999). Other specific features unique to crystal cargos are described below.

Cargo 1. At 5.81±0.12 Ma the AVC erupted basaltic andesite during the Gordo Stage (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). Plagioclase populations varied from ~30-90 molar % An from core-to-rim. Almost all plagioclases have at least a core, mantle, or rim that is greater than ~60 molar % An, indicating mafic recharge is occurring in the magma reservoir (Ginibre et al., 2002; Ginibre et al., 2007; Viccaro et al., 2012; Viccaro et al., 2016). Plagioclase in this sample fall into three populations. Plagioclases have resorbed cores, indicating a magma mingling event, and normal zoning in the mantle and rim, indicating fractional crystallization (Ginibre et al., 2002; Ginibre et al., 2007). Plagioclase populations overlap with the same textures but have different equilibrium statuses for Sr and Ba. Population 1 does not have re-equilibrated Sr or Ba. Population 2 has re-equilibrated Sr, but not Ba, and Population 3 has both re-equilibrated Sr and Ba. This indicates each population is residing in the magma for different periods of time. However, since there is overlap between the three plagioclase populations and mineral textures, there is likely the same variation of sources feeding into the magma chamber at different times.

REE element trends show plagioclase with increasing profiles from the core-to-rim, indicating fractional crystallization is occurring (Ginibre et al., 2002; Ginibre et al., 2007). Other REE trends containing cores with a higher concentration of REEs than the mantle or rim represent assimilated crystals. Trends that are the same from core-to-rim represent plagioclases residing and growing in a state of equilibrium in the magma (Pankhurst et al., 2018). Some plagioclases have trends with either mantles or rims that are significantly different from the rest of the crystal, indicating magma mingling (Ginibre et al., 2002; Ginibre et al., 2007; Viccaro et al., 2012; Viccaro et al., 2016; Pankurst et al., 2018). Plagioclase and pyroxene cores have different REE compositions from their mantles or rims, indicating there are multiple sources for crystals. Pyroxene textures show an abundance of normally zoned xenocrysts, indicating the magma chamber sat long enough to obtain crystals from the wall rock. The xenocrysts were inherited later than other pyroxenes in the magma reservoir because they do not have crystal growth beyond the reaction rims. Pyroxenes contained an abundance of antecrysts, suggesting magma mingling happened on multiple occasions.

This magma chamber is likely an open system that sat for ≥30,000 years for plagioclase to fully re-equilibrate Sr and Ba. Plots of Ba from core-to-rim transects in plagioclase are horizontal, meaning there is no variation left. Costa et al. (2020) suggests that it takes Ba >30,000 years to diffuse, so since Ba has fully re-equilibrated in some plagioclase phenocrysts, it indicates that the plagioclase has likely been residing in a magma for >30,000 years. During this time, the magma homogenized, continued to inherit more crystals, experience mafic recharge, and began to re-homogenize before a final mixing event triggered an eruption.

Cargo 2. At 5.23±0.09 Ma the AVC erupted trachy-andesite (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). Plagioclase in this sample include populations with oscillatory zoning, resorbed cores, and normal zoning in the mantles and rims (Ginibre et al., 2002; Ginibre et al., 2007). These plagioclases overlap with plagioclase from lavas erupted at 5.81±0.12 Ma. However, the new trachy-andesite contains plagioclase with specific zones of sieving before the rim. Abundant sieving in plagioclase rims is likely from magma injection and consequent magma mingling (Tsuchiyama, 1985; Nakamura and Shimakita, 1998; Viccaro et al., 2012). Another theory for the sieved rims is disequilibrium from decompression (Trumball et al., 1999), however, due to the abundance of sieving in a concentrated area, it is likely due to magma injection. Another population of plagioclase was found with abundant sieving, but in the core. This plagioclase has a wider area of sieving from core-to-mantle, suggesting it may be more likely from decompression than rising magma. However, another more plausible explanation is the same as the sieved rims; there was injection and mingling of another magma (Tsuchiyama, 1985; Nakamura and Shimakita, 1998; Viccaro et al., 2012). Pyroxenes include reverse and normal zoned phenocrysts and normal zoned antecrysts indicating magma mingling and fractional crystallization were ubiquitous processes (Ginibre et al., 2002; Ginibre et al., 2007; Pankhurst et al., 2018). Variation in REE trends in plagioclase and pyroxenes support open system processes as well as crystals residing in equilibrium in the magma and going through fractional crystallization.

Since both crystal cargo one and two have overlapping populations, the same source that fed the 5.81±0.12 Ma eruption, as well as an additional source from another reservoir lower in the crust, fed into 5.23±0.09 Ma eruption's growing MASH reservoir (Fig. 15). The trachy-andesite must have an additional source feeding into its magma chamber to account for the additional populations not seen in the older basaltic andesite. Both eruptions have lavas with larger ranges of An in plagioclase, which likely indicates they have a larger contribution from mafic recharge from a lower magma body in the magma plumbing system than other magmas that are erupted later at the AVC. The magma chamber is being recharged, which is seen by multiple different core REE patterns. Rims show there was some homogenization of the sample from core-to-rim before a final mixing event triggered the eruption.

Cargo 3. The AVC erupted trachyte at 5.13±0.18 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). This lava has a wide range of plagioclase and pyroxene populations, indicating there are multiple sources feeding into this magma chamber. The trachyte has overlapping populations from the previous eruptions, but also contains populations with more intense magma mixing textures. Plagioclase populations 2C and 3B have heavy patchy resorption in the cores and mantles from a period of prolonged magma mingling. Viccaro et al. (2012) suggests patchy resorption is due to the dissolution of sodic plagioclase that is followed by the growth of a more calcic plagioclase (An rich). Patchy resorption blends multiple chemical zones and erases others creating a complex, oscillatory profile across core-to-rim transects in the plagioclases.

While the plagioclase textures are more complex, major element chemistry along core-to-rim transects in plagioclases have a smaller range in An values (~30-73 molar % An) than the previous two samples. Plagioclase cores have similar REE trends but vary enough to be split into three different groups. Plagioclases homogenize over time to obtain the same rim compositions. There are at least two mixing events observed from REE trends, which are observed from rims with lower and higher compositions than crystals with similar REE patterns for cores.

Pyroxenes include reverse zoned phenocrysts and antecrysts, which provide evidence for magma mingling (Ginibre et al., 2002; Ginibre et al., 2007). Pyroxenes also show normal zoning, which matches the outer mantles and rims of plagioclase suggesting fractional crystallization occurred (Ginibre et al., 2002; Ginibre et al., 2007). REE trends indicate there were (1) crystals residing in equilibrium, (2) assimilation of inherited crystals, (3) fractional crystallization, and (4) magma mingling. However, almost all pyroxene REE trends record magma mingling, which is detectable by heavy variation between the core, mantles, and rim. This is likely because pyroxenes are more sensitive to changes in the system or inherited pyroxenes didn’t have time to re-equilibrate before eruption (Costa et al., 2020). Pyroxene cores show a variation of different patterns. Pyroxenes have fewer crystals that contain homogenized rims. Since there is overlap of populations with similar textures and chemistry, it is likely this magma body was being fed by two of the previous sources, as well as a third source that was the cause for the populations of plagioclase with abundant patchy resorption in the cores. Figure 15 shows the magma plumbing system evolving into a more intricate, connected magma plumbing system architecture that is likely becoming a larger MASH zone.

Cargo 4. At 4.39±0.06 Ma trachy-andesite erupted. Plagioclases in this sample have overlapping populations with the previous magmas but have fewer populations with heavy patchy resorption. The trachy-andesite also lacks any populations with abundant, concentrated sieving in the cores of higher An (majority ~60-80 molar % An) plagioclases. Because of this, this magma likely became disconnected to the more mafic source lower in the crust that contained heavily sieved plagioclase cores. The trachy-andesite has a narrower range of An compositions of 30-60 molar % An, indicating either increased homogenization or less interaction with a more mafic source (Pankhurst et al., 2018). The trachy-andesite shows cores that have three different REE trends, indicating three separate sources for this magma, which come from lower reservoirs in the crust. Similar REE trends for the rims indicate the magma began homogenizing. Most plagioclase crystals have similar REE trends indicating they were residing in equilibrium before later magma mingling events. A final mixing event produced crystal rims that were not homogenized and triggered an eruption.

Cargo 5. At 4.33±0.03 Ma a more mafic composition of basaltic trachyandesite erupted from the AVC. This sample is significantly different than other previously erupted material, because it contains an abundance of plagioclases with heavily sieved cores and higher compositions of An ranging from ~40-90 molar % An. Most samples were >60 molar % An. The sieving likely occurred from either (1) magma rising within the magma plumbing system architecture to a new location where it stagnated in the crust and began to grow new zones in equilibrium (Trumball et al., 1999) or (2) injection of magma that continued to mingle causing disequilibrium in the core (Viccaro et al., 2012). The body of magma containing these plagioclase populations must have the capability to rise to the surface on its own, because an abundance of populations 2D and 3C are not seen in other samples. This magma reservoir was previously connected to the reservoir that produced the 5.81±0.12 Ma, 5.23±0.09 Ma, and 5.13±0.18 Ma eruptions. The 4.39±0.06 Ma was not connected to the more mafic source, since it did not contain the uniquely sieved, higher An plagioclase. The magma likely stagnated in its own reservoir and became isolated before it erupted. REE trends for plagioclase cores indicate they all likely have the same source, since the patterns are the same. Most rim REE trends are the same, except for a couple trends that have an increased composition. The rim patterns with increased REEs were likely the final mixing event that triggered the final eruption from this reservoir. REE trends indicate magma mingling, as well as crystals that were growing in equilibrium in the magma.

Cargo 6. At 4.14±0.05 Ma the AVC erupted trachy-andesite again (Klemetti, 2005; Grunder et al., 2008; Walker, 2011). Both plagioclase and pyroxene crystals in this lava have REE trends representative of a crystal growing in equilibrium in the magma, fractional crystallization, multiple magma mingling events, and crystals with at least one magma mingling event. This is an open system with a hodge podge of different processes occurring, with magma mingling being the dominant process (Ginibre et al., 2002; Ginibre et al., 2007). REE trends for cores have similar REE trends, indicating two sources. Pyroxene REE trends have no matching core patterns. However, once the sample began homogenizing the pyroxene REE trends homogenized to only four groups of similar patterns. The leftover variation in REE trends indicate that (1) magma mingling was still occurring or (2) the crystals did not reside long enough to fully homogenize. Most plagioclase rim compositions have homogenized, except for two samples, which indicate final magma mingling events triggered an eruption halting homogenization of the magma.

Lava samples in this study include overlapping populations of plagioclase and pyroxene phenocrysts being progressively inherited in multiple MASH zones forming in the crust. The bodies of magma that make up these MASH zones were residing long enough to encourage fractional crystallization and assimilation to occur as ubiquitous processes. The magma underwent multiple magma mingling events and remained in the magma chamber long enough for plagioclase crystals to begin to re-equilibrate. Most of the chambers are likely connected within the same magma plumbing chamber system architecture, which is represented in Figure 15. However, differentiation processes are likely not the only forces at work in the magma reservoirs. Pankurst et al. (2018) suggests multiple scenarios for the chemical and textural variation in the plagioclase and pyroxene phenocrysts in MASH zones. Magma mingling of separate magmas will spur the magma to try and reach a new, hybridized equilibrium point between the magmas (Pankhurst et al., 2018). During this process more primitive crystals will become normally zoned while evolved crystals will become reverse zoned (Pankhurst et al., 2018). Zoning is induced from undercooling of the magma, a change in the environmental setting, or a change in crystal location in the reservoir (Pankurst et al., 2018). The variation in zoning, however, is likely not caused only from mingling, but rather a stratified MASH zone. For example, normal zoning could represent crystals near the floor while reverse zoning in crystals could represent crystals near the roof (Pankhurst et al., 2018). These processes may explain the variation of textures seen in AVC pyroxenes phenocrysts, antecrysts, and xenocrysts. Pankurst et al. (2018) also suggested that mush remobilization may trigger normal zoning on the outsides of the current crystal cargo, which is seen in AVC plagioclase. Normal zoning could be from fractional crystallization during storage (Ginibre et al., 2007) or a portion of it could be from mush remobilization (Pankusrt et al., 2018).

Evolution of the Magma Plumbing System Architecture Model

The magma plumbing system during the Gordo Stage of the AVC is a system of connected reservoirs constructed in the crust at depths of 15-30 km (Fig. 15). The magma reservoirs are likely fed by mafic melt rising from the lower crust and mantle that then stagnates between 30-40 km deep (Grunder et al., 2008, Walker, 2011; Walker et al., 2013). Between 6 Ma and 4 Ma the magmas erupted from six individual volcanic centers and recorded a state of flux and change in the magma storage system. Between 6 Ma and 5 Ma, erupted magmas become more frequent and erupted from multiple vents/cones. These lavas contain diverse crystal populations and suggest multiple interconnected underpinnings that provide multiple pathways to the surface. For example, at 5.81±0.12 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) there was at least one magmatic underpinning stagnating in the crust and being fed by a lower magma reservoir. By 5.23±0.09 Ma (Klemetti, 2005; Grunder et al., 2008; Walker, 2011) this magma reservoir added a lower body of magma which fed into a magma chamber higher in the crust at 15-30 km depth, which is indicated by the addition of textures suggestive of magma mixing. Pressure and temperature estimates calculated from plagioclase suggest during this period the magma reservoirs residing in the crust at 15-30 km were fed by at least two separated systems which homogenized its crystal cargos. These magma chambers and the crystal cargos began suggesting a magma plumbing system that fostered MASH zone development. After 5 Ma, plagioclase populations with heavily sieved cores and extremely abundant higher molar % An compositions were absent in the erupted lavas. This indicates that the more mafic reservoir containing the sieved, higher An plagioclase was cut off or homogenized in the MASH zone.

MASH zone development was hindered by the development of the Paco Paco cone at approximately 4.33±0.03 Ma and continued until roughly 4.14 Ma when the most voluminous Pabellón cone becomes the dominant eruptive center. During the Paco Paco center eruptive sequence magmas and the associated crystal cargo are heterogeneous, with both the most mafic and most felsic lavas of the Gordo Stage within ~150 k.y. (Klemetti et al., 2007; Walker, 2011).

During each period of storage pre-eruption, magma in each reservoir was experiencing MASH conditions. The dominant MASH process was storage with fractional crystallization that was interrupted by magma mixing events. Plagioclase phenocrysts record abundant magma mixing textures, a variation in major element composition, and a variation in REE trends that suggest continuous spurts of magma mingling from ~6-4 Ma. Plagioclase and pyroxene chemistry indicate that at least one, likely multiple, magma mingling events from the same sources that fed the previous eruption, kept feeding into the stagnated magma chambers through an interconnected system that becomes either (1) active again after each eruption, or (2) creates new pathways from the same lower crustal sources. There are likely multiple mixing events per crystal cargo to create the chemistry and textures observed.

The complexity of separate magma reservoirs is what creates the variation in Sr/Ba ratios. The magmas have gone through different extents of crustal processes for different lengths of time, which create variation between Sr and Ba. There are plagioclase phenocrysts estimated to have resided in the magma chamber for <300 years, ~300-30,000 years, and ≥30,000 years, which is estimated from the re-equilibration statuses of Sr and Ba from core-to-rim (Costa et al., 2020). The amount of variation of Sr and Ba composition from core-to-rim will indicate if it has re-equilibrated. For example, no variation would indicate the crystal has re-equilibrated and has longer residence timescales. Variation of Sr and Ba from core-to-rim would indicate the crystal has not resided in the magma as long, because it has not had time to fully re-equilibrate. Since all populations of crystals in the same magma reservoir have crystals that have resided over different lengths of time, it suggests multiple magma mingling events are feeding in crystals at later times. Another possible explanation for the variation in Sr and Ba is that each magma mixing event is resetting the crystals. Final mixing events found in the rims of plagioclase and pyroxenes, as well as a variation in pyroxene compositions, indicates final mixing events are what likely spurred final eruptions at the AVC. These eruptions captured each samples' magmatic history and locked it into the petrological record.

The AVC captures the petrological record of an open system magma plumbing system architecture that fosters the development of MASH zones feeding into other, likely larger, MASH zones. Figure 15 provides a focused insight on the Gordo Stage magma plumbing system evolution; however, it is important to understand this model is limited by number of samples that could be analyzed during the scope of this project. Additional insight into the complexity of the magma plumbing system will require the evaluation of additional samples. Absolute determination of magma storage times will depend on future determination of mineral residence times. Residence times of plagioclase and pyroxene phenocrysts can be determined using diffusion geospeedometry (Costa et al., 2020).

CONCLUSION AND BROADDER IMPACTS

The Aucanquilcha Volcanic Cluster (AVC) provides a long-lived Andean system that was volcanically active over a significant transition in the plutonic setting. During the Gordo Stage (~6-4 Ma) the AVC evolved from magmatic underpinnings to MASH zones. Studying the ubiquitous MASH processes occurring in AVC magma reservoirs at 15-30 km in the crust aid in the understanding of how magma processes evolve in continental crust. The AVC developed an open system of magma reservoirs that fed into each other and began to homogenize before erupting. While magma mingling is a ubiquitous processes during the Gordo Stage, fractional crystallization is the dominant process creating the decreased variation in major and trace element chemistry overtime in plagioclase and pyroxene phenocrysts. As analytical methods for determining the mineral textures and chemistry of small-scale volcanic material improves, so will the current understanding of how magma plumbing systems develop over time and how volcanic eruptions are triggered.

Plagioclase crystal zoning and geothermobarometry suggest Gordo Stage magmas were chemically and thermally zoned and stored in a variety of magmatic reservoirs. Zonation in plagioclase records abrupt changes between cores and rims, with limited chemical complexity in younger Gordo Stage magmas. In contrast to many other intermediate composition systems, the plumbing system during the Gordo Stage is in a state of flux with complex crystal texture populations. By the end of the Gordo Stage at ~4 Ma, the intermediate system produces relatively homogenous magmas on both the whole rock and crystal scale resulting from mineral-melt segregation.

This study was part of a high visibility project that focuses on providing a better understanding of how regional, subduction zone magmas, like the APMB, interact with local stratovolcanoes and volcanic centers, and how this interaction pertains to magma controls before eruption. Understanding the processes of magma evolution and plumbing in relation to magma storage timescales at the AVC will continue to pave the way to elucidate magma interaction processes over time for other arc-front stratovolcanoes. If the date of a volcanic eruption is known, diffusion chronometry can be used to create an absolute time series of pre-eruptive magma processes to compare magmatic events to volcano monitoring data (Costa et al., 2020). Monitoring data consists of geophysical indicators (i.e., seismicity and deformation) and geochemical indicators (i.e., gas chemistry or flux; Costa et al., 2020). If magmatic processes and monitoring indicators of approaching volcanic activity can be correlated, it will create a strong method of future volcanic hazard prediction.

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Table 1. Summary of six new samples of AVC lava in this study.

Aucanquilcha Volcanic Complex Sample Summary					
Sample ID	Rock Type	$^{40}Ar/^{39}Ar$ Age	Material Dated	Volcanic Center	Volcanic Stage
AP2-00-03	Trachy-andesite	4.14±0.05	Ground Mass	Pabellón	Gordo
AP2-00-10	Trachy-andesite	--	--	Pabellón	Gordo
AP2-00-42	Basaltic Andesite	5.81±0.12	Ground Mass	Puquíos	Gordo
AP2-00-48	Basaltic Trachyandesite	--	--	--	--
AP2-00-84	Trachy-andesite	5.23±0.09	Ground Mass	Las Bolitas	Gordo
AP2-00-88	Trachyte	5.13±0.18	Ground Mass	Las Bolitas	Gordo

Table 2. Whole rock major and trace element compositions and whole rock isotope ratios for samples AP2-00-03, AP2-00-42, and AP2-00-88. LOI = loss of ignition.

Major Elements Unnormalized						
wt%	AP20003	AP20010	AP20042	AP20048	AP20084	AP20088
SiO_2	60.07	60.83	56.55	54.25	61.63	62.44
Al_2O_3	16.67	17.06	16.97	18.74	15.95	15.97
TiO_2	0.76	0.60	0.94	1.05	0.79	0.74
MnO	0.09	0.10	0.11	0.12	0.08	0.08
MgO	3.06	2.28	4.47	3.73	2.60	2.66
Fe_2O_3	6.03	5.91	7.40	8.06	5.70	5.40
CaO	5.50	5.14	7.00	7.79	4.72	4.70
Na_2O	3.77	3.86	3.79	4.27	3.54	3.96
K_2O	2.83	2.84	1.88	1.35	3.47	3.07
P_2O_5	0.20	0.20	0.23	0.27	0.21	0.20
Cr_2O_3	0.00	0.00	0.01	0.00	0.01	0.01
Total	98.97	98.81	99.34	99.65	98.71	99.24
LOI	1.0144	1.1725	0.6408	0.3255	1.2766	0.7392

Trace elements (ppm)						
	AP20003	AP20010	AP20042	AP20048	AP20084	AP20088
Sc	16	8	14	16	9	9
V	133	102	141	172	112	109
Co	40	52	45	43	31	34
Ni	20	10	31	40	19	26
Minors	0	0	0	0	0	0

Whole Rock Sr and Nd Isotope Ratios						
Sample	$^{87}Sr/^{86}Sr$	$^{84}Sr/^{86}Sr$	n	$^{143}Nd/^{144}Nd$	$^{145}Nd/^{144}Nd$	n
AP20042	0.705478	0.056278	160	--	--	--
AP20003	0.705624	0.056439	128	0.512422	0.348413	100
AP20088	0.705846	0.056428	160	--	--	--

Whole Rock Pb Isotope Ratios						
Sample	$^{206}Pb/^{204}Pb$	$^{207}Pb/^{204}Pb$	$^{208}Pb/^{204}Pb$	$^{208}Pb/^{206}Pb$	$^{207}Pb/^{206}Pb$	--
AP20042	18.659	15.619	38.539	2.06537	0.83703	--
AP20003	18.722	15.626	38.625	2.06311	0.83467	--
AP20088	18.649	15.616	38.527	2.06595	0.83741	--

Table 3. Representative plagioclase major and trace element chemistry. For full dataset see appendix.

Plagioclase Representative Major and Trace Element Chemistry										
Major Element Chemistry										
Sample ID	**SiO_2**	**Al_2O_3**	**Na_2O**	**MgO**	**CaO**	**K_2O**	**FeO**	**TiO_2**	**Total**	**Molar An**
AP2-00-42P19A	48.27	33.67	1.82	0.04	16.74	0.06	0.73	0.00	101.33	0.83
AP2-00-42P19B	55.88	28.78	5.16	0.06	10.93	0.28	0.67	0.07	101.85	0.53
AP2-00-42P19C	57.70	26.92	6.08	0.06	9.13	0.45	0.73	0.09	101.18	0.44
AP2-004-2P19D	55.37	28.52	5.02	0.08	11.09	0.30	1.13	0.06	101.60	0.54
AP2-00-10P6A	59.75	25.96	6.96	0.03	7.57	0.72	0.46	0.00	101.54	0.36
AP2-00-10P6B	53.28	30.77	4.07	0.02	12.97	0.25	0.47	0.04	101.89	0.63
AP2-00-10P6C	60.37	25.98	7.09	0.03	7.75	0.57	0.43	0.05	102.34	0.36
AP2-00-10P7A	54.75	29.60	5.05	0.03	11.63	0.15	0.57	0.00	101.80	0.56
AP2-00-10P7B	56.77	28.26	5.74	0.01	10.16	0.18	0.31	0.01	101.46	0.49
AP2-00-10P7C	56.77	28.25	5.95	0.01	10.04	0.22	0.31	0.05	101.61	0.48
AP2-00-10P7D	56.15	28.82	5.28	0.06	10.96	0.24	0.65	0.07	102.28	0.53
AP2-00-88P14A	57.83	27.24	6.23	0.02	9.31	0.52	0.37	0.03	101.59	0.44
AP2-00-88P14B	56.87	28.00	5.70	0.01	10.18	0.43	0.36	0.05	101.63	0.48
AP2-00-88P14C	61.38	24.68	7.53	0.01	6.57	0.96	0.40	0.00	101.60	0.31
AP2-0088-P14D	56.62	27.87	5.75	0.04	10.39	0.36	0.88	0.04	101.96	0.49
AP2-00-48P4A	54.14	29.91	4.47	0.06	12.17	0.20	0.54	0.05	101.58	0.59
AP2-00-48P4B	53.14	29.25	4.41	0.07	11.96	0.22	0.87	0.07	100.02	0.59
AP2-00-48P4C	57.26	27.60	5.83	0.07	9.89	0.37	1.35	0.11	102.48	0.47
AP2-00-03P12A	57.06	26.63	6.28	0.02	8.95	0.69	0.47	0.03	100.19	0.42
AP2-00-03P12B	60.03	24.94	7.12	0.01	6.93	1.05	0.52	0.03	100.74	0.33

Table 3. Representative plagioclase major and trace element chemistry continued.

Major Element Chemistry										
Sample ID	**SiO_2**	**Al_2O_3**	**Na_2O**	**MgO**	**CaO**	**K_2O**	**FeO**	**TiO_2**	**Total**	**Molar An**
AP2-00-03P9A	57.94	26.46	6.28	0.02	8.49	0.66	0.46	0.05	100.43	0.41
AP2-00-03P9B	58.83	26.01	6.73	0.03	8.04	0.74	0.53	0.01	101.02	0.38
AP2-00-03P9C	56.57	27.39	5.86	0.03	9.70	0.51	0.44	0.02	100.61	0.46
AP2-00-03P9D	59.65	25.20	6.88	0.02	7.38	0.89	0.46	0.00	100.58	0.35
AP2-00-03P9E	55.70	28.17	5.44	0.01	10.43	0.46	0.41	0.01	100.73	0.50
AP2-00-03P9F	60.28	24.86	6.95	0.03	7.09	0.97	0.48	0.05	100.83	0.34
AP2-00-48P7A	51.96	30.99	3.65	0.08	13.66	0.12	0.80	0.04	101.31	0.67
AP2-00-48P7B	52.71	30.75	3.83	0.08	13.19	0.14	0.78	0.09	101.61	0.65
AP2-00-48P7C	53.26	30.30	4.17	0.10	12.90	0.13	0.91	0.06	101.83	0.63
AP2-00-48P7D	50.34	32.51	2.77	0.07	15.31	0.09	0.88	0.01	101.99	0.75
AP2-00-84P22A	59.12	27.07	6.41	0.00	8.67	0.57	0.36	0.01	102.28	0.41
AP2-00-84P22B	60.59	26.52	6.85	0.01	7.94	0.70	0.34	0.03	103.04	0.38
AP2-00-84P22C	62.80	25.13	7.41	0.03	6.37	1.00	0.39	0.00	103.21	0.30

Trace Element Chemistry (ppm)										
Sample ID	**Mg**	**Fe**	**Sr**	**Ba**	**La**	**Nd**	**Eu**	**Tb**	**Ho**	**Pb**
42-P19S1	227.00	1381.53	1066.36	56.20	0.98	0.63	0.21	0.00	0.00	0.82
42-P19S2	361.18	1519.41	1101.83	63.50	1.11	0.92	0.30	0.01	0.02	1.06
42-P19S3	478.76	2049.07	1688.66	282.91	3.40	2.22	1.02	0.02	0.02	3.14
42-P19S4	512.05	2007.75	1680.80	384.22	5.01	3.02	1.31	0.03	0.02	4.55
10-P6S1	270.32	1815.23	1782.47	1148.83	19.88	5.98	2.49	0.02	0.02	17.04
10-P6S2	256.40	1608.13	1647.93	1019.30	20.87	7.49	2.28	0.04	0.02	16.65
10-P6S3	261.38	1641.54	1657.35	1064.93	18.23	6.04	2.29	0.04	0.01	16.59
10-P6S4	352.47	2181.91	1673.08	1006.64	17.29	6.05	1.91	0.01	0.01	14.70
10-P7S1	222.73	1271.30	1794.63	239.73	6.97	2.54	0.84	0.02	0.02	4.80
10-P7S2	228.13	1288.80	1827.17	246.43	7.11	2.59	0.86	0.01	0.01	4.98
10-P7S3	1188.11	2450.29	1465.62	178.72	2.89	1.34	0.48	0.02	0.01	1.92
88-P14S1	116.33	1053.03	1228.71	329.65	5.93	3.56	1.06	0.05	0.03	6.48

Table 3. Representative plagioclase major and trace element chemistry continued.

	Trace Element Chemistry (ppm)									
Sample ID	**Mg**	**Fe**	**Sr**	**Ba**	**La**	**Nd**	**Eu**	**Tb**	**Ho**	**Pb**
88-P14S2	180.27	1178.49	1393.46	466.36	8.63	4.82	1.13	0.03	0.02	7.01
88-P14S3	127.19	1122.24	1328.80	495.24	9.97	5.24	1.30	0.04	0.03	8.62
88-P14S4	275.61	1927.51	1549.53	1051.28	27.91	9.80	3.00	0.05	0.06	22.04
48-P4S1	579.81	1913.54	1516.77	303.10	4.41	2.88	0.95	0.04	0.03	5.16
48-P4S2	514.91	1992.44	1405.63	282.35	3.43	2.27	1.12	0.02	0.02	4.87
48-P4S3	538.33	2581.13	1336.30	214.80	3.00	1.86	0.69	0.02	0.01	2.01
48-P4S4	668.04	2944.77	1433.08	222.96	2.43	1.50	0.55	0.01	0.01	1.43
3-P12S1	168.29	1260.53	1326.76	760.57	12.69	4.71	1.73	0.03	0.01	13.28
3-P12S2	158.35	1167.43	1236.40	685.30	12.37	4.89	1.66	0.03	0.01	12.53
3-P12S3	190.60	1427.02	1476.05	1032.58	15.24	5.41	2.04	0.03	0.01	15.07
3-P12S4	249.32	1559.27	1401.97	1060.06	18.36	6.91	1.90	0.03	0.02	14.64
3-P9S1	207.88	1417.78	1381.46	787.50	17.21	7.82	1.74	0.06	0.05	13.58
3-P9S2	220.70	1512.93	1570.88	882.59	18.55	5.96	1.88	0.01	0.02	14.74
3-P9S3	240.62	1443.58	1368.49	589.17	14.18	6.50	1.51	0.05	0.05	13.67
3-P9S4	295.44	1924.78	1689.53	1340.25	22.12	7.18	2.16	0.03	0.03	15.73
48-P7S1	858.58	2853.30	1702.87	235.34	2.89	1.83	0.67	0.01	0.02	1.83
48-P7S2	755.08	2784.67	1624.27	205.62	2.50	1.61	0.69	0.01	0.00	1.63
48-P7S3	983.18	3279.46	1737.79	253.29	2.78	1.86	0.70	0.01	0.01	1.50
48-P7S4	881.77	2924.09	1627.25	196.50	2.41	1.47	0.61	0.01	0.01	1.31
84-P22S1	98.93	1044.64	842.43	305.05	6.40	3.28	0.96	0.02	0.01	7.44
84-P22S2	236.82	1334.81	1023.62	444.09	11.91	10.62	1.66	0.36	0.36	10.36
84-P22S3	139.27	1170.60	1327.25	933.23	15.84	5.42	2.18	0.02	0.02	15.02
84-P22S4	478.84	1710.23	1585.35	1168.21	25.04	7.14	2.90	0.04	0.02	0.04

Table 4. Representative pyroxene major and trace element chemistry. For full dataset look in appendix.

Pyroxene Representative Major and Trace Element Chemistry										
Major Element Chemistry										
Sample ID	**SiO_2**	**TiO_2**	**Al_2O_3**	**FeO**	**MnO**	**MgO**	**CaO**	**Na_2O**	**Total**	**Mg#**
AP20084PX15A	63.32	0.07	0.64	19.34	0.47	24.39	1.13	0.02	109.37	0.56
AP20084PX15B	63.65	0.10	0.43	19.67	0.73	24.06	0.98	0.01	109.68	0.55
AP20042PX15A	46.52	0.02	0.02	16.90	0.20	43.32	0.13	0.00	107.27	0.72
AP20042PX15B	45.41	0.03	0.01	21.33	0.25	39.01	0.13	0.02	106.25	0.65
AP2003PX9A	62.41	0.30	1.29	8.36	0.26	15.45	24.23	0.34	112.67	0.65
AP2003PX9B	62.49	0.24	1.34	8.12	0.24	15.33	23.97	0.40	112.16	0.65
AP2003PX21A	62.82	0.19	0.76	19.43	0.50	24.30	1.13	0.02	109.17	0.56
AP2003PX21B	63.57	0.13	0.57	18.65	0.42	24.84	1.06	0.03	109.28	0.57
AP20088PX9A	63.46	0.17	0.72	18.21	0.53	25.55	1.45	0.03	110.12	0.58
AP20088PX9B	64.72	0.19	1.16	15.43	0.27	28.09	1.59	0.02	111.47	0.65
AP20084PX6A	64.39	0.19	0.87	18.35	0.49	25.70	1.20	0.01	111.24	0.58
AP20084PX6B	64.87	0.27	1.35	15.74	0.36	27.73	1.33	0.01	111.67	0.64
Trace Element Chemistry (ppm)										
Sample ID	**Cr**	**Ni**	**Sr**	**La**	**Nd**	**Sm**	**Eu**	**Tb**	**Ho**	**Yb**
84-PX15S1	26.37	120.03	0.27	0.11	1.13	0.68	0.09	0.28	0.60	3.48
84-PX15S2	38.49	117.21	0.12	0.06	0.99	0.58	0.07	0.27	0.60	3.56
84-PX15S3	16.29	92.28	1.07	2.41	3.48	1.02	0.10	0.28	0.56	3.05
84-PX15S4	1.24	12.59	15.89	39.25	52.82	9.93	0.71	0.96	0.94	1.83
42-PX15S1	0.00	0.01	22.99	0.09	0.04	0.00	0.01	0.00	0.00	0.00
42-PX15S2	0.01	0.00	19.70	0.06	0.03	0.00	0.01	0.00	0.00	0.00
3-PX9S1	98.24	76.31	43.27	12.80	64.60	20.08	2.08	3.09	3.60	8.79
3-PX9S2	40.87	68.05	40.51	21.33	77.38	22.64	2.23	3.34	3.80	8.49
3-PX9S3	48.67	83.88	44.33	23.14	83.62	24.26	2.44	3.75	4.22	9.37
3-PX21S1	28.12	96.11	63.05	2.28	2.63	0.64	0.15	0.18	0.33	1.97
3-PX21S2	95.60	110.99	6.41	0.45	1.45	0.59	0.08	0.20	0.40	2.37
3-PX21S3	39.47	103.04	4.03	7.82	11.67	2.43	0.21	0.36	0.59	2.49
88-PX9S1	6.64	110.69	36.39	1.02	1.78	0.81	0.11	0.31	0.50	2.80
88-PX9S2	4.80	112.76	1.78	2.72	4.41	1.38	0.13	0.32	0.62	2.74
88-PX9S3	5.41	120.12	6.46	0.38	1.59	0.77	0.15	0.29	0.56	2.98
88-PX9S4	7.06	113.71	25.79	1.10	2.06	0.63	0.11	0.27	0.52	2.68
84-PX6S1	21.35	144.93	1.66	0.26	1.05	0.65	0.11	0.23	0.52	2.72
84-PX6S2	6.49	37.27	18.67	12.84	20.99	4.25	0.67	0.52	0.51	1.25
84-PX6S3	12.30	73.09	9.33	13.42	20.58	4.23	0.45	0.53	0.63	2.04
84-PX6S4	27.91	184.20	13.21	1.24	1.71	0.53	0.15	0.19	0.36	1.83

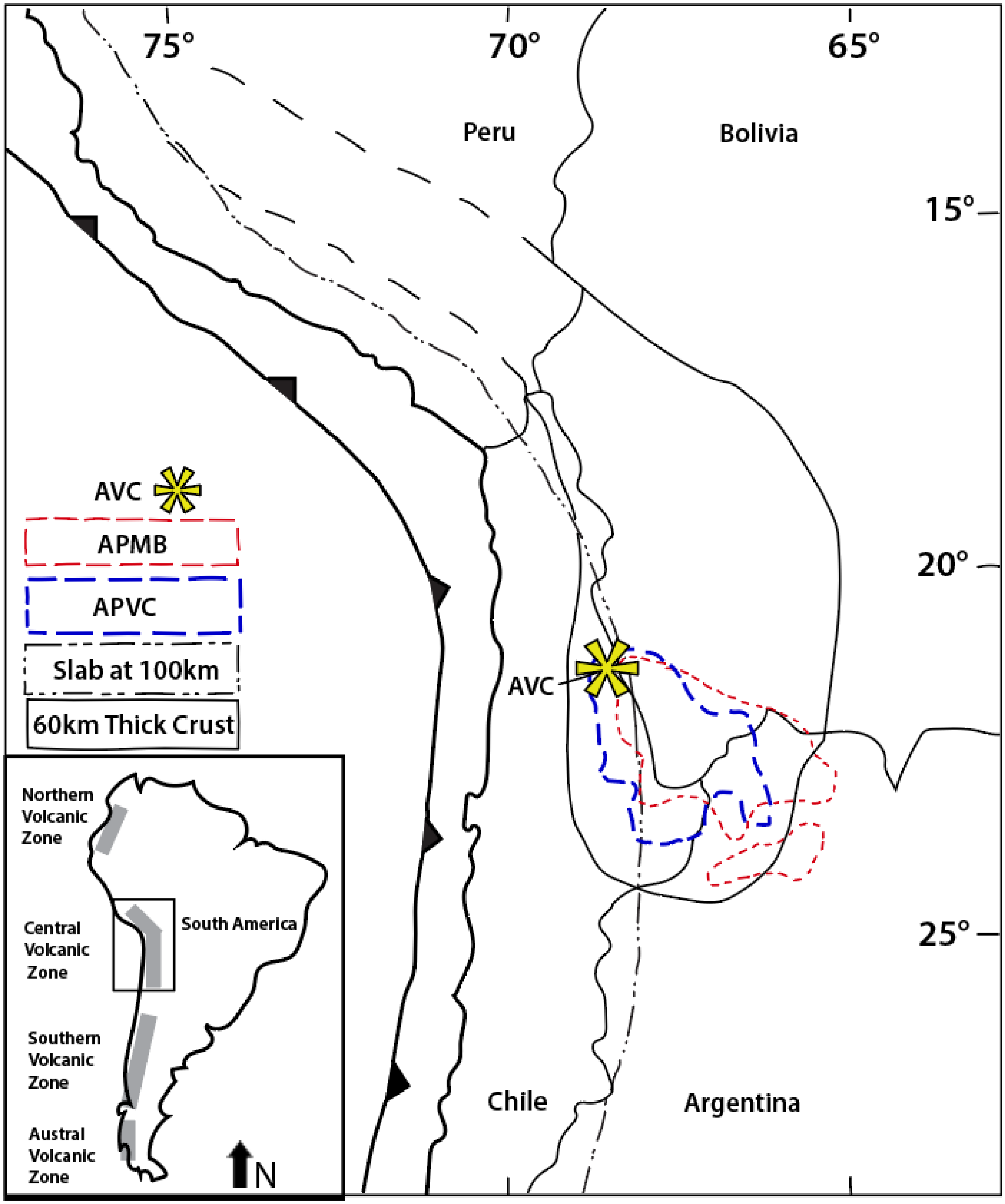


Figure 1. Regional map of the Aucanquilcha Volcanic Cluster (AVC) located in the central Andes. APVC = Altiplano-Puna volcanic complex (Salisbury et al., 2011). APMB = Altiplano-Puna magma body (Zandt et al., 2003). Slab depth from Cahill and Isacks (1992). Crustal thickness from Allmendinger et al. (1997). Modified from Walker (2011).

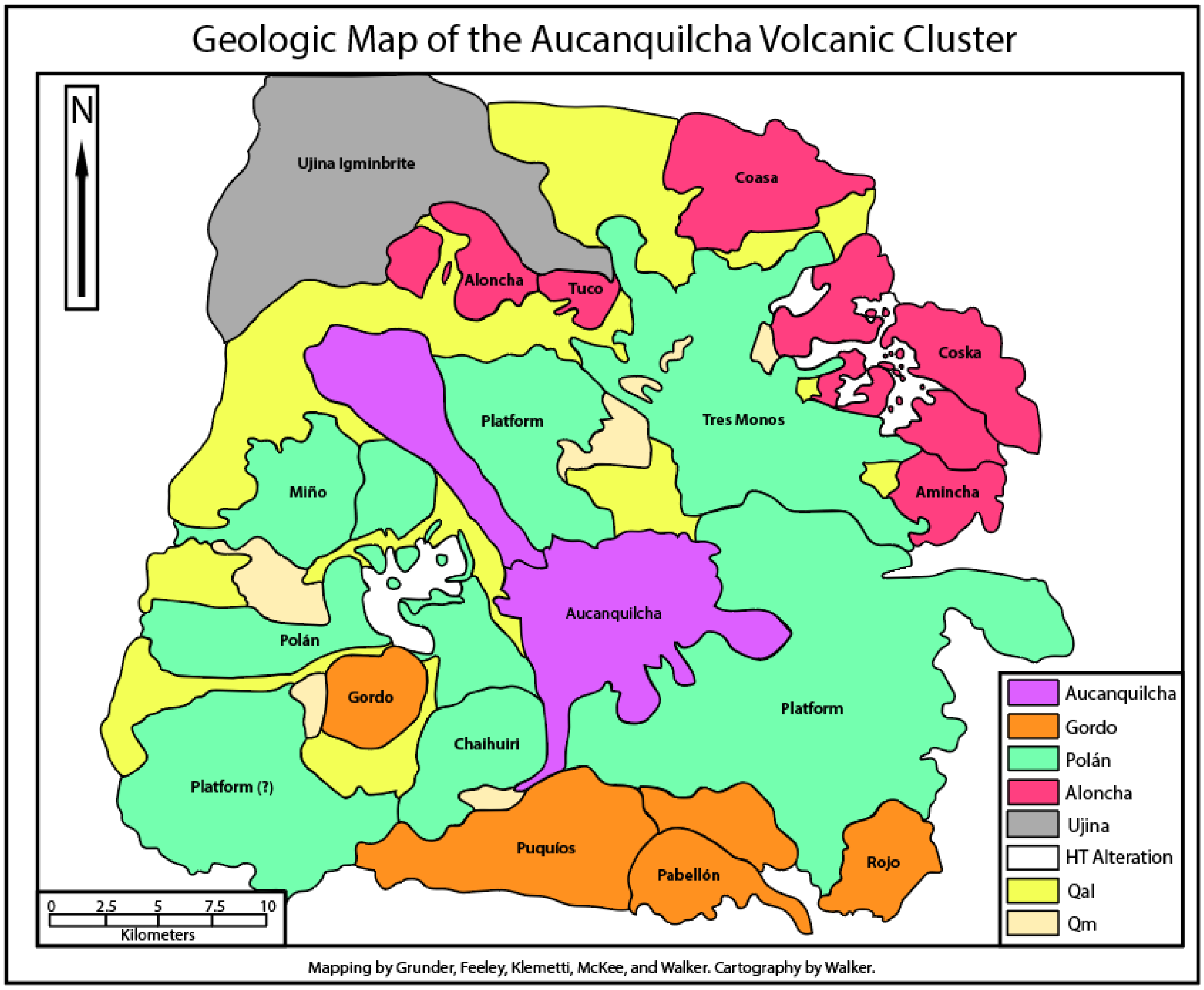


Figure 2. Stages of volcanic activity at the Aucanquilcha Volcanic Complex. Modified from Walker (2011).

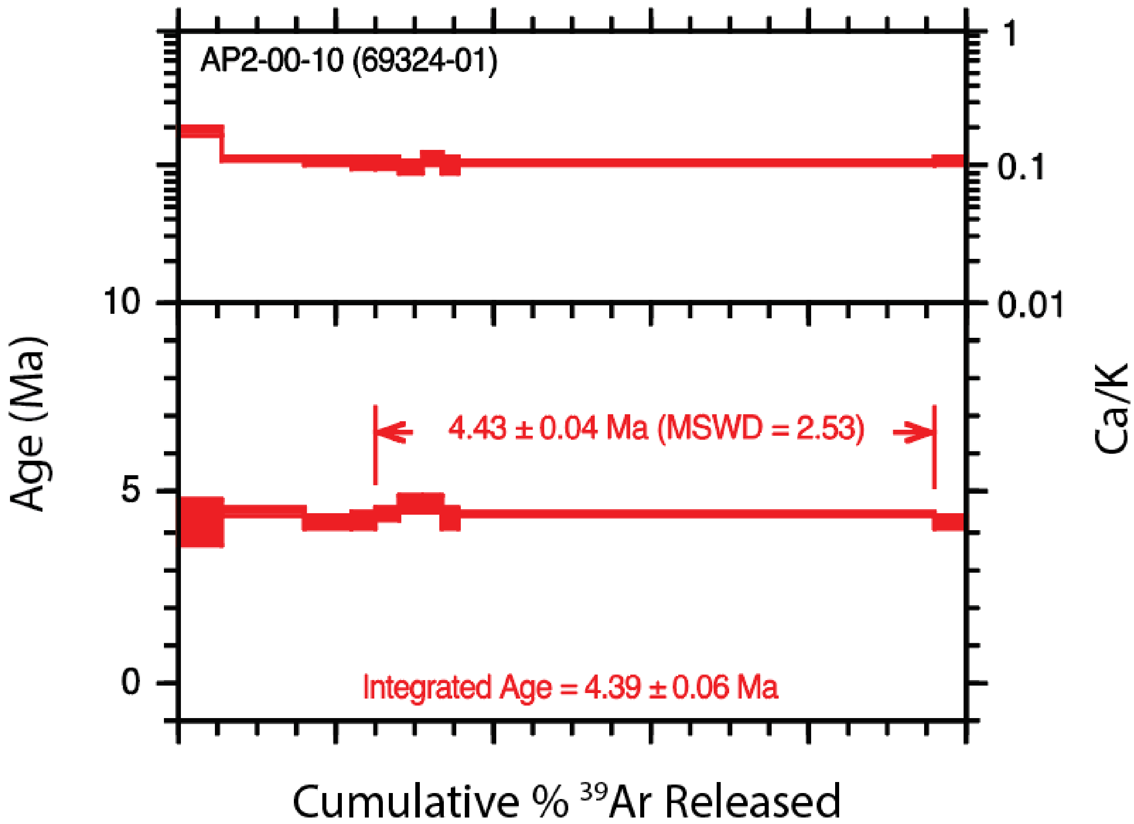


Figure 3. Argon age of plagioclase in sample AP2-00-10. Argon age (Ma) vs cumulative ^{39}Ar released.

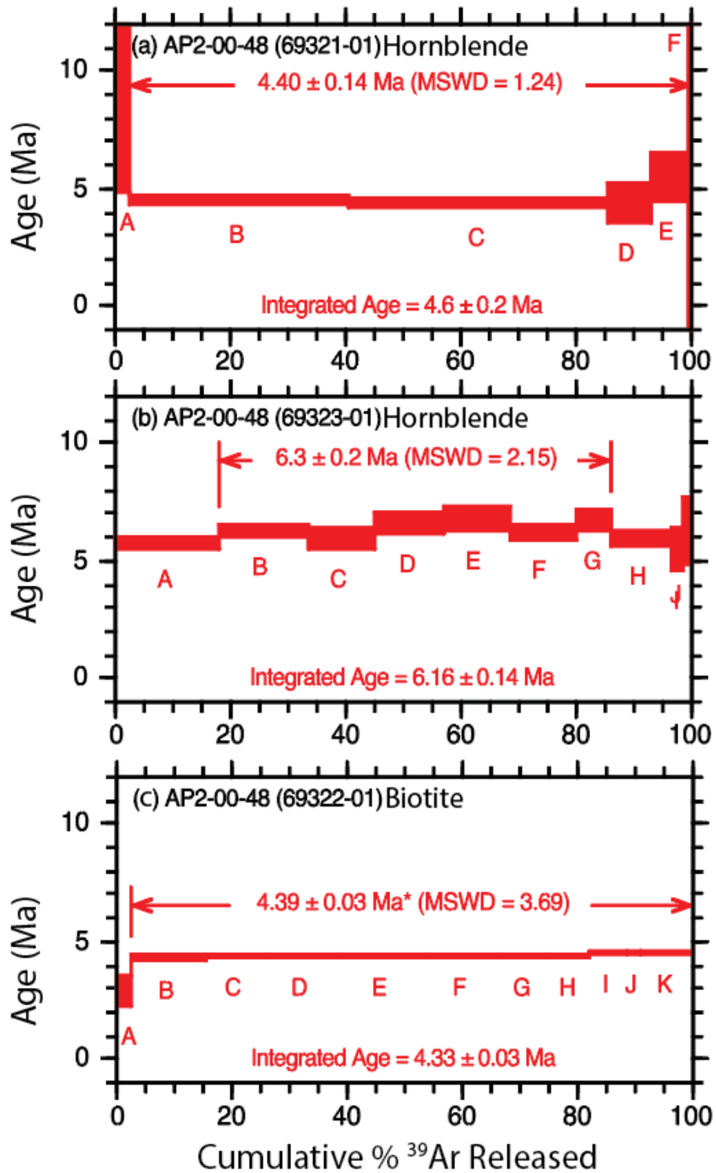


Figure 4. Argon age of biotite and hornblende in sample AP2-00-48. Argon age (Ma) vs cumulative ^{39}Ar released.

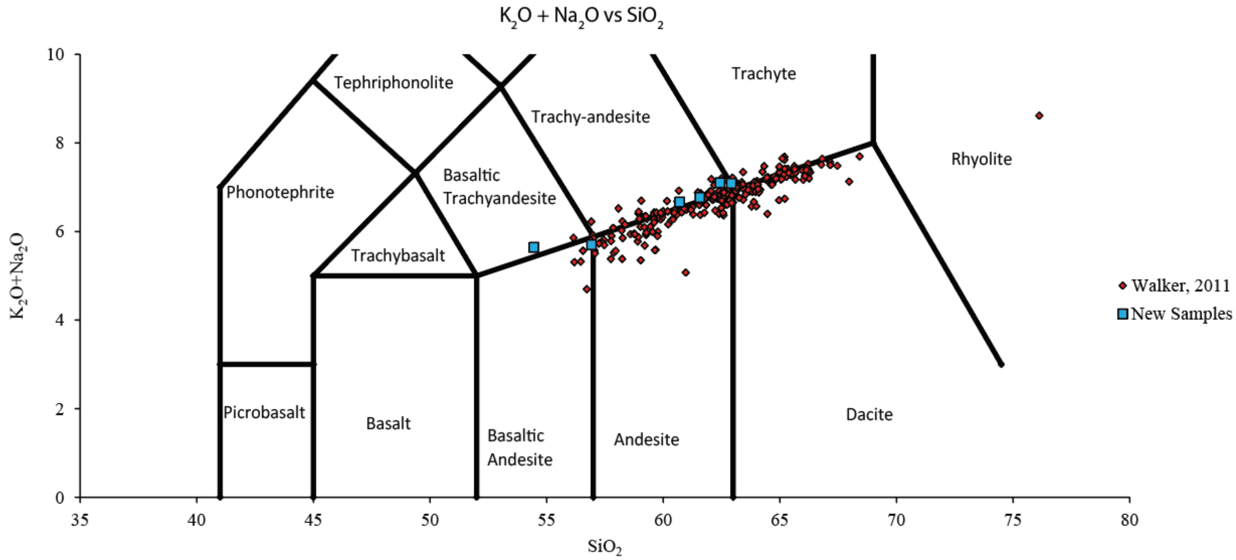


Figure 5. Aucanquilcha Volcanic Cluster new samples used in this study and samples from Walker (2011) plotted on a TAS diagram to determine rock type.

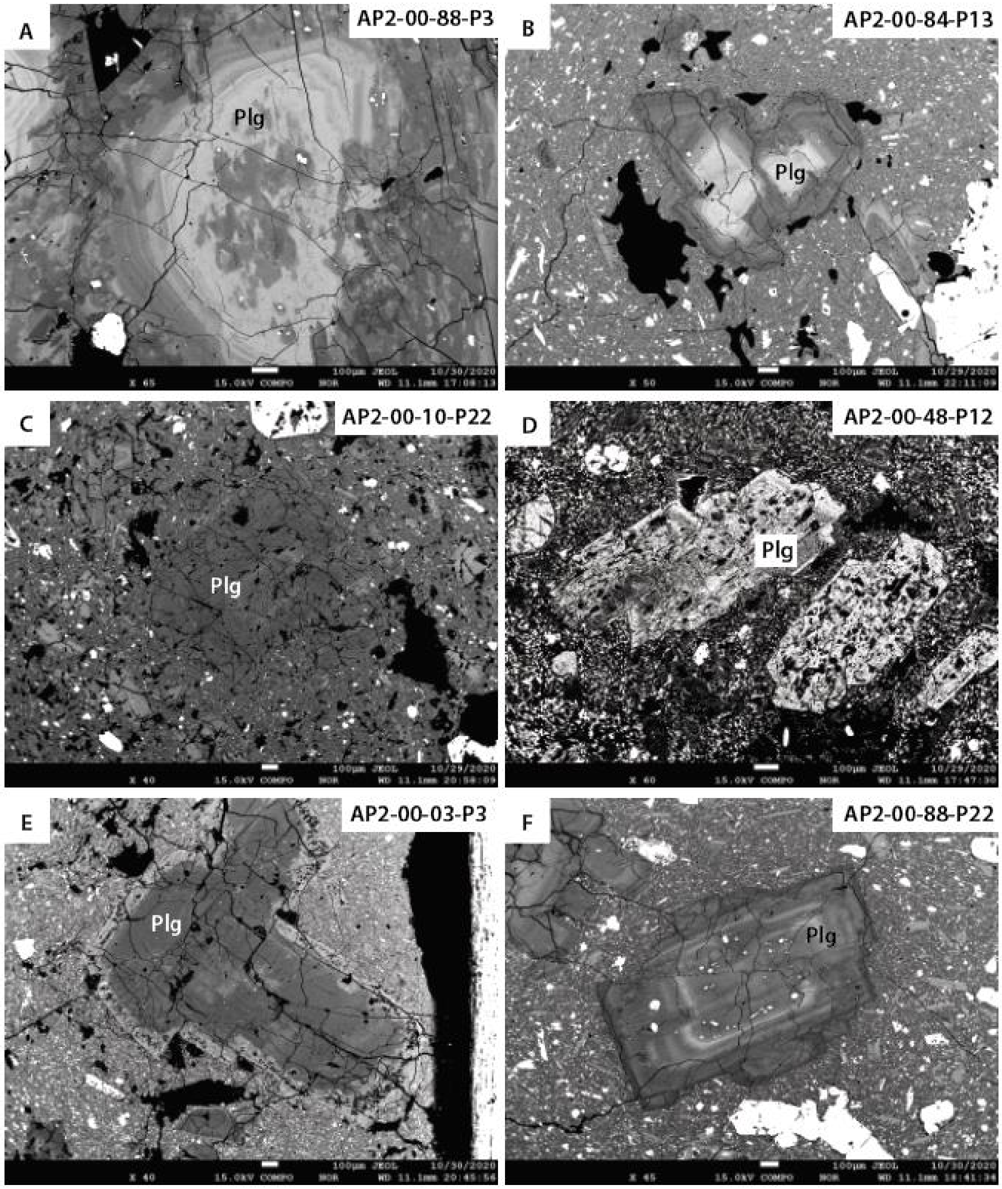


Figure 6. Plagioclase phenocryst textures in new AVC samples. All phenocrysts include oscillatory zoning and resorption textures. (A) Plagioclase phenocryst with a clear, rounded, and resorbed core and a resorbed rim. (B) Plagioclase phenocryst with a clear, euhedral, high An, resorbed core. Rim is resorbed and two phenocrysts have joined together. (C) Fairly homogenous An composition plagioclase phenocryst with a clear and rounded core. The rim is sieved and resorbed. Sieving and spongey texture exists throughout the crystal. (D) High An plagioclase phenocryst with a sieved core and mantle. (E) Plagioclase phenocryst with a sieved rim. The core is clear and rounded. (F) Euhedral plagioclase phenocryst with a low An rim.

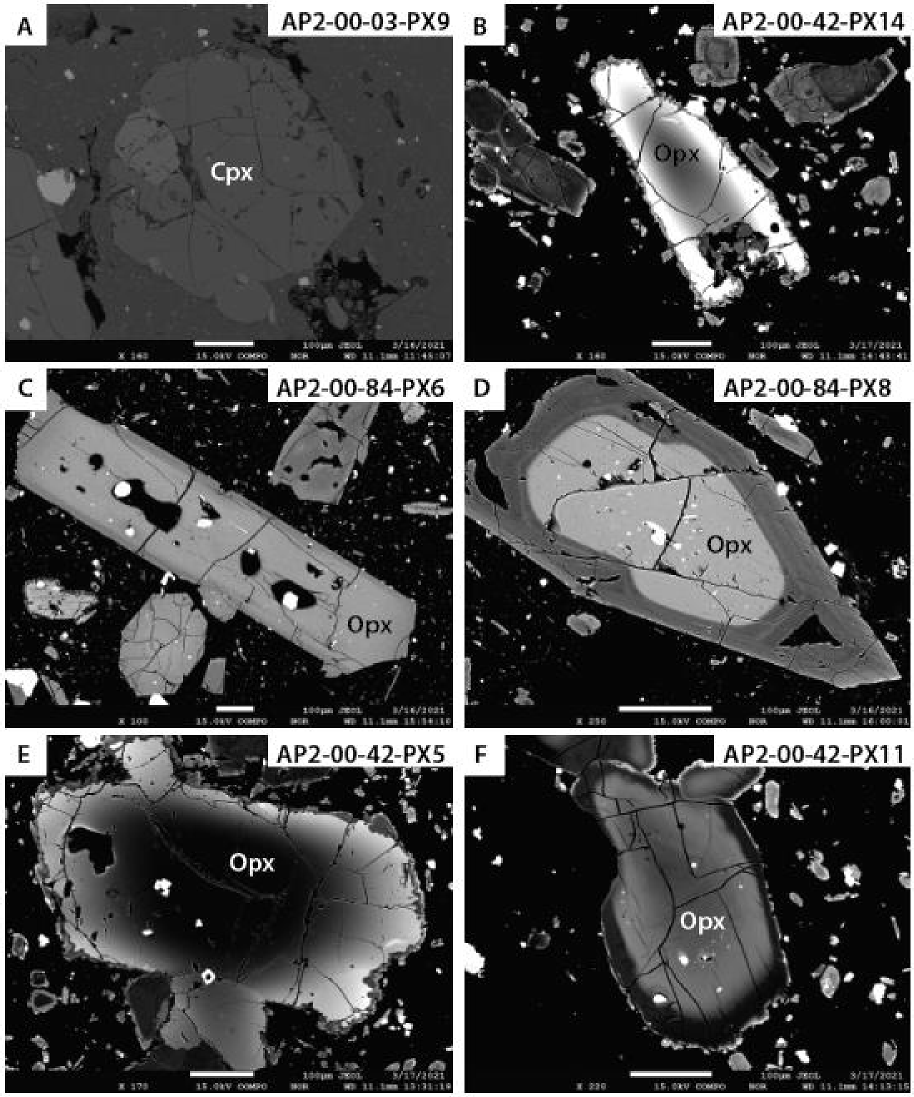


Figure 7. Pyroxene phenocryst textures in new AVC samples. (A) Clinopyroxene phenocryst with a clear and rounded core. (B) Orthopyroxene phenocryst with a clear, resorbed core and a resorbed rim. (C) Euhedral orthopyroxene phenocryst with a spongy core. (D) Orthopyroxene with a clear, rounded, and resorbed core. The rim is resorbed. (E) Orthopyroxene with a clear, rounded, resorbed core and a sieved and resorbed rim.

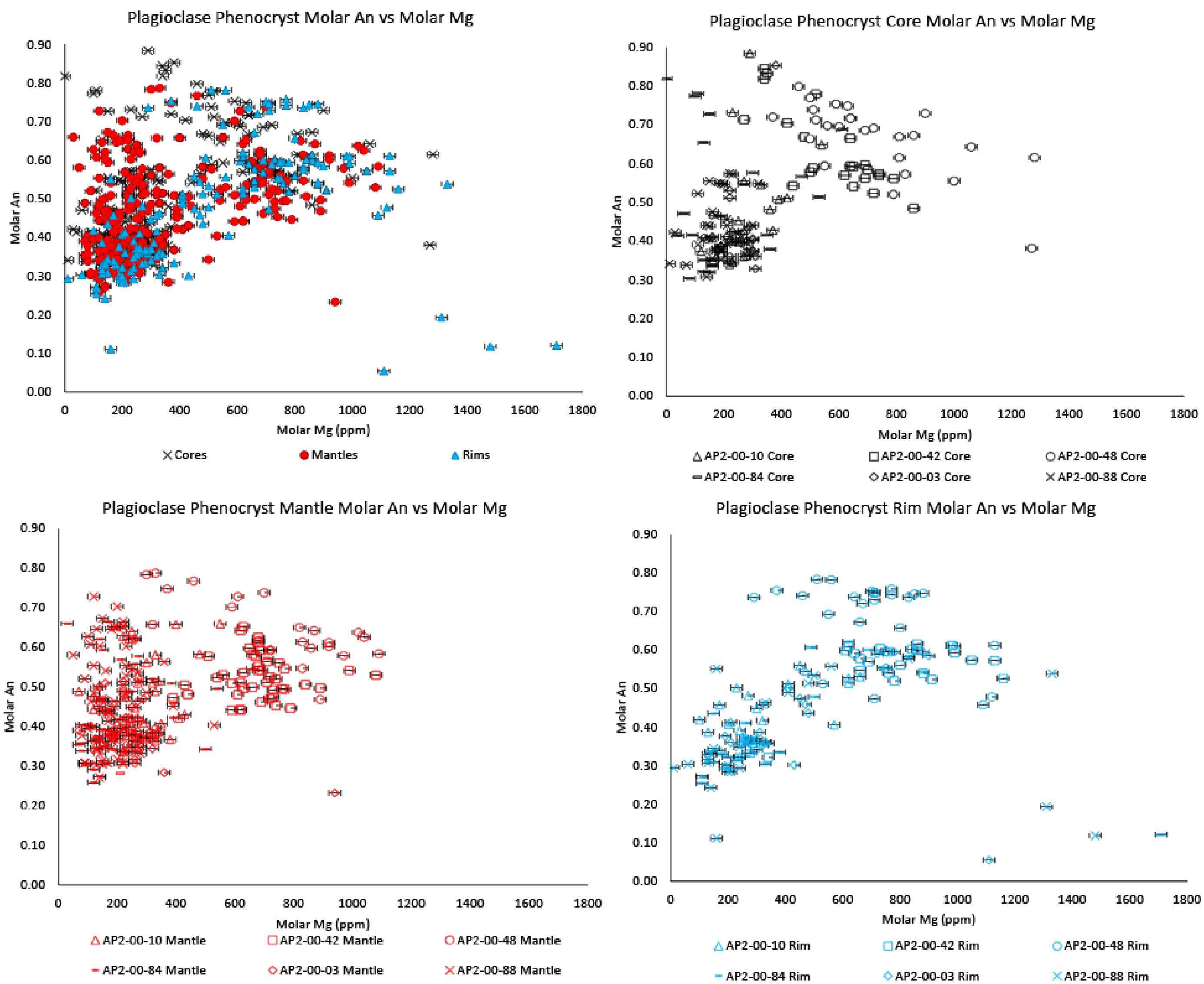


Figure 8. Molar An of plagioclase phenocrysts from AVC. Core = black, mantle = red, and rim = blue.

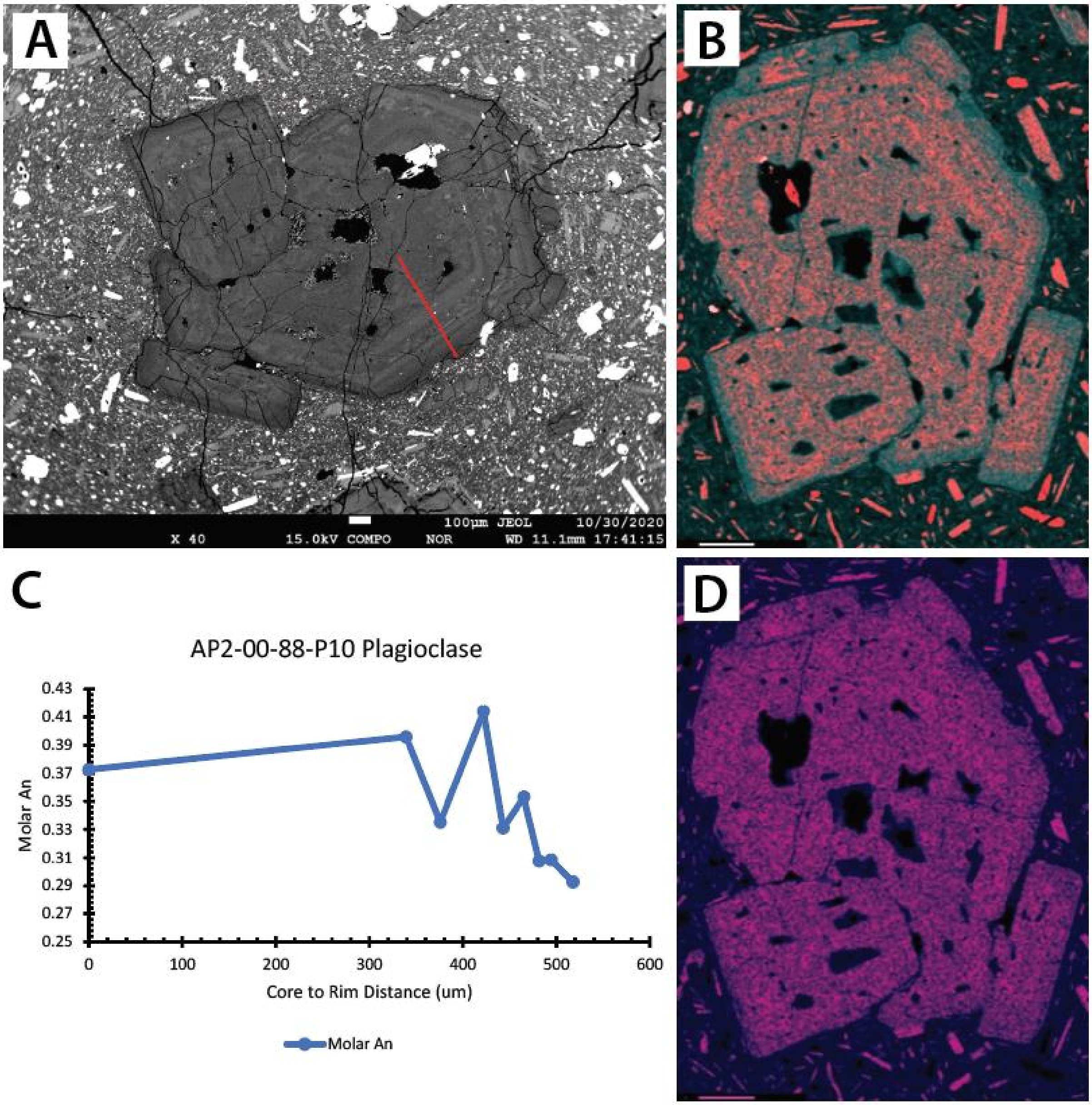


Figure 9. Plagioclase phenocryst from AVC lava. (A) Backscatter image of a plagioclase phenocryst with more homogenous, oscillatory zoning. Red line is the core-to-rim transect this study analyzed for major and trace elements. (B) Chemical map showing oscillatory zoning of Ca (red) and Na (blue). The rim is higher in Na than Ca. (C) Plot of spots analyzed on core-to-rim transect. Each data point is a spot along the transect with increasing distance from the core. There is an overall decrease in An from the core to the rim. (D) Chemical map of Al.

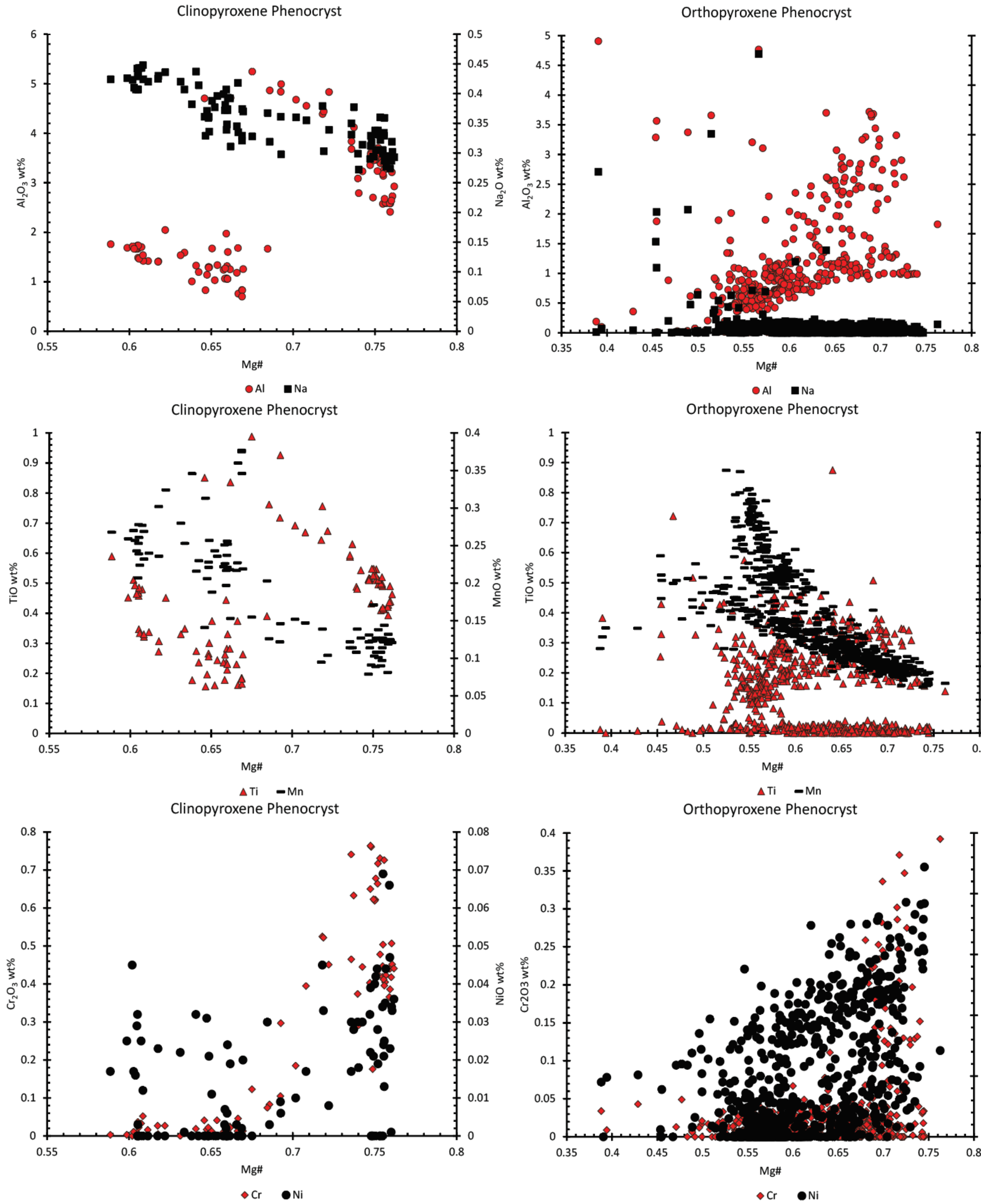
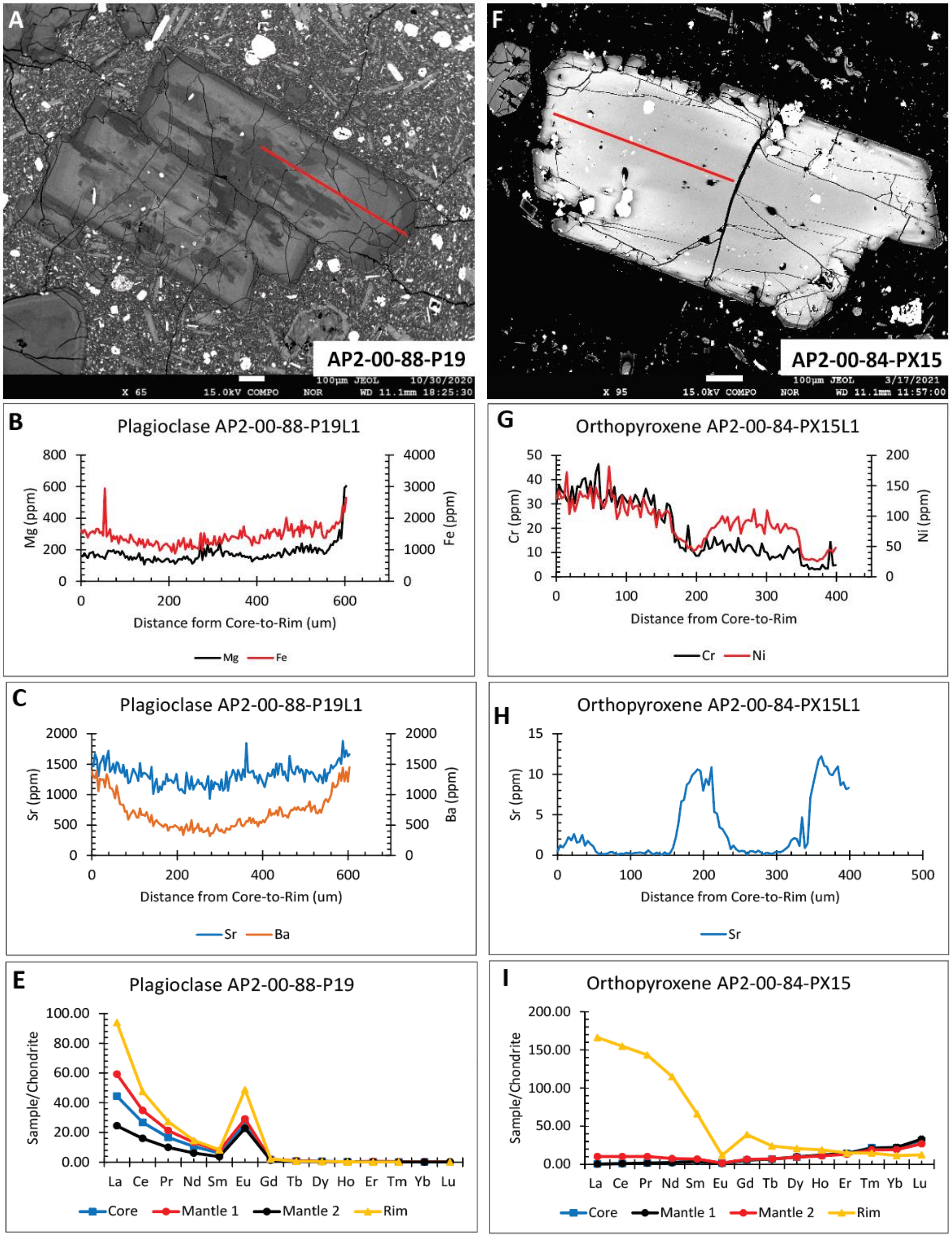


Figure 10. Pyroxene chemistry vs Mg# in both clinopyroxenes and orthopyroxenes.


A
AP2-00-88-P19
X 65 15.0kV COMPO NOR 100µm JEOL WD 11.1mm 10/30/2020 18:25:30
F
AP2-00-84-PX15
X 95 15.0kV COMPO NOR 100µm JEOL WD 11.1mm 3/17/2021 11:57:00
B
Plagioclase AP2-00-88-P19L1
Mg (ppm)
Fe (ppm)
Distance form Core-to-Rim (um)
Mg
Fe
G
Orthopyroxene AP2-00-84-PX15L1
Cr (ppm)
Ni (ppm)
Distance from Core-to-Rim
Cr
Ni
C
Plagioclase AP2-00-88-P19L1
Sr (ppm)
Ba (ppm)
Distance from Core-to-Rim (um)
Sr
Ba
H
Orthopyroxene AP2-00-84-PX15L1
Sr (ppm)
Distance from Core-to-Rim (um)
Sr
E
Plagioclase AP2-00-88-P19
Sample/Chondrite
La Ce Pr Nd Sm Eu Gd Tb Dy Ho Er Tm Yb Lu
Core
Mantle 1
Mantle 2
Rim
I
Orthopyroxene AP2-00-84-PX15
Sample/Chondrite
La Ce Pr Nd Sm Eu Gd Tb Dy Ho Er Tm Yb Lu
Core
Mantle 1
Mantle 2
Rim

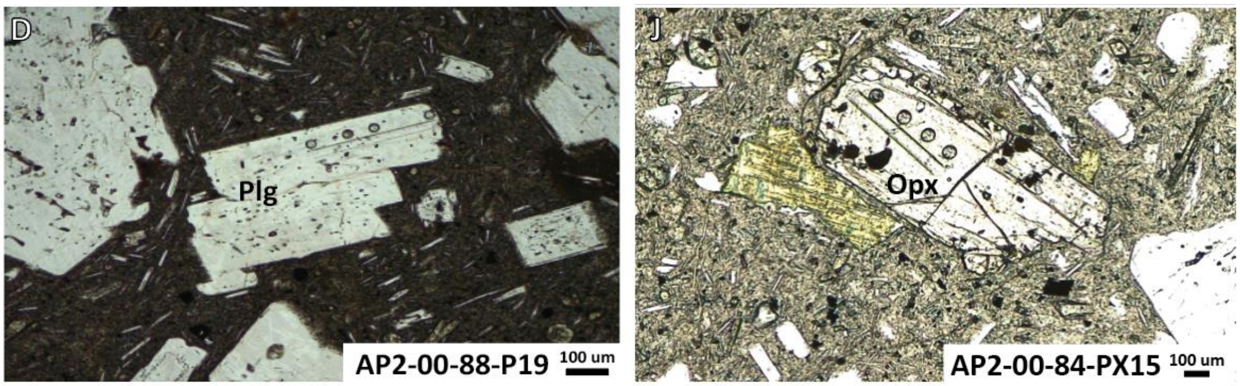


Figure 11. (A) Backscatter image of a plagioclase phenocryst taken on the EPMA. Red line is the transect analyzed for major and trace element chemistry. (B) Mg and Fe contents along plagioclase transect. (C) Sr and Ba contents along plagioclase transect. (D) Plain polarized light (PPL) image of plagioclase phenocryst in thin section with visible laser ablation pits. (E) Rare Earth Element (REE) contents of spots analyzed on plagioclase phenocryst. (F) Backscatter image of an orthopyroxene antecryst taken on the EPMA. Red line is the transect analyzed for major and trace element chemistry. (G) Cr and Ni contents along orthopyroxene transect. (H) Sr contents along orthopyroxene transect. (I) REE contents of spots analyzed on orthopyroxene antecryst. (J) PPL image of an orthopyroxene antecrysts in thin section with visible laser ablation pits and line transect. Chondrite normalization values from McDonough and Sun (1995).

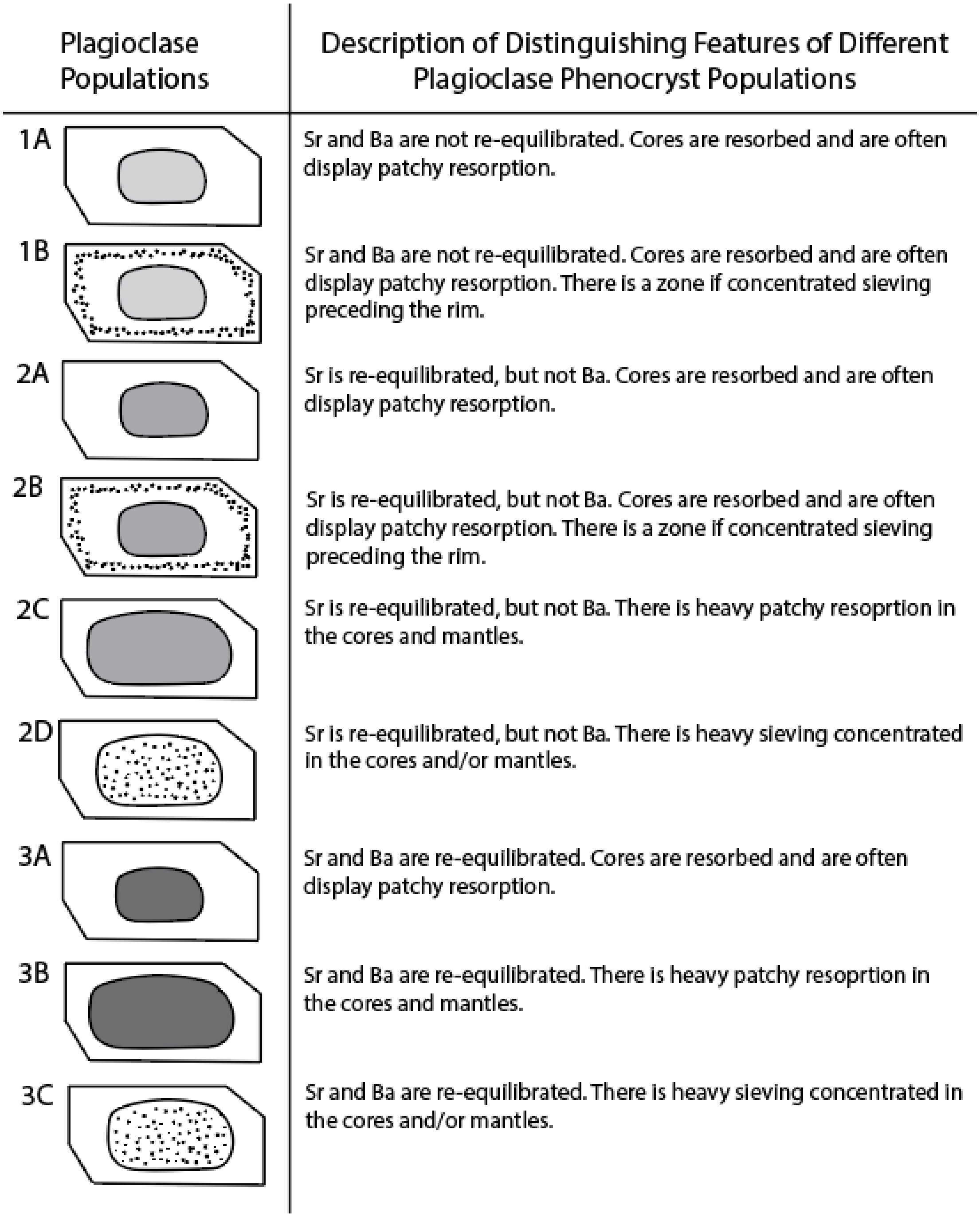


Figure 12. AVC plagioclase phenocryst populations. All phenocrysts display oscillatory chemical zoning and resorption zones. Populations are further characterized by trace element chemistry and mineral textures.

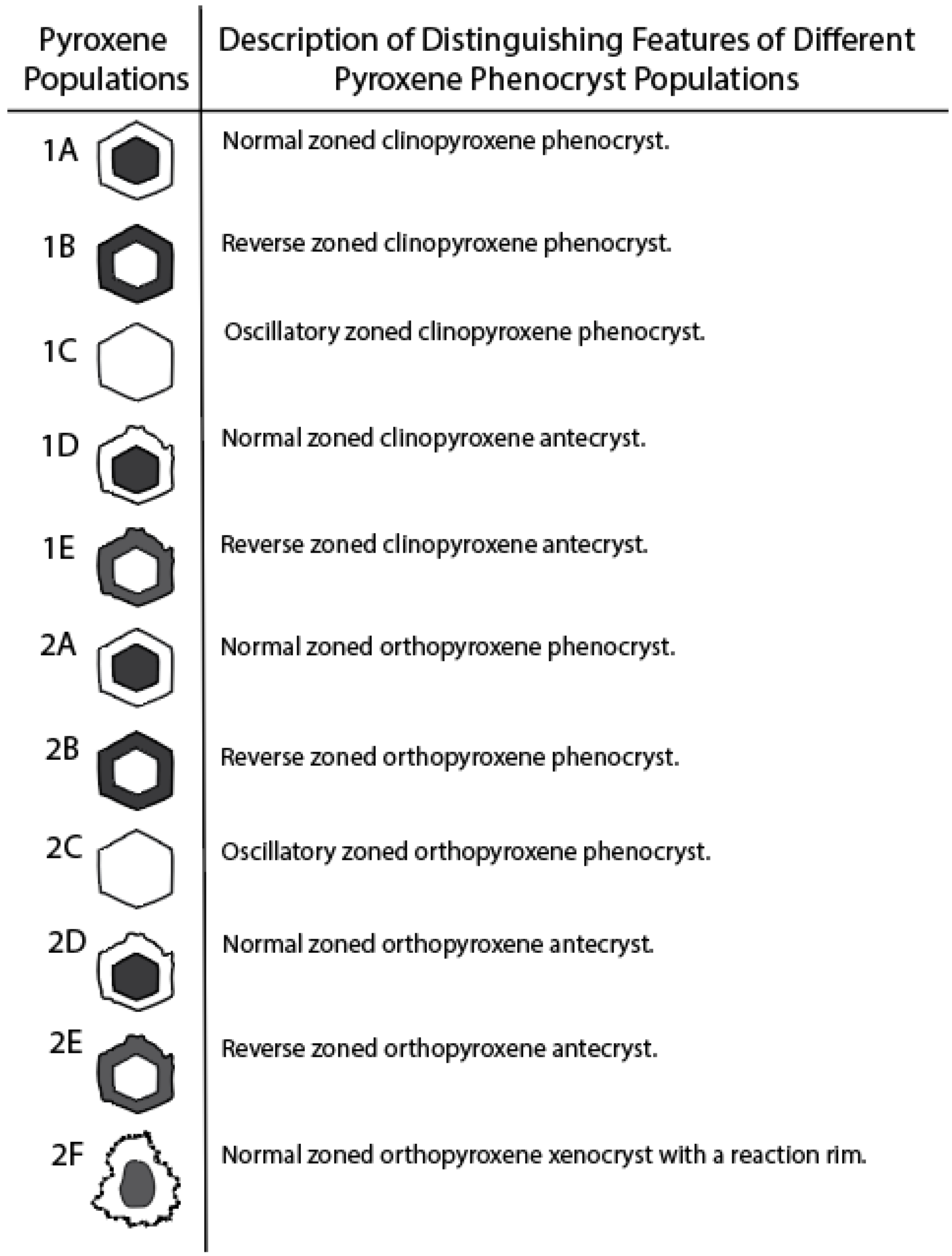


Figure 13. AVC pyroxene phenocryst populations. Populations are characterized by major element chemistry and mineral textures.

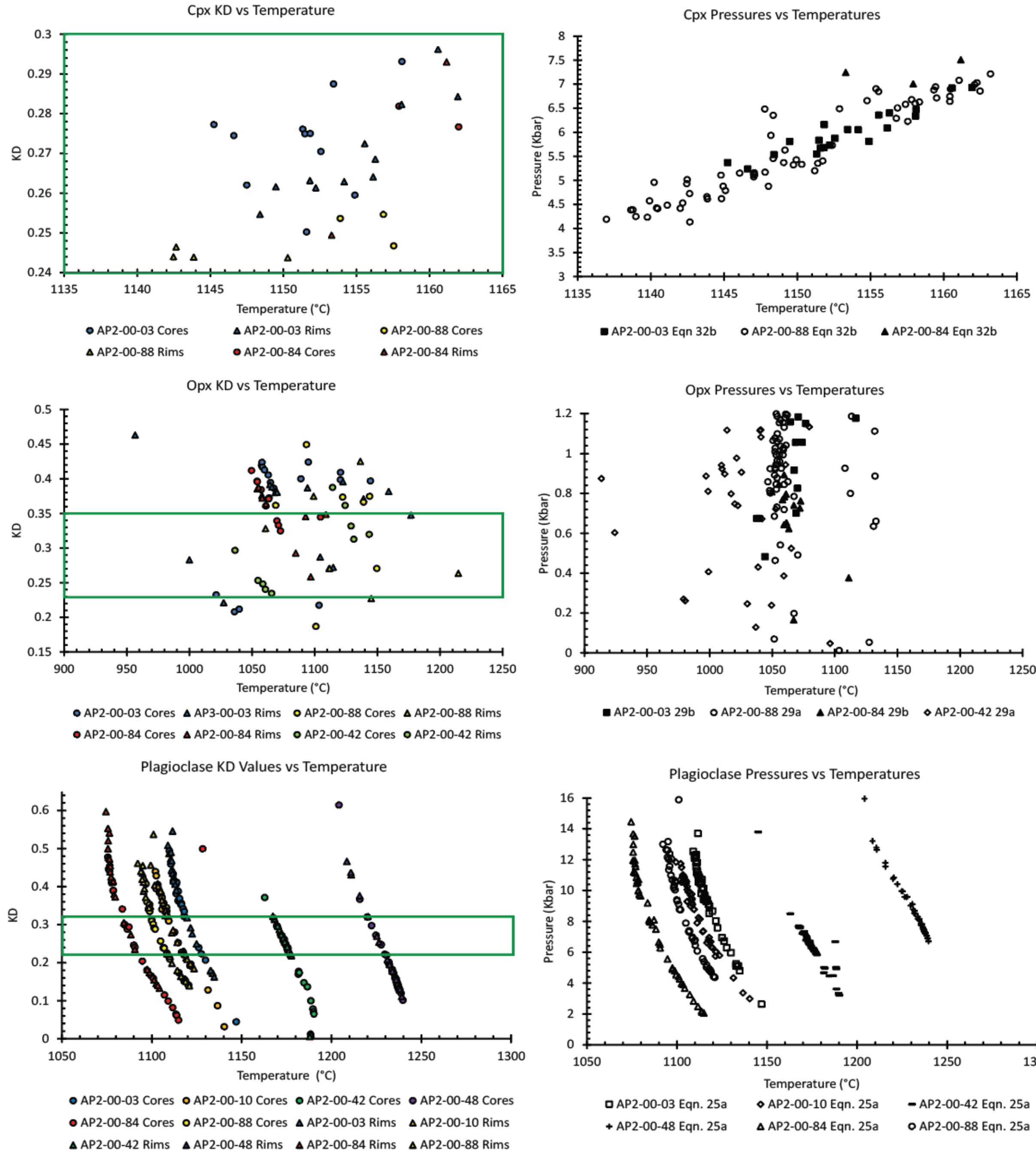


Figure 14. Thermobarometry model for clinopyroxene, orthopyroxene, and plagioclase. Equations from Putirka (2008) were used for the models. Values in equilibrium with the sample's whole rock composition are shown in the green rectangle.

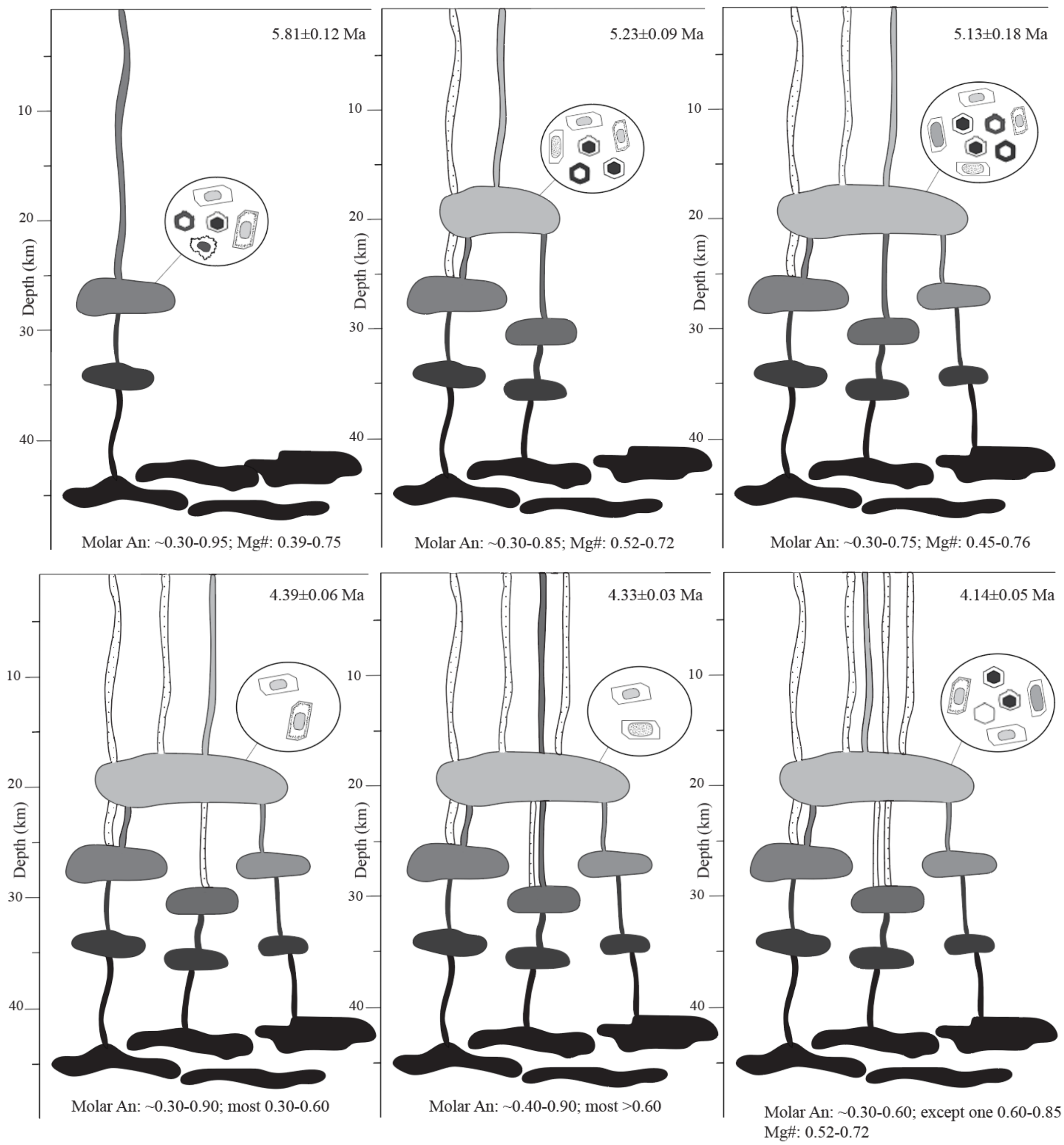
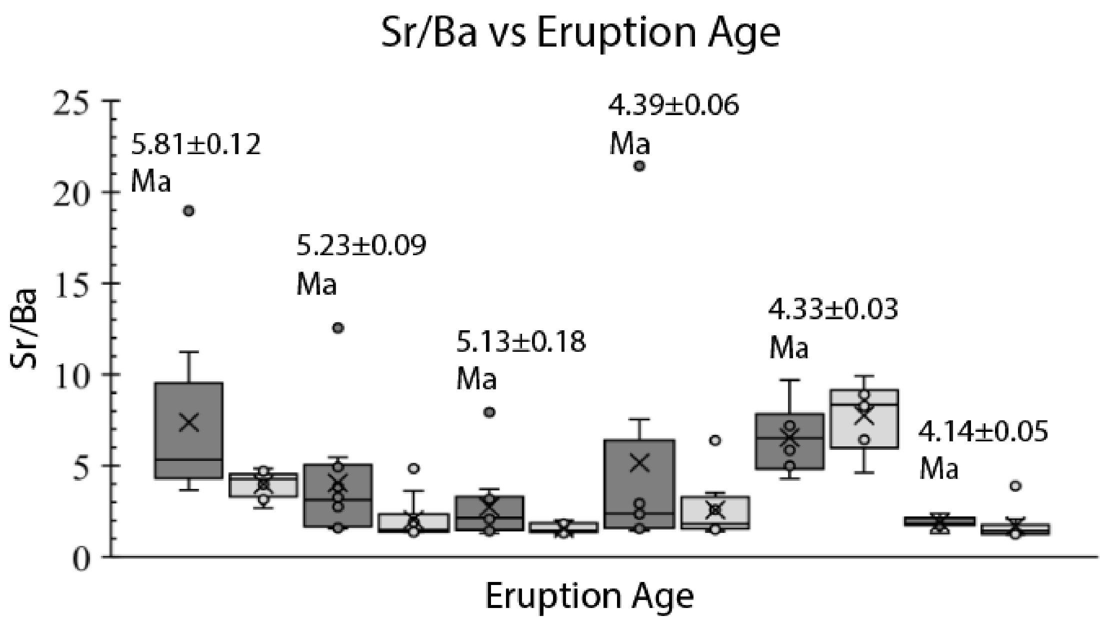


Figure 15. AVC Gordo Stage magma plumbing system architecture model through time. Dotted areas indicate where magma rose in the past eruption. This figure is an inferred model based on the six new AVC samples only. More samples are needed to capture additional complexity in the system.



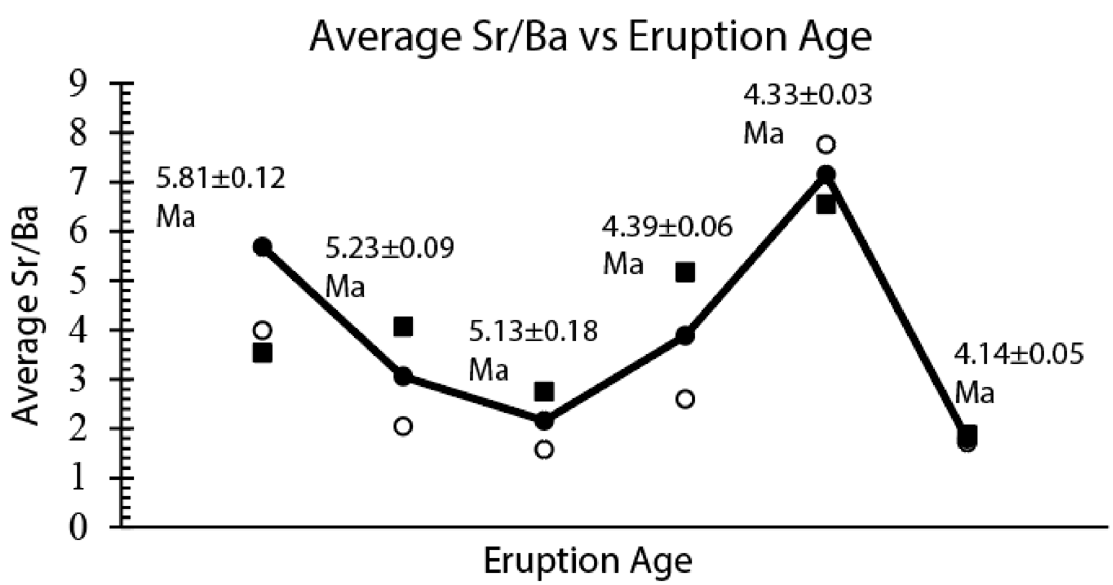


Figure 16. Sr/Ba ratios vs eruption age. (Top) Dark grey boxes are for core values and light grey boxes include rim values. Dark grey circles are core outliers and light grey circles are rim outliers. (Bottom) Black squares are cores values and open circles are rim values. Black line and black circles are the average both core and rim ratios.

APPENDICES

Appendix A. Measurements for Glass Puck Preparation for Whole Rock Analysis in the XRF.

For Fused Glass Beads (Flux)			For Loss on Ignition			
Sample ID	Weight of Sample ($W_{S;}$g)	Weight of Flux ($W_{F;}$g)	W_C(g)	W_P(g)	W_D(g)	W_I(g)
AP2-00-03	1.1666	5.8337	14.7808	3.5991	18.3752	18.338
AP2-00-10	1.1665	5.8333	17.5132	3.5696	21.0782	21.0364
AP2-00-42	1.1671	5.8332	15.79	3.4996	19.2854	19.263
AP2-00-48	1.1662	5.8332	17.5838	3.3235	20.9018	20.891
AP2-00-84	1.1665	5.8338	14.4013	3.5842	17.9811	17.9354
AP2-00-88	1.1671	5.8332	15.3289	3.6153	18.9409	18.9142

Appendix B. Summary of all whole rock compositions and standard compositions.

	Major Elements Unnormalized								Standards			
wt%	AP2-00-03	AP2-00-10	AP2-00-42	AP2-00-48	AP2-00-84	AP2-00-88	AGV-2	BHVO-2	rgm-2	AGV-2	BHVO-2	RGM-2
SiO_2	60.07	60.83	56.55	54.25	61.63	62.44	58.72	49.33	73.09	58.71	49.33	73.08
Al_2O_3	16.67	17.06	16.97	18.74	15.95	15.97	16.97	13.62	13.75	16.98	13.61	13.74
TiO_2	0.76	0.60	0.94	1.05	0.79	0.74	1.08	2.76	0.28	1.08	2.77	0.28
MnO	0.09	0.10	0.11	0.12	0.08	0.08	0.10	0.17	0.03	0.11	0.17	0.03
MgO	3.06	2.28	4.47	3.73	2.60	2.66	1.86	7.32	0.30	1.87	7.33	0.30
Fe_2O_3	6.03	5.91	7.40	8.06	5.70	5.40	7.03	12.55	1.92	7.03	12.55	1.92
CaO	5.50	5.14	7.00	7.79	4.72	4.70	5.53	11.57	1.24	5.53	11.58	1.24
Na_2O	3.77	3.86	3.79	4.27	3.54	3.96	4.60	2.24	4.20	4.58	2.24	4.22
K_2O	2.83	2.84	1.88	1.35	3.47	3.07	3.07	0.52	4.41	3.07	0.52	4.41
P_2O_5	0.20	0.20	0.23	0.27	0.21	0.20	0.48	0.27	0.05	0.48	0.27	0.05
Cr_2O_3	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.04	0.00	0.00	0.04	0.00
Total	98.97	98.81	99.34	99.65	98.71	99.24	99.44	100.40	99.27	99.44	100.41	99.27
LOI	1.0144	1.1725	0.6408	0.3255	1.2766	0.7392	0.541	-0.4637	0.7209	0.541	-0.4637	0.7209

	Major Elements Normalized								Standards			
wt%	AP2-00-03	AP2-00-10	AP2-00-42	AP2-00-48	AP2-00-84	AP2-00-88	AGV-2	BHVO-2	rgm-2	AGV-2	BHVO-2	RGM-2
SiO_2	60.70	61.56	56.92	54.45	62.44	62.92	59.05	49.13	73.63	59.04	49.13	73.62
Al_2O_3	16.84	17.27	17.08	18.80	16.16	16.09	17.06	13.56	13.85	17.08	13.55	13.84
TiO_2	0.76	0.61	0.95	1.05	0.80	0.74	1.09	2.75	0.28	1.09	2.75	0.28
MnO	0.09	0.10	0.11	0.12	0.09	0.08	0.10	0.17	0.03	0.11	0.17	0.03
MgO	3.09	2.30	4.50	3.75	2.63	2.68	1.87	7.29	0.30	1.88	7.30	0.30
Fe_2O_3	6.09	5.98	7.44	8.09	5.78	5.45	7.07	12.50	1.94	7.07	12.50	1.94
CaO	5.55	5.20	7.05	7.81	4.78	4.74	5.56	11.53	1.25	5.56	11.53	1.25
Na_2O	3.81	3.90	3.81	4.29	3.59	3.99	4.62	2.23	4.23	4.61	2.23	4.25

K_2O	2.86	2.87	1.89	1.35	3.51	3.10	3.09	0.52	4.44	3.08	0.52	4.44
P_2O_5	0.20	0.20	0.23	0.27	0.22	0.20	0.49	0.27	0.05	0.49	0.27	0.05
Cr_2O_3	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.04	0.00	0.00	0.04	0.00
Total	100	100	100	100	100	100	100	100	100	100	100	100

	Trace elements (ppm)								Standards (ppm)			
	AP2-00-03	AP2-00-10	AP2-00-42	AP2-00-48	AP2-00-84	AP2-00-88	AGV-2	BHVO-2	rgm-2	AGV-2	BHVO-2	RGM-2
Sc	16	8	14	16	9	9	12	33	9	16	30	10
V	133	102	141	172	112	109	159	380	44	165	371	47
Co	40	52	45	43	31	34	17	44	1	17	43	1
Ni	20	10	31	40	19	26	18	123	5	17	125	6
Minors	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C. Summary of all plagioclase phenocryst major element chemistry.

Plagioclase Phenocryst Major Element Chemistry from EPMA											
Sample ID	SiO_2	Al_2O_3	Na_2O	MgO	CaO	K_2O	BaO	FeO	TiO_2	Total	Molar An
AP2_00_10_P1A	59.40	26.71	6.43	0.02	8.47	0.56	0.10	0.47	0.09	102.24	0.41
AP2_00_10_P1B	59.57	26.72	6.59	0.02	8.25	0.58	0.06	0.50	0.00	102.29	0.40
AP2_00_10_P1C	60.01	26.04	6.77	0.02	7.67	0.67	0.07	0.51	0.00	101.75	0.37
AP2_00_10_P1D	60.10	26.30	6.55	0.02	8.10	0.62	0.03	0.50	0.03	102.24	0.39
AP2_00_10_P2A	60.45	26.09	6.78	0.01	7.77	0.66	0.07	0.48	0.01	102.30	0.37
AP2_00_10_P2B	57.43	27.86	5.78	0.02	9.89	0.41	0.04	0.45	0.01	101.89	0.47
AP2_00_10_P2C	60.87	25.46	6.57	0.03	7.26	0.70	0.07	0.52	0.01	101.49	0.36
AP2_00_10_P3A	58.69	27.17	6.26	0.04	8.91	0.49	0.08	0.51	0.01	102.16	0.43
AP2_00_10_P3B	53.40	27.88	4.17	0.05	11.10	0.32	0.03	0.89	0.05	97.90	0.58
AP2_00_10_P3C	59.53	25.59	6.89	0.03	7.45	0.72	0.07	0.47	0.02	100.76	0.36
AP2_00_10_P4A	57.54	27.66	6.02	0.03	9.48	0.49	0.05	0.43	0.04	101.73	0.45
AP2_00_10_P4B	60.29	26.15	6.87	0.04	7.71	0.71	0.06	0.51	0.06	102.40	0.37
AP2_00_10_P4C	60.91	25.71	7.10	0.02	7.34	0.75	0.10	0.47	0.00	102.39	0.35
AP2_00_10_P4D	59.84	25.97	7.00	0.03	7.62	0.72	0.08	0.50	0.06	101.81	0.36
AP2_00_10_P5A	59.39	26.51	6.51	0.02	8.32	0.63	0.11	0.54	0.01	102.03	0.40
AP2_00_10_P5B	54.23	30.08	4.65	0.03	12.16	0.30	0.08	0.51	0.00	102.03	0.58
AP2_00_10_P5C	58.49	26.69	6.47	0.03	8.61	0.61	0.06	0.44	0.07	101.47	0.41
AP2_00_10_P5D	60.72	25.47	7.00	0.03	7.29	0.83	0.09	0.49	0.03	101.93	0.35
AP2_00_10_P5E	60.48	25.65	6.97	0.02	7.61	0.77	0.08	0.47	0.04	102.07	0.36
AP2_00_10_P5F	58.26	27.08	6.46	0.02	9.02	0.56	0.04	0.46	0.05	101.95	0.42
AP2_00_10_P5G	59.37	25.76	6.70	0.03	7.69	0.73	0.02	0.48	0.01	100.77	0.37
AP2_00_10_P6A	59.75	25.96	6.96	0.03	7.57	0.72	0.09	0.46	0.00	101.54	0.36
AP2_00_10_P6B	53.28	30.77	4.07	0.02	12.97	0.25	0.02	0.47	0.04	101.89	0.63
AP2_00_10_P6C	60.37	25.98	7.09	0.03	7.75	0.57	0.08	0.43	0.05	102.34	0.36
AP2_00_10_P7A	54.75	29.60	5.05	0.03	11.63	0.15	0.03	0.57	0.00	101.80	0.56
AP2_00_10_P7B	56.77	28.26	5.74	0.01	10.16	0.18	0.02	0.31	0.01	101.46	0.49

AP2_00_10_P7C	56.77	28.25	5.95	0.01	10.04	0.22	0.00	0.31	0.05	101.61	0.48
AP2_00_10_P7D	56.15	28.82	5.28	0.06	10.96	0.24	0.04	0.65	0.07	102.28	0.53
AP2_00_10_P8A	60.02	25.81	6.92	0.03	7.58	0.69	0.02	0.46	0.03	101.57	0.36
AP2_00_10_P8B	57.43	27.48	6.04	0.03	9.32	0.48	0.07	0.50	0.04	101.38	0.45
AP2_00_10_P8C	59.12	26.56	6.60	0.03	8.53	0.57	0.04	0.45	0.04	101.93	0.40
AP2_00_10_P8D	56.29	28.59	5.55	0.02	10.59	0.39	0.06	0.45	0.06	102.00	0.50
AP2_00_10_P9A	58.66	26.65	6.44	0.02	8.46	0.62	0.07	0.46	0.00	101.38	0.41
AP2_00_10_P9B	58.21	26.87	6.27	0.03	8.80	0.58	0.05	0.48	0.00	101.28	0.42
AP2_00_10_P9C	59.57	25.99	6.78	0.03	7.71	0.72	0.07	0.52	0.03	101.43	0.37
AP2_00_10_P10A	55.90	28.57	5.47	0.04	10.56	0.30	0.04	0.46	0.01	101.35	0.51
AP2_00_10_P10B	58.80	26.73	6.59	0.04	8.55	0.45	0.02	0.49	0.02	101.70	0.41
AP2_00_10_P10C	56.04	28.49	5.37	0.04	10.58	0.30	0.06	0.51	0.07	101.45	0.51
AP2_00_10_P11A	58.79	26.56	6.53	0.03	8.33	0.69	0.08	0.53	0.03	101.55	0.40
AP2_00_10_P11B	58.48	26.85	6.40	0.02	8.77	0.61	0.05	0.52	0.04	101.73	0.42
AP2_00_10_P11C	59.44	25.59	6.84	0.03	7.52	0.70	0.07	0.50	0.00	100.69	0.36
AP2_00_10_P12A	58.91	26.35	6.64	0.03	8.20	0.65	0.06	0.49	0.01	101.34	0.39
AP2_00_10_P12B	57.78	27.01	6.34	0.03	8.88	0.57	0.06	0.42	0.03	101.10	0.42
AP2_00_10_P12C	59.00	26.80	6.61	0.02	8.44	0.64	0.09	0.47	0.05	102.12	0.40
AP2_00_10_P12D	59.12	26.34	6.80	0.01	8.22	0.64	0.06	0.51	0.03	101.73	0.39
AP2_00_10_P13A	56.83	28.29	5.76	0.04	10.04	0.34	0.06	0.48	0.01	101.84	0.48
AP2_00_10_P13B	59.99	26.28	6.80	0.03	7.98	0.43	0.02	0.31	0.00	101.84	0.38
AP2_00_10_P13C	56.82	28.14	5.70	0.03	10.27	0.35	0.04	0.57	0.07	101.99	0.49
AP2_00_10_P13D	55.27	29.13	5.06	0.05	11.34	0.27	0.03	0.68	0.04	101.86	0.54
AP2_00_10_P14A	50.36	32.98	2.89	0.02	14.68	0.13	0.01	0.57	0.02	101.66	0.73
AP2_00_10_P14B	43.96	24.14	3.96	0.03	13.08	0.16	0.00	0.58	0.00	85.89	0.64
AP2_00_10_P14C	57.29	27.59	6.08	0.02	9.59	0.33	0.04	0.50	0.03	101.47	0.46
AP2_00_10_P15A	60.39	26.07	7.03	0.02	7.85	0.59	0.05	0.41	0.00	102.40	0.37
AP2_00_10_P15B	59.90	26.00	6.72	0.02	7.84	0.65	0.06	0.50	0.00	101.68	0.38
AP2_00_10_P15C	55.94	28.49	5.48	0.03	10.77	0.35	0.03	0.45	0.01	101.55	0.51

AP2_00_10_P15D	60.13	26.05	6.97	0.03	7.77	0.52	0.04	0.47	0.06	102.04	0.37
AP2_00_10_P15E	55.22	28.89	5.26	0.07	11.09	0.26	0.02	0.82	0.03	101.65	0.53
AP2_00_10_P16A	58.05	26.83	6.68	0.03	8.65	0.44	0.06	0.45	0.02	101.22	0.41
AP2_00_10_P16B	59.15	26.68	6.34	0.04	8.78	0.50	0.06	0.68	0.05	102.27	0.42
AP2_00_10_P16C	54.69	29.55	4.87	0.03	11.67	0.25	0.08	0.51	0.06	101.71	0.56
AP2_00_10_P16D	59.78	26.14	6.88	0.03	7.94	0.52	0.07	0.47	0.03	101.84	0.38
AP2_00_10_P16E	57.41	28.05	5.78	0.03	10.05	0.31	0.04	0.46	0.04	102.16	0.48
AP2_00_10_P17A	46.80	35.07	1.27	0.03	17.77	0.03	0.03	0.64	0.00	101.64	0.88
AP2_00_10_P17B	53.46	30.83	4.20	0.02	12.90	0.21	0.04	0.59	0.01	102.25	0.62
AP2_00_10_P17C	61.16	25.32	7.29	0.03	7.03	0.71	0.03	0.36	0.04	101.97	0.33
AP2_00_10_P18A	60.37	25.35	7.10	0.02	7.11	0.81	0.10	0.46	0.01	101.32	0.34
AP2_00_10_P18B	59.43	26.39	6.72	0.02	8.21	0.66	0.07	0.50	0.05	102.05	0.39
AP2_00_10_P18C	60.60	25.72	7.27	0.02	7.19	0.81	0.06	0.43	0.00	102.10	0.34
AP2_00_10_P18D	58.90	26.77	6.49	0.02	8.59	0.61	0.07	0.47	0.04	101.95	0.41
AP2_00_10_P19A	56.82	28.56	5.47	0.04	10.61	0.20	0.00	0.57	0.02	102.30	0.51
AP2_00_10_P19B	52.26	30.85	3.79	0.06	13.58	0.13	0.02	0.61	0.03	101.32	0.66
AP2_00_10_P19C	52.42	31.11	3.79	0.04	13.58	0.14	0.02	0.60	0.02	101.72	0.66
AP2_00_10_P19D	57.96	27.54	6.17	0.01	9.27	0.36	0.02	0.31	0.02	101.66	0.44
AP2_00_10_P19E	59.79	27.28	6.37	0.01	8.67	0.45	0.04	0.38	0.00	102.97	0.42
AP2_00_10_P20A	59.99	25.29	7.04	0.02	7.24	0.79	0.09	0.52	0.08	101.06	0.35
AP2_00_10_P20B	58.77	26.59	6.39	0.03	8.72	0.53	0.05	0.49	0.06	101.64	0.42
AP2_00_10_P21A	59.12	26.19	6.73	0.02	8.00	0.68	0.09	0.49	0.00	101.32	0.38
AP2_00_10_P21B	55.28	29.11	5.22	0.03	11.02	0.33	0.03	0.48	0.06	101.55	0.53
AP2_00_10_P21C	59.86	25.92	6.84	0.03	7.78	0.60	0.05	0.47	0.03	101.58	0.37
AP2_00_10_P21D	57.28	25.54	6.21	0.06	8.13	0.56	0.07	0.73	0.08	98.65	0.41
AP2_00_10_P22A	60.01	26.04	6.82	0.03	7.89	0.69	0.08	0.49	0.00	102.04	0.37
AP2_00_10_P22B	56.68	28.68	5.29	0.03	10.45	0.38	0.04	0.50	0.04	102.09	0.51
AP2_00_10_P22C	60.30	25.99	6.79	0.03	7.68	0.68	0.03	0.45	0.05	102.00	0.37
AP2_00_10_P22D	60.34	25.86	6.86	0.03	7.54	0.65	0.06	0.49	0.03	101.85	0.36

AP2_00_10_P22E	59.52	26.71	6.45	0.02	8.68	0.55	0.07	0.50	0.00	102.51	0.41
AP2_00_10_P23A	58.52	26.98	6.27	0.03	8.90	0.49	0.07	0.49	0.06	101.80	0.43
AP2_00_10_P23B	59.47	26.29	6.70	0.03	8.00	0.49	0.05	0.53	0.05	101.62	0.39
AP2_00_10_P23C	56.47	28.36	5.33	0.06	10.61	0.34	0.04	0.84	0.01	102.04	0.51
AP2_00_10_P24A	55.15	29.40	5.04	0.03	11.32	0.28	0.00	0.55	0.04	101.81	0.55
AP2_00_10_P24B	57.93	27.41	6.05	0.03	9.33	0.47	0.05	0.58	0.00	101.84	0.45
AP2_00_10_P25A	52.83	30.64	3.81	0.05	13.12	0.19	0.01	0.67	0.04	101.36	0.65
AP2_00_10_P25B	57.67	26.90	6.23	0.04	8.98	0.49	0.06	0.62	0.11	101.10	0.43
AP2_00_10_P25C	55.33	28.55	5.30	0.03	10.65	0.37	0.03	0.66	0.01	100.93	0.51
AP2_00_10_P25D	54.66	29.58	4.91	0.05	11.73	0.30	0.04	0.75	0.03	102.05	0.56
AP2_00_42_P1A	52.59	2.17	0.37	15.41	20.43	0.00	0.03	11.50	0.59	103.09	0.97
AP2_00_42_P1B	50.92	2.94	0.30	15.58	19.07	0.00	0.04	12.70	0.96	102.49	0.97
AP2_00_42_P1C	50.92	3.52	0.37	15.29	20.00	0.00	0.03	11.28	0.89	102.29	0.97
AP2_00_42_P1D	51.35	2.94	0.37	15.54	19.66	0.00	0.02	11.73	0.88	102.49	0.97
AP2_00_42_P2A	39.53	0.02	0.03	42.96	0.13	0.00	0.01	24.54	0.05	107.27	0.68
AP2_00_42_P2B	38.85	0.00	0.00	40.49	0.13	0.01	0.00	28.11	0.02	107.61	0.95
AP2_00_42_P2C	37.83	0.00	0.01	36.82	0.14	0.01	0.00	33.40	0.00	108.21	0.87
AP2_00_42_P2D	53.16	1.20	0.02	24.99	2.63	0.01	0.02	22.46	0.52	105.02	0.98
AP2_00_42_P3A	53.86	28.64	4.82	0.08	11.55	0.27	0.01	0.78	0.04	100.04	0.56
AP2_00_42_P3B	56.32	27.16	5.74	0.06	10.01	0.34	0.03	0.71	0.07	100.43	0.48
AP2_00_42_P3C	54.16	28.73	4.80	0.08	11.43	0.24	0.00	0.69	0.04	100.16	0.56
AP2_00_42_P3D	55.10	27.83	5.38	0.06	10.57	0.30	0.05	0.72	0.00	100.01	0.51
AP2_00_42_P3F	53.29	29.51	4.40	0.09	12.29	0.22	0.04	0.94	0.07	100.85	0.60
AP2_00_42_P4A	53.63	29.29	4.64	0.05	11.85	0.22	0.02	0.72	0.09	100.51	0.58
AP2_00_42_P4B	53.12	25.12	4.90	0.62	9.13	0.40	0.00	0.91	0.05	94.25	0.49
AP2_00_42_P4C	53.93	28.94	4.86	0.07	11.75	0.23	0.02	0.75	0.07	100.61	0.56
AP2_00_42_P4D	54.96	28.33	5.11	0.06	11.08	0.29	0.01	0.73	0.08	100.65	0.54
AP2_00_42_P4F	53.94	29.23	4.67	0.07	11.99	0.24	0.06	0.77	0.03	101.00	0.58
AP2_00_42_P4G	55.36	28.44	5.35	0.07	10.87	0.29	0.02	0.78	0.05	101.23	0.52

AP2_00_42_P4H	54.73	28.17	5.00	0.10	11.08	0.28	0.06	0.90	0.09	100.41	0.54
AP2_00_42_P4I	53.24	29.55	4.24	0.10	12.48	0.21	0.06	0.96	0.04	100.89	0.61
AP2_00_42_P5A	51.68	30.61	3.60	0.05	13.54	0.16	0.03	0.83	0.04	100.53	0.67
AP2_00_42_P5B	55.61	27.99	5.34	0.06	10.43	0.32	0.05	0.74	0.03	100.55	0.51
AP2_00_42_P5C	54.88	28.17	5.28	0.12	11.00	0.30	0.02	0.98	0.03	100.77	0.53
AP2_00_42_P6A	53.98	28.99	4.67	0.07	11.70	0.22	0.06	0.73	0.05	100.45	0.57
AP2_00_42_P6B	55.72	27.44	5.48	0.09	10.20	0.33	0.02	0.80	0.01	100.09	0.50
AP2_00_42_P6C	55.06	28.91	4.91	0.07	11.38	0.27	0.04	0.78	0.03	101.44	0.55
AP2_00_42_P6D	56.06	27.72	5.54	0.06	10.32	0.34	0.02	0.73	0.05	100.84	0.50
AP2_00_42_P6E	53.34	29.30	4.38	0.06	12.25	0.25	0.02	0.99	0.00	100.59	0.60
AP2_00_42_P7A	51.88	30.63	3.68	0.06	13.58	0.16	0.00	0.75	0.00	100.73	0.66
AP2_00_42_P7B	52.41	30.30	3.93	0.06	13.17	0.18	0.02	0.77	0.09	100.92	0.64
AP2_00_42_P7C	55.15	28.60	4.94	0.08	11.14	0.25	0.01	0.74	0.07	100.97	0.55
AP2_00_42_P7D	52.93	29.82	4.28	0.07	12.61	0.20	0.00	0.75	0.02	100.67	0.61
AP2_00_42_P7E	55.50	28.11	5.22	0.11	11.03	0.29	0.06	0.94	0.07	101.33	0.53
AP2_00_42_P7F	54.45	28.85	4.75	0.11	11.91	0.26	0.05	1.05	0.07	101.51	0.57
AP2_00_42_P8A	55.22	28.21	5.23	0.07	10.76	0.28	0.06	0.74	0.03	100.60	0.52
AP2_00_42_P8B	55.58	28.06	5.21	0.07	10.85	0.29	0.06	0.78	0.03	100.93	0.53
AP2_00_42_P8C	54.19	28.86	4.64	0.05	11.89	0.24	0.03	0.72	0.09	100.70	0.58
AP2_00_42_P8D	52.50	30.36	3.81	0.06	13.30	0.16	0.03	0.79	0.06	101.06	0.65
AP2_00_42_P8E	57.51	26.88	6.11	0.06	9.22	0.44	0.05	0.77	0.08	101.11	0.44
AP2_00_42_P8F	54.28	28.89	4.89	0.05	11.44	0.32	0.03	1.12	0.05	101.07	0.55
AP2_00_42_P9A	53.74	29.40	4.59	0.07	12.03	0.24	0.02	0.74	0.03	100.85	0.58
AP2_00_42_P9B	56.10	27.97	5.58	0.08	10.30	0.35	0.04	0.77	0.09	101.26	0.49
AP2_00_42_P9C	53.96	29.35	4.55	0.07	11.88	0.24	0.05	0.76	0.09	100.93	0.58
AP2_00_42_P9D	57.33	26.96	6.02	0.07	9.45	0.42	0.04	0.70	0.09	101.09	0.45
AP2_00_42_P9E	55.16	28.73	4.97	0.07	11.32	0.31	0.00	0.92	0.01	101.49	0.55
AP2_00_42_P10A	54.02	29.37	4.54	0.05	12.09	0.20	0.04	0.72	0.07	101.11	0.59
AP2_00_42_P10B	56.84	27.53	5.82	0.04	9.81	0.34	0.01	0.57	0.01	100.97	0.47

AP2_00_42_P10C	54.96	28.45	5.11	0.09	11.30	0.36	0.05	1.32	0.08	101.71	0.54
AP2_00_42_P11A	55.35	28.81	5.09	0.04	11.28	0.27	0.01	0.53	0.06	101.42	0.54
AP2_00_42_P11B	56.78	27.93	5.75	0.04	10.02	0.32	0.01	0.54	0.02	101.40	0.48
AP2_00_42_P11C	53.93	29.18	4.46	0.10	12.16	0.24	0.02	1.02	0.07	101.18	0.59
AP2_00_42_P12A	51.04	31.32	3.22	0.04	14.28	0.14	0.02	0.71	0.05	100.83	0.70
AP2_00_42_P12B	56.44	27.97	5.65	0.07	10.33	0.35	0.06	0.78	0.05	101.68	0.49
AP2_00_42_P12C	53.60	29.55	4.21	0.09	12.60	0.22	0.02	0.96	0.03	101.26	0.62
AP2_00_42_P13A	55.28	28.90	5.11	0.07	11.25	0.26	0.02	0.68	0.03	101.59	0.54
AP2_00_42_P13B	54.33	29.46	4.40	0.07	11.99	0.23	0.03	0.75	0.01	101.27	0.59
AP2_00_42_P13C	57.95	27.07	6.04	0.08	9.23	0.43	0.08	0.74	0.05	101.66	0.45
AP2_00_42_P13D	54.45	29.22	4.66	0.11	11.78	0.28	0.00	0.98	0.04	101.51	0.57
AP2_00_42_P14A	54.67	29.09	4.75	0.07	11.70	0.24	0.05	0.78	0.03	101.38	0.57
AP2_00_42_P14B	57.65	27.33	5.89	0.07	9.54	0.37	0.04	0.70	0.06	101.64	0.46
AP2_00_42_P14C	53.32	29.56	4.39	0.07	12.21	0.21	0.01	0.74	0.04	100.54	0.60
AP2_00_42_P14D	57.03	27.23	5.76	0.07	9.66	0.35	0.07	0.73	0.04	100.94	0.47
AP2_00_42_P14E	55.05	28.88	4.91	0.08	11.74	0.26	0.04	1.02	0.06	102.03	0.56
AP2_00_42_P15A	49.45	32.80	2.40	0.05	15.68	0.08	0.02	0.73	0.01	101.23	0.78
AP2_00_42_P15B	55.50	28.73	5.07	0.07	11.23	0.27	0.02	0.74	0.01	101.63	0.54
AP2_00_42_P15C	53.94	29.49	4.45	0.08	12.28	0.23	0.02	0.83	0.07	101.39	0.60
AP2_00_42_P16A	54.00	29.50	4.42	0.06	12.08	0.24	0.04	0.76	0.01	101.11	0.59
AP2_00_42_P16B	53.15	29.92	4.09	0.07	12.72	0.20	0.00	0.73	0.01	100.88	0.62
AP2_00_42_P16C	56.73	27.92	5.59	0.08	10.30	0.33	0.03	0.79	0.05	101.82	0.49
AP2_00_42_P16D	53.87	29.76	4.35	0.07	12.42	0.24	0.04	0.99	0.07	101.83	0.60
AP2_00_42_P17A	48.32	33.57	1.98	0.03	16.51	0.07	0.00	0.63	0.09	101.20	0.82
AP2_00_42_P17B	56.68	27.96	5.44	0.04	10.44	0.33	0.04	0.70	0.01	101.63	0.50
AP2_00_42_P17C	58.24	27.14	6.12	0.06	9.16	0.41	0.05	0.69	0.04	101.91	0.44
AP2_00_42_P17D	54.64	29.00	4.78	0.07	11.84	0.28	0.00	0.97	0.04	101.61	0.57
AP2_00_42_P18A	47.64	34.05	1.69	0.03	17.06	0.07	0.00	0.65	0.06	101.24	0.84
AP2_00_42_P18B	55.83	28.43	5.20	0.05	10.77	0.32	0.03	0.68	0.04	101.35	0.52

AP2_00_42_P18C	55.48	28.54	4.99	0.07	11.12	0.31	0.03	0.99	0.05	101.58	0.54
AP2_00_42_P18D	60.90	24.69	7.42	0.03	6.76	0.73	0.12	0.88	0.09	101.63	0.32
AP2_00_42_P19A	48.27	33.67	1.82	0.04	16.74	0.06	0.00	0.73	0.00	101.33	0.83
AP2_00_42_P19B	55.88	28.78	5.16	0.06	10.93	0.28	0.02	0.67	0.07	101.85	0.53
AP2_00_42_P19C	57.70	26.92	6.08	0.06	9.13	0.45	0.03	0.73	0.09	101.18	0.44
AP2_00_42_P19D	55.37	28.52	5.02	0.08	11.09	0.30	0.04	1.13	0.06	101.60	0.54
AP2_00_42_P20A	52.84	28.17	4.47	0.06	11.18	0.30	0.03	0.75	0.01	97.81	0.57
AP2_00_42_P20B	56.63	28.00	5.56	0.07	10.42	0.33	0.03	0.70	0.05	101.78	0.50
AP2_00_42_P20C	54.14	29.83	4.39	0.08	12.42	0.22	0.00	0.96	0.00	102.05	0.60
AP2_00_42_P21A	54.07	29.69	4.41	0.07	12.17	0.23	0.05	0.79	0.04	101.52	0.60
AP2_00_42_P21B	56.17	28.06	5.38	0.07	10.55	0.30	0.05	0.77	0.06	101.40	0.51
AP2_00_42_P21C	57.37	27.32	5.79	0.07	9.86	0.36	0.00	0.79	0.04	101.59	0.47
AP2_00_42_P21D	55.57	28.35	5.28	0.09	10.92	0.34	0.04	1.17	0.08	101.83	0.52
AP2_00_42_P22A	56.94	27.83	5.70	0.09	10.03	0.32	0.04	0.88	0.09	101.90	0.48
AP2_00_42_P22B	56.38	28.65	5.35	0.08	10.86	0.31	0.02	1.10	0.07	102.81	0.52
AP2_00_42_P23A	54.53	29.79	4.51	0.07	12.23	0.23	0.02	0.76	0.08	102.21	0.59
AP2_00_42_P23B	51.79	26.42	5.48	0.08	10.58	0.33	0.05	0.96	0.09	95.78	0.51
AP2_00_42_P23C	27.31	16.39	4.41	0.06	11.95	0.24	0.04	1.07	0.04	61.51	0.59
AP2_00_42_P24A	0.00	0.01	2.17	0.03	10.38	0.22	0.05	0.64	0.05	13.54	0.71
AP2_00_42_P24B	49.36	28.46	4.31	0.06	12.58	0.23	0.02	1.05	0.07	96.13	0.61
AP2_00_42_P25A	54.95	29.44	4.94	0.07	11.80	0.22	0.03	0.71	0.05	102.21	0.56
AP2_00_42_P25B	54.34	29.31	4.66	0.07	11.97	0.26	0.04	0.94	0.02	101.60	0.58
AP2_00_48_P1A	51.30	31.73	3.10	0.06	14.47	0.09	0.00	0.87	0.02	101.63	0.72
AP2_00_48_P1B	54.09	29.32	4.68	0.11	12.13	0.15	0.00	0.91	0.12	101.51	0.58
AP2_00_48_P1C	50.33	32.12	2.85	0.05	15.14	0.12	0.02	1.00	0.06	101.68	0.74
AP2_00_48_P2A	51.56	31.35	3.43	0.07	14.00	0.17	0.02	0.83	0.00	101.43	0.69
AP2_00_48_P2B	56.99	27.57	5.75	0.11	9.90	0.33	0.05	0.98	0.06	101.75	0.48
AP2_00_48_P3A	52.11	31.05	3.62	0.09	13.77	0.13	0.00	0.87	0.04	101.67	0.67
AP2_00_48_P3B	50.03	32.32	2.80	0.09	15.23	0.08	0.00	0.84	0.05	101.43	0.75

AP2_00_48_P4A	54.14	29.91	4.47	0.06	12.17	0.20	0.04	0.54	0.05	101.58	0.59
AP2_00_48_P4B	53.14	29.25	4.41	0.07	11.96	0.22	0.03	0.87	0.07	100.02	0.59
AP2_00_48_P4C	57.26	27.60	5.83	0.07	9.89	0.37	0.01	1.35	0.11	102.48	0.47
AP2_00_48_P5A	50.66	32.19	2.98	0.09	14.94	0.13	0.01	0.77	0.00	101.77	0.73
AP2_00_48_P5B	54.03	29.70	4.44	0.09	12.30	0.19	0.00	0.83	0.05	101.61	0.60
AP2_00_48_P5C	50.18	32.36	2.73	0.07	15.31	0.09	0.00	0.85	0.05	101.63	0.75
AP2_00_48_P6A	55.69	28.68	5.40	0.08	10.93	0.25	0.07	0.69	0.04	101.82	0.52
AP2_00_48_P6B	55.11	28.86	4.95	0.08	11.44	0.26	0.07	1.16	0.08	101.99	0.55
AP2_00_48_P7A	51.96	30.99	3.65	0.08	13.66	0.12	0.01	0.80	0.04	101.31	0.67
AP2_00_48_P7B	52.71	30.75	3.83	0.08	13.19	0.14	0.03	0.78	0.09	101.61	0.65
AP2_00_48_P7C	53.26	30.30	4.17	0.10	12.90	0.13	0.00	0.91	0.06	101.83	0.63
AP2_00_48_P7D	50.34	32.51	2.77	0.07	15.31	0.09	0.01	0.88	0.01	101.99	0.75
AP2_00_48_P8A	49.93	32.96	2.53	0.05	15.67	0.11	0.03	0.84	0.03	102.14	0.77
AP2_00_48_P8B	52.12	30.91	3.75	0.03	13.48	0.19	0.03	0.85	0.03	101.40	0.66
AP2_00_48_P8C	49.55	32.87	2.36	0.06	15.71	0.10	0.00	0.97	0.03	101.65	0.78
AP2_00_48_P9A	50.15	32.58	2.79	0.06	15.29	0.08	0.00	0.82	0.00	101.77	0.75
AP2_00_48_P9B	55.34	28.84	5.09	0.08	11.44	0.21	0.00	0.77	0.04	101.80	0.55
AP2_00_48_P9C	50.11	32.28	2.88	0.03	14.98	0.12	0.02	0.96	0.02	101.41	0.74
AP2_00_48_P10A	50.54	32.00	3.10	0.04	14.77	0.13	0.00	0.87	0.04	101.49	0.72
AP2_00_48_P10B	50.09	32.27	2.75	0.04	15.22	0.12	0.00	0.85	0.02	101.36	0.75
AP2_00_48_P10C	50.14	32.31	2.93	0.06	15.20	0.09	0.05	0.90	0.03	101.71	0.74
AP2_00_48_P11A	49.93	32.63	2.70	0.06	15.38	0.13	0.01	0.84	0.04	101.71	0.75
AP2_00_48_P11B	58.41	14.83	4.19	8.80	5.72	0.96	0.07	13.34	0.95	107.26	0.40
AP2_00_48_P11C	50.25	32.62	2.85	0.08	15.21	0.09	0.00	0.83	0.06	101.98	0.74
AP2_00_48_P12A	52.44	30.96	3.71	0.05	13.68	0.18	0.02	0.88	0.05	101.97	0.66
AP2_00_48_P12B	51.05	32.14	2.96	0.06	14.69	0.12	0.01	0.79	0.02	101.84	0.73
AP2_00_48_P12C	50.20	32.39	2.82	0.09	15.20	0.09	0.00	0.85	0.06	101.69	0.74
AP2_00_48_P13A	48.91	33.39	2.21	0.05	16.17	0.07	0.04	1.02	0.04	101.90	0.80
AP2_00_48_P13B	48.91	33.03	2.37	0.03	15.84	0.08	0.02	0.92	0.02	101.21	0.78

AP2_00_48_P13C	49.26	33.01	2.36	0.05	15.82	0.09	0.02	0.85	0.02	101.47	0.78
AP2_00_48_P14A	50.45	32.40	2.86	0.05	15.02	0.12	0.01	0.92	0.07	101.90	0.74
AP2_00_48_P14B	49.36	33.21	2.31	0.03	15.90	0.09	0.02	0.93	0.02	101.88	0.79
AP2_00_48_P14C	50.85	32.01	2.99	0.07	14.93	0.10	0.02	0.86	0.05	101.88	0.73
AP2_00_48_P15A	50.93	31.59	3.07	0.06	14.51	0.16	0.01	0.84	0.00	101.17	0.72
AP2_00_48_P15B	51.44	31.62	3.25	0.06	14.37	0.17	0.00	0.85	0.05	101.81	0.70
AP2_00_48_P15C	53.54	29.96	4.24	0.08	12.58	0.21	0.00	0.95	0.04	101.60	0.61
AP2_00_48_P15D	57.43	27.39	5.90	0.09	9.77	0.34	0.04	1.00	0.11	102.06	0.47
AP2_00_48_P15E	57.86	26.86	5.83	0.11	9.28	0.37	0.01	1.75	0.17	102.23	0.46
AP2_00_48_P16A	51.03	31.69	3.34	0.06	14.24	0.17	0.02	0.75	0.00	101.29	0.69
AP2_00_48_P16B	54.98	27.63	4.90	0.54	10.91	0.36	0.02	1.90	0.25	101.48	0.54
AP2_00_48_P16C	54.67	29.47	4.70	0.10	11.99	0.18	0.02	0.93	0.05	102.10	0.58
AP2_00_48_P16D	50.32	32.43	2.92	0.08	15.05	0.09	0.01	0.92	0.00	101.81	0.74
AP2_00_48_P17A	51.31	31.66	3.35	0.06	14.41	0.15	0.01	0.69	0.01	101.65	0.70
AP2_00_48_P17B	54.07	29.80	4.51	0.07	12.30	0.18	0.03	0.74	0.04	101.73	0.60
AP2_00_48_P17C	50.27	32.26	2.91	0.07	15.10	0.08	0.00	0.75	0.01	101.45	0.74
AP2_00_48_P17D	53.89	29.88	4.30	0.09	12.61	0.16	0.00	0.89	0.07	101.90	0.61
AP2_00_48_P17E	50.19	32.68	2.80	0.07	15.27	0.09	0.00	0.86	0.03	101.99	0.75
AP2_00_48_P18A	53.81	30.03	4.21	0.08	12.55	0.21	0.01	0.85	0.08	101.83	0.61
AP2_00_48_P18B	51.99	31.13	3.61	0.07	13.74	0.14	0.03	0.87	0.04	101.61	0.67
AP2_00_48_P19A	54.98	29.09	4.99	0.10	11.55	0.20	0.00	0.88	0.09	101.89	0.55
AP2_00_48_P19B	53.13	30.77	3.96	0.09	13.12	0.12	0.05	0.85	0.05	102.13	0.64
AP2_00_48_P19C	51.97	31.66	3.36	0.06	14.01	0.13	0.00	0.91	0.01	102.10	0.69
AP2_00_48_P20A	52.03	31.52	3.41	0.07	14.14	0.12	0.03	0.84	0.03	102.19	0.69
AP2_00_48_P20B	50.23	32.86	2.65	0.08	15.33	0.08	0.00	0.87	0.01	102.10	0.76
AP2_00_48_P21A	59.98	25.36	6.41	0.13	7.74	0.82	0.00	1.05	0.05	101.52	0.38
AP2_00_48_P21B	49.93	32.48	2.60	0.21	15.45	0.14	0.02	1.33	0.07	102.23	0.76
AP2_00_48_P21C	55.96	28.37	5.44	0.05	10.73	0.32	0.02	1.15	0.14	102.17	0.51
AP2_00_48_P22A	51.20	31.80	3.15	0.05	14.51	0.13	0.00	0.89	0.05	101.77	0.71

AP2_00_48_P22B	50.10	32.80	2.52	0.05	15.40	0.09	0.00	0.91	0.03	101.89	0.77
AP2_00_48_P22C	50.08	32.68	2.67	0.04	15.23	0.12	0.02	0.99	0.06	101.88	0.75
AP2_00_48_P23A	52.97	30.41	3.97	0.11	13.25	0.16	0.02	0.86	0.02	101.77	0.64
AP2_00_48_P23B	54.18	29.77	4.36	0.09	12.33	0.21	0.01	0.86	0.07	101.88	0.60
AP2_00_48_P23C	53.00	30.49	4.02	0.10	13.14	0.16	0.01	0.89	0.01	101.80	0.64
AP2_00_48_P23D	54.14	30.16	4.34	0.11	12.69	0.17	0.02	0.92	0.05	102.59	0.61
AP2_00_48_P24A	53.75	29.57	4.19	0.13	12.58	0.25	0.01	1.04	0.08	101.59	0.62
AP2_00_48_P24B	53.58	30.36	4.28	0.07	12.83	0.20	0.00	0.83	0.13	102.27	0.62
AP2_00_48_P24C	53.03	30.74	3.74	0.08	13.32	0.15	0.02	0.96	0.09	102.12	0.66
AP2_00_48_P25A	53.38	29.55	3.72	0.24	12.56	0.26	0.03	1.30	0.11	101.14	0.64
AP2_00_48_P25B	51.09	32.17	3.08	0.07	14.74	0.12	0.00	0.84	0.06	102.17	0.72
AP2_00_48_P26A	55.17	29.16	4.75	0.08	11.84	0.22	0.03	0.84	0.08	102.16	0.57
AP2_00_48_P26B	54.58	29.68	4.40	0.08	12.12	0.23	0.01	0.94	0.08	102.11	0.60
AP2_00_84_P1A	56.14	28.86	5.41	0.05	10.79	0.37	0.02	0.59	0.05	102.28	0.51
AP2_00_84_P1B	57.30	28.05	6.01	0.04	9.73	0.46	0.05	0.62	0.04	102.30	0.46
AP2_00_84_P1C	60.19	25.64	7.28	0.05	7.32	0.73	0.08	0.63	0.01	101.93	0.34
AP2_00_84_P1D	54.29	29.90	4.69	0.08	12.33	0.27	0.03	0.80	0.10	102.48	0.58
AP2_00_84_P2A	61.05	26.03	7.22	0.02	7.16	0.78	0.05	0.37	0.04	102.71	0.34
AP2_00_84_P2B	59.37	27.14	6.57	0.01	8.57	0.59	0.07	0.33	0.05	102.70	0.40
AP2_00_84_P2C	62.35	25.18	7.45	0.02	6.54	0.98	0.09	0.43	0.01	103.04	0.31
AP2_00_84_P3A	61.37	25.62	7.41	0.01	6.82	0.87	0.11	0.40	0.04	102.64	0.32
AP2_00_84_P3B	59.72	26.69	6.75	0.02	8.30	0.63	0.04	0.37	0.00	102.52	0.39
AP2_00_84_P3C	63.11	24.56	7.67	0.01	5.77	1.24	0.07	0.42	0.05	102.88	0.27
AP2_00_84_P4A	57.88	28.20	5.80	0.01	9.81	0.45	0.06	0.40	0.03	102.64	0.47
AP2_00_84_P4B	57.30	28.40	5.64	0.03	10.29	0.46	0.04	0.39	0.04	102.59	0.49
AP2_00_84_P4C	62.62	24.48	7.80	0.01	5.74	1.23	0.12	0.39	0.02	102.41	0.27
AP2_00_84_P5A	59.19	27.07	6.23	0.02	8.79	0.59	0.03	0.56	0.05	102.53	0.42
AP2_00_84_P5B	54.66	30.02	4.63	0.03	12.00	0.31	0.04	0.48	0.02	102.19	0.58
AP2_00_84_P5C	60.80	25.89	7.03	0.03	7.53	0.70	0.09	0.48	0.01	102.56	0.36

AP2_00_84_P6A	51.94	31.70	3.46	0.06	14.18	0.14	0.01	0.73	0.07	102.28	0.69
AP2_00_84_P6B	54.80	29.93	4.79	0.07	11.92	0.22	0.02	0.74	0.03	102.52	0.57
AP2_00_84_P6C	55.70	29.36	5.08	0.07	11.37	0.24	0.00	0.72	0.02	102.57	0.55
AP2_00_84_P6D	53.66	30.63	4.18	0.06	12.80	0.20	0.02	0.72	0.00	102.26	0.62
AP2_00_84_P7A	49.62	33.52	2.52	0.01	15.96	0.09	0.00	0.56	0.03	102.30	0.77
AP2_00_84_P7B	52.75	31.69	3.73	0.00	13.62	0.21	0.03	0.45	0.02	102.50	0.66
AP2_00_84_P7C	61.24	25.82	7.15	0.01	7.06	0.83	0.06	0.36	0.00	102.53	0.34
AP2_00_84_P8A	48.58	34.24	2.00	0.00	16.68	0.09	0.02	0.56	0.02	102.18	0.82
AP2_00_84_P8B	52.59	31.26	3.67	0.02	13.65	0.20	0.02	0.49	0.05	101.94	0.66
AP2_00_84_P8C	60.34	25.92	7.00	0.03	7.63	0.72	0.05	0.36	0.03	102.06	0.36
AP2_00_84_P9A	49.68	33.52	2.41	0.01	15.95	0.08	0.02	0.53	0.03	102.24	0.78
AP2_00_84_P9B	54.43	30.18	4.53	0.02	12.46	0.27	0.00	0.50	0.05	102.44	0.59
AP2_00_84_P9C	58.73	26.77	5.67	0.02	8.43	0.58	0.07	0.36	0.08	100.70	0.44
AP2_00_84_P10A	60.90	25.96	7.22	0.01	7.53	0.74	0.12	0.38	0.02	102.89	0.35
AP2_00_84_P10B	62.06	24.95	7.55	0.02	6.45	0.98	0.07	0.39	0.00	102.47	0.30
AP2_00_84_P11A	62.02	25.58	7.52	0.02	6.85	0.86	0.02	0.37	0.02	103.25	0.32
AP2_00_84_P11B	61.28	25.82	7.38	0.01	7.31	0.77	0.05	0.47	0.00	103.09	0.34
AP2_00_84_P11C	62.77	24.54	7.58	0.01	6.13	1.02	0.02	0.43	0.08	102.59	0.29
AP2_00_84_P11D	60.97	25.92	6.99	0.01	7.46	0.78	0.11	0.49	0.04	102.76	0.35
AP2_00_84_P11E	63.12	24.53	7.63	0.02	5.96	1.12	0.08	0.39	0.03	102.87	0.28
AP2_00_84_P12A	59.94	26.43	6.75	0.04	8.04	0.83	0.08	0.59	0.07	102.76	0.38
AP2_00_84_P12B	61.34	25.40	7.17	0.04	7.04	0.88	0.11	0.65	0.03	102.67	0.33
AP2_00_84_P13A	51.05	32.46	3.02	0.02	15.02	0.14	0.00	0.53	0.01	102.24	0.73
AP2_00_84_P13B	55.11	30.06	4.79	0.02	11.91	0.29	0.05	0.44	0.05	102.73	0.57
AP2_00_84_P13C	61.84	25.46	7.63	0.01	6.60	0.92	0.06	0.47	0.07	103.07	0.31
AP2_00_84_P13D	59.43	26.92	6.53	0.01	8.47	0.60	0.08	0.47	0.03	102.53	0.40
AP2_00_84_P13E	62.52	25.04	7.56	0.01	6.44	0.96	0.06	0.43	0.01	103.03	0.30
AP2_00_84_P13F	59.35	26.75	6.72	0.02	8.36	0.63	0.04	0.44	0.05	102.34	0.39
AP2_00_84_P13G	61.31	25.59	7.12	0.02	7.20	0.87	0.08	0.40	0.05	102.64	0.34

AP2_00_84_P13H	62.72	24.85	7.65	0.02	6.23	1.06	0.11	0.43	0.04	103.10	0.29
AP2_00_84_P14A	64.52	19.11	4.94	0.53	4.02	4.18	0.04	3.72	0.60	101.65	0.22
AP2_00_84_P14B	54.24	30.55	4.45	0.07	12.48	0.22	0.00	0.65	0.02	102.68	0.60
AP2_00_84_P15A	58.83	27.38	6.43	0.01	8.75	0.58	0.03	0.32	0.11	102.43	0.42
AP2_00_84_P15B	63.19	24.40	8.00	0.01	5.56	1.21	0.04	0.39	0.03	102.84	0.26
AP2_00_84_P15C	55.95	29.37	4.89	0.07	11.43	0.31	0.03	0.75	0.07	102.88	0.55
AP2_00_84_P16A	54.96	29.96	4.66	0.03	11.94	0.30	0.06	0.57	0.06	102.54	0.58
AP2_00_84_P16B	59.16	27.13	6.24	0.04	8.80	0.62	0.08	0.56	0.00	102.63	0.42
AP2_00_84_P17A	55.22	29.71	4.82	0.05	11.79	0.26	0.00	0.62	0.08	102.54	0.57
AP2_00_84_P17B	56.74	28.25	5.62	0.05	10.42	0.35	0.00	0.69	0.06	102.18	0.50
AP2_00_84_P17C	54.27	30.37	4.35	0.05	12.58	0.24	0.01	0.70	0.06	102.62	0.61
AP2_00_84_P18A	52.93	31.65	3.85	0.01	13.60	0.19	0.04	0.53	0.01	102.83	0.65
AP2_00_84_P18B	56.81	28.66	5.43	0.04	10.66	0.37	0.02	0.66	0.04	102.69	0.51
AP2_00_84_P18C	59.33	27.10	6.49	0.03	8.66	0.59	0.05	0.57	0.03	102.85	0.41
AP2_00_84_P19A	55.47	29.73	5.11	0.03	11.50	0.28	0.02	0.53	0.03	102.67	0.55
AP2_00_84_P19B	55.50	29.71	4.86	0.03	11.54	0.30	0.02	0.51	0.00	102.46	0.56
AP2_00_84_P19C	57.43	28.51	5.77	0.02	10.37	0.36	0.03	0.48	0.04	103.01	0.49
AP2_00_84_P19D	56.31	28.78	5.34	0.03	10.89	0.31	0.05	0.43	0.05	102.19	0.52
AP2_00_84_P19E	57.49	28.21	5.83	0.05	10.10	0.38	0.04	0.59	0.00	102.68	0.48
AP2_00_84_P20A	62.36	25.17	7.62	0.01	6.49	0.97	0.00	0.26	0.00	102.87	0.30
AP2_00_84_P20B	63.33	24.50	7.82	0.01	5.85	1.12	0.08	0.35	0.00	103.08	0.27
AP2_00_84_P20C	61.59	25.70	7.34	0.02	7.02	0.86	0.08	0.38	0.00	102.99	0.33
AP2_00_84_P21A	57.95	28.30	5.96	0.02	9.84	0.47	0.06	0.38	0.06	103.03	0.46
AP2_00_84_P21B	53.72	30.87	4.18	0.01	12.89	0.25	0.04	0.41	0.03	102.39	0.62
AP2_00_84_P21C	60.67	26.27	7.02	0.01	7.57	0.73	0.06	0.38	0.05	102.75	0.36
AP2_00_84_P21D	61.70	25.59	7.39	0.02	6.85	0.88	0.09	0.52	0.00	103.04	0.32
AP2_00_84_P22A	59.12	27.07	6.41	0.00	8.67	0.57	0.06	0.36	0.01	102.28	0.41
AP2_00_84_P22B	60.59	26.52	6.85	0.01	7.94	0.70	0.07	0.34	0.03	103.04	0.38
AP2_00_84_P22C	62.80	25.13	7.41	0.03	6.37	1.00	0.08	0.39	0.00	103.21	0.30

AP2_00_84_P23A	61.39	25.55	7.19	0.02	7.05	0.83	0.11	0.40	0.06	102.59	0.33
AP2_00_84_P23B	61.01	25.92	7.21	0.01	7.39	0.80	0.04	0.39	0.02	102.79	0.35
AP2_00_84_P23C	62.49	25.16	7.47	0.02	6.69	0.97	0.09	0.50	0.02	103.42	0.31
AP2_00_84_P24A	58.88	26.65	6.27	0.04	8.68	0.73	0.05	0.58	0.07	101.95	0.42
AP2_00_84_P24B	55.83	29.06	5.08	0.09	11.34	0.31	0.06	0.87	0.09	102.72	0.54
AP2_00_84_P25A	60.73	26.14	7.23	0.02	7.55	0.75	0.05	0.34	0.06	102.87	0.35
AP2_00_84_P25B	63.82	24.00	7.97	0.01	5.43	1.27	0.12	0.39	0.00	103.00	0.25
AP2_00_3_P1A	55.38	28.44	5.45	0.02	10.86	0.44	0.04	0.44	0.06	101.11	0.51
AP2_00_3_P1B	59.39	25.23	6.97	0.03	7.41	0.94	0.06	0.42	0.07	100.52	0.35
AP2_00_3_P1C	60.75	24.78	7.26	0.03	6.69	1.02	0.09	0.45	0.02	101.09	0.32
AP2_00_3_P1D	59.80	25.26	6.99	0.03	7.48	0.89	0.04	0.60	0.07	101.16	0.35
AP2_00_3_P2A	59.16	26.12	6.64	0.02	8.18	0.81	0.07	0.49	0.04	101.53	0.39
AP2_00_3_P2B	59.63	25.61	6.83	0.03	7.67	0.84	0.05	0.53	0.07	101.26	0.36
AP2_00_3_P3A	58.39	26.59	6.45	0.01	8.65	0.73	0.06	0.45	0.00	101.33	0.41
AP2_00_3_P3B	60.67	24.52	7.35	0.03	6.50	1.14	0.11	0.45	0.06	100.83	0.31
AP2_00_3_P3D	61.59	23.35	7.05	0.04	6.17	1.29	0.14	0.91	0.15	100.70	0.30
AP2_00_3_P4A	60.76	25.03	7.26	0.03	7.01	1.02	0.11	0.42	0.03	101.66	0.33
AP2_00_3_P4B	58.85	26.16	6.64	0.03	8.24	0.81	0.07	0.44	0.03	101.27	0.39
AP2_00_3_P4C	60.06	25.07	7.02	0.03	7.25	0.93	0.10	0.47	0.01	100.93	0.34
AP2_00_3_P4D	53.45	29.41	4.56	0.07	12.27	0.23	0.04	0.93	0.07	101.02	0.59
AP2_00_3_P5A	46.86	33.98	1.62	0.04	17.37	0.06	0.02	0.69	0.03	100.65	0.85
AP2_00_3_P5B	53.27	28.92	4.34	0.09	12.05	0.30	0.06	0.89	0.06	99.99	0.59
AP2_00_3_P6A	57.89	26.61	6.55	0.01	8.56	0.66	0.03	0.44	0.04	100.79	0.40
AP2_00_3_P6B	58.66	25.97	6.81	0.02	7.97	0.78	0.10	0.45	0.00	100.75	0.38
AP2_00_3_P6C	59.39	25.77	6.90	0.03	7.79	0.85	0.07	0.48	0.06	101.33	0.37
AP2_00_3_P7A	59.40	25.58	6.88	0.03	7.58	0.85	0.09	0.41	0.03	100.84	0.36
AP2_00_3_P7B	52.93	29.40	4.43	0.08	12.28	0.29	0.00	0.88	0.05	100.35	0.59
AP2_00_3_P8A	57.85	26.41	6.38	0.02	8.65	0.71	0.04	0.44	0.02	100.51	0.41
AP2_00_3_P8B	57.77	26.69	6.38	0.03	8.76	0.70	0.07	0.43	0.04	100.88	0.41

AP2_00_3_P8C	59.91	25.40	7.05	0.02	7.12	0.96	0.13	0.47	0.02	101.06	0.34
AP2_00_3_P9A	57.94	26.46	6.28	0.02	8.49	0.66	0.09	0.46	0.05	100.43	0.41
AP2_00_3_P9B	58.83	26.01	6.73	0.03	8.04	0.74	0.11	0.53	0.01	101.02	0.38
AP2_00_3_P9C	56.57	27.39	5.86	0.03	9.70	0.51	0.09	0.44	0.02	100.61	0.46
AP2_00_3_P9D	59.65	25.20	6.88	0.02	7.38	0.89	0.09	0.46	0.00	100.58	0.35
AP2_00_3_P9E	55.70	28.17	5.44	0.01	10.43	0.46	0.08	0.41	0.01	100.73	0.50
AP2_00_3_P9F	60.28	24.86	6.95	0.03	7.09	0.97	0.12	0.48	0.05	100.83	0.34
AP2_00_3_P10A	59.00	25.82	6.68	0.02	7.84	0.84	0.07	0.46	0.01	100.72	0.37
AP2_00_3_P10B	58.87	25.93	6.79	0.02	7.97	0.80	0.10	0.46	0.05	100.98	0.38
AP2_00_3_P11A	57.40	26.95	6.21	0.03	9.22	0.55	0.05	0.48	0.07	100.95	0.44
AP2_00_3_P11B	59.06	25.73	6.84	0.01	7.72	0.82	0.08	0.41	0.04	100.72	0.37
AP2_00_3_P11C	56.92	27.45	6.09	0.03	9.53	0.55	0.06	0.42	0.00	101.05	0.45
AP2_00_3_P11D	60.30	25.15	7.17	0.03	7.04	0.96	0.07	0.52	0.02	101.26	0.33
AP2_00_3_P12A	57.06	26.63	6.28	0.02	8.95	0.69	0.06	0.47	0.03	100.19	0.42
AP2_00_3_P12B	60.03	24.94	7.12	0.01	6.93	1.05	0.12	0.52	0.03	100.74	0.33
AP2_00_3_P13B	55.89	28.05	5.67	0.02	10.39	0.48	0.10	0.52	0.06	101.17	0.49
AP2_00_3_P13C	59.27	25.66	6.80	0.03	7.87	0.80	0.07	0.57	0.00	101.07	0.37
AP2_00_3_P13D	54.31	29.69	4.54	0.09	12.05	0.28	0.03	0.99	0.00	101.97	0.58
AP2_00_3_P14A	57.88	26.34	6.52	0.03	8.51	0.71	0.07	0.39	0.01	100.44	0.40
AP2_00_3_P14B	58.66	25.97	6.75	0.03	8.09	0.79	0.08	0.43	0.04	100.85	0.38
AP2_00_3_P14C	56.47	27.57	5.73	0.05	9.91	0.51	0.01	0.69	0.07	101.00	0.47
AP2_00_3_P15A	57.56	26.80	6.37	0.03	8.89	0.70	0.04	0.43	0.04	100.85	0.42
AP2_00_3_P15B	54.80	28.34	5.26	0.02	10.65	0.45	0.06	0.42	0.03	100.03	0.51
AP2_00_3_P15C	58.03	26.23	6.57	0.03	8.40	0.73	0.03	0.43	0.04	100.49	0.40
AP2_00_3_P15D	61.25	24.01	7.53	0.04	5.98	1.20	0.09	0.46	0.03	100.59	0.28
AP2_00_3_P15E	59.38	25.48	7.10	0.03	7.66	0.86	0.08	0.59	0.03	101.20	0.36
AP2_00_3_P16A	59.12	25.71	6.69	0.03	7.75	0.88	0.11	0.44	0.03	100.76	0.37
AP2_00_3_P16B	57.76	26.58	6.24	0.02	8.85	0.64	0.07	0.50	0.00	100.68	0.42
AP2_00_3_P17A	57.80	26.31	6.45	0.03	8.35	0.72	0.08	0.51	0.04	100.29	0.40

AP2_00_3_P17B	52.61	30.28	4.18	0.03	12.78	0.26	0.07	0.49	0.04	100.73	0.62
AP2_00_3_P17C	59.04	26.18	6.67	0.02	8.00	0.79	0.03	0.45	0.03	101.20	0.38
AP2_00_3_P17D	58.34	26.13	6.63	0.03	8.10	0.73	0.07	0.48	0.04	100.54	0.39
AP2_00_3_P18A	54.23	29.13	5.01	0.02	11.57	0.39	0.06	0.48	0.03	100.93	0.55
AP2_00_3_P18B	52.25	30.26	4.14	0.03	12.95	0.29	0.04	0.45	0.03	100.42	0.62
AP2_00_3_P18C	58.43	26.32	6.60	0.02	8.32	0.75	0.05	0.45	0.02	100.95	0.39
AP2_00_3_P18D	56.53	27.00	5.87	0.05	9.61	0.60	0.06	0.81	0.03	100.56	0.46
AP2_00_3_P19A	59.18	25.48	6.97	0.02	7.67	0.86	0.06	0.46	0.01	100.70	0.36
AP2_00_3_P19B	59.15	25.54	6.74	0.03	7.48	0.86	0.05	0.38	0.00	100.23	0.36
AP2_00_3_P19C	58.81	25.86	6.89	0.01	7.72	0.84	0.08	0.40	0.03	100.63	0.36
AP2_00_3_P19D	58.66	26.20	6.66	0.03	8.16	0.77	0.09	0.41	0.04	101.02	0.39
AP2_00_3_P19E	60.41	25.22	6.98	0.01	7.09	0.93	0.07	0.46	0.00	101.16	0.34
AP2_00_3_P19F	59.83	25.53	6.90	0.02	7.58	0.84	0.10	0.53	0.00	101.34	0.36
AP2_00_3_P20A	55.01	28.77	5.21	0.02	11.15	0.37	0.02	0.48	0.03	101.06	0.53
AP2_00_3_P20B	59.41	25.88	6.78	0.02	8.02	0.76	0.08	0.52	0.00	101.46	0.38
AP2_00_3_P20C	56.44	27.32	5.73	0.03	9.74	0.51	0.03	0.48	0.01	100.28	0.47
AP2_00_3_P20D	55.32	25.35	5.69	0.05	8.54	0.64	0.04	0.70	0.01	96.33	0.44
AP2_00_3_P21A	58.84	26.26	6.67	0.03	8.34	0.67	0.06	0.49	0.03	101.38	0.39
AP2_00_3_P21B	55.72	28.09	5.33	0.02	10.55	0.43	0.00	0.58	0.04	100.75	0.51
AP2_00_3_P21C	59.91	25.77	6.89	0.03	7.80	0.81	0.05	0.50	0.00	101.76	0.37
AP2_00_3_P22A	58.92	26.07	6.62	0.02	8.11	0.78	0.07	0.43	0.02	101.03	0.39
AP2_00_3_P22B	58.21	26.25	6.42	0.01	8.39	0.74	0.07	0.48	0.00	100.57	0.40
AP2_00_3_P22C	60.84	24.76	7.17	0.02	6.72	1.00	0.10	0.48	0.01	101.09	0.32
AP2_00_3_P23A	60.10	25.24	7.04	0.02	7.32	0.90	0.07	0.42	0.02	101.13	0.35
AP2_00_3_P23B	58.94	26.35	6.55	0.01	8.18	0.78	0.08	0.40	0.04	101.30	0.39
AP2_00_3_P23C	55.82	27.94	5.49	0.04	10.51	0.44	0.04	0.77	0.03	101.09	0.50
AP2_00_3_P24A	59.13	25.93	6.76	0.03	7.90	0.79	0.06	0.46	0.01	101.08	0.37
AP2_00_3_P24B	52.96	29.85	4.32	0.10	12.65	0.23	0.04	0.85	0.07	101.07	0.61
AP2_00_3_P25A	58.44	26.54	6.48	0.03	8.53	0.62	0.06	0.39	0.02	101.11	0.41

AP2_00_3_P25B	59.51	25.74	6.80	0.02	7.72	0.78	0.05	0.42	0.02	101.05	0.37
AP2_00_3_P25C	59.31	25.72	6.89	0.03	7.91	0.76	0.05	0.61	0.02	101.29	0.37
AP2_00_88_P1A	54.66	28.98	4.93	0.02	11.62	0.33	0.00	0.41	0.07	101.02	0.55
AP2_00_88_P1B	55.35	28.81	5.28	0.02	11.18	0.36	0.06	0.41	0.04	101.51	0.53
AP2_00_88_P1C	52.09	30.98	3.82	0.02	13.54	0.22	0.05	0.43	0.02	101.17	0.65
AP2_00_88_P1D	57.11	27.36	6.14	0.01	9.63	0.52	0.02	0.41	0.05	101.25	0.45
AP2_00_88_P1E	52.83	30.36	4.11	0.01	13.03	0.25	0.00	0.44	0.09	101.11	0.63
AP2_00_88_P1F	54.74	29.36	4.92	0.02	11.57	0.34	0.04	0.38	0.09	101.47	0.55
AP2_00_88_P1G	54.94	29.03	5.02	0.03	11.38	0.36	0.06	0.47	0.01	101.30	0.54
AP2_00_88_P1H	53.03	30.01	4.37	0.01	12.54	0.29	0.03	0.44	0.09	100.81	0.60
AP2_00_88_P1I	55.29	28.49	5.37	0.01	11.03	0.37	0.02	0.43	0.07	101.08	0.52
AP2_00_88_P1J	57.30	27.60	5.90	0.02	9.74	0.48	0.05	0.35	0.04	101.48	0.46
AP2_00_88_P1K	56.99	27.90	5.87	0.02	9.93	0.47	0.06	0.39	0.02	101.63	0.47
AP2_00_88_P1L	57.92	27.30	6.29	0.02	9.39	0.54	0.05	0.42	0.08	102.01	0.44
AP2_00_88_P1M	58.00	27.26	6.10	0.02	9.16	0.55	0.03	0.41	0.02	101.55	0.44
AP2_00_88_P1N	61.05	24.79	7.52	0.02	6.74	0.94	0.10	0.43	0.03	101.61	0.31
AP2_00_88_P1O	60.44	25.32	7.13	0.02	7.31	0.83	0.07	0.49	0.09	101.68	0.34
AP2_00_88_P1P	61.44	25.10	7.34	0.02	6.72	0.92	0.08	0.46	0.03	102.11	0.32
AP2_00_88_P1Q	57.14	27.27	5.96	0.03	9.87	0.52	0.06	0.83	0.06	101.75	0.46
AP2_00_88_P2A	54.07	29.78	4.76	0.02	12.06	0.30	0.02	0.39	0.04	101.44	0.57
AP2_00_88_P2B	56.82	27.92	5.82	0.02	9.90	0.46	0.03	0.43	0.01	101.42	0.47
AP2_00_88_P2C	55.30	28.91	5.08	0.03	11.19	0.36	0.04	0.41	0.06	101.37	0.54
AP2_00_88_P2D	60.35	25.25	7.04	0.02	7.24	0.90	0.08	0.46	0.01	101.34	0.34
AP2_00_88_P3A	56.70	28.04	5.85	0.02	10.02	0.41	0.03	0.44	0.07	101.58	0.48
AP2_00_88_P3B	50.28	31.91	3.00	0.01	14.97	0.14	0.07	0.55	0.03	100.97	0.73
AP2_00_88_P3C	51.75	31.34	3.63	0.02	13.97	0.19	0.03	0.48	0.01	101.41	0.67
AP2_00_88_P3D	51.27	31.68	3.24	0.02	14.38	0.17	0.02	0.51	0.02	101.30	0.70
AP2_00_88_P3E	52.15	30.98	3.68	0.02	13.67	0.18	0.00	0.50	0.04	101.22	0.67
AP2_00_88_P3F	52.38	30.80	3.98	0.02	13.55	0.19	0.04	0.54	0.01	101.51	0.65

AP2_00_88_P3G	54.20	29.63	4.62	0.01	12.05	0.27	0.02	0.46	0.02	101.29	0.58
AP2_00_88_P3H	53.17	30.11	4.38	0.01	12.71	0.22	0.00	0.49	0.04	101.14	0.61
AP2_00_88_P3I	52.15	30.45	3.91	0.01	13.42	0.21	0.04	0.49	0.03	100.72	0.65
AP2_00_88_P3J	52.27	31.07	3.89	0.02	13.56	0.20	0.02	0.53	0.00	101.55	0.65
AP2_00_88_P3K	52.51	30.93	3.87	0.02	13.50	0.20	0.00	0.43	0.00	101.45	0.65
AP2_00_88_P3L	54.47	29.42	4.83	0.04	11.72	0.28	0.02	0.46	0.03	101.28	0.56
AP2_00_88_P3M	56.47	28.21	5.80	0.02	10.30	0.38	0.07	0.41	0.02	101.67	0.48
AP2_00_88_P3N	54.66	29.09	4.87	0.01	11.40	0.31	0.02	0.39	0.05	100.80	0.55
AP2_00_88_P3O	56.27	28.11	5.58	0.01	10.44	0.38	0.04	0.41	0.06	101.29	0.50
AP2_00_88_P3P	54.65	28.96	4.99	0.02	11.56	0.32	0.02	0.42	0.01	100.93	0.55
AP2_00_88_P4A	58.25	26.70	6.43	0.00	8.96	0.57	0.04	0.41	0.00	101.36	0.42
AP2_00_88_P4B	56.34	28.54	5.49	0.02	10.61	0.37	0.02	0.36	0.09	101.84	0.51
AP2_00_88_P4C	59.76	25.94	6.97	0.01	7.89	0.72	0.07	0.42	0.07	101.85	0.37
AP2_00_88_P4D	54.14	29.33	4.64	0.08	11.95	0.31	0.03	0.89	0.04	101.40	0.58
AP2_00_88_P5A	54.56	28.79	5.05	0.02	11.56	0.31	0.04	0.47	0.03	100.83	0.55
AP2_00_88_P5B	59.66	25.84	6.71	0.02	7.98	0.67	0.08	0.44	0.10	101.51	0.38
AP2_00_88_P5C	60.11	25.38	7.15	0.01	7.30	0.84	0.03	0.43	0.00	101.24	0.34
AP2_00_88_P5D	60.94	25.05	7.50	0.02	6.91	0.87	0.05	0.48	0.02	101.83	0.32
AP2_00_88_P6A	59.16	26.11	6.66	0.02	8.27	0.62	0.09	0.43	0.06	101.43	0.39
AP2_00_88_P6B	59.17	26.12	6.73	0.02	8.15	0.65	0.06	0.46	0.04	101.39	0.39
AP2_00_88_P6C	62.21	24.23	7.62	0.02	5.99	1.13	0.13	0.36	0.00	101.69	0.28
AP2_00_88_P7A	55.00	29.27	5.06	0.02	11.49	0.32	0.05	0.44	0.09	101.74	0.55
AP2_00_88_P7B	58.12	27.02	6.21	0.02	9.12	0.54	0.06	0.41	0.01	101.50	0.43
AP2_00_88_P7C	61.93	24.61	7.91	0.02	6.14	0.98	0.11	0.45	0.00	102.15	0.28
AP2_00_88_P8A	59.12	25.95	6.83	0.02	8.11	0.67	0.09	0.36	0.03	101.17	0.38
AP2_00_88_P8B	58.37	27.11	6.22	0.02	9.03	0.53	0.11	0.42	0.00	101.81	0.43
AP2_00_88_P8C	61.44	24.52	7.51	0.01	6.53	0.97	0.11	0.39	0.04	101.52	0.31
AP2_00_88_P9A	57.38	27.57	5.95	0.02	9.87	0.48	0.02	0.55	0.00	101.84	0.47
AP2_00_88_P9B	53.46	30.20	4.44	0.02	12.64	0.24	0.02	0.60	0.00	101.62	0.60

AP2_00_88_P9C	61.92	24.65	7.61	0.00	6.26	1.05	0.12	0.40	0.01	102.01	0.29
AP2_00_88_P10A	59.77	26.19	6.93	0.02	7.94	0.69	0.07	0.36	0.03	101.99	0.37
AP2_00_88_P10B	59.14	26.41	6.63	0.01	8.35	0.62	0.12	0.38	0.07	101.72	0.40
AP2_00_88_P10C	60.49	25.37	7.24	0.02	7.09	0.81	0.07	0.41	0.05	101.55	0.34
AP2_00_88_P10D	58.51	26.53	6.41	0.02	8.70	0.60	0.07	0.42	0.01	101.27	0.41
AP2_00_88_P10E	60.45	25.13	7.27	0.01	7.01	0.84	0.08	0.43	0.04	101.27	0.33
AP2_00_88_P10F	60.06	25.69	7.17	0.02	7.58	0.76	0.08	0.39	0.04	101.78	0.35
AP2_00_88_P10G	61.30	24.73	7.61	0.02	6.63	0.97	0.08	0.41	0.00	101.73	0.31
AP2_00_88_P10H	61.44	24.63	7.60	0.01	6.66	1.00	0.09	0.41	0.04	101.86	0.31
AP2_00_88_P10I	61.65	24.47	7.66	0.02	6.23	1.01	0.09	0.41	0.06	101.58	0.29
AP2_00_88_P11A	54.03	29.47	4.77	0.02	12.07	0.30	0.05	0.52	0.03	101.27	0.57
AP2_00_88_P11B	56.51	27.79	5.66	0.03	10.21	0.47	0.02	0.45	0.02	101.15	0.49
AP2_00_88_P11C	58.98	26.24	6.59	0.02	8.33	0.65	0.08	0.47	0.01	101.36	0.40
AP2_00_88_P11D	60.73	25.28	7.34	0.02	7.17	0.78	0.11	0.44	0.05	101.91	0.34
AP2_00_88_P11E	66.30	20.74	4.57	0.05	6.91	1.63	0.08	1.89	0.38	102.55	0.40
AP2_00_88_P11F	54.57	28.44	5.24	0.05	11.31	0.35	0.00	0.90	0.07	100.92	0.53
AP2_00_88_P12A	60.41	25.49	7.12	0.00	7.22	0.89	0.09	0.42	0.01	101.66	0.34
AP2_00_88_P12B	57.04	27.56	5.92	0.02	9.78	0.48	0.07	0.59	0.10	101.54	0.46
AP2_00_88_P12C	55.25	28.64	5.13	0.13	11.23	0.28	0.00	0.89	0.07	101.61	0.54
AP2_00_88_P13A	57.72	27.17	6.23	0.03	9.36	0.50	0.03	0.44	0.07	101.55	0.44
AP2_00_88_P13B	59.54	25.79	6.97	0.02	7.76	0.73	0.07	0.50	0.01	101.38	0.37
AP2_00_88_P13C	57.13	27.57	5.96	0.01	9.81	0.51	0.05	0.52	0.00	101.56	0.46
AP2_00_88_P13D	60.94	24.57	7.37	0.02	6.56	0.99	0.08	0.42	0.02	100.97	0.31
AP2_00_88_P13E	54.66	28.63	4.88	0.06	11.59	0.31	0.05	0.93	0.05	101.16	0.56
AP2_00_88_P14A	57.83	27.24	6.23	0.02	9.31	0.52	0.05	0.37	0.03	101.59	0.44
AP2_00_88_P14B	56.87	28.00	5.70	0.01	10.18	0.43	0.04	0.36	0.05	101.63	0.48
AP2_00_88_P14C	61.38	24.68	7.53	0.01	6.57	0.96	0.08	0.40	0.00	101.60	0.31
AP2_00_88_P14D	56.62	27.87	5.75	0.04	10.39	0.36	0.01	0.88	0.04	101.96	0.49
AP2_00_88_P15A	59.30	25.96	6.94	0.02	8.02	0.68	0.09	0.43	0.04	101.47	0.37

AP2_00_88_P15B	61.23	24.57	7.48	0.01	6.42	1.02	0.07	0.39	0.00	101.19	0.30
AP2_00_88_P15C	65.58	21.04	6.85	0.01	4.57	1.57	0.07	0.60	0.14	100.44	0.24
AP2_00_88_P16A	59.90	25.33	7.06	0.02	7.41	0.76	0.07	0.40	0.11	101.07	0.35
AP2_00_88_P16B	60.41	25.28	7.19	0.03	7.12	0.89	0.09	0.44	0.06	101.49	0.34
AP2_00_88_P16C	61.58	24.97	7.61	0.02	6.57	0.99	0.07	0.46	0.05	102.32	0.31
AP2_00_88_P16D	55.86	28.21	5.43	0.05	10.82	0.36	0.03	0.97	0.04	101.77	0.51
AP2_00_88_P17A	55.00	29.10	4.99	0.03	11.44	0.34	0.04	0.51	0.01	101.46	0.55
AP2_00_88_P17B	55.72	28.37	5.38	0.03	10.80	0.39	0.05	0.54	0.08	101.35	0.51
AP2_00_88_P17C	59.61	25.29	7.16	0.02	7.45	0.82	0.07	0.49	0.01	100.91	0.35
AP2_00_88_P18A	58.57	26.39	6.77	0.01	8.33	0.61	0.06	0.51	0.01	101.25	0.39
AP2_00_88_P18B	52.31	30.95	3.83	0.02	13.54	0.21	0.05	0.50	0.05	101.45	0.65
AP2_00_88_P18C	58.53	27.00	6.39	0.02	8.75	0.58	0.07	0.42	0.06	101.82	0.42
AP2_00_88_P18D	62.25	24.09	7.86	0.01	5.83	1.19	0.08	0.41	0.05	101.77	0.27
AP2_00_88_P19A	60.40	25.66	7.24	0.01	7.20	0.83	0.10	0.43	0.02	101.90	0.34
AP2_00_88_P19B	57.05	27.36	6.04	0.02	9.50	0.52	0.07	0.42	0.03	101.01	0.45
AP2_00_88_P19C	60.54	25.39	7.31	0.03	7.13	0.91	0.08	0.41	0.00	101.81	0.33
AP2_00_88_P19D	56.83	27.60	6.14	0.03	9.85	0.48	0.05	0.80	0.01	101.78	0.46
AP2_00_88_P20A	57.60	27.58	6.25	0.01	9.35	0.50	0.06	0.44	0.00	101.78	0.44
AP2_00_88_P20B	59.34	26.18	6.91	0.01	8.08	0.68	0.06	0.49	0.02	101.77	0.38
AP2_00_88_P20C	59.56	26.22	6.83	0.02	8.02	0.69	0.06	0.46	0.02	101.87	0.38
AP2_00_88_P20D	61.16	24.82	7.51	0.02	6.36	1.06	0.11	0.41	0.01	101.46	0.30
AP2_00_88_P21A	59.83	25.95	7.08	0.02	7.58	0.78	0.07	0.45	0.04	101.80	0.36
AP2_00_88_P21B	58.66	26.49	6.61	0.01	8.42	0.61	0.08	0.39	0.01	101.30	0.40
AP2_00_88_P21C	61.29	24.94	7.55	0.02	6.55	1.06	0.12	0.43	0.00	101.95	0.31
AP2_00_88_P22A	57.74	27.21	6.24	0.02	9.38	0.53	0.09	0.57	0.06	101.84	0.44
AP2_00_88_P22B	54.66	29.10	5.17	0.02	11.49	0.33	0.04	0.54	0.03	101.38	0.54
AP2_00_88_P22C	61.78	24.71	7.64	0.01	6.52	0.97	0.08	0.45	0.02	102.19	0.30
AP2_00_88_P23A	57.31	27.48	5.99	0.02	9.54	0.49	0.06	0.45	0.10	101.44	0.46
AP2_00_88_P23B	56.88	28.11	5.95	0.01	9.97	0.46	0.00	0.42	0.04	101.84	0.47

AP2_00_88_P23C	60.26	25.76	7.25	0.02	7.54	0.81	0.07	0.43	0.00	102.14	0.35
AP2_00_88_P24A	55.32	28.73	5.39	0.01	11.11	0.34	0.00	0.50	0.07	101.47	0.52
AP2_00_88_P24B	57.02	27.51	6.04	0.04	9.48	0.48	0.06	0.54	0.05	101.22	0.45
AP2_00_88_P24C	57.58	27.44	6.22	0.02	9.40	0.50	0.08	0.45	0.07	101.75	0.44
AP2_00_88_P24D	60.90	25.03	7.46	0.01	6.77	0.93	0.10	0.45	0.03	101.69	0.32
AP2_00_88_P25A	61.35	24.88	7.45	0.01	6.56	1.06	0.07	0.41	0.06	101.85	0.31
AP2_00_88_P25B	59.79	25.80	7.09	0.03	7.82	0.73	0.11	0.44	0.06	101.87	0.36
AP2_00_88_P25C	60.69	25.36	7.32	0.01	7.05	0.85	0.08	0.53	0.08	101.96	0.33

Appendix D. Summary of all clinopyroxene major element chemistry.

Clinopyroxene Phenocryst Major Element Chemistry from EPMA											
Sample ID	SiO_2	TiO_2	Al_2O_3	FeO	MnO	MgO	CaO	Na_2O	NiO	Cr_2O_3	Mg#
AP2003-PX2A	62.96	0.24	1.07	8.07	0.22	15.62	24.16	0.34	0.00	0.01	0.66
AP2003-PX2B	62.63	0.24	1.20	8.58	0.23	15.41	23.98	0.41	0.00	0.00	0.64
AP2003-PX3A	62.61	0.20	1.14	8.43	0.21	15.48	24.34	0.37	0.03	0.02	0.65
AP2003-PX3B	62.75	0.18	1.06	8.05	0.25	15.51	24.29	0.37	0.00	0.02	0.66
AP2003-PX6A	62.71	0.27	1.30	8.37	0.23	15.43	23.74	0.36	0.00	0.02	0.65
AP2003-PX6B	62.51	0.24	1.24	8.13	0.22	15.62	24.00	0.40	0.00	0.01	0.66
AP2003-PX9A	62.41	0.30	1.29	8.36	0.26	15.45	24.23	0.34	0.02	0.01	0.65
AP2003-PX9B	62.49	0.24	1.34	8.12	0.24	15.33	23.97	0.40	0.00	0.04	0.65
AP2003-PX11A	62.87	0.18	1.01	8.54	0.35	15.06	24.26	0.38	0.00	0.00	0.64
AP2003-PX11B	62.96	0.21	1.06	8.05	0.26	15.62	24.25	0.37	0.01	0.00	0.66
AP2003-PX12A	61.75	0.35	1.59	8.77	0.25	15.18	23.65	0.41	0.00	0.01	0.63
AP2003-PX12B	61.90	0.33	1.54	8.80	0.28	15.07	23.44	0.42	0.02	0.00	0.63
AP2003-PX15A	62.96	0.16	1.03	8.22	0.24	15.42	24.31	0.38	0.00	0.00	0.65
AP2003-PX15B	62.76	0.28	1.32	8.03	0.24	15.57	24.01	0.35	0.00	0.00	0.66
AP2003-PX18A	62.51	0.28	1.25	8.06	0.22	15.76	24.06	0.39	0.00	0.03	0.66
AP2003-PX18B	62.33	0.26	1.27	8.04	0.23	15.50	23.90	0.38	0.01	0.00	0.66
AP2003-PX20A	62.55	0.26	1.28	8.46	0.22	15.61	23.82	0.36	0.00	0.01	0.65
AP2003-PX20B	62.57	0.27	1.33	8.58	0.22	15.31	23.71	0.44	0.03	0.02	0.64
AP2003-PX25A	63.07	0.16	0.83	8.24	0.31	15.06	24.49	0.33	0.00	0.00	0.65
AP2003-PX25B	62.69	0.23	1.18	7.84	0.22	15.61	24.18	0.35	0.00	0.00	0.67
AP2003-PX30A	63.01	0.26	1.26	7.81	0.22	15.82	24.33	0.37	0.02	0.01	0.67
AP2003-PX30B	62.13	0.37	1.67	8.29	0.19	15.42	23.82	0.39	0.01	0.01	0.65
AP20088-PX11A	62.59	0.33	1.60	8.18	0.25	15.89	24.14	0.39	0.02	0.01	0.66
AP20088-PX11B	63.83	0.16	0.76	7.94	0.36	15.87	24.80	0.34	0.00	0.05	0.67
AP20088-PX12A	62.82	0.37	1.68	7.98	0.23	15.92	24.09	0.42	0.00	0.01	0.67
AP20088-PX12B	62.85	0.19	0.84	7.88	0.38	15.92	24.68	0.33	0.00	0.01	0.67

AP20088-PX13A	62.85	0.44	1.97	8.16	0.20	15.78	24.00	0.41	0.00	0.00	0.66
AP20088-PX13B	63.45	0.17	0.83	7.78	0.35	15.72	24.54	0.37	0.00	0.00	0.67
AP20088-PX5L1R-C1	60.57	0.84	4.71	8.18	0.15	16.01	23.01	0.31	0.02	0.02	0.66
AP20088-PX5L1R-C2	60.61	0.76	4.86	7.49	0.13	16.35	23.34	0.32	0.00	0.08	0.69
AP20088-PX5L1R-C3	60.86	0.72	4.84	7.38	0.12	16.62	23.12	0.36	0.01	0.11	0.69
AP20088-PX5L1R-C4	60.95	0.69	4.68	7.12	0.15	16.75	23.00	0.36	0.01	0.19	0.70
AP20088-PX5L1R-C5	61.36	0.67	4.55	6.97	0.15	16.90	23.05	0.36	0.02	0.40	0.71
AP20088-PX5L1R-C6	61.38	0.64	4.39	6.71	0.10	17.08	23.07	0.38	0.05	0.53	0.72
AP20088-PX5L1R-C7	61.56	0.63	4.12	6.19	0.11	17.35	23.24	0.38	0.03	0.63	0.74
AP20088-PX5L1R-C8	61.83	0.55	3.71	5.75	0.11	17.44	23.94	0.33	0.02	0.72	0.75
AP20088-PX5L1R-C9	62.15	0.50	3.49	5.78	0.14	17.65	24.08	0.36	0.00	0.73	0.75
AP20088-PX5L1R-C10	62.52	0.49	3.39	5.72	0.12	17.70	24.02	0.36	0.01	0.73	0.76
AP20088-PX5L1R-C11	62.82	0.50	3.26	5.75	0.11	17.77	23.99	0.33	0.02	0.69	0.76
AP20088-PX5L1R-C12	63.81	0.39	2.41	5.87	0.12	18.52	23.36	0.27	0.05	0.44	0.76
AP20088-PX5L1R-C13	63.26	0.41	2.58	5.99	0.11	18.45	23.36	0.31	0.03	0.42	0.75
AP20088-PX5L1R-C14	63.30	0.41	2.59	5.86	0.14	18.25	23.53	0.28	0.04	0.42	0.76
AP20088-PX5L1R-C15	63.06	0.43	2.58	5.80	0.13	18.30	23.70	0.29	0.02	0.39	0.76
AP20088-PX5L1R-C16	63.37	0.41	2.60	5.91	0.12	18.35	23.60	0.29	0.04	0.41	0.76
AP20088-PX5L1R-C17	63.66	0.42	2.59	5.84	0.08	18.40	23.61	0.30	0.07	0.37	0.76
AP20088-PX5L1R-C18	63.11	0.42	2.68	5.92	0.13	18.32	23.54	0.29	0.03	0.40	0.76
AP20088-PX5L1R-C19	62.87	0.44	2.73	5.69	0.12	18.10	23.91	0.30	0.03	0.45	0.76
AP20088-PX5L1R-C20	63.23	0.44	2.64	5.70	0.12	18.05	24.12	0.29	0.00	0.42	0.76
AP20088-PX5L1R-C21	62.83	0.46	2.93	5.64	0.12	18.02	24.02	0.29	0.04	0.44	0.76
AP20088-PX5L1R-C22	62.92	0.50	3.14	5.73	0.13	17.66	24.18	0.33	0.07	0.50	0.76
AP20088-PX5L1R-C23	62.83	0.50	3.18	5.78	0.09	17.80	23.87	0.30	0.00	0.45	0.75
AP20088-PX5L1R-C24	63.03	0.49	3.21	5.74	0.13	18.21	23.98	0.32	0.03	0.51	0.76
AP20088-PX5L1R-C25	62.65	0.51	3.24	5.83	0.09	17.64	24.21	0.33	0.04	0.43	0.75
AP20088-PX5L1R-C26	62.21	0.51	3.39	5.76	0.10	17.57	23.93	0.32	0.00	0.48	0.75
AP20088-PX5L1R-C27	62.68	0.52	3.39	5.77	0.10	17.83	24.20	0.33	0.02	0.41	0.76

AP20088-PX5L1R-C28	62.81	0.51	3.36	5.89	0.08	17.40	24.26	0.29	0.03	0.40	0.75
AP20088-PX5L1R-C29	63.63	0.43	2.70	6.05	0.09	18.04	24.27	0.29	0.00	0.18	0.75
AP20088-PX5L1R-C30	63.36	0.31	1.41	9.58	0.24	15.48	23.51	0.43	0.02	0.01	0.62
AP20088-PX5L1R-C31	63.41	0.34	1.42	9.72	0.24	15.30	23.49	0.42	0.00	0.02	0.61
AP20088-PX5L1R-C32	63.24	0.32	1.42	9.92	0.23	15.41	23.51	0.42	0.01	0.05	0.61
AP20088-PX5L1R-C33	62.83	0.35	1.48	9.90	0.24	15.19	23.52	0.41	0.00	0.03	0.61
AP20088-PX5L1R-C34	62.86	0.33	1.47	9.93	0.22	15.26	23.33	0.44	0.00	0.02	0.61
AP20088-PX5L2R-C1	60.15	0.99	5.24	8.12	0.16	16.87	22.13	0.33	0.00	0.12	0.68
AP20088-PX5L2R-C2	60.76	0.93	4.99	7.73	0.15	17.42	22.03	0.30	0.01	0.30	0.69
AP20088-PX5L2R-C3	60.99	0.76	4.44	7.06	0.14	18.04	21.80	0.30	0.03	0.52	0.72
AP20088-PX5L2R-C4	61.99	0.59	3.83	6.31	0.11	17.57	23.30	0.35	0.02	0.74	0.74
AP20088-PX5L2R-C5	62.56	0.52	3.58	5.96	0.11	17.69	23.43	0.32	0.00	0.76	0.75
AP20088-PX5L2R-C6	62.41	0.52	3.60	6.05	0.13	17.89	23.31	0.33	0.04	0.76	0.75
AP20088-PX5L2R-C7	62.32	0.53	3.47	5.88	0.10	17.72	23.46	0.31	0.04	0.68	0.75
AP20088-PX5L2R-C8	62.57	0.52	3.52	5.92	0.13	17.94	23.47	0.34	0.03	0.66	0.75
AP20088-PX5L2R-C9	61.73	0.55	3.49	5.96	0.17	17.92	23.50	0.33	0.00	0.62	0.75
AP20088-PX5L2R-C10	62.23	0.53	3.46	5.96	0.12	17.88	23.44	0.34	0.04	0.62	0.75
AP20088-PX5L2R-C11	61.99	0.55	3.46	6.02	0.12	17.99	23.47	0.29	0.02	0.62	0.75
AP20088-PX5L2R-C12	62.18	0.51	3.57	6.03	0.12	17.84	23.70	0.31	0.02	0.65	0.75
AP20088-PX5L2R-C13	62.36	0.59	3.68	6.34	0.12	17.64	23.64	0.33	0.03	0.47	0.74
AP20088-PX5L2R-C14	61.85	0.54	3.23	6.22	0.13	17.93	23.54	0.31	0.03	0.45	0.74
AP20088-PX5L2R-C15	62.47	0.49	3.09	6.32	0.11	17.96	23.52	0.30	0.03	0.37	0.74
AP20088-PX5L2R-C16	62.32	0.48	2.79	6.22	0.14	17.72	23.75	0.27	0.02	0.29	0.74
AP20088-PX5L2R-C17	63.12	0.39	1.67	7.82	0.20	16.95	23.56	0.37	0.03	0.07	0.68
AP20088-PX5L2R-C18	62.50	0.47	1.73	9.99	0.21	15.30	22.98	0.44	0.03	0.01	0.60
AP20088-PX5L2R-C19	62.59	0.46	1.67	10.06	0.28	15.42	23.10	0.41	0.03	0.00	0.61
AP20088-PX5L2R-C20	62.28	0.47	1.70	10.01	0.25	15.34	23.26	0.43	0.00	0.00	0.61
AP20088-PX5L2R-C21	62.41	0.46	1.67	10.02	0.24	15.28	23.20	0.41	0.02	0.00	0.60
AP20088-PX5L2R-C22	62.67	0.45	1.69	10.17	0.26	15.18	23.08	0.43	0.03	0.00	0.60

AP20088-PX5L2R-C23	62.76	0.48	1.70	10.05	0.28	15.54	23.16	0.44	0.03	0.03	0.61
AP20088-PX5L2R-C24	62.41	0.49	1.73	9.98	0.26	15.31	23.02	0.44	0.00	0.04	0.61
AP20088-PX5L2R-C25	62.23	0.51	1.72	10.12	0.27	15.31	23.01	0.42	0.05	0.00	0.60
AP20088-PX5L2R-C26	62.77	0.49	1.67	10.12	0.26	15.37	22.95	0.41	0.02	0.01	0.60
AP20088-PX19A	55.10	0.23	1.06	7.11	0.22	13.79	29.62	0.37	0.00	0.01	0.66
AP20088-PX19B	64.41	0.18	0.70	7.76	0.38	15.66	24.75	0.32	0.00	0.00	0.67
AP20084PX7A	62.89	0.45	2.05	9.51	0.32	15.65	22.79	0.44	0.00	0.03	0.62
AP20084PX7B	60.34	0.85	4.70	8.58	0.14	15.66	23.10	0.36	0.00	0.04	0.65
AP20084PX13A	62.40	0.27	1.41	9.26	0.30	14.96	23.59	0.43	0.00	0.03	0.62
AP20084PX13B	62.52	0.33	1.54	9.55	0.27	14.84	23.48	0.45	0.00	0.00	0.61
AP20042PX3A	59.68	0.67	4.83	6.35	0.10	16.48	23.21	0.34	0.01	0.45	0.72
AP20042PX3B	61.49	0.59	1.76	11.02	0.27	15.77	20.01	0.42	0.02	0.00	0.59

Appendix E. Summary of all orthopyroxene phenocryst major element chemistry.

Orthopyroxene Phenocryst Major Element Chemistry											
Sample ID	SiO_2	TiO_2	Al_2O_3	FeO	MnO	MgO	CaO	Na_2O	NiO	Cr_2O_3	Mg#
AP2003-PX1A	62.68	0.15	0.62	20.02	0.50	23.93	0.95	0.01	0.00	0.03	0.54
AP2003-PX1B	62.50	0.20	0.78	18.84	0.47	24.68	1.25	0.03	0.02	0.00	0.57
AP2003-PX4A	62.54	0.13	0.61	19.29	0.49	24.45	1.02	0.01	0.00	0.02	0.56
AP2003-PX4B	63.56	0.22	0.97	17.61	0.46	25.69	1.29	0.01	0.00	0.00	0.59
AP2003-PX5A	62.65	0.22	0.73	19.53	0.45	24.19	1.19	0.02	0.02	0.00	0.55
AP2003-PX5B	62.50	0.17	0.66	19.21	0.45	24.61	1.17	0.02	0.01	0.01	0.56
AP2003-PX7A	62.97	0.10	0.41	19.38	0.57	24.65	0.99	0.02	0.01	0.00	0.56
AP2003-PX7B	62.94	0.14	0.61	18.58	0.51	24.69	1.10	0.01	0.00	0.03	0.57
AP2003-PX8A	45.74	0.03	0.02	18.50	0.20	43.11	0.11	0.02	0.11	0.00	0.70
AP2003-PX8B	45.11	0.02	0.03	21.49	0.27	40.04	0.11	0.00	0.10	0.00	0.65
AP2003-PX10A	62.89	0.20	0.71	19.26	0.49	24.60	1.14	0.02	0.03	0.00	0.56
AP2003-PX10B	65.55	0.18	2.29	17.63	0.42	24.09	1.18	0.04	0.00	0.00	0.58
AP2003-PX13A	46.08	0.00	0.03	18.11	0.17	43.35	0.13	0.00	0.13	0.01	0.71
AP2003-PX13B	43.24	0.05	0.34	26.66	0.25	29.18	0.43	0.03	0.05	0.03	0.52
AP2003-PX14A	62.21	0.19	0.82	19.07	0.42	24.49	1.16	0.00	0.01	0.00	0.56
AP2003-PX14B	62.55	0.29	2.32	15.29	0.32	27.00	1.88	0.03	0.03	0.00	0.64
AP2003-PX16A	62.22	0.24	0.87	19.93	0.55	23.83	1.10	0.03	0.02	0.01	0.54
AP2003-PX16B	62.92	0.13	0.57	19.16	0.47	24.80	1.03	0.02	0.00	0.00	0.56
AP2003-PX17A	62.30	0.18	0.82	19.69	0.46	24.18	1.20	0.02	0.00	0.03	0.55
AP2003-PX17B	61.78	0.30	3.07	14.60	0.26	27.33	1.92	0.02	0.02	0.00	0.65
AP2003-PX19A	62.14	0.19	0.64	19.75	0.51	24.03	1.16	0.01	0.02	0.01	0.55
AP2003-PX19B	63.03	0.13	0.62	19.01	0.45	24.83	1.01	0.02	0.00	0.00	0.57
AP2003-PX21A	62.82	0.19	0.76	19.43	0.50	24.30	1.13	0.02	0.00	0.02	0.56
AP2003-PX21B	63.57	0.13	0.57	18.65	0.42	24.84	1.06	0.03	0.02	0.00	0.57
AP2003-PX22A	46.26	0.03	0.01	18.00	0.18	43.83	0.11	0.00	0.07	0.01	0.71
AP2003-PX22B	45.32	0.01	0.02	18.77	0.20	43.01	0.09	0.00	0.12	0.00	0.70

AP2003-PX23A	45.43	0.01	0.01	19.55	0.21	42.60	0.11	0.00	0.07	0.00	0.69
AP2003-PX23B	45.15	0.01	0.01	22.02	0.25	39.47	0.11	0.00	0.08	0.00	0.64
AP2003-PX26A	62.54	0.16	0.61	19.93	0.47	24.09	1.07	0.01	0.03	0.00	0.55
AP2003-PX26B	63.32	0.14	0.56	18.75	0.47	25.01	1.07	0.01	0.00	0.00	0.57
AP2003-PX28A	63.54	0.14	0.57	18.94	0.43	24.84	0.97	0.02	0.02	0.00	0.57
AP2003-PX28B	63.84	0.12	0.52	18.80	0.45	24.94	0.99	0.02	0.01	0.00	0.57
AP2003-PX26B Line 001	44.45	0.06	0.44	23.88	0.22	30.81	0.48	0.04	0.08	0.01	0.56
AP2003-PX26B Line 002	46.25	0.01	0.02	17.43	0.18	42.85	0.12	0.01	0.10	0.00	0.71
AP2003-PX26B Line 003	46.28	0.01	0.03	17.43	0.20	42.73	0.12	0.00	0.11	0.00	0.71
AP2003-PX26B Line 004	46.11	0.01	0.02	17.49	0.23	42.92	0.12	0.00	0.12	0.00	0.71
AP2003-PX26B Line 005	46.52	0.01	0.02	17.23	0.17	42.94	0.10	0.01	0.13	0.01	0.71
AP2003-PX26B Line 006	46.48	0.02	0.01	16.93	0.19	43.34	0.12	0.01	0.11	0.00	0.72
AP2003-PX26B Line 007	46.48	0.00	0.02	16.66	0.20	43.44	0.11	0.00	0.12	0.00	0.72
AP2003-PX26B Line 008	46.56	0.00	0.03	16.90	0.17	43.57	0.11	0.00	0.11	0.00	0.72
AP2003-PX26B Line 009	46.46	0.00	0.02	16.76	0.19	43.39	0.12	0.00	0.10	0.00	0.72
AP2003-PX26B Line 010	46.59	0.00	0.02	17.00	0.18	43.42	0.12	0.01	0.15	0.00	0.72
AP2003-PX26B Line 011	46.29	0.00	0.02	18.07	0.20	43.59	0.13	0.00	0.16	0.01	0.71
AP2003-PX26B Line 012	46.62	0.00	0.01	17.87	0.19	43.67	0.11	0.01	0.09	0.00	0.71
AP2003-PX26B Line 013	46.62	0.00	0.01	18.20	0.17	43.93	0.12	0.00	0.11	0.00	0.71

AP2003-PX29L1 R-C Line 003	64.28	0.23	1.28	18.02	0.39	23.97	2.00	0.03	0.00	0.00	0.57
AP2003-PX29L1 R-C Line 004	64.68	0.20	0.93	15.64	0.36	26.83	1.88	0.02	0.02	0.01	0.63
AP2003-PX29L1 R-C Line 005	65.07	0.20	1.05	14.50	0.34	28.17	1.91	0.01	0.00	0.00	0.66
AP2003-PX29L1 R-C Line 006	64.86	0.20	1.03	14.14	0.32	28.35	1.94	0.01	0.01	0.02	0.67
AP2003-PX29L1 R-C Line 007	64.81	0.17	1.14	14.11	0.30	28.44	2.02	0.01	0.00	0.00	0.67
AP2003-PX29L1 R-C Line 008	65.21	0.17	1.16	13.94	0.27	28.75	1.97	0.01	0.02	0.01	0.67
AP2003-PX29L1 R-C Line 009	65.05	0.19	1.09	13.69	0.25	28.66	1.96	0.02	0.04	0.01	0.68
AP2003-PX29L1 R-C Line 010	65.08	0.19	1.08	13.90	0.29	28.59	1.94	0.02	0.01	0.00	0.67
AP2003-PX29L1 R-C Line 011	64.80	0.16	0.89	14.83	0.29	27.75	1.84	0.02	0.00	0.00	0.65
AP2003-PX29L1 R-C Line 012	64.68	0.16	0.68	16.18	0.33	26.86	1.63	0.01	0.01	0.01	0.62
AP2003-PX29L1 R-C Line 013	64.11	0.16	0.66	17.48	0.44	26.10	1.25	0.02	0.02	0.02	0.60
AP2003-PX29L1 R-C Line 014	64.04	0.19	0.65	18.06	0.45	25.61	1.19	0.04	0.03	0.00	0.59
AP2003-PX29L1 R-C Line 015	63.80	0.16	0.64	18.34	0.48	25.10	1.21	0.02	0.00	0.03	0.58
AP2003-PX29L1 R-C Line 016	64.00	0.16	0.64	18.75	0.46	25.18	1.15	0.02	0.00	0.00	0.57
AP2003-PX29L1 R-C Line 017	63.75	0.18	0.66	18.34	0.46	25.14	1.14	0.02	0.02	0.00	0.58

AP20088-PX1A	63.19	0.20	0.69	18.89	0.56	24.90	1.39	0.02	0.03	0.00	0.57
AP20088-PX1B	65.93	0.25	3.29	20.00	0.53	16.60	1.11	0.37	0.01	0.00	0.45
AP20088-PX2A	62.54	0.25	0.78	21.13	0.44	23.16	1.18	0.01	0.01	0.02	0.52
AP20088-PX2B	63.98	0.14	0.49	19.19	0.70	25.22	1.05	0.01	0.01	0.00	0.57
AP20088-PX6A	46.36	0.01	0.03	17.21	0.21	45.34	0.12	0.00	0.19	0.01	0.72
AP20088-PX6B	45.29	0.01	0.03	21.69	0.31	40.56	0.10	0.00	0.16	0.04	0.65
AP20088-PX7A	63.20	0.22	0.72	18.74	0.53	25.20	1.23	0.01	0.01	0.00	0.57
AP20088-PX7B	62.41	0.23	0.93	20.28	0.62	23.50	1.18	0.01	0.00	0.01	0.54
AP20088-PX8A	63.21	0.24	0.59	18.91	0.61	24.85	1.11	0.03	0.00	0.02	0.57
AP20088-PX8B	62.82	0.36	2.04	16.86	0.34	25.31	1.80	0.04	0.00	0.00	0.60
AP20088-PX9A	63.46	0.17	0.72	18.21	0.53	25.55	1.45	0.03	0.00	0.00	0.58
AP20088-PX9B	64.72	0.19	1.16	15.43	0.27	28.09	1.59	0.02	0.00	0.00	0.65
AP20088-PX9L1R-C c-axis Line 001	64.85	0.23	1.14	13.39	0.22	29.71	1.83	0.03	0.03	0.00	0.69
AP20088-PX9L1R-C c-axis Line 002	64.65	0.21	1.64	13.60	0.19	29.22	1.90	0.04	0.03	0.01	0.68
AP20088-PX9L1R-C c-axis Line 003	65.10	0.20	1.39	13.28	0.22	29.71	1.91	0.04	0.02	0.04	0.69
AP20088-PX9L1R-C c-axis Line 004	63.66	0.19	0.55	18.10	0.41	26.01	1.27	0.02	0.03	0.00	0.59
AP20088-PX9L1R-C c-axis Line 005	64.68	0.25	1.90	17.80	0.34	23.97	1.39	0.17	0.03	0.00	0.57
AP20088-PX9L1R-C c-axis Line 006	63.27	0.26	1.17	16.48	0.25	26.80	1.68	0.02	0.03	0.04	0.62
AP20088-PX9L1R-C c-axis Line 007	65.26	0.22	1.00	13.67	0.19	29.03	1.85	0.02	0.07	0.07	0.68
AP20088-PX9L1R-C c-axis Line 008	65.73	0.21	0.99	11.92	0.18	30.97	1.91	0.03	0.04	0.13	0.72

AP20088-PX9L1R-C c-axis Line 009	65.62	0.20	1.11	11.47	0.18	30.91	2.20	0.02	0.02	0.13	0.73
AP20088-PX9L1R-C c-axis Line 010	65.59	0.18	0.98	11.45	0.18	31.22	2.03	0.01	0.05	0.20	0.73
AP20088-PX9L1R-C c-axis Line 011	65.13	0.18	0.91	13.39	0.25	29.47	2.01	0.02	0.04	0.22	0.69
AP20088-PX9L1R-C c-axis Line 012	64.20	0.21	0.79	15.91	0.42	27.33	1.50	0.02	0.04	0.02	0.63
AP20088-PX9L1R-C c-axis Line 013	63.52	0.19	0.80	17.26	0.48	26.34	1.46	0.04	0.00	0.00	0.60
AP20088-PX9L1R-C c-axis Line 014	63.35	0.21	0.76	17.87	0.49	25.90	1.49	0.02	0.00	0.00	0.59
AP20088-PX9L1R-C c-axis Line 015	63.63	0.21	0.73	18.03	0.50	25.66	1.48	0.04	0.01	0.00	0.59
AP20088-PX9L1R-C c-axis Line 016	64.01	0.20	0.72	18.06	0.48	25.71	1.49	0.04	0.00	0.00	0.59
AP20088-PX9L1R-C c-axis Line 017	63.73	0.21	0.73	18.13	0.50	25.90	1.51	0.02	0.03	0.01	0.59
AP20088-PX9L1R-C c-axis Line 018	63.40	0.21	0.71	18.21	0.49	25.52	1.43	0.04	0.00	0.00	0.58
AP20088-PX9L1R-C c-axis Line 019	63.84	0.19	0.74	17.88	0.49	25.58	1.51	0.02	0.02	0.00	0.59
AP20088-PX9L1R-C c-axis Line 020	64.17	0.20	0.72	17.88	0.51	25.80	1.49	0.02	0.00	0.00	0.59
AP20088-PX9L1R-C c-axis Line 021	63.94	0.22	0.72	18.25	0.47	25.69	1.46	0.04	0.02	0.01	0.58
AP20088-PX9L1R-C c-axis Line 022	64.28	0.20	0.71	18.26	0.49	25.74	1.49	0.01	0.04	0.02	0.59
AP20088-PX9L1R-C c-axis Line 023	64.23	0.18	0.69	17.89	0.54	25.70	1.51	0.03	0.05	0.00	0.59

AP20088-PX9L1R-C c-axis Line 024	63.97	0.18	0.72	18.02	0.49	25.73	1.46	0.04	0.00	0.00	0.59
AP20088-PX9L2R-C B-axis Line 001	63.39	0.33	2.57	15.22	0.23	27.61	1.69	0.02	0.00	0.00	0.64
AP20088-PX9L1R-C B-axis Line 002	64.11	0.30	1.75	14.72	0.26	28.38	1.67	0.03	0.03	0.03	0.66
AP20088-PX9L1R-C B-axis Line 003	64.12	0.26	1.96	14.81	0.25	28.14	1.63	0.02	0.01	0.00	0.66
AP20088-PX9L1R-C B-axis Line 004	63.70	0.31	2.15	14.76	0.23	27.87	1.67	0.00	0.01	0.00	0.65
AP20088-PX9L1R-C B-axis Line 005	63.58	0.31	2.39	14.89	0.25	28.16	1.74	0.02	0.04	0.00	0.65
AP20088-PX9L1R-C B-axis Line 006	64.42	0.33	2.16	14.45	0.25	28.64	1.79	0.02	0.05	0.01	0.66
AP20088-PX9L1R-C B-axis Line 007	64.09	0.32	2.47	13.75	0.23	28.68	1.99	0.03	0.00	0.05	0.68
AP20088-PX9L1R-C B-axis Line 008	63.90	0.32	2.69	13.72	0.21	28.69	2.08	0.02	0.06	0.01	0.68
AP20088-PX9L1R-C B-axis Line 009	61.32	0.20	0.59	20.23	0.47	22.51	1.28	0.02	0.00	0.00	0.53
AP20088-PX9L1R-C B-axis Line 010	63.45	0.30	1.00	19.65	0.37	24.31	1.51	0.03	0.03	0.00	0.55
AP20088-PX9L1R-C B-axis Line 011	63.82	0.37	1.03	17.44	0.31	25.91	1.78	0.02	0.05	0.00	0.60
AP20088-PX9L1R-C B-axis Line 012	63.46	0.40	2.60	15.35	0.24	27.50	2.01	0.01	0.01	0.00	0.64
AP20088-PX9L1R-C B-axis Line 013	64.02	0.38	2.92	13.02	0.20	29.41	2.27	0.03	0.04	0.13	0.69
AP20088-PX9L1R-C B-axis Line 014	64.52	0.35	2.86	11.97	0.14	30.03	2.23	0.03	0.06	0.30	0.71

AP20088-PX9L1R-C B-axis Line 015	63.93	0.35	3.32	11.81	0.18	29.99	2.28	0.03	0.03	0.37	0.72
AP20088-PX9L1R-C B-axis Line 016	64.79	0.34	2.90	11.69	0.18	30.54	2.16	0.04	0.06	0.35	0.72
AP20088-PX9L1R-C B-axis Line 017	65.12	0.21	1.15	15.42	0.38	27.50	1.66	0.03	0.02	0.11	0.64
AP20088-PX9L1R-C B-axis Line 018	64.43	0.17	0.73	18.10	0.48	26.13	1.47	0.02	0.01	0.00	0.59
AP20088-PX9L1R-C B-axis Line 019	64.33	0.18	0.71	18.12	0.50	25.67	1.46	0.02	0.03	0.00	0.59
AP20088-PX9L1R-C B-axis Line 020	64.23	0.21	0.71	17.89	0.46	25.76	1.46	0.03	0.01	0.00	0.59
AP20088-PX9L1R-C B-axis Line 021	64.42	0.21	0.70	18.22	0.49	25.95	1.51	0.03	0.00	0.00	0.59
AP20088-PX9L1R-C B-axis Line 022	64.38	0.17	0.71	18.14	0.49	25.75	1.48	0.02	0.02	0.06	0.59
AP20088-PX9L1R-C B-axis Line 023	64.34	0.19	0.70	18.28	0.49	25.91	1.50	0.02	0.00	0.00	0.59
AP20088-PX9L1R-C B-axis Line 024	64.24	0.20	0.69	18.05	0.49	25.80	1.45	0.03	0.01	0.02	0.59
AP20088-PX9L1R-C B-axis Line 025	64.21	0.19	0.71	18.00	0.47	25.93	1.49	0.02	0.00	0.02	0.59
AP20088-PX9L1R-C B-axis Line 026	64.56	0.19	0.71	17.90	0.52	25.99	1.46	0.04	0.00	0.00	0.59
AP20088-PX14A	64.69	0.12	0.56	18.98	0.46	25.85	1.04	0.02	0.00	0.00	0.58
AP20088-PX14B	65.25	0.51	1.00	13.61	0.37	29.51	1.62	0.04	0.00	0.02	0.68
AP20088-PX16L1 C-R Line 002	60.41	0.88	3.70	9.03	0.18	16.09	22.18	0.33	0.01	0.00	0.64
AP20088-PX16L1 C-R Line 003	63.04	0.37	2.95	14.57	0.23	28.01	1.93	0.03	0.02	0.02	0.66

AP20088-PX16L1 C-R Line 004	64.35	0.27	1.63	14.14	0.26	28.53	2.30	0.03	0.06	0.02	0.67
AP20088-PX16L1 C-R Line 005	63.65	0.18	0.62	19.48	0.52	24.93	1.14	0.02	0.00	0.01	0.56
AP20088-PX16L1 C-R Line 006	67.10	0.18	0.64	19.28	0.53	27.08	1.15	0.02	0.00	0.01	0.58
AP20088-PX16L1 C-R Line 007	63.66	0.16	0.55	19.36	0.61	24.98	1.10	0.02	0.00	0.00	0.56
AP20088-PX16L1 C-R Line 008	63.84	0.15	0.50	19.32	0.59	24.89	1.08	0.02	0.00	0.00	0.56
AP20088-PX16L1 C-R Line 009	63.88	0.16	0.56	19.57	0.63	24.84	1.09	0.02	0.00	0.02	0.56
AP20088-PX16L1 C-R Line 010	63.60	0.12	0.44	20.06	0.64	24.83	1.03	0.02	0.00	0.01	0.55
AP20088-PX16L1 C-R Line 011	63.13	0.11	0.46	19.84	0.62	24.41	1.07	0.03	0.00	0.01	0.55
AP20088-PX16L1 C-R Line 012	63.15	0.15	0.58	20.06	0.66	24.45	1.07	0.01	0.01	0.03	0.55
AP20088-PX16L1 C-R Line 013	63.30	0.14	0.47	19.76	0.68	24.50	1.06	0.01	0.00	0.02	0.55
AP20088-PX16L1 C-R Line 014	64.06	0.13	0.49	20.02	0.63	24.41	1.03	0.01	0.01	0.03	0.55
AP20088-PX16L1 C-R Line 015	63.43	0.11	0.46	19.78	0.68	24.57	0.99	0.01	0.00	0.02	0.55
AP20088-PX16L1 C-R Line 016	63.47	0.13	0.46	20.01	0.65	24.58	1.01	0.02	0.00	0.00	0.55
AP20088-PX16L1 C-R Line 017	63.47	0.14	0.47	19.85	0.70	24.47	1.04	0.01	0.03	0.00	0.55
AP20088-PX16L1 C-R Line 018	63.26	0.14	0.52	19.87	0.67	24.46	1.02	0.03	0.03	0.00	0.55

AP20088-PX16L1 C-R Line 019	62.98	0.19	0.68	19.86	0.64	24.34	1.07	0.03	0.01	0.00	0.55
AP20088-PX16L1 C-R Line 020	63.44	0.13	0.53	19.92	0.69	24.43	1.05	0.01	0.00	0.01	0.55
AP20088-PX16L1 C-R Line 021	63.58	0.12	0.45	19.95	0.67	24.63	1.04	0.02	0.00	0.00	0.55
AP20088-PX16L1 C-R Line 022	63.32	0.13	0.44	19.87	0.70	24.48	1.00	0.01	0.02	0.00	0.55
AP20088-PX16L1 C-R Line 023	63.09	0.12	0.51	20.02	0.64	24.51	1.03	0.01	0.01	0.00	0.55
AP20088-PX16L1 C-R Line 024	62.89	0.23	0.89	20.00	0.69	24.22	1.07	0.04	0.04	0.00	0.55
AP20088-PX16L1 C-R Line 025	63.34	0.22	0.73	19.98	0.65	24.41	1.10	0.02	0.00	0.01	0.55
AP20088-PX16L1 C-R Line 026	63.31	0.10	0.43	19.92	0.67	24.69	0.99	0.02	0.01	0.00	0.55
AP20088-PX16L1 C-R Line 027	63.51	0.14	0.48	20.10	0.70	24.57	1.09	0.00	0.00	0.01	0.55
AP20088-PX16L1 C-R Line 028	63.63	0.14	0.50	20.10	0.65	24.70	1.05	0.01	0.04	0.00	0.55
AP20088-PX16L2 C-R C-AXIS Line 003	64.32	0.40	2.31	15.78	0.30	26.07	1.81	0.03	0.00	0.00	0.62
AP20088-PX16L2 C-R C-AXIS Line 004	63.61	0.38	2.24	15.41	0.25	27.58	1.91	0.02	0.00	0.00	0.64
AP20088-PX16L2 C-R C-AXIS Line 005	63.16	0.38	2.48	14.91	0.21	27.86	1.95	0.03	0.01	0.02	0.65
AP20088-PX16L2 C-R C-AXIS Line 006	63.60	0.39	2.54	14.42	0.27	27.96	2.06	0.02	0.00	0.00	0.66
AP20088-PX16L2 C-R C-AXIS Line 007	63.40	0.37	2.61	14.53	0.23	28.32	2.04	0.03	0.05	0.02	0.66

AP20088-PX16L2 C-R C-AXIS Line 008	62.97	0.36	2.78	14.55	0.24	28.15	2.10	0.03	0.03	0.01	0.66
AP20088-PX16L2 C-R C-AXIS Line 009	62.93	0.37	2.83	14.49	0.25	27.76	2.12	0.03	0.03	0.00	0.66
AP20088-PX16L2 C-R C-AXIS Line 010	63.67	0.31	1.97	14.71	0.30	27.50	2.08	0.02	0.01	0.01	0.65
AP20088-PX16L2 C-R C-AXIS Line 011	64.02	0.18	0.88	17.50	0.47	26.22	1.49	0.02	0.02	0.03	0.60
AP20088-PX16L2 C-R C-AXIS Line 012	63.62	0.15	0.57	19.12	0.59	24.97	1.09	0.01	0.02	0.00	0.57
AP20088-PX16L2 C-R C-AXIS Line 013	63.35	0.18	0.63	19.30	0.49	24.90	1.12	0.02	0.00	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 014	63.65	0.18	0.63	19.11	0.49	24.90	1.14	0.02	0.01	0.01	0.57
AP20088-PX16L2 C-R C-AXIS Line 015	63.27	0.16	0.62	19.09	0.55	25.05	1.14	0.02	0.00	0.03	0.57
AP20088-PX16L2 C-R C-AXIS Line 016	63.23	0.16	0.62	18.96	0.56	25.02	1.16	0.02	0.00	0.00	0.57
AP20088-PX16L2 C-R C-AXIS Line 017	63.87	0.15	0.61	19.30	0.55	24.97	1.13	0.02	0.05	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 018	63.47	0.17	0.58	19.39	0.56	24.90	1.10	0.02	0.00	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 019	63.38	0.17	0.58	19.05	0.53	24.88	1.12	0.00	0.00	0.00	0.57
AP20088-PX16L2 C-R C-AXIS Line 020	63.65	0.16	0.51	19.33	0.55	24.88	1.10	0.01	0.01	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 021	63.41	0.15	0.49	19.51	0.58	24.89	1.07	0.01	0.01	0.02	0.56
AP20088-PX16L2 C-R C-AXIS Line 022	63.90	0.16	0.49	19.26	0.61	24.70	1.06	0.03	0.01	0.00	0.56

AP20088-PX16L2 C-R C-AXIS Line 023	63.62	0.12	0.51	19.26	0.63	24.88	1.07	0.02	0.02	0.03	0.56
AP20088-PX16L2 C-R C-AXIS Line 024	63.73	0.14	0.54	19.79	0.61	24.99	1.09	0.02	0.00	0.01	0.56
AP20088-PX16L2 C-R C-AXIS Line 025	63.50	0.15	0.52	19.39	0.59	24.77	1.05	0.00	0.02	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 026	63.70	0.14	0.48	19.55	0.62	24.82	1.08	0.02	0.00	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 027	63.56	0.11	0.46	19.60	0.61	24.77	1.06	0.02	0.02	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 028	63.89	0.14	0.47	19.53	0.65	24.98	1.04	0.03	0.00	0.02	0.56
AP20088-PX16L2 C-R C-AXIS Line 029	63.23	0.15	0.45	19.52	0.62	24.59	1.05	0.01	0.02	0.00	0.56
AP20088-PX16L2 C-R C-AXIS Line 030	62.48	0.13	0.47	19.74	0.61	24.53	1.03	0.02	0.02	0.02	0.55
AP20088-PX16L2 C-R C-AXIS Line 031	63.22	0.13	0.50	19.68	0.65	24.59	1.06	0.02	0.05	0.00	0.56
AP20088-PX17L1 R-C B-AXIS Line 001	62.86	0.38	2.47	16.24	0.32	26.93	1.75	0.03	0.01	0.00	0.62
AP20088-PX17L1 R-C B-AXIS Line 002	62.83	0.36	2.61	15.37	0.25	27.45	1.75	0.02	0.01	0.00	0.64
AP20088-PX17L1 R-C B-AXIS Line 003	63.20	0.34	2.57	15.05	0.24	27.96	1.70	0.03	0.01	0.01	0.65
AP20088-PX17L1 R-C B-AXIS Line 004	63.72	0.35	2.75	14.75	0.27	28.28	1.72	0.02	0.01	0.03	0.66
AP20088-PX17L1 R-C B-AXIS Line 005	63.81	0.36	2.85	14.37	0.23	28.71	1.78	0.04	0.03	0.03	0.67
AP20088-PX17L1 R-C B-AXIS Line 006	64.19	0.33	2.76	13.88	0.22	29.03	1.80	0.02	0.02	0.06	0.68

AP20088-PX17L1 R-C B-AXIS Line 007	64.16	0.35	2.84	13.24	0.19	29.74	1.88	0.03	0.01	0.11	0.69
AP20088-PX17L1 R-C B-AXIS Line 008	64.41	0.30	2.74	12.73	0.18	29.97	1.98	0.02	0.07	0.17	0.70
AP20088-PX17L1 R-C B-AXIS Line 009	64.66	0.31	2.68	12.18	0.20	30.59	2.06	0.02	0.05	0.29	0.72
AP20088-PX17L1 R-C B-AXIS Line 010	64.70	0.31	2.62	11.65	0.20	30.82	2.14	0.02	0.02	0.28	0.73
AP20088-PX17L1 R-C B-AXIS Line 011	64.32	0.29	2.50	12.10	0.21	30.55	2.15	0.03	0.08	0.25	0.72
AP20088-PX17L1 R-C B-AXIS Line 012	64.44	0.29	2.18	12.82	0.24	29.52	2.09	0.02	0.04	0.14	0.70
AP20088-PX17L1 R-C B-AXIS Line 013	64.57	0.25	1.74	14.52	0.23	28.96	1.94	0.03	0.02	0.05	0.67
AP20088-PX17L1 R-C B-AXIS Line 014	64.55	0.27	1.74	15.43	0.28	27.94	1.78	0.03	0.02	0.02	0.64
AP20088-PX17L1 R-C B-AXIS Line 015	64.70	0.28	1.48	16.14	0.28	27.38	1.77	0.03	0.00	0.00	0.63
AP20088-PX17L1 R-C B-AXIS Line 016	64.29	0.27	1.44	15.92	0.25	27.37	1.85	0.03	0.02	0.03	0.63
AP20088-PX17L1 R-C B-AXIS Line 017	63.61	0.25	1.60	16.32	0.29	27.30	1.76	0.03	0.02	0.01	0.63
AP20088-PX17L1 R-C B-AXIS Line 018	63.93	0.24	1.64	16.48	0.34	27.17	1.59	0.04	0.00	0.03	0.62
AP20088-PX17L1 R-C B-AXIS Line 019	63.44	0.20	1.17	17.66	0.41	26.08	1.45	0.03	0.01	0.01	0.60
AP20088-PX17L1 R-C B-AXIS Line 020	63.81	0.13	0.55	19.78	0.54	24.42	1.20	0.02	0.00	0.01	0.55
AP20088-PX17L1 R-C B-AXIS Line 021	63.72	0.11	0.43	20.19	0.55	23.99	1.12	0.02	0.00	0.00	0.54

AP20088-PX17L1 R-C B-AXIS Line 022	63.65	0.14	0.45	20.61	0.58	23.82	1.12	0.01	0.00	0.00	0.54
AP20088-PX17L1 R-C B-AXIS Line 023	63.44	0.14	0.45	20.61	0.55	23.77	1.13	0.03	0.00	0.01	0.54
AP20088-PX17L1 R-C B-AXIS Line 024	63.93	0.12	0.43	20.93	0.53	23.95	1.15	0.02	0.00	0.00	0.53
AP20088-PX17L1 R-C B-AXIS Line 025	63.61	0.16	0.50	20.36	0.58	23.95	1.16	0.02	0.00	0.00	0.54
AP20088-PX17L1 R-C B-AXIS Line 026	63.94	0.17	0.50	20.27	0.57	24.15	1.23	0.01	0.00	0.03	0.54
AP20088-PX17L1 R-C B-AXIS Line 027	63.53	0.15	0.50	20.42	0.59	24.11	1.27	0.02	0.00	0.00	0.54
AP20088-PX17L2 R-C C-AXIS Line 02	63.97	0.22	0.94	17.28	0.33	25.69	1.73	0.02	0.02	0.00	0.60
AP20088-PX17L2 R-C C-AXIS Line 03	65.53	0.21	0.92	14.47	0.29	29.04	1.66	0.04	0.03	0.02	0.67
AP20088-PX17L2 R-C C-AXIS Line 04	65.86	0.23	0.96	14.15	0.28	29.32	1.74	0.01	0.02	0.01	0.67
AP20088-PX17L2 R-C C-AXIS Line 05	65.69	0.21	1.01	13.53	0.25	29.42	1.80	0.01	0.03	0.01	0.68
AP20088-PX17L2 R-C C-AXIS Line 06	66.23	0.18	0.97	12.99	0.22	30.05	1.74	0.02	0.02	0.00	0.70
AP20088-PX17L2 R-C C-AXIS Line 07	66.21	0.18	1.00	12.77	0.25	30.36	1.83	0.02	0.00	0.04	0.70
AP20088-PX17L2 R-C C-AXIS Line 08	66.38	0.16	0.99	12.27	0.20	30.66	1.84	0.02	0.01	0.03	0.71
AP20088-PX17L2 R-C C-AXIS Line 09	66.39	0.20	1.01	11.99	0.23	31.04	1.94	0.01	0.03	0.06	0.72
AP20088-PX17L2 R-C C-AXIS Line 010	66.50	0.16	1.03	11.77	0.19	30.99	2.01	0.03	0.04	0.07	0.72

AP20088-PX17L2 R-C C-AXIS Line 011	66.51	0.17	0.99	11.39	0.21	31.53	2.05	0.01	0.03	0.13	0.73
AP20088-PX17L2 R-C C-AXIS Line 012	66.96	0.16	0.99	11.24	0.19	31.55	2.08	0.02	0.05	0.13	0.74
AP20088-PX17L2 R-C C-AXIS Line 013	66.76	0.16	0.99	11.14	0.17	31.73	2.14	0.02	0.06	0.15	0.74
AP20088-PX17L2 R-C C-AXIS Line 014	66.79	0.17	0.97	11.56	0.22	31.18	2.13	0.02	0.01	0.12	0.73
AP20088-PX17L2 R-C C-AXIS Line 015	66.04	0.18	0.96	13.68	0.26	29.82	1.85	0.01	0.04	0.07	0.69
AP20088-PX17L2 R-C C-AXIS Line 016	65.39	0.20	1.01	16.17	0.35	28.00	1.70	0.02	0.03	0.03	0.63
AP20088-PX17L2 R-C C-AXIS Line 017	64.62	0.16	0.70	17.48	0.39	26.55	1.30	0.02	0.03	0.00	0.60
AP20088-PX17L2 R-C C-AXIS Line 018	64.73	0.14	0.48	18.53	0.53	25.53	1.16	0.01	0.00	0.01	0.58
AP20088-PX17L2 R-C C-AXIS Line 019	64.55	0.13	0.46	19.11	0.52	25.35	1.24	0.02	0.00	0.00	0.57
AP20088-PX17L2 R-C C-AXIS Line 020	63.97	0.21	0.53	19.43	0.55	24.61	1.36	0.01	0.01	0.04	0.56
AP20088-PX17L2 R-C C-AXIS Line 021	63.58	0.36	0.80	19.58	0.58	24.77	1.47	0.03	0.03	0.02	0.56
AP20088-PX17L2 R-C C-AXIS Line 022	63.65	0.26	0.81	19.25	0.54	24.42	1.48	0.03	0.00	0.02	0.56
AP20088-PX17L2 R-C C-AXIS Line 023	63.75	0.22	0.77	19.51	0.52	24.74	1.37	0.03	0.01	0.00	0.56
AP20088-PX18A	64.40	0.14	0.56	19.14	0.58	25.31	1.14	0.02	0.00	0.01	0.57
AP20088-PX18B	64.24	0.15	0.58	19.23	0.54	25.27	1.10	0.01	0.00	0.00	0.57
AP20088-PX18C	64.53	0.14	0.56	19.33	0.56	25.18	1.12	0.02	0.00	0.00	0.57

AP20088-PX18L1 Line 002	66.99	0.37	3.11	17.34	0.36	23.06	1.50	0.07	0.02	0.04	0.57
AP20088-PX18L1 Line 003	63.92	0.31	2.32	14.69	0.27	28.19	1.83	0.02	0.02	0.02	0.66
AP20088-PX18L1 Line 004	64.20	0.31	2.34	14.21	0.23	28.36	1.80	0.03	0.02	0.00	0.67
AP20088-PX18L1 Line 005	64.17	0.31	2.41	13.92	0.24	28.66	1.83	0.02	0.00	0.00	0.67
AP20088-PX18L1 Line 006	64.72	0.32	2.45	13.77	0.23	29.15	1.86	0.02	0.02	0.03	0.68
AP20088-PX18L1 Line 007	63.79	0.31	2.57	14.02	0.26	28.58	1.88	0.02	0.01	0.00	0.67
AP20088-PX18L1 Line 008	64.58	0.32	2.46	13.19	0.21	29.50	2.05	0.03	0.02	0.01	0.69
AP20088-PX18L1 Line 009	64.59	0.33	2.43	12.81	0.21	29.40	2.16	0.03	0.01	0.06	0.70
AP20088-PX18L1 Line 010	64.90	0.33	2.43	12.86	0.20	29.77	2.26	0.03	0.04	0.09	0.70
AP20088-PX18L1 Line 011	65.26	0.33	2.25	12.39	0.21	30.00	2.31	0.04	0.07	0.14	0.71
AP20088-PX18L1 Line 012	63.96	0.24	1.28	17.43	0.55	26.13	1.59	0.03	0.03	0.07	0.60
AP20088-PX18L1 Line 013	63.25	0.26	1.09	20.26	0.72	23.74	1.25	0.03	0.03	0.03	0.54
AP20088-PX18L1 Line 014	63.27	0.30	1.34	20.43	0.63	23.48	1.29	0.01	0.00	0.02	0.53
AP20088-PX18L1 Line 015	62.39	0.32	1.55	20.26	0.65	23.33	1.39	0.03	0.00	0.01	0.54
AP20088-PX20A	66.60	0.14	1.83	10.19	0.15	32.72	1.43	0.03	0.07	0.39	0.76
AP20084PX1A	64.53	0.17	0.60	19.10	0.51	25.22	1.17	0.04	0.02	0.00	0.57

AP20084PX1B	64.37	0.20	0.59	19.07	0.55	25.12	1.20	0.03	0.00	0.01	0.57
AP20084PX1L1 Line 001	64.78	0.16	0.73	17.05	0.45	26.85	1.25	0.01	0.01	0.00	0.61
AP20084PX1L1 Line 002	64.89	0.21	0.84	16.97	0.49	26.89	1.24	0.01	0.00	0.00	0.61
AP20084PX1L1 Line 003	64.96	0.20	0.94	17.06	0.43	26.76	1.26	0.03	0.00	0.00	0.61
AP20084PX1L1 Line 004	64.46	0.22	0.94	17.12	0.46	26.70	1.29	0.01	0.00	0.00	0.61
AP20084PX1L1 Line 005	64.64	0.19	0.93	16.88	0.44	26.91	1.25	0.04	0.02	0.00	0.61
AP20084PX1L1 Line 006	64.99	0.21	0.89	16.81	0.44	27.27	1.22	0.02	0.00	0.00	0.62
AP20084PX1L1 Line 007	65.26	0.20	0.94	16.10	0.37	27.48	1.42	0.02	0.00	0.02	0.63
AP20084PX1L1 Line 008	65.19	0.23	1.16	15.14	0.28	28.01	1.96	0.02	0.05	0.01	0.65
AP20084PX1L1 Line 009	65.09	0.26	1.22	14.82	0.25	28.19	2.00	0.03	0.02	0.02	0.66
AP20084PX1L1 Line 010	65.17	0.23	1.15	14.83	0.27	28.22	1.92	0.02	0.03	0.04	0.66
AP20084PX1L1 Line 011	65.14	0.22	0.98	15.23	0.28	27.77	1.76	0.02	0.02	0.00	0.65
AP20084PX1L1 Line 012	65.55	0.22	0.87	15.60	0.30	27.92	1.72	0.02	0.06	0.02	0.64
AP20084PX1L1 Line 013	66.01	0.26	2.36	15.86	0.31	24.46	1.78	0.29	0.00	0.00	0.61
AP20084PX2A	63.90	0.19	0.72	20.11	0.57	23.80	1.24	0.03	0.00	0.02	0.54
AP20084PX2B	63.64	0.18	0.75	20.42	0.62	24.10	1.23	0.03	0.03	0.00	0.54
AP20084PX3A	64.10	0.23	1.00	18.61	0.40	25.43	1.41	0.02	0.01	0.00	0.58
AP20084PX3B	63.98	0.16	0.46	20.19	0.78	23.70	1.01	0.02	0.00	0.00	0.54
AP20084PX4A	64.01	0.22	0.95	18.70	0.43	25.08	1.37	0.02	0.00	0.00	0.57
AP20084PX6A	64.39	0.19	0.87	18.35	0.49	25.70	1.20	0.01	0.04	0.01	0.58

AP20084PX6B	64.87	0.27	1.35	15.74	0.36	27.73	1.33	0.01	0.00	0.00	0.64
AP20084PX8L1 R-M Line 001	61.80	0.40	3.21	16.70	0.32	21.18	1.70	0.17	0.00	0.01	0.56
AP20084PX8L1 R-M Line 002	64.01	0.34	2.09	15.51	0.28	27.10	1.58	0.02	0.00	0.00	0.64
AP20084PX8L1 R-M Line 003	63.91	0.35	2.78	14.60	0.24	28.33	1.68	0.02	0.02	0.06	0.66
AP20084PX8L1 R-M Line 004	64.07	0.34	3.30	13.37	0.23	28.89	1.83	0.04	0.08	0.20	0.68
AP20084PX8L1 R-M Line 005	63.66	0.38	3.72	13.19	0.18	29.04	1.96	0.03	0.06	0.23	0.69
AP20084PX8L1 R-M Line 006	64.10	0.34	3.44	12.76	0.18	28.98	1.78	0.03	0.04	0.25	0.69
AP20084PX8L1 R-M Line 007	63.75	0.35	3.63	13.07	0.17	29.12	1.89	0.05	0.08	0.18	0.69
AP20084PX8L1 R-M Line 008	63.71	0.34	3.68	12.99	0.22	29.20	1.94	0.03	0.07	0.19	0.69
AP20084PX8L1 R-M Line 009	63.70	0.37	3.67	13.12	0.17	29.17	1.87	0.03	0.02	0.22	0.69
AP20084PX8L1 R-M Line 010	64.26	0.34	3.26	12.67	0.19	29.40	1.83	0.04	0.04	0.34	0.70
AP20084PX8L1 R-M Line 011	64.38	0.34	3.14	12.74	0.18	29.47	1.78	0.03	0.04	0.28	0.70
AP20084PX8L1 R-M Line 012	64.04	0.33	2.84	13.67	0.20	28.85	1.83	0.04	0.08	0.22	0.68
AP20084PX8L1 R-M Line 013	63.87	0.33	3.25	13.56	0.21	28.82	1.83	0.04	0.08	0.26	0.68
AP20084PX8L1 R-M Line 014	64.38	0.30	2.92	12.93	0.18	29.48	1.80	0.03	0.09	0.23	0.70

AP20084PX8L1 R-M Line 015	64.64	0.28	2.44	12.79	0.20	29.71	1.79	0.02	0.03	0.25	0.70
AP20084PX8L1 R-M Line 016	64.77	0.29	2.07	12.88	0.22	29.39	1.94	0.04	0.04	0.21	0.70
AP20084PX8L1 R-M Line 017	64.39	0.27	1.38	15.58	0.31	27.13	2.08	0.04	0.03	0.08	0.64
AP20084PX8L1 R-M Line 018	63.91	0.27	0.96	18.21	0.45	25.00	1.77	0.03	0.00	0.01	0.58
AP20084PX8L1 R-M Line 019	64.13	0.28	0.93	18.41	0.48	25.08	1.77	0.04	0.01	0.01	0.58
AP20084PX8L1 R-M Line 020	64.00	0.25	0.93	18.26	0.46	24.82	1.76	0.03	0.00	0.00	0.58
AP20084PX8L1 R-M Line 021	63.67	0.27	0.90	18.28	0.48	24.95	1.73	0.03	0.00	0.01	0.58
AP20084PX8L2 R-M Line 001	64.92	0.25	1.50	14.75	0.27	28.38	1.81	0.01	0.00	0.04	0.66
AP20084PX8L2 R-M Line 002	65.36	0.20	1.59	13.32	0.20	29.41	1.89	0.03	0.06	0.05	0.69
AP20084PX8L2 R-M Line 003	65.83	0.19	1.45	12.63	0.21	30.18	1.89	0.02	0.03	0.12	0.71
AP20084PX8L2 R-M Line 004	65.88	0.19	1.32	12.13	0.16	30.76	1.75	0.03	0.06	0.21	0.72
AP20084PX8L2 R-M Line 005	65.64	0.17	1.37	12.69	0.18	30.32	1.82	0.03	0.01	0.07	0.70
AP20084PX8L2 R-M Line 006	65.97	0.21	1.35	12.56	0.19	30.29	1.93	0.02	0.06	0.07	0.71
AP20084PX8L2 R-M Line 007	65.84	0.19	1.27	12.27	0.19	30.49	1.72	0.01	0.03	0.17	0.71
AP20084PX8L2 R-M Line 008	65.65	0.19	1.26	12.28	0.18	30.45	1.77	0.04	0.07	0.14	0.71

AP20084PX8L2 R-M Line 009	65.75	0.20	1.27	12.37	0.20	30.20	1.83	0.03	0.05	0.14	0.71
AP20084PX8L2 R-M Line 010	65.54	0.18	1.28	13.53	0.25	29.73	1.79	0.02	0.05	0.08	0.69
AP20084PX8L2 R-M Line 011	65.72	0.17	1.27	12.75	0.21	29.91	1.83	0.03	0.02	0.13	0.70
AP20084PX8L2 R-M Line 012	65.32	0.16	1.21	13.36	0.22	29.80	1.88	0.01	0.07	0.14	0.69
AP20084PX8L2 R-M Line 013	64.32	0.22	0.98	16.86	0.42	26.50	1.65	0.04	0.03	0.00	0.61
AP20084PX8L2 R-M Line 014	63.32	0.24	0.92	18.42	0.45	24.89	1.65	0.03	0.00	0.00	0.57
AP20084PX8L2 R-M Line 015	63.50	0.24	0.97	18.52	0.47	24.89	1.63	0.04	0.00	0.00	0.57
AP20084PX8L2 R-M Line 016	63.34	0.27	0.99	18.49	0.48	24.85	1.63	0.05	0.03	0.00	0.57
AP20084PX8L2 R-M Line 017	63.48	0.24	0.96	18.37	0.47	24.83	1.66	0.04	0.00	0.00	0.57
AP20084PX8L2 R-M Line 018	63.64	0.25	0.93	18.39	0.50	24.71	1.67	0.03	0.05	0.02	0.57
AP20084PX9A	62.77	0.21	0.98	20.34	0.64	23.35	1.35	0.03	0.02	0.00	0.53
AP20084PX9B	63.57	0.15	0.61	19.81	0.73	23.98	1.11	0.03	0.00	0.00	0.55
AP20084PX10A	63.57	0.08	0.47	20.76	0.79	22.94	1.03	0.03	0.04	0.00	0.52
AP20084PX10B	63.91	0.13	0.44	19.42	0.69	24.33	1.05	0.02	0.01	0.00	0.56
AP20084PX11A	62.98	0.19	0.88	20.31	0.71	23.34	1.33	0.03	0.00	0.00	0.53
AP20084PX11B	64.02	0.23	0.83	16.94	0.36	26.33	1.87	0.03	0.01	0.00	0.61
AP20084PX12A	62.50	0.28	1.05	19.32	0.63	23.69	1.83	0.03	0.01	0.00	0.55
AP20084PX12B	65.93	0.26	4.77	16.57	0.45	21.64	2.29	1.13	0.03	0.02	0.57
AP20084PX15A	63.32	0.07	0.64	19.34	0.47	24.39	1.13	0.02	0.00	0.00	0.56

AP20084PX15B	63.65	0.10	0.43	19.67	0.73	24.06	0.98	0.01	0.04	0.01	0.55
AP20084PX15L1 Line 003	66.79	0.24	2.01	19.69	0.41	22.76	1.58	0.15	0.00	0.00	0.54
AP20084PX15L1 Line 004	64.87	0.22	0.88	15.69	0.34	27.51	1.62	0.02	0.00	0.00	0.64
AP20084PX15L1 Line 005	64.41	0.20	0.82	16.17	0.31	26.91	1.66	0.03	0.00	0.00	0.62
AP20084PX15L1 Line 006	64.19	0.16	0.59	17.13	0.42	26.32	1.26	0.03	0.00	0.00	0.61
AP20084PX15L1 Line 007	64.21	0.12	0.42	18.14	0.53	25.48	1.11	0.02	0.00	0.00	0.58
AP20084PX15L1 Line 008	64.03	0.08	0.40	18.62	0.60	25.29	0.98	0.01	0.00	0.00	0.58
AP20084PX15L1 Line 009	63.81	0.10	0.37	19.05	0.63	24.96	0.99	0.02	0.04	0.00	0.57
AP20084PX15L1 Line 010	63.88	0.10	0.41	19.33	0.66	24.56	1.01	0.02	0.00	0.01	0.56
AP20084PX15L1 Line 011	63.55	0.08	0.43	19.41	0.69	24.34	0.99	0.02	0.00	0.00	0.56
AP20084PX15L1 Line 012	63.56	0.10	0.39	19.48	0.72	24.10	1.05	0.01	0.00	0.01	0.55
AP20042PX1L1 Line 001	61.39	0.33	0.62	20.20	0.51	19.53	5.57	0.11	0.02	0.00	0.49
AP20042PX1L1 Line 002	62.25	0.35	0.63	19.88	0.44	21.25	4.17	0.08	0.04	0.00	0.52
AP20042PX1L1 Line 003	62.95	0.30	0.36	19.73	0.40	23.50	2.05	0.03	0.00	0.01	0.54
AP20042PX1L1 Line 004	50.59	0.09	0.20	27.17	0.42	28.32	0.69	0.01	0.01	0.00	0.51
AP20042PX1L1 Line 005	42.74	0.01	0.01	30.99	0.42	30.79	0.12	0.00	0.07	0.02	0.50

AP20042PX1L1 Line 006	42.96	0.02	0.01	31.08	0.38	30.98	0.13	0.01	0.05	0.00	0.50
AP20042PX1L1 Line 007	43.21	0.02	0.01	30.33	0.40	31.09	0.11	0.00	0.06	0.02	0.51
AP20042PX1L1 Line 008	43.09	0.00	0.03	30.67	0.40	29.25	0.19	0.00	0.07	0.01	0.49
AP20042PX1L1 Line 009	42.39	0.00	0.10	32.78	0.32	21.32	0.53	0.02	0.05	0.01	0.39
AP20042PX1L1 Line 010	42.76	0.01	0.19	33.01	0.25	20.93	0.55	0.00	0.05	0.03	0.39
AP20042PX1L1 Line 011	43.44	0.01	0.08	29.41	0.36	28.98	0.22	0.00	0.09	0.01	0.50
AP20042PX1L1 Line 012	43.49	0.02	0.02	29.04	0.37	31.36	0.12	0.00	0.06	0.03	0.52
AP20042PX1L1 Line 013	42.47	0.01	0.03	29.78	0.34	27.15	0.16	0.00	0.06	0.05	0.48
AP20042PX1L1 Line 014	41.80	0.01	0.36	30.55	0.31	22.92	0.38	0.01	0.05	0.04	0.43
AP20042PX1L1 Line 015	43.80	0.01	0.02	28.14	0.37	33.40	0.13	0.00	0.08	0.00	0.54
AP20042PX1L1 Line 016	43.59	0.02	0.02	27.92	0.34	33.62	0.12	0.00	0.14	0.01	0.55
AP20042PX1L1 Line 017	43.79	0.04	0.02	27.63	0.36	33.89	0.12	0.00	0.06	0.02	0.55
AP20042PX1L1 Line 018	43.79	0.02	0.02	26.95	0.36	34.00	0.15	0.01	0.10	0.00	0.56
AP20042PX1L1 Line 019	43.64	0.02	0.02	26.82	0.34	34.11	0.12	0.01	0.08	0.03	0.56
AP20042PX1L1 Line 020	43.76	0.00	0.02	26.65	0.31	34.58	0.12	0.02	0.12	0.02	0.56
AP20042PX1L1 Line 021	44.30	0.01	0.02	26.59	0.35	34.29	0.18	0.00	0.09	0.02	0.56

AP20042PX1L1 Line 022	44.43	0.02	0.02	25.95	0.30	35.74	0.10	0.02	0.11	0.03	0.58
AP20042PX1L1 Line 023	44.16	0.02	0.01	25.49	0.31	36.01	0.12	0.01	0.10	0.03	0.59
AP20042PX1L1 Line 024	43.99	0.02	0.02	25.30	0.32	36.06	0.09	0.01	0.08	0.02	0.59
AP20042PX1L1 Line 025	44.40	0.03	0.02	25.21	0.30	36.73	0.11	0.00	0.06	0.03	0.59
AP20042PX1L1 Line 026	44.45	0.00	0.02	24.73	0.30	36.76	0.11	0.00	0.09	0.03	0.60
AP20042PX1L1 Line 027	44.33	0.01	0.03	24.48	0.27	37.04	0.11	0.00	0.10	0.03	0.60
AP20042PX1L1 Line 028	44.45	0.01	0.00	24.29	0.27	37.28	0.10	0.00	0.11	0.01	0.61
AP20042PX1L1 Line 029	44.61	0.01	0.02	24.02	0.26	37.33	0.10	0.00	0.08	0.03	0.61
AP20042PX1L1 Line 030	44.52	0.02	0.02	24.06	0.28	37.86	0.11	0.00	0.08	0.00	0.61
AP20042PX1L1 Line 031	44.43	0.02	0.01	23.72	0.26	37.73	0.12	0.00	0.10	0.01	0.61
AP20042PX1L1 Line 032	44.72	0.03	0.02	23.41	0.25	37.97	0.11	0.00	0.06	0.00	0.62
AP20042PX1L1 Line 033	44.78	0.00	0.02	23.13	0.27	38.21	0.12	0.01	0.09	0.01	0.62
AP20042PX1L1 Line 034	44.91	0.01	0.01	22.85	0.26	38.38	0.14	0.01	0.09	0.00	0.63
AP20042PX1L1 Line 035	44.94	0.03	0.01	22.69	0.26	38.73	0.11	0.01	0.07	0.00	0.63
AP20042PX1L1 Line 036	44.68	0.02	0.00	22.78	0.26	38.45	0.12	0.01	0.08	0.03	0.63
AP20042PX1L1 Line 037	44.58	0.01	0.02	22.60	0.24	38.86	0.10	0.00	0.12	0.00	0.63

AP20042PX1L1 Line 038	44.92	0.01	0.06	22.43	0.26	38.44	0.15	0.00	0.11	0.02	0.63
AP20042PX1L1 Line 039	44.79	0.01	0.00	22.16	0.22	39.18	0.12	0.00	0.11	0.00	0.64
AP20042PX1L1 Line 040	44.66	0.02	0.01	22.19	0.20	39.31	0.13	0.00	0.11	0.00	0.64
AP20042PX1L1 Line 041	44.78	0.02	0.01	22.07	0.26	39.43	0.13	0.00	0.11	0.04	0.64
AP20042PX1L1 Line 042	44.57	0.02	0.03	22.03	0.25	39.52	0.11	0.01	0.09	0.01	0.64
AP20042PX1L1 Line 043	44.84	0.03	0.03	21.90	0.24	39.77	0.10	0.01	0.09	0.02	0.64
AP20042PX1L2A	41.93	0.02	0.00	32.59	0.46	28.99	0.17	0.00	0.06	0.01	0.47
AP20042PX1L2B	41.17	0.04	0.01	33.60	0.46	28.04	0.15	0.00	0.04	0.01	0.45
AP20042PX4A	42.19	0.01	0.01	31.89	0.46	29.81	0.14	0.00	0.06	0.00	0.48
AP20042PX4B	63.01	0.33	1.88	20.86	0.47	17.37	5.24	0.26	0.00	0.00	0.45
AP20042PX5A	45.94	0.01	0.02	17.49	0.18	43.92	0.13	0.01	0.10	0.06	0.72
AP20042PX5B	62.45	0.34	1.06	18.06	0.34	24.40	2.18	0.02	0.03	0.00	0.57
AP20042PX5L1 Line 002	63.17	0.43	1.89	19.72	0.42	21.56	2.17	0.13	0.01	0.00	0.52
AP20042PX5L1 Line 003	62.48	0.41	1.09	18.04	0.36	24.33	2.19	0.03	0.01	0.00	0.57
AP20042PX5L1 Line 004	60.08	0.40	1.01	17.86	0.36	26.75	1.97	0.02	0.03	0.00	0.60
AP20042PX5L1 Line 005	45.21	0.07	0.08	25.22	0.29	35.31	0.25	0.00	0.08	0.00	0.58
AP20042PX5L1 Line 006	44.18	0.03	0.01	25.59	0.33	36.00	0.15	0.01	0.07	0.01	0.58
AP20042PX5L1 Line 007	44.40	0.03	0.01	25.54	0.33	36.06	0.15	0.00	0.08	0.00	0.59
AP20042PX5L1 Line 008	44.28	0.04	0.01	25.42	0.32	36.04	0.17	0.01	0.06	0.01	0.59

AP20042PX5L1 Line 009	44.38	0.02	0.00	25.36	0.33	36.31	0.17	0.01	0.06	0.00	0.59
AP20042PX5L1 Line 010	44.53	0.00	0.00	25.10	0.31	36.36	0.15	0.01	0.04	0.01	0.59
AP20042PX5L1 Line 011	44.29	0.01	0.02	24.78	0.31	36.72	0.16	0.00	0.09	0.04	0.60
AP20042PX5L1 Line 012	44.15	0.02	0.01	24.80	0.31	36.94	0.18	0.00	0.08	0.00	0.60
AP20042PX5L1 Line 013	44.73	0.01	0.02	24.49	0.31	37.46	0.14	0.00	0.08	0.02	0.60
AP20042PX5L1 Line 014	44.50	0.02	0.02	24.09	0.28	37.42	0.15	0.00	0.10	0.01	0.61
AP20042PX5L1 Line 015	44.69	0.00	0.00	23.92	0.31	37.77	0.13	0.00	0.06	0.05	0.61
AP20042PX5L1 Line 016	44.93	0.01	0.01	23.62	0.30	37.87	0.15	0.01	0.09	0.03	0.62
AP20042PX5L1 Line 017	44.72	0.00	0.00	23.33	0.28	38.10	0.14	0.00	0.12	0.01	0.62
AP20042PX5L1 Line 018	44.84	0.02	0.02	23.17	0.30	38.59	0.12	0.01	0.08	0.03	0.62
AP20042PX5L1 Line 019	44.86	0.01	0.01	23.09	0.27	38.63	0.15	0.00	0.09	0.00	0.63
AP20042PX5L1 Line 020	45.02	0.00	0.02	22.64	0.27	38.79	0.13	0.00	0.12	0.04	0.63
AP20042PX5L1 Line 021	45.15	0.03	0.02	22.37	0.28	39.15	0.13	0.01	0.10	0.00	0.64
AP20042PX5L1 Line 022	45.11	0.02	0.01	22.29	0.26	39.22	0.13	0.01	0.05	0.04	0.64
AP20042PX5L1 Line 023	45.21	0.01	0.01	21.74	0.26	39.38	0.13	0.00	0.11	0.02	0.64
AP20042PX5L1 Line 024	45.24	0.00	0.02	21.54	0.26	39.71	0.14	0.00	0.10	0.03	0.65

AP20042PX5L1 Line 025	45.51	0.01	0.02	21.56	0.28	40.07	0.13	0.00	0.12	0.00	0.65
AP20042PX5L1 Line 026	45.36	0.01	0.00	21.31	0.20	40.27	0.14	0.00	0.10	0.00	0.65
AP20042PX5L1 Line 027	45.32	0.02	0.00	21.08	0.21	39.60	0.12	0.00	0.13	0.02	0.65
AP20042PX5L1 Line 028	45.43	0.02	0.02	20.90	0.24	40.47	0.13	0.00	0.11	0.02	0.66
AP20042PX5L1 Line 029	45.35	0.01	0.01	20.46	0.25	40.93	0.12	0.00	0.12	0.01	0.67
AP20042PX5L1 Line 030	45.43	0.01	0.01	20.61	0.24	40.76	0.14	0.01	0.12	0.02	0.66
AP20042PX5L1 Line 031	45.65	0.01	0.02	20.19	0.22	40.81	0.11	0.00	0.15	0.02	0.67
AP20042PX5L1 Line 032	45.66	0.02	0.01	20.17	0.22	41.18	0.14	0.00	0.13	0.01	0.67
AP20042PX5L1 Line 033	45.48	0.00	0.02	20.01	0.21	41.69	0.14	0.00	0.13	0.00	0.68
AP20042PX5L1 Line 034	45.52	0.02	0.00	19.97	0.21	41.30	0.14	0.00	0.08	0.00	0.67
AP20042PX5L1 Line 035	45.65	0.03	0.02	19.55	0.20	42.03	0.15	0.00	0.13	0.00	0.68
AP20042PX5L1 Line 036	45.70	0.01	0.02	19.51	0.21	41.75	0.12	0.01	0.12	0.02	0.68
AP20042PX5L1 Line 037	45.72	0.02	0.02	19.15	0.21	41.76	0.12	0.00	0.14	0.01	0.69
AP20042PX5L1 Line 038	45.61	0.01	0.02	19.24	0.21	41.79	0.12	0.00	0.14	0.00	0.68
AP20042PX5L1 Line 039	45.73	0.01	0.03	19.21	0.20	42.25	0.11	0.00	0.12	0.00	0.69
AP20042PX5L1 Line 040	45.89	0.02	0.01	19.16	0.19	42.40	0.11	0.00	0.09	0.01	0.69

AP20042PX5L1 Line 041	45.82	0.02	0.01	18.90	0.23	41.98	0.15	0.00	0.12	0.02	0.69
AP20042PX5L1 Line 042	45.82	0.01	0.01	19.08	0.19	42.76	0.12	0.00	0.15	0.00	0.69
AP20042PX5L1 Line 043	46.07	0.01	0.03	18.94	0.20	42.38	0.12	0.00	0.12	0.00	0.69
AP20042PX5L1 Line 044	46.27	0.00	0.02	18.77	0.22	42.51	0.11	0.00	0.11	0.01	0.69
AP20042PX5L1 Line 045	46.12	0.00	0.01	18.86	0.19	42.77	0.11	0.01	0.13	0.00	0.69
AP20042PX6A	46.32	0.00	0.02	17.81	0.22	43.34	0.14	0.02	0.12	0.02	0.71
AP20042PX6LI Line 003	62.72	0.44	1.03	18.04	0.34	24.80	2.18	0.02	0.03	0.00	0.58
AP20042PX6LI Line 004	62.98	0.44	1.17	16.87	0.31	25.50	2.37	0.03	0.01	0.02	0.60
AP20042PX6LI Line 005	62.94	0.47	1.23	16.52	0.36	25.71	2.69	0.04	0.02	0.00	0.61
AP20042PX6LI Line 006	62.38	0.44	0.95	16.60	0.33	25.26	2.91	0.05	0.00	0.00	0.60
AP20042PX6LI Line 007	54.95	0.28	0.59	19.78	0.32	29.63	1.50	0.02	0.03	0.01	0.60
AP20042PX6LI Line 008	44.12	0.06	0.02	25.58	0.34	35.99	0.10	0.01	0.05	0.02	0.58
AP20042PX6LI Line 009	43.98	0.03	0.00	25.53	0.31	36.02	0.12	0.00	0.10	0.02	0.59
AP20042PX6LI Line 010	44.13	0.02	0.00	25.43	0.31	36.23	0.10	0.00	0.10	0.00	0.59
AP20042PX6LI Line 011	44.12	0.02	0.00	25.27	0.32	36.27	0.11	0.00	0.08	0.00	0.59
AP20042PX6LI Line 012	44.33	0.02	0.02	25.13	0.31	36.44	0.12	0.00	0.09	0.04	0.59
AP20042PX6LI Line 013	44.09	0.00	0.00	25.04	0.33	36.22	0.12	0.00	0.08	0.00	0.59
AP20042PX6LI Line 014	44.31	0.01	0.01	25.29	0.31	36.62	0.11	0.01	0.06	0.00	0.59
AP20042PX6LI Line 015	44.44	0.00	0.01	24.94	0.34	36.82	0.14	0.00	0.08	0.00	0.60
AP20042PX6LI Line 016	44.50	0.00	0.01	24.77	0.29	36.97	0.12	0.00	0.08	0.02	0.60
AP20042PX6LI Line 017	44.57	0.00	0.01	24.16	0.28	37.17	0.14	0.00	0.09	0.01	0.61
AP20042PX6LI Line 018	44.50	0.02	0.01	24.37	0.29	37.37	0.15	0.01	0.10	0.02	0.61
AP20042PX6LI Line 019	44.38	0.00	0.03	23.99	0.30	37.40	0.12	0.00	0.10	0.00	0.61
AP20042PX6LI Line 020	44.72	0.01	0.02	23.47	0.28	37.89	0.14	0.00	0.12	0.01	0.62
AP20042PX6LI Line 021	44.69	0.01	0.01	23.29	0.24	38.03	0.12	0.00	0.10	0.04	0.62
AP20042PX6LI Line 022	44.79	0.01	0.00	23.02	0.29	38.53	0.13	0.00	0.08	0.00	0.63

AP20042PX6LI Line 023	45.00	0.01	0.01	22.76	0.28	38.78	0.11	0.00	0.10	0.01	0.63
AP20042PX6LI Line 024	44.96	0.02	0.01	22.68	0.25	38.81	0.11	0.01	0.12	0.02	0.63
AP20042PX6LI Line 025	44.98	0.00	0.02	22.27	0.24	39.54	0.10	0.00	0.12	0.00	0.64
AP20042PX6LI Line 026	44.98	0.00	0.00	22.13	0.25	39.78	0.14	0.00	0.16	0.00	0.64
AP20042PX6LI Line 027	44.89	0.00	0.03	21.88	0.26	39.69	0.12	0.00	0.13	0.00	0.64
AP20042PX6LI Line 028	45.17	0.02	0.03	21.56	0.29	40.08	0.12	0.00	0.09	0.00	0.65
AP20042PX6LI Line 029	45.10	0.02	0.03	21.17	0.23	40.26	0.11	0.00	0.12	0.01	0.66
AP20042PX6LI Line 030	45.25	0.01	0.03	20.85	0.23	40.86	0.11	0.00	0.15	0.00	0.66
AP20042PX6LI Line 031	45.15	0.02	0.01	20.78	0.22	40.85	0.09	0.00	0.15	0.03	0.66
AP20042PX6LI Line 032	45.45	0.01	0.02	20.35	0.22	41.00	0.12	0.00	0.11	0.01	0.67
AP20042PX6LI Line 033	45.65	0.00	0.00	20.16	0.19	40.99	0.12	0.00	0.12	0.02	0.67
AP20042PX6LI Line 034	45.25	0.01	0.02	19.79	0.23	41.24	0.12	0.01	0.14	0.00	0.68
AP20042PX6LI Line 035	45.80	0.01	0.02	19.72	0.24	41.51	0.12	0.01	0.10	0.01	0.68
AP20042PX6LI Line 036	45.73	0.01	0.01	19.51	0.20	41.81	0.12	0.00	0.14	0.00	0.68
AP20042PX6LI Line 037	45.13	0.03	0.03	19.36	0.20	42.09	0.08	0.00	0.12	0.04	0.68
AP20042PX6LI Line 038	45.87	0.01	0.01	19.40	0.22	42.44	0.12	0.00	0.08	0.00	0.69
AP20042PX6LI Line 039	45.85	0.00	0.01	19.29	0.20	42.21	0.13	0.00	0.10	0.03	0.69
AP20042PX6LI Line 040	46.00	0.02	0.02	19.00	0.20	42.64	0.14	0.00	0.13	0.03	0.69
AP20042PX6LI Line 041	45.78	0.01	0.01	18.89	0.20	42.67	0.13	0.00	0.18	0.01	0.69
AP20042PX6LI Line 042	46.02	0.00	0.01	18.59	0.22	42.52	0.15	0.00	0.11	0.02	0.70
AP20042PX6LI Line 043	45.80	0.04	0.02	18.60	0.20	42.94	0.13	0.00	0.11	0.01	0.70
AP20042PX6LI Line 044	45.77	0.02	0.02	18.39	0.19	42.89	0.14	0.00	0.12	0.02	0.70
AP20042PX6LI Line 045	46.00	0.00	0.01	18.47	0.21	42.89	0.13	0.00	0.13	0.02	0.70
AP20042PX7A	64.15	0.30	0.98	15.10	0.27	27.47	1.98	0.04	0.05	0.01	0.65
AP20042PX7B	62.55	0.44	0.99	18.23	0.32	24.54	2.27	0.04	0.02	0.00	0.57
AP20042PX7L1 Line 003	61.82	0.41	1.34	19.91	0.39	22.61	2.16	0.05	0.02	0.00	0.53
AP20042PX7L1 Line 004	63.01	0.37	1.96	16.42	0.26	26.27	2.01	0.02	0.00	0.00	0.62

AP20042PX8L1 Line 002	59.72	0.72	0.88	22.79	0.45	19.99	3.06	0.05	0.00	0.00	0.47
AP20042PX8L1 Line 003	62.05	0.41	0.87	18.86	0.41	23.56	2.21	0.04	0.03	0.00	0.56
AP20042PX8L1 Line 004	62.83	0.42	0.92	17.45	0.33	24.65	2.17	0.03	0.01	0.01	0.59
AP20042PX8L1 Line 005	62.74	0.39	1.57	16.68	0.32	25.48	2.06	0.04	0.03	0.03	0.60
AP20042PX8L1 Line 006	63.24	0.33	1.87	16.21	0.26	26.54	1.92	0.04	0.00	0.03	0.62
AP20042PX9A	45.79	0.00	0.02	18.12	0.18	43.19	0.12	0.00	0.12	0.05	0.70
AP20042PX10A	45.74	0.02	0.04	20.26	0.21	41.22	0.11	0.00	0.11	0.01	0.67
AP20042PX10L1 Line 001	62.44	0.43	0.69	19.62	0.47	19.57	6.98	0.15	0.04	0.02	0.50
AP20042PX10L1 Line 002	61.96	0.58	1.08	17.97	0.37	21.48	5.55	0.10	0.00	0.01	0.54
AP20042PX10L1 Line 003	47.23	0.09	0.19	27.30	0.37	30.66	1.04	0.02	0.02	0.01	0.53
AP20042PX10L1 Line 004	43.37	0.02	0.02	28.81	0.35	32.54	0.14	0.01	0.07	0.00	0.53
AP20042PX10L1 Line 005	43.57	0.01	0.03	28.58	0.38	33.17	0.13	0.01	0.03	0.02	0.54
AP20042PX10L1 Line 006	43.41	0.01	0.06	28.28	0.34	31.93	0.15	0.01	0.04	0.00	0.53
AP20042PX10L1 Line 007	43.27	0.01	0.04	28.21	0.32	29.14	0.18	0.00	0.10	0.01	0.51
AP20042PX10L1 Line 008	43.93	0.02	0.03	27.00	0.33	33.67	0.12	0.01	0.09	0.01	0.55
AP20042PX10L1 Line 009	43.79	0.02	0.03	26.72	0.32	35.15	0.10	0.01	0.06	0.01	0.57

AP20042PX10L1 Line 010	44.16	0.01	0.02	25.80	0.31	35.57	0.11	0.01	0.12	0.01	0.58
AP20042PX10L1 Line 011	44.12	0.01	0.03	25.46	0.29	36.23	0.12	0.01	0.08	0.00	0.59
AP20042PX10L1 Line 012	44.50	0.02	0.03	25.01	0.30	36.75	0.11	0.01	0.11	0.00	0.60
AP20042PX10L1 Line 013	44.60	0.03	0.05	24.40	0.27	37.22	0.11	0.01	0.13	0.01	0.60
AP20042PX10L1 Line 014	44.57	0.00	0.05	24.04	0.28	37.43	0.11	0.02	0.09	0.01	0.61
AP20042PX10L1 Line 015	44.63	0.01	0.02	23.44	0.28	38.07	0.13	0.00	0.13	0.00	0.62
AP20042PX10L1 Line 016	44.82	0.02	0.04	23.08	0.26	38.37	0.10	0.00	0.08	0.01	0.62
AP20042PX10L2 Line 017	44.60	0.02	0.02	22.58	0.29	38.52	0.10	0.00	0.13	0.01	0.63
AP20042PX10L2 Line 018	44.84	0.03	0.02	22.20	0.23	39.22	0.12	0.00	0.12	0.06	0.64
AP20042PX10L1 Line 019	44.93	0.01	0.04	21.90	0.24	39.38	0.12	0.01	0.11	0.01	0.64
AP20042PX10L2 Line 020	44.78	0.00	0.02	21.71	0.22	39.88	0.11	0.01	0.10	0.01	0.65
AP20042PX10L2 Line 021	45.09	0.02	0.03	21.35	0.21	40.21	0.13	0.02	0.13	0.02	0.65
AP20042PX10L2 Line 022	45.37	0.01	0.04	21.48	0.22	40.34	0.11	0.01	0.16	0.00	0.65
AP20042PX11B	63.67	0.27	1.11	14.74	0.26	27.84	1.90	0.03	0.04	0.03	0.65
AP20042PX11L1 Line 001	62.10	0.27	0.89	20.66	0.42	22.33	1.96	0.05	0.00	0.00	0.52

AP20042PX11L1 Line 002	62.42	0.27	0.99	18.93	0.33	23.73	2.01	0.04	0.01	0.03	0.56
AP20042PX11L1 Line 003	63.02	0.26	1.14	17.41	0.25	25.35	1.89	0.02	0.02	0.02	0.59
AP20042PX11L1 Line 004	63.41	0.27	1.26	15.50	0.25	27.00	1.88	0.03	0.03	0.02	0.64
AP20042PX11L1 Line 005	64.29	0.29	1.22	14.50	0.25	27.96	1.84	0.02	0.01	0.00	0.66
AP20042PX11L1 Line 006	64.13	0.23	1.13	14.21	0.22	28.03	1.88	0.04	0.00	0.00	0.66
AP20042PX11L1 Line 007	64.09	0.25	1.16	14.29	0.22	28.12	1.89	0.03	0.02	0.00	0.66
AP20042PX11L1 Line 008	63.82	0.26	1.11	14.47	0.27	28.08	1.90	0.04	0.03	0.01	0.66
AP20042PX11L1 Line 009	63.75	0.28	1.31	14.43	0.22	28.06	1.89	0.04	0.04	0.03	0.66
AP20042PX11L1 Line 010	63.92	0.26	1.12	14.27	0.23	28.23	1.98	0.02	0.01	0.03	0.66
AP20042PX11L1 Line 011	64.07	0.26	1.08	14.21	0.24	28.03	1.91	0.03	0.02	0.01	0.66
AP20042PX11L1 Line 012	63.82	0.26	1.25	14.35	0.23	28.16	1.86	0.02	0.00	0.00	0.66
AP20042PX11L1 Line 013	64.15	0.23	1.22	14.44	0.22	27.81	1.85	0.03	0.01	0.00	0.66
AP20042PX11L1 Line 014	63.87	0.27	1.17	14.39	0.29	27.86	1.86	0.02	0.04	0.01	0.66
AP20042PX11L1 Line 015	63.91	0.26	1.17	14.82	0.27	27.93	1.88	0.03	0.01	0.02	0.65
AP20042PX11L1 Line 016	63.73	0.24	1.10	15.03	0.27	27.54	1.94	0.03	0.00	0.01	0.65

AP20042PX11L1 Line 017	63.46	0.24	1.00	15.38	0.30	27.27	1.95	0.03	0.04	0.00	0.64
AP20042PX11L1 Line 018	63.44	0.28	1.18	15.64	0.37	27.00	1.85	0.04	0.03	0.00	0.63
AP20042PX11L1 Line 019	63.57	0.24	0.80	16.01	0.36	26.86	1.51	0.03	0.00	0.03	0.63
AP20042PX11L1 Line 020	63.93	0.23	0.73	16.36	0.43	26.59	1.48	0.02	0.00	0.01	0.62
AP20042PX11L1 Line 021	63.65	0.24	0.73	16.51	0.49	26.49	1.49	0.02	0.00	0.01	0.62
AP20042PX11L1 Line 022	63.39	0.24	0.73	16.91	0.43	26.23	1.52	0.03	0.00	0.02	0.61
AP20042PX11L1 Line 023	63.42	0.24	0.77	17.21	0.48	25.70	1.55	0.03	0.00	0.00	0.60
AP20042PX11L1 Line 024	63.53	0.24	0.80	17.16	0.49	25.71	1.54	0.03	0.00	0.00	0.60
AP20042PX11L1 Line 025	63.28	0.27	0.84	17.51	0.47	25.54	1.59	0.04	0.00	0.00	0.59
AP20042PX11L1 Line 026	63.52	0.29	0.87	17.65	0.52	25.27	1.57	0.04	0.02	0.00	0.59
AP20042PX11L1 Line 027	62.76	0.29	0.92	17.55	0.50	25.26	1.60	0.04	0.00	0.00	0.59
AP20042PX11L1 Line 028	62.90	0.30	0.94	17.70	0.49	25.37	1.65	0.03	0.00	0.00	0.59
AP20042PX11L1 Line 029	62.69	0.27	0.95	17.97	0.47	25.17	1.63	0.03	0.04	0.00	0.58
AP20042PX11L1 Line 030	63.02	0.31	1.00	17.87	0.50	24.93	1.64	0.04	0.00	0.00	0.58
AP20042PX11L1 Line 031	62.86	0.31	1.02	17.79	0.46	25.15	1.68	0.03	0.00	0.00	0.59

AP20042PX11L1 Line 032	63.04	0.28	1.05	17.88	0.45	25.14	1.67	0.02	0.00	0.00	0.58
AP20042PX11L1 Line 033	62.99	0.30	1.08	17.89	0.48	24.95	1.67	0.03	0.00	0.00	0.58
AP20042PX11L1 Line 034	62.82	0.29	1.06	17.98	0.49	24.97	1.72	0.03	0.06	0.00	0.58
AP20042PX11L1 Line 035	62.77	0.29	1.09	18.07	0.49	24.99	1.66	0.02	0.01	0.00	0.58
AP20042PX11L1 Line 036	62.60	0.28	1.09	18.03	0.53	24.92	1.72	0.02	0.00	0.00	0.58
AP20042PX11L1 Line 037	62.90	0.29	1.08	17.77	0.46	25.00	1.68	0.04	0.01	0.00	0.58
AP20042PX11L1 Line 038	63.10	0.27	1.08	17.74	0.46	25.08	1.74	0.03	0.00	0.01	0.59
AP20042PX11L1 Line 039	62.76	0.28	1.08	17.77	0.45	25.05	1.70	0.03	0.00	0.00	0.59
AP20042PX11L1 Line 040	62.80	0.26	1.10	17.87	0.48	25.07	1.70	0.03	0.01	0.02	0.58
AP20042PX11L1 Line 041	63.21	0.27	1.12	17.96	0.47	24.98	1.70	0.03	0.00	0.00	0.58
AP20042PX11L1 Line 042	62.73	0.30	1.15	17.81	0.47	25.20	1.70	0.03	0.00	0.00	0.59
AP20042PX11L1 Line 043	62.97	0.28	1.17	17.64	0.45	25.17	1.72	0.03	0.00	0.00	0.59
AP20042PX11L1 Line 044	62.89	0.29	1.14	17.67	0.49	24.97	1.71	0.04	0.04	0.00	0.59
AP20042PX11L1 Line 045	63.15	0.31	1.11	17.85	0.44	25.26	1.74	0.02	0.00	0.01	0.59
AP20042PX11L1 Line 046	63.14	0.28	1.00	17.69	0.43	25.35	1.68	0.03	0.01	0.00	0.59

AP20042PX11L1 Line 047	63.75	0.25	0.90	17.71	0.48	25.29	1.67	0.04	0.01	0.00	0.59
AP20042PX11L1 Line 048	63.64	0.25	0.87	17.64	0.47	25.61	1.71	0.03	0.03	0.00	0.59
AP20042PX11L1 Line 049	63.59	0.27	0.85	17.65	0.49	25.56	1.75	0.02	0.03	0.00	0.59
AP20042PX11L1 Line 050	63.70	0.28	0.82	17.52	0.46	25.65	1.74	0.04	0.00	0.00	0.59
AP20042PX12A	62.70	0.30	1.98	16.75	0.38	26.10	1.66	0.03	0.00	0.00	0.61
AP20042PX12B	66.02	0.43	3.57	19.31	0.40	16.07	2.01	0.49	0.00	0.00	0.45
AP20042PX12L1 Line 002	62.80	0.52	3.37	18.85	0.38	18.01	4.28	0.50	0.01	0.01	0.49
AP20042PX12L1 Line 003	62.39	0.42	1.20	17.76	0.38	24.31	2.60	0.02	0.01	0.00	0.58
AP20042PX12L1 Line 004	62.57	0.37	1.11	17.56	0.48	24.74	2.13	0.03	0.00	0.00	0.58
AP20042PX12L1 Line 005	63.11	0.34	1.07	16.57	0.45	26.05	1.70	0.03	0.00	0.00	0.61
AP20042PX13A	63.47	0.32	1.29	15.79	0.28	26.37	2.46	0.04	0.02	0.00	0.63
AP20042PX13B	52.57	0.38	4.91	14.36	0.29	9.20	1.94	0.65	0.00	0.00	0.39
AP20042PX13L1 Line 003	57.29	0.43	0.92	19.29	0.36	20.73	7.47	0.09	0.02	0.02	0.52
AP20042PX13L1 Line 004	62.22	0.47	0.99	18.38	0.36	23.49	2.45	0.05	0.02	0.00	0.56
AP20042PX13L1 Line 005	62.95	0.46	0.87	17.77	0.37	24.26	2.33	0.05	0.00	0.01	0.58
AP20042PX13L1 Line 006	62.75	0.44	0.94	17.71	0.34	24.44	2.37	0.04	0.00	0.02	0.58
AP20042PX13L1 Line 007	63.04	0.43	1.03	17.27	0.34	24.78	2.38	0.04	0.00	0.00	0.59

AP20042PX13L1 Line 008	62.91	0.46	1.50	16.69	0.33	24.57	3.23	0.05	0.02	0.01	0.60
AP20042PX13L1 Line 009	62.98	0.46	1.77	16.42	0.33	25.16	2.96	0.04	0.01	0.00	0.61
AP20042PX13L1 Line 010	63.20	0.46	1.84	15.17	0.31	25.56	2.77	0.05	0.02	0.01	0.63
AP20042PX13L1 Line 011	63.28	0.39	1.71	15.30	0.25	26.07	2.46	0.03	0.01	0.00	0.63
AP20042PX14L1 R-C Line 002	63.29	0.29	3.66	17.30	0.42	18.31	4.12	0.80	0.01	0.00	0.51
AP20042PX14L1 R-C Line 003	62.81	0.33	0.36	18.68	0.43	22.13	2.95	0.06	0.00	0.00	0.54
AP20042PX14L1 R-C Line 004	50.27	0.17	0.14	24.52	0.44	27.33	1.19	0.01	0.00	0.00	0.53
AP20042PX14L1 R-C Line 005	42.94	0.05	0.01	28.27	0.43	30.90	0.18	0.01	0.05	0.02	0.52
AP20042PX14L1 R-C Line 006	43.28	0.01	0.01	28.18	0.39	31.64	0.18	0.02	0.03	0.00	0.53
AP20042PX14L1 R-C Line 007	43.07	0.03	0.00	27.66	0.41	31.65	0.16	0.01	0.08	0.01	0.53
AP20042PX14L1 R-C Line 008	43.31	0.03	0.01	27.67	0.40	31.84	0.15	0.00	0.10	0.00	0.54
AP20042PX14L1 R-C Line 009	43.62	0.03	0.12	27.28	0.37	31.45	0.19	0.01	0.05	0.01	0.54
AP20042PX14L1 R-C Line 010	43.55	0.02	0.02	27.47	0.39	32.27	0.13	0.01	0.07	0.02	0.54
AP20042PX14L1 R-C Line 011	43.58	0.01	0.01	27.07	0.36	32.87	0.13	0.00	0.01	0.00	0.55
AP20042PX14L1 R-C Line 012	43.68	0.04	0.01	26.50	0.33	33.11	0.13	0.01	0.09	0.03	0.56

AP20042PX14L1 R-C Line 013	43.88	0.00	0.01	26.62	0.33	32.51	0.17	0.00	0.08	0.01	0.55
AP20042PX14L1 R-C Line 014	44.35	0.00	0.04	26.22	0.35	32.28	0.16	0.00	0.05	0.02	0.55
AP20042PX14L1 R-C Line 015	44.16	0.02	0.03	25.69	0.29	33.40	0.15	0.01	0.07	0.00	0.57
AP20042PX14L1 R-C Line 016	44.29	0.01	0.01	25.35	0.33	34.48	0.11	0.01	0.07	0.00	0.58
AP20042PX14L1 R-C Line 017	44.07	0.01	0.01	25.21	0.32	34.98	0.10	0.00	0.09	0.00	0.58
AP20042PX14L1 R-C Line 018	44.21	0.02	0.02	24.68	0.29	35.79	0.12	0.00	0.08	0.00	0.59
AP20042PX14L1 R-C Line 019	44.57	0.01	0.01	23.95	0.30	35.87	0.12	0.01	0.10	0.01	0.60
AP20042PX14L1 R-C Line 020	44.47	0.02	0.01	23.84	0.29	36.20	0.14	0.00	0.09	0.02	0.60
AP20042PX14L1 R-C Line 021	44.59	0.02	0.01	23.09	0.30	36.67	0.15	0.00	0.11	0.02	0.61
AP20042PX14L1 R-C Line 022	44.72	0.03	0.03	22.70	0.30	37.03	0.11	0.01	0.09	0.00	0.62
AP20042PX14L1 R-C Line 023	44.74	0.00	0.00	22.35	0.28	37.74	0.12	0.01	0.11	0.01	0.63
AP20042PX14L1 R-C Line 024	44.89	0.01	0.02	21.98	0.25	38.01	0.10	0.01	0.07	0.00	0.63
AP20042PX14L1 R-C Line 025	45.10	0.02	0.02	21.54	0.30	38.53	0.12	0.01	0.11	0.00	0.64
AP20042PX14L1 R-C Line 026	45.16	0.01	0.01	21.31	0.26	38.43	0.13	0.00	0.13	0.01	0.64
AP20042PX14L1 R-C Line 027	45.46	0.03	0.01	21.09	0.22	38.92	0.12	0.00	0.13	0.00	0.65

AP20042PX14L1 R-C Line 028	45.17	0.00	0.02	20.73	0.22	38.99	0.12	0.00	0.11	0.02	0.65
AP20042PX14L1 R-C Line 029	45.39	0.00	0.02	20.83	0.24	39.48	0.12	0.00	0.13	0.00	0.65
AP20042PX14L1 R-C Line 030	45.39	0.00	0.01	20.47	0.22	39.59	0.12	0.00	0.09	0.03	0.66
AP20042PX14L1 R-C Line 031	45.36	0.00	0.02	20.02	0.23	39.92	0.11	0.00	0.10	0.00	0.67
AP20042PX14L1 R-C Line 032	45.49	0.02	0.01	20.14	0.26	40.05	0.09	0.00	0.07	0.00	0.67
AP20042PX14L1 R-C Line 033	45.41	0.03	0.01	20.04	0.24	40.10	0.14	0.00	0.08	0.00	0.67
AP20042PX14L1 R-C Line 034	45.74	0.02	0.01	19.57	0.18	40.34	0.11	0.01	0.06	0.02	0.67
AP20042PX14L1 R-C Line 035	45.69	0.00	0.01	19.72	0.22	40.80	0.14	0.01	0.13	0.04	0.67
AP20042PX14L1 R-C Line 036	45.67	0.04	0.00	19.26	0.19	40.63	0.10	0.01	0.11	0.01	0.68
AP20042PX14L1 R-C Line 037	45.73	0.00	0.01	19.41	0.23	40.64	0.13	0.01	0.11	0.01	0.68
AP20042PX14L1 R-C Line 038	45.77	0.02	0.00	19.53	0.21	40.76	0.13	0.01	0.07	0.01	0.68
AP20042PX14L1 R-C Line 039	45.79	0.01	0.02	19.16	0.22	40.88	0.12	0.02	0.10	0.03	0.68
AP20042PX14L1 R-C Line 040	45.84	0.02	0.01	19.03	0.22	41.21	0.12	0.00	0.11	0.01	0.68
AP20042PX15L1 R-C Line 001	45.41	0.03	0.01	21.33	0.25	39.01	0.13	0.02	0.06	0.00	0.65
AP20042PX15L1 R-C Line 002	45.30	0.04	0.01	20.80	0.26	39.30	0.13	0.00	0.11	0.02	0.65

AP20042PX15L1 R-C Line 003	45.69	0.00	0.01	20.59	0.23	39.59	0.15	0.01	0.11	0.00	0.66
AP20042PX15L1 R-C Line 004	45.64	0.01	0.02	20.18	0.23	40.23	0.14	0.00	0.12	0.00	0.67
AP20042PX15L1 R-C Line 005	45.56	0.00	0.02	19.54	0.22	40.42	0.12	0.01	0.10	0.00	0.67
AP20042PX15L1 R-C Line 006	45.81	0.00	0.00	19.43	0.23	40.98	0.12	0.00	0.13	0.03	0.68
AP20042PX15L1 R-C Line 007	46.03	0.00	0.01	18.94	0.24	41.20	0.11	0.00	0.12	0.00	0.69
AP20042PX15L1 R-C Line 008	46.18	0.01	0.01	18.36	0.21	41.80	0.12	0.01	0.12	0.00	0.69
AP20042PX15L1 R-C Line 009	45.98	0.00	0.01	18.30	0.22	41.94	0.12	0.01	0.14	0.00	0.70
AP20042PX15L1 R-C Line 010	46.02	0.01	0.03	17.98	0.23	42.24	0.10	0.00	0.15	0.00	0.70
AP20042PX15L1 R-C Line 011	46.31	0.03	0.02	17.75	0.19	42.36	0.14	0.00	0.17	0.03	0.70
AP20042PX15L1 R-C Line 012	46.11	0.00	0.01	17.62	0.22	42.67	0.10	0.00	0.13	0.03	0.71
AP20042PX15L1 R-C Line 013	46.45	0.00	0.01	17.20	0.19	43.02	0.11	0.00	0.12	0.03	0.71
AP20042PX15L1 R-C Line 014	46.45	0.00	0.00	17.21	0.17	43.30	0.10	0.00	0.12	0.00	0.72
AP20042PX15L1 R-C Line 015	46.09	0.01	0.02	17.09	0.17	43.02	0.14	0.02	0.14	0.02	0.72
AP20042PX15L1 R-C Line 016	46.56	0.01	0.01	16.89	0.22	43.49	0.11	0.00	0.14	0.00	0.72
AP20042PX15L1 R-C Line 017	46.52	0.02	0.02	16.90	0.20	43.32	0.13	0.00	0.16	0.02	0.72

AP20042PX16L1 R-C Line 001	38.82	0.25	0.72	10.78	0.25	12.30	24.71	0.10	0.03	0.00	0.53
AP20042PX16L1 R-C Line 002	45.06	0.05	0.06	26.57	0.35	32.39	0.31	0.01	0.09	0.00	0.55
AP20042PX16L1 R-C Line 003	44.09	0.03	0.01	26.23	0.38	33.85	0.15	0.00	0.10	0.04	0.56
AP20042PX16L1 R-C Line 004	44.57	0.02	0.02	25.69	0.34	35.02	0.13	0.02	0.08	0.00	0.58
AP20042PX16L1 R-C Line 005	44.47	0.02	0.00	24.37	0.30	35.92	0.11	0.00	0.12	0.00	0.60
AP20042PX16L1 R-C Line 006	45.05	0.01	0.01	23.02	0.31	37.52	0.11	0.00	0.17	0.03	0.62
AP20042PX16L1 R-C Line 007	45.45	0.01	0.02	21.84	0.31	38.82	0.11	0.01	0.15	0.03	0.64
AP20042PX16L1 R-C Line 008	45.73	0.00	0.01	20.30	0.24	40.07	0.11	0.00	0.18	0.04	0.66
AP20042PX16L1 R-C Line 009	45.85	0.02	0.01	19.14	0.24	40.94	0.11	0.00	0.18	0.02	0.68
AP20042PX16L1 R-C Line 010	46.25	0.01	0.02	18.36	0.22	41.75	0.12	0.02	0.18	0.04	0.69
AP20042PX16L1 R-C Line 011	46.30	0.00	0.02	17.68	0.20	42.70	0.12	0.01	0.16	0.02	0.71
AP20042PX16L1 R-C Line 012	46.65	0.01	0.02	17.12	0.20	43.42	0.13	0.01	0.16	0.01	0.72
AP20042PX16L1 R-C Line 013	46.67	0.01	0.00	16.35	0.20	43.64	0.11	0.00	0.16	0.01	0.73
AP20042PX16L1 R-C Line 014	46.76	0.01	0.01	16.12	0.18	44.11	0.13	0.00	0.17	0.00	0.73
AP20042PX16L1 R-C Line 015	46.90	0.02	0.02	16.09	0.19	44.58	0.11	0.00	0.18	0.02	0.73

AP20042PX16L1 R-C Line 016	46.67	0.01	0.00	15.84	0.14	44.78	0.12	0.00	0.15	0.04	0.74
AP20042PX16L1 R-C Line 017	47.00	0.02	0.02	15.57	0.14	44.97	0.12	0.01	0.14	0.03	0.74
AP20042PX16L1 R-C Line 018	46.94	0.00	0.02	15.43	0.16	45.12	0.14	0.00	0.22	0.00	0.75
AP20042PX16L1 R-C Line 019	46.98	0.02	0.02	15.48	0.18	45.29	0.15	0.00	0.19	0.00	0.75
AP20042PX16L1 R-C Line 020	46.74	0.02	0.03	15.49	0.18	44.69	0.13	0.00	0.17	0.01	0.74
AP20042PX16L1 R-C Line 021	47.09	0.00	0.02	15.48	0.15	45.13	0.13	0.00	0.15	0.03	0.74
AP20042PX16L1 R-C Line 022	47.01	0.01	0.02	15.56	0.18	45.09	0.12	0.01	0.14	0.03	0.74
AP20042PX16L1 R-C Line 023	47.16	0.01	0.02	15.51	0.15	45.09	0.14	0.00	0.18	0.02	0.74
AP20042PX16L1 R-C Line 024	47.02	0.02	0.02	15.73	0.15	45.07	0.14	0.00	0.19	0.00	0.74
AP20042PX16L1 R-C Line 025	47.19	0.01	0.02	15.53	0.16	45.06	0.14	0.00	0.16	0.00	0.74
AP20042PX18A	46.64	0.00	0.00	17.07	0.18	43.94	0.13	0.00	0.15	0.00	0.72
AP20042PX18B	45.74	0.01	0.01	20.57	0.26	40.14	0.15	0.00	0.10	0.00	0.66
AP20042PX18C	63.45	0.44	2.38	14.08	0.29	27.20	2.31	0.04	0.02	0.01	0.66

Appendix F. Summary of plagioclase phenocryst trace element contents.

Plagioclase Phenocryst Trace Element Chemistry from the LA-ICPMS

Sample ID	Li (ppm)	Mg (ppm)	Si (ppm)	Sc (ppm)	Ti (ppm)	Cr (ppm)	Fe (ppm)	Zn (ppm)	Rb (ppm)	Sr (ppm)
42-P19L1	9.10	647.39	338642.59	9.01	294.41	3.40	2023.50	11.63	1.27	1521.09
42-P19S1	3.32	227.00	232047.68	6.02	107.50	4.10	1381.53	3.72	0.22	1066.36
42-P19S2	4.01	361.18	232744.75	6.06	128.11	2.63	1519.41	5.30	0.28	1101.83
42-P19S3	9.72	478.76	360995.70	9.70	346.09	11.88	2049.07	12.30	0.77	1688.66
42-P19S4	8.07	512.05	373715.44	9.69	311.04	8.09	2007.75	11.65	0.62	1680.80
42-P19G1	40.06	33916.44	943558.74	40.66	5868.33	30.13	21248.03	67.39	316.98	1823.01
42-P17L1	6.85	639.19	345901.07	8.88	346.88	2.95	1994.19	13.38	1.30	1632.84
42-P17S1	6.21	437.38	292818.27	7.67	273.57	3.00	1675.26	7.32	0.75	1406.69
42-P17S2	3.38	396.81	247864.23	6.68	189.60	0.87	1536.93	5.65	0.43	1206.83
42-P17S3	3.23	398.48	248613.36	6.17	122.71	2.21	1584.99	5.72	0.32	1187.70
42-P17S4	13.66	761.40	482932.42	11.68	522.61	0.00	2664.88	18.39	1.60	2118.65
42-P17G1	18.61	59335.78	1163266.20	76.63	24777.07	17.83	74019.09	568.60	419.83	1257.66
42-P16L1	6.50	911.92	411169.82	10.75	465.46	2.42	2618.60	16.24	2.49	1913.22
42-P16S1	4.22	810.09	415789.01	10.31	470.91	2.42	2601.34	15.56	1.19	2045.49
42-P16S2	9.34	863.69	395984.95	9.95	409.88	1.86	2488.68	13.93	0.86	1960.57
42-P16S3	8.49	875.84	401786.41	9.80	439.37	1.09	2661.08	14.81	0.95	1880.70
42-P16G1	42.34	245353.29	1543033.34	104.95	17859.47	39.33	139655.83	976.09	533.24	1643.01
42-P15S1	6.06	460.02	347511.28	8.86	280.58	0.66	2087.76	9.13	0.56	1618.02
42-P15S2	5.00	409.35	293105.87	7.38	167.16	0.96	1946.03	8.16	0.64	1393.79
42-P15S3	9.83	513.64	369329.82	9.19	391.90	4.28	2218.56	10.21	0.79	1692.48
42-P15S4	10.54	673.15	400662.45	10.15	422.36	5.32	2366.60	13.57	0.81	1817.17
42-P15G1	32.53	120387.78	1256565.28	112.36	14024.52	22.81	72909.09	436.24	538.69	969.59
42-P13L1	7.25	1152.88	422120.85	10.90	945.29	4.26	3410.10	24.84	14.56	1861.95
42-P13S1	7.91	626.90	367680.45	8.70	332.10	2.35	2258.99	12.09	0.85	1922.79
42-P13S2	7.72	712.99	339684.13	8.37	310.70	2.27	2144.47	12.05	0.84	1848.80
42-P13S3	5.54	747.18	365755.89	8.75	403.45	1.59	2328.42	13.15	1.24	1882.51

42-P13S4	6.74	907.85	375174.62	9.10	455.27	2.29	2668.12	14.01	0.99	1872.53
42-P13G1	32.92	171620.04	1019765.99	140.41	99078.74	778.13	217979.13	1768.48	409.36	465.11
42-P14L1	10.16	728.11	378771.85	9.32	369.61	0.44	2374.68	15.25	0.96	1859.57
42-P14S1	8.16	609.01	346759.00	8.14	322.14	2.58	2143.14	11.55	0.84	1907.46
42-P14S2	9.91	727.31	366413.12	8.70	357.23	5.07	2281.65	12.10	1.41	1987.73
42-P14S3	9.67	561.14	334814.96	7.91	304.12	4.06	2094.08	12.11	0.86	1761.88
42-P14S4	8.48	654.49	359584.17	8.62	407.26	4.19	2324.36	12.52	0.83	1877.25
42-P14G1	9.71	14765.79	1174434.14	46.24	9838.34	9.79	22237.79	155.98	470.51	1641.59
42-P10S1	9.42	779.72	337066.00	8.19	576.35	1.46	2411.52	14.40	0.90	1971.33
42-P10S2	8.13	454.96	319915.15	7.61	396.23	1.66	2173.93	11.54	0.37	1968.06
42-P10S3	8.50	439.48	332727.29	7.76	389.38	1.88	2129.24	13.08	0.30	2035.98
42-P10S4	15.16	876.08	439428.81	10.40	361.20	4.08	2219.82	15.13	1.06	2248.34
42-P10G1	13.82	6571.45	972313.31	30.08	6622.98	11.03	11915.65	64.38	287.26	1910.95
42-P7L1	10.17	956.64	381235.21	9.20	577.22	3.09	2825.85	16.23	2.74	1844.84
42-P7S1	5.53	562.48	299443.54	6.99	143.30	1.21	2025.74	8.21	0.42	1641.91
42-P7S2	7.43	537.40	339208.66	7.85	256.43	2.13	2255.68	9.18	0.40	1763.62
42-P7S3	9.99	544.81	357661.87	8.28	286.26	2.58	2207.18	10.44	0.47	1826.66
42-P7S4	8.90	1017.84	404221.37	9.43	499.29	0.30	3056.05	14.60	0.93	1762.15
42-P7G1	4.65	1431.96	969766.68	26.90	5306.40	2.26	9355.01	66.12	186.09	2000.23
42-P9S1	8.69	649.66	361133.10	8.25	338.46	1.31	2315.03	12.41	1.05	1770.81
42-P9S2	8.56	714.96	413604.29	9.58	436.31	1.48	2570.13	14.37	1.20	2015.00
42-P9S3	6.26	643.23	411614.67	9.22	417.26	3.12	2510.14	13.50	1.03	1910.73
42-P9G1	22.36	41680.56	658718.37	43.30	7820.94	30.92	42753.55	140.57	141.57	1467.64
42-P8L1	7.58	661.72	349219.55	8.33	327.42	2.14	2345.51	11.26	1.09	1712.70
42-P8S1	7.86	1951.42	403164.45	9.95	865.02	2.45	4393.58	22.98	12.84	1748.14
42-P8S2	6.83	774.13	348166.87	8.33	298.77	2.03	2404.96	11.14	0.90	1687.00
42-P8S3	6.26	500.09	325972.38	7.43	271.40	2.26	2185.91	10.06	0.42	1665.01
42-P8S4	7.77	778.86	360885.01	8.35	408.00	2.60	2786.49	13.63	0.86	1633.90
42-P8G1	19.44	48088.84	1211989.28	109.69	225496.40	702.12	514593.81	3135.66	578.23	1113.84

3-P17L1	17.95	251.76	397793.26	9.04	219.10	0.00	1552.32	14.95	2.33	1512.48
3-P17S1	14.65	189.29	318604.99	7.09	149.07	1.10	1473.35	10.08	0.86	1248.85
3-P17S2	20.15	241.78	432650.42	9.93	237.66	2.30	1729.64	12.48	2.62	1633.95
3-P17S3	20.19	251.46	441200.45	10.17	211.02	2.82	1710.94	12.70	2.44	1639.14
3-P17S4	19.28	259.03	427514.46	9.71	234.46	3.46	1634.90	12.40	2.16	1582.18
3-P17G1	39.77	22459.44	1008983.73	38.17	7861.10	6.81	25163.93	181.90	311.26	1461.01
3-P18S1	13.38	312.04	347350.20	8.03	230.52	1.20	1406.54	9.63	1.54	1169.72
3-P18S2	13.19	209.98	331660.98	7.57	223.34	0.25	1330.37	8.75	0.94	1126.22
3-P18S3	17.75	229.35	428595.86	9.45	210.81	1.53	1540.71	10.07	1.84	1425.92
3-P18S4	20.16	344.00	578995.19	13.23	326.04	2.12	2222.01	15.32	10.88	1825.83
3-P18G1	41.88	19050.69	1071321.30	38.22	7229.31	3.34	21514.50	172.35	308.17	1724.41
3-P15L1	15.58	210.17	348572.89	7.83	260.39	1.20	1541.64	14.53	1.70	1372.47
3-P15S1	16.98	207.55	372858.71	8.13	227.15	1.68	1418.53	10.69	2.17	1459.72
3-P15S2	13.40	167.13	279532.49	6.31	168.12	0.66	1589.17	8.35	1.13	1157.45
3-P15S3	16.28	187.43	376594.12	8.01	283.44	0.64	1379.80	11.48	2.22	1434.64
3-P15S4	17.16	229.02	445898.63	9.50	191.96	1.75	1603.66	12.60	3.60	1667.35
3-P15G1	46.97	26190.25	982474.84	42.30	10707.37	3.73	33216.28	269.12	353.39	1156.19
3-P11L1	17.90	372.29	414848.04	9.26	261.04	1.85	1863.11	25.67	4.28	1511.84
3-P11S1	16.56	186.51	344696.49	7.53	189.66	0.76	1238.87	10.20	1.51	1342.44
3-P11S2	17.95	307.53	394348.68	8.45	237.83	1.20	1633.45	13.10	3.03	1481.85
3-P11S3	16.20	207.92	341649.36	7.67	169.92	2.08	1296.84	10.42	1.58	1337.12
3-P11S4	17.19	231.18	397825.33	8.51	195.34	1.20	1457.45	12.41	2.18	1483.76
3-P11G1	48.37	28622.67	975349.37	41.70	10348.81	7.94	33085.38	231.65	362.84	1210.86
3-P13S1	12.10	184.65	301059.03	6.51	163.79	3.38	1192.57	9.13	1.09	1165.19
3-P13S2	12.18	177.05	277149.51	6.10	154.08	2.67	1138.66	8.38	0.88	1094.95
3-P13S3	17.55	480.28	413479.55	10.09	3061.15	8.20	3848.33	18.79	8.94	1555.79
3-P13S4	8.74	5635.25	255499.90	7.42	483.83	2.15	4712.14	31.62	2.04	1248.94
3-P13G1	40.02	25084.29	927221.73	35.34	8481.34	3.63	25187.78	183.92	330.16	1241.78
3-P12L1	15.36	240.20	371799.76	8.06	232.30	2.53	1505.20	17.94	3.07	1358.96

3-P12S1	15.89	168.29	343672.13	7.50	225.48	1.69	1260.53	10.93	1.60	1326.76
3-P12S2	14.62	158.35	320024.02	6.67	207.88	1.82	1167.43	9.92	1.40	1236.40
3-P12S3	17.29	190.60	391580.01	8.55	235.80	1.89	1427.02	10.64	2.45	1476.05
3-P12S4	12.82	249.32	385885.36	8.29	261.75	2.24	1559.27	12.32	3.15	1401.97
3-P12G1	35.86	18861.09	978072.27	36.57	7684.88	9.16	21389.92	166.32	333.88	1222.35
3-P9S1	16.01	207.88	366144.34	7.43	193.75	1.74	1417.78	10.68	1.87	1381.46
3-P9S2	17.81	220.70	416537.24	8.63	165.08	2.73	1512.93	11.72	3.17	1570.88
3-P9S3	16.42	240.62	349327.29	7.36	252.66	3.56	1443.58	12.66	9.95	1368.49
3-P9S4	17.38	295.44	457703.35	9.93	214.19	2.55	1924.78	19.80	4.00	1689.53
3-P9G1	29.29	23341.13	745534.24	30.36	5103.40	2.45	19271.75	148.70	224.98	1325.24
3-P10L1	16.59	217.76	394436.88	8.32	210.69	2.36	1536.95	13.80	2.90	1485.12
3-P10S1	19.54	207.00	428868.10	9.16	193.21	1.36	1655.46	11.50	3.33	1641.40
3-P10S2	19.20	193.31	391358.34	8.39	232.99	0.28	1559.44	11.88	2.34	1488.28
3-P10S3	18.09	195.39	417235.25	9.00	140.48	0.52	1571.83	11.23	2.82	1588.14
3-P10S4	17.15	209.42	432744.81	9.08	141.42	2.05	1673.85	11.69	3.32	1621.19
3-P10G1	52.83	36075.32	1108966.05	50.32	14255.34	6.60	49726.07	340.20	414.26	1148.72
3-P1L1	17.94	299.20	381054.44	8.14	275.24	1.81	1650.51	14.53	4.18	1353.42
3-P1S1	18.06	196.61	368433.27	7.99	224.75	0.56	1401.20	10.51	1.99	1353.66
3-P1S2	17.41	192.78	349363.82	7.38	236.74	0.95	1314.16	10.19	1.70	1260.37
3-P1S3	19.70	236.88	458081.04	10.01	280.43	2.12	1741.19	12.00	5.25	1607.23
3-P1S4	20.11	266.40	500867.42	10.70	182.68	2.49	1987.23	13.82	4.18	1777.58
3-P1G1	58.58	55095.73	1103227.34	56.32	9890.28	7.38	38388.43	268.59	420.45	1109.22
3-P3L1	13.60	777.57	338918.91	7.69	286.73	1.37	2092.97	15.63	13.28	1194.75
3-P3S1	15.07	203.31	368505.90	8.26	102.43	1.19	1402.60	10.50	3.76	1311.09
3-P3S2	15.07	160.50	362444.75	7.57	95.17	2.50	1307.93	8.89	3.21	1284.94
3-P3S3	14.81	156.21	363885.89	7.96	95.61	0.48	1314.06	9.08	3.21	1296.21
3-P3S4	5.04	4716.08	255688.87	7.74	902.36	1.39	5756.02	33.35	29.81	920.37
3-P3G1	30.57	27348.16	663577.33	32.16	6540.79	1.24	23822.06	160.84	216.13	870.04
84-P22L1	14.31	1367.51	294146.24	7.09	643.62	2.17	3291.75	30.31	5.65	995.36

84-P22S1	11.40	98.93	213270.21	4.56	223.93	0.32	1044.64	7.98	0.32	842.43
84-P22S2	16.16	236.82	269880.45	6.02	723.16	1.14	1334.81	10.78	1.30	1023.62
84-P22S3	20.65	139.27	370745.70	7.82	214.51	1.11	1170.60	11.01	1.57	1327.25
84-P22S4	16.72	478.84	467123.89	9.60	199.98	1.71	1710.23	15.90	6.75	1585.35
84-P22G1	79.60	11926.85	1758136.37	52.99	18235.35	6.91	37486.05	362.26	917.64	976.15
84-P20L1	23.29	831.20	417440.68	9.11	111.45	1.12	1260.56	19.66	8.72	1028.98
84-P20S1	22.17	114.93	404912.57	8.43	56.10	0.41	998.91	10.54	2.79	995.75
84-P20S2	21.36	115.96	399240.06	8.28	60.76	0.00	1017.55	10.23	2.63	966.82
84-P20S3	21.91	125.22	395480.64	8.17	43.53	1.04	1031.44	10.25	2.71	977.04
84-P20S4	21.35	125.90	411437.51	8.44	96.27	0.00	1176.90	10.63	3.12	1210.66
84-P20G1	113.86	34170.65	2452036.95	85.24	21394.57	0.00	50537.75	480.41	1346.98	800.02
84-P19L1	21.12	537.71	379682.94	7.96	373.00	0.00	1896.51	17.43	4.40	1601.18
84-P19S1	19.23	955.30	347581.61	7.20	302.24	1.96	1801.05	18.32	6.32	1480.67
84-P19S2	20.56	226.25	356428.58	7.47	304.88	2.92	1604.22	11.60	0.81	1524.23
84-P19S3	23.92	287.87	400764.22	8.53	351.73	4.32	1724.58	13.35	0.92	1609.28
84-P19S4	19.01	408.03	385099.09	8.04	294.12	4.23	1977.16	13.56	1.29	1851.72
84-P19G1	37.33	215123.94	705213.05	87.38	9778.30	159.32	94335.06	588.36	139.47	348.33
84-P4L1	21.44	987.02	426400.96	9.55	582.76	3.06	2428.32	30.85	26.72	1438.62
84-P4S1	22.81	350.31	429128.31	8.59	309.29	0.71	1988.53	22.98	3.27	1743.89
84-P4S2	20.62	498.06	412523.64	8.88	397.25	3.11	2239.04	22.22	4.23	1602.70
84-P4S3	18.11	2334.15	398157.02	10.35	3040.26	2.30	17677.23	96.51	3.66	1434.81
84-P4S4	21.78	265.58	520279.45	10.62	181.21	1.04	1700.22	14.28	4.22	1789.97
84-P4G1	77.08	7978.61	1628201.82	48.50	15990.63	9.29	31923.06	275.74	763.96	1410.52
84-P13L1	16.44	301.32	317385.04	6.50	199.85	2.00	1412.36	14.69	2.69	1198.74
84-P13S1	8.64	92.84	200178.56	4.20	86.99	0.70	1073.21	5.37	0.25	870.44
84-P13S2	6.91	318.32	183699.92	3.78	83.97	1.09	1177.42	7.39	1.52	791.43
84-P13S3	25.08	176.94	459101.77	9.27	295.70	2.74	1712.15	14.16	2.63	1695.63
84-P13S4	25.55	954.50	485178.21	9.85	280.12	1.92	2059.79	24.86	7.84	1662.98
84-P13G1	93.76	14483.92	2001079.77	60.56	18889.26	6.67	38510.62	352.15	965.62	1318.77

84-P8S1	8.47	87.55	249506.25	5.02	116.91	1.45	1395.54	5.01	0.11	1144.86
84-P8S2	8.26	440.43	258203.41	5.39	167.03	2.16	1640.25	12.54	3.73	1165.95
84-P8S3	18.86	222.70	382571.12	7.53	370.39	3.36	2528.86	15.88	1.15	1537.97
84-P8S4	29.20	479.01	660483.75	13.24	380.63	4.10	2187.36	21.98	6.01	2077.42
84-P8G1	82.46	12457.40	2161587.32	63.86	19376.16	7.44	41763.88	375.12	960.95	2023.10
84-P10L1	18.51	844.47	375225.95	7.92	353.83	2.35	1860.06	23.54	11.09	1144.26
84-P10S1	18.89	126.58	364756.31	7.53	307.72	2.36	1123.03	11.03	1.97	1180.38
84-P10S2	19.47	620.78	385637.77	7.72	386.05	2.10	1357.24	17.64	6.21	1207.41
84-P10S3	17.02	617.15	379275.64	7.87	283.30	2.43	1501.71	19.59	13.33	1205.35
84-P10S4	18.83	185.04	429843.50	8.65	134.22	1.78	1356.25	13.05	3.32	1465.53
84-P10G1	56.78	6124.29	1379693.78	38.61	10477.53	5.30	20420.17	181.89	646.63	1110.63
84-P17S1	18.01	522.24	405685.37	8.19	418.15	2.19	2407.00	15.17	0.88	1797.28
84-P17S2	10.00	510.14	388115.02	7.94	396.01	1.72	2255.86	13.01	0.86	1710.52
84-P17S3	12.89	450.45	351933.43	7.43	332.53	1.91	2113.64	10.49	0.58	1587.95
84-P17S4	19.44	456.73	354100.70	7.09	336.21	2.99	2210.23	11.50	0.57	1625.37
84-P17G1	199.44	37467.38	4172849.20	132.93	34885.13	18.77	80201.84	709.65	2434.31	1607.85
84-P16L1	14.46	671.02	259901.10	5.42	251.20	1.57	1623.97	17.07	5.21	1022.24
84-P16S1	12.50	227.86	231433.13	4.53	239.98	1.25	1235.22	7.57	0.59	913.09
84-P16S2	12.15	220.36	226612.33	4.51	231.31	0.82	1217.41	7.10	0.52	896.66
84-P16S3	13.54	850.74	263278.55	5.80	253.36	1.73	1770.79	17.59	6.01	1015.65
84-P16S4	15.55	570.40	303660.62	6.11	225.43	0.94	1844.90	16.34	4.84	1161.27
84-P16G1	35.47	40183.16	1105461.78	40.79	14105.76	0.59	50178.58	383.88	532.92	946.86
84-P15L1	23.28	1009.88	436743.46	9.01	524.21	0.01	1853.51	26.83	11.70	1281.91
84-P15S1	20.17	143.70	371265.97	7.82	602.23	0.23	1116.31	9.72	1.43	955.72
84-P15S2	21.06	302.24	382976.47	7.49	608.50	1.28	1253.04	14.94	3.73	964.65
84-P15S3	26.36	184.32	532855.30	10.03	474.97	0.13	1704.91	13.83	3.93	1552.10
84-P15S4	21.42	171.08	446665.86	8.84	156.36	2.38	1505.26	12.98	2.51	1568.13
84-P15G1	62.61	33818.76	1680540.39	59.14	11707.19	12.83	52706.34	394.07	841.98	1356.65
10-P3L1	17.16	305.27	416188.34	9.62	258.38	4.72	1764.06	17.98	6.45	1581.90

10-P3S1	11.83	174.09	277976.58	6.65	120.98	3.86	1183.03	7.75	0.56	1139.56
10-P3S2	17.52	251.58	396521.87	8.88	181.54	3.56	1633.57	13.81	1.83	1523.93
10-P3S3	18.04	249.17	424423.80	9.61	217.40	3.77	1680.22	13.40	1.72	1620.90
10-P3S4	11.08	391.73	493090.04	11.53	299.57	3.42	2305.08	18.27	12.38	1805.28
10-P3G1	171.66	11323.86	2757167.08	87.41	16366.19	16.57	34704.88	327.24	1199.28	1405.24
10-P17S1	3.46	230.65	236406.23	5.41	60.92	2.10	1544.03	3.70	0.10	1063.03
10-P17S2	3.41	203.47	229025.29	5.40	54.80	2.00	1635.09	4.97	0.66	1048.92
10-P17S3	4.97	315.48	241503.39	5.58	67.23	1.22	1641.35	3.95	0.14	1103.84
10-P17S4	9.30	287.65	311943.26	7.15	133.99	2.50	1894.24	10.06	1.24	1333.20
10-P17G1	342.71	40472.16	5215147.08	172.28	30929.54	11.33	70848.95	671.95	2271.37	1914.87
10-P12L1	15.38	308.18	378268.35	8.77	320.61	2.01	1940.93	21.25	2.62	1431.50
10-P12S1	16.58	234.50	408589.58	9.26	187.81	1.16	1545.58	12.68	1.87	1506.42
10-P12S2	13.73	224.61	383485.97	8.75	179.42	1.14	1482.43	11.93	1.59	1498.19
10-P12S3	18.53	223.47	393227.34	8.54	224.68	0.97	1522.41	11.88	1.62	1493.22
10-P12S4	12.21	258.07	393085.99	9.05	169.11	1.07	1626.72	13.25	2.13	1536.47
10-P12G1	253.44	30997.97	3744438.85	122.24	23422.60	2.34	56996.00	541.25	1624.68	1041.91
10-P6L1	21.50	323.01	441529.89	9.92	361.99	1.54	2115.51	21.84	2.80	1601.89
10-P6S1	16.30	270.32	489589.22	11.09	170.01	1.63	1815.23	14.56	2.57	1782.47
10-P6S2	18.10	256.40	435946.74	9.31	159.97	2.08	1608.13	14.44	2.04	1647.93
10-P6S3	22.05	261.38	455287.92	10.97	179.49	6.98	1641.54	13.44	1.90	1657.35
10-P6S4	13.34	352.47	463088.82	10.54	216.12	5.41	2181.91	20.32	3.76	1673.08
10-P6G1	200.22	84521.60	3196847.24	123.93	18308.30	23.24	72764.66	608.76	1304.37	1129.09
10-P7L1	11.97	433.80	335476.11	7.60	142.42	2.65	1963.68	21.69	3.99	1661.64
10-P7S1	14.40	222.73	349069.87	7.79	88.68	3.18	1271.30	12.15	0.71	1794.63
10-P7S2	14.95	228.13	339370.17	7.98	90.97	1.41	1288.80	10.59	0.29	1827.17
10-P7S3	8.82	1188.11	289596.03	6.77	154.87	1.29	2450.29	15.49	1.40	1465.62
10-P7G1	366.51	47934.56	5170205.12	174.65	34644.62	0.00	105477.38	860.53	2238.69	1329.54
10-P8L1	19.36	593.37	510121.94	12.30	829.65	1.39	3067.35	34.98	65.85	1652.66
10-P8S1	15.65	263.71	427014.80	9.76	156.04	3.48	1616.30	12.28	1.86	1632.04

10-P8S2	19.88	287.49	477587.31	10.21	154.37	4.89	1810.89	13.15	2.21	1796.22
10-P8S3	11.04	301.01	446427.97	9.51	186.37	5.35	1774.30	13.94	5.56	1757.99
10-P8S4	13.08	230.04	378361.90	8.27	186.47	4.63	1544.29	12.99	1.41	1566.83
10-P8G1	59.02	9075.04	1158626.57	36.32	5469.87	8.43	15344.80	144.81	348.82	1358.34
10-P13L1	14.84	366.58	352156.20	7.60	162.24	6.67	1700.17	16.07	2.45	1610.84
10-P13S1	11.03	189.82	309649.21	6.60	81.52	3.13	1067.83	8.54	0.42	1592.07
10-P13S2	10.01	231.81	310872.50	6.73	100.50	2.51	1376.25	13.20	1.65	1634.65
10-P13S3	16.33	395.86	379601.35	8.40	147.07	2.34	1883.81	15.62	1.56	1605.76
10-P13S4	12.54	387.25	367462.60	7.98	179.32	2.82	2024.08	15.00	1.46	1414.54
10-P13G1	302.42	33676.93	4073822.08	136.20	25049.56	0.43	60543.62	569.86	1815.81	1314.95
10-P9L1	17.25	731.19	382480.86	9.55	433.85	4.82	3196.33	29.41	4.49	1470.75
10-P9S1	15.85	225.72	362799.27	8.01	193.68	0.00	1423.13	11.04	1.36	1419.23
10-P9S2	17.20	218.15	355163.38	7.80	188.54	0.81	1385.01	11.03	1.29	1362.08
10-P9S3	7.67	50680.06	615586.50	13.65	142.72	7.25	113.42	2.09	53.75	56.61
10-P9G1	229.12	20460.88	3449984.28	109.23	19612.59	0.00	47818.06	450.60	1496.16	1219.01
10-P10L1	18.43	745.89	399400.84	10.20	745.44	0.00	2656.58	25.09	31.39	1521.81
10-P10S1	13.38	321.46	347823.53	7.72	226.59	0.00	1612.16	12.87	0.91	1533.30
10-P10S2	12.07	285.32	351749.13	7.70	223.08	0.00	1533.43	10.55	0.68	1572.38
10-P10S3	11.77	285.08	322962.10	7.30	203.38	0.83	1441.95	10.37	0.52	1470.03
10-P10S4	13.14	310.44	327901.62	7.16	254.64	1.04	1737.79	12.84	1.31	1469.18
10-P10G1	228.95	25147.88	3655720.07	113.63	21987.38	7.06	56719.96	517.72	1509.67	1361.52
10-P11L1	14.79	422.37	386117.28	8.59	322.79	1.99	2146.15	18.73	10.60	1433.13
10-P11S1	17.51	230.58	343761.65	7.51	200.51	1.31	1491.98	11.17	1.64	1329.07
10-P11S2	18.17	265.62	380720.89	8.35	216.89	0.31	1637.51	12.95	4.76	1451.26
10-P11S3	11.38	257.67	333733.21	6.94	216.79	0.00	1555.54	12.03	2.90	1295.05
10-P11S4	12.55	314.52	411548.85	9.00	201.30	0.00	1902.56	14.08	3.17	1600.64
10-P11G1	142.32	32624.71	2385345.66	79.70	14252.60	0.00	40629.31	355.49	1009.71	1068.54
88-P5L1	18.18	376.45	338823.35	7.27	590.63	0.00	2407.62	17.13	2.93	1343.90
88-P5S1	12.02	200.16	290748.02	6.37	405.54	0.00	1562.48	10.21	2.09	1231.08

88-P5S2	11.80	132.99	239726.44	5.29	209.29	2.62	1032.24	6.86	0.42	1024.61
88-P5S3	14.82	163.22	282157.29	5.85	283.45	6.07	1156.77	9.59	0.77	1200.18
88-P5S4	19.74	208.13	401757.43	8.82	205.56	8.51	1586.61	12.19	2.71	1569.48
88-P5G1	16.64	12836.28	1048589.82	31.17	6770.28	18.75	17961.31	146.02	315.67	1322.94
88-P3S1	13.03	136.07	278464.73	6.26	172.49	2.47	1377.48	6.15	0.31	1253.62
88-P3S2	21.24	292.90	596708.75	12.88	319.63	4.35	2068.47	15.16	3.57	2343.34
88-P3S3	26.75	202.26	496080.05	10.79	294.57	6.10	1731.02	12.50	3.02	2228.71
88-P3S4	24.97	237.95	555582.76	12.08	313.36	3.91	2073.16	16.78	2.04	2358.77
88-P3G1	59.53	132449.96	2535282.54	129.84	86565.01	19.49	305316.54	2440.29	1262.03	1729.35
88-P13L1	24.52	255.03	446481.72	9.51	238.07	2.60	1875.68	15.69	3.55	1853.00
88-P13S1	22.11	183.55	373593.51	7.97	289.70	1.86	1505.55	10.90	1.36	1788.67
88-P13S2	25.30	208.31	441370.08	9.32	226.08	2.76	1774.84	13.39	2.22	1921.87
88-P13S3	25.15	201.77	459779.22	9.89	205.25	2.11	1777.82	14.00	3.00	1780.79
88-P13S4	20.76	184.48	384651.01	8.06	253.48	1.17	1590.04	12.60	1.43	1565.43
88-P13G1	81.56	32410.84	2432157.76	81.35	29428.47	9.74	71193.06	549.61	1285.37	1374.77
88-P10L1	16.64	153.31	354989.83	7.51	159.39	0.71	1219.10	11.60	2.02	1318.72
88-P10S1	19.87	155.30	381233.19	7.73	108.38	0.15	1345.05	11.99	1.89	1394.10
88-P10S2	15.13	152.73	393850.70	8.65	177.08	1.59	1355.80	10.85	3.63	1417.33
88-P10S3	16.48	129.42	323727.81	7.20	216.19	0.66	1163.78	10.08	1.12	1237.34
88-P10S4	16.30	147.30	388416.81	8.07	152.67	0.49	1332.59	11.75	2.27	1439.93
88-P10G1	56.18	82067.57	1515050.95	64.12	11550.21	8.66	50715.04	386.18	733.78	744.51
88-P11S1	11.71	166.91	321633.23	6.64	241.37	1.39	1301.53	10.46	1.12	1458.45
88-P11S2	14.98	170.89	348607.41	6.91	239.02	1.50	1403.17	10.44	1.09	1595.46
88-P11S3	13.66	185.39	373319.21	7.67	271.07	0.62	1508.76	12.01	1.26	1612.84
88-P11S4	7.91	419.13	443458.10	9.74	562.08	0.44	2324.99	19.71	9.48	1664.22
88-P11G1	71.40	69860.70	2086808.22	82.27	14980.34	2.88	56127.76	437.10	989.07	1343.04
88-P14L1	17.93	154.62	313234.35	6.57	266.99	0.30	1227.43	9.65	1.27	1250.70
88-P14S1	18.89	116.33	272491.08	5.75	269.56	0.82	1053.03	7.34	0.70	1228.71
88-P14S2	19.73	180.27	320765.58	6.77	349.26	1.88	1178.49	8.65	1.09	1393.46

88-P14S3	20.07	127.19	305626.33	6.53	283.87	3.57	1122.24	8.15	0.85	1328.80
88-P14S4	12.59	275.61	516182.28	10.89	328.04	7.42	1927.51	14.16	8.21	1549.53
88-P14G1	148.22	76460.27	3715272.67	130.82	33993.10	37.91	90900.65	693.12	2223.86	1399.96
88-P15S1	15.83	124.15	300953.86	6.29	166.56	1.77	1094.06	8.74	1.39	1124.33
88-P15S2	14.54	148.69	303119.48	6.40	172.43	1.85	1136.91	8.41	1.50	1117.05
88-P15S3	16.60	156.66	317428.35	6.63	185.05	2.95	1162.42	8.42	1.65	1179.72
88-P15S4	13.43	135.63	297979.81	6.02	154.21	1.40	1112.25	8.62	1.41	1094.09
88-P15G1	43.64	18603.13	1892306.25	57.81	16330.42	6.69	37079.89	303.51	959.37	1016.79
88-P16L1	19.67	223.82	397862.93	8.21	381.91	0.77	1511.94	14.08	4.12	1403.81
88-P16S1	20.84	197.64	426770.95	8.47	540.37	1.31	1556.87	13.40	10.55	1424.79
88-P16S2	18.51	156.22	371087.01	7.61	348.44	0.00	1265.45	10.61	1.65	1329.32
88-P16S3	19.18	161.75	414880.85	8.57	389.10	0.00	1408.01	11.57	2.12	1458.02
88-P16S4	14.71	188.03	401550.57	8.59	200.10	1.65	1481.69	12.11	2.52	1451.10
88-P16G1	54.29	18272.83	2183605.06	69.06	18114.27	0.00	38538.81	296.05	1125.74	1245.04
88-P18L1	18.67	352.45	319349.91	6.94	363.60	0.00	1976.16	14.82	2.31	1260.22
88-P18S1	13.36	154.16	331410.41	6.85	211.91	0.00	1136.21	8.58	1.46	1185.53
88-P18S2	16.64	145.06	285559.85	5.89	273.59	0.25	1052.71	8.80	0.87	1145.04
88-P18S3	21.39	135.56	339650.21	6.93	233.63	0.00	1188.01	9.47	1.49	1356.25
88-P18S4	16.34	124.68	327378.97	6.67	203.45	2.41	1198.52	9.96	1.09	1282.83
88-P18G1	68.38	40480.99	2582955.65	87.31	23576.88	14.53	62342.32	478.88	1353.31	1295.71
88-P19L1	20.12	169.77	352918.45	7.26	244.59	1.58	1405.28	13.63	1.94	1318.23
88-P19S1	18.28	127.10	318422.20	6.47	227.91	1.83	1189.47	10.69	1.37	1274.85
88-P19S2	20.82	149.77	380147.96	7.47	184.39	1.39	1404.69	12.01	2.27	1500.55
88-P19S3	17.40	126.89	300328.65	6.09	266.95	0.00	1149.03	10.07	1.01	1283.76
88-P19S4	17.65	203.13	477586.47	9.50	190.07	2.36	1652.47	13.53	3.05	1684.76
88-P19G1	44.50	22565.33	1951540.35	56.88	14985.56	5.80	34837.80	286.56	944.41	1379.68
48-P8S1	3.34	824.85	334276.48	7.05	402.63	0.58	3010.01	9.87	0.87	1609.95
48-P8S2	4.24	809.10	344353.67	7.07	304.50	0.98	3071.65	12.09	1.00	1703.34
48-P8S3	9.44	1962.23	377234.17	8.91	745.95	7.86	4740.98	17.60	4.02	1715.95

48-P8G1	49.69	109149.59	861239.81	135.85	33177.52	13.45	134782.57	851.26	82.46	1007.10
48-P7L1	8.83	1389.11	395727.80	8.64	620.73	0.02	3780.84	16.77	1.29	1729.73
48-P7S1	7.29	858.58	362881.80	7.50	413.14	0.00	2853.30	10.78	0.32	1702.87
48-P7S2	7.13	755.08	342741.56	7.24	372.34	0.06	2784.67	10.16	0.24	1624.27
48-P7S3	7.02	983.18	379670.94	8.06	492.34	1.49	3279.46	11.54	0.25	1737.79
48-P7S4	6.84	881.77	340879.65	7.02	393.22	1.20	2924.09	9.34	0.22	1627.25
48-P7G1	14.60	48027.12	595257.16	23.84	711.53	19.02	5650.97	19.04	54.79	262.32
48-P6L1	8.63	969.25	319919.18	6.84	613.65	0.00	3089.71	23.92	1.35	1432.32
48-P6S1	10.11	957.08	325134.12	6.79	400.70	0.00	2791.25	12.88	1.08	1476.82
48-P6S2	7.77	680.46	313595.51	6.65	428.54	0.46	2799.98	12.74	0.34	1440.75
48-P6S3	6.63	631.85	321299.32	6.59	437.55	1.25	2868.03	15.35	0.64	1452.61
48-P6S4	3.28	644.13	326365.85	6.73	451.38	1.38	2853.64	19.58	0.46	1438.54
48-P6G1	42.61	177201.62	757847.47	97.73	18112.21	9.71	125783.76	929.80	55.10	882.28
48-P5S1	3.52	644.43	318681.31	6.49	301.94	0.43	2731.01	7.99	0.26	1525.77
48-P5S2	3.04	552.39	299639.16	5.86	242.05	1.14	2475.72	6.77	0.13	1456.06
48-P5S3	6.02	1412.17	425946.16	8.78	558.68	0.99	3619.61	16.29	1.07	1866.56
48-P5S4	5.07	980.53	370216.21	7.62	405.91	1.28	3154.75	10.77	0.26	1671.46
48-P5G1	20.74	59920.58	861057.44	78.32	23993.50	12.50	86680.05	522.98	95.94	1574.76
48-P4S1	8.83	579.81	335421.22	7.24	381.96	0.26	1913.54	8.46	0.50	1516.77
48-P4S2	6.91	514.91	326938.51	6.66	312.32	1.54	1992.44	8.70	0.49	1405.63
48-P4S3	3.18	538.33	304709.58	6.14	294.66	0.00	2581.13	10.72	0.68	1336.30
48-P4S4	6.53	668.04	324674.98	6.62	432.29	1.21	2944.77	13.33	0.41	1433.08
48-P4G1	46.46	73627.29	715188.03	80.06	20116.50	11.37	76502.68	497.48	62.93	1022.90
48-P16S1	4.19	820.76	349352.89	7.25	391.57	0.60	2779.85	10.33	1.63	1640.23
48-P16S2	3.64	817.13	349302.69	7.03	373.99	2.37	2805.67	9.27	0.31	1568.84
48-P16S3	1.90	558.92	303723.67	6.67	322.21	1.06	2717.23	8.19	0.69	1408.42
48-P16G1	12.57	57473.78	854833.30	76.29	26696.29	14.16	87435.73	520.66	106.98	1295.59
48-P15S1	3.15	1584.45	322113.27	7.85	1062.04	1.57	4104.37	19.66	3.06	1385.04
48-P15S2	2.89	1014.74	315573.91	7.04	394.23	0.29	2946.10	11.71	0.69	1427.97

48-P15S3	3.11	832.41	300623.03	6.40	272.62	3.33	2745.08	12.33	0.38	1413.86
48-P15G1	23.53	58494.49	759211.59	70.06	26824.82	15.51	87109.19	520.23	103.84	1253.64
48-P17S1	7.53	2674.10	454763.70	10.94	936.94	0.00	6030.59	39.16	5.76	1905.86
48-P17S2	3.85	679.06	350763.62	7.65	281.15	0.00	2737.09	7.89	0.94	1687.16
48-P17S3	5.73	850.62	372731.75	8.28	379.20	2.11	2947.75	9.79	0.34	1672.34
48-P17S4	3.48	897.20	365253.65	7.91	362.90	0.00	3103.82	8.71	0.19	1644.96
48-P17G1	12.20	63268.49	816764.59	77.55	24628.65	11.41	90933.16	489.38	113.54	1339.54
48-P1S1	6.80	1433.79	386739.58	8.68	533.38	1.94	3624.43	14.82	1.22	1770.58
48-P1S2	7.20	1186.75	421392.35	9.51	614.09	1.11	3737.32	13.27	0.76	1864.22
48-P1S3	5.84	1030.32	396937.92	8.18	457.26	0.00	3506.47	10.46	0.32	1697.04
48-P1S4	4.14	756.71	338321.63	7.01	280.74	5.76	3001.26	9.14	0.33	1524.65
48-P1G1	34.78	107326.81	988054.43	111.74	32554.37	16.54	128664.28	722.41	120.54	1123.25
48-P3S1	6.21	1220.49	379176.83	8.64	507.14	2.77	3798.62	12.90	1.10	1749.90
48-P3S2	2.85	999.42	336433.30	7.60	238.62	0.62	3001.10	10.03	0.38	1579.51
48-P3G1	26.60	82726.04	841621.49	89.43	24844.08	55.78	105585.24	600.72	100.21	1373.62

Plagioclase Phenocryst Trace Element Chemistry from the LA-ICPMS Continued

Sample ID	Y (ppm)	Zr (ppm)	Nb (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Eu (ppm)	Gd (ppm)
42-P19L1	0.29	1.06	0.60	0.03	270.38	3.50	5.76	0.67	1.82	0.86	0.13
42-P19S1	0.16	0.04	0.00	0.00	56.20	0.98	1.64	0.18	0.63	0.21	0.07
42-P19S2	0.22	0.34	0.01	0.03	63.50	1.11	1.97	0.20	0.92	0.30	0.06
42-P19S3	0.40	0.17	0.00	0.00	282.91	3.40	5.62	0.58	2.22	1.02	0.26
42-P19S4	0.51	0.06	0.00	0.01	384.22	5.01	8.02	0.82	3.02	1.31	0.27
42-P19G1	34.16	463.21	15.39	8.21	2922.08	52.24	103.33	11.96	50.09	4.62	7.88
42-P17L1	1.06	1.65	0.09	0.04	399.11	5.56	9.67	0.93	3.52	1.11	0.36
42-P17S1	0.58	0.45	0.84	0.02	238.64	4.36	7.55	0.81	2.69	0.82	0.27
42-P17S2	0.51	0.51	0.02	0.02	126.92	2.40	4.42	0.48	1.74	0.57	0.19
42-P17S3	0.21	0.30	0.02	0.01	87.82	1.40	2.46	0.28	0.85	0.45	0.11
42-P17S4	0.46	0.22	0.01	0.01	787.19	8.78	12.98	1.27	3.91	1.75	0.31
42-P17G1	88.80	872.15	42.55	13.07	2877.16	122.87	273.49	31.81	127.84	4.63	22.72

42-P16L1	0.37	2.91	0.08	1.03	436.04	5.15	8.95	0.81	2.57	1.02	0.19
42-P16S1	0.40	0.70	0.04	0.01	557.97	6.35	10.10	0.88	2.71	1.27	0.31
42-P16S2	0.39	0.33	0.02	0.03	444.52	5.29	8.47	0.82	2.79	1.11	0.23
42-P16S3	0.23	0.28	0.01	0.06	437.96	5.32	8.07	0.78	2.40	1.00	0.15
42-P16G1	68.03	704.92	32.30	11.86	3310.54	84.65	185.28	21.16	82.04	4.83	13.69
42-P15S1	0.61	0.17	0.00	0.02	303.62	4.92	8.16	0.88	2.82	1.08	0.34
42-P15S2	0.47	0.23	0.01	0.02	146.20	2.16	4.07	0.43	1.49	0.76	0.19
42-P15S3	0.89	0.20	0.02	0.02	276.05	5.25	8.71	0.95	3.33	0.84	0.43
42-P15S4	0.58	0.34	0.00	0.03	384.78	5.11	8.02	0.73	2.82	1.20	0.26
42-P15G1	107.38	900.50	39.33	14.61	2532.80	127.41	297.08	35.15	141.09	4.26	26.70
42-P13L1	2.38	40.46	1.59	0.47	572.43	8.85	15.95	1.68	6.13	1.33	0.75
42-P13S1	0.28	0.22	0.00	0.01	441.53	6.14	8.87	0.77	3.05	1.08	0.26
42-P13S2	0.31	0.47	0.00	0.00	370.84	5.52	7.92	0.75	2.62	1.03	0.19
42-P13S3	0.47	1.48	0.04	0.02	466.02	5.89	8.56	0.91	2.93	1.10	0.25
42-P13S4	0.38	0.29	0.02	0.00	541.30	6.03	8.72	0.82	2.88	1.12	0.17
42-P13G1	113.86	787.46	66.13	11.84	1727.66	132.40	301.92	38.11	157.60	3.68	28.85
42-P14L1	0.30	0.34	0.01	0.04	447.16	5.57	8.72	0.79	2.57	1.04	0.17
42-P14S1	0.26	0.27	0.00	0.01	443.48	5.78	8.36	0.76	2.41	1.12	0.19
42-P14S2	0.40	0.80	0.04	0.12	509.99	6.15	8.91	0.90	2.65	1.18	0.23
42-P14S3	0.35	0.19	0.01	0.01	380.80	5.46	7.99	0.71	2.68	0.92	0.23
42-P14S4	0.51	0.11	0.34	0.00	473.41	5.81	8.89	0.91	2.73	1.08	0.23
42-P14G1	50.52	811.13	35.70	13.05	3011.83	74.70	161.25	17.85	67.69	4.11	11.41
42-P10S1	0.53	3.15	0.31	0.04	250.78	3.32	5.90	0.61	2.16	0.74	0.31
42-P10S2	0.19	0.01	0.00	0.00	214.90	2.72	4.41	0.48	1.63	0.63	0.12
42-P10S3	0.15	0.04	0.00	0.00	255.59	2.89	4.94	0.53	1.84	0.74	0.13
42-P10S4	0.37	0.68	0.01	0.47	710.66	9.19	13.33	1.32	3.99	1.98	0.26
42-P10G1	40.75	610.91	25.18	9.28	2995.98	67.29	131.79	15.65	58.62	4.17	9.01
42-P7L1	1.40	6.55	0.69	0.28	379.69	5.04	10.28	1.15	3.68	0.98	0.32
42-P7S1	0.21	0.28	0.03	0.03	146.09	2.80	4.74	0.40	1.46	0.54	0.07

42-P7S2	0.23	0.03	0.00	0.00	235.41	3.38	5.49	0.52	1.65	0.74	0.10
42-P7S3	0.28	0.05	0.00	0.04	269.82	4.01	7.03	0.64	1.95	0.93	0.19
42-P7S4	0.32	0.37	0.01	0.01	403.82	4.48	7.13	0.72	2.09	0.86	0.16
42-P7G1	43.46	454.46	20.56	5.85	3307.47	76.39	158.85	18.93	71.36	5.39	12.44
42-P9S1	0.29	0.48	0.02	0.01	364.18	4.80	7.63	0.69	2.43	0.93	0.22
42-P9S2	0.68	0.39	0.01	0.13	574.01	7.07	11.52	1.13	3.56	1.45	0.47
42-P9S3	0.59	0.06	0.01	0.00	613.73	7.52	10.65	0.96	3.11	1.34	0.22
42-P9G1	47.61	301.63	8.81	4.61	1746.41	53.45	113.92	14.46	59.81	3.28	10.65
42-P8L1	0.26	0.55	1.24	0.03	313.83	4.02	6.88	0.64	2.13	0.86	0.18
42-P8S1	2.37	24.16	1.21	0.34	452.90	8.10	14.44	1.43	5.09	0.95	0.66
42-P8S2	0.26	0.52	0.03	0.02	283.47	4.07	6.25	0.59	1.97	0.77	0.15
42-P8S3	0.24	0.01	0.00	0.00	240.81	3.34	5.35	0.54	1.71	0.70	0.15
42-P8S4	0.25	0.53	0.01	0.00	337.87	3.88	6.37	0.63	2.04	0.83	0.12
42-P8G1	130.68	1167.63	106.41	17.21	2822.01	188.14	415.36	51.15	205.21	4.85	34.67
3-P17L1	0.52	1.61	0.06	0.04	927.65	15.83	24.73	2.06	6.08	1.91	0.45
3-P17S1	1.00	7.08	0.03	0.00	523.09	16.47	25.06	2.24	7.15	1.54	0.53
3-P17S2	0.61	0.75	0.06	0.04	984.11	16.93	24.45	2.10	6.16	1.89	0.36
3-P17S3	0.45	0.24	0.01	0.01	1046.31	15.22	21.11	1.83	4.96	2.09	0.33
3-P17S4	0.52	0.06	0.00	0.01	1032.18	17.21	24.88	2.14	6.41	1.90	0.34
3-P17G1	37.55	446.21	22.35	16.57	2514.42	69.24	139.97	14.83	52.97	2.80	7.98
3-P18S1	0.79	0.46	0.07	0.02	529.38	15.64	25.60	2.38	7.29	1.55	0.58
3-P18S2	5.74	41.19	0.83	0.01	501.38	11.28	20.56	2.25	8.31	1.69	1.30
3-P18S3	0.67	0.21	0.00	0.00	825.58	16.28	24.83	2.29	6.42	2.03	0.57
3-P18S4	0.93	6.15	0.57	0.44	1378.86	24.57	36.19	3.00	8.60	2.65	0.60
3-P18G1	37.11	467.99	23.52	16.41	3049.76	67.00	139.37	14.75	52.96	3.09	8.71
3-P15L1	0.58	0.57	0.11	0.07	711.54	14.09	21.39	1.90	5.61	1.65	0.40
3-P15S1	0.73	0.84	0.04	0.01	785.01	14.10	20.12	1.85	5.32	1.64	0.41
3-P15S2	12.53	0.43	0.02	0.06	499.01	29.14	61.79	7.22	29.25	1.76	4.34
3-P15S3	0.42	0.13	0.01	0.02	787.39	14.01	20.41	1.81	5.24	1.77	0.34

3-P15S4	0.51	0.34	0.03	0.01	1361.36	20.06	26.96	2.11	6.39	2.11	0.35
3-P15G1	45.48	518.64	24.35	17.65	2400.29	72.30	151.57	17.49	63.78	2.64	9.62
3-P11L1	1.82	5.53	0.57	0.18	984.48	19.84	29.49	2.61	8.24	2.04	0.57
3-P11S1	1.74	0.11	0.25	0.00	730.90	15.23	24.87	2.34	7.58	1.79	0.87
3-P11S2	0.91	2.56	0.14	0.09	927.97	18.09	25.83	2.22	6.60	2.01	0.44
3-P11S3	0.91	0.15	7.78	0.01	754.13	19.52	28.49	2.55	7.74	1.85	0.44
3-P11S4	0.47	0.22	0.01	0.00	956.04	18.53	25.20	2.13	6.00	2.07	0.33
3-P11G1	47.55	521.70	25.87	18.49	2254.99	76.10	165.99	18.66	69.17	2.43	10.49
3-P13S1	0.52	0.04	0.00	0.00	679.80	11.37	17.38	1.63	5.00	1.60	0.37
3-P13S2	0.80	0.15	0.01	0.02	575.96	11.80	18.47	1.73	5.74	1.38	0.46
3-P13S3	4.68	10.62	3.07	0.41	1264.11	19.76	34.61	3.53	13.46	2.13	1.46
3-P13S4	0.61	4.33	0.20	0.08	321.22	4.77	7.43	0.70	2.13	0.85	0.19
3-P13G1	40.56	474.89	22.94	16.25	2190.97	66.95	139.78	15.37	57.59	2.15	8.81
3-P12L1	0.71	3.12	0.12	0.11	872.52	15.70	22.97	1.89	5.50	1.89	0.36
3-P12S1	0.39	0.03	0.01	0.01	760.57	12.69	18.23	1.63	4.71	1.73	0.25
3-P12S2	0.42	0.04	0.00	0.01	685.30	12.37	17.95	1.66	4.89	1.66	0.35
3-P12S3	0.48	0.13	0.02	0.01	1032.58	15.24	21.58	1.92	5.41	2.04	0.30
3-P12S4	0.61	3.67	0.51	0.08	1060.06	18.36	26.97	2.28	6.91	1.90	0.44
3-P12G1	41.22	504.79	25.12	17.14	2732.25	68.03	143.22	15.73	56.83	2.65	8.78
3-P9S1	1.33	0.09	0.02	0.02	787.50	17.21	26.19	2.42	7.82	1.74	0.72
3-P9S2	0.46	0.11	0.00	0.03	882.59	18.55	24.27	2.10	5.96	1.88	0.33
3-P9S3	1.26	34.50	0.96	0.99	589.17	14.18	21.43	1.95	6.50	1.51	0.47
3-P9S4	1.21	2.28	0.08	0.06	1340.25	22.12	28.88	2.42	7.18	2.16	0.41
3-P9G1	30.29	325.48	15.77	11.40	1797.49	49.67	101.54	11.47	41.70	2.02	6.44
3-P10L1	0.38	1.13	0.05	0.03	1078.19	15.94	23.83	1.93	5.46	1.87	0.29
3-P10S1	0.41	0.04	0.00	0.00	1267.32	18.21	23.70	2.08	5.40	2.03	0.33
3-P10S2	0.43	0.07	0.00	0.01	1008.75	17.73	23.81	1.96	5.61	2.06	0.41
3-P10S3	0.60	0.02	0.00	0.01	1128.26	20.68	26.47	2.07	6.39	1.90	0.40
3-P10S4	0.37	0.24	0.06	0.00	1271.46	21.35	26.29	2.08	6.33	2.08	0.34

3-P10G1	50.60	598.83	29.63	20.55	2725.09	81.03	167.00	18.47	68.12	2.77	11.07
3-P1L1	0.55	3.16	0.18	0.10	770.36	13.80	20.04	1.70	5.06	1.74	0.29
3-P1S1	0.59	0.10	0.00	0.01	739.29	12.91	18.30	1.60	5.08	1.94	0.42
3-P1S2	0.59	0.12	0.02	0.00	627.93	11.95	17.38	1.59	4.70	1.52	0.40
3-P1S3	0.48	0.48	0.04	0.09	1071.80	14.91	19.08	1.54	4.99	2.13	0.28
3-P1S4	0.39	0.13	0.00	0.03	1076.13	24.63	31.75	2.54	6.95	2.42	0.54
3-P1G1	54.13	659.39	30.11	20.92	2583.20	80.40	164.10	18.70	68.86	2.67	11.82
3-P3L1	1.16	7.60	0.57	0.60	664.07	16.09	22.31	1.86	5.45	1.51	0.41
3-P3S1	0.32	0.77	0.04	0.04	615.33	17.06	22.10	1.80	4.63	1.92	0.31
3-P3S2	0.30	0.00	0.07	0.01	604.23	17.13	22.69	1.81	4.74	1.67	0.16
3-P3S3	0.26	0.00	0.00	0.01	795.34	17.07	22.22	1.68	4.77	1.81	0.28
3-P3S4	3.45	28.44	1.38	1.29	439.42	8.82	15.03	1.58	5.72	0.75	0.82
3-P3G1	29.67	324.96	15.94	10.33	1745.55	47.41	98.12	11.26	41.40	1.79	6.43
84-P22L1	2.95	9.66	0.81	0.41	492.18	12.92	22.68	2.29	7.59	1.55	0.90
84-P22S1	0.45	2.60	0.26	0.00	305.05	6.40	11.45	1.09	3.28	0.96	0.22
84-P22S2	8.92	86.16	3.00	0.07	444.09	11.91	23.37	2.70	10.62	1.66	2.07
84-P22S3	0.44	0.06	0.01	0.13	933.23	15.84	22.52	1.92	5.42	2.18	0.25
84-P22S4	0.76	3.09	0.63	0.43	1168.21	25.04	33.34	2.50	7.14	2.90	0.54
84-P22G1	95.24	1163.89	66.82	47.61	4864.39	183.67	391.16	44.58	168.14	4.58	22.05
84-P20L1	0.66	3.55	0.34	0.53	397.49	12.94	15.05	1.01	2.74	1.58	0.17
84-P20S1	0.09	0.00	0.00	0.02	304.71	12.84	12.79	0.81	1.83	1.31	0.12
84-P20S2	0.08	0.00	0.00	0.00	292.69	12.84	12.62	0.86	1.79	1.26	0.05
84-P20S3	0.13	0.08	0.00	0.03	287.46	9.50	8.70	0.60	1.17	1.47	0.05
84-P20S4	0.24	0.01	0.00	0.01	797.89	20.79	24.88	1.88	4.72	2.15	0.27
84-P20G1	136.84	1783.15	93.00	70.04	6107.66	236.15	495.46	55.59	204.84	5.61	31.36
84-P19L1	0.59	5.52	0.14	0.27	421.30	6.49	11.47	1.18	3.74	1.35	0.29
84-P19S1	0.38	4.88	0.27	0.51	271.16	4.48	7.07	0.73	2.53	0.90	0.25
84-P19S2	6.09	0.22	0.00	0.01	322.94	9.84	19.39	2.50	10.85	1.30	2.05
84-P19S3	0.44	2.05	0.19	0.02	553.68	7.39	11.06	1.09	3.57	1.86	0.31

84-P19S4	0.39	0.88	0.03	0.01	509.96	10.67	14.77	1.42	4.40	1.69	0.25
84-P19G1	64.31	211.87	11.63	6.93	1068.83	67.05	83.80	17.15	66.80	2.82	14.56
84-P4L1	7.62	25.58	1.70	2.09	970.92	23.97	41.20	4.22	13.96	2.41	1.64
84-P4S1	2.53	1.01	0.16	0.09	1042.28	17.63	27.73	2.72	9.35	2.06	0.99
84-P4S2	1.27	3.09	0.18	0.23	976.92	16.51	23.59	2.02	6.14	2.09	0.43
84-P4S3	3.83	7.85	1.22	0.07	812.65	21.27	34.67	3.32	10.83	2.42	1.19
84-P4S4	2.19	1.02	0.05	0.09	1311.48	27.33	36.24	2.97	8.84	3.17	0.40
84-P4G1	78.62	1004.52	57.70	39.72	4535.34	152.24	316.98	34.75	129.62	4.99	19.43
84-P13L1	0.88	1.69	0.07	0.14	611.72	9.26	14.48	1.30	3.92	1.58	0.28
84-P13S1	0.38	0.07	0.01	0.01	176.11	4.20	7.29	0.73	2.33	0.86	0.23
84-P13S2	0.35	1.15	0.07	0.11	144.94	2.00	3.41	0.35	1.15	0.83	0.14
84-P13S3	0.55	0.27	0.01	0.04	1223.94	15.52	20.03	1.76	5.13	2.34	0.33
84-P13S4	1.54	4.40	0.28	0.45	1153.13	23.11	32.81	2.74	8.41	2.88	0.66
84-P13G1	113.55	1286.02	73.18	52.36	6042.53	204.66	440.11	49.16	187.52	6.09	26.93
84-P8S1	0.30	0.03	0.00	0.00	91.14	1.60	2.87	0.31	1.13	0.37	0.14
84-P8S2	0.73	2.64	0.21	0.37	110.19	2.15	3.90	0.41	1.60	0.48	0.19
84-P8S3	1.07	0.84	0.07	0.05	464.47	8.52	13.54	1.35	4.55	1.79	0.45
84-P8S4	0.72	1.15	0.10	0.26	1365.50	29.34	39.78	3.44	10.03	3.82	0.55
84-P8G1	103.42	1341.22	70.71	50.25	6929.95	197.31	410.81	46.92	169.60	8.04	22.59
84-P10L1	2.93	6.61	0.58	0.77	792.47	19.63	32.53	2.96	9.21	2.30	0.91
84-P10S1	0.40	0.05	0.01	0.00	736.95	16.37	24.13	2.21	6.14	2.14	0.37
84-P10S2	0.89	3.06	1.03	0.42	819.37	15.05	23.08	2.14	6.29	2.39	0.42
84-P10S3	1.61	12.52	0.61	0.94	830.11	21.36	29.51	2.53	7.25	2.40	0.66
84-P10S4	1.17	0.21	0.02	0.04	1055.49	24.60	33.06	2.81	8.26	2.72	0.75
84-P10G1	64.78	881.69	46.12	34.13	4161.14	121.61	252.68	27.41	102.60	4.71	15.17
84-P17S1	0.42	0.11	0.00	0.01	467.06	5.62	8.65	0.86	2.76	1.29	0.19
84-P17S2	0.34	0.04	0.00	0.00	432.86	5.70	8.88	0.89	3.09	1.27	0.24
84-P17S3	0.42	0.02	0.00	0.00	369.39	5.14	8.41	0.80	2.97	1.13	0.25
84-P17S4	0.31	0.02	0.01	0.01	334.29	4.99	8.34	0.82	2.72	0.95	0.28

84-P17G1	226.85	3077.75	166.19	127.38	10425.38	369.16	802.16	88.69	327.05	8.84	47.91
84-P16L1	0.77	1.96	0.19	0.39	458.43	6.43	10.38	0.98	3.09	1.18	0.25
84-P16S1	0.53	0.22	0.01	0.00	306.40	4.14	7.32	0.74	2.56	1.07	0.23
84-P16S2	0.44	0.17	0.01	0.01	280.03	3.77	6.29	0.69	2.22	1.02	0.14
84-P16S3	1.70	3.02	0.21	0.43	441.94	6.82	11.04	1.06	3.61	1.16	0.37
84-P16S4	1.06	1.39	0.11	0.31	609.22	10.07	14.80	1.39	4.51	1.35	0.31
84-P16G1	57.44	678.33	39.48	26.58	2180.85	94.53	205.33	22.85	90.66	2.45	13.53
84-P15L1	1.31	8.67	1.12	0.76	730.32	17.14	25.01	2.20	6.39	2.68	0.43
84-P15S1	0.42	0.03	0.00	0.02	621.47	7.52	12.40	1.25	4.20	2.24	0.27
84-P15S2	0.55	0.70	0.03	0.23	461.08	8.77	14.45	1.47	5.05	2.20	0.28
84-P15S3	0.38	0.06	0.00	0.31	793.05	25.30	34.23	2.77	7.94	3.07	0.39
84-P15S4	6.63	0.16	0.01	0.02	1087.10	33.81	57.96	6.11	21.75	2.83	2.40
84-P15G1	77.42	1050.94	57.07	47.14	3859.12	127.39	270.72	30.93	117.08	4.04	16.84
10-P3L1	1.31	3.12	0.43	0.45	1025.57	19.76	30.38	2.79	8.02	1.93	0.64
10-P3S1	0.73	0.05	0.00	0.02	473.93	17.87	27.92	2.51	7.50	1.36	0.33
10-P3S2	0.58	0.34	0.02	0.20	906.90	19.04	27.53	2.38	6.77	1.86	0.48
10-P3S3	0.46	0.01	0.00	0.00	1057.21	20.60	28.25	2.38	6.84	2.04	0.38
10-P3S4	1.27	13.71	0.64	0.51	1195.81	19.88	27.13	2.35	6.84	2.13	0.62
10-P3G1	138.36	1797.71	87.29	59.14	8174.20	218.80	463.09	49.12	177.87	6.35	26.74
10-P17S1	0.08	0.00	0.00	0.00	49.61	1.23	1.81	0.20	0.64	0.25	0.06
10-P17S2	0.12	0.27	0.00	0.03	44.96	1.08	1.79	0.16	0.61	0.24	0.05
10-P17S3	0.09	0.04	0.00	0.01	58.56	1.22	1.98	0.19	0.71	0.25	0.07
10-P17S4	0.24	1.27	0.06	0.07	208.46	3.17	4.67	0.42	1.56	0.71	0.16
10-P17G1	256.73	3419.17	164.81	109.40	15584.32	392.33	826.99	86.87	312.19	9.66	49.76
10-P12L1	0.90	3.14	0.54	0.13	932.28	16.59	24.71	2.20	6.59	1.83	0.45
10-P12S1	0.42	0.43	0.03	0.02	1039.16	16.64	22.16	1.93	5.63	1.86	0.40
10-P12S2	0.42	0.11	0.00	0.03	928.52	16.41	22.82	1.96	5.62	1.92	0.32
10-P12S3	0.63	0.10	0.01	0.00	991.91	14.99	21.93	1.97	5.77	1.80	0.44
10-P12S4	0.39	0.27	0.01	0.05	933.89	15.74	21.71	1.81	5.14	1.88	0.34

10-P12G1	191.93	2452.03	115.77	80.56	10825.30	284.89	601.55	66.12	239.63	7.41	35.10
10-P6L1	1.11	1.39	0.23	0.07	956.13	18.84	28.37	2.52	7.56	2.10	0.63
10-P6S1	0.43	0.05	0.01	0.00	1148.83	19.88	25.53	2.09	5.98	2.49	0.37
10-P6S2	0.70	0.30	0.02	0.01	1019.30	20.87	27.28	2.38	7.49	2.28	0.48
10-P6S3	0.52	0.00	0.00	0.02	1064.93	18.23	23.85	2.09	6.04	2.29	0.37
10-P6S4	0.57	1.54	0.04	0.09	1006.64	17.29	23.35	2.01	6.05	1.91	0.36
10-P6G1	163.73	1985.62	93.82	65.17	9064.49	242.19	513.75	56.94	201.82	5.94	33.40
10-P7L1	0.47	7.16	0.29	0.23	230.65	5.93	8.89	0.83	2.49	0.72	0.19
10-P7S1	0.34	0.52	0.01	0.29	239.73	6.97	9.58	0.86	2.54	0.84	0.20
10-P7S2	0.23	0.10	0.01	0.01	246.43	7.11	10.06	0.90	2.59	0.86	0.10
10-P7S3	0.37	1.64	0.06	0.15	178.72	2.89	4.32	0.46	1.34	0.48	0.14
10-P7G1	254.82	3349.83	165.39	108.74	13840.22	384.53	810.24	87.44	305.26	8.32	49.83
10-P8L1	19.49	60.29	4.69	3.48	835.20	35.30	48.21	7.51	23.26	3.18	5.38
10-P8S1	0.37	0.07	0.00	0.02	693.53	18.51	24.22	2.24	5.84	1.95	0.49
10-P8S2	0.45	0.03	0.00	0.00	798.19	22.08	29.04	2.32	6.54	2.13	0.29
10-P8S3	0.65	5.24	0.21	0.34	902.72	20.55	26.47	2.13	6.39	2.08	0.28
10-P8S4	0.41	0.15	0.00	0.05	781.98	13.59	18.46	1.67	4.79	1.77	0.33
10-P8G1	42.08	564.36	26.28	17.60	3235.59	69.80	143.01	15.65	54.24	3.26	8.87
10-P13L1	0.63	3.99	0.59	0.13	346.15	8.59	12.45	1.17	3.53	1.10	0.22
10-P13S1	0.19	0.07	0.00	0.03	210.82	7.04	10.53	0.88	2.66	0.88	0.11
10-P13S2	0.28	1.64	0.04	0.07	218.39	7.35	10.57	0.93	2.72	0.82	0.16
10-P13S3	0.35	0.62	0.02	0.07	475.72	9.08	12.16	1.00	3.20	1.55	0.12
10-P13S4	0.40	0.51	0.01	0.04	545.49	8.65	12.35	1.15	3.20	1.48	0.22
10-P13G1	212.66	2736.13	134.54	86.64	13166.98	310.26	674.78	72.15	248.11	6.91	39.24
10-P9L1	1.52	5.66	0.95	0.17	935.91	16.72	24.85	2.16	6.43	1.78	0.64
10-P9S1	0.42	0.07	0.00	0.03	843.01	13.26	19.27	1.64	4.77	1.74	0.39
10-P9S2	0.42	0.06	0.13	0.00	785.60	12.93	19.25	1.66	5.11	1.65	0.36
10-P9S3	2.06	273.65	1.10	0.81	403.45	2.75	11.07	0.53	3.70	0.26	0.32
10-P9G1	172.33	2132.08	104.29	73.03	9820.10	257.84	543.73	59.44	217.04	6.32	34.77

10-P10L1	3.89	59.84	2.42	1.80	655.30	12.76	22.12	2.38	7.35	1.54	0.90
10-P10S1	0.47	0.40	0.02	0.04	522.44	7.94	11.92	1.07	3.37	1.55	0.21
10-P10S2	0.44	0.06	0.01	0.01	524.80	7.94	12.01	1.11	3.43	1.52	0.26
10-P10S3	0.41	0.10	0.01	0.01	431.80	6.29	9.46	0.83	2.53	1.35	0.16
10-P10S4	1.26	0.59	0.01	0.05	416.80	7.42	12.34	1.28	4.27	1.31	0.42
10-P10G1	178.44	2223.48	111.81	76.91	10658.99	270.02	574.23	60.84	213.39	6.72	33.43
10-P11L1	1.51	11.55	0.83	0.46	971.83	16.78	25.87	2.28	7.02	1.76	0.62
10-P11S1	0.93	0.12	0.01	0.00	787.28	13.99	21.28	1.99	6.16	1.60	0.50
10-P11S2	0.61	1.78	0.13	0.14	958.84	14.92	20.98	1.88	5.78	1.71	0.34
10-P11S3	11.14	1.43	0.07	0.08	798.50	28.52	57.49	6.79	27.44	2.04	3.66
10-P11S4	0.35	0.32	0.02	0.03	1133.44	16.46	22.51	1.89	5.31	1.85	0.31
10-P11G1	115.81	1455.62	73.16	49.85	6744.53	178.45	374.72	39.66	142.51	4.60	23.86
88-P5L1	0.81	5.39	0.45	0.08	737.23	10.23	15.65	1.51	4.86	1.85	0.41
88-P5S1	0.86	7.34	0.38	0.10	514.54	7.00	11.54	1.16	3.89	1.58	0.42
88-P5S2	0.57	0.30	0.62	0.02	339.90	6.96	11.45	1.21	3.99	1.31	0.33
88-P5S3	0.40	0.30	0.01	0.02	472.43	6.22	9.79	1.02	3.27	1.62	0.15
88-P5S4	4.24	0.41	0.02	0.03	1123.54	24.13	37.82	3.88	14.72	2.51	1.64
88-P5G1	44.00	453.70	27.30	15.30	3220.06	92.94	194.72	22.38	78.38	3.66	11.33
88-P3S1	0.73	0.05	0.01	0.03	158.17	2.81	4.82	0.50	2.42	0.75	0.22
88-P3S2	0.76	1.02	0.03	0.05	1451.95	25.51	34.61	3.01	9.16	2.96	0.58
88-P3S3	0.89	0.08	0.02	0.00	792.89	18.71	26.53	2.28	7.25	2.10	0.49
88-P3S4	0.55	0.07	0.00	0.04	1170.19	20.39	28.40	2.39	7.67	2.64	0.55
88-P3G1	153.38	1430.04	112.69	60.92	6575.49	274.72	593.22	68.97	254.41	7.31	37.40
88-P13L1	0.48	1.27	0.08	0.11	1327.48	20.47	27.10	2.24	6.19	2.59	0.44
88-P13S1	0.50	0.02	0.06	0.00	865.63	11.90	16.79	1.43	4.25	2.04	0.32
88-P13S2	0.45	0.02	0.00	0.00	1338.48	19.45	25.24	2.06	6.06	2.49	0.46
88-P13S3	0.41	0.15	0.00	0.02	1349.46	21.95	28.64	2.27	6.33	2.71	0.33
88-P13S4	0.37	0.02	0.00	0.02	806.37	13.37	18.98	1.74	5.02	2.08	0.33
88-P13G1	113.71	1395.67	91.00	71.18	5283.90	211.31	447.88	47.80	175.33	5.14	25.72

88-P10L1	3.98	0.56	0.03	0.03	932.37	20.29	33.91	3.31	11.31	2.39	1.17
88-P10S1	0.40	0.03	0.00	0.01	935.88	14.43	18.45	1.48	4.09	2.28	0.29
88-P10S2	0.37	0.39	0.00	0.10	1117.72	18.70	24.52	2.07	5.87	2.41	0.35
88-P10S3	0.43	0.02	0.00	0.01	727.18	11.53	15.90	1.42	4.33	1.89	0.30
88-P10S4	0.38	0.02	0.00	0.02	1088.77	19.82	26.07	2.15	6.15	2.54	0.41
88-P10G1	145.01	799.73	50.26	43.94	3537.38	261.38	601.52	73.67	283.27	5.17	43.20
88-P11S1	0.43	0.45	0.04	0.01	459.34	8.33	11.94	1.16	3.68	1.46	0.26
88-P11S2	0.61	0.04	0.00	0.02	577.78	10.05	14.53	1.42	3.87	1.56	0.34
88-P11S3	0.43	0.16	0.01	0.00	752.12	11.04	15.54	1.42	4.46	1.99	0.31
88-P11S4	1.82	17.38	0.80	1.20	980.81	18.72	27.29	2.48	7.56	2.04	0.52
88-P11G1	107.62	1120.28	66.59	54.47	5366.23	195.46	413.20	46.07	165.47	5.27	23.54
88-P14L1	0.79	1.11	0.08	0.04	467.56	9.51	15.75	1.53	4.99	1.37	0.44
88-P14S1	0.75	0.22	0.02	0.02	329.65	5.93	10.25	1.07	3.56	1.06	0.32
88-P14S2	0.74	1.30	0.06	0.03	466.36	8.63	13.92	1.45	4.82	1.13	0.43
88-P14S3	0.79	0.29	0.02	0.01	495.24	9.97	16.27	1.63	5.24	1.30	0.36
88-P14S4	1.24	6.25	0.46	0.34	1051.28	27.91	39.85	3.23	9.80	3.00	0.63
88-P14G1	204.47	2384.83	147.71	115.01	7760.42	369.56	816.33	90.84	321.61	5.70	45.15
88-P15S1	0.30	0.02	0.00	0.01	779.06	12.36	17.24	1.57	4.34	1.63	0.36
88-P15S2	0.39	0.94	0.05	0.02	769.64	13.00	18.43	1.54	4.42	1.62	0.36
88-P15S3	0.38	0.90	0.03	0.01	847.49	13.32	18.12	1.54	4.72	1.76	0.25
88-P15S4	0.37	0.46	0.01	0.01	788.92	13.18	18.57	1.56	4.80	1.87	0.33
88-P15G1	85.15	1091.70	66.58	52.12	4523.00	164.62	345.17	38.06	136.22	4.35	17.96
88-P16L1	1.86	4.01	0.22	0.11	1082.01	17.43	30.43	2.77	8.64	2.44	0.76
88-P16S1	1.35	20.30	0.69	0.60	1093.22	15.16	22.47	2.12	6.56	2.08	0.52
88-P16S2	0.55	0.07	0.00	0.01	919.35	14.28	20.92	1.97	6.11	1.82	0.36
88-P16S3	0.47	0.02	0.00	0.00	1124.35	13.59	19.56	1.85	5.64	2.34	0.33
88-P16S4	1.42	0.70	0.04	0.04	1052.51	21.85	31.91	2.74	8.95	2.56	0.79
88-P16G1	97.12	1278.24	76.81	60.40	5403.93	187.50	379.28	41.74	150.96	4.86	21.34
88-P18L1	1.33	2.50	0.15	0.10	708.44	12.18	19.89	2.08	6.27	1.72	0.60

88-P18S1	0.55	0.70	0.02	0.01	678.33	13.54	20.66	1.84	5.75	2.07	0.49
88-P18S2	0.72	0.93	0.03	0.36	588.61	9.74	15.24	1.48	4.69	1.43	0.33
88-P18S3	0.57	0.08	0.01	0.00	724.48	13.89	19.29	1.75	5.61	1.74	0.41
88-P18S4	0.40	0.01	0.00	0.00	697.76	11.93	17.24	1.57	4.74	1.91	0.32
88-P18G1	129.71	1533.38	92.33	80.42	6958.60	243.76	511.90	56.00	206.00	6.14	32.09
88-P19L1	0.45	0.74	0.04	0.03	703.53	10.54	17.00	1.41	4.32	1.73	0.28
88-P19S1	0.58	0.06	0.00	0.01	578.14	10.49	16.61	1.50	4.86	1.54	0.36
88-P19S2	0.65	0.07	0.00	0.00	746.27	13.99	21.60	1.92	6.14	1.75	0.36
88-P19S3	0.47	0.08	0.00	0.01	409.95	5.78	9.91	0.90	2.82	1.37	0.26
88-P19S4	0.41	0.42	0.02	0.01	1341.14	22.17	29.52	2.46	6.72	2.93	0.43
88-P19G1	80.69	1021.53	65.27	51.00	4577.20	158.74	337.90	36.10	130.13	4.61	19.03
48-P8S1	0.69	2.49	0.15	0.04	181.92	3.29	5.78	0.64	2.33	0.69	0.29
48-P8S2	0.37	1.54	0.06	0.03	161.48	2.17	3.67	0.39	1.50	0.52	0.10
48-P8S3	2.46	17.70	1.07	0.20	386.67	5.18	9.71	1.05	4.56	0.79	0.61
48-P8G1	89.10	557.70	26.98	5.59	1682.94	62.34	137.97	18.16	79.54	4.44	18.27
48-P7L1	0.47	1.81	0.22	0.04	287.82	3.20	5.79	0.62	2.07	0.77	0.27
48-P7S1	0.28	0.37	0.03	0.00	235.34	2.89	4.63	0.53	1.83	0.67	0.12
48-P7S2	0.26	0.06	0.00	0.02	205.62	2.50	4.16	0.43	1.61	0.69	0.11
48-P7S3	0.25	0.09	0.00	0.02	253.29	2.78	4.41	0.49	1.86	0.70	0.14
48-P7S4	0.20	0.02	0.00	0.00	196.50	2.41	3.76	0.41	1.47	0.61	0.11
48-P7G1	15.00	200.81	0.70	0.68	568.57	13.42	32.26	3.54	17.75	0.82	3.42
48-P6L1	0.89	7.96	0.49	0.05	246.00	3.34	6.78	0.72	2.33	0.69	0.34
48-P6S1	0.38	1.56	0.04	0.04	251.92	2.89	4.79	0.56	1.60	0.67	0.15
48-P6S2	0.20	0.06	0.00	0.01	238.73	2.68	4.01	0.40	1.71	0.67	0.13
48-P6S3	0.26	0.56	0.03	0.01	286.35	2.69	4.36	0.45	1.87	0.79	0.13
48-P6S4	0.23	0.66	0.02	0.02	311.62	2.97	4.47	0.47	1.84	1.05	0.12
48-P6G1	69.48	239.48	13.32	1.57	1318.42	51.96	116.87	15.21	67.05	3.64	14.55
48-P5S1	0.30	0.47	0.03	0.02	157.33	2.60	4.64	0.46	1.79	0.65	0.14
48-P5S2	0.22	0.10	0.00	0.00	125.67	2.17	3.61	0.41	1.51	0.56	0.12

48-P5S3	0.45	1.72	0.09	0.10	294.34	3.31	5.45	0.55	2.27	0.75	0.20
48-P5S4	0.24	0.37	0.00	0.03	199.07	2.38	4.02	0.39	1.59	0.59	0.11
48-P5G1	74.55	516.40	21.21	2.65	2330.50	71.89	159.20	20.67	89.92	5.40	15.68
48-P4S1	0.91	0.50	0.03	0.02	303.10	4.41	7.66	0.81	2.88	0.95	0.28
48-P4S2	0.49	0.25	0.01	0.02	282.35	3.43	5.47	0.57	2.27	1.12	0.21
48-P4S3	0.25	0.40	0.01	0.03	214.80	3.00	5.08	0.53	1.86	0.69	0.17
48-P4S4	0.19	0.09	0.00	0.00	222.96	2.43	4.12	0.43	1.50	0.55	0.21
48-P4G1	76.35	484.91	22.36	1.49	1774.85	81.88	171.21	21.69	90.51	4.29	18.01
48-P16S1	0.30	0.79	0.04	0.03	237.25	3.61	6.08	0.59	2.26	0.77	0.20
48-P16S2	0.19	0.37	0.00	0.03	183.15	2.21	3.81	0.43	1.39	0.63	0.08
48-P16S3	0.61	4.01	0.22	0.03	147.91	2.47	4.69	0.48	1.85	0.52	0.19
48-P16G1	69.31	540.20	27.43	7.19	1807.77	73.41	162.85	21.04	87.44	4.77	16.68
48-P15S1	0.98	5.84	1.18	0.11	297.72	2.75	5.46	0.64	2.00	0.69	0.33
48-P15S2	5.35	3.21	0.08	0.03	193.27	20.45	38.66	5.58	20.35	0.83	2.10
48-P15S3	0.16	0.82	0.02	0.07	152.17	1.95	3.54	0.40	1.23	0.45	0.12
48-P15G1	56.97	438.51	25.05	2.60	1796.14	57.33	125.20	16.50	69.99	3.96	13.61
48-P17S1	1.81	10.79	0.44	0.10	443.40	3.77	7.41	0.84	3.18	0.72	0.43
48-P17S2	0.26	0.41	0.03	0.02	174.57	2.43	4.05	0.41	1.56	0.55	0.15
48-P17S3	0.20	0.17	0.00	0.03	206.04	2.34	3.94	0.41	1.57	0.80	0.16
48-P17S4	0.21	0.04	0.01	0.00	185.12	2.17	3.90	0.46	1.46	0.58	0.14
48-P17G1	68.29	543.94	22.90	1.91	1911.11	66.54	153.18	20.06	87.65	4.98	15.67
48-P1S1	0.61	2.96	0.21	0.06	246.22	3.03	5.37	0.54	1.80	0.67	0.21
48-P1S2	0.31	1.34	0.03	0.04	323.10	3.27	5.56	0.59	1.84	0.74	0.13
48-P1S3	0.26	0.07	0.11	0.01	235.47	2.55	4.56	0.42	1.46	0.66	0.11
48-P1S4	0.21	0.17	0.00	0.02	153.55	2.05	3.62	0.39	1.22	0.50	0.08
48-P1G1	93.83	653.95	32.96	9.21	1813.75	89.20	202.10	26.23	110.86	4.87	21.10
48-P3S1	0.71	3.75	0.23	0.05	202.59	3.17	5.41	0.65	2.03	0.72	0.26
48-P3S2	0.21	0.55	0.00	0.08	124.29	1.90	3.15	0.34	1.27	0.44	0.12
48-P3G1	76.42	427.99	21.95	3.86	1836.36	65.02	147.60	19.54	86.93	4.83	17.31

Plagioclase Phenocryst Trace Element Chemistry from the LA-ICPMS Continued											
Sample ID	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Pb (ppm)	Th (ppm)	U (ppm)
42-P19L1	0.01	0.07	0.01	0.03	0.00	0.01	0.00	0.01	4.19	0.00	0.13
42-P19S1	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00
42-P19S2	0.01	0.06	0.02	0.01	0.00	0.01	0.00	0.00	1.06	0.00	0.00
42-P19S3	0.02	0.09	0.02	0.00	0.00	0.01	0.00	0.00	3.14	0.00	0.00
42-P19S4	0.03	0.06	0.02	0.01	0.00	0.01	0.00	0.00	4.55	0.00	0.00
42-P19G1	1.05	6.78	1.34	3.49	0.49	2.85	0.44	11.76	35.58	11.45	2.89
42-P17L1	0.03	0.20	0.03	0.06	0.01	0.05	0.01	0.03	4.29	0.05	0.03
42-P17S1	0.02	0.08	0.02	0.07	0.01	0.05	0.00	0.00	3.52	0.00	0.00
42-P17S2	0.02	0.14	0.01	0.06	0.00	0.04	0.00	0.01	2.68	0.00	0.00
42-P17S3	0.01	0.04	0.01	0.01	0.00	0.01	0.00	0.00	2.23	0.00	0.02
42-P17S4	0.02	0.13	0.02	0.03	0.00	0.01	0.00	0.01	5.76	0.00	0.00
42-P17G1	3.17	16.92	3.50	9.57	1.23	8.86	1.13	22.48	57.03	25.21	6.96
42-P16L1	0.04	0.07	0.02	0.03	0.00	0.01	0.00	0.03	4.77	0.02	2.01
42-P16S1	0.02	0.07	0.01	0.01	0.00	0.01	0.00	0.02	4.72	0.02	0.00
42-P16S2	0.03	0.09	0.01	0.04	0.00	0.02	0.00	0.00	4.34	0.01	0.00
42-P16S3	0.02	0.06	0.01	0.02	0.00	0.00	0.00	0.00	3.96	0.00	0.00
42-P16G1	2.03	12.44	2.43	7.26	1.11	8.07	1.23	18.89	53.24	20.88	5.79
42-P15S1	0.02	0.14	0.04	0.06	0.01	0.04	0.01	0.00	4.05	0.00	0.00
42-P15S2	0.02	0.12	0.02	0.04	0.00	0.02	0.00	0.00	2.84	0.00	0.00
42-P15S3	0.04	0.14	0.03	0.04	0.00	0.06	0.01	0.00	4.00	0.00	0.00
42-P15S4	0.03	0.14	0.03	0.03	0.00	0.06	0.00	0.00	4.54	0.00	0.00
42-P15G1	3.75	20.88	4.14	10.35	1.47	10.50	1.40	23.39	52.83	26.45	7.31
42-P13L1	0.08	0.39	0.09	0.17	0.03	0.17	0.03	0.93	6.42	0.95	0.31
42-P13S1	0.02	0.07	0.01	0.02	0.00	0.00	0.00	0.00	3.34	0.00	0.00
42-P13S2	0.02	0.05	0.02	0.01	0.00	0.01	0.00	0.01	3.15	0.00	0.00
42-P13S3	0.03	0.07	0.02	0.03	0.01	0.03	0.00	0.08	4.53	0.06	0.01
42-P13S4	0.02	0.06	0.02	0.03	0.00	0.01	0.00	0.01	3.63	0.01	0.00

42-P13G1	3.98	21.60	4.34	11.33	1.58	11.01	1.41	21.83	50.57	21.77	5.92
42-P14L1	0.02	0.05	0.01	0.02	0.00	0.02	0.00	0.00	3.77	0.00	0.00
42-P14S1	0.02	0.05	0.01	0.01	0.00	0.00	0.00	0.00	3.44	0.00	0.00
42-P14S2	0.01	0.09	0.01	0.04	0.01	0.03	0.00	0.02	3.49	0.02	0.01
42-P14S3	0.03	0.05	0.01	0.00	0.00	0.00	0.00	0.00	3.29	0.00	0.00
42-P14S4	0.02	0.11	0.02	0.03	0.00	0.03	0.00	0.00	3.88	0.01	0.00
42-P14G1	1.61	9.69	1.89	5.16	0.76	4.95	0.87	21.11	55.72	23.92	6.40
42-P10S1	0.02	0.12	0.03	0.02	0.00	0.05	0.00	0.13	1.94	0.08	0.03
42-P10S2	0.01	0.03	0.01	0.01	0.00	0.00	0.00	0.00	1.68	0.00	0.00
42-P10S3	0.01	0.06	0.01	0.01	0.00	0.00	0.00	0.00	1.96	0.00	0.00
42-P10S4	0.03	0.06	0.01	0.03	0.01	0.00	0.00	0.01	5.32	0.00	0.00
42-P10G1	1.23	7.86	1.48	4.12	0.54	4.19	0.53	15.32	43.27	16.71	4.51
42-P7L1	0.07	0.16	0.04	0.09	0.03	0.11	0.02	0.35	4.19	0.21	0.89
42-P7S1	0.02	0.06	0.01	0.01	0.00	0.01	0.00	0.01	2.31	0.00	0.00
42-P7S2	0.01	0.06	0.01	0.02	0.00	0.00	0.00	0.00	3.10	0.00	0.00
42-P7S3	0.02	0.06	0.01	0.06	0.00	0.02	0.02	0.00	5.00	0.00	0.32
42-P7S4	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.01	3.10	0.00	0.00
42-P7G1	1.54	8.63	1.55	4.42	0.52	3.72	0.50	11.23	42.39	13.26	3.67
42-P9S1	0.01	0.05	0.02	0.02	0.00	0.00	0.00	0.00	3.78	0.00	0.00
42-P9S2	0.04	0.11	0.02	0.03	0.01	0.03	0.01	0.01	5.31	0.02	0.01
42-P9S3	0.01	0.06	0.01	0.03	0.00	0.00	0.00	0.00	4.72	0.00	0.00
42-P9G1	1.53	9.48	1.68	4.43	0.62	4.12	0.58	7.62	21.63	6.59	1.60
42-P8L1	0.02	0.08	0.02	0.02	0.00	0.01	0.00	0.00	3.14	0.02	0.10
42-P8S1	0.10	0.40	0.09	0.31	0.02	0.20	0.03	0.54	4.25	0.87	0.26
42-P8S2	0.02	0.06	0.01	0.01	0.00	0.01	0.00	0.02	2.73	0.00	0.00
42-P8S3	0.01	0.04	0.00	0.01	0.00	0.01	0.00	0.00	3.01	0.00	0.00
42-P8S4	0.02	0.06	0.01	0.02	0.00	0.02	0.00	0.01	2.92	0.00	0.00
42-P8G1	4.41	25.93	4.60	12.29	1.65	10.09	1.51	32.69	69.10	31.71	8.74
3-P17L1	0.03	0.14	0.02	0.04	0.01	0.02	0.00	0.05	13.00	0.08	0.04

3-P17S1	0.05	0.20	0.04	0.09	0.01	0.06	0.01	0.31	9.99	0.05	0.02
3-P17S2	0.02	0.15	0.02	0.04	0.00	0.01	0.00	0.03	13.60	0.07	0.03
3-P17S3	0.02	0.08	0.01	0.03	0.00	0.01	0.00	0.00	14.85	0.02	0.00
3-P17S4	0.03	0.14	0.02	0.04	0.00	0.01	0.00	0.00	14.28	0.00	0.00
3-P17G1	1.17	6.43	1.34	3.61	0.52	3.68	0.59	12.48	47.45	34.09	10.28
3-P18S1	0.04	0.20	0.03	0.08	0.01	0.02	0.00	0.02	13.44	0.01	0.01
3-P18S2	0.26	1.63	0.24	0.75	0.10	0.47	0.06	1.14	12.50	18.15	6.17
3-P18S3	0.04	0.13	0.02	0.05	0.00	0.01	0.00	0.00	15.64	0.01	0.00
3-P18S4	0.03	0.21	0.05	0.09	0.01	0.04	0.00	0.17	19.62	0.64	0.25
3-P18G1	1.16	7.01	1.22	3.95	0.54	4.05	0.61	13.06	50.80	36.80	10.88
3-P15L1	0.03	0.16	0.02	0.04	0.00	0.04	0.00	0.01	11.64	0.05	0.07
3-P15S1	0.04	0.12	0.03	0.05	0.01	0.02	0.00	0.02	12.53	0.02	0.01
3-P15S2	0.51	2.41	0.45	1.03	0.11	0.66	0.08	0.01	9.25	1.42	0.30
3-P15S3	0.03	0.09	0.02	0.03	0.00	0.07	0.00	0.00	13.31	0.08	0.13
3-P15S4	0.02	0.09	0.02	0.03	0.00	0.01	0.00	0.00	16.23	0.03	0.01
3-P15G1	1.40	8.15	1.79	4.58	0.66	4.73	0.72	13.98	45.85	37.27	11.59
3-P11L1	0.08	0.32	0.06	0.12	0.02	0.12	0.01	0.13	16.91	0.36	0.09
3-P11S1	0.09	0.37	0.06	0.14	0.01	0.10	0.01	0.00	13.75	0.21	0.06
3-P11S2	0.04	0.15	0.03	0.07	0.01	0.03	0.00	0.09	15.75	0.11	0.02
3-P11S3	0.04	0.18	0.03	0.09	0.01	0.03	0.00	0.00	13.21	0.05	0.03
3-P11S4	0.02	0.14	0.01	0.03	0.01	0.02	0.00	0.00	15.31	0.01	0.00
3-P11G1	1.51	9.07	1.75	4.81	0.67	4.75	0.71	14.54	47.22	39.96	12.52
3-P13S1	0.03	0.11	0.02	0.03	0.00	0.00	0.00	0.00	10.46	0.01	0.00
3-P13S2	0.04	0.14	0.02	0.07	0.01	0.02	0.01	0.00	9.49	0.04	0.01
3-P13S3	0.18	0.89	0.16	0.32	0.05	0.26	0.05	0.25	13.75	0.95	0.24
3-P13S4	0.03	0.10	0.03	0.08	0.01	0.07	0.01	0.07	4.75	0.14	0.10
3-P13G1	1.23	7.30	1.37	4.13	0.60	4.23	0.61	12.73	44.14	34.55	10.74
3-P12L1	0.04	0.14	0.03	0.04	0.01	0.02	0.01	0.09	15.00	0.11	0.04
3-P12S1	0.03	0.09	0.01	0.02	0.00	0.01	0.00	0.00	13.28	0.00	0.00

3-P12S2	0.03	0.10	0.01	0.04	0.00	0.02	0.00	0.00	12.53	0.00	0.00
3-P12S3	0.03	0.12	0.01	0.02	0.01	0.02	0.00	0.00	15.07	0.01	0.00
3-P12S4	0.03	0.16	0.02	0.03	0.01	0.04	0.00	0.07	14.64	0.16	0.12
3-P12G1	1.30	7.23	1.39	4.36	0.65	4.46	0.56	13.86	46.41	36.38	10.93
3-P9S1	0.06	0.31	0.05	0.14	0.01	0.05	0.00	0.00	13.58	0.09	0.03
3-P9S2	0.01	0.11	0.02	0.03	0.00	0.00	0.01	0.00	14.74	0.00	0.00
3-P9S3	0.05	0.33	0.05	0.11	0.02	0.13	0.02	1.14	13.67	4.74	1.55
3-P9S4	0.03	0.18	0.03	0.08	0.01	0.04	0.01	0.04	15.73	0.04	0.04
3-P9G1	0.91	5.26	1.08	3.15	0.44	3.23	0.44	8.87	31.02	26.27	7.98
3-P10L1	0.03	0.11	0.02	0.04	0.00	0.01	0.00	0.02	13.26	0.05	0.02
3-P10S1	0.03	0.09	0.02	0.01	0.00	0.00	0.00	0.00	14.64	0.00	0.00
3-P10S2	0.03	0.08	0.01	0.05	0.00	0.00	0.00	0.00	13.37	0.01	0.00
3-P10S3	0.03	0.14	0.02	0.05	0.00	0.03	0.00	0.00	14.57	0.03	0.00
3-P10S4	0.03	0.11	0.02	0.04	0.01	0.02	0.00	0.00	15.29	0.01	0.02
3-P10G1	1.50	9.09	1.72	5.24	0.71	5.45	0.82	16.82	55.26	50.28	14.30
3-P1L1	0.04	0.12	0.02	0.04	0.01	0.03	0.01	0.10	13.55	0.09	0.06
3-P1S1	0.03	0.10	0.02	0.02	0.00	0.00	0.00	0.00	13.30	0.00	0.00
3-P1S2	0.03	0.10	0.03	0.02	0.00	0.03	0.00	0.00	12.85	0.00	0.00
3-P1S3	0.03	0.10	0.02	0.03	0.00	0.01	0.00	0.00	17.67	0.04	0.01
3-P1S4	0.02	0.10	0.01	0.02	0.00	0.02	0.00	0.00	17.91	0.01	0.01
3-P1G1	1.68	9.94	2.03	5.43	0.85	5.77	0.87	18.75	55.79	51.20	13.64
3-P3L1	0.04	0.20	0.04	0.12	0.02	0.11	0.02	0.17	13.79	0.80	0.31
3-P3S1	0.02	0.07	0.02	0.03	0.00	0.00	0.00	0.02	13.57	0.02	0.01
3-P3S2	0.02	0.06	0.01	0.01	0.00	0.00	0.00	0.00	13.73	0.00	0.00
3-P3S3	0.02	0.05	0.01	0.03	0.00	0.02	0.00	0.00	13.84	0.00	0.00
3-P3S4	0.12	0.67	0.12	0.40	0.05	0.35	0.08	0.67	7.49	1.45	0.41
3-P3G1	0.92	5.70	1.16	2.89	0.43	3.29	0.50	9.11	29.70	21.85	6.31
84-P22L1	0.11	0.51	0.14	0.26	0.04	0.27	0.04	0.27	12.76	0.64	0.30
84-P22S1	0.02	0.06	0.01	0.04	0.00	0.03	0.00	0.05	7.44	0.13	0.04

84-P22S2	0.36	1.99	0.36	0.83	0.13	0.83	0.14	2.22	10.36	11.12	3.14
84-P22S3	0.02	0.21	0.02	0.04	0.00	0.02	0.00	0.00	15.02	0.00	0.00
84-P22S4	0.04	0.14	0.02	0.04	0.01	0.04	0.01	0.15	19.84	0.15	0.05
84-P22G1	3.29	18.98	3.20	8.77	1.39	9.54	1.32	31.49	104.50	90.05	26.53
84-P20L1	0.02	0.11	0.02	0.06	0.01	0.07	0.01	0.18	14.64	0.08	0.04
84-P20S1	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	14.12	0.00	0.00
84-P20S2	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	14.63	0.00	0.00
84-P20S3	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.00	14.42	0.00	0.00
84-P20S4	0.02	0.07	0.01	0.03	0.00	0.00	0.00	0.00	16.70	0.00	0.00
84-P20G1	4.62	25.00	4.44	13.05	2.04	13.31	2.05	47.86	151.08	137.09	38.51
84-P19L1	0.04	0.14	0.02	0.06	0.01	0.03	0.00	0.09	7.25	0.11	0.14
84-P19S1	0.03	0.10	0.01	0.01	0.01	0.02	0.00	0.11	5.41	0.03	0.03
84-P19S2	0.24	1.29	0.24	0.49	0.07	0.42	0.05	0.00	5.32	0.26	0.07
84-P19S3	0.02	0.12	0.01	0.03	0.00	0.00	0.00	0.00	10.30	0.00	0.00
84-P19S4	0.02	0.11	0.02	0.04	0.00	0.03	0.00	0.02	6.80	0.03	0.02
84-P19G1	1.92	11.60	2.24	6.19	0.80	5.43	0.82	6.63	18.47	16.86	4.79
84-P4L1	0.22	1.22	0.24	0.67	0.09	0.63	0.11	0.63	19.23	2.61	0.87
84-P4S1	0.12	0.48	0.08	0.25	0.04	0.18	0.02	0.03	16.85	0.41	0.08
84-P4S2	0.05	0.26	0.04	0.12	0.01	0.08	0.01	0.07	16.69	0.05	0.06
84-P4S3	0.13	0.83	0.16	0.29	0.04	0.26	0.01	0.25	17.26	0.44	0.09
84-P4S4	0.07	0.28	0.06	0.18	0.03	0.14	0.02	0.02	21.51	0.12	0.05
84-P4G1	2.81	14.41	2.73	7.55	1.08	7.41	1.17	27.69	87.66	77.89	22.96
84-P13L1	0.03	0.15	0.03	0.08	0.01	0.06	0.01	0.05	10.47	0.07	0.08
84-P13S1	0.02	0.07	0.01	0.05	0.00	0.03	0.00	0.00	6.80	0.00	0.00
84-P13S2	0.01	0.07	0.01	0.03	0.00	0.01	0.00	0.02	4.90	0.01	0.01
84-P13S3	0.02	0.11	0.02	0.04	0.00	0.02	0.00	0.00	15.67	0.04	0.01
84-P13S4	0.06	0.30	0.03	0.10	0.01	0.10	0.02	0.09	19.59	0.17	0.05
84-P13G1	4.09	20.70	3.80	11.03	1.55	10.95	1.47	36.32	113.30	99.85	30.58
84-P8S1	0.01	0.09	0.01	0.03	0.00	0.03	0.00	0.00	3.41	0.00	0.00

84-P8S2	0.03	0.11	0.03	0.04	0.01	0.05	0.01	0.08	4.37	0.06	0.02
84-P8S3	0.04	0.21	0.04	0.08	0.01	0.03	0.01	0.01	11.34	0.11	0.02
84-P8S4	0.04	0.19	0.03	0.05	0.00	0.00	0.00	0.04	28.54	0.01	0.01
84-P8G1	3.62	19.29	3.54	10.26	1.35	9.34	1.32	38.85	135.22	100.81	28.02
84-P10L1	0.11	0.61	0.07	0.24	0.03	0.21	0.03	0.25	15.73	0.76	0.23
84-P10S1	0.02	0.10	0.02	0.03	0.00	0.01	0.00	0.00	15.78	0.00	0.00
84-P10S2	0.03	0.18	0.04	0.07	0.02	0.03	0.01	0.06	16.04	0.08	0.03
84-P10S3	0.05	0.25	0.05	0.17	0.01	0.14	0.03	0.38	16.67	1.01	0.25
84-P10S4	0.06	0.24	0.04	0.08	0.01	0.05	0.00	0.00	18.16	0.05	0.00
84-P10G1	2.26	11.52	2.39	6.15	0.87	5.59	1.01	23.84	75.17	66.91	18.92
84-P17S1	0.02	0.07	0.01	0.02	0.01	0.03	0.00	0.00	5.17	0.02	0.00
84-P17S2	0.02	0.08	0.01	0.03	0.00	0.04	0.00	0.00	5.33	0.00	0.00
84-P17S3	0.02	0.10	0.02	0.04	0.00	0.00	0.00	0.00	4.28	0.00	0.00
84-P17S4	0.02	0.07	0.01	0.02	0.00	0.02	0.00	0.00	4.01	0.00	0.00
84-P17G1	6.83	40.29	7.52	21.65	2.84	23.18	3.44	82.70	246.80	229.38	67.01
84-P16L1	0.03	0.12	0.03	0.07	0.01	0.04	0.01	0.05	5.98	0.05	0.06
84-P16S1	0.02	0.11	0.02	0.05	0.00	0.04	0.00	0.00	5.58	0.00	0.00
84-P16S2	0.02	0.13	0.01	0.05	0.01	0.02	0.00	0.00	5.42	0.01	0.00
84-P16S3	0.04	0.24	0.06	0.15	0.03	0.15	0.02	0.09	6.30	0.08	0.04
84-P16S4	0.03	0.16	0.04	0.05	0.01	0.11	0.01	0.02	7.02	0.05	0.02
84-P16G1	1.79	10.68	2.12	5.34	0.72	5.54	0.78	19.25	55.44	52.49	14.22
84-P15L1	0.04	0.21	0.04	0.13	0.03	0.09	0.03	0.26	18.90	0.31	0.67
84-P15S1	0.03	0.12	0.01	0.04	0.00	0.00	0.00	0.00	15.72	0.00	0.00
84-P15S2	0.04	0.11	0.02	0.04	0.01	0.02	0.00	0.02	15.78	0.01	0.01
84-P15S3	0.03	0.16	0.02	0.04	0.00	0.03	0.00	0.00	20.75	0.00	0.00
84-P15S4	0.31	1.47	0.26	0.60	0.05	0.37	0.04	0.00	18.37	0.51	0.10
84-P15G1	2.41	14.60	2.60	7.79	1.09	8.28	1.10	31.75	82.82	73.20	21.37
10-P3L1	0.06	0.30	0.05	0.11	0.02	0.09	0.01	0.09	12.94	0.31	0.27
10-P3S1	0.05	0.15	0.02	0.05	0.00	0.03	0.00	0.00	8.89	0.00	0.00

10-P3S2	0.03	0.18	0.01	0.05	0.00	0.00	0.01	0.01	12.04	0.04	0.01
10-P3S3	0.03	0.16	0.01	0.03	0.00	0.00	0.00	0.00	13.11	0.00	0.00
10-P3S4	0.04	0.27	0.05	0.12	0.01	0.12	0.02	0.36	14.95	1.25	0.36
10-P3G1	4.26	24.60	4.72	14.87	2.00	15.48	2.38	49.83	160.65	122.19	38.33
10-P17S1	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
10-P17S2	0.01	0.05	0.01	0.00	0.00	0.01	0.00	0.00	0.81	0.00	0.01
10-P17S3	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.00	0.00	0.00
10-P17S4	0.01	0.04	0.01	0.02	0.00	0.02	0.00	0.04	5.21	0.03	0.02
10-P17G1	7.38	46.74	8.91	30.25	3.89	30.41	4.26	93.63	299.55	224.97	75.21
10-P12L1	0.05	0.22	0.04	0.07	0.01	0.09	0.01	0.08	13.06	0.23	0.26
10-P12S1	0.02	0.10	0.01	0.02	0.01	0.00	0.00	0.01	13.44	0.03	0.61
10-P12S2	0.02	0.13	0.03	0.05	0.00	0.02	0.00	0.00	12.52	0.00	0.00
10-P12S3	0.04	0.16	0.02	0.05	0.01	0.03	0.00	0.00	11.90	0.02	0.00
10-P12S4	0.02	0.08	0.01	0.04	0.00	0.01	0.00	0.00	12.32	0.00	0.00
10-P12G1	5.73	36.36	6.81	20.43	2.99	21.57	2.81	63.64	215.86	159.45	51.14
10-P6L1	0.06	0.28	0.06	0.10	0.02	0.10	0.03	0.06	17.95	0.35	0.23
10-P6S1	0.02	0.06	0.02	0.03	0.00	0.00	0.00	0.00	17.04	0.00	0.08
10-P6S2	0.04	0.14	0.02	0.09	0.00	0.02	0.00	0.04	16.65	0.04	0.02
10-P6S3	0.04	0.07	0.01	0.03	0.00	0.00	0.00	0.00	16.59	0.00	0.00
10-P6S4	0.01	0.16	0.01	0.03	0.00	0.00	0.00	0.03	14.70	0.07	0.02
10-P6G1	4.81	26.83	5.49	16.85	2.63	17.99	2.92	54.71	180.20	132.58	42.98
10-P7L1	0.02	0.06	0.02	0.04	0.01	0.05	0.01	0.21	5.24	0.30	0.10
10-P7S1	0.02	0.10	0.02	0.03	0.01	0.02	0.00	0.03	4.80	0.01	0.01
10-P7S2	0.01	0.01	0.01	0.02	0.00	0.01	0.00	0.00	4.98	0.00	0.00
10-P7S3	0.02	0.06	0.01	0.03	0.00	0.02	0.00	0.04	1.92	0.04	0.02
10-P7G1	7.55	45.52	9.28	25.60	4.10	26.37	4.29	90.40	287.50	209.97	70.61
10-P8L1	0.59	3.36	0.80	1.66	0.31	1.80	0.26	1.46	23.78	6.27	2.36
10-P8S1	0.01	0.13	0.01	0.02	0.01	0.02	0.00	0.00	12.91	0.00	0.00
10-P8S2	0.02	0.09	0.01	0.03	0.00	0.01	0.00	0.00	13.51	0.00	0.00

10-P8S3	0.03	0.13	0.03	0.07	0.01	0.03	0.01	0.18	12.92	0.42	0.13
10-P8S4	0.02	0.08	0.02	0.06	0.00	0.04	0.00	0.00	11.03	0.00	0.00
10-P8G1	1.37	7.95	1.56	4.37	0.69	4.95	0.76	14.57	53.43	34.39	10.90
10-P13L1	0.03	0.14	0.02	0.05	0.01	0.04	0.01	0.11	7.60	0.19	0.07
10-P13S1	0.02	0.05	0.01	0.03	0.00	0.00	0.00	0.00	7.83	0.00	0.00
10-P13S2	0.01	0.07	0.01	0.01	0.00	0.00	0.00	0.04	7.01	0.04	0.03
10-P13S3	0.02	0.07	0.01	0.00	0.00	0.03	0.00	0.04	7.42	0.00	0.01
10-P13S4	0.02	0.07	0.01	0.04	0.00	0.00	0.00	0.02	6.62	0.00	0.00
10-P13G1	6.35	38.48	7.88	22.69	3.13	22.79	3.42	73.70	237.87	173.53	56.23
10-P9L1	0.06	0.35	0.06	0.19	0.03	0.13	0.02	0.16	15.39	0.43	0.14
10-P9S1	0.03	0.13	0.01	0.04	0.00	0.02	0.00	0.01	11.73	0.01	0.00
10-P9S2	0.05	0.14	0.02	0.02	0.00	0.00	0.00	0.00	11.28	0.00	0.00
10-P9S3	0.03	0.29	0.07	0.21	0.04	0.23	0.05	6.46	10.53	0.70	0.43
10-P9G1	5.19	31.70	5.93	18.44	2.51	20.41	2.97	58.63	197.78	143.36	46.07
10-P10L1	0.13	0.73	0.15	0.40	0.07	0.50	0.06	1.41	11.78	2.17	0.93
10-P10S1	0.02	0.10	0.02	0.04	0.00	0.03	0.00	0.03	6.77	0.01	0.01
10-P10S2	0.02	0.10	0.02	0.02	0.00	0.00	0.00	0.00	6.23	0.00	0.00
10-P10S3	0.01	0.07	0.01	0.02	0.00	0.01	0.00	0.00	5.93	0.00	0.00
10-P10S4	0.07	0.25	0.10	0.13	0.01	0.07	0.01	0.02	5.99	0.04	0.02
10-P10G1	4.93	29.94	5.73	19.47	2.98	19.30	2.85	60.91	203.24	142.43	48.17
10-P11L1	0.06	0.35	0.05	0.17	0.01	0.15	0.02	0.38	14.00	1.58	0.30
10-P11S1	0.06	0.23	0.03	0.05	0.01	0.06	0.00	0.01	11.02	0.08	0.01
10-P11S2	0.04	0.15	0.02	0.08	0.00	0.04	0.00	0.03	12.21	0.22	0.10
10-P11S3	0.45	2.23	0.40	1.02	0.11	0.64	0.07	0.03	10.85	0.73	0.19
10-P11S4	0.02	0.10	0.01	0.02	0.00	0.02	0.00	0.02	12.11	0.02	0.01
10-P11G1	3.41	18.44	4.15	11.81	1.63	12.25	1.92	41.21	132.12	99.09	31.43
88-P5L1	0.05	0.16	0.03	0.08	0.01	0.03	0.01	0.23	11.45	0.19	0.08
88-P5S1	0.03	0.18	0.04	0.05	0.01	0.04	0.01	0.19	9.62	0.34	0.08
88-P5S2	0.03	0.10	0.02	0.02	0.00	0.03	0.01	0.00	7.64	0.01	0.00

88-P5S3	0.02	0.11	0.02	0.05	0.00	0.00	0.00	0.00	8.87	0.01	0.00
88-P5S4	0.22	0.85	0.17	0.37	0.04	0.18	0.01	0.00	13.39	0.31	0.03
88-P5G1	1.49	7.79	1.41	4.61	0.65	3.62	0.58	12.65	55.26	41.15	10.65
88-P3S1	0.03	0.13	0.02	0.10	0.00	0.04	0.00	0.00	6.48	0.00	0.02
88-P3S2	0.06	0.11	0.01	0.04	0.00	0.00	0.00	0.08	18.10	0.02	0.01
88-P3S3	0.04	0.21	0.04	0.08	0.01	0.04	0.01	0.03	13.47	0.00	0.00
88-P3S4	0.03	0.12	0.02	0.04	0.00	0.04	0.00	0.00	16.36	0.01	0.00
88-P3G1	4.72	29.87	5.17	15.57	2.11	15.64	2.06	41.74	141.36	127.19	34.40
88-P13L1	0.03	0.11	0.02	0.04	0.00	0.02	0.00	0.03	12.78	0.04	0.19
88-P13S1	0.02	0.10	0.01	0.02	0.00	0.00	0.00	0.01	9.06	0.02	0.00
88-P13S2	0.03	0.09	0.02	0.03	0.00	0.00	0.01	0.00	11.97	0.01	0.00
88-P13S3	0.03	0.12	0.03	0.00	0.00	0.02	0.00	0.00	13.68	0.01	0.00
88-P13S4	0.03	0.08	0.01	0.03	0.01	0.00	0.00	0.00	11.12	0.00	0.00
88-P13G1	3.66	20.37	3.92	11.10	1.55	11.99	1.72	41.40	139.28	129.07	38.80
88-P10L1	0.15	0.76	0.15	0.36	0.04	0.19	0.03	0.02	13.10	0.24	0.07
88-P10S1	0.02	0.08	0.02	0.03	0.00	0.02	0.00	0.00	14.45	0.00	0.00
88-P10S2	0.03	0.09	0.01	0.01	0.00	0.00	0.00	0.02	15.32	0.05	0.00
88-P10S3	0.02	0.09	0.02	0.02	0.00	0.00	0.00	0.00	11.53	0.00	0.00
88-P10S4	0.03	0.11	0.02	0.02	0.00	0.00	0.00	0.00	16.72	0.00	0.00
88-P10G1	5.60	29.04	5.39	14.69	1.75	11.16	1.63	22.84	86.36	84.22	23.59
88-P11S1	0.03	0.11	0.02	0.04	0.00	0.03	0.00	0.00	8.80	0.03	0.02
88-P11S2	0.03	0.18	0.03	0.06	0.00	0.02	0.00	0.00	9.62	0.02	0.05
88-P11S3	0.02	0.10	0.03	0.07	0.00	0.03	0.00	0.02	11.62	0.02	0.00
88-P11S4	0.08	0.31	0.04	0.20	0.01	0.12	0.01	0.34	16.32	1.06	0.24
88-P11G1	3.37	20.80	3.70	10.91	1.58	10.12	1.62	32.82	117.85	105.24	30.56
88-P14L1	0.03	0.19	0.03	0.07	0.01	0.04	0.00	0.03	9.44	0.02	0.01
88-P14S1	0.05	0.17	0.03	0.04	0.00	0.04	0.00	0.01	6.48	0.01	0.00
88-P14S2	0.03	0.19	0.02	0.03	0.01	0.05	0.00	0.04	7.01	0.02	0.01
88-P14S3	0.04	0.16	0.03	0.04	0.01	0.04	0.00	0.01	8.62	0.01	0.00

88-P14S4	0.05	0.25	0.06	0.09	0.02	0.14	0.02	0.19	22.04	0.63	0.18
88-P14G1	6.59	35.46	7.37	21.59	2.88	20.03	3.32	63.85	234.26	205.83	59.61
88-P15S1	0.02	0.07	0.01	0.02	0.00	0.02	0.00	0.00	10.46	0.00	0.00
88-P15S2	0.01	0.07	0.01	0.03	0.00	0.02	0.00	0.02	10.58	0.02	0.00
88-P15S3	0.02	0.08	0.00	0.02	0.00	0.00	0.00	0.03	11.48	0.02	0.00
88-P15S4	0.02	0.07	0.01	0.03	0.00	0.02	0.00	0.00	11.73	0.01	0.00
88-P15G1	2.65	15.01	3.13	7.89	1.34	9.22	1.26	30.78	108.94	100.74	28.93
88-P16L1	0.14	0.42	0.08	0.20	0.02	0.12	0.02	0.15	15.75	0.50	0.12
88-P16S1	0.04	0.30	0.06	0.14	0.02	0.10	0.01	0.65	17.25	1.13	0.27
88-P16S2	0.04	0.14	0.02	0.04	0.00	0.04	0.00	0.00	14.39	0.01	0.00
88-P16S3	0.03	0.12	0.02	0.03	0.00	0.02	0.00	0.00	15.68	0.00	0.00
88-P16S4	0.06	0.30	0.05	0.15	0.02	0.05	0.00	0.01	15.67	0.14	0.03
88-P16G1	3.20	17.82	3.53	9.35	1.40	9.13	1.78	37.30	128.02	116.82	32.36
88-P18L1	0.07	0.29	0.05	0.12	0.01	0.10	0.01	0.10	9.13	0.16	0.06
88-P18S1	0.03	0.13	0.02	0.05	0.01	0.00	0.00	0.02	12.31	0.01	0.00
88-P18S2	0.04	0.16	0.03	0.05	0.01	0.02	0.00	0.01	8.41	0.02	0.01
88-P18S3	0.03	0.08	0.03	0.03	0.00	0.00	0.00	0.00	10.13	0.00	0.00
88-P18S4	0.03	0.12	0.02	0.02	0.01	0.01	0.00	0.00	10.89	0.00	0.00
88-P18G1	4.44	24.30	4.67	13.66	1.80	12.10	1.90	42.55	144.51	139.20	40.26
88-P19L1	0.02	0.09	0.01	0.04	0.00	0.03	0.00	0.02	11.36	0.03	0.02
88-P19S1	0.03	0.14	0.01	0.02	0.00	0.03	0.00	0.00	9.39	0.01	0.00
88-P19S2	0.04	0.12	0.01	0.10	0.01	0.05	0.00	0.00	10.52	0.00	0.00
88-P19S3	0.02	0.11	0.02	0.02	0.00	0.01	0.00	0.00	8.25	0.01	0.00
88-P19S4	0.03	0.10	0.01	0.02	0.00	0.00	0.00	0.00	19.24	0.01	0.00
88-P19G1	2.62	14.25	2.95	8.33	1.29	8.28	1.31	29.81	103.76	98.75	27.91
48-P8S1	0.03	0.15	0.02	0.02	0.00	0.07	0.01	0.11	1.53	0.04	0.01
48-P8S2	0.01	0.05	0.01	0.01	0.00	0.03	0.00	0.02	1.37	0.02	0.00
48-P8S3	0.08	0.47	0.10	0.26	0.03	0.23	0.02	0.51	6.21	0.29	0.08
48-P8G1	2.97	17.77	3.38	9.82	1.30	8.56	1.19	16.93	24.54	6.74	1.64

48-P7L1	0.03	0.12	0.02	0.05	0.01	0.03	0.00	0.08	2.70	0.04	0.02
48-P7S1	0.01	0.06	0.02	0.03	0.00	0.01	0.00	0.00	1.83	0.01	0.00
48-P7S2	0.01	0.06	0.00	0.01	0.00	0.00	0.00	0.00	1.63	0.00	0.00
48-P7S3	0.01	0.07	0.01	0.02	0.00	0.00	0.00	0.00	1.50	0.00	0.00
48-P7S4	0.01	0.08	0.01	0.02	0.00	0.01	0.00	0.00	1.31	0.00	0.00
48-P7G1	0.49	2.53	0.55	1.38	0.20	1.20	0.16	5.22	13.54	1.08	0.41
48-P6L1	0.03	0.19	0.05	0.09	0.01	0.11	0.01	0.19	2.41	0.09	0.06
48-P6S1	0.02	0.08	0.01	0.02	0.00	0.03	0.00	0.04	1.86	0.03	0.00
48-P6S2	0.02	0.04	0.01	0.02	0.00	0.00	0.00	0.00	1.50	0.00	0.00
48-P6S3	0.01	0.07	0.01	0.02	0.00	0.00	0.00	0.02	2.27	0.01	0.26
48-P6S4	0.01	0.08	0.01	0.01	0.00	0.00	0.00	0.02	3.11	0.00	0.00
48-P6G1	2.04	12.86	2.51	7.14	1.02	7.73	1.18	6.69	18.25	3.42	0.70
48-P5S1	0.01	0.08	0.02	0.02	0.00	0.00	0.00	0.00	1.62	0.00	0.00
48-P5S2	0.01	0.07	0.01	0.01	0.00	0.00	0.00	0.00	1.40	0.00	0.00
48-P5S3	0.01	0.09	0.02	0.06	0.00	0.10	0.02	0.10	2.30	0.01	0.02
48-P5S4	0.01	0.06	0.01	0.02	0.00	0.01	0.00	0.02	1.44	0.00	0.01
48-P5G1	2.51	13.63	2.75	7.51	1.05	7.36	1.01	13.70	30.97	6.98	1.53
48-P4S1	0.04	0.22	0.03	0.09	0.02	0.06	0.01	0.00	5.16	0.01	0.00
48-P4S2	0.02	0.09	0.02	0.11	0.01	0.04	0.00	0.01	4.87	0.01	0.00
48-P4S3	0.02	0.06	0.01	0.02	0.00	0.00	0.00	0.00	2.01	0.00	0.00
48-P4S4	0.01	0.08	0.01	0.01	0.00	0.00	0.00	0.00	1.43	0.00	0.00
48-P4G1	2.48	14.85	2.88	8.15	1.09	7.30	0.98	14.08	20.89	6.39	2.80
48-P16S1	0.02	0.08	0.03	0.02	0.01	0.02	0.00	0.02	1.69	0.01	0.06
48-P16S2	0.01	0.06	0.00	0.02	0.00	0.00	0.00	0.00	1.51	0.00	0.00
48-P16S3	0.03	0.12	0.02	0.05	0.01	0.06	0.00	0.08	1.99	0.06	0.23
48-P16G1	2.57	14.17	2.59	7.19	1.03	6.26	0.97	14.46	27.49	6.25	1.89
48-P15S1	0.03	0.23	0.03	0.07	0.01	0.12	0.01	0.18	2.96	0.05	0.01
48-P15S2	0.28	1.34	0.19	0.54	0.06	0.32	0.04	0.05	1.60	0.63	0.20
48-P15S3	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.03	1.33	0.00	0.00

48-P15G1	1.94	11.14	2.38	5.93	0.80	5.03	0.75	11.53	27.16	4.91	1.32
48-P17S1	0.05	0.28	0.05	0.13	0.02	0.17	0.02	0.34	3.09	0.13	0.04
48-P17S2	0.02	0.06	0.00	0.01	0.00	0.00	0.00	0.01	1.34	0.01	0.00
48-P17S3	0.02	0.04	0.01	0.00	0.00	0.00	0.00	0.00	1.88	0.00	0.00
48-P17S4	0.01	0.07	0.01	0.01	0.00	0.02	0.00	0.00	1.25	0.00	0.00
48-P17G1	2.29	12.83	2.49	6.43	0.93	6.16	0.82	12.94	27.00	5.41	1.58
48-P1S1	0.04	0.15	0.02	0.02	0.01	0.02	0.00	0.06	1.97	0.04	0.02
48-P1S2	0.01	0.12	0.01	0.02	0.01	0.04	0.00	0.03	1.86	0.01	0.00
48-P1S3	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	1.48	0.00	0.00
48-P1S4	0.02	0.05	0.01	0.01	0.00	0.00	0.00	0.01	1.43	0.00	0.00
48-P1G1	2.98	18.21	3.49	9.03	1.17	8.40	1.20	16.41	25.86	7.86	2.10
48-P3S1	0.03	0.15	0.02	0.02	0.01	0.02	0.01	0.10	1.75	0.04	0.02
48-P3S2	0.01	0.02	0.01	0.03	0.00	0.00	0.00	0.02	1.11	0.00	0.00
48-P3G1	2.53	14.38	2.91	7.79	0.98	7.03	0.94	11.91	23.09	4.65	1.13

Appendix G. Summary of pyroxene trace element contents.

Pyroxene Phenocryst Trace Element Chemistry from the LA-ICPMS										
Sample ID	Ca (ppm)	Mg (ppm)	Al (ppm)	Si (ppm)	P (ppm)	Sc (ppm)	Ti (ppm)	Cr (ppm)	Mn (ppm)	Ni (ppm)
42-PX14S1	5340.50	40.74	10715.44	16787.03	6.34	0.35	23.51	0.07	2.28	0.02
42-PX14S2	5340.50	43.81	10707.39	16503.24	6.53	0.34	28.39	0.34	2.50	0.04
42-PX14G1	5340.50	3216.54	14528.28	41011.66	47.96	2.10	208.76	0.71	97.93	2.01
42-PX13S1	38608.46	245.45	76998.94	120268.91	42.13	2.30	178.96	1.53	18.59	0.15
42-PX13G1	38608.46	7180.79	116121.26	318888.96	370.58	9.90	3438.93	4.91	395.70	7.05
42-PX12S1	22635.71	263315.83	20066.73	418088.71	416.50	71.64	3527.49	20.20	6837.58	117.03
42-PX12S2	22635.71	249381.89	16570.37	406978.65	511.79	75.04	3053.92	10.47	6902.01	119.37
42-PX12G1	22635.71	5295.38	72259.62	200019.98	166.98	6.02	1290.12	0.84	198.03	3.67
42-PX15S1	1212.94	17.75	2552.16	4290.28	1.53	0.09	5.62	0.00	0.81	0.01
42-PX15S2	1212.94	7.36	2514.35	4027.92	1.43	0.08	5.48	0.01	0.56	0.00
42-PX15G1	1212.94	764.21	3236.87	10998.29	23.29	0.64	75.37	0.17	23.63	0.45
42-PX10S1	6960.00	1996827.55	1390.04	1460910.59	696.85	58.90	481.81	359.51	19359.64	5637.76
42-PX10S2	6960.00	1549223.51	1751.46	1229250.16	735.47	57.90	560.62	693.21	23350.68	3606.59
42-PX10G1	6960.00	2808.96	18942.47	58695.25	59.01	2.88	433.54	0.44	102.95	1.48
3-PX1L1	21970.00	226698.90	4437.65	379590.32	347.74	44.43	2255.71	22.67	9433.16	105.43

3-PX1S1	10985.00	67229.68	1541.63	114309.10	919.24	14.52	847.12	6.57	2495.83	35.90
3-PX1S2	10985.00	78662.20	1718.23	133946.82	887.97	15.36	420.29	6.37	2990.55	40.27
3-PX1S3	10985.00	224567.89	4570.11	375173.68	413.11	49.08	1455.50	25.61	9729.20	96.45
3-PX1S4	10985.00	147579.83	3548.29	252480.12	783.21	24.69	631.82	10.97	7164.13	53.76
3-PX1G1	10985.00	4623.65	50118.12	193374.92	149.50	7.25	1676.47	0.47	244.65	1.93
3-PX21L1	21820.00	153979.26	4831.87	256757.10	341.20	33.65	1030.03	89.90	5205.76	94.70
3-PX21S1	10910.00	159258.92	12298.25	282217.29	137.40	33.72	2402.17	28.12	5278.83	96.11
3-PX21S2	10910.00	175863.69	5385.09	297082.07	98.60	39.65	1163.16	95.60	5934.91	110.99
3-PX21S3	10910.00	166724.36	3615.23	280525.80	443.41	35.30	988.04	39.47	5674.36	103.04
3-PX21G1	10910.00	5027.28	43947.82	160237.88	119.54	6.40	1551.74	0.67	227.72	2.05
3-PX18S1	239830.00	163168.83	8136.33	400464.38	593.73	161.19	2007.39	50.16	3997.34	78.48
3-PX18S2	239830.00	169061.99	8054.66	408494.28	125.41	177.27	1972.08	56.72	4041.48	83.98
3-PX18S3	239830.00	163234.57	8861.40	406524.73	665.25	182.73	2003.10	45.43	4301.77	87.67
3-PX18S4	239830.00	169683.21	9010.42	411196.46	352.99	173.81	2086.08	37.78	4350.78	82.05
3-PX18G1	239830.00	116268.98	821384.54	2908082.63	2318.04	131.30	27858.22	18.55	5245.39	82.30
3-PX26L1	21340.00	221754.88	4808.33	379217.51	348.75	37.43	1033.40	16.96	8717.90	127.17
3-PX26S1	10670.00	258976.22	4626.87	439531.98	147.30	49.12	1591.43	19.93	9407.81	162.82
3-PX26S2	10670.00	255624.79	4434.10	423300.01	124.99	49.61	1304.82	18.24	9734.02	152.68
3-PX26S3	10670.00	131269.26	2298.75	221964.39	753.44	25.62	1867.02	12.10	5374.23	71.76
3-PX26S4	10670.00	318174.18	3487.81	527324.08	150.80	47.31	1051.38	16.29	12329.25	169.62
3-PX26G1	10670.00	5567.20	46710.38	173096.45	148.42	7.01	1574.81	0.44	262.15	2.65
3-PX12S1	235445.00	1205657.52	1512465.20	1187417.80	23185.93	2457.82	7444091.06	133792.61	308675.44	21434.41
3-PX12G1	235445.00	76793.80	852978.21	2936031.26	3315.98	115.29	32017.09	1.10	4224.49	45.64
3-PX7L1	20940.00	269461.25	5130.25	439265.75	188.16	42.24	1066.95	21.41	10297.92	129.31
3-PX7S1	10470.00	291134.43	3276.07	484773.76	138.24	46.41	1047.35	25.10	12272.67	139.00
3-PX7S2	10470.00	264778.99	4273.50	443242.61	185.44	44.92	1157.84	19.89	9468.52	139.73
3-PX7S3	10470.00	55513.46	753.55	90051.60	1131.67	8.51	203.47	3.77	2045.87	32.74
3-PX7S4	10470.00	217138.18	2941.68	368323.25	355.48	36.35	958.99	13.41	7761.06	120.33
3-PX7G1	10470.00	5776.75	37511.22	137814.38	123.84	6.87	1433.83	0.09	256.65	2.28

3-PX9S1	240985.00	158503.83	7867.97	387775.22	111.21	167.63	2161.75	98.24	4404.49	76.31
3-PX9S2	240985.00	159590.53	7309.96	409712.06	387.00	194.34	1839.42	40.87	4245.76	68.05
3-PX9S3	240985.00	160534.18	8685.01	393314.30	535.41	195.14	2275.37	48.67	3987.08	83.88
3-PX9G1	240985.00	229917.88	1165744.06	4819631.36	3993.11	269.93	177326.29	44.93	14739.48	285.45
3-PX10L1	23200.00	214494.92	7114.18	346466.02	231.82	48.58	3659.85	65.70	7325.94	123.94
3-PX10S1	11600.00	179272.88	5057.25	297155.58	530.46	40.84	2990.88	45.63	6013.14	109.76
3-PX10S2	11600.00	234454.32	6217.64	384644.56	165.91	55.03	1867.95	31.98	8035.72	125.85
3-PX10S3	11600.00	242854.28	8245.76	399795.62	148.84	56.42	11621.88	287.42	8467.71	188.93
3-PX10S4	11600.00	249238.42	5398.32	420035.87	127.06	54.64	1537.49	22.72	8540.42	131.17
3-PX10G1	11600.00	4695.44	45883.67	168095.46	119.12	7.18	1833.77	0.51	245.25	2.38
84-PX1S1	18461.88	335357.15	5685.04	538715.59	689.69	70.16	2076.59	6.77	13053.31	139.90
84-PX1S2	18461.88	144544.61	3763.40	239040.99	353.12	38.38	993.75	3.62	5424.20	57.06
84-PX1S3	18461.88	425138.26	8634.81	692470.14	238.80	89.04	2673.22	10.05	16222.81	174.95
84-PX1S4	18461.88	391472.94	6133.60	613443.18	420.40	71.00	1973.21	14.25	14436.41	167.73
84-PX1S5	18461.88	209499.70	4096.88	317291.34	1387.56	38.14	1280.85	13.37	6775.51	86.54
84-PX1G1	18461.88	4344.65	139661.52	595304.04	371.17	16.75	5471.93	8.66	430.97	3.71
84-PX2S1	12365.00	157641.27	8145.57	269456.81	460.49	33.47	1447.95	8.40	6795.18	58.94
84-PX2S2	12365.00	257042.80	10355.54	472131.36	193.05	62.89	1991.01	14.67	14866.45	79.67
84-PX2G1	12365.00	4486.03	68025.56	270774.16	178.16	8.99	3500.69	1.40	328.46	4.12
84-PX3S1	12065.00	229147.18	6252.12	363870.44	202.09	47.17	1838.38	17.28	7229.44	110.98
84-PX3S2	12065.00	102457.15	5336.01	183749.22	855.22	22.69	807.72	8.99	4996.25	34.18
84-PX3G1	12065.00	3928.14	77873.08	340498.90	311.30	9.67	2770.40	0.42	296.05	1.86
84-PX5S1	240820.00	159538.13	8841.35	394365.46	1131.13	220.02	1645.84	10.69	5502.91	50.68
84-PX5S2	240820.00	155464.00	16225.88	370970.02	2243.61	155.44	4199.73	51.74	3674.64	66.87
84-PX5S3	240820.00	166119.05	34669.02	465475.44	194.67	164.36	5375.49	64.28	3585.33	68.61
84-PX5G1	240820.00	38611.62	1450126.00	5694518.34	3474.76	156.37	46796.17	24.27	3748.03	29.31
84-PX6L1	25290.00	229940.17	15193.73	397353.29	210.81	51.66	2177.17	37.18	7708.90	104.23
84-PX6S1	12645.00	305196.97	7448.85	482603.78	155.98	58.23	2155.24	21.35	10176.14	144.93
84-PX6S2	12645.00	88099.30	2385.00	130281.39	1182.52	16.32	626.56	6.49	2572.63	37.27

84-PX6S3	12645.00	165202.03	3855.46	251359.59	675.34	31.02	1127.61	12.30	5107.71	73.09
84-PX6S4	12645.00	240343.75	9844.65	363505.02	153.92	46.08	1934.27	27.91	6251.71	184.20
84-PX6G1	12645.00	1777.78	83875.89	317469.65	162.42	9.07	2588.04	3.94	185.61	1.57
84-PX15L1	23111.42	211953.76	4080.59	344759.55	357.39	46.25	1109.33	19.54	8168.18	89.82
84-PX15S1	11555.71	252833.07	5030.46	414095.70	137.08	57.49	916.53	26.37	8834.53	120.03
84-PX15S2	11555.71	249457.74	5160.60	396728.76	132.21	57.48	1121.24	38.49	8576.42	117.21
84-PX15S3	11555.71	211220.08	4358.33	345688.85	194.45	48.11	1560.07	16.29	7973.16	92.28
84-PX15S4	11555.71	35846.61	1474.17	62716.51	1218.72	8.09	229.86	1.24	1684.00	12.59
84-PX15G1	11555.71	2534.11	46174.09	152834.02	92.92	4.50	1070.52	0.64	163.56	1.31
84-PX7S1	229440.00	166730.11	17419.98	404357.81	141.26	193.74	5092.61	327.25	5390.25	91.84
84-PX7S2	229440.00	164454.80	16607.30	399054.50	137.98	191.10	6445.88	438.74	5396.50	95.96
84-PX7S3	229440.00	162128.77	14815.00	387096.40	142.09	205.69	3858.02	76.08	4925.03	80.83
84-PX7S4	229440.00	163010.45	15642.87	392983.96	189.36	208.92	4030.64	41.65	4864.80	78.81
84-PX7G1	229440.00	101307.43	1495737.92	6759257.64	6031.64	210.77	65587.55	23.00	6634.32	62.65
10-PX8S1	14525.00	13216.56	890.06	27666.75	8.17	8.12	215.86	144.32	194.03	21.57
10-PX8S2	14525.00	12495.95	1684.12	26354.17	8.85	9.07	334.96	257.55	159.21	25.72
10-PX8G1	14525.00	6244.62	90090.07	375949.19	294.42	12.21	4547.21	1.76	443.54	7.45
10-PX9S1	16260.38	282291.84	9458.35	469172.98	163.30	59.59	1856.62	6.64	10095.51	110.69
10-PX9S2	16260.38	292326.54	5941.10	473919.42	264.09	61.28	1875.37	4.80	10632.42	112.76
10-PX9S3	16260.38	298625.91	6874.05	488862.79	179.73	62.87	1910.43	5.41	10778.46	120.12
10-PX9S4	16260.38	288719.31	8430.38	470344.96	177.58	59.67	1816.60	7.06	10042.38	113.71
10-PX9G1	16260.38	87793.64	51130.92	296982.25	202.56	17.64	1691.92	26.71	1874.68	73.65
10-PX5S1	234605.20	165752.55	11609.66	414939.76	117.37	169.91	3580.65	38.17	4607.59	106.37
10-PX5S2	234605.20	170518.31	12006.80	420288.33	116.57	161.74	3859.71	561.42	4174.39	160.08
10-PX5S3	234605.20	205835.11	15586.01	443461.56	134.24	121.75	3418.61	3014.51	2693.94	369.68

10-PX5G1	234605.20	1174750.12	1431862.12	8701447.76	7160.61	477.58	57278.49	25.17	59890.99	331.67
10-PX4S1	78828.14	64209.63	8918.50	135797.70	47.55	40.58	1563.74	1140.32	790.67	91.87
10-PX4S2	78828.14	70792.18	8174.82	146136.75	48.06	42.30	1648.30	1038.96	1000.02	97.44
10-PX4S3	78828.14	56100.16	10285.72	129130.30	42.73	45.88	1957.54	877.37	711.57	74.84
10-PX4G1	78828.14	36197.38	648081.17	2994610.61	1808.59	90.85	30707.25	11.19	2471.59	30.45
10-PX3S1	78828.14	70200.94	6432.13	147176.02	47.50	46.54	1514.28	206.90	1160.62	83.16
10-PX3G1	78828.14	28621.09	335717.24	1211601.74	1053.44	39.66	13925.16	6.15	1247.37	27.61
10-PX19L1	543650.00	188488.03	9092.38	454537.67	141.13	237.64	2301.17	33.77	5963.12	63.12
10-PX19S1	271825.00	187024.36	9393.11	457263.24	131.84	222.62	2364.32	33.49	5375.73	59.56
10-PX19S2	271825.00	185251.33	9383.96	458802.63	213.76	233.61	2457.02	32.76	5556.81	65.86
10-PX19G1	271825.00	122560.25	1327324.64	5225027.76	3828.80	165.19	39306.99	14.81	6543.90	59.68
10-PX18S1	16655.56	335470.90	6714.33	561739.54	348.76	69.57	1942.77	18.52	13916.73	119.60
10-PX18S2	16655.56	393037.80	6450.15	663163.44	210.66	77.39	2177.44	24.45	18061.88	139.60
10-PX18G1	16655.56	11685.09	106228.98	454511.31	337.36	15.18	3644.20	6.78	536.21	10.24
10-PX14S1	13315.00	364249.59	5296.61	592315.85	192.67	60.56	1513.08	16.69	12610.48	126.96
10-PX14S2	13315.00	376835.59	4894.63	595143.89	195.52	55.63	1378.46	15.16	13052.59	128.90
10-PX14S3	13315.00	344730.04	5105.43	554517.18	179.79	53.47	1426.78	13.96	12624.48	114.22
10-PX14S4	13315.00	297216.85	5944.54	486312.21	157.88	63.03	1884.60	15.59	13421.70	91.57
10-PX14G1	13315.00	32117.40	60245.88	276760.43	214.14	13.59	2007.78	0.98	931.32	34.30
10-PX15S1	149130.00	1630678.75	37486.86	2696990.41	8544.71	409.45	12206.71	61.75	68011.00	606.19

10-PX15S2	149130.00	2004407.64	45292.87	3379153.21	8096.62	485.66	13719.47	81.19	86477.10	760.77
10-PX15S3	149130.00	3002797.32	79528.11	5037583.22	1967.65	804.59	22504.11	110.89	137575.10	1032.36
10-PX15S4	149130.00	3437916.26	61113.88	5860673.02	1844.39	802.29	21096.23	136.24	187589.92	1054.96
10-PX15G1	149130.00	82375.00	1202755.09	5693608.65	3092.71	169.26	44171.06	0.00	4692.77	37.93

Pyroxene Phenocryst Trace Element Chemistry from the LA-ICPMS

Sample ID	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	La (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
42-PX14S1	85.63	0.01	0.05	0.00	0.22	0.03	0.11	0.01	0.04	0.01	0.00
42-PX14S2	83.51	0.01	0.03	0.00	0.20	0.03	0.10	0.01	0.04	0.00	0.00
42-PX14G1	81.23	1.75	15.69	0.60	2.68	0.65	2.68	0.52	0.19	0.41	0.06
42-PX13S1	620.36	0.30	4.35	0.19	1.99	0.32	1.09	0.15	0.34	0.09	0.01
42-PX13G1	631.26	12.35	156.10	7.41	21.75	5.15	20.72	3.71	1.52	3.06	0.43
42-PX12S1	62.10	11.83	9.58	0.43	3.35	1.07	5.31	1.31	0.36	1.49	0.26
42-PX12S2	40.63	16.06	19.06	0.56	7.24	2.46	10.40	2.36	0.47	2.58	0.39
42-PX12G1	392.64	6.84	98.28	4.22	11.99	2.77	10.77	2.09	1.00	1.58	0.25
42-PX15S1	22.99	0.01	0.04	0.00	0.09	0.01	0.04	0.00	0.01	0.00	0.00
42-PX15S2	19.70	0.01	0.05	0.00	0.06	0.01	0.03	0.00	0.01	0.00	0.00
42-PX15G1	14.52	0.99	7.46	0.25	1.42	0.37	1.56	0.31	0.05	0.27	0.04

42-PX10S1	6.23	1.18	7.52	4.39	1.19	0.16	0.45	0.04	0.03	0.06	0.03
42-PX10S2	9.65	3.90	7.76	1.99	1.26	0.18	0.56	0.16	0.00	0.27	0.04
42-PX10G1	101.68	2.72	32.23	1.40	4.05	1.02	4.02	0.76	0.26	0.64	0.10
3-PX1L1	3.78	15.21	5.45	1.74	5.58	2.02	8.13	1.79	0.20	1.83	0.32
3-PX1S1	11.30	17.05	2.74	0.53	18.73	6.38	27.21	5.25	0.50	4.35	0.59
3-PX1S2	12.65	18.37	2.19	0.04	19.51	6.66	28.31	5.41	0.52	4.75	0.61
3-PX1S3	3.19	18.09	4.00	0.43	6.09	2.06	9.36	1.99	0.20	2.32	0.36
3-PX1S4	9.77	20.92	5.43	0.27	25.27	7.97	33.79	6.22	0.40	5.44	0.67
3-PX1G1	166.70	8.91	106.38	5.46	14.95	3.50	12.98	2.38	0.51	2.05	0.27
3-PX21L1	8.57	13.33	5.11	0.10	6.33	2.14	9.38	2.05	0.20	2.02	0.32
3-PX21S1	63.05	9.10	6.26	1.71	2.28	0.57	2.63	0.64	0.15	0.87	0.18
3-PX21S2	6.41	11.32	6.23	0.10	0.45	0.23	1.45	0.59	0.08	0.88	0.20
3-PX21S3	4.03	14.78	3.36	0.05	7.82	2.69	11.67	2.43	0.21	2.27	0.36
3-PX21G1	152.24	7.60	95.48	4.45	12.05	2.76	10.66	1.95	0.38	1.54	0.23
3-PX18S1	49.05	80.44	45.09	0.13	23.61	15.72	78.59	21.27	2.37	19.75	3.03
3-PX18S2	39.02	82.62	48.32	0.07	13.42	12.72	66.32	19.90	2.22	19.36	3.06
3-PX18S3	47.55	97.50	46.32	0.17	25.83	17.82	89.39	24.91	2.47	23.30	3.59
3-PX18S4	43.82	83.62	46.35	0.11	16.63	13.22	68.97	20.68	2.25	19.24	3.07
3-PX18G1	3103.30	134.33	1418.79	73.79	211.31	49.92	187.89	36.98	7.67	28.79	4.39
3-PX26L1	4.90	13.62	3.53	0.13	5.00	1.79	7.82	1.65	0.19	1.75	0.30
3-PX26S1	0.21	12.47	3.62	0.28	0.32	0.16	1.01	0.45	0.06	0.69	0.17
3-PX26S2	0.20	12.64	3.02	0.01	0.04	0.06	0.54	0.44	0.05	0.71	0.17
3-PX26S3	9.40	18.92	4.06	1.22	13.62	4.76	20.55	4.34	0.36	4.19	0.58
3-PX26S4	0.08	11.64	1.33	0.01	0.04	0.12	0.62	0.46	0.04	0.81	0.18
3-PX26G1	147.00	9.14	104.84	4.91	14.49	3.41	12.84	2.39	0.40	2.10	0.28
3-PX12S1	985.14	390.54	9242.29	3382.97	540.31	165.07	739.08	136.92	13.37	125.04	14.67
3-PX12G1	3189.76	152.60	1536.36	79.97	254.17	61.50	233.47	44.24	8.28	34.12	5.12

3-PX7L1	3.39	11.75	4.51	0.35	1.80	0.61	2.68	0.81	0.09	0.98	0.25
3-PX7S1	0.16	11.71	1.79	0.00	0.05	0.07	0.59	0.48	0.06	0.70	0.20
3-PX7S2	2.37	12.23	5.17	0.14	1.83	0.65	2.83	0.78	0.09	1.14	0.23
3-PX7S3	13.51	21.67	0.81	0.03	34.07	11.53	46.97	8.69	0.65	7.10	0.88
3-PX7S4	3.14	13.10	1.78	0.01	7.26	2.40	9.91	2.16	0.18	1.98	0.31
3-PX7G1	128.89	7.42	78.68	3.66	11.25	2.69	10.00	2.02	0.38	1.57	0.25
3-PX9S1	43.27	89.58	31.32	0.05	12.80	11.84	64.60	20.08	2.08	19.99	3.09
3-PX9S2	40.51	96.09	38.88	0.05	21.33	15.13	77.38	22.64	2.23	22.20	3.34
3-PX9S3	44.33	102.26	58.76	0.07	23.14	16.18	83.62	24.26	2.44	23.62	3.75
3-PX9G1	3034.95	265.37	3191.85	184.12	388.55	90.08	336.26	63.67	10.34	56.69	7.70
3-PX10L1	8.88	14.39	6.68	0.40	2.62	0.98	4.39	1.11	0.15	1.27	0.28
3-PX10S1	5.38	16.85	6.09	0.28	8.87	3.00	12.80	2.82	0.27	2.74	0.43
3-PX10S2	1.61	15.59	6.22	0.10	1.19	0.53	2.35	0.77	0.11	1.20	0.27
3-PX10S3	0.87	15.12	11.92	1.58	0.51	0.25	1.65	0.71	0.11	0.90	0.26
3-PX10S4	0.07	14.29	3.81	0.03	0.06	0.09	0.72	0.55	0.05	0.92	0.24
3-PX10G1	170.66	8.06	95.77	4.68	12.27	2.87	11.11	2.12	0.45	1.65	0.26
84-PX1S1	5.12	29.35	3.84	0.03	10.88	3.92	16.59	4.03	0.38	3.91	0.71
84-PX1S2	5.80	18.91	7.62	0.18	7.21	2.96	13.06	3.24	0.29	3.24	0.55
84-PX1S3	2.11	26.27	9.20	0.22	1.43	0.56	2.53	1.17	0.13	1.74	0.37
84-PX1S4	3.56	23.33	4.19	0.01	5.82	2.24	10.67	2.46	0.29	2.71	0.55
84-PX1S5	19.07	29.59	3.35	0.02	26.38	9.48	41.08	8.70	1.11	7.39	1.04
84-PX1G1	261.77	33.09	434.61	24.30	58.66	13.89	50.15	9.04	1.55	7.83	1.11
84-PX2S1	39.50	15.20	2.71	0.09	11.12	3.55	14.62	2.98	0.30	2.75	0.40
84-PX2S2	5.62	21.31	26.40	1.22	3.44	1.08	4.23	1.32	0.11	1.76	0.35
84-PX2G1	197.99	15.09	193.46	10.81	26.35	6.36	21.78	4.21	0.64	3.39	0.51
84-PX3S1	1.19	12.10	3.13	0.02	0.97	0.36	1.79	0.54	0.11	0.84	0.22
84-PX3S2	12.05	30.90	14.39	0.70	42.01	13.53	57.17	10.67	0.83	9.22	1.15
84-PX3G1	162.32	20.44	233.65	12.44	36.69	9.09	33.82	6.35	0.92	5.17	0.70
84-PX5S1	45.56	156.47	41.75	0.52	62.65	32.93	156.33	42.33	3.19	37.45	5.94

84-PX5S2	82.49	104.17	68.30	0.14	60.21	27.26	123.18	30.08	4.24	28.02	4.12
84-PX5S3	76.96	68.30	140.39	3.61	17.51	9.79	51.76	15.78	2.86	15.60	2.53
84-PX5G1	3842.08	273.58	3758.65	207.68	518.40	119.59	420.06	78.62	17.32	66.20	8.97
84-PX6L1	16.96	16.19	36.08	1.40	4.76	1.68	5.93	1.55	0.21	1.74	0.33
84-PX6S1	1.66	14.01	8.56	0.17	0.26	0.22	1.05	0.65	0.11	0.88	0.23
84-PX6S2	18.67	14.06	3.61	0.09	12.84	4.65	20.99	4.25	0.67	3.90	0.52
84-PX6S3	9.33	17.13	2.73	0.01	13.42	4.68	20.58	4.23	0.45	3.86	0.53
84-PX6S4	13.21	9.73	9.29	0.26	1.24	0.40	1.71	0.53	0.15	0.95	0.19
84-PX6G1	199.67	18.48	249.96	12.10	31.53	7.14	26.34	5.39	0.96	3.85	0.61
84-PX15L1	3.17	18.56	3.82	0.05	7.25	2.50	10.75	2.43	0.20	2.42	0.43
84-PX15S1	0.27	16.55	3.78	0.06	0.11	0.15	1.13	0.68	0.09	1.10	0.28
84-PX15S2	0.12	16.69	4.78	0.01	0.06	0.13	0.99	0.58	0.07	1.11	0.27
84-PX15S3	1.07	15.14	3.82	0.02	2.41	0.92	3.48	1.02	0.10	1.31	0.28
84-PX15S4	15.89	25.00	2.55	0.15	39.25	12.90	52.82	9.93	0.71	7.79	0.96
84-PX15G1	206.33	6.67	82.95	4.53	12.40	2.80	10.55	1.90	0.53	1.57	0.20
84-PX7S1	55.96	97.60	109.72	0.86	12.54	10.99	62.21	20.09	2.90	20.26	3.31
84-PX7S2	53.73	99.78	112.10	1.07	12.48	11.08	63.66	19.68	2.90	20.03	3.41
84-PX7S3	52.53	94.78	94.04	0.13	11.65	10.36	59.83	19.56	2.91	19.63	3.30
84-PX7S4	55.83	95.73	95.97	0.23	12.27	10.73	61.09	19.59	2.99	20.07	3.22
84-PX7G1	2542.96	406.81	4800.62	269.49	681.19	171.75	664.12	117.25	16.26	101.73	12.70
10-PX8S1	3.45	1.67	2.11	0.01	0.18	0.18	1.09	0.39	0.09	0.38	0.06
10-PX8S2	4.07	1.61	3.10	0.01	0.24	0.21	1.23	0.38	0.11	0.39	0.06
10-PX8G1	242.28	18.23	204.95	13.34	35.67	8.49	29.73	5.38	1.08	4.31	0.59
10-PX9S1	36.39	14.36	7.57	0.16	1.02	0.33	1.78	0.81	0.11	1.14	0.31
10-PX9S2	1.78	15.73	5.91	0.04	2.72	1.01	4.41	1.38	0.13	1.70	0.32

10-PX9S3	6.46	14.94	6.86	0.08	0.38	0.20	1.59	0.77	0.15	1.17	0.29
10-PX9S4	25.79	13.28	6.97	0.05	1.10	0.40	2.06	0.63	0.11	1.23	0.27
10-PX9G1	165.83	10.92	88.51	5.27	17.95	4.19	14.71	2.79	0.50	2.30	0.35
10-PX5S1	48.59	97.51	95.82	0.15	13.98	12.71	69.11	22.02	2.37	22.18	3.49
10-PX5S2	54.72	86.58	87.57	0.15	12.18	10.97	60.68	19.58	2.36	19.02	3.05
10-PX5S3	62.00	20.63	35.91	0.34	2.47	2.38	15.12	4.72	1.34	5.29	0.78
10-PX5G1	2701.59	494.93	4347.24	260.88	747.24	182.50	681.16	119.61	12.87	104.55	14.42
10-PX4S1	27.10	6.01	11.67	0.06	1.08	0.84	5.00	1.58	0.44	1.57	0.24
10-PX4S2	23.34	6.34	10.77	0.24	0.89	0.81	4.59	1.56	0.45	1.61	0.24
10-PX4S3	25.16	7.81	16.36	0.07	1.17	1.02	6.12	2.02	0.58	2.02	0.32
10-PX4G1	1365.94	131.59	1828.98	117.08	251.95	59.86	209.81	37.53	6.00	27.86	4.04
10-PX3S1	18.24	8.68	12.02	0.03	0.88	0.89	5.41	1.92	0.53	2.00	0.32
10-PX3G1	1100.95	46.43	677.16	35.81	96.13	22.96	82.53	14.85	3.18	10.96	1.44
10-PX19L1	37.34	152.57	58.72	0.26	21.03	20.87	111.01	35.39	2.76	33.27	5.52
10-PX19S1	41.27	124.32	68.87	0.08	18.10	17.50	95.97	30.44	3.08	29.04	4.70
10-PX19S2	42.52	138.31	67.57	0.07	20.25	19.52	103.05	32.53	3.17	31.92	5.24
10-PX19G1	4020.65	244.24	2797.73	169.25	443.76	105.39	384.10	69.52	12.32	46.45	7.42
10-PX18S1	3.43	21.12	5.65	0.12	1.56	0.72	3.61	0.99	0.18	1.34	0.38
10-PX18S2	0.21	22.80	3.42	0.02	0.05	0.16	0.96	0.57	0.15	1.24	0.40
10-PX18G1	257.24	23.90	260.39	15.86	43.20	9.99	37.66	7.30	1.10	5.54	0.77
10-PX14S1	0.10	15.24	2.14	0.01	0.06	0.11	0.87	0.54	0.07	0.94	0.26
10-PX14S2	0.10	13.70	2.46	0.00	0.04	0.09	0.76	0.59	0.07	0.77	0.25

10-PX14S3	0.15	14.32	2.89	0.01	0.05	0.08	0.75	0.56	0.09	1.04	0.22
10-PX14S4	0.14	19.84	4.09	0.02	0.05	0.11	0.80	0.51	0.08	1.14	0.31
10-PX14G1	175.32	14.50	123.69	7.63	23.06	5.70	21.10	3.79	0.68	3.30	0.46
10-PX15S1	81.58	295.33	47.11	1.91	195.51	68.23	291.98	58.42	4.64	52.60	8.33
10-PX15S2	100.95	315.60	41.98	0.31	219.64	73.80	325.73	65.93	3.62	60.85	8.61
10-PX15S3	17.62	298.70	88.49	2.18	12.69	5.36	30.76	12.66	1.63	20.93	5.26
10-PX15S4	1.24	278.16	40.62	0.45	0.79	1.79	12.89	9.03	1.00	18.46	4.51
10-PX15G1	2217.14	288.06	3561.75	217.06	521.34	121.30	419.95	81.76	9.99	66.65	8.80

Pyroxene Phenocryst Trace Element Chemistry from the LA-ICPMS

Sample ID	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	Th (ppm)	U (ppm)
42-PX14S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42-PX14S2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42-PX14G1	0.34	0.07	0.17	0.02	0.18	0.03	0.39	0.04	0.43	0.12
42-PX13S1	0.06	0.01	0.03	0.00	0.03	0.00	0.11	0.01	0.12	0.04
42-PX13G1	2.40	0.43	1.26	0.14	1.06	0.15	3.86	0.44	4.53	1.26
42-PX12S1	1.91	0.46	1.46	0.22	2.01	0.31	0.37	0.02	0.15	0.05
42-PX12S2	2.66	0.63	1.94	0.33	2.41	0.40	0.61	0.04	0.58	0.15

42-PX12G1	1.22	0.25	0.77	0.11	0.68	0.09	2.58	0.27	2.99	0.84
42-PX15S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42-PX15S2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42-PX15G1	0.19	0.04	0.10	0.01	0.09	0.01	0.20	0.02	0.22	0.05
42-PX10S1	0.11	0.04	0.19	0.03	0.37	0.07	0.14	0.01	0.05	0.03
42-PX10S2	0.38	0.15	0.55	0.09	1.14	0.15	0.20	0.06	0.09	0.06
42-PX10G1	0.53	0.10	0.28	0.04	0.25	0.04	0.82	0.08	0.93	0.26
3-PX1L1	2.23	0.57	2.04	0.36	3.07	0.52	0.21	0.11	0.37	0.39
3-PX1S1	3.24	0.63	1.80	0.24	1.73	0.27	0.11	0.02	0.86	0.26
3-PX1S2	3.34	0.67	1.87	0.27	1.98	0.30	0.09	0.00	0.96	0.27
3-PX1S3	2.66	0.67	2.37	0.44	3.82	0.62	0.17	0.00	0.38	0.11
3-PX1S4	3.98	0.79	2.11	0.30	2.38	0.36	0.16	0.02	1.42	0.37
3-PX1G1	1.63	0.33	0.93	0.14	0.95	0.14	2.97	0.38	8.79	2.73
3-PX21L1	2.08	0.47	1.60	0.28	2.17	0.36	0.21	0.01	0.36	0.09
3-PX21S1	1.30	0.33	1.29	0.21	1.97	0.31	0.20	0.11	0.15	0.17
3-PX21S2	1.65	0.40	1.53	0.27	2.37	0.37	0.24	0.01	0.23	0.06
3-PX21S3	2.44	0.59	1.73	0.29	2.49	0.39	0.13	0.00	0.34	0.19
3-PX21G1	1.40	0.28	0.88	0.12	0.79	0.12	2.58	0.33	6.83	1.94
3-PX18S1	17.22	3.12	8.45	1.05	7.23	1.01	2.22	0.01	0.74	0.24
3-PX18S2	17.75	3.27	9.00	1.20	7.90	1.07	2.25	0.02	0.14	0.04
3-PX18S3	21.26	3.77	10.40	1.37	8.60	1.29	2.34	0.01	0.70	0.22
3-PX18S4	17.70	3.33	8.91	1.13	7.81	1.09	2.25	0.01	0.33	0.13
3-PX18G1	23.60	4.81	13.81	1.84	15.04	2.13	39.05	4.79	111.06	33.20
3-PX26L1	2.08	0.49	1.68	0.30	2.42	0.43	0.14	0.01	0.31	0.27

3-PX26S1	1.58	0.46	1.89	0.33	3.12	0.50	0.14	0.01	0.04	0.01
3-PX26S2	1.60	0.47	1.85	0.32	2.92	0.52	0.11	0.01	0.00	0.00
3-PX26S3	3.39	0.73	2.18	0.32	2.16	0.34	0.14	0.07	0.81	0.20
3-PX26S4	1.68	0.41	1.53	0.31	2.59	0.43	0.07	0.00	0.00	0.07
3-PX26G1	1.49	0.34	0.97	0.14	0.95	0.15	3.12	0.37	8.16	2.32
3-PX12S1	76.88	15.17	37.71	4.15	32.35	4.85	282.85	155.73	59.39	18.06
3-PX12G1	27.22	5.46	15.36	2.11	14.36	2.34	41.98	5.83	122.59	37.05
3-PX7L1	1.80	0.45	1.65	0.29	2.29	0.40	0.14	0.02	0.37	0.20
3-PX7S1	1.68	0.46	1.61	0.31	2.54	0.43	0.10	0.00	0.01	0.00
3-PX7S2	1.91	0.49	1.68	0.31	2.65	0.40	0.13	0.01	0.18	0.06
3-PX7S3	4.61	0.81	2.03	0.25	1.47	0.22	0.03	0.00	1.44	0.34
3-PX7S4	2.20	0.47	1.57	0.26	2.15	0.37	0.09	0.00	0.31	0.55
3-PX7G1	1.36	0.27	0.78	0.10	0.72	0.12	2.17	0.27	5.76	1.68
3-PX9S1	18.89	3.60	9.57	1.31	8.79	1.22	1.63	0.01	0.11	0.03
3-PX9S2	20.19	3.80	9.97	1.35	8.49	1.20	1.98	0.01	0.51	0.12
3-PX9S3	21.67	4.22	10.68	1.47	9.37	1.33	2.86	0.01	0.54	0.12
3-PX9G1	50.88	9.82	26.32	4.04	28.00	3.83	91.83	12.74	230.65	64.84
3-PX10L1	2.08	0.51	1.86	0.34	2.78	0.48	0.25	0.03	0.21	0.30
3-PX10S1	2.83	0.62	2.01	0.37	2.63	0.47	0.23	0.02	0.62	0.31
3-PX10S2	2.14	0.59	2.10	0.38	3.35	0.53	0.27	0.01	0.33	0.24
3-PX10S3	2.25	0.57	2.12	0.38	3.10	0.53	0.44	0.08	0.29	0.08
3-PX10S4	1.97	0.55	1.96	0.35	3.20	0.53	0.21	0.01	0.00	0.00
3-PX10G1	1.41	0.27	0.85	0.13	0.88	0.12	2.65	0.34	7.15	2.12
84-PX1S1	4.76	1.15	3.77	0.61	5.05	0.75	0.15	0.00	0.31	0.06
84-PX1S2	3.41	0.76	2.32	0.35	2.56	0.41	0.33	0.01	0.57	0.14
84-PX1S3	3.47	0.98	3.71	0.64	5.47	0.97	0.38	0.03	0.36	0.08
84-PX1S4	3.66	0.91	3.01	0.51	4.04	0.71	0.14	0.01	0.31	0.08
84-PX1S5	5.67	1.12	3.12	0.40	3.20	0.45	0.14	0.00	1.46	0.31
84-PX1G1	6.24	1.22	3.32	0.46	3.29	0.56	12.42	1.74	33.73	9.95

84-PX2S1	2.55	0.55	1.80	0.32	2.39	0.41	0.11	0.00	0.34	0.07
84-PX2S2	2.93	0.82	3.02	0.53	4.70	0.82	0.80	0.07	1.78	0.72
84-PX2G1	2.66	0.52	1.54	0.22	1.51	0.24	5.59	0.78	14.69	4.02
84-PX3S1	1.73	0.45	1.70	0.30	2.47	0.41	0.12	0.00	0.07	0.02
84-PX3S2	6.13	1.20	3.22	0.42	2.91	0.42	0.46	0.05	2.86	0.64
84-PX3G1	4.01	0.77	2.08	0.28	2.03	0.26	6.40	0.90	18.48	5.28
84-PX5S1	34.05	6.52	16.46	2.11	13.09	1.83	2.10	0.06	2.11	0.46
84-PX5S2	23.04	4.22	11.12	1.37	8.80	1.19	3.09	0.02	2.30	0.49
84-PX5S3	14.65	2.82	7.36	0.97	6.05	0.86	5.03	0.24	5.31	1.48
84-PX5G1	50.92	9.50	26.32	3.97	27.80	3.77	104.27	14.72	290.27	83.69
84-PX6L1	2.45	0.63	2.13	0.37	2.94	0.48	1.07	0.11	2.14	0.71
84-PX6S1	1.90	0.52	2.00	0.33	2.72	0.47	0.29	0.01	0.04	0.16
84-PX6S2	2.79	0.51	1.46	0.19	1.25	0.21	0.14	0.01	0.65	0.17
84-PX6S3	3.13	0.63	1.87	0.28	2.04	0.31	0.09	0.00	0.36	0.08
84-PX6S4	1.44	0.36	1.24	0.25	1.83	0.31	0.30	0.02	0.36	0.15
84-PX6G1	3.50	0.66	1.81	0.28	1.91	0.31	7.15	0.86	19.06	5.06
84-PX15L1	2.92	0.69	2.34	0.39	3.31	0.55	0.15	0.00	0.32	0.24
84-PX15S1	2.32	0.60	2.32	0.44	3.48	0.62	0.07	0.00	0.09	0.01
84-PX15S2	2.48	0.60	2.30	0.42	3.56	0.66	0.13	0.00	0.00	0.00
84-PX15S3	2.31	0.56	2.11	0.38	3.05	0.54	0.19	0.00	0.07	0.01
84-PX15S4	5.16	0.94	2.39	0.29	1.83	0.25	0.10	0.02	1.38	0.34
84-PX15G1	1.27	0.24	0.72	0.10	0.66	0.11	2.35	0.32	6.40	1.75
84-PX7S1	20.16	4.04	10.50	1.47	9.60	1.38	3.77	0.06	0.63	0.18
84-PX7S2	20.54	4.11	11.03	1.54	9.99	1.40	3.98	0.06	0.29	0.07
84-PX7S3	19.92	3.79	10.33	1.44	9.29	1.31	4.08	0.01	0.13	5.32

84-PX7S4	19.56	3.80	10.55	1.47	8.85	1.32	4.13	0.03	0.19	0.05
84-PX7G1	75.50	14.43	39.20	5.43	40.06	5.57	134.71	19.70	367.47	113.47
10-PX8S1	0.37	0.07	0.18	0.02	0.15	0.02	0.11	0.00	0.01	0.00
10-PX8S2	0.36	0.07	0.18	0.02	0.13	0.02	0.16	0.00	0.01	0.00
10-PX8G1	3.32	0.67	1.91	0.25	1.59	0.28	5.99	0.92	18.84	5.53
10-PX9S1	2.19	0.50	1.86	0.33	2.80	0.48	0.26	0.01	0.10	0.03
10-PX9S2	2.35	0.62	2.04	0.34	2.74	0.51	0.22	0.00	0.08	0.01
10-PX9S3	2.14	0.56	1.98	0.35	2.98	0.51	0.29	0.02	0.05	0.01
10-PX9S4	2.10	0.52	1.84	0.33	2.68	0.46	0.26	0.01	0.10	0.05
10-PX9G1	1.88	0.39	1.19	0.17	1.24	0.17	2.49	0.42	8.52	2.27
10-PX5S1	21.18	3.87	10.49	1.46	9.19	1.30	4.22	0.01	0.18	0.06
10-PX5S2	18.06	3.59	9.44	1.20	8.10	1.11	3.85	0.01	0.17	0.24
10-PX5S3	4.36	0.90	2.28	0.30	1.72	0.24	1.84	0.05	0.14	0.04
10-PX5G1	84.30	18.05	55.45	8.82	55.57	8.87	123.30	18.52	408.09	113.01
10-PX4S1	1.32	0.26	0.68	0.08	0.53	0.08	0.56	0.00	0.05	0.01
10-PX4S2	1.42	0.26	0.70	0.09	0.59	0.09	0.53	0.01	0.02	0.00
10-PX4S3	1.67	0.35	0.83	0.11	0.69	0.10	0.82	0.01	0.02	0.01
10-PX4G1	24.04	5.03	12.91	1.82	13.75	1.83	53.62	8.03	158.60	49.06
10-PX3S1	1.91	0.37	0.94	0.13	0.85	0.10	0.53	0.00	0.02	0.00
10-PX3G1	8.42	1.61	4.25	0.57	4.16	0.66	20.28	2.60	45.93	8.68
10-PX19L1	32.09	6.24	16.06	2.10	13.50	1.88	2.98	0.02	0.24	0.09
10-PX19S1	27.82	5.17	13.11	1.69	10.81	1.54	3.38	0.02	0.17	0.03
10-PX19S2	30.49	5.68	14.41	2.00	12.04	1.73	3.35	0.04	0.19	0.03
10-PX19G1	43.43	8.30	21.10	3.65	24.46	3.61	84.34	13.05	250.61	73.88
10-PX18S1	2.91	0.80	3.00	0.53	4.63	0.79	0.21	0.01	0.16	0.02

10-PX18S2	3.11	0.82	3.13	0.60	4.75	0.82	0.22	0.00	0.09	0.00
10-PX18G1	4.32	0.87	2.34	0.33	2.29	0.35	7.78	1.22	25.09	6.86
10-PX14S1	2.40	0.56	2.13	0.38	2.80	0.51	0.09	0.00	0.00	0.00
10-PX14S2	1.90	0.50	1.81	0.34	2.94	0.44	0.10	0.01	0.00	0.00
10-PX14S3	2.12	0.49	2.07	0.37	3.23	0.55	0.09	0.00	0.00	0.00
10-PX14S4	2.74	0.75	2.71	0.52	4.56	0.76	0.23	0.00	0.00	0.00
10-PX14G1	2.57	0.50	1.42	0.22	1.61	0.23	3.70	0.60	12.17	3.38
10-PX15S1	50.14	11.01	33.96	5.00	38.49	6.00	2.54	0.05	5.60	1.17
10-PX15S2	53.63	11.46	36.28	5.59	45.34	6.58	2.25	0.01	6.57	1.19
10-PX15S3	41.87	10.75	39.56	7.18	61.52	10.26	5.17	0.16	1.36	0.49
10-PX15S4	38.04	9.22	36.78	7.29	62.89	10.99	2.10	0.52	0.05	0.42
10-PX15G1	52.57	10.01	29.07	4.28	27.65	4.38	100.98	16.43	331.64	92.33

Appendix H. Thermobarometry models of plagioclase phenocrysts (Putirka, 2008). K_D values in bold are in equilibrium with the whole rock composition.

Plagioclase Phenocryst Thermobarometry Models												Test for Equilibrium
Plagioclase-Liquid Thermometers, hygrometer and "barometer"												KD(Ab-An)
Putirka (2008) RiMG equations												T<1050 ºC = 0.1+/-0.11
Eqn 23				Putirka (2005)			Components predicted (Putirka 2005)					T>1050 ºC = 0.27+/-0.05
Putirka (2005)	2005	Eqn (24a)	Eqn 25b	Model H	Eqn 25a	Eqn 26	Eqn. E	Eqn. F	Eqn. G		Comp.	Observed
T(C)	T(C) sat	T(C)	H2O (wt. %)	H2O (wt. %)	P(kbar)	T(C) sat	An	Ab	Or		Sum	KD(Ab-An)
Plagioclase Phenocryst Cores												
Sample AP2-00-03 Cores												
1126.13	1117.98	1132.65	1.74	3.55	6.73	1130.73	0.52	0.51	0.00		1.03	**0.24**
1114.73	1117.98	1117.53	2.43	4.56	10.14	1130.73	0.51	0.52	0.00		1.03	0.39
1116.52	1117.98	1119.93	2.28	4.37	9.44	1130.73	0.51	0.52	0.00		1.03	0.36
1109.78	1117.98	1110.91	2.91	5.13	12.29	1130.73	0.51	0.53	0.00		1.03	0.49
1147.00	1117.98	1160.56	1.89	1.62	2.64	1130.73	0.54	0.48	0.00		1.02	0.04
1114.93	1117.98	1117.89	2.34	4.42	9.51	1130.73	0.51	0.52	0.00		1.03	0.36
1111.85	1117.98	1113.74	2.65	4.81	11.02	1130.73	0.51	0.52	0.00		1.03	0.43
1116.68	1117.98	1120.14	2.27	4.35	9.35	1130.73	0.51	0.52	0.00		1.03	0.35
1116.16	1117.98	1119.49	2.28	4.35	9.30	1130.73	0.51	0.52	0.00		1.03	0.35
1113.63	1117.98	1116.07	2.52	4.67	10.55	1130.73	0.51	0.52	0.00		1.03	0.41
1117.91	1117.98	1121.84	2.14	4.14	8.52	1130.73	0.51	0.52	0.00		1.03	**0.32**
1118.05	1117.98	1121.95	2.18	4.24	8.98	1130.73	0.51	0.52	0.00		1.03	0.33
1210.90	1117.98	1238.34	4.14	7.83	36.11	1130.73	0.59	0.42	0.00		1.00	1.09
1115.40	1117.98	1118.47	2.34	4.43	9.59	1130.73	0.51	0.52	0.00		1.03	0.37
1117.43	1117.98	1121.13	2.22	4.28	9.12	1130.73	0.51	0.52	0.00		1.03	0.34
1113.82	1117.98	1116.29	2.54	4.70	10.71	1130.73	0.51	0.52	0.00		1.03	0.41

1115.43	1117.98	1118.50	2.35	4.45	9.69	1130.73	0.51	0.52	0.00	1.03	0.37
1129.90	1117.98	1137.62	1.60	3.28	5.97	1130.73	0.52	0.50	0.00	1.02	0.21
1111.70	1117.98	1113.54	2.65	4.82	11.02	1130.73	0.51	0.52	0.00	1.03	0.43
1127.58	1117.98	1134.58	1.68	3.41	6.29	1130.73	0.52	0.50	0.00	1.03	**0.22**
1113.54	1117.98	1116.07	2.43	4.52	9.81	1130.73	0.51	0.52	0.00	1.03	0.38
1114.28	1117.98	1116.97	2.44	4.57	10.13	1130.73	0.51	0.52	0.00	1.03	0.39
1110.60	1117.98	1112.06	2.77	4.95	11.54	1130.73	0.51	0.53	0.00	1.03	0.46
1112.90	1117.98	1115.15	2.54	4.68	10.49	1130.73	0.51	0.52	0.00	1.03	0.41
1114.74	1117.98	1117.66	2.34	4.40	9.40	1130.73	0.51	0.52	0.00	1.03	0.36
Sample AP2-00-10 Cores											
1107.70	1112.85	1109.53	2.56	4.88	9.37	1120.96	0.52	0.49	0.00	1.01	0.33
1104.33	1112.85	1105.07	2.81	5.20	10.48	1120.96	0.52	0.49	0.00	1.01	0.38
1109.48	1112.85	1111.89	2.43	4.71	8.77	1120.96	0.53	0.48	0.00	1.01	**0.31**
1112.68	1112.85	1116.07	2.27	4.50	8.15	1120.96	0.53	0.48	0.00	1.01	**0.28**
1107.50	1112.85	1109.23	2.60	4.95	9.69	1120.96	0.52	0.49	0.00	1.01	0.34
1103.37	1112.85	1103.79	2.91	5.32	10.96	1120.96	0.52	0.49	0.00	1.01	0.41
1121.31	1112.85	1127.50	1.88	3.75	5.74	1120.96	0.53	0.47	0.00	1.00	0.19
1103.24	1112.85	1103.63	2.90	5.30	10.86	1120.96	0.52	0.49	0.00	1.01	0.40
1108.29	1112.85	1110.27	2.55	4.89	9.49	1120.96	0.52	0.49	0.00	1.01	0.34
1117.38	1112.85	1122.29	2.02	4.09	6.78	1120.96	0.53	0.47	0.00	1.01	**0.23**
1108.12	1112.85	1110.01	2.59	4.96	9.78	1120.96	0.52	0.49	0.00	1.01	0.34
1106.59	1112.85	1108.03	2.66	5.03	9.94	1120.96	0.52	0.49	0.00	1.01	0.36
1114.62	1112.85	1118.67	2.14	4.28	7.37	1120.96	0.53	0.48	0.00	1.01	**0.25**
1136.64	1112.85	1147.72	1.71	2.68	3.36	1120.96	0.55	0.45	0.00	1.00	0.09
1102.43	1112.85	1102.66	2.88	5.25	10.53	1120.96	0.52	0.49	0.00	1.01	0.39
1105.67	1112.85	1106.96	2.61	4.91	9.29	1120.96	0.52	0.49	0.00	1.01	0.34
1140.30	1112.85	1152.85	2.30	2.01	2.99	1120.96	0.55	0.45	0.00	1.00	0.03
1102.01	1112.85	1101.95	3.07	5.51	11.74	1120.96	0.52	0.49	0.00	1.01	0.44
1116.62	1112.85	1121.34	2.04	4.07	6.61	1120.96	0.53	0.48	0.00	1.01	**0.23**

1102.52	1112.85	1102.63	3.01	5.45	11.50	1120.96	0.52	0.49	0.00	1.01	0.43
1105.71	1112.85	1106.86	2.73	5.12	10.27	1120.96	0.52	0.49	0.00	1.01	0.37
1104.96	1112.85	1105.88	2.78	5.18	10.47	1120.96	0.52	0.49	0.00	1.01	0.38
1109.39	1112.85	1111.77	2.44	4.72	8.78	1120.96	0.52	0.48	0.00	1.01	**0.31**
1121.70	1112.85	1127.95	1.87	3.81	6.03	1120.96	0.54	0.47	0.00	1.00	0.20
1131.27	1112.85	1140.56	1.66	3.14	4.34	1120.96	0.54	0.46	0.00	1.00	0.13
Sample AP2-00-42 Cores											
1188.38	1164.42	1203.34	2.02	0.86	5.02	1180.70	0.55	0.45	0.00	1.00	0.01
1181.53	1164.42	1193.64	0.89	2.14	4.67	1180.70	0.55	0.45	0.00	1.00	0.17
1172.27	1164.42	1181.32	1.05	2.91	6.85	1180.70	0.54	0.46	0.00	1.00	**0.27**
1173.59	1164.42	1183.08	1.01	2.79	6.49	1180.70	0.54	0.46	0.00	1.00	**0.26**
1182.12	1164.42	1194.36	0.85	2.19	4.96	1180.70	0.55	0.45	0.00	1.00	0.17
1173.12	1164.42	1182.45	1.02	2.83	6.58	1180.70	0.54	0.46	0.00	1.00	**0.26**
1181.73	1164.42	1193.85	0.85	2.22	5.02	1180.70	0.55	0.45	0.00	1.00	0.18
1167.66	1164.42	1175.27	1.20	3.20	7.61	1180.70	0.53	0.47	0.00	1.00	**0.32**
1174.50	1164.42	1184.26	0.98	2.75	6.40	1180.70	0.54	0.46	0.00	1.00	**0.25**
1174.59	1164.42	1184.40	0.98	2.72	6.29	1180.70	0.54	0.46	0.00	1.00	**0.25**
1169.85	1164.42	1178.15	1.12	3.05	7.20	1180.70	0.54	0.46	0.00	1.00	**0.29**
1184.68	1164.42	1197.78	0.85	1.99	4.47	1180.70	0.55	0.45	0.00	1.00	0.15
1169.56	1164.42	1177.76	1.13	3.06	7.23	1180.70	0.54	0.46	0.00	1.00	**0.30**
1172.78	1164.42	1182.00	1.03	2.86	6.68	1180.70	0.54	0.46	0.00	1.00	**0.27**
1188.48	1164.42	1202.92	0.98	1.59	3.61	1180.70	0.55	0.45	0.00	1.00	0.10
1175.60	1164.42	1185.71	0.95	2.68	6.24	1180.70	0.54	0.46	0.00	1.00	**0.24**
1189.71	1164.42	1204.62	1.11	1.41	3.32	1180.70	0.55	0.44	0.00	1.00	0.08
1190.20	1164.42	1205.33	1.22	1.30	3.21	1180.70	0.55	0.44	0.00	1.00	0.06
1189.96	1164.42	1204.99	1.17	1.35	3.24	1180.70	0.55	0.44	0.00	1.00	0.07
1173.77	1164.42	1183.27	1.00	2.84	6.71	1180.70	0.54	0.46	0.00	1.00	**0.26**
1175.75	1164.42	1185.91	0.95	2.66	6.18	1180.70	0.54	0.46	0.00	1.00	**0.24**
1162.84	1164.42	1168.94	1.41	3.51	8.50	1180.70	0.53	0.47	0.00	1.00	0.37

1175.30	1164.42	1185.32	0.96	2.69	6.24	1180.70	0.54	0.46	0.00	1.00	**0.24**
1186.62	1164.42	1200.30	0.82	1.92	4.48	1180.70	0.55	0.45	0.00	1.00	0.14
1171.69	1164.42	1180.58	1.06	2.91	6.78	1180.70	0.54	0.46	0.00	1.00	**0.27**
Sample AP2-00-48 Cores											
1235.35	1225.67	1235.45	0.47	2.63	7.76	1221.64	0.60	0.33	0.00	0.93	0.16
1233.74	1225.67	1233.29	0.44	2.81	8.31	1221.64	0.60	0.34	0.00	0.93	0.18
1232.20	1225.67	1231.31	0.46	2.90	8.49	1221.64	0.60	0.34	0.00	0.93	0.19
1224.72	1225.67	1221.56	0.59	3.42	9.97	1221.64	0.59	0.34	0.00	0.93	**0.27**
1236.57	1225.67	1237.03	0.47	2.56	7.61	1221.64	0.60	0.33	0.00	0.93	0.15
1215.75	1225.67	1209.97	0.88	3.99	11.55	1221.64	0.58	0.35	0.00	0.93	0.37
1231.74	1225.67	1230.71	0.47	2.92	8.53	1221.64	0.59	0.34	0.00	0.93	0.20
1238.70	1225.67	1239.86	0.54	2.34	7.06	1221.64	0.60	0.33	0.00	0.93	0.12
1237.33	1225.67	1238.06	0.51	2.46	7.31	1221.64	0.60	0.33	0.00	0.93	0.14
1235.92	1225.67	1236.18	0.46	2.61	7.75	1221.64	0.60	0.33	0.00	0.93	0.16
1238.01	1225.67	1238.94	0.50	2.43	7.28	1221.64	0.60	0.33	0.00	0.93	0.13
1231.90	1225.67	1230.89	0.46	2.95	8.68	1221.64	0.59	0.34	0.00	0.93	0.20
1239.70	1225.67	1241.22	0.62	2.20	6.70	1221.64	0.60	0.33	0.00	0.93	0.10
1237.07	1225.67	1237.70	0.48	2.51	7.47	1221.64	0.60	0.33	0.00	0.93	0.14
1235.95	1225.67	1236.20	0.45	2.63	7.82	1221.64	0.60	0.33	0.00	0.93	0.16
1234.48	1225.67	1234.27	0.44	2.75	8.16	1221.64	0.60	0.33	0.00	0.93	0.17
1234.46	1225.67	1234.25	0.45	2.74	8.10	1221.64	0.60	0.33	0.00	0.93	0.17
1227.27	1225.67	1224.87	0.53	3.27	9.57	1221.64	0.59	0.34	0.00	0.93	**0.25**
1219.89	1225.67	1215.33	0.73	3.72	10.75	1221.64	0.59	0.34	0.00	0.93	**0.32**
1233.71	1225.67	1233.28	0.46	2.78	8.18	1221.64	0.60	0.34	0.00	0.93	0.18
1204.14	1225.67	1194.69	1.67	5.18	15.95	1221.64	0.57	0.36	0.00	0.93	0.61
1235.41	1225.67	1235.51	0.46	2.66	7.86	1221.64	0.60	0.33	0.00	0.93	0.16
1229.64	1225.67	1227.96	0.49	3.09	9.03	1221.64	0.59	0.34	0.00	0.93	**0.22**
1227.76	1225.67	1225.48	0.52	3.26	9.59	1221.64	0.59	0.34	0.00	0.93	**0.25**
1230.68	1225.67	1229.27	0.46	3.08	9.12	1221.64	0.59	0.34	0.00	0.93	**0.22**

1222.35	1225.67	1218.49	0.66	3.58	10.41	1221.64	0.59	0.34	0.00	0.93	**0.30**
Sample AP2-00-84 Cores											
1094.75	1083.91	1099.57	1.96	3.47	5.56	1097.52	0.50	0.54	0.00	1.04	0.20
1077.59	1083.91	1076.96	3.05	4.94	10.46	1097.52	0.49	0.56	0.00	1.05	0.41
1076.52	1083.91	1075.50	3.20	5.11	11.16	1097.52	0.49	0.57	0.00	1.05	0.44
1090.58	1083.91	1094.10	2.15	3.78	6.51	1097.52	0.50	0.55	0.00	1.05	**0.24**
1086.41	1083.91	1088.58	2.40	4.16	7.76	1097.52	0.50	0.55	0.00	1.05	**0.29**
1109.19	1083.91	1118.63	1.69	2.37	2.83	1097.52	0.52	0.52	0.00	1.04	0.10
1113.52	1083.91	1124.44	1.84	1.95	2.17	1097.52	0.52	0.51	0.00	1.03	0.06
1114.88	1083.91	1126.31	2.00	1.75	2.07	1097.52	0.52	0.51	0.00	1.03	0.05
1113.78	1083.91	1124.80	1.87	1.91	2.13	1097.52	0.52	0.51	0.00	1.03	0.06
1078.52	1083.91	1078.21	2.95	4.82	9.98	1097.52	0.49	0.56	0.00	1.05	0.39
1075.95	1083.91	1074.77	3.23	5.13	11.21	1097.52	0.49	0.57	0.00	1.05	0.45
1083.65	1083.91	1084.85	2.66	4.53	9.19	1097.52	0.50	0.55	0.00	1.05	0.34
1111.63	1083.91	1121.88	1.73	2.16	2.48	1097.52	0.52	0.52	0.00	1.03	0.08
1128.31	1083.91	1140.60	2.86	5.76	19.85	1097.52	0.53	0.50	0.00	1.03	0.50
1085.03	1083.91	1086.80	2.47	4.23	7.95	1097.52	0.50	0.55	0.00	1.05	**0.30**
1100.91	1083.91	1107.67	1.76	3.03	4.41	1097.52	0.51	0.53	0.00	1.04	0.16
1099.46	1083.91	1105.78	1.80	3.10	4.53	1097.52	0.51	0.53	0.00	1.04	0.17
1107.06	1083.91	1115.79	1.67	2.56	3.25	1097.52	0.51	0.52	0.00	1.04	0.12
1097.38	1083.91	1103.06	1.87	3.25	4.90	1097.52	0.51	0.54	0.00	1.04	0.18
1075.56	1083.91	1074.17	3.36	5.30	11.94	1097.52	0.49	0.57	0.00	1.06	0.48
1089.95	1083.91	1093.26	2.18	3.83	6.66	1097.52	0.50	0.55	0.00	1.05	**0.25**
1084.81	1083.91	1086.50	2.48	4.24	7.99	1097.52	0.50	0.55	0.00	1.05	**0.30**
1077.93	1083.91	1077.37	3.07	4.97	10.63	1097.52	0.49	0.56	0.00	1.05	0.41
1087.27	1083.91	1089.62	2.40	4.21	8.09	1097.52	0.50	0.55	0.00	1.05	**0.29**
1078.59	1083.91	1078.30	2.95	4.82	10.00	1097.52	0.49	0.56	0.00	1.05	0.39
Sample AP2-00-88 Cores											
1118.75	1102.17	1126.58	1.40	2.48	4.77	1119.73	0.47	0.61	0.00	1.08	0.15

1120.43	1102.17	1128.80	1.35	2.36	4.42	1119.73	0.47	0.60	0.00	1.08	0.14
1110.07	1102.17	1115.18	1.74	3.07	6.44	1119.73	0.46	0.62	0.00	1.09	0.21
1104.90	1102.17	1108.35	2.04	3.50	7.89	1119.73	0.46	0.63	0.00	1.09	**0.26**
1117.74	1102.17	1125.27	1.43	2.53	4.86	1119.73	0.47	0.61	0.00	1.08	0.16
1101.88	1102.17	1104.36	2.24	3.75	8.75	1119.73	0.46	0.63	0.00	1.09	**0.29**
1117.69	1102.17	1125.20	1.43	2.54	4.91	1119.73	0.47	0.61	0.00	1.08	0.16
1100.83	1102.17	1102.97	2.33	3.85	9.12	1119.73	0.46	0.63	0.00	1.09	**0.30**
1109.58	1102.17	1114.51	1.78	3.14	6.72	1119.73	0.46	0.62	0.00	1.09	**0.22**
1099.95	1102.17	1101.80	2.40	3.93	9.40	1119.73	0.46	0.64	0.00	1.09	**0.31**
1120.32	1102.17	1128.66	1.35	2.36	4.42	1119.73	0.47	0.60	0.00	1.08	0.14
1098.76	1102.17	1100.11	2.61	4.22	10.64	1119.73	0.46	0.64	0.00	1.09	0.35
1106.64	1102.17	1110.65	1.93	3.34	7.32	1119.73	0.46	0.63	0.00	1.09	**0.24**
1106.73	1102.17	1110.75	1.93	3.35	7.39	1119.73	0.46	0.63	0.00	1.09	**0.24**
1100.05	1102.17	1101.94	2.38	3.91	9.32	1119.73	0.46	0.64	0.00	1.09	**0.31**
1098.19	1102.17	1099.45	2.57	4.13	10.18	1119.73	0.46	0.64	0.00	1.10	0.34
1118.12	1102.17	1125.75	1.42	2.52	4.90	1119.73	0.47	0.61	0.00	1.08	0.16
1101.34	1102.17	1103.66	2.27	3.77	8.78	1119.73	0.46	0.63	0.00	1.09	**0.29**
1097.33	1102.17	1098.28	2.67	4.26	10.70	1119.73	0.46	0.64	0.00	1.10	0.36
1106.49	1102.17	1110.46	1.93	3.35	7.34	1119.73	0.46	0.63	0.00	1.09	**0.24**
1098.87	1102.17	1100.34	2.52	4.09	10.05	1119.73	0.46	0.64	0.00	1.09	0.33
1106.93	1102.17	1111.02	1.92	3.34	7.36	1119.73	0.46	0.63	0.00	1.09	**0.24**
1108.55	1102.17	1113.14	1.83	3.22	6.98	1119.73	0.46	0.62	0.00	1.09	**0.22**
1115.05	1102.17	1121.72	1.52	2.71	5.38	1119.73	0.47	0.61	0.00	1.08	0.17
1096.82	1102.17	1097.43	2.91	4.56	12.06	1119.73	0.46	0.64	0.00	1.10	0.41
Plagioclase Phenocryst Mantles											
Sample AP2-00-03 Mantles											
1111.72	1117.98	1113.50	2.71	4.90	11.43	1130.73	0.51	0.52	0.00	1.03	0.45
1108.71	1117.98	1109.48	3.02	5.24	12.71	1130.73	0.51	0.53	0.00	1.03	0.52
1109.18	1117.98	1110.00	3.09	5.34	13.25	1130.73	0.51	0.53	0.00	1.03	0.54

1152.79	1117.98	1164.90	2.80	5.82	20.26	1130.73	0.54	0.48	0.00	1.02	0.59
1114.93	1117.98	1117.80	2.42	4.55	10.09	1130.73	0.51	0.52	0.00	1.03	0.38
1110.84	1117.98	1112.35	2.77	4.97	11.64	1130.73	0.51	0.53	0.00	1.03	0.46
1112.79	1117.98	1115.01	2.54	4.67	10.45	1130.73	0.51	0.52	0.00	1.03	0.41
1116.98	1117.98	1120.55	2.25	4.32	9.24	1130.73	0.51	0.52	0.00	1.03	0.35
1112.92	1117.98	1115.21	2.51	4.62	10.24	1130.73	0.51	0.52	0.00	1.03	0.40
1121.10	1117.98	1126.03	1.97	3.91	7.83	1130.73	0.52	0.51	0.00	1.03	**0.29**
1111.49	1117.98	1113.23	2.70	4.88	11.29	1130.73	0.51	0.52	0.00	1.03	0.44
1125.18	1117.98	1131.39	1.78	3.62	6.96	1130.73	0.52	0.51	0.00	1.03	**0.25**
1112.20	1117.98	1114.21	2.60	4.76	10.79	1130.73	0.51	0.52	0.00	1.03	0.42
1119.60	1117.98	1124.04	2.05	4.03	8.21	1130.73	0.52	0.51	0.00	1.03	**0.30**
1123.90	1117.98	1129.72	1.84	3.71	7.21	1130.73	0.52	0.51	0.00	1.03	**0.26**
1112.62	1117.98	1114.78	2.56	4.70	10.57	1130.73	0.51	0.52	0.00	1.03	0.41
1113.55	1117.98	1116.00	2.49	4.62	10.30	1130.73	0.51	0.52	0.00	1.03	0.40
1126.80	1117.98	1133.52	1.72	3.52	6.68	1130.73	0.52	0.51	0.00	1.03	**0.24**
1114.96	1117.98	1117.88	2.38	4.48	9.77	1130.73	0.51	0.52	0.00	1.03	0.37
1107.26	1117.98	1107.40	3.34	5.61	14.32	1130.73	0.51	0.53	0.00	1.04	0.60
1117.50	1117.98	1121.25	2.20	4.24	8.96	1130.73	0.51	0.52	0.00	1.03	0.34
1135.85	1117.98	1145.50	1.46	2.82	4.69	1130.73	0.53	0.49	0.00	1.02	0.16
1113.72	1117.98	1116.22	2.49	4.62	10.32	1130.73	0.51	0.52	0.00	1.03	0.40
1136.59	1117.98	1146.46	1.44	2.78	4.65	1130.73	0.53	0.49	0.00	1.02	0.15
1114.73	1117.98	1117.58	2.40	4.51	9.89	1130.73	0.51	0.52	0.00	1.03	0.38
1112.33	1117.98	1114.35	2.63	4.80	11.02	1130.73	0.51	0.52	0.00	1.03	0.43
1112.15	1117.98	1114.14	2.62	4.78	10.88	1130.73	0.51	0.52	0.00	1.03	0.43
1114.12	1117.98	1116.76	2.45	4.57	10.13	1130.73	0.51	0.52	0.00	1.03	0.39
1064.64	1084.90	1050.58	2.98	6.93	9.93	1071.26	0.63	0.39	0.00	1.02	0.47
1066.90	1084.90	1053.60	2.72	6.59	8.57	1071.26	0.63	0.39	0.00	1.02	0.40
1075.36	1084.90	1064.52	2.19	5.83	6.07	1071.26	0.64	0.38	0.00	1.02	**0.28**
1079.08	1084.90	1069.31	2.04	5.54	5.23	1071.26	0.64	0.38	0.00	1.02	**0.24**

1069.82	1084.90	1057.32	2.54	6.37	7.91	1071.26	0.64	0.39	0.00	1.02	0.37
1068.78	1084.90	1055.98	2.61	6.47	8.25	1071.26	0.63	0.39	0.00	1.02	0.38
1065.92	1084.90	1052.33	2.79	6.68	8.88	1071.26	0.63	0.39	0.00	1.02	0.42
Sample AP2-00-10 Mantles											
1106.24	1112.85	1107.61	2.65	4.99	9.74	1120.96	0.52	0.49	0.00	1.01	0.35
1104.08	1112.85	1104.74	2.83	5.22	10.59	1120.96	0.52	0.49	0.00	1.01	0.39
1114.64	1112.85	1118.67	2.16	4.33	7.56	1120.96	0.53	0.48	0.00	1.01	**0.26**
1126.71	1112.85	1134.49	1.73	3.53	5.42	1120.96	0.54	0.46	0.00	1.00	0.17
1104.19	1112.85	1104.87	2.84	5.25	10.71	1120.96	0.52	0.49	0.00	1.01	0.39
1102.16	1112.85	1102.18	3.01	5.44	11.39	1120.96	0.52	0.49	0.00	1.01	0.43
1125.93	1112.85	1133.48	1.75	3.55	5.42	1120.96	0.54	0.46	0.00	1.00	0.17
1108.52	1112.85	1110.58	2.53	4.86	9.37	1120.96	0.52	0.48	0.00	1.01	0.33
1103.44	1112.85	1103.80	2.98	5.42	11.47	1120.96	0.52	0.49	0.00	1.01	0.42
1104.05	1112.85	1104.64	2.89	5.31	11.01	1120.96	0.52	0.49	0.00	1.01	0.40
1109.43	1112.85	1111.79	2.45	4.75	8.97	1120.96	0.52	0.48	0.00	1.01	**0.32**
1130.08	1112.85	1138.96	1.67	3.25	4.64	1120.96	0.54	0.46	0.00	1.00	0.14
1113.55	1112.85	1117.35	2.16	4.24	7.05	1120.96	0.53	0.48	0.00	1.01	**0.25**
1112.34	1112.85	1115.76	2.22	4.34	7.37	1120.96	0.53	0.48	0.00	1.01	**0.26**
1112.03	1112.85	1115.22	2.30	4.54	8.27	1120.96	0.53	0.48	0.00	1.01	**0.29**
1107.09	1112.85	1108.73	2.59	4.92	9.50	1120.96	0.52	0.49	0.00	1.01	0.34
1109.98	1112.85	1112.50	2.44	4.75	9.01	1120.96	0.53	0.48	0.00	1.01	**0.31**
1105.94	1112.85	1107.30	2.60	4.90	9.29	1120.96	0.52	0.49	0.00	1.01	0.34
1109.52	1112.85	1111.88	2.47	4.80	9.19	1120.96	0.53	0.48	0.00	1.01	**0.32**
1109.76	1112.85	1112.22	2.44	4.75	8.98	1120.96	0.53	0.48	0.00	1.01	**0.31**
1107.54	1112.85	1109.28	2.60	4.95	9.70	1120.96	0.52	0.49	0.00	1.01	0.34
1102.31	1112.85	1102.59	2.81	5.13	9.96	1120.96	0.52	0.49	0.00	1.01	0.38
1115.63	1112.85	1119.99	2.10	4.22	7.20	1120.96	0.53	0.48	0.00	1.01	**0.24**
1130.20	1112.85	1139.16	1.68	3.19	4.41	1120.96	0.54	0.46	0.00	1.00	0.13
1104.90	1112.85	1105.82	2.77	5.15	10.35	1120.96	0.52	0.49	0.00	1.01	0.38

1118.40	1112.85	1123.61	1.99	4.06	6.76	1120.96	0.53	0.47	0.00	1.01	**0.22**
1101.65	1112.85	1101.67	2.90	5.25	10.45	1120.96	0.52	0.49	0.00	1.01	0.39
1108.64	1112.85	1110.79	2.48	4.77	8.95	1120.96	0.52	0.48	0.00	1.01	**0.32**
1123.27	1112.85	1130.02	1.82	3.69	5.71	1120.96	0.54	0.47	0.00	1.00	0.18
1102.73	1112.85	1103.08	2.83	5.17	10.21	1120.96	0.52	0.49	0.00	1.01	0.38
1129.06	1112.85	1137.63	1.69	3.30	4.72	1120.96	0.54	0.46	0.00	1.00	0.14
1106.28	1112.85	1107.62	2.68	5.05	10.02	1120.96	0.52	0.49	0.00	1.01	0.36
1101.44	1112.85	1101.21	3.10	5.54	11.80	1120.96	0.52	0.49	0.00	1.01	0.44
1131.61	1112.85	1141.03	1.67	3.08	4.13	1120.96	0.54	0.46	0.00	1.00	0.12
1131.66	1112.85	1141.10	1.67	3.08	4.16	1120.96	0.54	0.46	0.00	1.00	0.12
1109.80	1112.85	1112.38	2.37	4.59	8.24	1120.96	0.53	0.48	0.00	1.01	**0.29**
1120.36	1112.85	1126.18	1.92	3.92	6.38	1120.96	0.53	0.47	0.00	1.00	0.21
1103.36	1112.85	1103.85	2.84	5.21	10.44	1120.96	0.52	0.49	0.00	1.01	0.39
1118.86	1112.85	1124.19	1.98	4.05	6.79	1120.96	0.53	0.47	0.00	1.01	**0.22**
1104.20	1112.85	1104.88	2.83	5.23	10.62	1120.96	0.52	0.49	0.00	1.01	0.39
1102.94	1112.85	1103.26	2.90	5.29	10.79	1120.96	0.52	0.49	0.00	1.01	0.40
1103.64	1112.85	1104.28	2.76	5.09	9.92	1120.96	0.52	0.49	0.00	1.01	0.37
1109.86	1112.85	1112.39	2.41	4.69	8.70	1120.96	0.53	0.48	0.00	1.01	**0.31**
1119.28	1112.85	1124.75	1.96	4.02	6.68	1120.96	0.53	0.47	0.00	1.01	**0.22**
Sample AP2-00-42 Mantles											
1188.22	1164.42	1203.14	2.06	0.85	5.33	1180.70	0.55	0.45	0.00	1.00	0.01
1188.42	1164.42	1203.38	2.01	0.86	4.96	1180.70	0.55	0.45	0.00	1.00	0.01
1189.89	1164.42	1205.22	1.83	0.92	--	1180.70	0.55	0.44	0.00	1.00	0.00
1192.59	1164.42	1208.49	1.28	1.17	4.19	1180.70	0.55	0.44	0.00	1.00	0.04
1162.75	1164.42	1168.80	1.42	3.53	8.60	1180.70	0.53	0.47	0.00	1.00	0.37
1171.81	1164.42	1180.72	1.06	2.92	6.84	1180.70	0.54	0.46	0.00	1.00	**0.27**
1166.41	1164.42	1173.61	1.26	3.29	7.88	1180.70	0.53	0.47	0.00	1.00	0.33
1166.07	1164.42	1173.10	1.30	3.40	8.38	1180.70	0.53	0.47	0.00	1.00	0.35
1172.05	1164.42	1181.05	1.05	2.89	6.74	1180.70	0.54	0.46	0.00	1.00	**0.27**

1169.34	1164.42	1177.46	1.14	3.10	7.35	1180.70	0.54	0.47	0.00	1.00	**0.30**
1173.88	1164.42	1183.45	1.00	2.78	6.49	1180.70	0.54	0.46	0.00	1.00	**0.25**
1167.35	1164.42	1174.85	1.22	3.22	7.67	1180.70	0.53	0.47	0.00	1.00	**0.32**
1169.99	1164.42	1178.31	1.12	3.05	7.23	1180.70	0.54	0.46	0.00	1.00	**0.29**
1166.43	1164.42	1173.63	1.26	3.30	7.93	1180.70	0.53	0.47	0.00	1.00	0.33
1164.83	1164.42	1171.54	1.32	3.40	8.21	1180.70	0.53	0.47	0.00	1.00	0.35
1171.17	1164.42	1179.88	1.08	2.97	7.00	1180.70	0.54	0.46	0.00	1.00	**0.28**
1165.00	1164.42	1171.75	1.32	3.40	8.22	1180.70	0.53	0.47	0.00	1.00	0.35
1179.91	1164.42	1191.43	0.87	2.36	5.37	1180.70	0.54	0.45	0.00	1.00	0.20
1170.26	1164.42	1178.68	1.11	3.02	7.11	1180.70	0.54	0.46	0.00	1.00	**0.29**
1177.18	1164.42	1187.81	0.92	2.55	5.87	1180.70	0.54	0.46	0.00	1.00	**0.22**
1168.54	1164.42	1176.41	1.17	3.14	7.47	1180.70	0.54	0.47	0.00	1.00	**0.31**
1168.12	1164.42	1175.85	1.19	3.17	7.56	1180.70	0.53	0.47	0.00	1.00	**0.31**
1173.79	1164.42	1183.33	1.00	2.79	6.50	1180.70	0.54	0.46	0.00	1.00	**0.26**
1180.65	1164.42	1192.41	0.86	2.30	5.19	1180.70	0.54	0.45	0.00	1.00	0.19
1158.74	1164.42	1163.51	1.63	3.85	9.60	1180.70	0.53	0.48	0.00	1.00	0.43
1164.79	1164.42	1171.47	1.33	3.41	8.28	1180.70	0.53	0.47	0.00	1.00	0.35
1174.38	1164.42	1184.10	0.98	2.76	6.42	1180.70	0.54	0.46	0.00	1.00	**0.25**
1159.94	1164.42	1165.09	1.57	3.76	9.34	1180.70	0.53	0.48	0.00	1.00	0.42
1112.30	1129.12	1101.04	1.78	5.49	6.89	1117.01	0.65	0.36	0.00	1.01	0.39
1113.22	1129.12	1102.22	1.74	5.42	6.68	1117.01	0.65	0.36	0.00	1.01	0.37
1115.05	1129.12	1104.54	1.67	5.33	6.48	1117.01	0.65	0.36	0.00	1.01	0.36
1125.28	1129.12	1117.70	1.35	4.61	4.58	1117.01	0.66	0.35	0.00	1.01	**0.24**
1110.09	1129.12	1098.17	1.90	5.69	7.58	1117.01	0.65	0.36	0.00	1.01	0.43
1111.35	1129.12	1099.81	1.83	5.57	7.16	1117.01	0.65	0.36	0.00	1.01	0.40
1125.65	1129.12	1118.18	1.34	4.58	4.49	1117.01	0.66	0.35	0.00	1.01	**0.24**
1112.31	1129.12	1101.04	1.78	5.50	6.95	1117.01	0.65	0.36	0.00	1.01	0.39
1120.05	1129.12	1110.97	1.48	4.96	5.46	1117.01	0.66	0.35	0.00	1.01	**0.30**
1128.12	1129.12	1121.37	1.30	4.41	4.09	1117.01	0.67	0.35	0.00	1.01	0.21

1115.09	1129.12	1104.60	1.66	5.31	6.41	1117.01	0.65	0.36	0.00	1.01	0.35
1116.38	1129.12	1106.24	1.61	5.23	6.21	1117.01	0.65	0.36	0.00	1.01	0.34
1109.21	1129.12	1097.06	1.94	5.74	7.67	1117.01	0.65	0.36	0.00	1.01	0.44
1118.59	1129.12	1109.08	1.54	5.09	5.85	1117.01	0.66	0.35	0.00	1.01	**0.32**
1120.63	1129.12	1111.70	1.47	4.96	5.51	1117.01	0.66	0.35	0.00	1.01	**0.29**
1118.89	1129.12	1109.49	1.52	5.04	5.68	1117.01	0.66	0.35	0.00	1.01	**0.31**
1109.73	1129.12	1097.70	1.92	5.73	7.71	1117.01	0.65	0.36	0.00	1.01	0.44
1115.60	1129.12	1105.26	1.64	5.28	6.32	1117.01	0.65	0.36	0.00	1.01	0.35
1116.76	1129.12	1106.75	1.60	5.19	6.06	1117.01	0.66	0.36	0.00	1.01	0.33
1112.82	1129.12	1101.69	1.76	5.47	6.87	1117.01	0.65	0.36	0.00	1.01	0.38
1116.53	1129.12	1106.44	1.61	5.22	6.18	1117.01	0.65	0.36	0.00	1.01	0.34
Sample AP2-00-48 Mantles											
1222.93	1225.67	1219.27	0.64	3.50	10.12	1221.64	0.59	0.34	0.00	0.93	**0.29**
1224.86	1225.67	1221.74	0.59	3.43	10.02	1221.64	0.59	0.34	0.00	0.93	**0.27**
1225.20	1225.67	1222.19	0.58	3.39	9.87	1221.64	0.59	0.34	0.00	0.93	**0.27**
1230.21	1225.67	1228.71	0.48	3.04	8.88	1221.64	0.59	0.34	0.00	0.93	**0.22**
1227.58	1225.67	1225.30	0.53	3.21	9.30	1221.64	0.59	0.34	0.00	0.93	**0.24**
1231.45	1225.67	1230.31	0.46	2.98	8.78	1221.64	0.59	0.34	0.00	0.93	0.21
1219.01	1225.67	1214.19	0.76	3.77	10.92	1221.64	0.58	0.35	0.00	0.93	**0.33**
1237.67	1225.67	1238.49	0.50	2.46	7.35	1221.64	0.60	0.33	0.00	0.93	0.13
1215.54	1225.67	1209.02	1.31	4.91	15.98	1221.64	0.58	0.35	0.00	0.93	0.54
1236.39	1225.67	1236.81	0.47	2.57	7.62	1221.64	0.60	0.33	0.00	0.93	0.15
1239.12	1225.67	1240.44	0.58	2.27	6.86	1221.64	0.60	0.33	0.00	0.93	0.11
1239.41	1225.67	1240.82	0.59	2.25	6.83	1221.64	0.60	0.33	0.00	0.93	0.11
1235.03	1225.67	1234.99	0.44	2.71	8.04	1221.64	0.60	0.33	0.00	0.93	0.17
1227.14	1225.67	1224.70	0.53	3.28	9.58	1221.64	0.59	0.34	0.00	0.93	**0.25**
1209.60	1225.67	1202.03	1.15	4.41	12.89	1221.64	0.58	0.35	0.00	0.93	0.45
1220.19	1225.67	1215.64	0.74	3.80	11.20	1221.64	0.59	0.34	0.00	0.93	0.33
1222.70	1225.67	1218.97	0.64	3.53	10.24	1221.64	0.59	0.34	0.00	0.93	**0.29**

1224.61	1225.67	1221.43	0.59	3.42	9.92	1221.64	0.59	0.34	0.00	0.93	**0.27**
1236.73	1225.67	1237.27	0.49	2.51	7.45	1221.64	0.60	0.33	0.00	0.93	0.14
1226.37	1225.67	1223.72	0.55	3.30	9.57	1221.64	0.59	0.34	0.00	0.93	**0.25**
1229.19	1225.67	1227.39	0.50	3.10	9.00	1221.64	0.59	0.34	0.00	0.93	**0.22**
1238.47	1225.67	1239.54	0.51	2.39	7.20	1221.64	0.60	0.33	0.00	0.93	0.12
1238.50	1225.67	1239.61	0.54	2.36	7.08	1221.64	0.60	0.33	0.00	0.93	0.12
1225.81	1225.67	1222.97	0.56	3.36	9.80	1221.64	0.59	0.34	0.00	0.93	**0.26**
1229.12	1225.67	1227.29	0.50	3.12	9.10	1221.64	0.59	0.34	0.00	0.93	**0.23**
1227.27	1225.67	1224.87	0.53	3.26	9.52	1221.64	0.59	0.34	0.00	0.93	**0.25**
Sample AP2-00-84 Mantles											
1089.24	1083.91	1092.34	2.21	3.87	6.76	1097.52	0.50	0.55	0.00	1.05	**0.25**
1077.25	1083.91	1076.56	3.03	4.90	10.25	1097.52	0.49	0.56	0.00	1.05	0.40
1083.76	1083.91	1085.14	2.54	4.32	8.23	1097.52	0.50	0.55	0.00	1.05	**0.31**
1082.28	1083.91	1083.18	2.64	4.45	8.67	1097.52	0.49	0.56	0.00	1.05	0.33
1092.95	1083.91	1097.18	2.05	3.64	6.13	1097.52	0.50	0.54	0.00	1.04	**0.22**
1101.29	1083.91	1108.16	1.75	3.02	4.38	1097.52	0.51	0.53	0.00	1.04	0.16
1099.58	1083.91	1105.95	1.80	3.07	4.41	1097.52	0.51	0.53	0.00	1.04	0.16
1096.99	1083.91	1102.56	1.88	3.25	4.88	1097.52	0.51	0.54	0.00	1.04	0.18
1107.72	1083.91	1116.66	1.67	2.52	3.19	1097.52	0.51	0.52	0.00	1.04	0.11
1108.00	1083.91	1117.04	1.67	2.50	3.13	1097.52	0.51	0.52	0.00	1.04	0.11
1102.42	1083.91	1109.66	1.73	2.92	4.11	1097.52	0.51	0.53	0.00	1.04	0.15
1077.20	1083.91	1076.47	3.06	4.94	10.41	1097.52	0.49	0.56	0.00	1.05	0.41
1075.16	1083.91	1073.59	3.47	5.42	12.50	1097.52	0.49	0.57	0.00	1.06	0.50
1079.84	1083.91	1079.90	2.89	4.77	9.91	1097.52	0.49	0.56	0.00	1.05	0.38
1100.12	1083.91	1106.64	1.79	3.08	4.52	1097.52	0.51	0.53	0.00	1.04	0.16
1075.35	1083.91	1073.93	3.34	5.26	11.74	1097.52	0.49	0.57	0.00	1.06	0.47
1083.75	1083.91	1085.11	2.55	4.33	8.28	1097.52	0.50	0.55	0.00	1.05	**0.31**
1075.61	1083.91	1074.23	3.36	5.30	11.95	1097.52	0.49	0.57	0.00	1.06	0.48
1082.67	1083.91	1083.70	2.62	4.42	8.59	1097.52	0.49	0.56	0.00	1.05	**0.33**

1079.27	1083.91	1079.09	2.99	4.90	10.44	1097.52	0.49	0.56	0.00	1.05	0.40
1073.95	1083.91	1071.81	3.81	5.79	14.15	1097.52	0.49	0.57	0.00	1.06	0.58
1086.61	1083.91	1088.83	2.40	4.16	7.81	1097.52	0.50	0.55	0.00	1.05	**0.29**
1092.51	1083.91	1096.65	2.05	3.60	5.89	1097.52	0.50	0.54	0.00	1.04	**0.22**
1094.30	1083.91	1098.99	1.98	3.50	5.65	1097.52	0.50	0.54	0.00	1.04	0.21
1099.04	1083.91	1105.22	1.82	3.16	4.70	1097.52	0.51	0.53	0.00	1.04	0.17
1091.51	1083.91	1095.35	2.09	3.66	6.05	1097.52	0.50	0.54	0.00	1.05	**0.23**
1094.96	1083.91	1099.87	1.95	3.42	5.38	1097.52	0.50	0.54	0.00	1.04	0.20
1074.49	1083.91	1072.62	3.64	5.61	13.33	1097.52	0.49	0.57	0.00	1.06	0.54
1059.36	1052.41	1051.46	2.01	4.81	2.53	1040.77	0.64	0.39	0.00	1.03	0.13
1035.60	1052.41	1020.90	3.03	6.73	8.07	1040.77	0.61	0.42	0.00	1.03	0.38
1037.38	1052.41	1023.19	2.91	6.57	7.55	1040.77	0.62	0.41	0.00	1.03	0.35
1034.90	1052.41	1019.97	3.12	6.84	8.53	1040.77	0.61	0.42	0.00	1.03	0.40
Sample AP2-00-88 Mantles											
1115.98	1102.17	1122.94	1.49	2.67	5.28	1119.73	0.47	0.61	0.00	1.08	0.17
1127.21	1102.17	1137.77	1.23	1.86	3.16	1119.73	0.48	0.59	0.00	1.07	0.10
1108.25	1102.17	1112.75	1.85	3.25	7.09	1119.73	0.46	0.62	0.00	1.09	**0.23**
1125.22	1102.17	1135.13	1.25	2.01	3.53	1119.73	0.48	0.60	0.00	1.07	0.11
1118.81	1102.17	1126.65	1.40	2.48	4.79	1119.73	0.47	0.61	0.00	1.08	0.15
1117.92	1102.17	1125.48	1.43	2.55	4.97	1119.73	0.47	0.61	0.00	1.08	0.16
1123.36	1102.17	1132.66	1.28	2.16	3.93	1119.73	0.47	0.60	0.00	1.07	0.12
1115.20	1102.17	1121.91	1.52	2.72	5.44	1119.73	0.47	0.61	0.00	1.08	0.17
1109.54	1102.17	1114.45	1.78	3.15	6.75	1119.73	0.46	0.62	0.00	1.09	**0.22**
1110.17	1102.17	1115.29	1.75	3.10	6.59	1119.73	0.46	0.62	0.00	1.08	**0.21**
1106.81	1102.17	1110.86	1.93	3.35	7.41	1119.73	0.46	0.63	0.00	1.09	**0.24**
1107.30	1102.17	1111.49	1.91	3.34	7.43	1119.73	0.46	0.62	0.00	1.09	**0.24**
1095.65	1102.17	1096.00	2.89	4.51	11.70	1119.73	0.45	0.64	0.00	1.10	0.40
1098.24	1102.17	1099.48	2.60	4.19	10.45	1119.73	0.46	0.64	0.00	1.09	0.35
1096.19	1102.17	1096.71	2.84	4.46	11.52	1119.73	0.45	0.64	0.00	1.10	0.39

1110.34	1102.17	1115.50	1.74	3.09	6.56	1119.73	0.46	0.62	0.00	1.08	**0.21**
1117.18	1102.17	1124.51	1.45	2.60	5.12	1119.73	0.47	0.61	0.00	1.08	0.16
1131.77	1102.17	1143.87	1.28	1.45	2.28	1119.73	0.48	0.59	0.00	1.07	0.07
1128.43	1102.17	1139.40	1.23	1.75	2.90	1119.73	0.48	0.59	0.00	1.07	0.09
1130.47	1102.17	1142.12	1.25	1.58	2.55	1119.73	0.48	0.59	0.00	1.07	0.08
1127.85	1102.17	1138.63	1.23	1.79	2.99	1119.73	0.48	0.59	0.00	1.07	0.10
1126.25	1102.17	1136.51	1.25	1.91	3.23	1119.73	0.48	0.60	0.00	1.07	0.11
1120.96	1102.17	1129.50	1.34	2.31	4.28	1119.73	0.47	0.60	0.00	1.08	0.14
1123.12	1102.17	1132.37	1.29	2.14	3.81	1119.73	0.47	0.60	0.00	1.07	0.12
1126.57	1102.17	1136.92	1.24	1.90	3.25	1119.73	0.48	0.60	0.00	1.07	0.10
1126.80	1102.17	1137.23	1.24	1.88	3.18	1119.73	0.48	0.60	0.00	1.07	0.10
1126.80	1102.17	1137.23	1.24	1.87	3.18	1119.73	0.48	0.60	0.00	1.07	0.10
1119.18	1102.17	1127.17	1.38	2.42	4.57	1119.73	0.47	0.61	0.00	1.08	0.15
1065.02	1069.83	1054.59	1.98	5.10	4.79	1061.16	0.58	0.46	0.00	1.04	0.20
1072.08	1069.83	1063.65	1.73	4.62	3.49	1061.16	0.58	0.46	0.00	1.04	0.15
1066.59	1069.83	1056.60	1.92	5.01	4.54	1061.16	0.58	0.46	0.00	1.04	0.19
1067.43	1069.83	1057.67	1.89	4.95	4.37	1061.16	0.58	0.46	0.00	1.04	0.19
1054.76	1069.83	1041.33	2.61	6.03	7.91	1061.16	0.57	0.47	0.00	1.04	**0.32**
1055.90	1069.83	1042.79	2.53	5.93	7.54	1061.16	0.57	0.47	0.00	1.04	**0.30**
1053.24	1069.83	1039.31	2.79	6.26	8.82	1061.16	0.57	0.48	0.00	1.04	0.35
1056.15	1069.83	1043.13	2.50	5.88	7.37	1061.16	0.57	0.47	0.00	1.04	**0.30**
1060.87	1069.83	1049.21	2.20	5.48	6.03	1061.16	0.57	0.47	0.00	1.04	**0.24**
1060.42	1069.83	1048.65	2.22	5.50	6.09	1061.16	0.57	0.47	0.00	1.04	**0.25**
1076.17	1069.83	1068.93	1.65	4.31	2.71	1061.16	0.59	0.45	0.00	1.04	0.13
1056.94	1069.83	1044.16	2.44	5.80	7.06	1061.16	0.57	0.47	0.00	1.04	**0.28**
1051.80	1069.83	1037.47	2.88	6.35	9.10	1061.16	0.57	0.48	0.00	1.04	0.37
1059.07	1069.83	1046.89	2.31	5.64	6.57	1061.16	0.57	0.47	0.00	1.04	**0.26**
1051.73	1069.83	1037.37	2.91	6.39	9.26	1061.16	0.57	0.48	0.00	1.04	0.37
1053.26	1069.83	1039.38	2.74	6.18	8.45	1061.16	0.57	0.48	0.00	1.04	0.34

1050.34	1069.83	1035.50	3.11	6.62	10.22	1061.16	0.57	0.48	0.00	1.04	0.41
1050.87	1069.83	1036.16	3.09	6.61	10.22	1061.16	0.57	0.48	0.00	1.04	0.41
1066.29	1069.83	1056.18	1.94	5.08	4.84	1061.16	0.58	0.46	0.00	1.04	0.20
1057.42	1069.83	1044.76	2.42	5.79	7.09	1061.16	0.57	0.47	0.00	1.04	**0.28**
1051.22	1069.83	1036.75	2.90	6.36	9.05	1061.16	0.57	0.48	0.00	1.04	0.37
1075.89	1069.83	1067.74	1.90	5.54	8.08	1061.16	0.59	0.45	0.00	1.04	**0.24**
1063.78	1069.83	1052.96	2.05	5.24	5.29	1061.16	0.58	0.46	0.00	1.04	**0.22**
1054.46	1069.83	1040.93	2.64	6.07	8.05	1061.16	0.57	0.47	0.00	1.04	**0.32**
1063.98	1069.83	1053.20	2.05	5.25	5.36	1061.16	0.58	0.46	0.00	1.04	**0.22**
1051.50	1069.83	1036.95	3.05	6.58	10.13	1061.16	0.57	0.48	0.00	1.04	0.40
1065.63	1069.83	1055.35	1.96	5.09	4.83	1061.16	0.58	0.46	0.00	1.04	0.20
1050.41	1069.83	1035.60	3.10	6.62	10.22	1061.16	0.57	0.48	0.00	1.04	0.41
1050.87	1069.83	1036.13	3.12	6.66	10.46	1061.16	0.57	0.48	0.00	1.04	0.42
1053.00	1069.83	1038.97	2.85	6.33	9.14	1061.16	0.57	0.48	0.00	1.04	0.36
1050.44	1069.83	1035.62	3.12	6.64	10.34	1061.16	0.57	0.48	0.00	1.04	0.41
1068.65	1069.83	1059.22	1.84	4.88	4.23	1061.16	0.58	0.46	0.00	1.04	0.18
1080.18	1069.83	1074.10	1.62	4.01	2.09	1061.16	0.59	0.45	0.00	1.04	0.10
1059.13	1069.83	1046.98	2.30	5.62	6.50	1061.16	0.57	0.47	0.00	1.04	**0.26**
1049.45	1069.83	1034.16	3.43	7.00	11.95	1061.16	0.56	0.48	0.00	1.04	0.48
1062.73	1069.83	1051.60	2.11	5.34	5.62	1061.16	0.58	0.47	0.00	1.04	**0.23**
1052.71	1069.83	1038.58	2.87	6.37	9.27	1061.16	0.57	0.48	0.00	1.04	0.37
1055.29	1069.83	1042.02	2.56	5.96	7.62	1061.16	0.57	0.47	0.00	1.04	**0.31**
1055.61	1069.83	1042.42	2.55	5.95	7.63	1061.16	0.57	0.47	0.00	1.04	**0.30**
1057.23	1069.83	1044.54	2.42	5.77	6.98	1061.16	0.57	0.47	0.00	1.04	**0.28**
1051.48	1069.83	1036.89	3.10	6.63	10.41	1061.16	0.57	0.48	0.00	1.04	0.41
1070.86	1069.83	1062.08	1.77	4.70	3.71	1061.16	0.58	0.46	0.00	1.04	0.16
1063.94	1069.83	1053.18	2.04	5.22	5.19	1061.16	0.58	0.46	0.00	1.04	**0.21**
1053.18	1069.83	1039.26	2.77	6.22	8.62	1061.16	0.57	0.48	0.00	1.04	0.34
1062.27	1069.83	1051.03	2.12	5.35	5.58	1061.16	0.58	0.47	0.00	1.04	**0.23**

1061.32	1069.83	1049.81	2.17	5.42	5.81	1061.16	0.57	0.47	0.00	1.04	**0.24**
1054.07	1069.83	1040.44	2.66	6.09	8.09	1061.16	0.57	0.47	0.00	1.04	**0.32**
Plagioclase Phenocryst Rims											
Sample AP2-00-03 Rims											
1111.29	1117.98	1112.99	2.71	4.88	11.28	1130.73	0.51	0.52	0.00	1.03	0.45
1112.28	1117.98	1114.31	2.61	4.77	10.86	1130.73	0.51	0.52	0.00	1.03	0.42
1111.59	1117.98	1113.00	3.08	5.38	13.70	1130.73	0.51	0.52	0.00	1.03	0.55
1132.73	1117.98	1141.40	1.52	3.01	5.12	1130.73	0.53	0.50	0.00	1.02	0.18
1134.03	1117.98	1143.07	1.49	2.97	5.11	1130.73	0.53	0.50	0.00	1.02	0.17
1112.39	1117.98	1114.45	2.60	4.76	10.82	1130.73	0.51	0.52	0.00	1.03	0.42
1133.86	1117.98	1142.86	1.49	2.97	5.09	1130.73	0.53	0.50	0.00	1.02	0.17
1110.53	1117.98	1111.92	2.82	5.02	11.86	1130.73	0.51	0.53	0.00	1.03	0.47
1111.14	1117.98	1112.71	2.79	5.00	11.82	1130.73	0.51	0.52	0.00	1.03	0.47
1113.05	1117.98	1115.35	2.53	4.67	10.45	1130.73	0.51	0.52	0.00	1.03	0.41
1109.65	1117.98	1110.78	2.88	5.09	12.09	1130.73	0.51	0.53	0.00	1.03	0.49
1110.70	1117.98	1112.07	2.88	5.11	12.32	1130.73	0.51	0.53	0.00	1.03	0.49
1132.74	1117.98	1141.39	1.52	3.04	5.25	1130.73	0.53	0.50	0.00	1.02	0.18
1122.48	1117.98	1127.84	1.91	3.83	7.58	1130.73	0.52	0.51	0.00	1.03	**0.28**
1111.01	1117.98	1112.64	2.70	4.86	11.17	1130.73	0.51	0.53	0.00	1.03	0.44
1252.46	1117.98	1291.20	6.09	9.95	50.58	1130.73	0.62	0.38	0.00	1.00	2.18
1113.67	1117.98	1116.20	2.46	4.57	10.08	1130.73	0.51	0.52	0.00	1.03	0.39
1121.61	1117.98	1126.64	1.97	3.94	8.03	1130.73	0.52	0.51	0.00	1.03	**0.29**
1111.58	1117.98	1113.39	2.66	4.82	11.03	1130.73	0.51	0.52	0.00	1.03	0.43
1119.70	1117.98	1124.11	2.09	4.13	8.66	1130.73	0.52	0.51	0.00	1.03	**0.32**
1112.06	1117.98	1114.04	2.60	4.75	10.74	1130.73	0.51	0.52	0.00	1.03	0.42
1109.04	1117.98	1109.92	2.98	5.20	12.54	1130.73	0.51	0.53	0.00	1.03	0.51
1124.96	1117.98	1131.11	1.79	3.62	6.94	1130.73	0.52	0.51	0.00	1.03	**0.25**
1134.75	1117.98	1144.06	1.48	2.87	4.80	1130.73	0.53	0.50	0.00	1.02	0.16
1111.89	1117.98	1113.85	2.58	4.71	10.55	1130.73	0.51	0.52	0.00	1.03	0.42

Sample AP2-00-10 Rims											
1106.31	1112.85	1107.69	2.67	5.03	9.90	1120.96	0.52	0.49	0.00	1.01	0.36
1104.10	1112.85	1104.72	2.87	5.28	10.87	1120.96	0.52	0.49	0.00	1.01	0.40
1103.31	1112.85	1103.70	2.92	5.33	11.02	1120.96	0.52	0.49	0.00	1.01	0.41
1103.31	1112.85	1103.71	2.91	5.32	10.94	1120.96	0.52	0.49	0.00	1.01	0.40
1105.34	1112.85	1106.34	2.79	5.20	10.59	1120.96	0.52	0.49	0.00	1.01	0.38
1101.56	1112.85	1101.53	2.93	5.30	10.68	1120.96	0.52	0.49	0.00	1.01	0.40
1119.11	1112.85	1124.58	1.95	3.95	6.34	1120.96	0.53	0.47	0.00	1.01	**0.21**
1117.83	1112.85	1122.84	2.02	4.11	6.96	1120.96	0.53	0.47	0.00	1.01	**0.23**
1104.87	1112.85	1105.74	2.81	5.22	10.65	1120.96	0.52	0.49	0.00	1.01	0.39
1118.09	1112.85	1123.21	2.00	4.05	6.69	1120.96	0.53	0.47	0.00	1.01	**0.22**
1103.58	1112.85	1104.07	2.89	5.29	10.87	1120.96	0.52	0.49	0.00	1.01	0.40
1105.66	1112.85	1106.83	2.71	5.07	10.05	1120.96	0.52	0.49	0.00	1.01	0.36
1121.53	1112.85	1127.73	1.87	3.81	6.03	1120.96	0.53	0.47	0.00	1.00	0.20
1111.19	1112.85	1114.20	2.29	4.48	7.90	1120.96	0.53	0.48	0.00	1.01	**0.28**
1119.67	1112.85	1125.31	1.94	3.92	6.28	1120.96	0.53	0.47	0.00	1.01	0.21
1114.23	1112.85	1118.17	2.15	4.29	7.33	1120.96	0.53	0.48	0.00	1.01	**0.25**
1099.42	1112.85	1098.63	3.17	5.59	11.84	1120.96	0.52	0.50	0.00	1.01	0.46
1108.29	1112.85	1110.28	2.54	4.88	9.41	1120.96	0.52	0.49	0.00	1.01	0.33
1107.53	1112.85	1109.37	2.52	4.80	8.98	1120.96	0.52	0.49	0.00	1.01	**0.32**
1108.52	1112.85	1110.62	2.50	4.80	9.10	1120.96	0.52	0.48	0.00	1.01	**0.32**
1107.69	1112.85	1109.50	2.56	4.90	9.45	1120.96	0.52	0.49	0.00	1.01	0.34
1108.20	1112.85	1110.20	2.52	4.83	9.20	1120.96	0.52	0.49	0.00	1.01	**0.33**
1118.71	1112.85	1124.02	1.98	4.03	6.68	1120.96	0.53	0.47	0.00	1.01	**0.22**
1111.91	1112.85	1115.07	2.30	4.54	8.25	1120.96	0.53	0.48	0.00	1.01	**0.29**
1123.56	1112.85	1130.38	1.81	3.70	5.79	1120.96	0.54	0.47	0.00	1.00	0.18
Sample AP2-00-42 Rims											
1188.44	1164.42	1203.41	2.01	0.86	4.93	1180.70	0.55	0.45	0.00	1.00	0.01
1187.88	1164.42	1202.72	2.12	0.82	6.68	1180.70	0.55	0.45	0.00	1.00	0.01

1175.96	1164.42	1186.19	0.94	2.64	6.11	1180.70	0.54	0.46	0.00	1.00	**0.23**
1177.22	1164.42	1187.87	0.91	2.56	5.89	1180.70	0.54	0.46	0.00	1.00	**0.22**
1168.25	1164.42	1176.03	1.19	3.17	7.57	1180.70	0.53	0.47	0.00	1.00	**0.31**
1176.26	1164.42	1186.58	0.93	2.64	6.15	1180.70	0.54	0.46	0.00	1.00	**0.23**
1173.40	1164.42	1182.81	1.01	2.83	6.62	1180.70	0.54	0.46	0.00	1.00	**0.26**
1172.01	1164.42	1180.96	1.06	2.95	7.03	1180.70	0.54	0.46	0.00	1.00	**0.28**
1171.02	1164.42	1179.66	1.09	3.01	7.14	1180.70	0.54	0.46	0.00	1.00	**0.29**
1170.57	1164.42	1179.05	1.11	3.06	7.34	1180.70	0.54	0.46	0.00	1.00	**0.30**
1175.51	1164.42	1185.59	0.95	2.68	6.23	1180.70	0.54	0.46	0.00	1.00	**0.24**
1177.66	1164.42	1188.44	0.91	2.53	5.83	1180.70	0.54	0.46	0.00	1.00	**0.22**
1173.81	1164.42	1183.34	1.00	2.81	6.61	1180.70	0.54	0.46	0.00	1.00	**0.26**
1172.02	1164.42	1181.00	1.05	2.91	6.84	1180.70	0.54	0.46	0.00	1.00	**0.27**
1175.74	1164.42	1185.90	0.95	2.66	6.18	1180.70	0.54	0.46	0.00	1.00	**0.24**
1176.70	1164.42	1187.16	0.92	2.61	6.06	1180.70	0.54	0.46	0.00	1.00	**0.23**
1173.20	1164.42	1182.53	1.02	2.85	6.70	1180.70	0.54	0.46	0.00	1.00	**0.26**
1145.01	1164.42	1145.36	2.66	5.05	13.79	1180.70	0.52	0.49	0.00	1.01	0.72
1170.00	1164.42	1178.32	1.12	3.06	7.28	1180.70	0.54	0.46	0.00	1.00	**0.30**
1176.27	1164.42	1186.60	0.94	2.62	6.05	1180.70	0.54	0.46	0.00	1.00	**0.23**
1168.34	1164.42	1176.13	1.19	3.19	7.66	1180.70	0.54	0.47	0.00	1.00	**0.32**
1167.43	1164.42	1174.95	1.22	3.22	7.70	1180.70	0.53	0.47	0.00	1.00	**0.32**
1175.36	1164.42	1185.40	0.96	2.70	6.27	1180.70	0.54	0.46	0.00	1.00	**0.24**
1177.14	1164.42	1187.75	0.92	2.57	5.94	1180.70	0.54	0.46	0.00	1.00	**0.22**
1174.00	1164.42	1183.60	0.99	2.79	6.52	1180.70	0.54	0.46	0.00	1.00	**0.25**
Sample AP2-00-48 Rims											
1237.20	1225.67	1237.87	0.49	2.50	7.44	1221.64	0.60	0.33	0.00	0.93	0.14
1210.92	1225.67	1203.72	1.09	4.33	12.64	1221.64	0.58	0.35	0.00	0.93	0.43
1237.23	1225.67	1237.93	0.51	2.47	7.33	1221.64	0.60	0.33	0.00	0.93	0.14
1210.76	1225.67	1203.50	1.11	4.37	12.78	1221.64	0.58	0.35	0.00	0.93	0.44
1237.65	1225.67	1238.48	0.51	2.44	7.27	1221.64	0.60	0.33	0.00	0.93	0.13

1220.37	1225.67	1215.92	0.72	3.72	10.85	1221.64	0.59	0.34	0.00	0.93	**0.32**
1237.53	1225.67	1238.31	0.51	2.45	7.31	1221.64	0.60	0.33	0.00	0.93	0.13
1239.19	1225.67	1240.52	0.57	2.28	6.90	1221.64	0.60	0.33	0.00	0.93	0.11
1236.98	1225.67	1237.57	0.48	2.52	7.51	1221.64	0.60	0.33	0.00	0.93	0.14
1236.79	1225.67	1237.34	0.49	2.52	7.47	1221.64	0.60	0.33	0.00	0.93	0.14
1237.11	1225.67	1237.76	0.50	2.49	7.39	1221.64	0.60	0.33	0.00	0.93	0.14
1237.22	1225.67	1237.90	0.50	2.48	7.37	1221.64	0.60	0.33	0.00	0.93	0.14
1239.19	1225.67	1240.52	0.58	2.28	6.88	1221.64	0.60	0.33	0.00	0.93	0.11
1236.34	1225.67	1236.75	0.48	2.56	7.59	1221.64	0.60	0.33	0.00	0.93	0.15
1208.51	1225.67	1200.60	1.22	4.51	13.21	1221.64	0.58	0.35	0.00	0.93	0.47
1236.69	1225.67	1237.20	0.49	2.52	7.49	1221.64	0.60	0.33	0.00	0.93	0.14
1237.39	1225.67	1238.12	0.50	2.46	7.34	1221.64	0.60	0.33	0.00	0.93	0.14
1232.28	1225.67	1231.40	0.46	2.90	8.51	1221.64	0.60	0.34	0.00	0.93	0.19
1233.83	1225.67	1233.44	0.46	2.77	8.17	1221.64	0.60	0.33	0.00	0.93	0.18
1237.93	1225.67	1238.85	0.52	2.41	7.19	1221.64	0.60	0.33	0.00	0.93	0.13
1215.64	1225.67	1209.80	0.90	4.04	11.80	1221.64	0.58	0.35	0.00	0.93	0.38
1238.00	1225.67	1238.93	0.51	2.42	7.27	1221.64	0.60	0.33	0.00	0.93	0.13
1226.43	1225.67	1223.79	0.55	3.30	9.59	1221.64	0.59	0.34	0.00	0.93	**0.25**
1231.02	1225.67	1229.76	0.47	2.99	8.76	1221.64	0.59	0.34	0.00	0.93	0.21
1235.89	1225.67	1236.14	0.47	2.61	7.73	1221.64	0.60	0.33	0.00	0.93	0.16
1225.29	1225.67	1222.29	0.57	3.41	9.95	1221.64	0.59	0.34	0.00	0.93	**0.27**
Sample AP2-00-84 Rims											
1101.32	1083.91	1108.22	1.76	2.99	4.26	1097.52	0.51	0.53	0.00	1.04	0.15
1076.70	1083.91	1075.65	3.28	5.22	11.73	1097.52	0.49	0.57	0.00	1.05	0.46
1076.47	1083.91	1075.10	3.60	5.61	13.52	1097.52	0.49	0.57	0.00	1.05	0.54
1075.66	1083.91	1074.05	3.66	5.66	13.68	1097.52	0.49	0.57	0.00	1.06	0.55
1078.96	1083.91	1078.81	2.90	4.75	9.74	1097.52	0.49	0.56	0.00	1.05	0.38
1104.32	1083.91	1112.18	1.70	2.75	3.67	1097.52	0.51	0.53	0.00	1.04	0.13
1078.18	1083.91	1077.69	3.05	4.95	10.56	1097.52	0.49	0.56	0.00	1.05	0.41

1079.73	1083.91	1079.80	2.86	4.72	9.65	1097.52	0.49	0.56	0.00	1.05	0.37
1088.35	1083.91	1091.09	2.31	4.05	7.49	1097.52	0.50	0.55	0.00	1.05	**0.27**
1075.86	1083.91	1074.55	3.35	5.29	11.95	1097.52	0.49	0.57	0.00	1.06	0.48
1075.75	1083.91	1074.26	3.53	5.51	12.98	1097.52	0.49	0.57	0.00	1.06	0.52
1078.63	1083.91	1078.25	3.05	4.97	10.70	1097.52	0.49	0.56	0.00	1.05	0.41
1075.65	1083.91	1074.21	3.45	5.41	12.49	1097.52	0.49	0.57	0.00	1.06	0.50
1102.54	1083.91	1109.83	1.73	2.88	3.98	1097.52	0.51	0.53	0.00	1.04	0.14
1098.75	1083.91	1104.83	1.82	3.18	4.80	1097.52	0.51	0.53	0.00	1.04	0.17
1161.80	1083.91	1182.36	4.19	7.49	31.59	1097.52	0.56	0.46	0.00	1.02	0.92
1103.39	1083.91	1110.95	1.71	2.84	3.90	1097.52	0.51	0.53	0.00	1.04	0.14
1084.48	1083.91	1086.08	2.50	4.27	8.09	1097.52	0.50	0.55	0.00	1.05	**0.30**
1090.59	1083.91	1094.14	2.13	3.73	6.28	1097.52	0.50	0.55	0.00	1.05	**0.23**
1077.39	1083.91	1076.66	3.12	5.02	10.84	1097.52	0.49	0.56	0.00	1.05	0.43
1076.86	1083.91	1075.94	3.18	5.10	11.13	1097.52	0.49	0.56	0.00	1.05	0.44
1076.55	1083.91	1075.43	3.33	5.28	11.95	1097.52	0.49	0.57	0.00	1.05	0.47
1077.00	1083.91	1076.06	3.24	5.18	11.54	1097.52	0.49	0.56	0.00	1.05	0.45
1097.46	1083.91	1103.14	1.86	3.26	4.97	1097.52	0.51	0.54	0.00	1.04	0.18
1074.49	1083.91	1072.45	3.84	5.84	14.45	1097.52	0.49	0.57	0.00	1.06	0.60
Sample AP2-00-88 Rims											
1109.97	1102.17	1114.99	1.77	3.14	6.78	1119.73	0.46	0.62	0.00	1.09	**0.22**
1099.30	1102.17	1100.81	2.58	4.19	10.56	1119.73	0.46	0.64	0.00	1.09	0.35
1118.15	1102.17	1125.80	1.42	2.51	4.82	1119.73	0.47	0.61	0.00	1.08	0.15
1120.95	1102.17	1129.47	1.34	2.33	4.37	1119.73	0.47	0.60	0.00	1.08	0.14
1095.47	1102.17	1095.83	2.84	4.44	11.34	1119.73	0.45	0.64	0.00	1.10	0.39
1095.03	1102.17	1095.00	3.16	4.83	13.18	1119.73	0.45	0.64	0.00	1.10	0.45
1092.20	1102.17	1091.43	3.24	4.85	13.00	1119.73	0.45	0.65	0.00	1.10	0.46
1095.36	1102.17	1095.59	2.95	4.58	12.02	1119.73	0.45	0.64	0.00	1.10	0.41
1094.83	1102.17	1094.81	3.08	4.72	12.63	1119.73	0.45	0.64	0.00	1.10	0.44
1093.98	1102.17	1093.74	3.11	4.74	12.65	1119.73	0.45	0.65	0.00	1.10	0.44

1116.44	1102.17	1123.55	1.48	2.63	5.17	1119.73	0.47	0.61	0.00	1.08	0.17
1116.31	1102.17	1123.40	1.48	2.60	5.03	1119.73	0.47	0.61	0.00	1.08	0.16
1118.79	1102.17	1126.64	1.40	2.46	4.71	1119.73	0.47	0.61	0.00	1.08	0.15
1111.24	1102.17	1116.73	1.68	2.96	6.08	1119.73	0.47	0.62	0.00	1.08	0.20
1100.95	1102.17	1102.13	3.45	5.27	15.89	1119.73	0.46	0.63	0.00	1.09	0.54
1114.22	1102.17	1120.62	1.56	2.78	5.58	1119.73	0.47	0.61	0.00	1.08	0.18
1098.45	1102.17	1099.76	2.58	4.16	10.32	1119.73	0.46	0.64	0.00	1.09	0.34
1109.67	1102.17	1112.67	3.93	5.92	19.87	1119.73	0.46	0.62	0.00	1.09	0.68
1108.51	1102.17	1113.10	1.83	3.20	6.89	1119.73	0.46	0.62	0.00	1.09	**0.22**
1095.84	1102.17	1096.14	3.00	4.65	12.39	1119.73	0.45	0.64	0.00	1.10	0.42
1148.63	1102.17	1161.11	4.91	7.40	30.88	1119.73	0.49	0.57	0.00	1.06	1.12
1094.70	1102.17	1094.72	3.00	4.63	12.16	1119.73	0.45	0.64	0.00	1.10	0.42
1174.23	1102.17	1194.31	4.11	7.01	31.62	1119.73	0.51	0.53	0.00	1.04	0.89
1095.90	1102.17	1096.33	2.86	4.48	11.58	1119.73	0.45	0.64	0.00	1.10	0.39
1096.65	1102.17	1097.37	2.74	4.34	10.98	1119.73	0.45	0.64	0.00	1.10	0.37

Appendix I. Thermobarometry models of clinopyroxene phenocrysts (Putirka, 2008). K_D values in bold are in equilibrium with the whole rock composition.

Clinopyroxene Phenocryst Thermobarometry Models								
Putirka et al (1996)						Putirka et al (2003)		
Eqn T1		Eqn T2		Eqn P1				
T(K) P-ind	T(C) P-ind	T(K) P-dep	T(C) P-dep	P(kbar)	T(K)	P(kbar)	T(C)	KD(Fe-Mg)
Sample AP2-00-03 Cores								
1424.47	1151.32	1412.99	1139.84	2.11	1352.19	4.67	1079.04	**0.28**
1424.98	1151.83	1412.71	1139.56	1.97	1354.40	4.55	1081.25	**0.27**
1419.76	1146.61	1407.44	1134.29	1.43	1349.16	4.15	1076.01	**0.27**
1426.58	1153.43	1415.21	1142.06	2.35	1354.11	4.85	1080.96	**0.29**
1431.26	1158.11	1420.20	1147.05	2.89	1358.28	5.26	1085.13	**0.29**
1425.72	1152.57	1414.24	1141.09	2.24	1353.46	4.76	1080.31	**0.27**
1428.04	1154.89	1416.82	1143.67	2.53	1355.31	4.99	1082.16	**0.26**
1424.62	1151.47	1412.55	1139.40	1.98	1353.61	4.56	1080.46	**0.27**
1418.39	1145.24	1406.00	1132.85	1.28	1347.93	4.03	1074.78	**0.28**
1424.73	1151.58	1413.01	1139.86	2.08	1352.97	4.64	1079.82	**0.25**
Sample AP2-00-88 Cores								
1430.69	1157.54	1415.21	1142.06	2.53	1342.55	6.02	1069.40	**0.25**
1429.99	1156.84	1414.08	1140.93	2.36	1342.75	5.88	1069.60	**0.25**
1435.41	1162.26	1420.02	1146.87	3.02	1347.08	6.39	1073.93	**0.32**
1432.47	1159.32	1416.16	1143.01	2.50	1346.06	5.99	1072.91	**0.32**
Sample AP2-00-84 Cores								
1431.0635	1157.9135	1415.7709	1142.6209	2.8204	1343.24	6.38838	1070.09	0.2818495
Sample AP2-00-03 Rims								
1431.23	1158.08	1420.38	1147.23	2.93	1357.82	5.29	1084.67	**0.28**
1424.97	1151.82	1413.44	1140.29	2.15	1352.80	4.70	1079.65	**0.26**
1429.29	1156.14	1418.17	1145.02	2.68	1356.39	5.10	1083.24	**0.26**

1429.43	1156.28	1418.15	1145.00	2.65	1356.88	5.08	1083.73	**0.27**
1425.36	1152.21	1413.78	1140.63	2.18	1353.31	4.72	1080.16	**0.26**
1433.73	1160.58	1422.75	1149.60	3.14	1360.69	5.46	1087.54	**0.30**
1422.63	1149.48	1410.27	1137.12	1.71	1352.19	4.36	1079.04	**0.26**
1427.31	1154.16	1415.79	1142.64	2.38	1355.19	4.87	1082.04	**0.26**
1435.08	1161.93	1424.46	1151.31	3.36	1361.35	5.62	1088.20	**0.28**
1421.55	1148.40	1409.33	1136.18	1.64	1350.79	4.30	1077.64	**0.25**
1428.72	1155.57	1417.17	1144.02	2.52	1356.69	4.97	1083.54	**0.27**
Sample AP2-00-88 Rims								
1417.01	1143.86	1400.39	1127.24	0.87	1331.44	4.75	1058.29	**0.25**
1415.81	1142.66	1399.35	1126.20	0.79	1329.94	4.69	1056.79	**0.24**
1423.45	1150.30	1407.56	1134.41	1.71	1336.22	5.39	1063.07	**0.24**
1420.93	1147.78	1401.81	1128.66	0.63	1340.57	4.56	1067.42	**0.25**
1426.03	1152.88	1406.58	1133.43	1.07	1346.28	4.89	1073.13	**0.24**
1415.62	1142.47	1398.44	1125.29	0.59	1331.27	4.53	1058.12	**0.24**
Sample AP2-00-84 Rims								
1426.45	1153.30	1408.67	1135.52	1.74	1343.84	5.55	1070.69	**0.25**
1434.31	1161.16	1419.26	1146.11	3.20	1346.00	6.68	1072.85	**0.29**
Sample AP2-00-42 Rims								
1462.01	1188.86	1454.04	1180.89	4.97	1420.36	5.79	1147.21	0.42
Sample AP2-00-88 Mantles								
1421.50	1148.35	1402.69	1129.54	0.77	1340.50	4.67	1067.35	0.23
1428.52	1155.37	1410.36	1137.21	1.65	1345.99	5.34	1072.84	0.22
1428.70	1155.55	1410.46	1137.31	1.64	1346.35	5.33	1073.20	0.21
1427.91	1154.76	1409.48	1136.33	1.51	1345.98	5.24	1072.83	0.20
1430.96	1157.81	1413.11	1139.96	1.97	1347.77	5.58	1074.62	0.19
1429.91	1156.76	1412.20	1139.05	1.90	1346.43	5.53	1073.28	0.18
1420.95	1147.80	1402.91	1129.76	0.91	1338.29	4.78	1065.14	0.16
1424.34	1151.19	1407.00	1133.85	1.43	1340.14	5.17	1066.99	0.16

1424.54	1151.39	1407.04	1133.89	1.41	1340.69	5.16	1067.54	0.16
1420.17	1147.02	1401.97	1128.82	0.79	1337.87	4.68	1064.72	0.16
1411.78	1138.63	1392.06	1118.91	-0.46	1332.99	3.73	1059.84	0.16
1416.98	1143.83	1398.11	1124.96	0.29	1336.18	4.30	1063.03	0.16
1411.92	1138.77	1392.47	1119.32	-0.38	1332.52	3.79	1059.37	0.16
1412.91	1139.76	1393.94	1120.79	-0.15	1332.45	3.96	1059.30	0.16
1414.27	1141.12	1395.21	1122.06	-0.03	1333.96	4.05	1060.81	0.16
1413.53	1140.38	1394.38	1121.23	-0.14	1333.47	3.98	1060.32	0.16
1415.16	1142.01	1396.64	1123.49	0.19	1333.67	4.23	1060.52	0.15
1412.12	1138.97	1393.31	1120.16	-0.19	1331.36	3.93	1058.21	0.16
1413.61	1140.46	1394.86	1121.71	-0.02	1332.65	4.06	1059.50	0.15
1420.20	1147.05	1402.27	1129.12	0.86	1337.35	4.74	1064.20	0.16
1415.60	1142.45	1396.73	1123.58	0.15	1334.86	4.19	1061.71	0.16
1418.24	1145.09	1399.84	1126.69	0.54	1336.40	4.49	1063.25	0.16
1420.16	1147.01	1402.34	1129.19	0.88	1337.07	4.76	1063.92	0.16
1419.21	1146.06	1401.00	1127.85	0.69	1336.95	4.61	1063.80	0.16
1420.22	1147.07	1402.32	1129.17	0.87	1337.29	4.75	1064.14	0.16
1413.37	1140.22	1394.45	1121.30	-0.09	1332.78	4.01	1059.63	0.17
1413.06	1139.91	1394.38	1121.23	-0.06	1331.99	4.03	1058.84	0.17
1433.61	1160.46	1417.93	1144.78	2.77	1345.89	6.20	1072.74	**0.30**
1432.59	1159.44	1416.66	1143.51	2.61	1345.36	6.08	1072.21	0.31
1432.66	1159.51	1416.91	1143.76	2.66	1345.06	6.12	1071.91	0.32
1430.53	1157.38	1414.58	1141.43	2.40	1343.36	5.92	1070.21	0.32
1421.34	1148.19	1401.03	1127.88	0.37	1343.53	4.36	1070.38	0.22
1422.30	1149.15	1402.11	1128.96	0.50	1344.19	4.46	1071.04	0.19
1425.53	1152.38	1407.32	1134.17	1.33	1343.17	5.10	1070.02	0.18
1422.22	1149.07	1403.53	1130.38	0.87	1340.92	4.75	1067.77	0.17
1417.93	1144.78	1398.91	1125.76	0.35	1337.44	4.35	1064.29	0.16
1423.08	1149.93	1404.70	1131.55	1.04	1341.12	4.87	1067.97	0.16

1421.18	1148.03	1403.04	1129.89	0.91	1338.72	4.77	1065.57	0.16
1422.89	1149.74	1404.66	1131.51	1.06	1340.61	4.89	1067.46	0.16
1415.32	1142.17	1396.27	1123.12	0.08	1334.97	4.14	1061.82	0.16
1418.08	1144.93	1399.44	1126.29	0.46	1336.78	4.43	1063.63	0.17
1421.50	1148.35	1403.12	1129.97	0.88	1339.56	4.75	1066.41	0.18
1417.97	1144.82	1399.63	1126.48	0.53	1336.03	4.48	1062.88	0.17
1415.79	1142.64	1396.93	1123.78	0.17	1335.01	4.21	1061.86	0.17
1410.11	1136.96	1390.98	1117.83	-0.48	1330.09	3.71	1056.94	0.17
1424.88	1151.73	1408.02	1134.87	1.61	1339.67	5.31	1066.52	0.23
1436.33	1163.18	1420.70	1147.55	3.05	1348.50	6.42	1075.35	0.32
1431.48	1158.33	1415.29	1142.14	2.43	1344.82	5.94	1071.67	0.32
1433.57	1160.42	1418.01	1144.86	2.80	1345.56	6.22	1072.41	0.32
1431.19	1158.04	1415.13	1141.98	2.44	1344.26	5.95	1071.11	0.32
1434.19	1161.04	1418.29	1145.14	2.77	1346.93	6.20	1073.78	0.33
1435.63	1162.48	1420.09	1146.94	3.01	1347.61	6.38	1074.46	0.32
1435.26	1162.11	1419.57	1146.42	2.93	1347.56	6.32	1074.41	0.32
1433.57	1160.42	1417.74	1144.59	2.73	1346.13	6.17	1072.98	0.33

Appendix J. Thermobarometry models of orthopyroxene phenocrysts (Putirka, 2008). K_D values in bold are in equilibrium with the whole rock composition.

Orthopyroxene Phenocryst Thermobarometry Models						
Thermometers			Barometers (use 28a as input for T)			
Putirka (2008) RiMG			Putirka (2008) RiMG			
Beattie (1993)	Eqn. 28a	Eqn. 28b	Eqn 29a	Eqn 29b	Eqn 29c	Test for Equilibrium
T(C)	T(C)	T(C)	P(GPa)	P(GPa)	P(GPa)	KD(Fe-Mg)
AP2-00-03 Cores						
1213.82	1094.92	1117.06	0.23	0.28	-0.46	0.42
1191.92	1089.03	1099.88	0.23	0.24	-0.56	0.40
1250.32	1120.66	1140.63	0.34	0.41	--	0.41
1250.32	1120.53	1140.63	0.24	0.30	--	0.40
1283.17	1103.42	1156.63	0.20	--	--	0.22
1286.82	1144.53	1158.11	0.36	0.49	--	0.40
1151.77	1039.71	1062.27	-0.20	--	-1.00	0.21
1140.82	1064.72	1050.59	-0.06	0.20	-0.87	0.39
1140.82	1057.99	1050.59	0.33	0.21	-0.53	0.42
1140.82	1059.97	1050.59	0.30	0.20	-0.39	0.41
1140.82	1058.37	1050.59	0.16	0.16	-0.64	0.42
1140.82	1062.97	1050.59	0.29	0.17	-0.44	0.41
1140.82	1035.97	1050.59	--	--	-0.98	0.21
1140.82	1021.36	1050.59	--	--	--	**0.23**
1140.82	1057.52	1050.59	0.17	0.14	--	0.42
1140.82	1067.41	1050.59	0.26	0.09	--	0.39
1140.82	1035.32	1050.59	--	--	--	0.21
1140.82	1073.59	1050.59	0.20	0.12	--	0.37
AP2-00-88 Cores						
1219.40	1101.02	1108.21	0.22	0.34	--	0.37
1197.42	1068.94	1091.10	0.21	0.32	-0.45	0.45

1256.04	1093.40	1131.72	--	--	-1.01	0.19
1256.04	1122.32	1131.72	0.12	0.44	--	0.37
1289.02	1138.94	1147.71	0.30	0.46	-0.45	0.37
1292.68	1149.53	1149.20	0.32	0.52	--	**0.35**
1146.13	1071.32	1042.03	0.28	0.17	--	**0.35**
1146.13	1073.63	1042.03	0.26	0.16	--	**0.34**
1146.13	1063.58	1042.03	0.17	0.12	--	0.36
1146.13	1052.27	1042.03	0.09	0.13	--	0.40
1146.13	1054.59	1042.03	0.16	0.12	--	0.39
1146.13	1050.10	1042.03	0.14	0.12	-0.77	0.42
1146.13	1059.17	1042.03	0.26	0.19	--	0.39
1146.13	1061.93	1042.03	0.14	0.12	-0.59	0.37
1146.13	1053.20	1042.03	0.38	0.35	-0.36	0.43
1146.13	1143.89	1042.03	0.29	0.36	0.14	0.15
			AP2-00-84 Cores			
1213.27	1104.69	1096.10	0.36	0.30	-0.74	**0.34**
1140.30	--	1030.31	--	--	--	0.42
1140.30	1057.30	1030.31	0.33	0.17	-0.45	0.38
1140.30	1071.04	1030.31	0.26	0.26	--	**0.33**
1140.30	1069.83	1030.31	0.28	0.24	--	**0.34**
1140.30	1072.71	1030.31	0.08	0.22	-0.54	**0.32**
1140.30	1073.39	1030.31	0.31	0.24	-0.47	**0.33**
1140.30	1072.41	1030.31	0.34	0.23	-0.37	**0.34**
1140.30	1053.98	1030.31	0.36	0.26	--	0.40
1140.30	1049.56	1030.31	0.30	0.08	--	0.41
1140.30	1054.26	1030.31	0.35	0.23	--	0.40
1140.30	1063.26	1030.31	0.38	0.29	--	0.37
1140.30	1061.05	1030.31	0.23	0.16	--	0.36
1140.30	1059.47	1030.31	0.09	0.06	-0.68	0.37

AP2-00-42 Cores						
1229.06	1270.46	1163.39	1.97	1.08	--	0.39
1155.31	1020.23	1095.50	0.20	--	-0.89	**0.33**
1155.31	924.15	1095.50	0.06	--	-0.61	0.68
1155.31	930.62	1095.50	0.19	--	--	0.65
1155.31	1060.66	1095.50	0.09	--	-0.78	**0.24**
1155.31	1049.36	1095.50	0.02	--	--	**0.27**
1155.31	1058.63	1095.50	0.17	--	-0.95	**0.25**
1155.31	1052.27	1095.50	--	--	-0.90	**0.26**
1155.31	1129.07	1095.50	0.43	0.25	-0.43	**0.33**
1155.31	1120.50	1095.50	0.57	0.41	0.08	0.37
1155.31	1054.77	1095.50	--	--	-0.79	**0.25**
1155.31	1036.37	1095.50	--	--	-1.09	**0.30**
1155.31	1025.39	1095.50	0.09	--	--	**0.32**
1155.31	820.21	1095.50	0.94	--	1.46	1.45
1155.31	1105.73	1095.50	0.43	0.21	--	0.41
1155.31	1114.26	1095.50	0.55	0.43	--	0.39
1155.31	1113.60	1095.50	0.44	0.27	--	0.38
1155.31	1124.26	1095.50	0.52	0.32	--	0.36
1155.31	1130.22	1095.50	0.54	0.38	--	**0.35**
1155.31	1046.14	1095.50	--	--	-0.97	**0.28**
1155.31	1080.33	1095.50	--	--	--	0.21
1155.31	1065.69	1095.50	-0.08	--	--	**0.23**
AP2-00-03 Rims						
1191.92	1094.28	1099.88	0.38	0.29	--	0.39
1308.72	1176.93	1165.79	0.33	0.61	--	**0.35**
1250.32	1122.60	1140.63	0.32	0.40	-0.52	0.40
1301.42	1159.09	1163.46	0.23	0.48	-0.35	0.38
1359.82	1114.84	1175.82	-0.16	--	--	**0.27**

1228.42	1138.96	1127.23	0.63	0.50	-0.26	0.37
1151.77	956.71	1062.27	0.35	--	-0.40	0.46
1140.82	1104.42	1050.59	0.51	0.45	-0.35	**0.29**
1140.82	1064.27	1050.59	0.23	0.12	-0.82	0.39
1140.82	1111.56	1050.59	0.56	0.56	--	**0.27**
1140.82	1065.87	1050.59	0.27	0.12	--	0.39
1140.82	1070.02	1050.59	0.29	0.08	-0.88	0.38
1140.82	1027.29	1050.59	--	--	--	**0.22**
1140.82	1000.00	1050.59	--	--	--	**0.28**
1140.82	1068.61	1050.59	0.17	0.11	--	0.38
1140.82	1069.01	1050.59	0.24	0.07	--	0.38
1140.82	978.13	1050.59	0.34	--	-0.54	0.39
1140.82	1473.62	1050.59	2.87	1.64	--	0.51
AP2-00-88 Rims						
1197.42	1099.13	1091.10	1.01	0.31	--	0.59
1314.66	1152.65	1156.89	0.20	0.48	--	0.37
1256.04	1050.20	1131.72	--	--	-0.82	**0.26**
1307.34	1136.46	1154.55	0.27	0.60	-0.49	0.43
1365.96	1214.67	1167.01	0.65	0.96	--	**0.33**
1234.06	1145.20	1118.36	0.28	0.48	-0.48	**0.27**
1157.12	1119.45	1053.65	0.23	0.31	--	**0.22**
1146.13	1100.42	1042.03	0.39	0.49	--	**0.27**
1146.13	1111.90	1042.03	0.26	0.25	-0.31	**0.23**
1146.13	--	1042.03	--	--	--	1.26
1146.13	--	1042.03	--	--	--	0.64
1146.13	1090.76	1042.03	0.47	0.50	--	**0.30**
1146.13	1190.76	1042.03	1.67	0.25	--	0.56
1146.13	1060.78	1042.03	0.13	0.12	--	0.38
1146.13	--	1042.03	--	--	--	0.69

1146.13	1187.69	1042.03	1.70	0.60	0.68	**0.33**
AP2-00-84 Rims						
1191.38	1092.75	1079.08	0.32	0.25	-0.63	**0.35**
1191.38	1111.14	1079.08	0.04	0.30	--	**0.29**
1140.30	1054.20	1030.31	0.32	0.21	--	0.39
1140.30	1055.18	1030.31	0.24	0.08	--	0.39
1140.30	1176.08	1030.31	1.37	0.11	0.71	0.42
1140.30	1096.87	1030.31	0.24	0.31	--	**0.26**
1140.30	1093.27	1030.31	0.92	0.43	0.16	**0.36**
1140.30	1106.88	1030.31	0.14	0.35	-0.06	**0.24**
1140.30	1057.93	1030.31	0.29	0.14	--	0.38
1140.30	1061.00	1030.31	0.22	0.08	--	0.36
1140.30	1084.94	1030.31	0.29	0.23	--	**0.29**
1140.30	1108.99	1030.31	1.17	0.47	0.50	**0.35**
1140.30	1058.12	1030.31	0.16	0.08	-0.72	0.37
1140.30	--	1030.31	--	--	--	1.96
AP2-00-42 Rims						
1206.93	1227.71	1145.92	1.67	0.87	0.63	0.38
1206.93	1117.21	1145.92	0.66	0.29	--	0.62
1155.31	913.53	1095.50	0.09	--	-0.62	0.72
1155.31	1093.39	1095.50	0.91	0.31	--	0.73
1155.31	1100.76	1095.50	0.42	0.28	--	0.45
1155.31	--	1095.50	--	--	--	0.81
1155.31	1605.28	1095.50	2.68	1.60	--	1.07
1155.31	--	1095.50	--	--	--	2.09
1155.31	1099.70	1095.50	0.49	0.28	--	0.45
1155.31	--	1095.50	--	--	--	0.62
1155.31	--	1095.50	--	--	--	0.73
1155.31	--	1095.50	--	--	--	1.79

1155.31	1102.56	1095.50	0.66	0.20	0.41	0.61
1155.31	1131.18	1095.50	0.40	0.29	-0.16	**0.32**
1155.31	1076.39	1095.50	0.54	0.23	-0.73	0.56
1155.31	1113.21	1095.50	1.19	0.23	--	0.73
1155.31	--	1095.50	--	--	--	1.31
1155.31	1148.43	1095.50	1.62	0.35	--	0.94
1155.31	--	1095.50	--	--	--	1.02
1155.31	--	1095.50	--	--	--	0.89
1155.31	1025.40	1095.50	0.23	--	--	**0.33**
1155.31	1477.39	1095.50	1.02	--	--	0.53
1155.31	1143.50	1095.50	0.63	0.48	0.12	**0.31**
AP2-00-03 Mantles						
1140.82	1039.73	1050.59	0.07	--	--	0.21
1140.82	1039.75	1050.59	-0.15	--	--	0.21
1140.82	1039.04	1050.59	--	--	-1.18	0.21
1140.82	1041.98	1050.59	-0.08	--	-0.96	0.20
1140.82	1044.49	1050.59	-0.05	--	--	0.20
1140.82	1046.61	1050.59	--	--	--	0.19
1140.82	1044.97	1050.59	-0.32	--	--	0.20
1140.82	1045.76	1050.59	-0.22	--	--	0.20
1140.82	1044.21	1050.59	0.05	--	--	0.20
1140.82	1035.40	1050.59	--	--	-1.05	0.21
1140.82	1037.62	1050.59	0.07	--	-1.15	0.21
1140.82	1138.16	1050.59	1.42	0.39	0.39	0.46
1140.82	1082.44	1050.59	0.40	0.22	-0.63	0.38
1140.82	1100.79	1050.59	0.23	0.18	-0.39	**0.30**
1140.82	1111.38	1050.59	0.19	0.22	-0.49	**0.26**
1140.82	1113.98	1050.59	0.17	0.22	-0.25	**0.25**
1140.82	1114.61	1050.59	0.18	0.25	--	**0.25**

1140.82	1116.73	1050.59	0.12	0.25	-0.42	**0.25**
1140.82	1118.47	1050.59	0.23	0.23	-0.38	**0.24**
1140.82	1116.55	1050.59	0.23	0.23	-0.52	**0.25**
1140.82	1107.36	1050.59	0.20	0.18	--	**0.27**
1140.82	1094.61	1050.59	0.17	0.12	-0.55	**0.31**
1140.82	1081.59	1050.59	0.24	0.12	-0.53	**0.34**
1140.82	1076.56	1050.59	0.33	0.12	--	**0.36**
1140.82	1073.75	1050.59	0.26	0.11	-0.43	0.37
1140.82	1070.69	1050.59	0.21	0.12	--	0.38
AP2-00-88 Mantles						
1157.12	1119.25	1053.65	0.36	0.39	-0.13	**0.23**
1146.13	1115.66	1042.03	0.31	0.32	-0.07	**0.22**
1146.13	1068.92	1042.03	0.16	0.14	--	**0.34**
1146.13	1079.38	1042.03	0.65	0.28	--	0.37
1146.13	1084.68	1042.03	0.23	0.30	-0.15	**0.30**
1146.13	1111.68	1042.03	0.19	0.23	-0.13	**0.23**
1146.13	1126.77	1042.03	0.18	0.24	-0.06	0.19
1146.13	1131.79	1042.03	0.11	0.27	0.03	0.18
1146.13	1130.82	1042.03	0.06	0.24	-0.02	0.18
1146.13	1113.51	1042.03	0.13	0.21	-0.06	**0.22**
1146.13	1089.38	1042.03	0.13	0.19	-0.40	**0.29**
1146.13	1076.78	1042.03	0.31	0.20	--	**0.32**
1146.13	1071.45	1042.03	0.15	0.21	-0.69	**0.34**
1146.13	1070.71	1042.03	0.27	0.18	--	**0.35**
1146.13	1071.30	1042.03	0.28	0.17	--	**0.35**
1146.13	1070.21	1042.03	0.16	0.20	-0.54	**0.34**
1146.13	1068.55	1042.03	0.27	0.18	--	**0.35**
1146.13	1072.53	1042.03	0.19	0.18	--	**0.34**
1146.13	1073.08	1042.03	0.17	0.17	--	**0.34**

1146.13	1069.54	1042.03	0.29	0.18	-0.52	**0.35**
1146.13	1070.33	1042.03	0.05	0.18	-0.43	**0.35**
1146.13	1073.10	1042.03	0.24	0.16	--	**0.34**
1146.13	1102.79	1042.03	0.33	0.38	-0.05	**0.26**
1146.13	1102.66	1042.03	0.29	0.40	--	**0.26**
1146.13	1103.38	1042.03	0.00	0.43	--	**0.26**
1146.13	1102.77	1042.03	0.42	0.48	--	**0.26**
1146.13	1107.42	1042.03	0.34	0.44	-0.17	**0.25**
1146.13	1114.40	1042.03	0.43	0.48	0.24	**0.24**
1146.13	1115.32	1042.03	0.40	0.51	0.06	**0.24**
1146.13	1046.60	1042.03	0.24	0.14	-0.71	0.44
1146.13	1058.85	1042.03	0.28	0.25	--	0.40
1146.13	1078.27	1042.03	0.21	0.26	--	**0.33**
1146.13	1100.67	1042.03	0.30	0.51	--	**0.27**
1146.13	1122.65	1042.03	0.47	0.55	0.46	0.22
1146.13	1132.19	1042.03	0.43	0.53	0.46	0.20
1146.13	1134.11	1042.03	0.52	0.59	0.54	0.19
1146.13	1134.62	1042.03	0.48	0.54	0.46	0.19
1146.13	1097.00	1042.03	0.25	0.24	-0.07	**0.28**
1146.13	1071.81	1042.03	0.19	0.18	--	**0.34**
1146.13	1071.46	1042.03	0.19	0.17	-0.89	**0.35**
1146.13	1073.11	1042.03	0.24	0.16	--	**0.34**
1146.13	1070.85	1042.03	0.23	0.17	--	**0.35**
1146.13	1071.42	1042.03	0.18	0.16	-0.30	**0.35**
1146.13	1070.20	1042.03	0.20	0.17	--	**0.35**
1146.13	1071.71	1042.03	0.21	0.16	-0.44	**0.34**
1146.13	1072.11	1042.03	0.20	0.17	-0.44	**0.34**
1146.13	1361.22	1042.03	1.11	1.52	--	**0.28**
1146.13	1107.19	1042.03	0.52	0.56	0.23	**0.26**

1146.13	1109.39	1042.03	0.32	0.38	-0.05	**0.24**
1146.13	1057.94	1042.03	0.20	0.15	-0.63	0.38
1146.13	1067.14	1042.03	0.17	0.14	-0.60	**0.35**
1146.13	1058.44	1042.03	0.21	0.13	--	0.38
1146.13	1058.95	1042.03	0.19	0.10	--	0.38
1146.13	1057.35	1042.03	0.14	0.13	-0.58	0.39
1146.13	1052.14	1042.03	0.16	0.10	-0.68	0.40
1146.13	1052.94	1042.03	0.24	0.09	-0.63	0.40
1146.13	1051.84	1042.03	0.09	0.15	-0.47	0.40
1146.13	1054.05	1042.03	0.00	0.11	-0.61	0.40
1146.13	1053.79	1042.03	0.09	0.09	-0.54	0.40
1146.13	1053.93	1042.03	0.12	0.10	-0.60	0.40
1146.13	1052.28	1042.03	0.18	0.10	--	0.40
1146.13	1053.74	1042.03	0.07	0.11	--	0.40
1146.13	1053.21	1042.03	0.23	0.12	--	0.40
1146.13	1053.41	1042.03	0.27	0.17	--	0.40
1146.13	1053.32	1042.03	0.08	0.13	-0.67	0.40
1146.13	1053.01	1042.03	0.20	0.09	--	0.40
1146.13	1053.01	1042.03	0.08	0.10	--	0.40
1146.13	1051.49	1042.03	0.01	0.14	-1.01	0.40
1146.13	1052.96	1042.03	0.33	0.23	--	0.41
1146.13	1053.64	1042.03	0.19	0.19	-0.61	0.40
1146.13	1052.38	1042.03	0.19	0.09	-0.88	0.40
1146.13	1052.05	1042.03	-0.10	0.12	-0.65	0.40
1146.13	1174.15	1042.03	1.17	0.12	--	0.40
1146.13	1097.89	1042.03	0.44	0.41	-0.16	**0.30**
1146.13	1098.77	1042.03	0.37	0.46	--	**0.28**
1146.13	1102.92	1042.03	0.46	0.50	0.11	**0.26**
1146.13	1108.57	1042.03	0.37	0.50	-0.30	**0.25**

1146.13	1107.20	1042.03	0.49	0.52	0.17	**0.25**
1146.13	1106.91	1042.03	0.51	0.55	0.09	**0.25**
1146.13	1107.83	1042.03	0.53	0.54	--	**0.26**
1146.13	1104.32	1042.03	0.36	0.41	-0.06	**0.26**
1146.13	1076.29	1042.03	0.22	0.21	-0.32	**0.33**
1146.13	1060.30	1042.03	0.12	0.13	--	0.38
1146.13	1058.62	1042.03	0.17	0.16	--	0.38
1146.13	1060.87	1042.03	0.21	0.14	-0.61	0.38
1146.13	1060.05	1042.03	0.15	0.16	-0.45	0.38
1146.13	1061.11	1042.03	0.16	0.16	--	0.37
1146.13	1059.79	1042.03	0.18	0.14	--	0.38
1146.13	1057.92	1042.03	0.14	0.14	--	0.38
1146.13	1060.49	1042.03	-0.10	0.14	-0.76	0.38
1146.13	1058.57	1042.03	0.10	0.12	--	0.38
1146.13	1056.40	1042.03	0.05	0.12	-0.55	0.39
1146.13	1059.52	1042.03	0.23	0.08	--	0.38
1146.13	1058.81	1042.03	0.18	0.10	-0.51	0.38
1146.13	1055.14	1042.03	0.16	0.14	-0.72	0.39
1146.13	1057.64	1042.03	-0.16	0.12	--	0.39
1146.13	1056.73	1042.03	0.18	0.10	--	0.39
1146.13	1055.83	1042.03	0.17	0.10	--	0.39
1146.13	1057.15	1042.03	0.20	0.09	-0.61	0.39
1146.13	1055.69	1042.03	0.11	0.10	--	0.39
1146.13	1052.17	1042.03	0.17	0.12	-0.59	0.40
1146.13	1098.36	1042.03	0.44	0.51	--	**0.28**
1146.13	1101.25	1042.03	0.47	0.51	-0.07	**0.27**
1146.13	1105.50	1042.03	0.46	0.52	0.20	**0.26**
1146.13	1109.28	1042.03	0.53	0.54	0.27	**0.25**
1146.13	1113.74	1042.03	0.44	0.52	0.33	**0.24**

1146.13	1119.30	1042.03	0.48	0.54	0.40	0.22
1146.13	1124.07	1042.03	0.36	0.52	0.42	0.21
1146.13	1128.88	1042.03	0.39	0.52	0.41	0.20
1146.13	1133.59	1042.03	0.36	0.51	0.41	0.19
1146.13	1128.61	1042.03	0.42	0.51	0.38	0.20
1146.13	1121.94	1042.03	0.30	0.45	0.29	0.21
1146.13	1105.68	1042.03	0.33	0.39	0.05	**0.25**
1146.13	1097.97	1042.03	0.34	0.37	-0.09	**0.27**
1146.13	1091.73	1042.03	0.34	0.33	--	**0.29**
1146.13	1092.76	1042.03	0.32	0.33	-0.10	**0.29**
1146.13	1088.23	1042.03	0.37	0.38	-0.30	**0.29**
1146.13	1087.29	1042.03	0.38	0.36	-0.07	**0.30**
1146.13	1074.65	1042.03	0.31	0.28	-0.40	**0.33**
1146.13	1055.70	1042.03	0.19	0.12	-0.63	0.40
1146.13	1051.65	1042.03	0.17	0.07	--	0.41
1146.13	1048.33	1042.03	0.08	0.09	--	0.43
1146.13	1047.88	1042.03	0.25	0.08	-0.68	0.43
1146.13	1046.49	1042.03	0.15	0.09	-0.92	0.43
1146.13	1050.58	1042.03	0.19	0.11	--	0.42
1146.13	1052.27	1042.03	0.05	0.11	-0.50	0.41
1146.13	1079.11	1042.03	0.17	0.22	--	**0.33**
1146.13	1104.46	1042.03	0.26	0.21	-0.38	**0.25**
1146.13	1108.08	1042.03	0.09	0.23	-0.42	**0.24**
1146.13	1113.31	1042.03	0.12	0.23	-0.34	**0.23**
1146.13	1118.37	1042.03	0.14	0.22	--	0.21
1146.13	1120.32	1042.03	0.16	0.23	-0.19	0.21
1146.13	1124.83	1042.03	0.15	0.22	-0.23	0.20
1146.13	1127.44	1042.03	0.01	0.24	-0.12	0.19
1146.13	1129.79	1042.03	0.21	0.23	-0.08	0.19

1146.13	1132.76	1042.03	0.07	0.23	-0.03	0.18
1146.13	1134.97	1042.03	0.16	0.22	-0.03	0.18
1146.13	1135.52	1042.03	0.16	0.23	-0.01	0.17
1146.13	1132.10	1042.03	0.09	0.22	-0.03	0.18
1146.13	1112.37	1042.03	0.08	0.23	-0.14	**0.23**
1146.13	1090.67	1042.03	0.16	0.25	-0.26	**0.28**
1146.13	1076.58	1042.03	0.14	0.16	--	**0.32**
1146.13	1067.33	1042.03	0.02	0.08	-0.70	**0.36**
1146.13	1062.48	1042.03	0.15	0.09	--	0.37
1146.13	1059.48	1042.03	0.07	0.11	-0.43	0.39
1146.13	1058.96	1042.03	0.25	0.22	-0.38	0.39
1146.13	1061.55	1042.03	0.28	0.19	-0.38	0.39
1146.13	1060.93	1042.03	0.10	0.13	--	0.37
1146.13	1094.11	1042.03	0.70	0.35	0.31	0.37
1146.13	1105.21	1042.03	0.39	0.46	0.06	**0.26**
1146.13	1109.83	1042.03	0.44	0.45	--	**0.25**
1146.13	1112.43	1042.03	0.35	0.47	--	**0.24**
1146.13	1114.68	1042.03	0.37	0.47	0.15	**0.23**
1146.13	1111.48	1042.03	0.39	0.50	--	**0.24**
1146.13	1119.80	1042.03	0.41	0.48	0.07	**0.22**
1146.13	1123.54	1042.03	0.44	0.47	0.29	0.21
1146.13	1123.61	1042.03	0.39	0.48	0.33	0.21
1146.13	1127.84	1042.03	0.43	0.45	0.32	0.20
1146.13	1078.57	1042.03	0.33	0.30	-0.09	**0.33**
1146.13	1053.13	1042.03	0.31	0.26	-0.28	0.42
1146.13	1052.93	1042.03	0.26	0.30	-0.28	0.43
AP2-00-84 Mantles						
1308.14	1181.81	1144.69	0.25	0.61	--	**0.29**
1249.76	1145.90	1119.53	0.35	0.48	--	**0.29**

1249.76	1144.32	1119.53	0.15	0.50	--	**0.29**
1249.76	1146.69	1119.53	0.40	0.49	--	**0.29**
1300.84	1179.01	1142.35	0.37	0.61	--	**0.28**
1282.60	1175.89	1135.50	0.32	0.57	-0.26	**0.27**
1359.22	1238.26	1154.94	0.40	0.85	-0.01	**0.25**
1286.25	1193.01	1136.98	0.43	0.66	0.00	**0.24**
1227.87	1156.29	1106.20	0.32	0.49	-0.05	**0.24**
1151.24	1107.48	1041.85	0.21	0.26	-0.54	**0.25**
1151.24	1104.63	1041.85	0.23	0.24	-0.39	**0.25**
1140.30	1104.21	1030.31	0.80	0.30	--	**0.30**
1140.30	1100.68	1030.31	0.42	0.42	--	**0.26**
1140.30	1110.45	1030.31	0.49	0.53	0.33	**0.23**
1140.30	1123.38	1030.31	0.62	0.59	0.53	0.21
1140.30	1125.86	1030.31	0.63	0.64	0.62	0.21
1140.30	1129.25	1030.31	0.60	0.59	0.57	0.20
1140.30	1126.68	1030.31	0.69	0.63	0.60	0.20
1140.30	1127.38	1030.31	0.63	0.64	0.61	0.20
1140.30	1126.00	1030.31	0.62	0.63	0.61	0.20
1140.30	1129.51	1030.31	0.61	0.58	0.52	0.20
1140.30	1128.58	1030.31	0.55	0.56	0.50	0.20
1140.30	1119.12	1030.31	0.55	0.54	0.44	0.22
1140.30	1121.14	1030.31	0.60	0.59	0.52	0.21
1140.30	1126.08	1030.31	0.52	0.54	0.46	0.20
1140.30	1125.85	1030.31	0.37	0.48	0.35	0.20
1140.30	1124.71	1030.31	0.43	0.43	0.27	0.20
1140.30	1099.54	1030.31	0.38	0.33	0.02	**0.26**
1140.30	1074.88	1030.31	0.35	0.24	-0.37	**0.33**
1140.30	1073.62	1030.31	0.37	0.24	-0.44	**0.33**
1140.30	1074.45	1030.31	0.32	0.23	--	**0.33**

1140.30	1119.97	1030.31	0.36	0.36	0.02	0.21
1140.30	1126.03	1030.31	0.27	0.33	0.07	0.19
1140.30	1129.38	1030.31	0.26	0.31	0.04	0.18
1140.30	1124.55	1030.31	0.29	0.33	0.00	0.19
1140.30	1126.61	1030.31	0.25	0.32	-0.01	0.19
1140.30	1127.98	1030.31	0.17	0.30	0.02	0.18
1140.30	1127.67	1030.31	0.32	0.30	0.02	0.18
1140.30	1127.43	1030.31	0.31	0.29	0.03	0.19
1140.30	1116.99	1030.31	0.27	0.31	-0.04	0.21
1140.30	1124.08	1030.31	0.31	0.29	0.02	0.19
1140.30	1117.98	1030.31	0.18	0.30	0.00	0.20
1140.30	1086.11	1030.31	0.37	0.25	--	**0.29**
1140.30	1071.18	1030.31	0.32	0.25	--	**0.34**
1140.30	1070.99	1030.31	0.36	0.25	--	**0.34**
1140.30	1070.99	1030.31	0.40	0.26	--	**0.34**
1140.30	1072.21	1030.31	0.36	0.24	--	**0.34**
1140.30	--	1030.31	--	--	--	0.59
1140.30	1073.25	1030.31	0.70	0.28	--	0.39
1140.30	1096.39	1030.31	0.24	0.22	--	**0.26**
1140.30	1091.42	1030.31	0.28	0.21	-0.71	**0.27**
1140.30	1081.08	1030.31	0.27	0.14	-0.96	**0.30**
1140.30	1072.03	1030.31	0.16	0.07	--	**0.32**
1140.30	1067.18	1030.31	0.02	0.07	--	**0.34**
1140.30	1063.21	1030.31	0.20	0.06	--	**0.35**
1140.30	1061.31	1030.31	0.21	0.07	-0.69	**0.36**
1140.30	1059.91	1030.31	0.22	0.08	--	0.36
AP2-00-42 Mantles						
1324.93	1187.26	1212.35	0.69	0.57	--	0.57
1265.93	1145.92	1187.25	0.44	0.31	-0.51	0.51

1265.93	1040.77	1187.25	0.31	--	--	0.58
1265.93	985.40	1187.25	--	--	-0.83	0.61
1317.56	1008.82	1210.06	0.37	--	--	0.61
1299.12	1007.15	1203.29	0.15	--	-0.87	0.59
1376.56	1037.15	1221.86	--	--	-0.99	0.63
1302.81	970.81	1204.77	0.55	--	-0.71	0.93
1243.81	946.37	1173.71	0.29	--	-0.39	0.95
1166.37	954.61	1107.47	0.20	--	-0.71	0.61
1166.37	960.33	1107.47	0.14	--	-0.66	0.56
1155.31	941.15	1095.50	0.18	--	-0.50	0.66
1155.31	928.17	1095.50	0.38	--	-0.22	0.81
1155.31	965.65	1095.50	--	--	-1.07	0.51
1155.31	966.81	1095.50	--	--	-0.85	0.50
1155.31	969.77	1095.50	-0.05	--	-0.75	0.49
1155.31	974.60	1095.50	0.29	--	--	0.48
1155.31	975.07	1095.50	0.23	--	-0.73	0.47
1155.31	977.16	1095.50	0.32	--	-0.81	0.47
1155.31	979.08	1095.50	0.03	--	-0.74	0.47
1155.31	985.55	1095.50	0.29	--	-0.77	0.44
1155.31	988.31	1095.50	0.28	--	-0.75	0.43
1155.31	989.05	1095.50	0.18	--	-0.81	0.42
1155.31	991.80	1095.50	--	--	-0.78	0.41
1155.31	995.31	1095.50	--	--	-0.79	0.41
1155.31	997.08	1095.50	--	--	-0.80	0.40
1155.31	998.97	1095.50	0.04	--	-0.97	0.39
1155.31	1001.50	1095.50	--	--	-0.77	0.39
1155.31	1001.54	1095.50	--	--	--	0.38
1155.31	1003.55	1095.50	--	--	-0.91	0.38
1155.31	1006.87	1095.50	--	--	--	0.37

1155.31	1009.36	1095.50	0.09	--	-1.03	0.37
1155.31	1012.01	1095.50	0.09	--	--	**0.36**
1155.31	1013.59	1095.50	0.22	--	--	**0.35**
1155.31	1011.95	1095.50	0.22	--	-0.82	**0.36**
1155.31	1013.32	1095.50	-0.05	--	--	**0.35**
1155.31	1015.39	1095.50	-0.05	--	-0.84	**0.35**
1155.31	1017.47	1095.50	--	--	--	**0.34**
1155.31	1017.11	1095.50	--	--	-1.11	**0.34**
1155.31	1018.49	1095.50	--	--	-0.80	**0.34**
1155.31	1018.25	1095.50	0.20	--	-0.97	**0.34**
1155.31	1092.36	1095.50	0.80	0.33	--	0.55
1155.31	1101.33	1095.50	0.46	0.29	--	0.45
1155.31	1095.62	1095.50	0.41	0.41	-0.69	0.40
1155.31	993.16	1095.50	--	--	--	0.43
1155.31	987.68	1095.50	0.20	--	-0.88	0.43
1155.31	988.79	1095.50	--	--	--	0.43
1155.31	989.27	1095.50	0.16	--	-0.98	0.43
1155.31	990.21	1095.50	0.13	--	--	0.42
1155.31	992.44	1095.50	0.22	--	-0.99	0.42
1155.31	994.62	1095.50	--	--	-0.71	0.41
1155.31	994.24	1095.50	--	--	--	0.41
1155.31	998.69	1095.50	0.08	--	-0.85	0.39
1155.31	1000.87	1095.50	-0.02	--	-0.92	0.39
1155.31	1002.95	1095.50	--	--	-0.73	0.38
1155.31	1006.03	1095.50	0.15	--	-0.79	0.38
1155.31	1007.69	1095.50	--	--	-0.99	0.37
1155.31	1009.79	1095.50	0.09	--	-0.78	0.36
1155.31	1010.35	1095.50	-0.04	--	--	0.36
1155.31	1014.37	1095.50	--	--	-0.78	**0.35**

1155.31	1017.06	1095.50	0.08	--	--	**0.35**
1155.31	1017.58	1095.50	0.18	--	-0.77	**0.34**
1155.31	1022.09	1095.50	-0.16	--	-0.91	**0.33**
1155.31	1023.99	1095.50	--	--	-0.81	**0.33**
1155.31	1024.92	1095.50	--	--	--	**0.32**
1155.31	1026.45	1095.50	-0.07	--	--	**0.32**
1155.31	1027.53	1095.50	-0.07	--	-0.88	**0.32**
1155.31	1030.08	1095.50	0.02	--	-0.91	**0.31**
1155.31	1033.52	1095.50	-0.02	--	-1.03	**0.30**
1155.31	1032.56	1095.50	0.12	--	-0.89	**0.31**
1155.31	1036.39	1095.50	--	--	-0.91	**0.30**
1155.31	1036.88	1095.50	0.01	--	-0.99	**0.30**
1155.31	1038.04	1095.50	-0.03	--	--	**0.29**
1155.31	1038.05	1095.50	-0.09	--	--	**0.29**
1155.31	1042.33	1095.50	--	--	--	**0.28**
1155.31	1042.49	1095.50	0.14	--	-0.92	**0.28**
1155.31	1045.36	1095.50	--	--	-1.06	**0.28**
1155.31	1044.38	1095.50	--	--	--	**0.28**
1155.31	1045.24	1095.50	-0.21	--	--	**0.27**
1155.31	1046.14	1095.50	--	--	-1.06	**0.27**
1155.31	1047.80	1095.50	-0.21	--	-0.94	**0.27**
1155.31	1046.88	1095.50	-0.01	--	--	**0.27**
1155.31	1048.34	1095.50	--	--	--	**0.27**
1155.31	1050.21	1095.50	--	--	-1.01	**0.27**
1155.31	1145.38	1095.50	1.42	0.33	0.61	0.63
1155.31	1101.68	1095.50	0.40	0.29	--	0.44
1155.31	1113.47	1095.50	0.46	0.31	-0.18	0.40
1155.31	1117.55	1095.50	0.50	0.34	-0.53	0.39
1155.31	1115.18	1095.50	0.49	0.28	--	0.40

1155.31	1062.72	1095.50	0.27	--	-0.54	0.40
1155.31	987.59	1095.50	0.28	--	-0.78	0.43
1155.31	987.46	1095.50	--	--	-0.85	0.43
1155.31	988.72	1095.50	--	--	--	0.42
1155.31	989.89	1095.50	--	--	--	0.42
1155.31	991.85	1095.50	--	--	-0.72	0.42
1155.31	991.33	1095.50	--	--	--	0.42
1155.31	990.69	1095.50	0.15	--	--	0.42
1155.31	993.84	1095.50	--	--	-1.16	0.41
1155.31	995.37	1095.50	--	--	-0.87	0.40
1155.31	1000.18	1095.50	--	--	-0.91	0.39
1155.31	998.83	1095.50	0.14	--	-0.81	0.39
1155.31	1001.16	1095.50	-0.02	--	--	0.39
1155.31	1006.45	1095.50	--	--	-1.02	0.37
1155.31	1007.83	1095.50	--	--	-0.77	0.37
1155.31	1010.53	1095.50	--	--	--	0.36
1155.31	1013.24	1095.50	-0.04	--	-1.07	**0.35**
1155.31	1013.87	1095.50	0.11	--	-0.88	**0.35**
1155.31	1017.56	1095.50	-0.05	--	--	**0.34**
1155.31	1018.93	1095.50	--	--	--	**0.34**
1155.31	1020.46	1095.50	--	--	--	**0.33**
1155.31	1023.99	1095.50	--	--	-1.32	**0.32**
1155.31	1026.92	1095.50	-0.01	--	-1.03	**0.32**
1155.31	1030.20	1095.50	--	--	--	**0.31**
1155.31	1030.54	1095.50	--	--	-0.84	**0.31**
1155.31	1034.70	1095.50	--	--	-0.95	**0.30**
1155.31	1036.64	1095.50	--	--	-0.95	**0.30**
1155.31	1038.73	1095.50	0.04	--	--	**0.29**
1155.31	1040.90	1095.50	0.11	--	-1.11	**0.29**

1155.31	1042.56	1095.50	--	--	--	**0.28**
1155.31	1042.44	1095.50	--	--	-0.81	**0.28**
1155.31	1044.25	1095.50	--	--	--	**0.28**
1155.31	1044.93	1095.50	--	--	-0.87	**0.28**
1155.31	1048.00	1095.50	-0.11	--	-0.85	**0.27**
1155.31	1048.25	1095.50	-0.11	--	-0.99	**0.27**
1155.31	1051.11	1095.50	-0.11	--	-0.91	**0.26**
1155.31	1050.86	1095.50	--	--	-1.00	**0.26**
1155.31	1052.37	1095.50	--	--	-0.92	**0.26**
1155.31	1707.29	1095.50	2.74	2.70	2.10	0.70
1155.31	1084.78	1095.50	0.59	0.33	--	0.53
1155.31	1119.05	1095.50	0.50	0.44	--	0.38
1155.31	983.49	1095.50	1.94	1.35	--	11.64
1155.31	1056.80	1095.50	0.56	0.33	--	0.69
1155.31	1092.58	1095.50	0.46	0.24	--	0.48
1155.31	1106.65	1095.50	0.44	0.24	-0.44	0.43
1155.31	1115.08	1095.50	0.55	0.37	-0.02	0.40
1155.31	1112.65	1095.50	0.65	0.32	0.05	0.51
1155.31	981.93	1095.50	0.38	--	-0.59	0.54
1155.31	958.65	1095.50	0.26	--	--	0.53
1155.31	961.71	1095.50	0.27	--	-0.70	0.52
1155.31	961.51	1095.50	0.31	--	--	0.53
1155.31	957.66	1095.50	--	--	-0.77	0.58
1155.31	974.18	1095.50	0.30	--	-0.91	0.48
1155.31	977.45	1095.50	0.28	--	-0.97	0.46
1155.31	985.54	1095.50	0.14	--	-1.00	0.44
1155.31	988.54	1095.50	0.20	--	-1.08	0.42
1155.31	993.50	1095.50	0.12	--	--	0.41
1155.31	998.83	1095.50	0.21	--	-0.95	0.40

1155.31	1001.39	1095.50	0.27	--	-1.00	0.39
1155.31	1006.62	1095.50	--	--	-1.19	0.37
1155.31	1010.06	1095.50	--	--	-0.95	0.36
1155.31	1013.25	1095.50	--	--	-0.95	**0.35**
1155.31	1017.61	1095.50	--	--	-0.73	**0.34**
1155.31	1020.13	1095.50	0.07	--	-1.04	**0.34**
1155.31	1021.52	1095.50	0.10	--	-0.95	**0.33**
1155.31	1025.53	1095.50	0.22	--	-0.86	**0.32**
1155.31	1092.29	1095.50	0.47	0.25	-0.19	0.48
1155.31	1106.85	1095.50	0.42	0.28	-0.25	0.41
1155.31	1124.63	1095.50	0.45	0.31	-0.14	**0.35**
1155.31	1135.05	1095.50	0.37	0.30	--	**0.31**
1155.31	1136.94	1095.50	0.45	0.27	--	**0.31**
1155.31	1136.28	1095.50	0.40	0.29	--	**0.31**
1155.31	1133.87	1095.50	0.47	0.29	-0.24	**0.31**
1155.31	1134.87	1095.50	0.49	0.32	-0.07	**0.31**
1155.31	1136.05	1095.50	0.37	0.29	-0.15	**0.31**
1155.31	1136.79	1095.50	0.43	0.27	-0.37	**0.31**
1155.31	1135.39	1095.50	0.36	0.32	--	**0.31**
1155.31	1135.18	1095.50	0.43	0.29	--	**0.31**
1155.31	1135.04	1095.50	0.39	0.29	-0.33	**0.31**
1155.31	1131.14	1095.50	0.41	0.30	-0.19	**0.32**
1155.31	1128.87	1095.50	0.43	0.28	-0.28	**0.33**
1155.31	1124.89	1095.50	0.42	0.27	--	**0.34**
1155.31	1123.05	1095.50	0.47	0.30	--	**0.35**
1155.31	1117.64	1095.50	0.40	0.20	-0.32	**0.36**
1155.31	1115.02	1095.50	0.31	0.18	-0.49	0.37
1155.31	1113.14	1095.50	0.29	0.19	-0.50	0.38
1155.31	1109.17	1095.50	0.39	0.19	-0.44	0.39

1155.31	1106.98	1095.50	0.41	0.19	--	0.40
1155.31	1107.70	1095.50	0.41	0.19	--	0.40
1155.31	1104.52	1095.50	0.44	0.22	--	0.41
1155.31	1104.08	1095.50	0.47	0.21	--	0.42
1155.31	1103.34	1095.50	0.46	0.24	--	0.42
1155.31	1102.66	1095.50	0.43	0.25	--	0.42
1155.31	1099.71	1095.50	0.45	0.26	-0.59	0.43
1155.31	1101.77	1095.50	0.48	0.25	--	0.43
1155.31	1102.17	1095.50	0.45	0.26	-0.56	0.43
1155.31	1101.85	1095.50	0.41	0.27	--	0.43
1155.31	1101.84	1095.50	0.44	0.27	--	0.43
1155.31	1100.73	1095.50	0.47	0.27	--	0.43
1155.31	1099.78	1095.50	0.36	0.28	-0.60	0.44
1155.31	1099.82	1095.50	0.40	0.29	--	0.44
1155.31	1102.72	1095.50	0.48	0.27	--	0.43
1155.31	1103.58	1095.50	0.43	0.27	-0.38	0.43
1155.31	1102.41	1095.50	0.46	0.27	--	0.43
1155.31	1101.64	1095.50	0.46	0.28	-0.25	0.43
1155.31	1101.97	1095.50	0.47	0.27	--	0.43
1155.31	1102.20	1095.50	0.48	0.29	--	0.43
1155.31	1104.36	1095.50	0.47	0.29	--	0.42
1155.31	1103.88	1095.50	0.49	0.28	--	0.43
1155.31	1102.92	1095.50	0.36	0.28	-0.40	0.43
1155.31	1103.54	1095.50	0.43	0.26	--	0.42
1155.31	1104.37	1095.50	0.47	0.21	--	0.42
1155.31	1104.63	1095.50	0.40	0.22	--	0.42
1155.31	1104.55	1095.50	0.35	0.22	-0.57	0.42
1155.31	1114.44	1095.50	1.16	0.45	0.21	0.63
1155.31	1105.21	1095.50	0.44	0.32	--	0.44

1155.31	1105.46	1095.50	0.48	0.29	-0.64	0.43
1155.31	1196.68	1095.50	1.97	1.15	--	0.69
1155.31	1093.41	1095.50	0.62	0.46	0.52	0.56
1155.31	1098.47	1095.50	0.51	0.26	--	0.47
1155.31	1104.53	1095.50	0.50	0.22	-0.32	0.44
1155.31	1104.91	1095.50	0.46	0.25	-0.19	0.44
1155.31	1109.76	1095.50	0.47	0.27	--	0.42
1155.31	1119.14	1095.50	0.58	0.37	-0.05	0.41
1155.31	1121.70	1095.50	0.60	0.41	--	0.39
1155.31	1133.22	1095.50	0.63	0.39	0.01	**0.36**
1155.31	1129.50	1095.50	1.20	0.40	--	0.57
1155.31	1096.25	1095.50	0.46	0.00	-0.57	0.51
1155.31	1008.49	1095.50	0.18	--	--	0.54
1155.31	958.71	1095.50	0.25	--	-0.69	0.55
1155.31	961.31	1095.50	0.35	--	--	0.54
1155.31	964.21	1095.50	0.19	--	-0.77	0.53
1155.31	965.23	1095.50	--	--	--	0.52
1155.31	968.75	1095.50	0.30	--	-0.87	0.52
1155.31	967.94	1095.50	0.18	--	-0.75	0.51
1155.31	971.37	1095.50	--	--	--	0.50
1155.31	976.17	1095.50	0.21	--	-0.74	0.48
1155.31	975.15	1095.50	--	--	-0.91	0.49
1155.31	979.32	1095.50	-0.06	--	-0.74	0.49
1155.31	983.70	1095.50	0.27	--	-1.12	0.46
1155.31	987.69	1095.50	0.26	--	-1.09	0.44
1155.31	988.59	1095.50	--	--	--	0.44
1155.31	993.87	1095.50	--	--	--	0.42
1155.31	1000.31	1095.50	0.16	--	-0.95	0.40
1155.31	1001.20	1095.50	-0.02	--	-0.83	0.40

1155.31	1007.68	1095.50	--	--	-0.85	0.38
1155.31	1011.25	1095.50	0.16	--	--	0.37
1155.31	1014.55	1095.50	0.16	--	-0.93	**0.36**
1155.31	1017.93	1095.50	0.17	--	--	**0.35**
1155.31	1022.51	1095.50	0.07	--	--	**0.34**
1155.31	1024.34	1095.50	--	--	-0.94	**0.33**
1155.31	1027.26	1095.50	--	--	--	**0.33**
1155.31	1029.29	1095.50	--	--	-0.86	**0.32**
1155.31	1029.55	1095.50	--	--	-1.12	**0.32**
1155.31	1032.41	1095.50	--	--	-0.86	**0.31**
1155.31	1036.00	1095.50	--	--	--	**0.30**
1155.31	1035.54	1095.50	--	--	--	**0.30**
1155.31	1036.31	1095.50	--	--	--	**0.30**
1155.31	1040.92	1095.50	0.14	--	-0.95	**0.29**
1155.31	1040.09	1095.50	0.11	--	-0.81	**0.29**
1155.31	1043.47	1095.50	0.17	--	-1.09	**0.29**
1155.31	1042.45	1095.50	0.13	--	-0.98	**0.29**
1155.31	1041.68	1095.50	0.07	--	-1.02	**0.29**
1155.31	1044.79	1095.50	0.21	--	-0.83	**0.28**
1155.31	1029.51	1095.50	-0.17	--	-0.90	**0.32**
1155.31	1032.27	1095.50	0.17	--	--	**0.31**
1155.31	1035.94	1095.50	--	--	--	**0.30**
1155.31	1040.80	1095.50	0.11	--	--	**0.29**
1155.31	1042.72	1095.50	--	--	-0.88	**0.29**
1155.31	1047.30	1095.50	--	--	--	**0.28**
1155.31	1052.78	1095.50	0.15	--	--	**0.27**
1155.31	1052.82	1095.50	0.07	--	--	**0.26**
1155.31	1055.74	1095.50	-0.06	--	-1.19	**0.26**
1155.31	1058.60	1095.50	--	--	-0.87	**0.25**

1155.31	1059.16	1095.50	-0.07	--	-0.87	**0.25**
1155.31	1063.64	1095.50	--	--	-0.88	**0.24**
1155.31	1063.56	1095.50	--	--	-1.27	**0.24**
1155.31	1063.67	1095.50	0.17	--	-0.95	**0.24**
1155.31	1066.69	1095.50	--	--	--	**0.23**
1155.31	1066.49	1095.50	--	--	-0.96	**0.24**
1155.31	979.87	1095.50	0.24	--	-1.17	0.50
1155.31	980.42	1095.50	0.03	--	-0.69	0.47
1155.31	987.00	1095.50	0.30	--	-1.08	0.44
1155.31	997.02	1095.50	0.09	--	-1.28	0.41
1155.31	1010.39	1095.50	--	--	-0.83	0.37
1155.31	1021.60	1095.50	0.20	--	-0.82	**0.34**
1155.31	1035.12	1095.50	--	--	-0.81	**0.31**
1155.31	1045.19	1095.50	--	--	-0.94	**0.28**
1155.31	1053.10	1095.50	0.20	--	-0.82	**0.27**
1155.31	1059.26	1095.50	0.04	--	-0.90	**0.25**
1155.31	1065.12	1095.50	0.05	--	-1.00	**0.24**
1155.31	1071.46	1095.50	-0.04	--	-0.98	**0.23**
1155.31	1073.88	1095.50	-0.09	--	-1.26	**0.22**
1155.31	1074.75	1095.50	--	--	-0.94	0.22
1155.31	1076.37	1095.50	--	--	-0.84	0.21
1155.31	1079.49	1095.50	0.11	--	-0.86	0.21
1155.31	1080.59	1095.50	-0.06	--	--	0.21
1155.31	1080.38	1095.50	--	--	-1.36	0.21
1155.31	1079.48	1095.50	-0.16	--	-1.09	0.21
1155.31	1080.47	1095.50	--	--	-0.85	0.21
1155.31	1079.69	1095.50	-0.02	--	-0.85	0.21
1155.31	1080.43	1095.50	-0.16	--	-0.93	0.21
1155.31	1078.32	1095.50	--	--	--	0.21

1155.31	1033.15	1095.50	-0.02	--	--	**0.31**