**Geography (GEOG) 403/704 Spring 2022**

**Lab Two**

**Air Photos as Quantitative Data**

**25 points**

**Materials needed:** clear acetate sheet, 1-cm grid transparency sheet, grease pencil, metric

scale ruler, hand lens, calculator with scientific notation

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Goal: The purpose of this exercise is to introduce you to the types of measurements and quantitative data that can be extracted from conventional air photos.

1. Photo Set WX-22 (8-4-37) Frames 2071-2074
   1. Determine the approximate RF scale of this photo mission with the help of the Milwaukee topographic quadrangle and frame 2072 or 2073.
   2. From frame 2072 or 2073, determine the approximate total area of the three rectangular blocks that make up the UW-Milwaukee campus.
2. Photo Sets: 63030 (4-6-63) Frames 435-437, 439, and 441

Note: Assume a 6-inch focal length for these images.

* 1. Determine the approximate scale of this photo mission in frame 435.
  2. What is the approximate photo base length of this mission (use adjacent photos)?
  3. What is the approximate % overlap of this mission?
  4. Mosaic the photos. Is there significant drift or crab in the flight line?

Geography (GEOG) 403/704 Lab Two 2

* 1. Use the displacement method formula to determine the approximate height of the long N-S oriented building that is located in the top portion of the SW quadrant of frame 439 and also located in the NW quadrant of frame 441. Produce a estimated height value for frame 439 only.

1. Brookfield T7N R20E (Sec. 3,4,9,10) 1963,1967,1970,1975,1980,1985,1990,1995 (1"/400')
   1. Determine an "eyeball estimate" of the approximate percent "open space" (areas with no roads, houses, or other development) in each year. When did the most development occur? What are the trends in development over the thirty-two years?
   2. Determine a representative average square footage for the single-family houses in the photo area at two different times (use 1975 and 1995 photos).
   3. Speculate as to the average income level of the residential area (low-middle-high) shown in the photo. What other information from the photo did you use to help reach your conclusion? Has the level changed from 1975 to 1995?
2. Wauwatosa East T7N R22E (Sec. 3,4,9,10) 1963,1970,1975,1980,1985,1990,1995 (1"/400')

Note: 1"/2000' photos of the area are also available for your reference (1970,1980,1990)

* 1. Count the number of campus buildings each year. When did the greatest increase occur? What are the trends in building activity over the thirty-two years?