

## USING DANA-WH

### Downloading and Installing the DANA-WH Client

To install the DANA-WH client application, one must download version 1.4 of Sun Microsystems' Java Runtime Environment (JRE) software. This software download can be accessed from the DANA-WH Web site (<http://www.dana-wh.net/download/>) or the ATL Web page (<http://atl.ndsu.edu/archive/>). During the initial JRE setup, Sun's new Java Web Start (JWS) will be installed on the user's computer as well. JWS allows DANA-WH users to run the network's client software from their desktop without the aid of a standard web-browser. Once the JWS installation is complete, the user may access the DANA- WH client software by returning to the DANA-WH website and selecting the "Launch Application" hyperlink. The user is only required to return to the web site once after installation in order to launch the application. Every other time after the first, the user may launch the application by clicking the applications icon now found on the user's computer desktop environment. If a user wishes to access the 3D model interface, he/she must additionally download and install the latest Java3D JRE. A link to this software download is available from either the ATL or DANA-WH websites. An installation tutorial is available on both web sites.

### Launching and Searching DANA-WH for Content

When the DANA-WH software client is launched, a valid login takes the user to the search interface. The user selects the collection to which he/she wants access. Currently in the DANA-WH Archaeology Collection, initial browsing is geographical. The global, geographical search operates through six levels of increasing spatial specificity: global regions (e.g., North America), global sub-regions (Northern North America), individual nation (e.g., USA), and primary, secondary, and tertiary levels appropriate to the country (e.g., in the USA: State, County, and Township or other tertiary unit designation as appropriate, such as unincorporated areas or named physiographic feature, such as Big Butte Plateau). When the desired geographic level is reached, the user can continue the search by Site\_Code (Site\_Name), by Material\_Class, Material\_Type, Artifact\_Class, and Artifact\_Type.

If the user is interested in Oceanian material culture, and is particularly interested in, for example, Samoan stone adzes, the user drills down geographically through Oceania, Polynesia, USA, American Samoa and further down to the island of Ta'u, and still further down to a particular village site or locality, e.g., Ta'u Village. The user then chooses Material\_Class Stone, Material\_Type Basalt, Artifact\_Class tool, and Artifact\_Type adze. The search criteria will yield Specimen\_Code AS-11-8-42. Figure 1, below, shows a screen capture of the data, 2D image, and 3D model retrieval for this specimen.

As a further example, if a user is searching for ceramics from India, the geographic search sequence is Asia, South Asia, India, Uttar Pradesh, Etah, and locality Atranjikhera, then the user then selects in Material\_Class Ceramics, in the Material\_Type Medium Fabric Artifact\_Class Container, and Artifact\_Type Vessel, the search criteria will yield Specimen\_Code Atranjikhera-v15-189 (see Figure 2),

The visualization interface will be able to retrieve 2D images (e.g., JPEG) of the object or 3D models. The 2D image viewer provides multiple views of artifacts with metric scales, and as appropriate, scientific drawings of the objects. For example, in Figure 1 (above) the viewer displays six views of each Samoan stone or shell adze (individual views of front, back, both side profiles, cutting edge, and poll), profiles of ceramic types from India (Figure 2, above). A wide range of image data can be displayed in this manner, from interior and exterior views of decorated pottery sherds to multiple views of archaic projectile points from the Rustad Site in North Dakota. Although not yet implemented, the 2D image viewer will soon also have Java-based measurement tools, similar to the DANA-WH client's 3D viewer measurement tools.

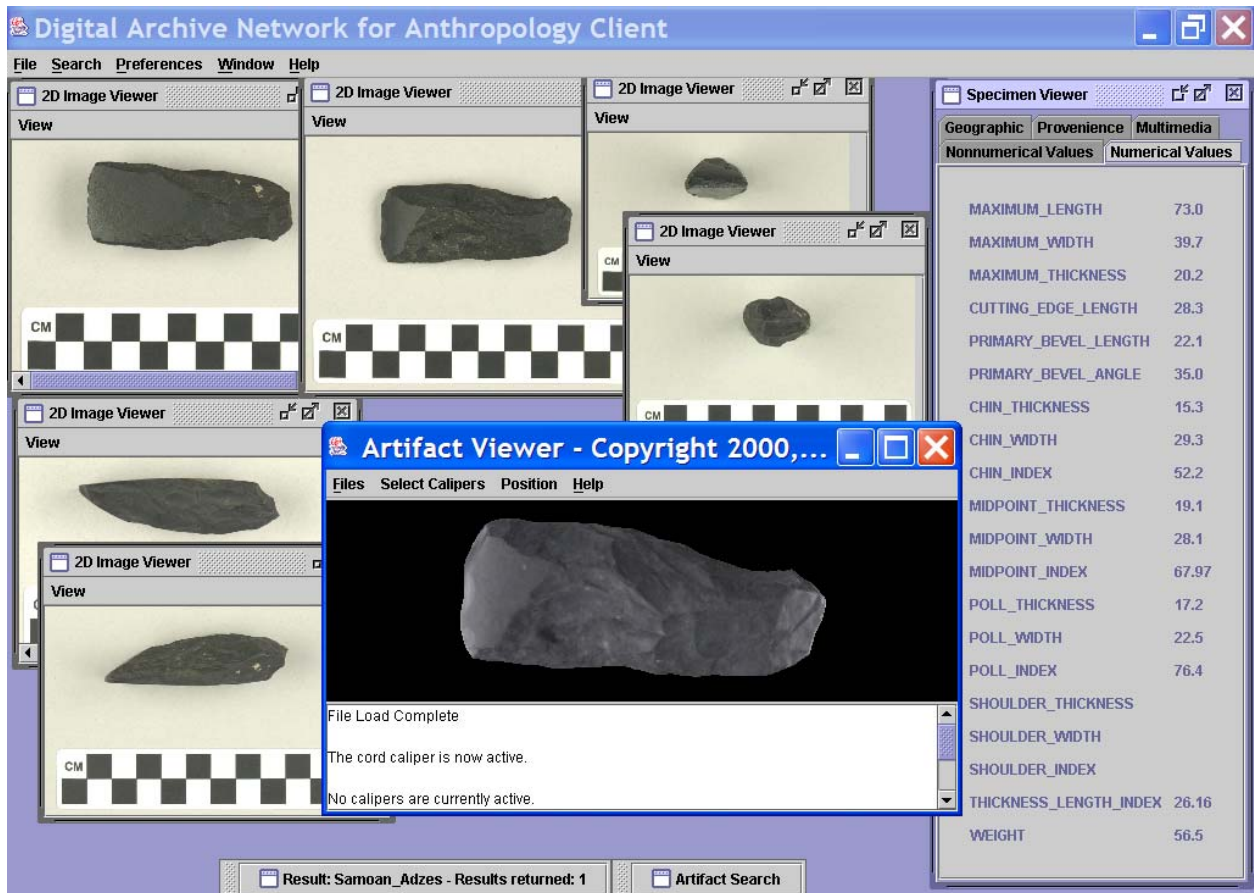


FIGURE 1. View of DANA-WH client showing retrieved 3D model (center foreground) and 6 2D images (left and top) and metric data (right) for Samoan stone adze AS-11-8-42. Original adze specimen provided to ATL for digitization through courtesy of Dr. Paul Cleghorn, Pacific Legacy Inc., Honolulu, HI.

As our second-generation 3D model viewer, we have incorporated a number of new capabilities. Users have increased control over lighting options, i.e., a choice between headlight and three directional lights, light color, and light intensity. Several navigation improvements have been made, as well, including the ability 1) to return to a previous 3D location, 2) to save and print viewpoints, and 3) to automatically position viewpoint upon loading a new model. Users are also able to change the display in order to view an object in any of four render modes: full-color, grayscale, wireframe, or point cloud. We currently have plans to allow for the following tools: load files directly from a URL, gzip-compressed 3D files, software import of end-user developed virtual calipers, 3D data mining plots, and model/measurement annotation.

For full resolution 3D models, the file sizes are quite large (e.g., 20-30 MB, or larger), but the resolution is so precise as to allow measurements at the sub-millimeter level. We are working to employ compression software to deliver the large files with less wait and no loss of model accuracy. Extremely large files (very complex or large objects) will be made available in either full form or as decimated files. The decimated files will have some loss of precision (how much depends on the level of decimation used), but will be quite sufficient for teaching purposes and general examinations. In this way, we can accommodate the users' access mode (Internet2, broadband, modem), computer capabilities (RAM, speed, graphics card), and purpose (e.g., detailed analysis or general observation).

**Digital Archive Network for Anthropology Client**

File Search Preferences Window Help

**Artifact Search**

Site Code:

Region	Subregion	Nation	Primary Subunit	Secondary Sub.	Tertiary Subunit
Africa	East Asia	India	Uttar Pradesh	Etah	Atranjikhhera
Asia	Island SE Asia				
Europe	South Asia				
North America					
Oceania					

material_class	material_type	artifact_class	artifact_type
Antler	Clay With Lithic And Sa...	Container	Basin
Bone	Clay With Lithic Temper		Bowl
Ceramic	Coarse Fabric		Bowl On Stand
Coral	Fine Fabric		Dish On Stand
Glass	Medium Fabric		Lid
Metal			Miniature Dish On Stand
Shell Marine			Storage Jar
Stone			Trough
			Vase
			Vessel

Locked Locked Locked Locked

Reset All Unlock All Search

**Specimen Viewer**

Geographic Provenience Multimedia

Nonnumerical Values		Numerical Values	
View	Type	Size	Estimated Download Ti
	Image	16.0 KB	0:00:02

**2D Image Viewer**

View

**Result: Indian\_Ceramics - Results returned: 177**

SITE_CODE	SPECIMEN	CONDITION	CERAMIC...	POTTERY...	POTTERY...	RIM_TYPE	NECK_TYPE	NATURE_O...	SURFACE	CLAY_COL	NATURE_O...	SURFACE...
Atranjikhhera	187	sherd	Ochre Colo...	Container	Vessel	out-turned f...	concave ne...	Medium Fa...	Slipped	Dull Red	Wheel Made	none
Atranjikhhera	188	sherd	Ochre Colo...	Container	Vessel	out-turned f...	roughly con...	Medium Fa...	Slipped	Red	Wheel Made	none
Atranjikhhera	189	sherd	Ochre Colo...	Container	Vessel	out-turned f...	concave ne...	Medium Fa...	Unslipped	Dull Red	Wheel Made	none
Atranjikhhera	19	sherd	Ochre Colo...	Container	Bowl	out-turned f...	slightly tap...	Medium Fa...	Unslipped	Dull Red	Wheel Made	none
Atranjikhhera	190	sherd	Ochre Colo...	Container	Vessel	out-turned f...	squatish n...	Medium Fa...	Unslipped	Red	Wheel Made	none
Atranjikhhera	191	sherd	Ochre Colo...	Container	Vessel	out-turned f...	carinated n...	Medium Fa...	Slipped	Greyish	Wheel Made	none

FIGURE 2. View of DANA-WH client display of data and pottery profile of specimen Atranjikhhera-vl5-189. Indian ceramics data provided by Dr. Vinod Nautiyal, HNB Garhwal University, Srinagar, Uttaranchal, India.