



Obsidian of Guatemala

Where Highway CA 9
Cuts through the Hills
of El Chayal near Km 25

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Introduction to Obsidian near Guatemala City

When you drive from Guatemala City towards Peten, the highway goes through hills of almost solid obsidian. There are tons of this volcanic glass, mostly on the right side (south side) of this highway.

I have been driving past this obsidian alongside Highway CA-9, Kilometer 25, for over 50 years (since 1970, when I drove to Yaxha every year for five years to map that Maya site with Miguel Orrego and helpful students). The obsidian was cut through by bulldozers and backhoes so the highway could get through the hill. There are about two to three hills where you can see it. Start looking at Kilometer 21 and you will start seeing it a few kilometers later. Between Km. 25 and Km. 26 is the best because you can park more easily off the highway. After Km. 26 I have not noticed any more in this area.

I am sure that if you are studying obsidian sources in Guatemala you will find even more by hiking around atop the hill and behind. But we just like to stop and see the varying colors at the base of the highway cut. Most is solid black but occasionally you get dark gray and at the end of Km. 25 you get black with mahogany-colored veins. I did not see much of this color in the southern hills; only at the cut through the northern one.

For students this is a great place to learn, face-to-face, in front of actual volcanic glass. And for visitors to Guatemala, this obsidian source is helpful as a “learning mat” or “infographic poster” right in front of your eyes. Obviously nowadays you learn from the Internet, but I prefer also to learn in-person. There are no Maya artifacts here whatsoever since the Classic Maya probably mined at the top of the hill. The Maya were never near the highway cut at the bottom of the hill, so this is natural rock, not artifacts whatsoever.



We have a long-range interest to prepare a thorough list of suggested reading on:

- obsidian sources in Guatemala
- obsidian as artifacts at Maya sites of Mesoamerica
- green obsidian sources for Teotihuacan near Pachuca, Mexico

Decades ago, I was so curious about Teotihuacan sources of their “green obsidian” that I drove from USA down to Mexico and drove to the area of Pachuca. There you could see piles of green obsidian kilometer after kilometer (either debris from 2nd to 7th century mining or modern mining of the 1970’s-1980’s). I had seen the Teotihuacan-Maya symbolism on Early Classic Tikal Stela 4, Stela 31 and Stela 32; and Uaxactun Stela 5. Plus at Yaxha (Yaxha Stela 11 is the largest frontal portrait of an armed Tlaloc warrior king/general of the entire Maya Lowlands). I wrote my MA thesis on Teotihuacan influence (albeit the influence that remained in the Maya Lowlands in the Late Classic, after Teotihuacan itself collapsed). Late Classic Maya kings wanted to pretend they were descended from the power and wealth of the earlier Teotihuacan empire.

The present series of photographs shows the black, gray, and mahogany-colored obsidian near El Chayal, Guatemala. Would help to have comparable reports showing the natural location of every mineral and stone that the Classic Maya used. Would be especially helpful to show where cinnabar (mercuric sulfide) was mined, plus the minerals for Maya mirrors. But at least we can show one obsidian source. There is no way to show this size and quality of photo in a peer-reviewed journal article; those articles are best for geological, mineral, and other precise documentation.



This highway cut is part of the El Chayal obsidian source (which would be above or on a side of the hills not cut by bulldozers and backhoes).

These photos are on the south side of the highway cut, March 25, 2023, Nicholas Hellmuth, iPhone 14 Pro Max.

Photo at the right by Nancy Dwyer.





A geologist would use more accurate jargon, but I call this raw obsidian (it has not been worked or cut by a craftsman). When cut and worked by the Classic Maya craftsmen it is bright shiny black glass-like.

Obsidian visible where the highway CA 9 cut through the hill, near kilometer 25, photo by Nancy Dwyer with iPhone 14 Pro, March 25, 2023.

Archaeologist Geoffrey Braswell kindly wrote me in 2023 with helpful information: “The El Chayal source area is spread over at least 50km², not just two hills. You should check out Mejía and Suyuc's articles from, I think, the late 90s or early 00s-- they surveyed the region. Every source I have ever visited has some mahogany/brick-red obsidian. It is a matter of the oxidized state of iron.”



This photo shows also the top of the hill (sky visible in upper right corner). The bulldozer (decades ago) cut through this hill. Then when the highway was widened, cut through again. So obsidian everywhere. There is parking space adjacent to this obsidian area.

The Classic Maya did not mine or work this lower part (because this was not cut until over a thousand years later). They probably mined at the top of the hill or other locations. There are several other sources of obsidian in Guatemala, Mexico, etc., but this is the easiest to see, so you can learn about this material.

Thomas Dwyer is a high school student who came on this year 2023 field trip to learn about Guatemala flora, fauna, and the rare chance here to learn about volcanic glass, obsidian. It is helpful to see raw obsidian and cut obsidian (cut by the blade of the bulldozer or backhoe). Thomas Dwyer, Joseph Dwyer, and Nancy Dwyer then went to Parque Nacional Yaxha, Nakum and Naranjo, so all could learn about Classic Maya architecture. Then we all hiked for hours through the rain forest to the incredible biodiverse ecosystem of the Savanna East of Nakum.

Photo by Nancy Dwyer with iPhone 14 Pro, March 25, 2023.



Obsidian visible where the highway CA 9 cut through the hill, kilometer 25, photo by Joseph Dwyer with iPhone 13 Pro Max, March 25, 2023.



Since we have been driving through this obsidian area for over half a century, long ago we noted that in at least one area there was a lot of mahogany color in the otherwise black dark gray obsidian.

On the March 25, 2023 field trip we noticed a husband and wife were loading up their pickup truck with debris from the road cut.

So I walked over to ask if he could provide some obsidian with mahogany color and he gave let me photograph two pieces.

On this stone the mahogany color is very subtle, but it's there. In the next photo (on the next page) you can see the color better on another piece.

This is the most gorgeous atypical obsidian color that I have ever seen in this road cut (Km. 25 + circa 560 meters). It would be great if INGUAT could let the world know that you can see this color as you drive from Guatemala City on highway CA9 towards Lake Izabal or the Caribbean. If you are driving to Peten you also pass this road cut.

Tons have been bulldozed, backhoed and tons have been hauled elsewhere as road fill. This piece has clearly been hit by backhoe.

Would be helpful if a cooperative of local people had an association to have handicrafts of this material available to tourists. There are many companies that sell jade art in Antigua such as Jade Maya. It would also be great to have obsidian of this unexpected color to show the beauty of volcanic glass of Guatemala.



We will issue this FLAAR Report as a second edition when our complete bibliography on obsidian sources of Mexico and Guatemala and pre-Hispanic obsidian artifacts of Mexico down to Honduras is finished. Here we include an initial sample of suggested reading.

ANDERSON, J. Heath, and Kenneth G. HIRTH

2009 Obsidian Blade Production for Craft Consumption at Kaminaljuyu. *Ancient Mesoamerica* 20:163-172

AOYAMA, Kazuo

2005 Classic Maya Warfare and Weapons: Spear, Dart, and Arrow Points of Aguateca and Copan. *Ancient Mesoamerica* 16: 291- 304.

BRASWELL, Geoffrey E. and Michael D. GLASSCOCK

1992 A New Obsidian Source in the Highlands of Guatemala. *Ancient Mesoamerica* 3, 47-49.

BRASWELL, Geoffrey E.

1996 A Maya Obsidian Source: The Geoarchaeology, Settlement History, and Ancient Economy of San Martín Jilotepeque, Guatemala. Ph.D. dissertation, Department of Anthropology, Tulane University.

BRASWELL, Geoffrey E.

2002 Praise the Gods and Pass the Obsidian?: The Organization of Ancient Economy in San Martín Jilotepeque, Guatemala. In *Ancient Maya Political Economies*, edited by Marilyn A. Masson and David A. Freidel, pp. 285-306. AltaMira Press, Walnut Creek, CA.

BRASWELL, Geoffrey E.; CLARK, John E.; AOYAMA, Kazuo; MCKILLOP, Hearther I. and Michael D. GLASSCOCK

2000 Determining the Geological Provenance of Obsidian Artifacts from the Maya Region: A Test of the Efficacy of Visual Sourcing. *Latin American Antiquity* 11(3): 269-282.

CARPIO REZZIO, Edgar

2015 Estudios Sobre las Fuentes de Obsidiana en Guatemala: Importancia en el Intercambio Prehispánico. USAC.
https://apuntes.usac.edu.gt/wp-content/uploads/2019/10/E2_N4_07_ECarpio.pdf

CLARK, John E.

- 1997 Prismatic Blademaking, Craftsmanship, and Production: An Analysis of Obsidian Refuse from Ojo De Agua, Chiapas, Mexico. *Ancient Mesoamerica* 8(1): 137-159.

CLARK, John E.

- 2003 A Review of Twentieth-Century Mesoamerican Obsidian Studies. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, edited by Kenneth G. Hirth, pp. 15-54. University of Utah Press.

CLARK, John E. and Thomas A. LEE

- 1984 Formative Obsidian Exchange and the Emergence of Public Economies in Chiapas, Mexico. In *Trade and Exchange in Early Mesoamerica*, edited by Kenneth G. Hirth, pp. 235-274. University of New Mexico Press.

COBEAN, Robert H.; COE, Michael D.; PERRY, E.; TUREKIAN, K. and D. KHARKAR

- 1971 Obsidian Trade at San Lorenzo Tenochtitlan, Mexico. *Science* 174: 66-671.

COBEAN, Robert H.; VOGT, Terrance L.; GLASCOCK, Michael D. and James R. STOCKER

- 1991 High-Precision Trace-Element Characterization of Major Mesoamerican Obsidian Sources and Further Analyses of Artifacts from San Lorenzo Tenochtitlan, Mexico. *Latin American Antiquity* 2(1): 69-91.

DARRAS, Véronique

- 1991 Technologies Prehispaniques De L'obsidienne: Les Centres De Production De La Région De Zináparo-Prieto, Université de Paris.

DARRAS, Véronique

- 1999 Tecnologías Prehispánicas De La Obsidiana: Los Centros De Producción De La Región De Zináparo-Prieto, Michoacán, México. Centre français d'études mexicaines et centraméricaines, México.

HEALAN, Dan M.

- 1997 Pre-Hispanic Quarrying in the Ucareo-Zinapecuaro Obsidian Source Area. *Ancient Mesoamerica* 8: 77-100.

MEJIA, Héctor E. and Edgar SUYUC Ley

1997 Nuevos afloramientos en El Chayal. In *X Simposio de Investigaciones Arqueológicas en Guatemala, 1996* (edited by J. P. Laporte y H. Escobedo), pp.47-60. Museo Nacional de Arqueología y Etnología, Guatemala. (versión digital).

MEJIA, Héctor E. and Edgar SUYUC Ley

1999 Prospección geológica-arqueológica en Llano Largo, San Antonio La Paz, El Progreso. In *XII Simposio de Investigaciones Arqueológicas en Guatemala, 1998* (edited by J. P. Laporte and H. L. Escobedo), pp.466-476. Museo Nacional de Arqueología y Etnología, Guatemala.

MOHOLY-NAGY, Hattula

1999 Mexican Obsidian at Tikal, Guatemala. *Latin American Antiquity* 10(3): 300-313.

PIRES-FERREIRA, Jane W.

1976 Obsidian Exchange in Formative Mesoamerica. In *The Early Mesoamerican Village*, edited by Kent V. Flannery, pp. 292- 306. Studies in Archeology. Academic Press, New York.

SANTLEY, Robert S.

1984 Obsidian Exchange, Economic Stratification, and the Evolution of Complex Society in the Basin of Mexico. In *Trade and Exchange in Early Mesoamerica*, edited by Kenneth G. Hirth, pp. 43-86. University of New Mexico Press, Albuquerque.

SHACKLEY, M. Steven

1996 Archaeological Obsidian Studies, Method and Theory. *Advances in Archaeological and Museum Science*, Vol. 3.

SIDRYS, Raymond V.

1976 Classic Maya Obsidian Trade. *American Antiquity* 41(4): 449- 464.

SIDRYS, Raymond V.

- 1977 Mass-Distance Measures for the Maya Obsidian Trade. In *Exchange Systems in Prehistory*, edited by Timothy K. Earle and Jonathon E. Ericson, pp. 91-107. Studies in Archeology. Academic Press.

STEMP, W. James; GRAHAM, Elizabeth and Jessica GOULET

- 2011 Coastal Maya Obsidian Trade in the Late Postclassic to Early Colonial Period: The View from San Pedro, Ambergris Caye, Belize, *The Journal of Island and Coastal Archaeology*, 6: 1, 134 — 154.

<http://dx.doi.org/10.1080/15564894.2010.487366> and via ResearchGate.

WINTER, Marcus C. and Jane W. PIRES-FERREIRA

- 1976 Distribution of Obsidian among Households in Two Oaxacan Villages. In *The Early Mesoamerican Village*, edited by Kent V. Flannery, pp. 306-311. Studies in Archeology. Academic Press, New York.

ZEITLIN, Robert N. and R. C. HEIMBUCH

- 1978 Trace Element Analysis and the Archaeological Study of Obsidian Procurement in Precolumbian Mesoamerica. In *Lithics and Subsistence: The Analysis of Stone Tool Use in Prehistoric Economies*, edited by D. D. Davis. *Vanderbilt University Publications in Anthropology*. vol. 20.