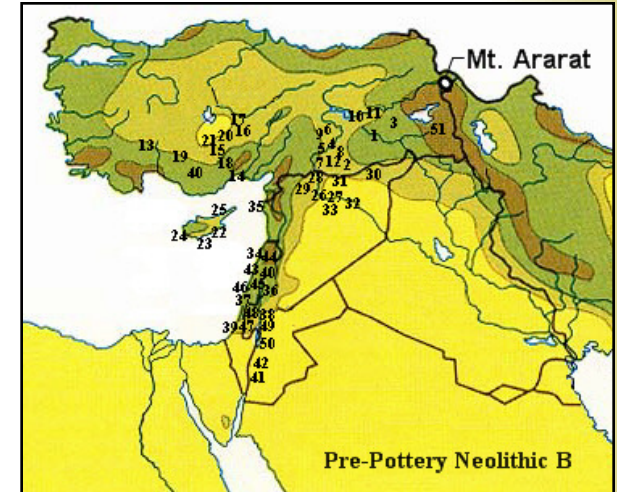
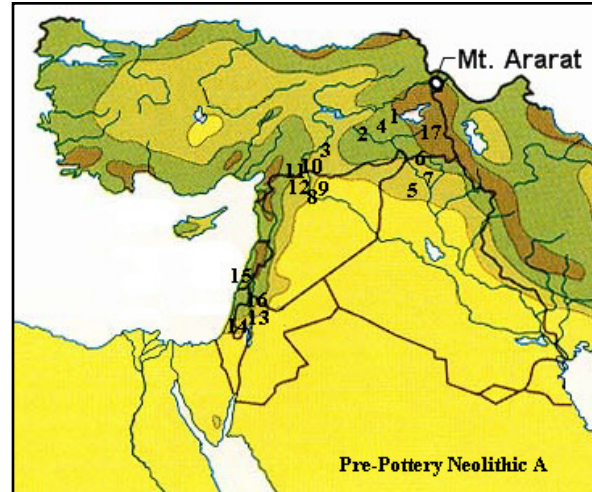
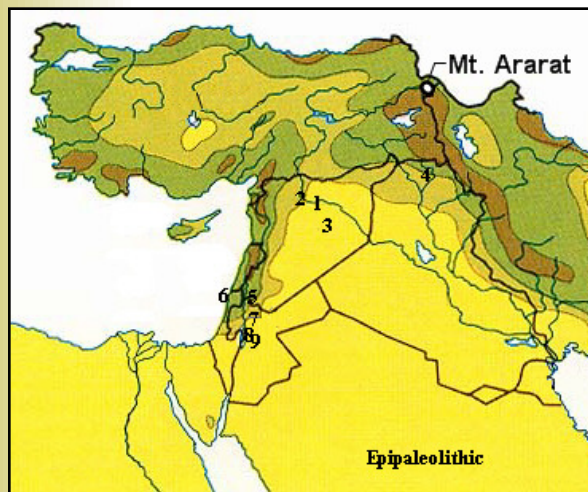


Prehistoric Monumental Wood  
Structure, Smaller Wood Edifices, and  
Cave Site on Mount Ararat: Chronology,  
Function, and Context.



Dr. Joel Klenck  
PRC, Inc.

# Late Epipaleolithic (22-9.6k BC) to PPNA (9.6-8.5k BC) to PPNB (8.5-6.5k BC).



- ❧ Proposed Origins of Anatolian Neolithic: Levant, N. Pontus, N. Iran.
- ❧ M. Özdoğan (1999): Prospect of Anatolian PPNA from mountainous regions of eastern Turkey.
- ❧ Hallan Çemi: 640 m a.s.l. dating to *ca.* 9,000 BC.
- ❧ Çayönü, Boytepe, Çinaz, and Cafer Höyük at > 800 m a.s.l.
- ❧ Tirşin at 3,000 m a.s.l.

# Ararat Prehistoric Site



- ❧ From 3,000 to 4,700 m a.s.l.
- ❧ All areas within 1,200 m (1,347 m with elevation) linear extent.
- ❧ Divided into three areas: A, B, and C.
- ❧ Area A: Monumental wood structure; fourteen (14) loci; minimum LWH measurements:
  - ❧ 1) Possible features and artifact scatter: 159.23 m, 91.34 m, and 10.21 m.
  - ❧ 2) Wood fragments: 119.88 m, 91.34 m, and 10.21 m.
  - ❧ 3) Fully or partially intact wood loci: 96.53 m, 45.28 m, and 10.21 m.
- ❧ Architecture mostly of cypress (*Cupressus* sp.).
- ❧ Loci 4, 5, 6, 7, 10 & Loci 3, 14 constructed together.

# Radiometric Dating



- ❧ Shahid Beheshti University in Iran.
- ❧ A: Uncharred wood with fungus, <20 mm, >100.0 pMC
- ❧ B: Uncharred wood; <20 mm;  $120 \pm 25$  CalBP
- ❧ C: Uncharred wood; 60 mm;  $610 \pm 25$  CalBP
- ❧ D: Uncharred wood; 300 mm;  $6,891 \pm 4,647$  CalBP
- ❧ Larger the uncharred wood sample, the older the dates.
- ❧ Corollary: Peruvian site of Paredones exhibiting modern dates from uncharred vegetal samples while charred portion of same artifact and other samples yielded dates from 6<sup>th</sup> and 7<sup>th</sup> millenniums BP (Grobman et al., *PNAS*, 2012).
- ❧ Artifact seriation evidences earlier date parameter.

# Site Context



# Artifact Seriation



- ❧ Thick-walled globular stone vessels date from the 12<sup>th</sup> to 7<sup>th</sup> Mil. BC (Kozłowski and Aurenche, 2005).
- ❧ Vegetal remains dominated by legumes (chick pea & bitter vetch) and small amounts of wild cereals; similar to Hallan Çemi (bitter vetch & lentils without cereals) dating to 10<sup>th</sup> Mil BC (Rosenberg & Nesbitt).
- ❧ Ararat wood bowls coarser, more robust compared to Kefar Samir from 5<sup>th</sup> Mil BC (Galili et al., 1993).
- ❧ Lithic core technology and microliths: 40<sup>th</sup> to 3<sup>rd</sup> Mil. BC (Gatsov, Pers. Com., 2013).



# Waddle Walls



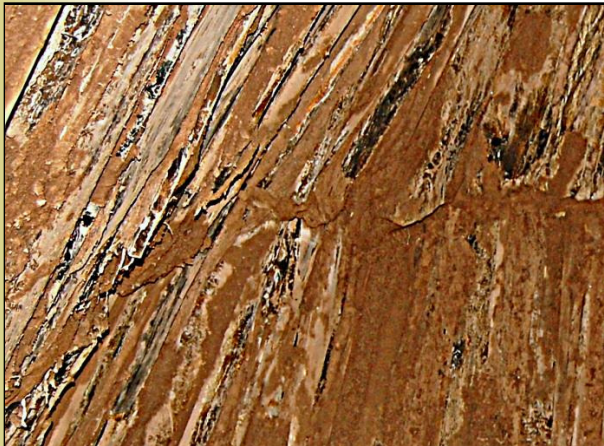
- ❧ Bundles of tree stems, wrapped in vegetal material (covered in mud).
- ❧ Anatolian S. Coast: Fikirtepe, Pendik, İstanbul Yenikapı, and Aktopraklık, round/oval wattle-and-daub huts, semi-sunken floors, 6,450-6,100 BC (Özdoğan and Başgelen, 2007).
- ❧ Shillourokambos in southern Cyprus dating to 8,200 BC (Guilaine and Briois, 2001); Çatal Höyük with contexts around 7,500 BC (Hodder, 2003); Hallan Çemi at ca. 9,000 BC (Rosenberg et al.).
- ❧ Çayönü, horizontal bands of waddle (Braidwood 1981, Schirmer 1988).
- ❧ Ararat A, Locus 8, waddle without daub. Stem bundles wrapped in cords of flax (*Linum* sp.).
- ❧ Similar to Loci 2, 3, and in Area C.



# *Vertical* Timbers with Clay Coating

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- ☞ Wooden posts with clay coating at Jarf el Ahmar in Syria dating to 9,500-8,500 BC (Stordeur et al. 2001); at Mureybet IIIB (van Loon 1966).
- ☞ Ararat, Locus 3, vertical slats of wood covered with clay coating.





# Timber Courses in Clay



- ❧ Pre-Pottery Neolithic features at Mureybet II, IIIB, Cheikh Hassan, Çayönü, and Jericho where vertical timber courses were emplaced in clay (van Loon 1968; Cauvin 1980; Schirmer 1988).
- ❧ Ararat Locus 2, timber course adhered to wall by clay material.



# Retaining Walls with Wood Posts

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- Features found in PPNA strata at Hallan Çemi and Jarf el Ahmar (Rosenberg, 1994; Stordeur et al, 2001).
- Ararat A, Locus 6, wood posts preventing lithic material from entering structure.



# Vertical and Horizontal Timbers & Planks



- Vertical timbers without clay coating at Area A, Locus 14 (e.g., Natufian structures).

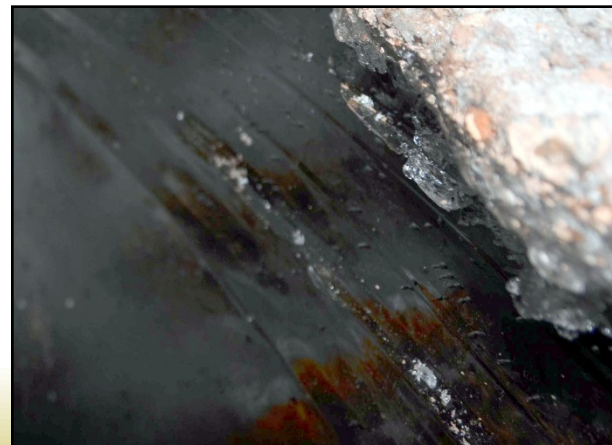


- Horizontal planks without clay coating at Area A, Locus 5 (marks akin to adze impacts).

# Bitumen or Resin



- ❧ Base of SF289, Wadi Faynan, southern Jordan, 9-8<sup>th</sup> Mil BC (Wicks, 2007).
- ❧ As-Sabiyah, Kuwait, 6<sup>th</sup> Mil BC (Carter, 2010).
- ❧ Ararat sites: Thick or thin coatings exhibited in most loci. Exceptions in Area A: Loci 3, 8 (with clay coating or waddle) and 6 (retaining wall?).



# Area B: Smaller Edifices



- ❧ Area B: Smaller wood structures at lower elevations.
- ❧ Smaller edifices constructed or separated from Area A by cultural or natural processes.
- ❧ Early historic preservation?
- ❧ Area B, Locus 2.



# Area C: Cave Site



- ❧ Cave site with no ceramic artifacts but bone and wood tools, *Linum* strands, cords, textiles, wild cherry, cinnamon, and ginger.
- ❧ Artifacts suggest food storage; textile manufacturing and dyeing; or both.
- ❧ Bowls made of organic materials.



# Ararat Prehistoric Sites

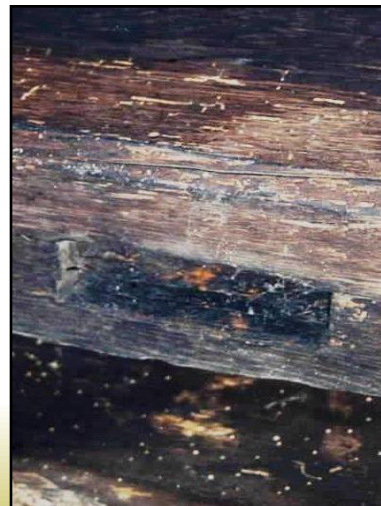


- ❧ No surprises; archaeological analogues; prior hypotheses.
- ❧ Adds to discussions about the Late Epipaleolithic to Pre-Pottery Neolithic A transition.

# Architecture



- ❧ Pre-Pottery Neolithic architecture built mostly of stone, mudbrick, sometimes reinforced by timber (Bıçakçı, 2003).
- ❧ Wood construction rare and poorly preserved in archaeological contexts.
- ❧ Ararat loci exhibit knowledge of carpentry techniques: mortise-and-tenon joints and notched cross-beams.





# Domestication



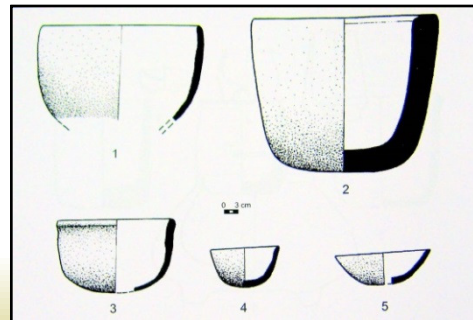
- Wild grains and legumes (chickpea, bitter vetch, and lentils) domesticated around 9,000 BC.
- Ararat sites have very large and well-preserved unburnt samples of early domesticates.
- Legumes (*Cicer*, *Vicia*) predominant; similar to Hallan Çemi (*Vicia*, *Lens*).
- Similar or smaller: Tell el-Kerkh, Ain Ghazal, Jericho, Ramad, Cayönü (Tanno & Willcox 2006).  
Ht: 4.43 mm & Wdth: 3.54 mm (N=10).
- C. arietinum* or *C. bijugum*?
- Genetic studies possible.



# Non-Ceramic Containers



- ❧ Old World Archaeologists: Pottery from Lime Ware.
- ❧ New World / Australasian Archaeologists: Pottery from Organic Materials.
- ❧ Ararat sites provide evidence for both. Form and function – evolution of pottery.



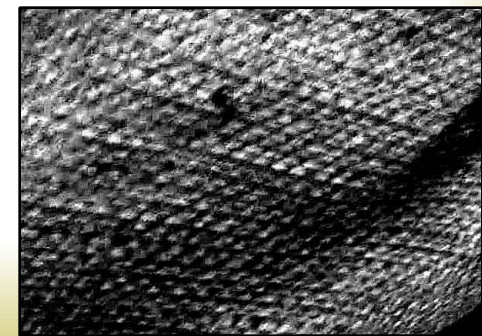
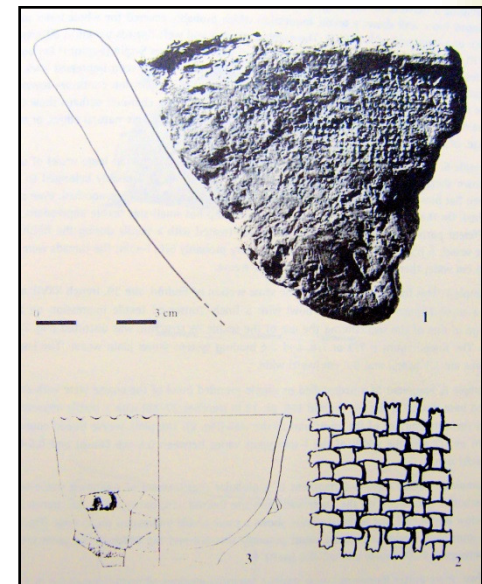
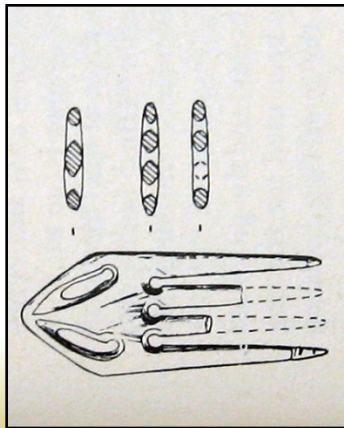
# Non-Ceramic Containers



# Industry



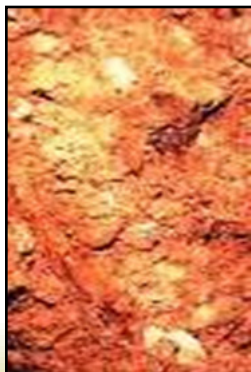
- ❧ Comprehensive evidence for manufacturing processes: flax strands (*Linum* sp.)
- ❧ Bone and wood tools.
- ❧ Cord making.
- ❧ Textile weaving.
- ❧ Fabric dyeing.



# Veneration



- ❧ 1960s to 1980s: Environment a causal factor.
- ❧ 1990s to 2000s: Importance of ideology.
- ❧ Origins of Ararat site, absence of cult architecture, exhibits utilitarian features: legume storage, caprovine herding, textile manufacturing and dyeing.
- ❧ Later cultures venerated site leaving whole bowls and other artifacts in Locus 4.



# Civilization



- ❧ Earliest monumental structure: PPNA tower at Jericho dates to 8,000 BC; 9 m in diameter; 8.5 m in height; dating to ca. 8,500 BC. Required coordination and hierarchical society (Kenyon, 1981).
- ❧ Earliest display of non-egalitarian village at Hallan Çemi (10<sup>th</sup> Mil BC) (Rosenberg et al.).
- ❧ Earliest cult area at Göbekli Tepe (9<sup>th</sup> Mil BC); required transport of materials several kilometers (Schmidt, 1995, 2001a; 2001b).
- ❧ Area A significantly larger than PPNA tower at Jericho: At least 96.53 m. in length, 45.28 m. in width, and 10.21 m. in height.
- ❧ Uncommon building materials required more extensive transport to higher elevations compared to Göbekli Tepe.
- ❧ Origins of site and assemblage appear to be from L. Epipaleolithic/PPNA transition.
- ❧ Initially non-cult oriented organization and coordination similar to Hallan Çemi .



# Additional Surveys



- ❧ Archaeologists from University of Leiden surveyed Area B loci in May, 2013.
- ❧ Detailed measurements and high resolution photographs.
- ❧ Area B, Locus 1 exhibits mortise-and-tenon joints < 20 mm in diameter.



# Concerns



- ❧ Preliminary report sent to Turkish, International, and Academic archaeological authorities in March, 2013.
- ❧ Melting ice and retreating glacier.
- ❧ Lack of preservation efforts.
- ❧ Looting by locals and enthusiasts.
- ❧ Paucity of organized mitigation efforts.