"It’s thought that humans first cruised from South America to Cuba around 3500 BC. Primarily fishers and hunter-gatherers, these original inhabitants were later joined by the agriculturalist Taino, a branch of the Arawak Indians. Christopher Columbus sighted Cuba on 27 October 1492, and by 1514, Diego Velázquez de Cuéllar had conquered the island for the Spanish crown and founded seven settlements. When captured Taino Chief and resistance fighter Hatuey was condemned to die at the stake, he refused baptism, saying that he never wanted to see another Spaniard again, not even in heaven. Cattle ranching quickly became the mainstay of the Cuban economy. Large estates were established on the island under the encomienda system, enslaving the Indians under the pretext of offering instruction in Christianity. By 1542, when the system was abolished, only around 5000 Indians (of an estimated 100,000 half a century before) survived. Undaunted, the Spanish imported African slaves as replacements. Unlike in the North American slave trade, Cuba’s African slaves retained their tribal groupings, and certain aspects of their culture endure" (Super CubaTravel, 2010). "Father Bartolomé de Las Casas was in Cuba 1511-1512, and it was probably his observations there of the abuse and decimation of the native Caribs (who had only about 3500 BC) that launched him on his career as ‘Apostle of the Indians’ " (Boundaries, Possessions, and Conflicts, 1938). Thanks to InfoPlease, 2010, “In the early 1800s, Cuba’s sugarcane industry boomed, requiring massive numbers of black slaves. A simmering independence movement turned into open warfare from 1867 to 1878. Slavery was abolished in 1886. In 1895, the poet José Martí led the struggle that finally ended Spanish rule, thanks largely to U.S. intervention in 1898 after the sinking of the battleship Maine in Havana harbor." The Spanish-American War had begun, and Teddy Roosevelt prevailed at the Battle of San Juan Hill, including my grandfather, Gaston Mandeville Mugnier of the Louisiana Regulars, although I think he was stuck in Florida tending Teddy’s horses …. In 1959, Fidel Castro completed a successful revolution and deposed the Batista regime to form the closed communist society extant to this day.

The island of Cuba is slightly smaller than Pennsylvania and is the largest country in the Caribbean. With a coastline of 3,735 km, the terrain is mostly flat with rugged hills and mountains in the southeast; the lowest point is the Caribbean Sea (0 m), and the highest point is Pico Turquino (1,970 m) (personal communication, Dr. Ernesto Rodríguez Roche 2010, Havana Cuba). The only land boundary is with the U.S. Naval Base at Guantanamo Bay (29 km) (World FactBook, 2010). The first map known of Cuba was produced by Juan de la Cosa in 1500. In the 17th century, an improved map of Cuba was compiled by Gerhardus Mercator. In the middle 1800s, the Spanish Army produced a topographic map of the island called “Mapa de Vivas.” The U.S. Army Map Service Inter American Geodetic Survey (IAGS) established an office in Cuba in 1947. The Instituto Cartográfico Nacional (ICN) was designated as the national agency to collaborate with the IAGS in the cartographic plan (MAPPLAN). In the first eight to ten years of cooperative work the operations consisted of establishing a geodetic network covering the entire territory as well as the installation of 10 tide gauges in selected locations. Aerial photography was flown in 1956, and 100% Cuban coverage of topographic maps at 1:50,000 scale was completed in 1960 in cooperation with the IAGS (IAGS Report (in Spanish) by Army Map Service, ca. 1960).

"When captured Taino chief and resistance fighter Hatuey was condemned to die at the stake, he refused baptism, saying that he never wanted to see another Spaniard again, not even in heaven.”
A GPS campaign was carried out in 1998, and some additional GPS densification was performed in the vicinity of Havana in 2001. Although transformation parameters were developed between the modernized astrogeodetic system (NAD 27) and WGS 84, efforts are planned to establish a cutting-edge system of reference stations similar to the National Continuously Operating Reference System (CORS) of the United States. The 7-parameter transformation is reported to be a Coordinate Frame Rotation from NAD27 to WGS 84: $DX = +2.478 \text{ m}$, $DY = +149.752 \text{ m}$, $DZ = +197.726 \text{ m}$, $Rx = -0.526356$, $Ry = -0.497970$, $Rz = +0.500831$, $\delta s = +0.6852386$, where the rotations are in arc seconds and the scalar exponent is parts per million (ibid., Dr. Ernesto Rodriguez Roche 2010). The accuracy is reputed to be good to a meter. A test point offered by Mr. Pablo Velasco Villares from the “PROJ mailing list” is from NAD 27: $\phi = 20^\circ 22' 16.1900'' \text{ N}$, $\lambda = -76^\circ 38' 28.0824'' \text{ W}$ to WGS 84: $\phi = 20^\circ 22' 17.8949'' \text{ N}$, $\lambda = -76^\circ 38' 27.1732'' \text{ W}$.

The contents of this column reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the American Society for Photogrammetry and Remote Sensing and/or the Louisiana State University Center for GeoInformatics (C4G).

ASPRS congratulates these recently Certified and Re-certified individuals:

Certified Photogrammetrist
Justin Magill, Certification #1441,
effective 03/28/2010, expires 03/28/2015

Certified Mapping Scientist, Remote Sensing
Jill Andrea Stokes, Certification # RS177,
effective 03/28/2010, expires 03/28/2015

Certified Mapping Scientist, GIS/LIS
Jill Andrea Stokes, Certification # GS224,
effective 03/28/2010, expires 03/28/2015

Member of the ASPRS – and he is generally regarded as the Father of Analytical Photogrammetry.