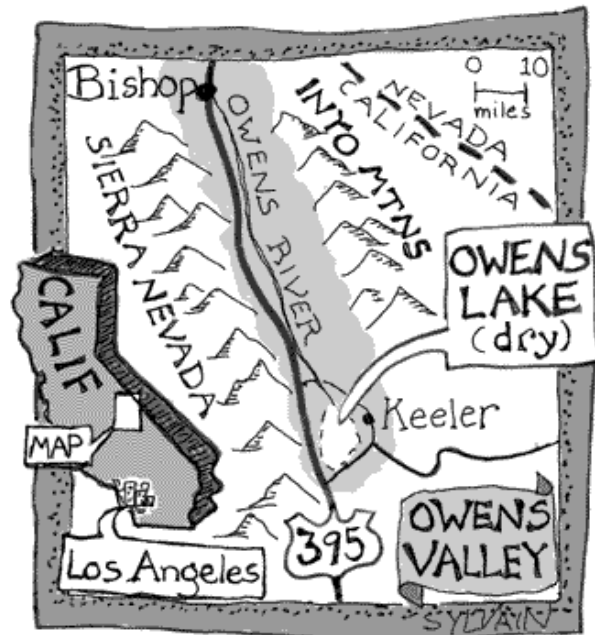


# Geology 171B: Geology of the Sierra Nevada and the Long Valley Caldera.

**What is it about?** The eastern flank of the Sierra Nevada is one of the most spectacular and significant geologic sites in the entire western hemisphere. The combination of granite plutons, ancient metamorphic rocks, and modern glacial sediments and volcanic rocks make it a marvelous laboratory for studying earth materials. Active volcanoes and faults bring alive the study of structural geology of the dynamic earth.

This trip will be a rigorous test of your patience and health. There will be several long driving days, and conditions may become harsh, with rain, snow and wind as serious possibilities. The success of the trip will depend on your amiability and willingness to put up with inclement conditions.



Diane Syrain

**Dates:** Leave Thursday, Sept. 18 at 4:00 PM from north side of the Science Community Center  
Return Monday, Sept. 22 at about 8:00pm

**Please note:** you will be missing any classes you have on Thursday evening, Friday or Monday. **It is your responsibility** to make arrangements in advance with your instructors to make up any missed assignments. **Space is limited on the trip.** Sign up early or be wait-listed.

**Cost:** \$40.00, plus the per unit fee, payable in the MJC Business Office. This fee **MUST** be paid to attend the trip

Recommended Text: **Geology Underfoot in Death Valley and Owens Valley**, by Sharp and Glazner (available in the MJC Bookstore)

## Academic Requirements:

### BEFORE THE TRIP:

- You must attend the organizational meeting on Thursday, Sept. 11, at 5:30 PM in SCC 326
- You must research and write a short synopsis (2 pages) of the geology of one of the following subjects related to our trip:

The Long Valley Caldera, Volcanism in Mammoth Lakes, Bristlecone Pines, Glaciers in the Sierra Nevada, Faulting and Earthquakes in the Owens Valley, Granite plutons in the Sierra Nevada, Metamorphic rocks in the Sierra Nevada, Water use issues at Mono Lake, Mining History of Bodie Ghost Town (you may suggest other topics)

**DURING THE TRIP:**

- You will be expected to take complete lecture notes at each stop along the trip
- You will complete the worksheet provided at the beginning of the trip.

**AFTER THE TRIP:**

- Notes and worksheets are to be submitted by Tuesday, Sept. 30
- Final exam on Tuesday, Sept. 30 at 5:30 pm in SCC 326

**Logistics:**

You will be responsible for your own meals for this trip. I strongly recommend getting together with others to save money and space. Keep meals as simple as possible. For breakfast, it is best to use meals requiring only milk or hot water for their preparation. Lunches should consist of snacks that can be eaten all day. Dinners are easiest when they're out of a can! You will need 3 dinners and breakfasts, and four lunches

**Tentative Itinerary:**

| <b>Date</b>               | <b>Stops</b>   | <b>Campsite (subject to change)</b>                     |
|---------------------------|--|---|
| <b>Thursday, Sept. 18</b> | <b>Knights Ferry<br/>Table Mountain</b>  | <b>Dardanelles<br/>Campground, near<br/>Sonora Pass</b> |
| <b>Friday, Sept. 19</b>   | <b>Sonora Pass<br/>Dardanelles<br/>Bodie Ghost Town<br/>Mono Lake<br/>Volcanic Tableland</b>                         | <b>Browns Town<br/>Campground, Bishop</b>               |
| <b>Saturday, Sept. 20</b> | <b>Long Valley Caldera<br/>Minaret Summit<br/>Devils Postpile (?)<br/>Metamorphic rocks of the<br/>Sierra Nevada</b> | <b>Browns Town<br/>Campground, Bishop</b>               |
| <b>Sunday, Sept. 21</b>   | <b>White Mountains<br/>Bristlecone Pines<br/>Owens Lake<br/>Cinder Cone<br/>Lone Pine Fault Scarp</b>                | <b>Browns Town<br/>Campground, Bishop</b>               |
| <b>Monday, Sept. 22</b>   | <b>Lembert Dome<br/>Tioga Pass<br/>Mother Lode</b>   | <b>Return to MJC,<br/>approximately 8:00pm</b>          |

**We will be camping out, and cold temperatures are very likely.** Wind, snow, and cold rain are possibilities. Please be prepared to be comfortable in these conditions. We will be doing some moderate hiking, so please bring adequate walking shoes as well.

**No alcohol or illegal drugs** allowed at school functions. Just don't do it...

### **Suggested Equipment and Supplies**

#### **Personal:**

- Warm Sleeping Bag
- Foam Pad
- Day Pack
- Personal Toilet Kit
- Eating utensils, cup, plate
- Poncho or rainsuit
- Warm jacket or coat (layers)
- Warm hat
- Walking shoes
- Gloves or mittens
- Changes of clothes
- Flashlight (maybe even two)

- Extra batteries
- Sunglasses
- Sunscreen
- Toilet Paper
- Clipboard, Pen, Pencils
- Paper
- Towel
- Canteen
- Lip balm
- Ground cloth

#### **Group**

- Cleaning supplies
- Cooking utensils
- Ice Chest
- Stove
- Lantern

#### **Optional:**

- Camera and Film
- Rock hammer
- Extra blanket
- Small pillow
- Folding chair (if room available)
- Spending money



### **Course Learning Outcomes:**

**By the time you finish this course, you will be able to:**

- a. Utilize the scientific method in reconstructing earth history on the basis of field relationships and observations.
- b. Use basic geologic principles and examples of present-day processes to explain the geologic events of the past, as revealed by rocks and fossils in observed rock outcrops.
- c. Identify common minerals, rocks, and fossils as located in field outcrops.
- d. Interpret and categorize depositional environments of sedimentary rocks on the basis of field observations.