Geography 407. Remote Sensing.
Spring 2006
Photogrammetry. Exercise 3: stereo pairs

Photo: Hawaii. Photos 3951-3 and 4

1. From a pair of photographs at a scale of 1:4600 taken with a camera with a 12" focal length, we wish to determine the height of Washington Monument. The average photo base length (P) is 4.40 inches, the distance for the monument base is 2.06 inches, and the top, 1.46 inches. Calculate the monument height.

2. A building on flat ground is photographed at a scale of 1:14,400 with a camera using a 12" focal length. The average photo base (P) is 60 mm and the differential parallax is 1.55 mm between the top and street level of the building. Calculate the building height.

3. A plateau is photographed with a camera having a focal length of 5.32 inches. The scale of the plateau top is 1:18,000, the average photo base (P) is 102 mm, and the parallax difference (dp) between the rim and the bottom of a canyon cut into the plateau is 7.81 mm. Calculate the canyon depth.

4. Orient photos 3951-4 and 3 so the numbers are in the upper right corner, and the flight instruments down the RHS. Locate the principal points and the conjugate principal points on both photos. What is the average photo base, P? Find the height of building located at the principal point of photo 3951-4 using differential parallax. (The building has 2 cylindrical structures on its roof and is located near the top center of 3951-3.)