Lab #15: *Geology 3* (Chapter 9)

Speleology II

INTRODUCTION:

The objective of this lab is to learn how to spot features in a cave that support rapid cave formation.

MATERIALS

- Field journal
- A high lumens flashlight
- Camera
- Durable, non-slip shoes
- [Optional] Hard hat (with light)

METHODS

1. Study the hypogene speleogenesis feature pictures in Alexander Klimchouk's "Hypogene Speleogenesis: Hydrogeological and Morphogenetic Perspective" (pp. 41ff)
2. Go on a tour at a local cavern and take pictures of cupolas/domes and note relative sizes in the journal
3. Take pictures of wall and/or ceiling channels and note relevant characteristics in the journal
4. Take pictures of feeders and note relevant characteristics in the journal
5. If not discussed by the tour guide, ask:
   - If there are drop offs down to much lower areas below the cave
   - If there is a lower water source or drain (e.g., an underground aquifer/stream) for the cave
6. Take pictures of the speleothems on display in the cave (e.g., stalactites, stalagmites, cave bacon, flowstone, cave pearls, etc.). Note the size of any speleothems with known origination dates (documenting the dates)—for example, stalagmites growing on stairs, paved paths, etc.
   - Did the tour guide mention any speleothems in the cave that formed much more rapidly than "typical" speleothem growth? If so, document them.

RESULTS/DISCUSSION

1. Discuss whether (and if so, how) the features of the cave support the formation of the cave from rising acidic waters as opposed to descending acidic waters.
2. Research to determine the factors that affect the rate of growth of speleothems and discuss how the post-Flood Ice Age could have affected speleothem growth rates.