Introduction to Physical Geology (GEOL 1)

"Physical Science"

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Office hours 8:30-9:00
12:00-12:30, 5:00-6:00

What is

Physical Geology

Having to do with the material world

Γῆλογία

Earth Study

Introduction to Physical Geology

Introduction to the study of the Earth within our material world

Materials break

Materials break

Materials bend

Plan for the day:

1) Go over the most important project

2) Go over the outside project

3) Structural geology part 1

4) Midterm 8

5) Passback stuff

6) More structural geology

Reminders:

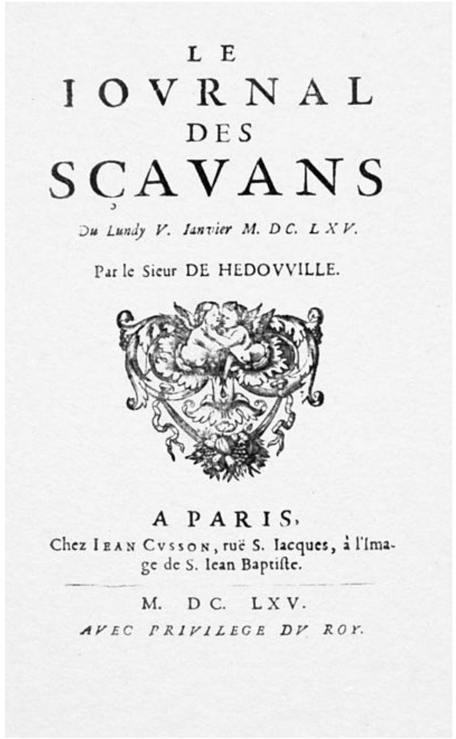
Reading this week: Ch 9: Crags Cracks and Crumples: Geologic structures and mountain building

Scientific method

Question
Hypothesis
Experiment
Analysis
Conclusions
Share

How do scientists share ideas?

How do scientists share ideas?



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Du Lundy V. Ianvier M. DC. LXV.

Par le Sieur DE HEDOVVILLE.

A PARIS,
Chez IEAN CVSSON, ruë S. Iacques, à l'Image de S. Iean Baptiſte.

M. DC. LXV.
AVEC PRIVILEGE DV ROY.


nature
THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE
SCIENCE STARS of SOUTH AMERICA
As investment increases, researchers are raising their game
PAGE 201
MATERIALS
DIAMOND WITH AN EDGE
'Nanotwin' synthetic is tops for hardness and stability
PAGES 229 & 250
CONTEMPORARY ART
CULTURE COLLISION
On the fusion of art and science
PAGE 210
CALENDAR
EVENTS DIRECTORY
The mid-year guide to global science events and courses
BACK PAGES & NATURE.COM
NATURE.COM/NATURE
12 June 2014
Neuron
Volume 96
Number 1
September 27, 2017
www.cell.com
BULLETIN
THE GEOLOGICAL SOCIETY OF AMERICA
MAY/JUNE 2017
IN THIS ISSUE
Science
18 April 2014 | $10
A Wink in the Sky

Much of the scientific research has been paid for by you!
(or your parents really)

So if you ever want to read any of the research:

Arrrrgg.... I stole me some knowledge!!

Scientists community in a consistent format

Part of learning about a science is
learning how they communicate with each other

Abstract (Summary)
Introduction
Methods
Results
Discussion
Conclusion (Implicaition)
References

home lectures lab study homework

Homework

Google Project (Due October 2nd)

Download Google Project as aPDF

Download Google Project as a word doc

Download questions only as a word doc

Submit google project

Most important Project (Due November 20th)

Download most important Project as a docx

Submit important project

Outdoor Project (Due before the semester ends)

Download outdoor Project as a docx

Submit outdoor project

Recommended (and Free!) reference managers:

Mendeley Zotero

A list of other reference managers

Other options listed here:

THE MOST IMPORTANT GEOLOGY PROJECT

You will pick some geologic topic, concept, process, formation, mineral, rock, environment, theory, etc, and argue why it is the most important aspect of geology.

Will be using the scientific format to do this.

What class are we in?

Your argument is far more important than any fancy writing.
This is not an English class paper!

Spend your time on communicating your idea instead of on grammar, complex words, and style.

Think simple and clear.

Summary: 3-7 sentences

Introduction

Main facts and points

Discussion

Implications

References

Are outlines good or bad?

Outlines are good!

You must have an outline at the end of each homework.

If you send me an outline before March 28th
I will give you feedback on your important project

Here is a checklist/points break down for how you will be graded

Check list	Value
Outline after the references	yes/no *
Title	yes/no *
Author name	yes/no *
Author e-mail	yes/no *
Summary which summarizes the main points	15
Introduction which give background important to the argument	10
Presentation of main facts which support argument	15
Discussion of why the facts are important and how they together make your argument	30
Implications explaining why knowing your argument is valuable	10
6 references (at a minimum) used to support your argument, including:	10
1 website reference that is not Wikipedia	
2 academic references not counting our text book	
All references listed in the reference section	
Correct formatting used in the reference section	
Word count between 750 and 1000 words (not including references)	10
Total points	100

* If you are missing any of the yes/no items, the most you will be able to earn is 50 points total

THE OUTSIDE GEOLOGY REPORT

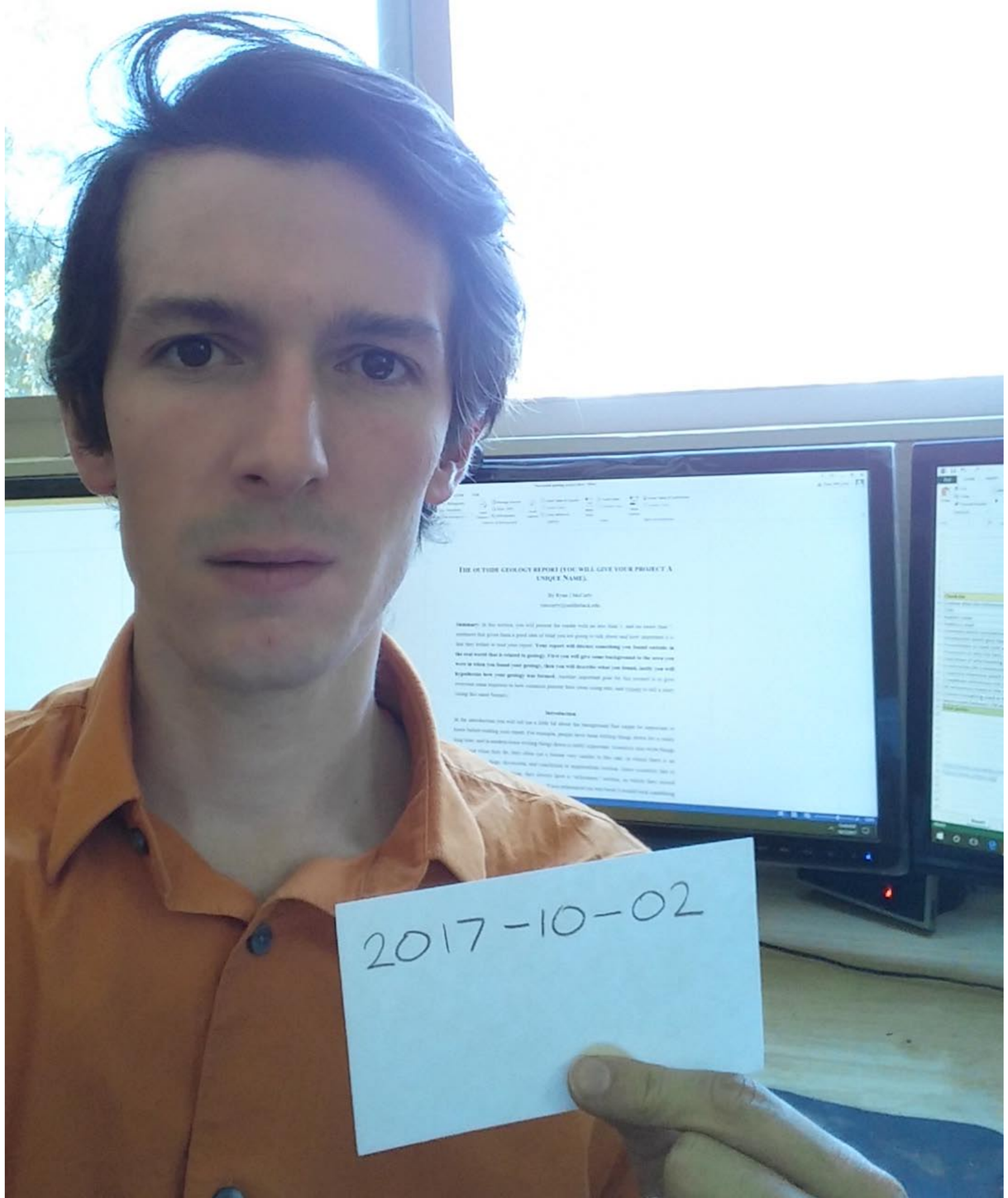
Your report will discuss something you found outside in the real world that is related to geology. First you will give some background to the area you were in when you found your geology (geologically speaking!), then you will describe what you found, and lastly you will hypothesize how your geology was formed.

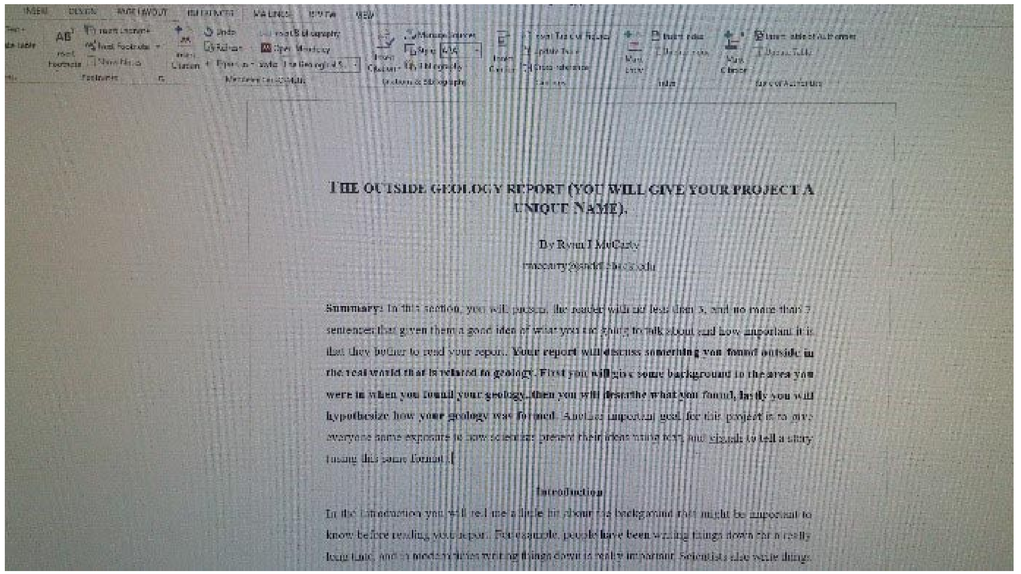
BE SAFE

Here is a checklist/points break down for how you will be graded

Check list	Value
Outline after the references	yes/no *
Title	yes/no *
Author name	yes/no *
Author e-mail	yes/no *
Selfie photo with a date	yes/no *
Two drawings done by you which are used to explain your story	yes/no *
Summary which summarizes the main points	5
Introduction which give background important to the argument	5
Presentation of the geology that you found	25
Discussion about the origin of the geology that you found	15
4 references (at a minimum), including:	5
2 academic references not counting our text book	
All references listed in the reference section	
Correct formatting used in the reference section	
Word count between 800 and 1500 words	5
Total points	60

* If you are missing any of the yes/no items, the most you will be able to earn is 30 points total





THE OUTSIDE GEOLOGY REPORT (YOU WILL GIVE YOUR PROJECT A UNIQUE NAME).

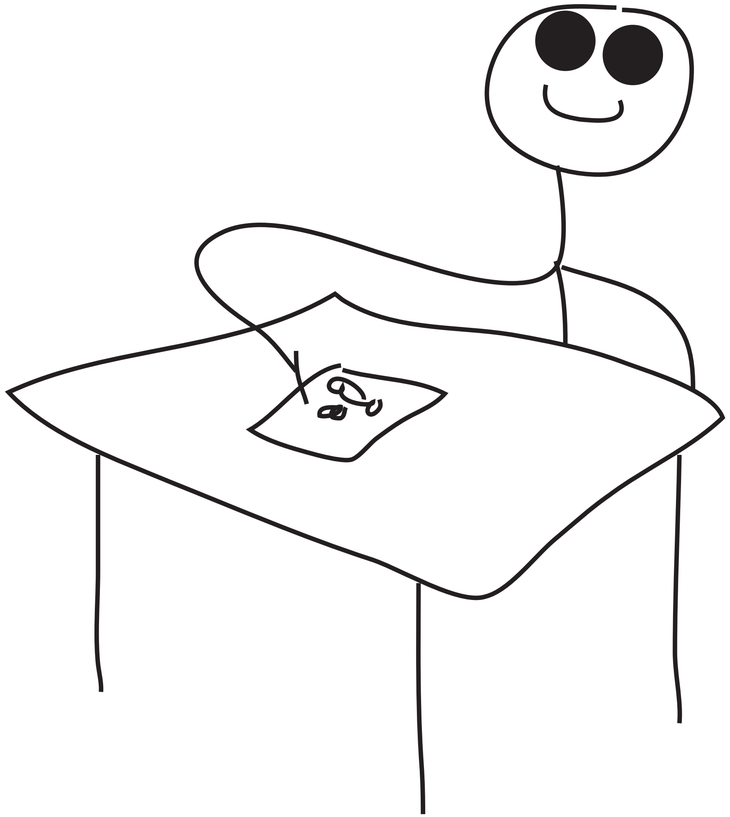
By Ryan J McCarty

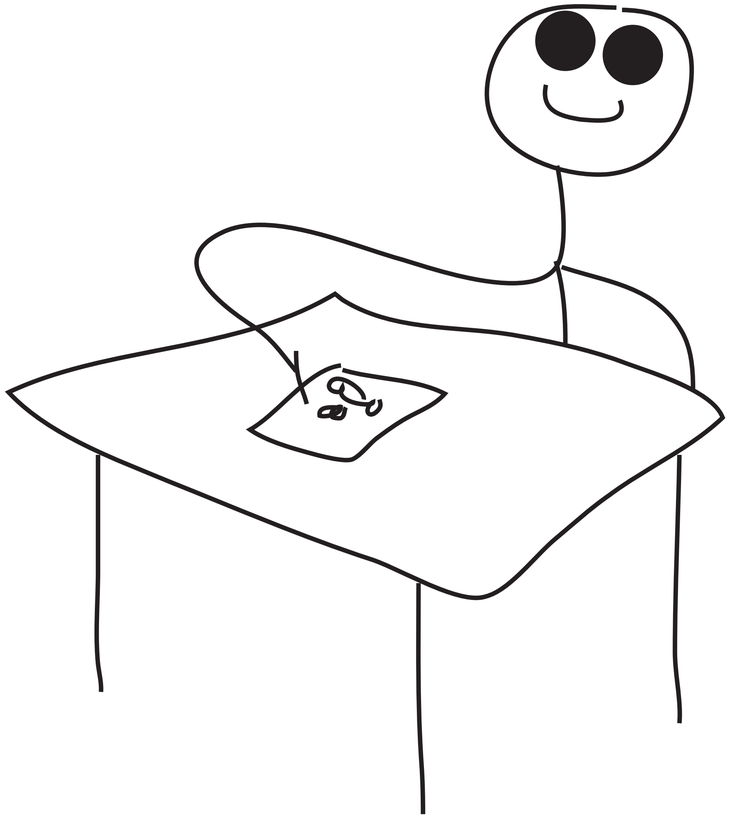
Summary: In this section, you will present the reader with no less than 3, and no more than 5 sentences that gives them a good idea of what you are going to talk about and how important it is that they bother to read your report. Your report will discuss something you found outside in the real world that is related to geology. First you will give some background to the area you were in when you found your geology. Then you will describe what you found, lastly you will hypothesize how your geology was formed. Another important goal for this project is to give everyone some exposure to how scientists present their ideas in written text, and we talk to tell a story using this same format.

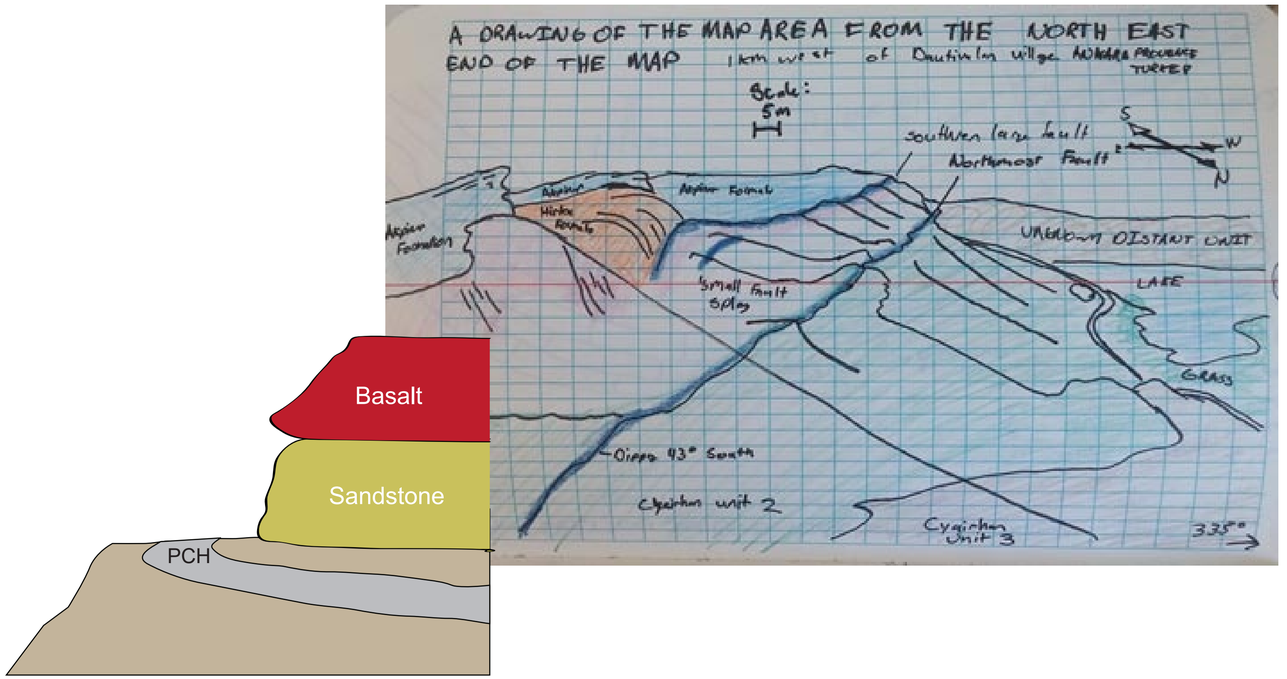
Introduction

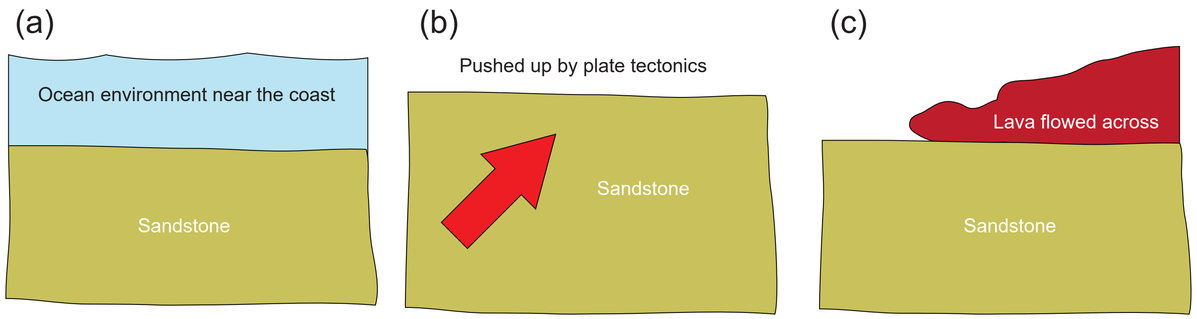
In the introduction you will tell me a little bit about the background that might be important to know before reading your report. For example, people have been writing things down for a really long time, and sometimes were not things down is really important. Scientists like write things

You must have drawings in the outside project






A DRAWING OF THE MAP AREA FROM THE NORTH EAST END OF THE MAP
Scale: 5m
Basalt
Sandstone
PCH


(a)
Ocean environment near the coast
Sandstone
(b)
Pushed up by plate tectonics
Sandstone
(c)
Lava flowed across
Sandstone

1) I am not most Educators.

2) There is a problem with this.

It's called academic dishonesty.

"using the work of others and claiming it as your own"

There are 7.4 B people on Earth…
there is a LOT of scientific information being generated every day.
In the old days, scientific fields were small, and research was not published as often. Now a days scientists are often appraised by how many papers they have published.

In 2009, (quite a while ago) we passed the
50 Million scientific papers mark.

Each year around 2.5 to 3 Million papers are published

Scientists do not have enough hours in the day
to keep up with all aspects of their field.

Encyclopedias, review articles, search engines, books, blogs, and many other places summarize important articles.

LOTS of work goes into making these sources.
They rephrase complex ideas, present information in new ways that helps understand them.

So; IF you use it, don't be dishonest, cite them.

But please don't get into trouble!
(Knowledge always has a way of getting people into trouble)

Why are you here?

Transferring from Saddleback to a 4 year university.

Get a degree and change the world
(or make some hard cash).

A big part of the education systems is doing what the person in the front of the rooms says to.

If in your other classes a professor says
“no giving credit to Wikipedia”

I’ll explain what to do.

“The only thing that interferes with my learning is my education”

-Albert Einstein

A fourth gravitational wave has been detected — and we've pinpointed its location better than ever before

15

Virgo has joined in on the fun

by Loren Grush | @lorengrush | Sep 27, 2017, 12:30pm EDT

SHARE TWEET LINKEDIN

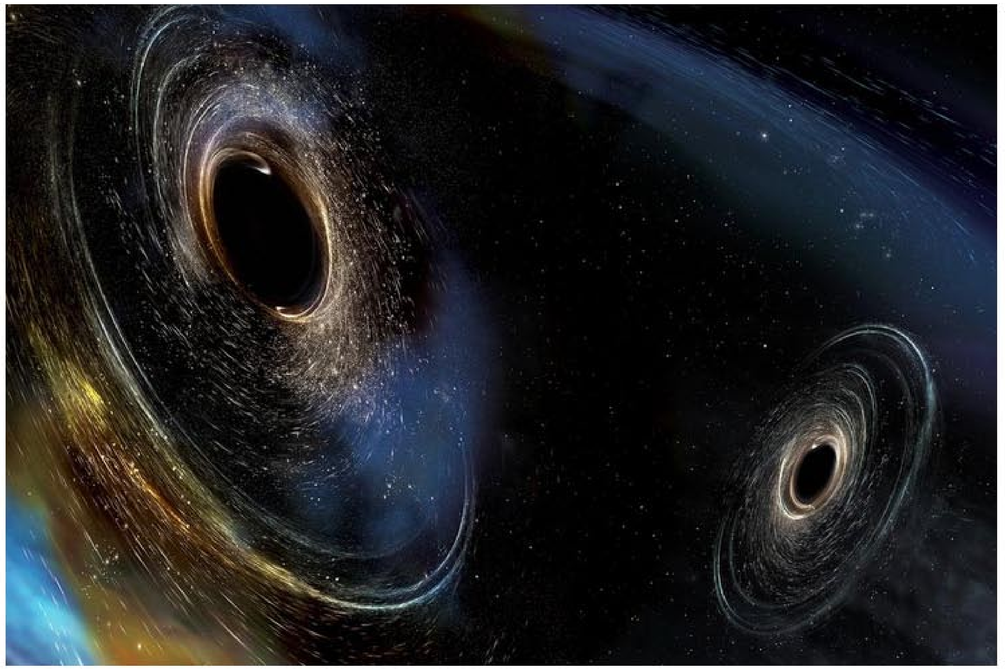


Image: LIGO / Caltech / MIT / Sonoma State (Aurore Simonnet)

Geography [edit]

The shallow slopes of San Gorgonio Mountain earn it the name of *Old Greyback*

San Gorgonio Mountain lies at the easternmost extremity of the Transverse Ranges. The mountain is a heavily eroded, partially dissected plateau.[5]

Big Bear Lake, California is the largest city near San Gorgonio, and hosts two major ski resorts, as well as a popular summer get away for many southern Californians that utilize the lake for boating swimming, and fishing.

Geology [edit]

The shape of the mountain is influenced by a series of steeply dipping thrust faults on the north face of the mountain. The south side of the mountain contains river canyons typical of a dissected plateau.[5]

The mountain is a massive block of quartz monzonite, which sits on an ancient platform of Precambrian gneissic rocks. Glacial and fluvial deposits dominate the surface of the lowest part of the mountain.[6]

Hydrology [edit]

Three major Southern California rivers have their source on San Gorgonio Mountain: the Santa Ana River, the Whitewater River, and the San Gorgonio River.

Jenks Lake, on the north slope of the mountain, is one of the few perennial lakes in Southern California.

- List of Ultras of the United States

References [edit]

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2. ^ "USA Lower 48 Top 100 Peaks by Prominence". Peakbagger.com. Retrieved 2012-04-01.
3. ^ "USA Peaks with 6000 feet of Prominence". Peakbagger.com. Retrieved 2012-04-01.
4. ^ Longest lines of sight
5. ^ a b J.C. Matti and D.M. Morton, U.S. Geological Survey, Geologic setting, San Bernardino National Forest
6. ^ Dibblee, T.W., 1964, Geologic map of the San Gorgonio Mountain quadrangle, San Bernardino and Riverside Counties, California: U.S. Geological Survey, Miscellaneous Geologic Investigations, Map I-431, scale 1:62,500.
7. ^ "Transport Plane Wreckage Hunted", *Playground Daily News*, Fort Walton, Florida, 4 December 1952, Volume 7, Number 44, page 2.
8. ^ G. Pat Macha (2013). *Historic Aircraft Wrecks of San Bernardino County*. The History Press. pp. 72–75. ISBN 978-1-62619-012-2.
9. ^ "The San Gorgonio C-47 9/5/05". *SmugMug*. Joe Idoni. 5 September 2005. Retrieved 18 October 2014.
   "Private-Law 88-159" (PDF). *Statute-77*. Government Printing Office. 30 December 1963. Retrieved 18 October 2014.
   G. Pat Macha (2013). *Historic Aircraft Wrecks of San Bernardino County*. The History Press. p. 73. ISBN 978-1-62619-012-2.
10. ^ "C47 Transport Crashes on Mount San Gorgonio". Qnet.com. Retrieved 2008-11-24.
11. ^ Bill Bell; Michelle Caruso; Ana Figueroa; Corky Siemaszko (May 18, 1998). "Facing Life Without Him Sinatra's Wife Seeks Solace". *NY Daily News*. Retrieved July 28, 2012

Unpublished manuscript
02/09/2000

GEOLOGY OF THE SAN BERNARDINO NATIONAL FOREST

The San Bernardino National Forest (SBNF) includes parts of, two major geologic-geomorphic provinces of western North America, the Transverse Ranges and Peninsular Ranges provinces. The San Gabriel and San Bernardino Mountains are part of the eastern Transverse Ranges and the San Jacinto and Santa Rosa Mountains, Thomas Mountain, and Coahuila Mountain are part of the northern Peninsular Ranges. The geology of the two provinces is vastly different one from the other.

The Transverse Ranges province boundary south of the San Gabriel Mountains is the Cucamonga fault zone, a major compressional fault zone at the base of the mountains. East of the San Gabriel Mountains the province boundary is right-laterally offset 15-20 km by the San Jacinto fault and is located in the structurally complex San Gorgonio Pass area.

Due to fundamental differences in all but the youngest geology, the pre-Quaternary geology of the San Bernardino National Forest is discussed in terms of three rock assemblages, the San Gabriel Mountains assemblage, the San Bernardino Mountains assemblage, and the Peninsular Ranges assemblage. Although within the same geologic-geomorphic province all but the youngest geology of the San Gabriel and San Bernardino Mountains is markedly different. Major lateral displacement on the San Andreas

rocks of Cajon Valley and the Crowder Formation as well as the tectonic structures that separate these two older units.

Quaternary deposits

The most conspicuous and widespread assemblage of Quaternary surficial materials in the Cajon Valley region underlies and caps the so-called "inface bluffs" that rise above Cajon Valley and face southward (Noble, 1954a). The bluffs display three successive Pleistocene rock units that together record the history and evolution of the Victorville fan--an ancient, now-abandoned Quaternary alluvial-fan complex of sand and gravel that spread northward onto the high desert from various stream-canyon sources in the crystalline San Gabriel Mountains (Meisling and Weldon, 1989; Weldon and others, 1993). Two rock units form the lower part of the Victorville fan: the Harold Formation (of Noble, 1953) and the Shoemaker Gravel (of Noble,1954b). The Harold Formation is a thin (less than 120 ft) nearly continuous section of unconsolidated, fluvial sandstone and pebbly sandstone exposed along the lower part of the "inface bluffs" (Foster, 1980, 1982). The Harold Formation grades upward into the Shoemaker Gravel, an unconsolidated section of thick and poorly bedded, fluvial coarse sand, conglomeratic sand, and conglomerate. North of Cajon Valley the Shoemaker Gravel is about 200 ft thick. The top of the Victorville fan is capped by unnamed, dissected brownish sand-and-gravel units that represent the youngest deposits of the ancient alluvial fan (Foster, 1980, 1982; Meisling, 1984; Weldon,1986).

In the Cajon Valley area, several large landslide deposits carry gneiss, marble, and tonalitic rocks over the Cajon fault and sedimentary rocks of Cajon Valley.

GEOLOGY OF THE SAN BERNARDINO MOUNTAINS

Crystal clear?

Clear as mud?