Site_Plot

June 12, 2021

The Site_Plot shape file was created with ESRI ArcGIS 10.7.1. and QGIS 3.10.2.

This is the dataset discussed in the following paper.

Inomata, Takeshi, Juan Carlos Fernandez-Diaz, Daniela Triadan, Miguel García Mollinedo, Flory Pinzón, Melina García Hernández, Atasta Flores, Ashley Sharpe, Timothy Beach, Gregory W. L. Hodgins, Juan Javier Durón Díaz, Antonio Guerra Luna, Luis Guerrero Chávez, María de Lourdes Hernández Jiménez, and Manuel Moreno Díaz
2021   Origins and spread of formal ceremonial complexes in the Olmec and Maya regions revealed by airborne lidar. *Nature Human Behaviour*.

The sites were plotted through the analysis of the high-resolution lidar data (DEM with 0.5 to 1 m horizontal spacing) obtained by the Middle Usumacinta Archaeological Project and the Nation Center for Airborne Laser Mapping (NCALM) and the low-resoultion lidar data (DEM with 5 m horizontal spacing) acquired by the Instituto Nacional de Estadística y Geografía (INEGI). The INEGI makes its lidar data publicly available through its web site (www.inegi.org.mx).

We plotted individual complexes, such as MFUs and mound groups rather than aggregations of them.

Fields in the shape file

FID: Record ID number given by ArcGIS.

Shape: Data type given by ArcGIS.

Site_ID2: Consecutive site number.

Name: Site name.

Name2: Additional site name.

Reference: Literature mentioning the site.

Type = Type of complex
        MFU primary = Aguada Fénix
        MFU = Middle Formative Usumacinta pattern
        MFU minor (less than 400 m in length)
        MFC = Middle Formative Chiapas pattern
        MFG primary = La Venta
        MFG = Middle Formative Gulf pattern
        VC = Veracruz Ceremonial pattern
        VC minor (less than 400 m in length)
        Rectangle major
        Rectangle minor (less than 400 m in length)

Rectangle mini = tend to have tall, well defined, continuous walls; but often in the same areas as MFUs and Rectangles major = somewhat later periods?

Square = Square earth work

E Group = E Group without other elements of MFU or MFC

Center primary = Primary center other than MFU, etc

Center major = Major complex other than MFU, etc

Center minor = Minor complex other than MFU, etc

Classic Veracruz major = Major Standard Plan/Long-plaza Plan/Villa Alta Quadripartite Arrangement

Classic Veracruz minor

Classic Veracruz mini = Very small Classic Veracruz

[blank] = other mound groups

Period

P = Preclassic

C = Classic-Postclassic

B = Preclassic-Classic-Postclassic

Visibility = Visibility in lidar

B = Visible in NCALM and INEGI lidar

O = visible only in NCALM lidar, not in INEGI lidar

X = Outside of INEGI lidar

I = Outside of NCALM lidar, visible in INEGI lidar

N = Not visible in INEGI lidar; outside of NCALM lidar; data from literature, personal communication

C = commission error in INEGI

GTruth = Ground verification

S = Surveyed but not excavated

E = Excavated

LidarA = Lidar polygon

A = Aguada Fenix

R = Rancho Zaragoza

S = Santa Elena

B = Buenavista

C = La Carmelita

Z = Saraguato

M = Mirador

E = Emiliano Zapata

I = Inside the INEGI coverage but outside the NCALM coverage

NCE = NASA Campeche east (G-LiHT 6)

NCW = NASA Campeche west (G-LiHT 5)

NCH = NASA Chiapas (G-LiHT 3)

NOA = NASA Oaxaca (G-LiHT 1)

NTB = NASA Tabasco (G-LiHT 4)

NVE = NASA Veracruz (G-LiHT 2)

CCG = CCGS

O = Outside the INEGI coverage

Length

Length of the complex (MFU, VC, MFC, MFG, Classic Veracruz). Measured between the outer edges of the defining mounds.

Width
Width of the complex (MFU, VC, MFC, MFG, Classic Veracruz). Measured between the outer edges of the defining mounds.

Length_D
Length of the two connected Classic Veracruz complex (those connected directly sharing one boundary mound along the same long axis). Measured between the outer edges of the two end mounds.

Pyr1_Ht
Height of the main pyramid (not the westernmost pyramid) of the E Group;
Or the taller end pyramid in the Classic Veracruz complex (measuring the largest Classic Veracruz complex at the site)
Or the tallest mound at the major/minor center

Pyr2W_Ht
Height of the westernmost pyramid (west of the main pyramid) in an E Group that has double pyramids
Or the shorter end pyramid/mound in Classic Veracruz complex (measuring the largest Classic Veracruz complex at the site)

LStr_Ht
Average height of lateral structures in MFU, Rectangle, Classic Veracruz complex, etc. Measured from the plaza floor.

EPla_Ht
Height of the eastern platform of the E Group at its center

G_Azimuth: Clockwise angle from the UTM Grid north in decimal degree (-180 to 180 degree)
The angles were measured for the long axis of the complex. When an E Group is present, the azimuth from its pyramid to the center point of the elongated platform should be approximately G_Azimuth + 90°.
The complexes for which the orientations are not clear have 0.

Convergen: Convergence of the true north from the grid north in decimal degree. Calculated with the Grid Convergence tool of ArcGIS

N_Azimuth: Clockwise angle from the true north in decimal degree
G_Azimuth - Convergenc

WPyr_PA
Y = Westernmost pyramid present (E Group with double western pyramids along the east-west axis; in rare cases of MFU, there is no pyramid where a main pyramid of the E Group is expected and a pyramid is present where a westernmost pyramid is usually found)
N = Westernmost pyramid absent (E Group only with a main pyramid of the E Group or no E Group)

Pyr_PA

Y1 = 1 main (west) pyramid of an E Group or an E Group like arrangement (VC)

Y2 = 2 main (west) pyramids of an E Group or an E Group like arrangement (VC), which are placed parallel to the long axis of the complex

N = No pyramid where a main pyramid of an E Group or an E Group like arrangement is expected (All rectangular complexes and some VC correspond to this category; In rare cases of MFU, no pyramid is found where a main pyramid of the E Group is expected, although a pyramid is present where a westernmost pyramid is usually found).

1 = Square with a center mound (Also for rectangle with a center mound); For 1 Rectangle minor, I used this (EPI_PA =Ne)

2 = Square with 2 center mounds

F = Square without a center pyramid

EPI_PA

Yl = Long east platform of a E Group present

Ys = Short or pyramidal east platform of a E Group present

Yc = Cenote-type long platform of an E Group present

Ne = Stand-alone east platform of an E Group absent (though west or center pyramids are present), the edge platforms of the MFU or VC may have served as substitutes

Nn = No east platform of an E Group (though west or center pyramids are present; Edge platforms of the MFU or VC do not appear to serve as substitutes)

Na = no E Group feature (no west pyramids or an eastern platform) present (for MFU, MFV)

N = no E Group feature (no west pyramids or an eastern platform) present (for Rectangles)

Orientatio: Orientation (for those at least one E Group element is present). This refers to the direction form the pyramidal building of the E Group toward the elongated platform.

E = facing east

S = facing south

W = facing west

N = facing north

E_Group: types of E Group

1L = 1 western pyramid and a long eastern platform

2L = 2 western pyramids and a long eastern platform

1S = 1 western pyramid and a short eastern platform

2S = 2 western pyramids and a short eastern platform

1C = 1 western pyramid and an eastern platform with a center pyramid (Cenote type)

2C = 2 western pyramids and an eastern platform with a center pyramid (Cenote type)

1E = 1 western pyramid and no standalone eastern platform (eastern edge platforms may have substituted?)

2E = 2 western pyramids and no standalone eastern platform (eastern edge platforms may have substituted?)

1N = 1 western pyramid and no standalone eastern platform (no eastern edge platforms substituting it?)

2N = 2 western pyramids and no standalone eastern platform (no eastern edge platforms substituting it?)

NN = no E Group features

INAH_VRC
    Site code given by the Centro INAH Veracruz

INAH_Vcera
    Dates of the ceramics surface-collected during the Centro INAH Veracruz survey