RECENT ADVANCES IN THE ARCHAEOLOGY OF THE FIJI/WEST-POLYNESIA REGION

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SAMOAN PLAIN WARE CERAMICS OF TUTUILA ISLAND, AMERICAN SĀMOA: SOME THOUGHTS ON THEIR SPATIAL AND CHRONOLOGICAL DISTRIBUTION

David J. Addison* · Jeffery Toloa† · Tuipuavai Tago† · Siaki Vaueli†

ABSTRACT

The last decade has seen big changes in understandings of the amount and distribution of plainware ceramic sites on Tutuila. This paper reviews this new evidence and discusses the spatial and temporal distribution of sites. We suggest that the argument for late ceramics on Tutuila is weakened by recent discoveries and that the idea of ceramic use ending in the ~AD 400–800 period is strengthened. At the early end, we find few convincing data currently available to support ceramic use before ~500 BC. Decades of searching for Lapita sites outside the one known for 'Upolu has been unsuccessful and we question the utility of continuing to posit their existence in models of Samoan prehistory. Inland settlement on Tutuila was not a late-period phenomenon; ceramic-bearing strata at several sites indicate inland settlement by ~200–100 BC. The minimal and rare decoration on Tutuila ceramics was not confined to the earliest period and likely continued to the end of ceramic use on the island.

INTRODUCTION

Almost three millennia ago people using Lapita[1] pottery spread over a 4500 km distance from the Bismarck Archipelago to Sāmoa. This major event in Pacific prehistory represents the beginning of humanity's colonization of the last major unpopulated area of the earth – Remote Oceania. The Mulifanua site on 'Upolu, dating to ~1050–650 BC marks the easternmost extent of Lapita exploration (Petchey 2001).

Green and Davidson's foundational work on Samoan archaeology established the initial chronology and found that Samoan Plain Ware characterized the 'Upolu sites dating to ~100 BC–AD 300 (Green and Davidson 1974b). Green noted that the 'continuity between Lapita and the Plain Ware assemblages' was based on 'general technological resemblances' and the evidence was 'not very impressive' (Green 1974: 249). Yet at the time it was the best 'case in Western Polynesia for continuity between the ancestral Lapita horizon and the Polynesian cultural complex which developed from it in the course of the next 2000 years' (Green and Davidson 1974b: 224). The relationship (or lack thereof) between Lapita and subsequent cultural traditions remains a fundamental issue in West Polynesian archaeology.

The conventional model holds that Sāmoa was occupied from this time onward and sees Lapita as directly ancestral to the current Samoan populations and cultures (e.g., Clark 1996, Green 2002, Kirch and Hunt 1993b). A similar scenario is widely accepted for all of West Polynesia (except Niue, Tokelau, and Tuvalu, the initial colonization of which was clearly later) and is closely linked to the constructions of Ancestral Polynesian Society (Kirch and Green 2001 and sources therein). Critiques of this scenario have been few (but see Smith 1995, Smith 2002, Terrell 1989, Terrell *et al.* 1997). Smith's detailed examination of the evidence for continuity indicates that more work is needed before a strong evidence-based argument for continuity can be made (Smith 2002). Crucial in assessing continuity in the region will be robust data sets from both undecorated components of Lapita assemblages and assemblages of Polynesian Plain Ware.

As late as 1996, Clark and Michlovic could write that 'Āoa was the 'only ceramic residential site known for Tutuila' (Clark and Michlovic 1996: 164). The last decade has seen an explosion in the documentation of plainware sites, with more now known on Tutuila than on any other island in the West-Polynesia region. Below, we present summary information on these new sites and discuss some aspects of their spatial and chronological distribution. Most of these collections await detailed analysis, and there is little data in this paper to address the Lapita-to-plainware issue. However, we contend that bringing attention to the

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1 Although we acknowledge the ongoing discussion of whether there is a 'Lapita cultural complex' and what constitutes it, we do not wish to engage in it here and hence adopt the conservative definition of 'Lapita' as dentate-stamped pottery.

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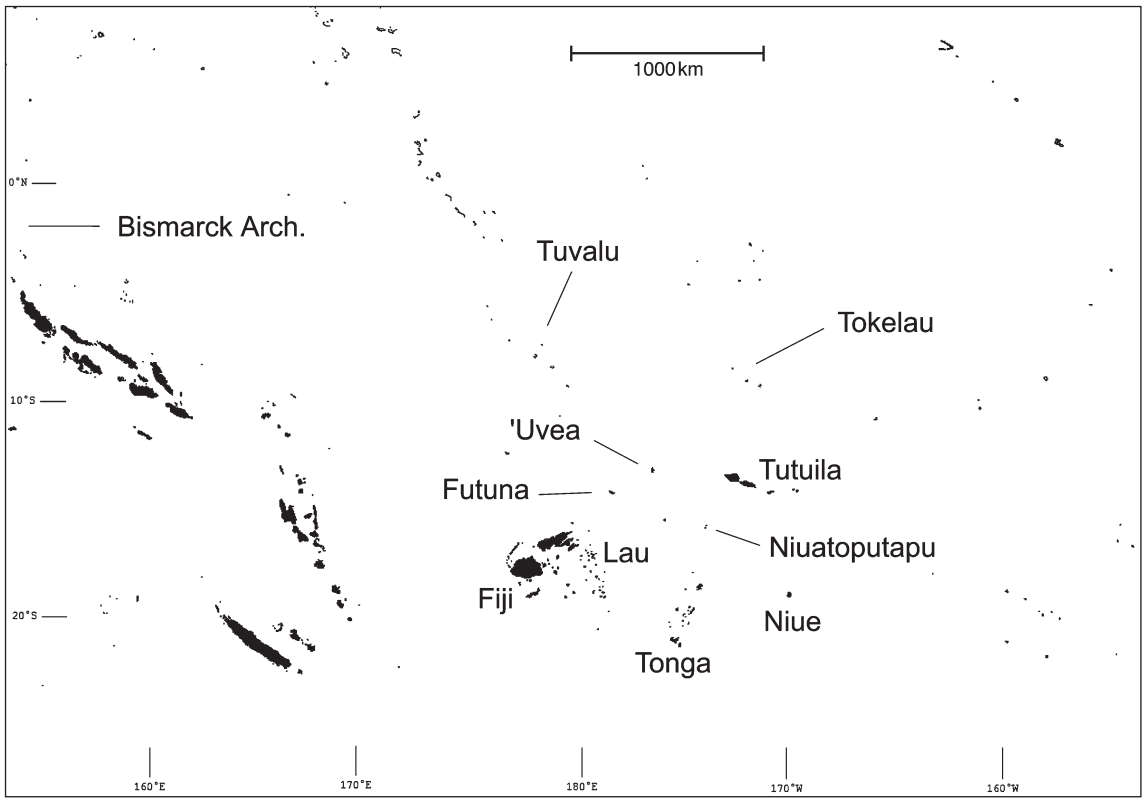

Figure 1. Sāmoa's location in the Pacific. Base map courtesy of Peter Minton (http://www.evs-islands.blogspot.com).

richness of Tutuila's plainware record is a worthy goal in itself.

Summaries of Samoan prehistory can be found in Clark (1996) and Wallin *et al.* (2007). Sāmoa in regional context is discussed in Burley and Clark (2003). Some current topics on Tutuila are reviewed by Addison and Asaua (2006b). Dates in this paper are reported at 2σ and use the calibration in the original publication unless otherwise noted. Dates reported here for the first time are calibrated with OxCal v3.10 (Bronk Ramsey 2005) using the Northern Hemisphere curve (Reimer *et al.* 2004) for reasons discussed elsewhere (Addison and Asaua 2006a, Petchey and Addison this volume).

Ceramics in Sāmoa

The first ceramics in Sāmoa were found at Vailele (Figure 2) on 'Upolu in 1957 by Golson. His work as part of the Tri-Institutional Pacific Program represented the first modern archaeology in Sāmoa and gave an initial indication of the richness of the archipelago's record (Golson 1959, Golson 1969). At the 10th Pacific Science Congress in Honolulu in 1961, archaeologists decided to follow up this program with a coordinated approach to investigating the region's prehistory – the Polynesian Culture History Program.

Green took Sāmoa and led an international team on a multiyear research project on the islands of 'Upolu, Apolima, and Savai'i, building on Golson's initial discoveries. That work (Green and Davidson 1969, Green and Davidson 1974a) laid the foundations of subsequent discussions of Samoan prehistory. The project found ceramic sites on 'Upolu (Green and Davidson 1969, Green and Davidson 1974a) and Apolima (Peters 1974). Their initial results suggested pottery manufacture in Sāmoa from ~100 BC–AD 300 with ceramics sites spread throughout 'Upolu in both inland and coastal locations (Green and Davidson 1974b).

As the project was ending, Lapita pottery was discovered at Mulifanua on 'Upolu (Jennings 1974). Based on the rapidly accumulating dates for Lapita from other archipelagos, Green and Davidson inferred the Mulifanua deposits dated to 'around or before 800 B.C.' (Green and Davidson 1974b: 224). Subsequent radiocarbon dates of ~930–800 BC confirmed their initial estimate (Petchey 2001: 67). Green and Davidson noted that the first 600–800 years of Samoan prehistory were represented only by the Mulifanua deposits, with 'securely dated habitation layers…not known until the first century A.D.' (Green and Davidson 1974b: 224).

To date, all known pottery in Sāmoa is Samoan Plain Ware, except that from Mulifanua. As well as its minimal decoration, Samoan Plain Ware is characterized by simple vessel shapes. So far, only open mouthed globular to subglobular bowls and cups have been documented. Rims are simple and flat or rounded (e.g., Figures 5, 6, & 7).

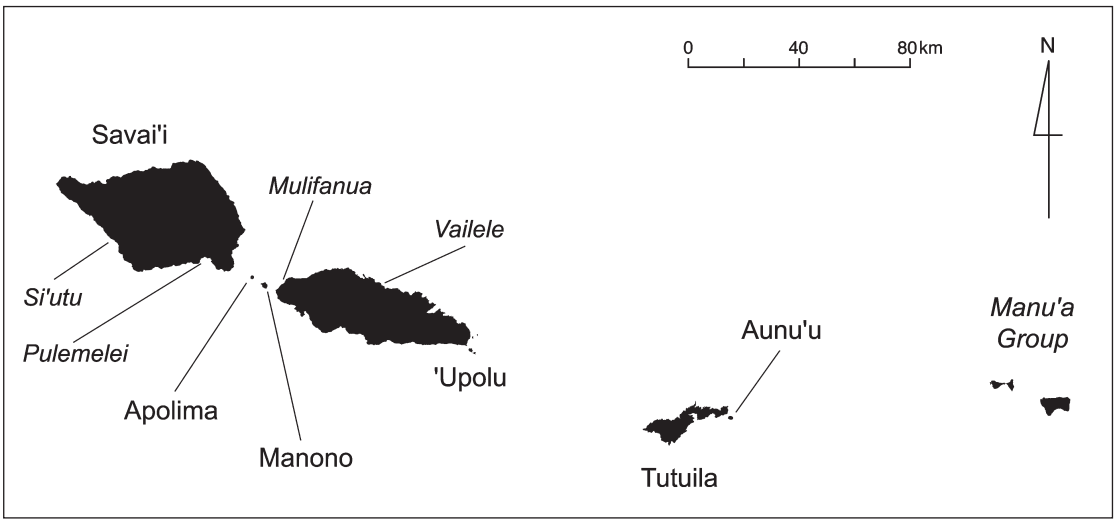

Figure 2. The Samoan Archipelago showing places mentioned in the text.

Jennings and colleagues' research on 'Upolu and Manono in the 1970s found additional Samoan Plain Ware sites on those islands. Complexities of stratigraphy and dating make the pottery's exact chronological position difficult to interpret, but it probably dates to the ~550 BC–AD 450 period (see reviews in Rieth 2007, Smith 2002).

On Savai'i, additional ceramics have been found at the Pulemelei site (Martinsson-Wallin *et al.* 2007), and Ishimura (Ishimura and Inoue 2006) has found ceramics in excavations at the Si'utu site originally found by Buist (1969).

The first ceramics on Tutuila were found in 1980 at the Tataga Matau basalt quarry by Jeff Clark (1980). In 1986 Clark and Herdrich found several ceramic sites at 'Āoa (Clark and Herdrich 1988). This same year, two ceramic sites were found in Manu'a – at the To'aga Landfill on Ofu Island (Figure 3) and at Ta'ū Village on Ta'ū Island (Hunt and Kirch 1987, Hunt and Kirch 1988). Kirch, Hunt and colleagues (Kirch and Hunt 1993c, Kirch *et al.* 1990) spent three field seasons at To'aga excavating deeply stratified cultural deposits overlying a beach dated by non-cultural shell to ~1950–1350 BC (calibration after Rieth *et al.* in press, Table 1). These deposits were argued to 'span virtually the entire three-millennium-long sequence of Samoa' (Kirch and Hunt 1993a:2). The interpretive paradox at To'aga was that, although the dates indicated occupation contemporaneous with the Mulifanua Lapita site (or even predating it), no dentate-stamped pottery or vessel shapes characteristic of known Lapita assemblages were found at To'aga. Still the researchers felt 'certain that the island of Ofu, and the To'aga site, were settled by the end of the second millennium B.C. as part of the process of discov-

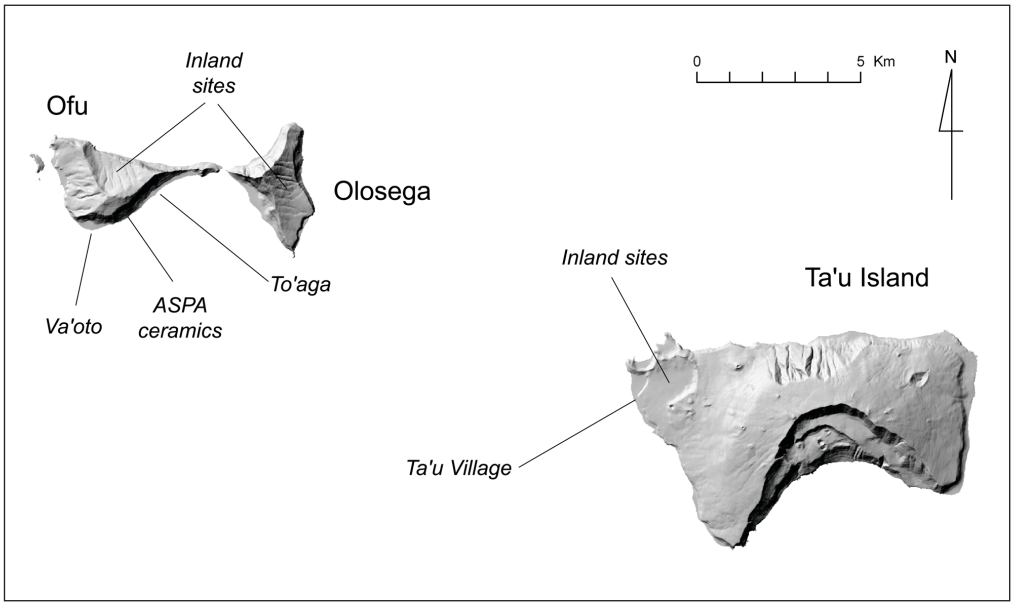

Figure 3. Ceramic sites in Manu'a.

ery and colonization of the Fiji-West Polynesia region by Lapita populations' and that an *in situ* Lapita occupation was 'situated on a beach ridge inland' of their excavations 'and now buried under several meters of talus and colluvium' (Kirch 1993: 91). They proposed that the full range of artifacts at To'aga indicated continuity of settlement from Lapita times onward (Kirch and Hunt 1993b).

Best subsequently found another ceramic site on Ofu at Va'oto (Best 1992a), and Clark spent two seasons excavating there (Clark 1994). Clark also more locations on Ta'ū (Clark 1990). Herdrich and colleagues found two sites with sherds inland of Ta'ū Village (Herdrich *et al.* 1996). ASPA (American Samoa Power Authority) archaeologists later found additional ceramic sites on Ofu between To'aga and Va'oto. Ceramics are now documented for most of Ofu's south coast. Manu'a has yet to be systematically explored for additional ceramic sites. There are extensive archaeological sites at inland locations on each island, and it is likely that their simpler geomorphological context would favor sherds being visible at the surface, were systematic surveys to be undertaken.

Clark (1994) found the first sherds on 'Aunu'u Island (Figure 2). Best's subsequent testing indicated intact Samoan Plain Ware deposits there (Best 1992b). GIS modeling indicates this as a likely spot for early settlement (Morrison *et al.* in review [expected 2008], Morrison *et al.* 2007), and a sampling strategy for finding Lapita-aged beaches has been proposed (Rieth *et al.* in press).

TUTUILA CERAMIC SITES

While Hunt and Kirch were finding ceramics in Manu'a, Jeff Clark was beginning three seasons of fieldwork on Tutuila (Clark 1989, Clark 1992, Clark 1993a, Clark 1993b, Clark and Herdrich 1988, Clark and Herdrich 1993). Two of the research goals of the Eastern Tutuila Archaeological Project were finding Lapita sites on Tutuila and understanding the relationship of geomorphological processes to site visibility on the island (Clark and Herdrich 1988: 9–10). Clark found Samoan Plain Ware[2] at four locations – minimal ceramics at three locations and some 878 sherds at 'Āoa (Clark and Michlovic 1996). The dates associated with the 'Āoa ceramic deposits were interpreted as 'contemporaneous with the Lapita site of Mulifanua, starting at ca. 3000 BP' (Clark 1993b: 325) and comparable to the earliest dates at To'aga. However, as at To'aga, the hallmarks of Lapita ceramics – dentate stamping and complex vessel forms – were absent.

Many more sites have been found in the two decades since Clark's initial discovery of ceramic sites on Tutuila (Table 2). Most of these discoveries have been the result of contract archaeology associated with development on the island and done in compliance with US federal historic preservation law. A majority of these have been found during archaeological work associated with construction by ASPA. Much of this work remains unreported and an attempt will be made here to give at least some indication of the wealth of that unreported material. Most of the new sites are on western Tutuila and associated with the Tualauta County Sewerline construction project. Before discussing these sites, we will mention the ones on the rest of the island (for locations see Figure 4). The following villages are arranged roughly east to west.

Utumea

In 1998, excavations associated with an ASPA waterline found subsurface ceramics at Utumea and Aganoa (Moore and Kennedy 1999). A total of 217 sherds was found at Utumea. Calibrated dates range from 414 BC–AD 100. While these dates are plausible for Samoan Plain Ware deposits, site stratigraphy and chronology are poorly understood. These sherds have not been analyzed.

2 None of the pottery from anywhere in American Samoa deviates from the simple vessel form and minimal decoration characteristic of Samoan Plain Ware.

Table 1. *Chronology of Sāmoa ceramics.*

	Initial settlement**	Plainware ends	Earliest inland ceramics sites	Data source
Green and Davidson	by 800 BC	AD 300	300 BC–AD 100	'Upolu
Kirch and Hunt	by 1000 BC	AD 400–500	—	Ofu
J. Clark and Michlovic	ca. 1000 BC	AD 1600	—	'Āoa
Wallin, Martinsson-Wallin and G. Clark*	'yet to be definitively established'	AD 500	'Upolu 400 BC–AD 30 Savai'i 100 BC–AD 200	'Upolu & Savai'i
Data herein	~500 BC?	AD 600–700	350 BC–AD 0	Tutuila

*(Wallin *et al*. 2007) **See critical evaluation of Sāmoa colonization-period dates elsewhere (Rieth *et al*. in press, Rieth 2007).

Table 2. *Ceramic sites in American Sāmoa. NA=not assigned. Dates are as listed in original reports. For multiple dates from the same site the earliest end of the earliest date and latest end of the latest date at 2σ are listed.*

Site No.	No. of sherds	Name/Location	Visibility	Date at 2σ	References
AS-11-51	<200	Ta'ū Village	Subsurface	140 BC–AD 170*	Clark 1990, Hunt and Erkelens 1993, Hunt and Kirch 1987
AS-11-59	minimal	Inland of Ta'ū Village	Surface	–	Clark 1990, Herdrich *et al*. 1996
AS-11-73	minimal	Inland of Ta'ū Village	Surface	–	Herdrich *et al*. 1996
AS-13-1	2,434	To'aga	Subsurface	–	Kirch and Hunt 1993c
NA	~20	Between To'aga and Va'oto	Subsurface	–	ASPA Archaeology files
AS-13-13	2,144	Va'oto	Subsurface	–	Best 1992a, Clark 1994
AS-21-5	878	'Āoa	Subsurface	1505–245 BC	Clark and Michlovic 1996
AS-22-42	29	'Aunu'u	Subsurface	–	Best 1992b, Clark 1994
NA	<100	'Āuto	Subsurface	AD 640–770	ASPA Archaeology files, Addison and Asaua 2006a
AS-22-44	217	Utumea	Subsurface	414 BC–AD 100	Moore and Kennedy 1999
AS-22-43	1,984	Aganoa	Subsurface	796–174 BC	Moore and Kennedy 1999
AS-23-22	minimal	Ālega	Surface	–	Clark and Michlovic 1996
NA	2	Āfono	Subsurface	AD 650–970	ASPA Archaeology files, Addison and Asaua 2006a
AS-25-62	1	Fatu-ma-Futi	Subsurface	–	Kailihiwa *et al*. 2005
AS-25-65	~1,000	Vaipito	Subsurface	350 BC–AD 10	ASPA Archaeology files, Addison 2004, Addison and Asaua 2006a
AS-25-66	~2,000	Fo'isia	Subsurface	370 BC–AD 130	ASPA Archaeology files, Addison 2004, Addison and Asaua 2006a
NA	minimal	Puna	Surface	–	Addison, pers. comm.
AS-32-16	many	Āsufou (Vainu'u)	Surface	–	ASHPO files
NA	minimal	Āsufou	Surface	–	D. Herdrich, pers. comm.
AS-32-7	8	Malaeloa	Surface	–	ASHPO files, Ayres *et al*. 2001
AS-34-10	1	Tataga Matau	Surface	–	Clark and Michlovic 1996
AS-34-10	1	Tataga Matau	Surface	–	ASPA Archaeology files
NA	minimal	Leone	Surface	–	Clark and Michlovic 1996
NA	15	Tāfuna	Surface	–	Shapiro and Cleghorn 1994
AS-31-34	~5,000	Malae'imi	Surface	AD 800–1200?**	Ayres *et al*. 2001
NA	~2,000	Faleniu various ASPA	Both	AD 70–665	ASPA Archaeology files
AS-31-94	1	Faleniu	Subsurface	–	Cochrane *et al*. 2004
AS-31-97	2	Faleniu	Subsurface	–	Cochrane *et al*. 2004
AS-31-99 & 100	2	Faleniu	Surface	–	Cochrane *et al*. 2004
AS-31-102	23	Faleniu	Surface	–	Cochrane *et al*. 2004
AS-31-107, 108, & 109	58	Faleniu	Surface	–	Cochrane *et al*. 2004
AS-31-115	1	Pava'ia'i	Surface	–	Cochrane *et al*. 2004
AS-31-106 & 116	8	Pava'ia'i	Surface	–	Cochrane *et al*. 2004
AS-31-126	4	Kokoland	Surface	–	Cochrane *et al*. 2004
NA	~100	Kokoland various ASPA	Surface	–	ASPA Archaeology files
NA	~1,000	Kokoland M-2 Data Recovery	Subsurface	360–50 BC	ASPA Archaeology files
AS-31-127	5	Faleniu	Subsurface	–	Cochrane *et al*. 2004
AS-31-127	5	Faleniu ('Ulu Tree)	Subsurface	730–230 BC	Cochrane *et al*. 2004
AS-31-129	2	Mēsepa	Subsurface	–	Cochrane *et al*. 2004
AS-31-130 & 131	124	Faleniu	Surface	–	Cochrane *et al*. 2004
AS-31-132	9	Pava'ia'i	Surface	–	Cochrane *et al*. 2004
AS-31-136, 140, & 141	23	Pava'ia'i	Surface	–	Cochrane *et al*. 2004
AS-31-142	2	Pava'ia'i	Subsurface	–	Cochrane *et al*. 2004
AS-31-171	33	Pava'ia'i Red Ash profile	Subsurface	AD 250–540	Addison *et al*. 2006
AS-31-171	~1,000	Pava'ia'i P-6 Data Recovery	Subsurface	AD 540–650	ASPA Archaeology files
NA	~1,000	Pava'ia'i Malae	Subsurface	210 BC–AD 80	ASPA Archaeology files
NA	<100	Pava'ia'i various	Surface	–	ASPA Archaeology files

* Beta-19741 calibrated with the 2004 marine curve (Hughen *et al*. 2004 and using a ΔR of 25±28 (Petchey and Addison, this volume).
** The publication includes this date with no indication of its calibration protocol.

Aganoa

At Aganoa, Moore and Kennedy found 1984 sherds during excavation. A single date calibrates to 796–174 BC. As at Utumea, stratigraphic and chronological relationships are unclear at this site. Analysis was done on 783 of the Aganoa sherds. The only decoration was 'incised grooves in a crisscross pattern on the upper surface (face) of the lip' of two rim sherds (see Moore and Kennedy 1999:103–110). Eckert has examined 895 of the Aganoa sherds for temper analysis. She noted the presence of grog temper, 15 sherds with red slip, and 4 (3 triangles and 1 disk) deliberately shaped sherds (Eckert 2006:67). Further excavations by Eckert, Pearl, and students at Aganoa in 2006 significantly increased the sample of sherds and publication of their results should provide a better understanding of the site's stratigraphy and chronology. At To'aga, red slip was considered an indicator of the earliest deposits (Kirch and Hunt 1993c) and the shaped sherds are reminiscent of the sherd disks from Mulifanua.

'Āoa

Sherds were initially discovered in a stream bank at 'Āoa. Subsequent excavation over two seasons resulted in an assemblage of 878 sherds (Clark and Michlovic 1996). Lower ceramic-bearing strata date to BC 1505–245. Dates from upper sherd-bearing strata date to AD 1297–1657. Clark suggested the possibility of 'pottery use a thousand years or so longer than previously thought' at least at some locations on Tutuila (Clark and Michlovic 1996:164). We return to this topic below. Clark also noted sherds at another location at the west end of 'Āoa bay (Clark, pers. comm.).

'Āuto

ASPA archaeologists found fewer than 100 sherds during installation of a septic tank in 'Āuto. A date of AD 640–770 is associated with the sherds (Addison and Asaua 2006a). More work is needed at the site to determine the context of these deposits and their chronological associations.

Ālega

Clark found three surface sherds at a mountainside site (AS-23-22) at Ālega although none was found at the coastal flat below (Clark 1992). These sherds may well be in secondary context and indicative of primary ceramic-bearing deposits at the ridgetop.

Āfono

Two sherds were found below deep colluvial deposits at Āfono. They come from the interface between the colluvial deposits and underlying wetland deposits (ASPA Archaeology files; Addison 2004) and date to AD 650–970 (Addison and Asaua 2006a).

Fatu-ma-Futi

One sherd was found during excavation at Fatu-ma-Futi (Kailihiwa *et al.* 2005). It was deep in terrigenous deposits at the bottom of a steep slope. Habitation features are described for the ridge above (Addison *et al.* 2008) and the sherd is probably from there. Extensive excavations on the Fatu-ma-Futi coastal flat revealed rich cultural deposits but no ceramics (Addison and Valentin 2006). Dates

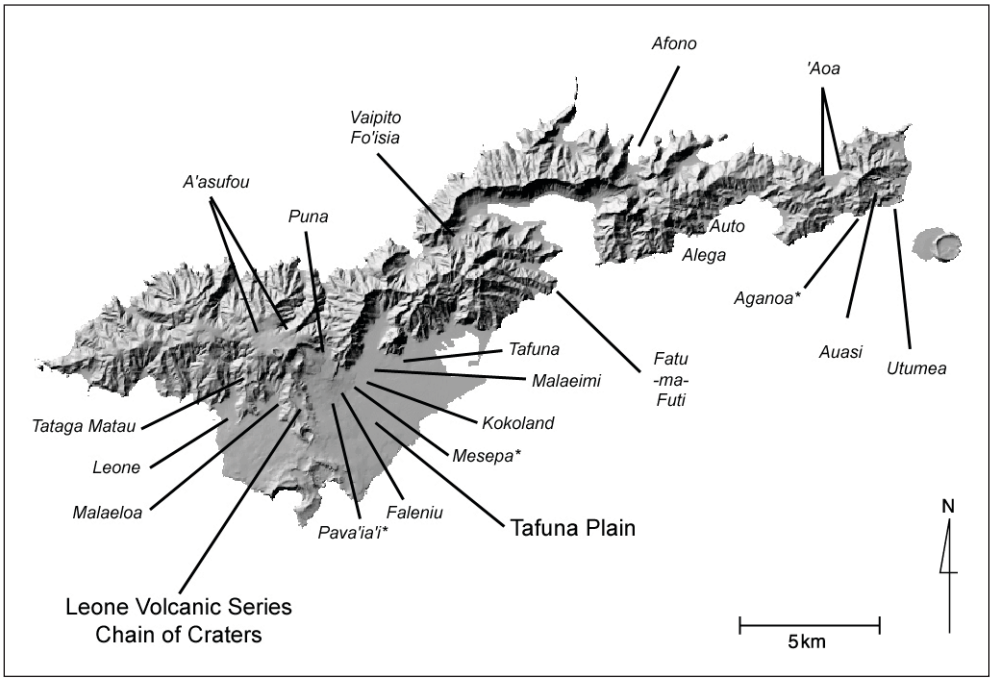

Figure 4. Location of ceramic sites on Tutuila (* indicates sites with incised rims).

from these excavations go back to AD 330–550, although the main cultural deposit is slightly later (Addison and Asaua 2006a). Inbuilt sample age or other reasons may account for the earliest date (Addison *et al.* 2008).

Vaipito

Vaipito is a far inland section of Pago Pago Village less than 500 m from the mountain pass to Fagasā. The ceramic deposit is located at the lowest level of a terrace that was repeatedly rebuilt and heightened over some two millennia (Addison 2004). Excavation in the terrace initially revealed just two sherds. Later sewerline construction that cut into the base of the terrace exposed a deposit from which ~1000 sherds were recovered. The deposit is interpreted as an ancient hill-slope below a habitation area from which refuse was thrown. Many large sherds (~10 cm in a dimension) and the presence of *in situ* articulated sherds suggest very little disturbance of this deposit before it was covered by later terrace-building activities. The stratum with the ceramics dates to 350 BC–AD 10 (Addison and Asaua 2006a).

Fo'isia

The Fo'isia site is about 100 m from the Vaipito site and at the same elevation far inland in Pago Pago. During sewerline construction ASPA Archaeology personnel noted abundant sherds adjacent to the sewerline in the heavy-equipment spoil of a terrace being excavated for house construction. An intact pottery-bearing stratum was located in the cut hillside. Stratigraphic excavations were done back from the cut face. There was a thin ceramic-bearing deposit on top of basal rock and capped by a thick aceramic deposit with little cultural material of any kind. Five dates unambiguously associated with the ceramics range 370 BC–AD 130 (Addison and Asaua 2006a). The depositional context appears to mirror Vaipito – refuse thrown on a hillside and subsequently covered, with little post-depositional disturbance. Many of the sherds measure >10 cm in one dimension. About half of the ~2000 sherds from this site were collected from the disturbed spoil. Apparently most of the deposit was removed by the heavy equipment, because archaeological excavations showed a narrowing deposit further into the hillside. Several pecked-stone pounder fragments were found *in situ* with the ceramics. Others came from the spoil. This kind of artifact, so characteristic of East Polynesia, is only known in West Polynesia from the Fo'isia site (Addison 2004).

Puna

Addison has found a few sherds around his house in the Puna section of inland Faleniu. He has also noted basalt tool fragments, basalt flakes, stream-pebble paving and ovoid foundations in the general area (Addison 2008). There has been no systematic archaeological work in the area.

Āsufou

Results are in preparation from Eckert and students' 2006 and 2007 excavations at the ceramic site of Vainu'u at the inland village of Āsufou. Herdrich previously noted isolated sherds in another part of Āsufou (Herdrich, pers. comm.).

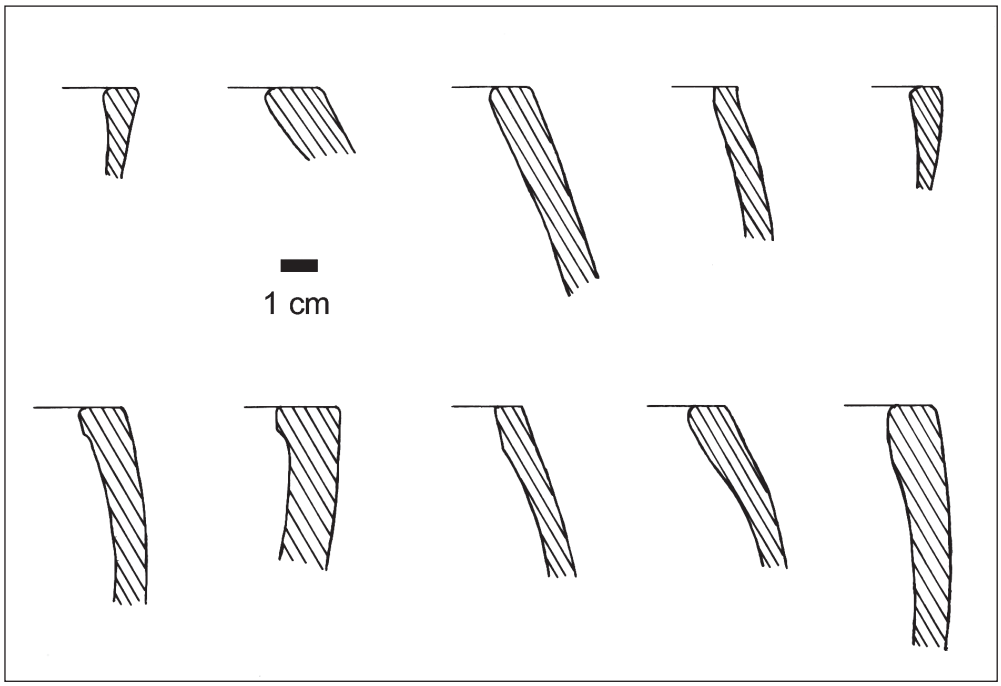

Figure 5. Rims from the Fo'isia Site.

Malaeloa

Surface sherds were found at an inland terrace site in Malaeloa (American Samoa Historic Preservation Office site files; Ayres *et al.* 2001). It is unclear whether these are derived from a ridgetop primary deposit and thus in secondary context.

Leone

Clark mentions finding an isolated surface sherd at Leone (Clark and Michlovic 1996:164). Because of late-Holocene pyroclastic deposits, deposits older than ~AD 1200–1400 in Leone are likely capped by meters of ashrock (Addison and Asaua 2006a). Hence, further ceramics at Leone are likely to be found only at sites on non-Leone-Volcanic-Series substrates (i.e., they will be on mountain slopes).

Tataga Matau

Clark found one surface sherd at the massive inland basalt quarry site of Tataga Matau (Clark and Michlovic 1996:164). Toloa, Tago, and Addison also found one surface sherd on a ridgetop at Tataga Matau (ASPA Archaeology files).

TUALAUTA SEWER PROJECT CERAMIC SITES

Tualauta County stretches from Nu'uuli to Leone and encompasses all of the Tāfuna Plain (Figure 4) and much of mid-to-late-Holocene volcanics of Tutuila (Leone Volcanic Series). The interior of Tualauta is highly dissected 1.0–1.5 million-year-old mountains. The Leone Volcanics added the gently sloping land between the steep mountains and the Tāfuna Plain. This plain is rocky, with lava or ashrock often at the surface and rarely covered by more than a meter of soil. ASPA began a large sewerline project in Tualauta County in the mid 1990s to protect the important aquifer under the Tāfuna Plain. All ceramics known from the county are the result of archaeological work associated with the Tualauta County Sewerline Project. Initially, a series of companies was contracted to do aspects of this work. In 2002, ASPA decided to develop an internal archaeology unit to conduct archaeological investigations in-house. From 2002–2006 this unit was directed by Addison.[3]

During the initial phase of the sewerline project, archaeological surface and subsurface survey found 75 sherds (Shapiro and Cleghorn 1994). Of these, 15 were from a cluster of sites in Tāfuna. The other sixty were from a site in Malae'imi. Epi Suafo'a (now Suafo'a-Taua'i) conducted further excavations at the Malae'imi site, collecting ~5000 sherds. This remains the largest collection from any site in American Sāmoa, by a factor of two. The site has not been fully reported (but see Ayres *et al.* 2001), and although Ayres *et al.* suggest a date of AD 800–1200, stratigraphic and chronological associations at the site cannot currently be evaluated.

Several small surface scatters of sherds were found over three field seasons of survey on the Tualauta Sewerline Project by Taomia and a team from the University of Oregon (Taomia 2001a, Taomia 2001b, Taomia 2002). No sherds were collected during these surveys. Subsurface survey at these sites by shovel test pit was done by Cochrane and colleagues (Cochrane *et al.* 2004) of the International Archaeological Research Institute, Inc. (IARII). The lack of correspondence between surface indications and subsurface deposits found by Cochrane's team highlights the importance of construction monitoring as a significant component of site discovery. It is impossible to know how many other ceramic sites have gone unrecorded on Tutuila for lack of archaeological monitoring of major construction activities. Cochrane's analysis of the project's 42 surface and 264 excavated sherds suggests differences between sites in temper grain size (Cochrane 2004). Results of further excavations by IARII at some of these sites in 2001–2002 are in preparation.

Further ceramic sites were discovered in the Tualauta Sewerline Project area after ASPA decided to conduct archaeological investigations 'in-house'.

Tāfuna

ASPA Archaeology noted a few surface sherds during survey on land of Fonoti, west of the sites located by Shapiro (Shapiro and Cleghorn 1994).

Malae'imi

During reconnaissance survey after Hurricane Heta, an ASPA Archaeology crew noted sherds on the surface in the area between the Tāfuna ceramic sites (Shapiro and Cleghorn 1994) and the Malae'imi site (Ayres *et al.* 2001).

Kokoland[4]

Sherds have been found in surface contexts in Kokoland since Taomia's initial survey of the area (Site AS-31-126, Taomia 2001a:39). Cochrane found at total of 4 sherds from 11 subsurface survey units with no identified subsurface deposit (Cochrane *et al.* 2004:337–342). ASPA Ar-

3 Because of workload and inadequate resources, ASPA Archaeology gave priority to fieldwork over analysis and publication. Addison left ASPA in 2006, partly in protest over this issue. Part of the purpose of this paper is to make summary results available. Addison hopes to be permitted access to the ASPA Archaeology material in future to contribute to the full reporting of this work.

4 Following the usage at ASPA (and hence on the ASPA Archaeology notes and bags), we use the term 'Kokoland' to refer to an area that is larger than what many Tutuila residents would call Kokoland. As used here, the term refers to areas that are more properly parts of Malae'imi, Mēsepa and Faleniu.

chaeology has found about 100 sherds from a variety of sites in Kokoland.

An intact ceramic deposit was found during monitoring of construction trenching midway between Sites AS-31-126 and AS-31-127 (also called 'Ulu Tree Site, see below). Subsequent excavations called 'Kokoland M-2 Data Recovery' were done in 2006 with the assistance of Winterhoff and the University of Oregon field school. This 2 x 2 m excavation recovered sherds from a cultural deposit buried by almost 2 m of aceramic deposits. A date[5] of 360–50 BC came from the same stratum as the ~1000 excavated sherds.

Proximity (~100 m) and radiocarbon results suggest contemporaneity of these sherds and the sherds from the 'Ulu Tree Site. These two sites also typify the site visibility problems in Tualauta. 'Ulu Tree is on a lava outcrop with sherds visible at the surface and only ~50 cm of sediments. Kokoland M-2 Data Recovery is in a low spot where alluvial and other depositional processes have resulted in a thick cap over the ceramics and no pottery visible at the surface.

These two sites are also typical for Tualauta in that the ceramic deposits are highly constrained horizontally. Two surface surveys (Cochrane *et al.* 2004, Taomia 2001a) and systematic subsurface testing (Cochrane *et al.* 2004) failed to find the intact subsurface deposit at the 'Ulu Tree Site. At the Kokoland M-2 ceramic site, construction trench monitoring showed that the ceramic deposit extended for a length of less than 10 m in the trench.

5 WK-19504, 2154±38 BP on unidentified charcoal.

Faleniu

Some 2000 sherds have been collected by ASPA Archaeology from a variety of surface and subsurface contexts in Faleniu. Currently, more ceramic sites are known for Faleniu than anywhere else in American Sāmoa. Some of these sites are capped by a red ash layer with only aceramic strata above (as described for Pava'ia'i, Addison and Asaua 2006a, Addison *et al.* 2006). Dates for such deposits in Faleniu are in the AD 70–665 range (Addison and Asaua 2006a).

Two rim sherds with incised lips were found at one such deposit located at the Faleniu-Pava'ia'i border. A piece of unidentified charcoal[6] dates this deposit to the AD 330–540 range (Addison and Asaua 2006a). As noted by Addison and Asaua, this is much later than generally thought for decoration on Samoan Plain Ware – in fact, it suggests that limited decoration continued until near the end of ceramic use in Sāmoa.

THE 'ULU TREE SITE

The 'Ulu Tree Site is a component of Site AS-31-127. Taomia's team first noted surface ceramics at Site AS-31-127 in 1997 (Taomia 2001a: 38). Three of Cochrane's 11 subsurface survey units yielded a total of only five sherds, no discernible subsurface deposit, and in two units modern material (e.g., metal, glass) was in the same context as the ceramics (Cochrane *et al.* 2004: 343–348). The presence of a subsurface deposit at this Faleniu Village site was indicated when sherds were noted in the rootmass of an *'ulu* (bread-

6 For many of the ASPA dates on unidentified charcoal, a half piece of the dated sample has been archived for future identification and/or dating.

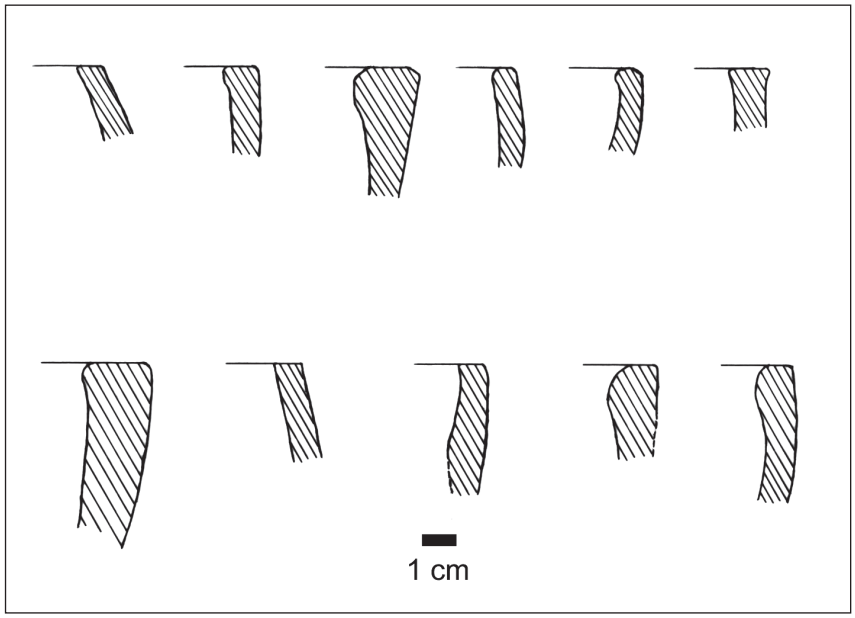

Figure 6. Representative rims from sites in Kokoland.

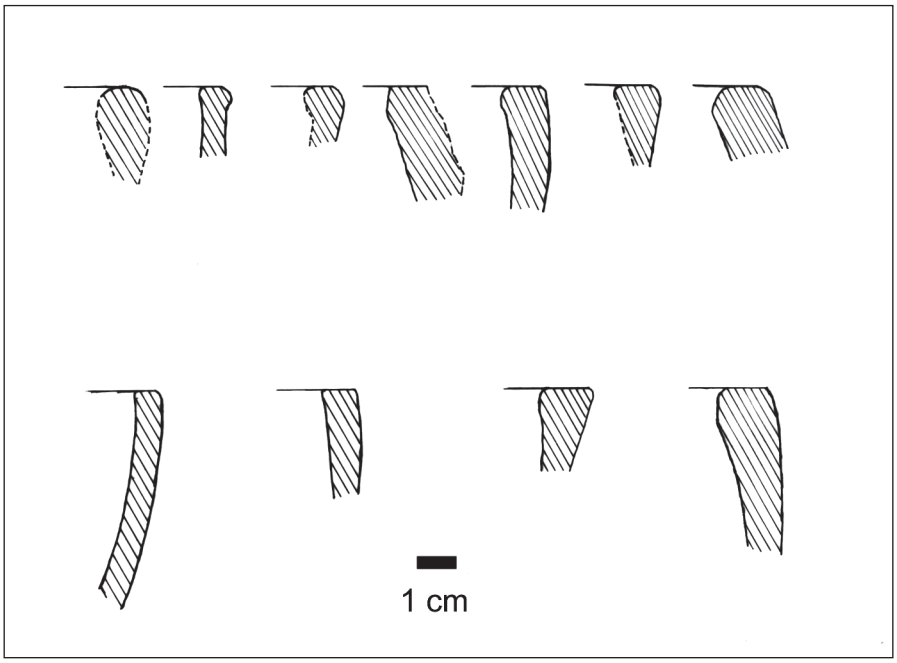

Figure 7. Representative rims from sites in Faleniu.

fruit) tree uprooted during Hurricane Heta. Very limited excavation (50 x 60 cm) by ASPA Archaeology confirmed the subsurface deposit and resulted in a collection of 259 sherds from both surface and excavation. In visual inspection of the sherds during her ceramic analysis of this small assemblage, Eckert notes the diversity of tempers (Eckert and Pearl 2006). She is working on a detailed petrographic analysis of the assemblage. A date[7] of 730–230 BC is associated with the sherds. This is the oldest date anywhere in Tualauta County (or anywhere on Tutuila outside of ʻĀoa). Allen and Wallace (Allen and Wallace 2007) have documented up to 300 years of inbuilt age for unidentified wood charcoal at Aitutaki in the Cook Islands. If this degree of inbuilt age in common in tropical Pacific environments, it may help explain this anomalously early date at the ʻUlu Tree Site. Alternatively, the date could simply be a statistical outlier. The period of use of the ʻUlu Tree sherds is likely at the most recent end of the calibrated range, or even more recent (see discussion of Kokoland M-2 Data Recovery above).

Mēsepa

This site is in Faleniu Village. Sherds are visible on the surface just inland of the bridge at Mēsepa along the stream bank. One incised rim sherd was found there by Tago and Addison in 2006. The presence of multiple modern Tongan graves directly adjacent to the sherd find location and the lack of any cultural deposit visible in the stream-cut bank suggests that the surface sherds are from a subsurface deposit disturbed by grave construction.

Pava'ia'i

Taomia noted surface sherds at a few sites in Pava'ia'i (Taomia 2001b). Cochrane's subsurface survey collected a few sherds but found no intact subsurface ceramic deposit (Cochrane *et al.* 2004). It was only during construction trench monitoring that subsurface ceramic deposits were found in Pava'ia'i. The first of these was Site AS-31-171 where a ceramic deposit was found capped by a layer of red ash and with aceramic deposits above that (Addison *et al.* 2006). A date on multiple pieces of unidentified charcoal from this deposit calibrates to AD 240–540 (Addison *et al.* 2006:10). A total of 33 sherds were collected from the ceramic stratum.

Winterhoff and the University of Oregon field school assisted ASPA Archaeology to excavate near the AS-31-171 deposit. Approximately 1000 sherds were collected. A date[8] of AD 540–650 came from the stratum containing the sherds. Shovel testing suggested that the ceramic deposit is tightly constrained horizontally (~15 m diameter).

A rich ceramic deposits was found ~2 m below the village *malae* at Pava'ia'i during construction-trench monitoring,. Approximately 1000 sherds were collected from this context. A date on coconut endocarp from this deposit calibrates to 50 BC–AD 80 (Addison and Asaua 2006a). The deposit extended no more than 10 m along the trench.

7 WK-19408, 2400±36 BP on unidentified charcoal.

8 WK-19502, 1467±36 BP on unidentified charcoal

TUTUILA CERAMIC CHRONOLOGY

Previously, only one site on Tutuila – ʻĀoa – has been used in ceramic chronology models for Sāmoa. The other data come from sites in Manu'a and islands in Independent Sāmoa. Table 1 summarizes the various models that have been proposed.

Earliest Ceramics

Mulifanua is the only site with dentate-stamped Lapita pottery, so it could be considered the oldest, but equally old dates come from Ofu and ʻĀoa. These dates have been critiqued and their relevance discussed elsewhere (Rieth *et al.* in press, Rieth 2007, Rieth and Hunt, in press, Smith 2002). Here, we will only point out that each site poses interpretive challenges and that the dates cannot be accepted uncritically. More data are needed from each site before these issues can be resolved.

As noted, the earliest dates from strata with ceramics are from ʻĀoa and are interpretively problematic. As seen in Figure 8, Beta-48049 is anomalously early when compared with the dates for Tutuila ceramic strata. The same is true if only the coastal site dates are compared. We suggest that this date is not an accurate reflection of the age of the ceramics at ʻĀoa because of inbuilt age in the sample or other problems. Subtracting 300 years for inbuilt age (Allen and Wallace 2007) would make it interpretively the same date as the other early ʻĀoa date (Beta-48911) and in line with the other earliest dates for Tutuila ceramics.

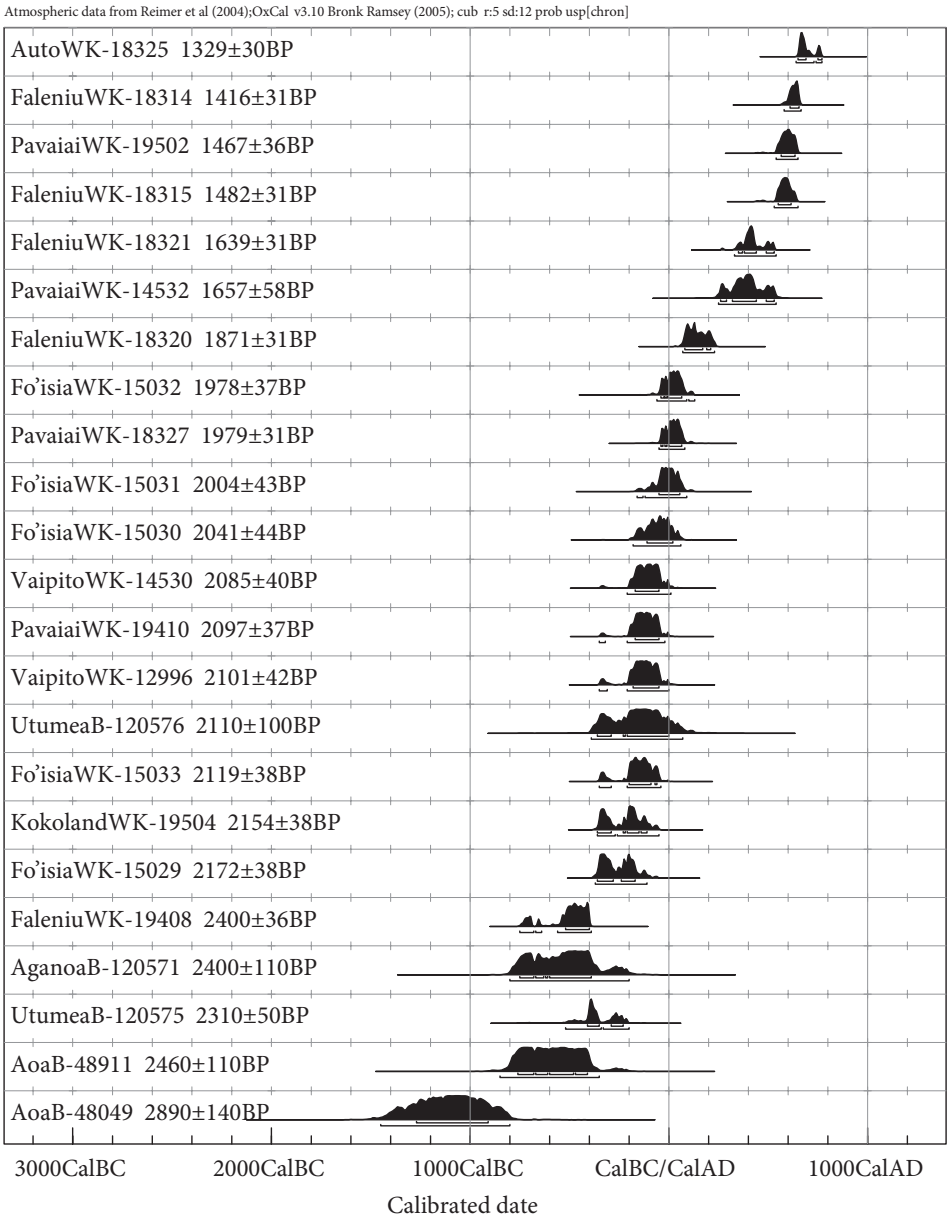

Figure 8. Radiocarbon dates for Tutuila strata with ceramics. Coastal sites are ʻĀoa, Utumea, Aganoa, and ʻĀuto. "B-"=Beta Analytic; "WK-"=Waikato Radiocarbon Dating Laboratory.

As noted earlier, the context of the Aganoa and Utumea dates is problematic. However, if we temporarily accept them as dating the ceramics at those locations,[9] we have the earliest ceramics on Tutuila at Aganoa, Utumea, and ʻĀoa on eastern Tutuila and at Faleniu (ʻUlu Tree) on the west side. The dates from these sites are interpretively contemporaneous and fall in the ~800–300 BC range. The wide standard deviations on these dates make interpretation difficult. However, the lack of both dentate stamping and complex vessel forms that are the hallmarks of Lapita ceramics suggest that the actual date of these deposits is at the latter end of their range. A conservative estimate of the first ceramics (and hence, first settlement) on Tutuila would be ~500 BC, after the replacement of Lapita ceramics by Polynesian Plain Ware (see also discussion in Smith 2002: 142–4). This removes the interpretive dilemma at ʻĀoa where there are Mulifanua-aged dates but no Lapita sherds. A similar case could be made for To'aga.

Geomorphology and 'Hidden' Sites

The geomorphological arguments for why the earliest (and Lapita) sites are hidden in Sāmoa have been reviewed elsewhere (Addison and Morrison in press, Green 2002), but a few comments are warranted here.

On western Tutuila, Clark was unable to find sites comparable in age to ʻĀoa (Clark 1993b). To account for this distribution, he suggested the possibility that Tutuila was tilting, with the western end of the island subsiding and the eastern end uplifting (Clark and Herdrich 1988: 10). We now know that early sites on the western end of Tutuila are likely covered in meters of ash from the Leone Volcanic Series, produced by eruptions as recently as 1400 years ago (Addison and Asaua 2006a, Addison *et al.* 2006). Other evidence suggests that Tutuila has been tectonically fairly stable with neither subsidence nor uplift as major factors (Dickinson 1997).

ʻĀoa showed that subsidence was not hiding early sites on eastern Tutuila as at Mulifanua, neither were they buried under meters of colluvium as at To'aga. In Clark's model, major change in eastern Tutuila shorelines was due to regional patterns of sea-level change. The earliest sites should be located on gentle slopes near former embayments or wetlands associated with the mid-Holocene high sea stand.

The last few decades of archaeological research on Tutuila have been informed by understandings of the possibility of massive geomorphological change. Despite this, if sites earlier than ~500 BC are hidden on Tutuila under many meters of colluvium at the backs of coastal valleys, or in other geomorphologically difficult locations, they remain to be found. The fact that there are now several sites on Tutuila dating to a few centuries after Lapita suggests that either early sites are not all hidden or that the few centuries preceding 500 BC were a time of rapid geomorphological change whose tempo dramatically declined by 500 BC, with relative stability for the last 2.5 millennia. The former may be the more believable scenario.

The Samoan case could appear analogous to Vanuatu where archaeologists also searched for Lapita sites in vain for decades (Bedford 2006). We think that Vanuatu's much more complex geology and geomorphological processes make it less than comparable to Sāmoa.

A program of searching for sites dating to before 500 BC has been proposed for 2008–2009 (Rieth *et al.* in press). This search is informed by GIS modeling of palaeo shorelines and desirable locations for initial settlement (Morrison *et al.* in press). This project will address questions of the timing and characteristics of initial settlement on Tutuila and ʻAunu'u (Addison and Morrison in press).

Early Inland Settlement

Figure 9 presents dates from inland ceramic sites on Tutuila. The earliest date is from the ʻUlu Tree Site (WK-19408). Subtracting 300 years from this date for inbuilt age makes it contemporaneous with the nearby date from Kokoland (WK-19504) and in line with the other earliest inland ceramic dates. The Kokoland date and several of the Fo'isia/Vaipito dates have bimodal distributions because they fall on a flat section of the calibration curve. If the later portion of the distribution on these dates is accepted, then they, the ʻUlu Tree date, and the date from the Pava'ia'i Malae are interpretively contemporaneous. This means people were using five widely spaced inland sites on Tutuila by ~200–100 BC. Green has estimated Tutuila's maximum population at ~6500 (Green 2007). Models of population growth on newly colonized islands would allow this size population to develop in the centuries between 500 BC and 200–100 BC (Kirch and Rallu 2007). Population pressure then could be one reason why people were using inland areas this early (assuming that the first Tutuilans preferred living at the coast).

Although Pearl dated three ridgetop sites to AD 1300–1400 and argues that initial settlement of Tutuila's mountains was in response to the transition from the Little Climatic Optimum to the Little Ice Age (Pearl 2006), the evidence presented here and elsewhere suggests use of inland areas at least a millennium earlier (Addison and Asaua 2006a, Ayres *et al.* 2001). There are eight other inland sites with ceramics that remain undated. Of these, three are on ridgetops (Tataga Matau and two at Āsufou), and another four have ceramics in secondary context that likely come from adjacent ridgetops (Āfono, Fatu-ma-Futi, Ālega, and Malaeloa). The number of inland ceramic sites discussed in this paper reinforces the argument that use of mountains on Tutuila was widespread and early.

9 Publication of Eckert and Pearl's recent results from Aganoa should greatly improve our understanding of chronological and stratigraphic relationships at this site.

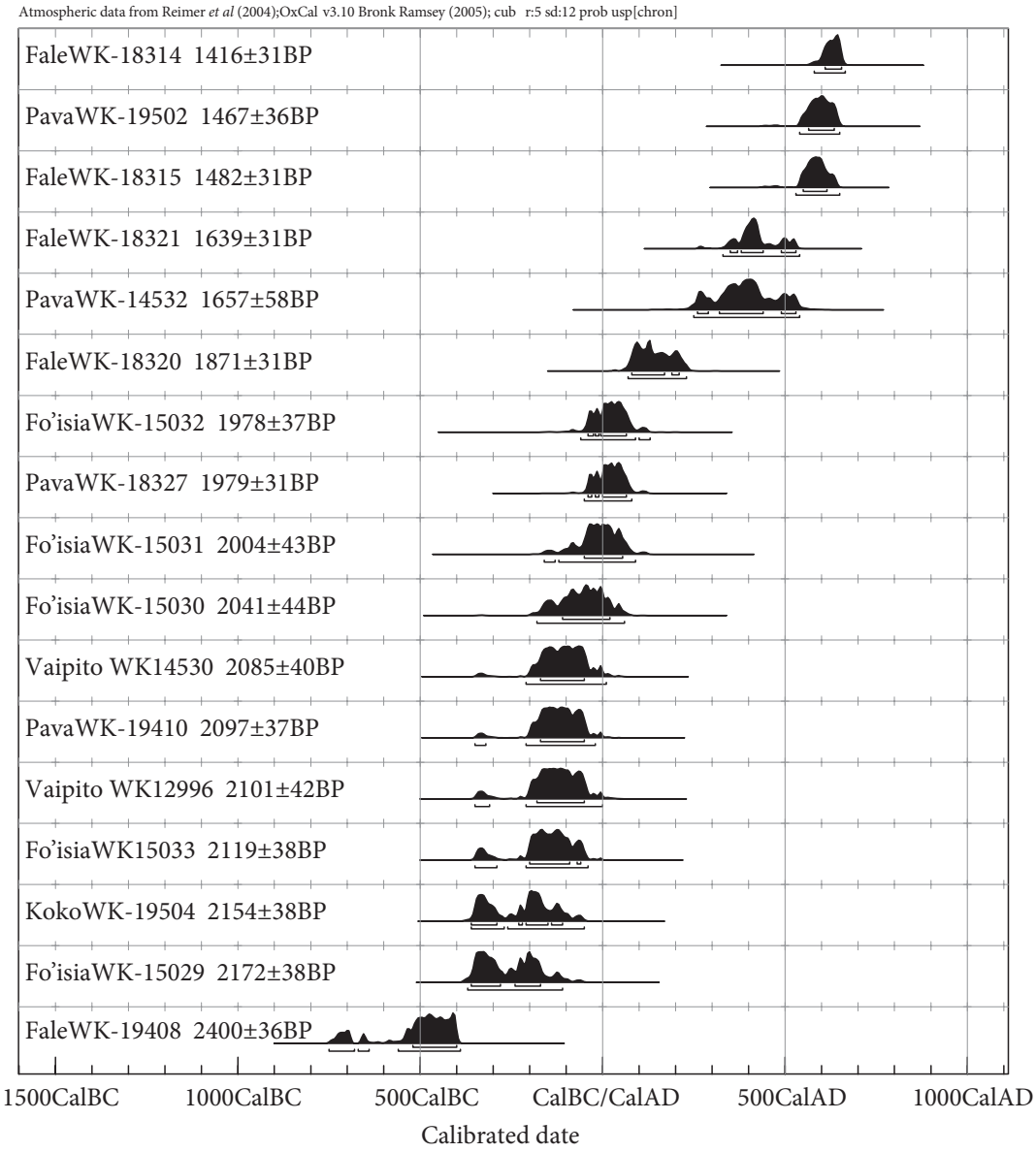

Figure 9. Dates from inland ceramic sites on Tutuila.

Cessation of Ceramic Use

Clark's excavations at 'Āoa yielded deposits ranging from 1505–245 BC at the bottom to AD 1307–1657 near the top (Clark and Michlovic 1996:162). Significantly, there is a ~1500 year gap in the midsection of the deposit (Figure 10).

Although noting the stratigraphic complications, Clark and Michlovic suggested the possibility of late ceramic use on Tutuila. They accepted 'the possibility that our conclusions may require revision as additional work is completed' (Clark and Michlovic 1996:164). When the 'Āoa ceramics were excavated two decades ago, this was the 'only ceramic residential site known for Tutuila' (Clark and Michlovic 1996:164). With the increase in available data on ceramic sites of Tutuila, it is time to begin the revision that Clark and Michlovic foreshadowed.

The latest ceramics in non-problematic stratigraphic and chronological context are at 'Āuto and the Faleniu/Pava'ia'i border (Table 2, Figure 4). These date to the ~AD 600–700 period, and if the most recent end of the 'Āuto date is added, then AD 800 (this latter date has been proposed for the cessation of ceramics on Niuatoputapu [Kirch 1988:246]). At each of these Tutuila sites it is conceivable that the charcoal dated is from continued use of the sites for a couple of centuries after the cessation of ceramic use, and that the date of ceramic cessation is in the ~AD 400–500 range.[10] A similar date can be argued for Tonga (Burley and Connaughton 2007 and Connaughton pers. comm.). The earliest deposits at Fatu-ma-Futi date to this period (Addison

10 Afono is excluded because of lack of context for the two sherds found there. The Afono dates are good for infilling of a palaeo-wetland, but questionable for association with a primary ceramic deposit.

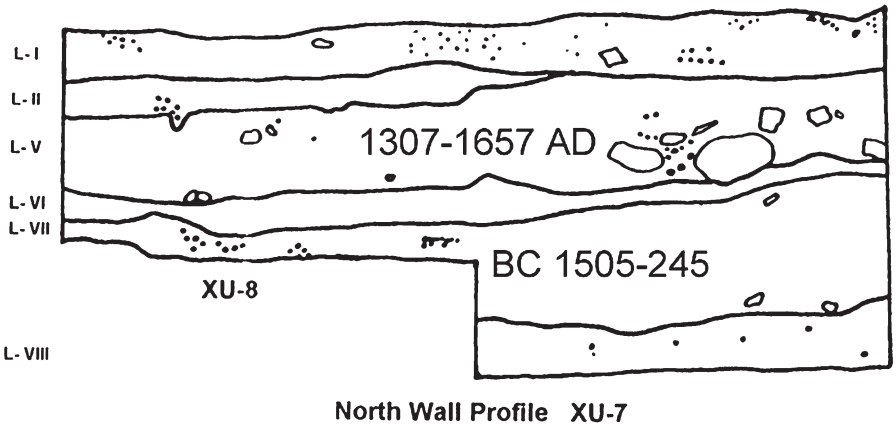

Figure 10. ʻĀoa ceramic stratigraphy (after Clark and Michlovic 1996:158). Note that L-VI represents more than 1500 years.

et al. 2008). The fact that no pottery was found in extensive excavations at Fatu-ma-Futi (Addison and Valentin 2006) further reinforces a ~AD 400–500 cessation date.

In either case, with more than forty ceramic sites now known from Tutuila, there is no evidence of ceramics past AD 800 in an unambiguous context (see also discussion in Rieth and Addison, this volume). Several sites are now documented with post-AD-800 aceramic deposits on top of earlier ceramic deposits. This also argues against late ceramic use on Tutuila.

Much of the area covered by the Leone Volcanics has minimal sediment deposition. Aside from pockets of low-lying areas, the only deposition is from cultural processes, organic matter, and airborne material from explosive volcanic eruptions. Consequently there is often up to two millennia of artifactual material in a matrix less than 50 cm thick. This matrix has been subjected to vertical movement by planting, posthole digging, and a variety of other natural and cultural processes over the same long time period. Hence, finding deposits in unambiguous primary context is a challenge. The presence of a discernable layer of red ash has been very useful in this regard. Although often broken up and mixed with later material, where this ash layer is intact it insures a known 'prior to' age for underlying deposits. On other parts of the island, there are also very old deposits near enough to the surface to be disturbed by cultural digging, for example at Aganoa and Utumea (Moore and Kennedy 1999).

Another point calling into question a very long plainware sequence is the lack of change in Tutuila ceramics. For Vanuatu, Bedford has argued the implausibility of people making the same style of pots for an extended period (Bedford 2006). If this principle holds for Sāmoa and no temporal variability is shown for Samoan Plain Ware, we may find the plainware chronology further shortened.

The idea of late ceramics in Sāmoa would be definitively established by finding ceramics in a late context that is clearly sealed by overlying deposits and which does not have underlying ceramic deposits from which the sherds may be derived.

Decorated Pottery – Only Early?

Kirch and Hunt considered incising as indicative of only the earliest ceramics at To'aga (Kirch and Hunt 1993c). Incised rim lips are now known from three sites on Tutuila (Aganoa, Faleniu-Pava'ia'i, and Mēsepa). The Faleniu-Pava'ia'i border site is one of the latest contexts for ceramics on Tutuila. As mentioned above, it is possible that the charcoal from the site postdates the ceramics, but the possibility must be considered that minimal and very rare decoration continued until the end of ceramic use on Tutuila. Notable are the large collections from early contexts at Vaipito, Fo'isia, Kokoland M-2, and Pava'ia'i Malae where no decorated sherds were found. For regional comparison, ʻUpolu has notched rims in late context (Green and Davidson 1974a), and there is late incising on ʻUvea (Christophe Sand pers. comm.).

Spatial Distribution

Sampling on Tutuila has been heavily biased towards Tualauta County. This is because of the proactive role of ASPA in pursuing archaeology connected with its Tualauta County Sewerline Project.[11] Much of the Tāfuna Plain and adjacent lowland slopes have been fairly thoroughly searched for surface sites. Hence we have a reasonably accurate understanding of where surface ceramics are located.[12] In addition, many kilometers of construction trenching (usually down to bedrock) have been thorough-

11 Largely due to the concern and foresight of then ASPA leaders Utu Abe Malae, Fonoti P. Perelini, and Michael Dworsky.

12 Our repeated visits to some sites through successive phases of construction work suggest that often important elements of a site are initially missed because of changes in vegetation, slight surface disturbance, and the like, so that more ceramic sites surely remain to be found in areas surveyed by ASPA.

ly monitored by ASPA Archaeology. This monitoring has given a good sample of subsurface ceramic locations (at least of those accompanied by a cultural layer noticeable in the trench walls). Earlier we noted that Cochrane's systematic subsurface testing showed how little correspondence there is between surface remains and intact subsurface deposits on this part of Tutuila. The same pattern holds for the construction trench monitoring.

It can be noted from Figure 4 that the Tualauta ceramic sites are all on the lowland slopes at the very margins of the Tāfuna Plain proper. Extensive surface survey and construction trench monitoring on this lava delta have uncovered no ceramics. As a corollary, no dates from the Tāfuna Plain, except at its inland fringe, are more than 1000 years old (Addison and Asaua 2006a). Major parts of the Tāfuna Plain may have been formed by lava flows associated with the most recent pyroclastic deposits on the island at ~AD 600–800 (Addison and Asaua 2006a, Addison *et al.* 2006). This would explain the distribution of ceramic sites.

The earliest ceramic sites are at the coast, with inland sites following a few centuries later. These early coastal sites are on eastern Tutuila. Because of coastal geomorphology associated with the Leone Volcanics, it is unlikely that coastal locations appropriate for early settlement existed in much of western Tutuila (Morrison *et al.* in press). Narrow coastal plains not affected by the Leone Volcanics appear to have formed as habitable areas only after ~AD 500–700 (Addison and Asaua 2006a). Hence, it is unsurprising that the earliest sites are at the slightly elevated localities of ʻĀoa and Aganoa. In the Morrison *et al* GIS modeling, the lack of good coastal habitation locations may also be helpful in understanding why there was apparently such rapid movement to inland areas.

CONCLUSION

In a little over a decade, the number of ceramic sites documented for Tutuila has risen from a handful to over 40. Although the outlines of a spatial and chronological picture are beginning to emerge, detailed analysis of the vast bulk of these ceramics remains to be published. Particularly useful will be analyses that attempt to differentiate stylistic and functional traits in the ceramic assemblages and that assess temporal and spatial differences in the distribution of such traits. This will be critical in addressing regional questions such as the replacement of Lapita pottery by Polynesian Plain Ware and attendant issues relating to the construction of an Ancestral Polynesian Culture, its location and timing.

Detailed analysis of the existing collections will also allow a range of questions about the interactions on Tutuila to be addressed. Geochemical characterization of clays in Tutuila sherds also offers the possibility of identifying where pottery was made on the island and comparing where it was finally deposited in the archaeological record. Eckert's work on temper suggests the utility of this form of analysis for understanding aspects of ceramic production and exchange. Her preliminary studies have shown consistent use of at least two kinds of temper in the sherds from Aganoa (Eckert 2006). At the ʻUlu Tree Site, Eckert's identification of several different tempers suggests complex relationships (Eckert and Pearl 2006). There is a rich potential for further studies of this sort.

The idea of an early 'thin-fine ware' and a later 'thick-coarse ware' has not been touched in this paper; addressing it will require analysis of the existing collections. In particular, the relatively tight chronology and capped-and-undisturbed nature of the deposits at Fo'isia, Vaipito, Kokoland M-2, and Pava'ia'i Malae should add some resolution to this question.

The earliest part of the Tutuila ceramic chronology remains to be adequately defined (Addison and Morrison in press). In the last few years, advances in understanding geomorphological processes on Tutuila have set the stage for informed prospection for the earliest sites.

Regardless of what may be learned from the analysis of Samoan Plain Ware on Tutuila, data on Polynesian Plain Ware assemblages from the West-Polynesia region are needed. Especially useful would be comparisons with assemblages from Lau, Tonga, ʻUvea, and Futuna. Discussion at the Archaeology of the Polynesian Homeland Conference suggested individualised plainware traditions for these islands or archipelagos. Currently there is little evidence of the transport of pots, or even transport of ideas about vessel shape. Evidence for transport of lithics remains extremely thin in the post-Lapita period of the region as well. This leaves archaeologists to argue interaction from reconstructions of language and culture, and to posit exchange of perishable items in the absence of hard material. Clearly, much more archaeological work needs to be done to sort out these questions. Published analyses of plainware assemblages would be a good start. Without more data from the region, Tutuila will sit alone and discussion of regional dynamics will remain conjectural.

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