
Introduction to the Brunton Compass

Geo420k, Lab 1

Parts of the Brunton Compass

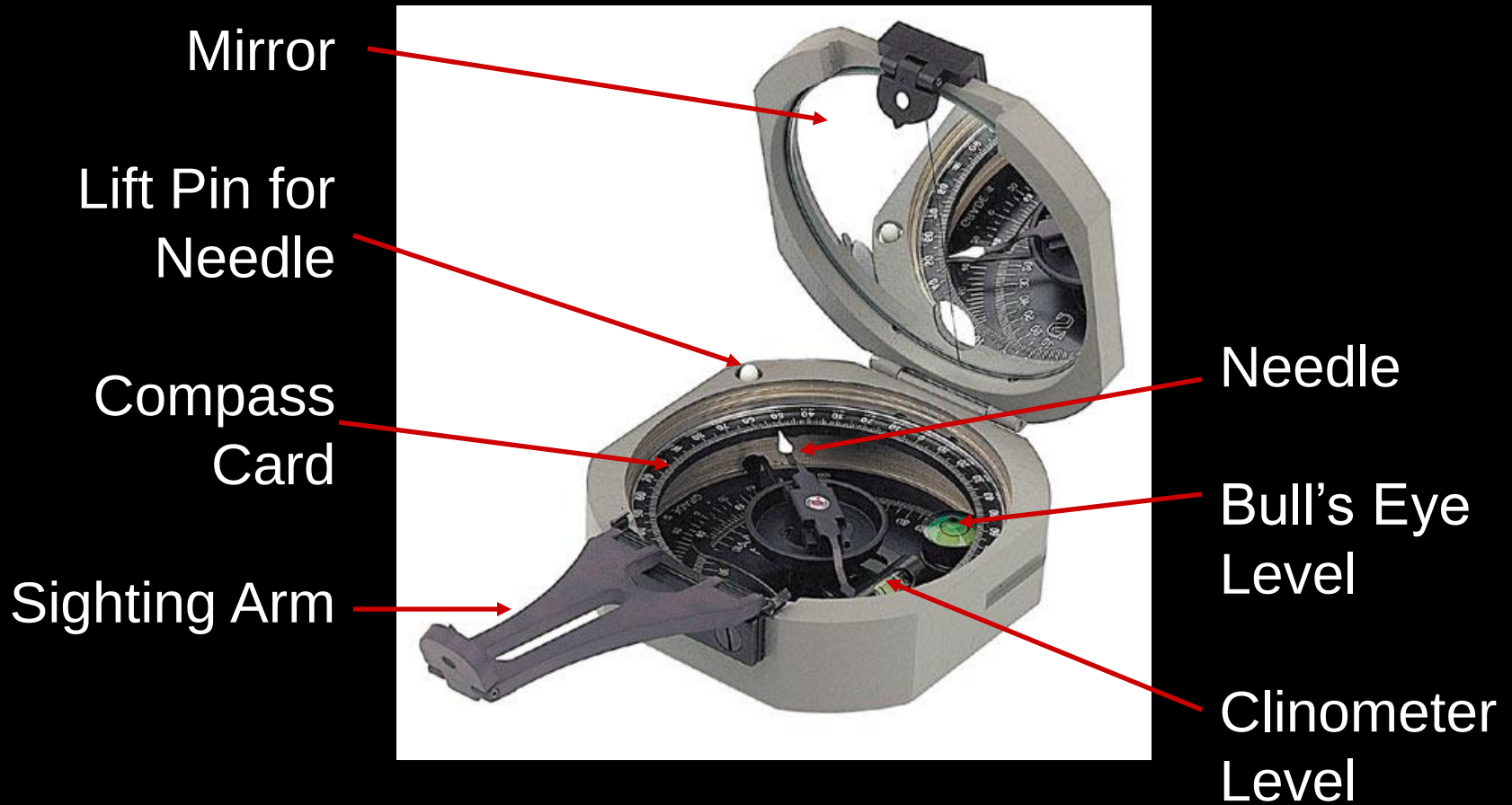


Image from: <http://courses.geo.ucalgary.ca/glgy203/images/sd.htm>

Parts of the Compass Face

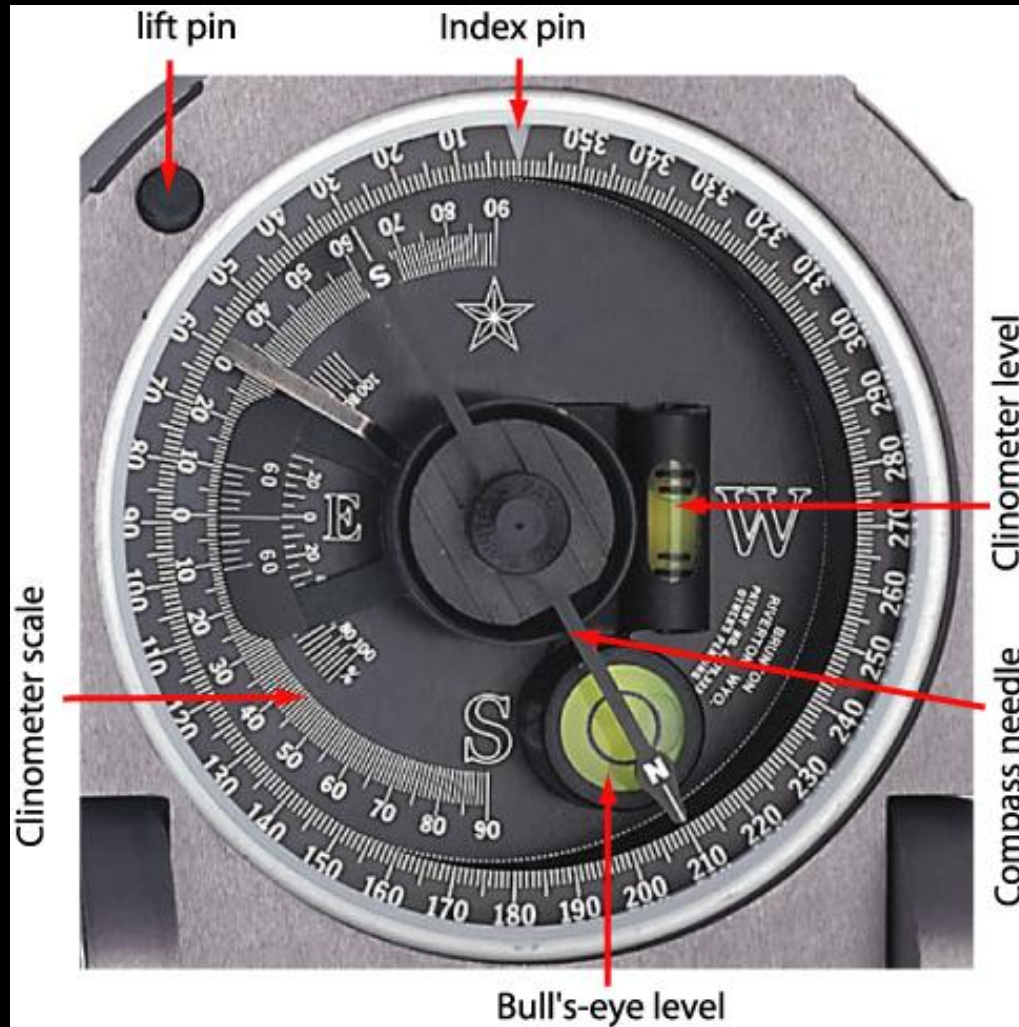


Image from: <http://courses.geo.ucalgary.ca/glgy203/images/sd.htm>

Compass Mastery

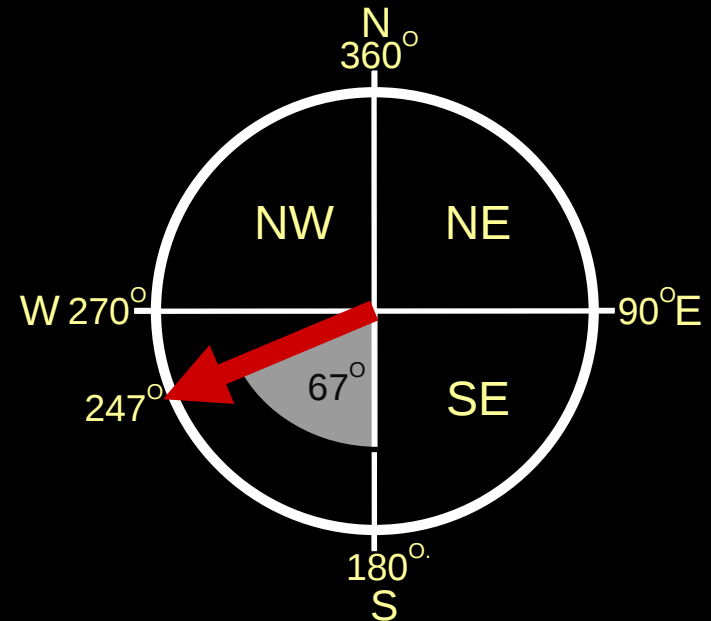
- Locate North, Set local declination
- Measure Bearings
- Measure Strike and Dip of planes
- Measure Trend and Plunge of lines
- Measure Vertical Angles
 - measuring height / thickness of a feature

Recording a Bearing

Bearing: direction from one point to another

Recording notation:

- Azimuth: “247°”



- Quadrant: “S 67°W”

Measuring Strike

Strike: Direction of the line of intersection between a tilted plane and a horizontal plane

Aerial View: Strike of Dipping Strata

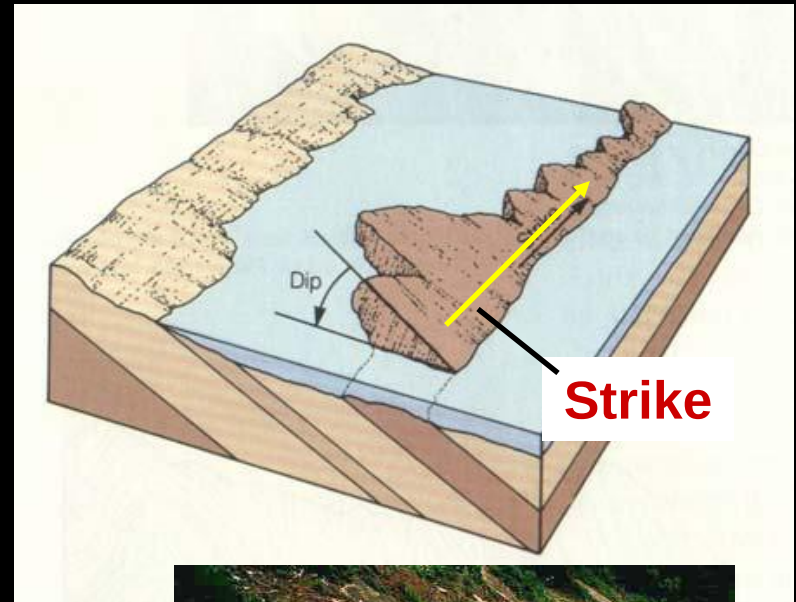


Image from: <http://courses.geo.ualgary.ca/glgy203/images/sd.htm>

Measuring Strike



Measuring a field book that defines the tilted plane of interest

Measuring Strike

Strike: Direction of the line of intersection between a tilted plane and a horizontal plane



- Compass must be horizontal (bull's eye bubble centered), with compass edge flush to the tilted plane

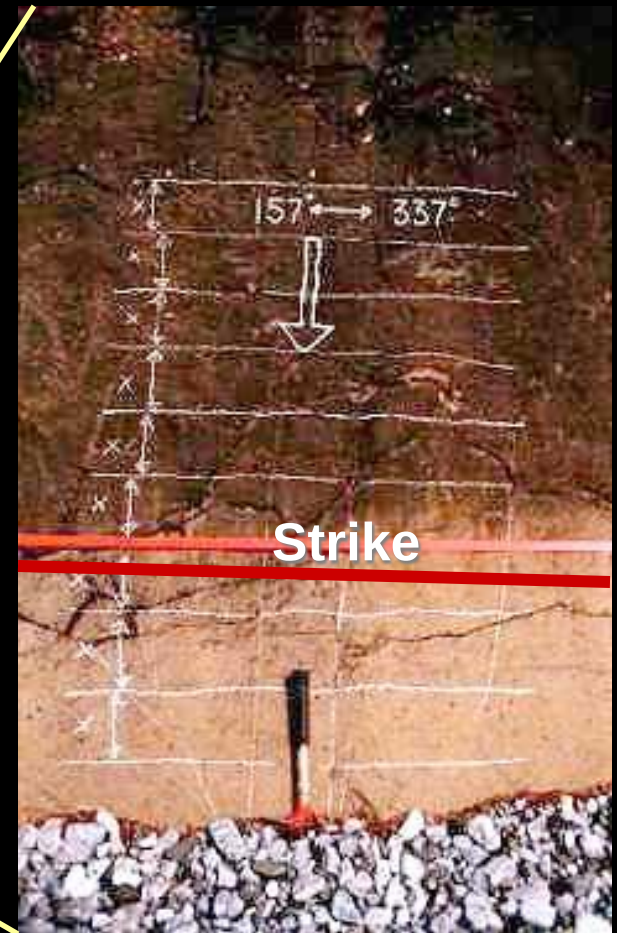
Recording Strike

In the picture at left, is the strike 157° or 337°?

Right-hand Rule:

- Record the bearing in the direction that places the dip direction of the plane to the right (clockwise from) strike.

Answer: 337°



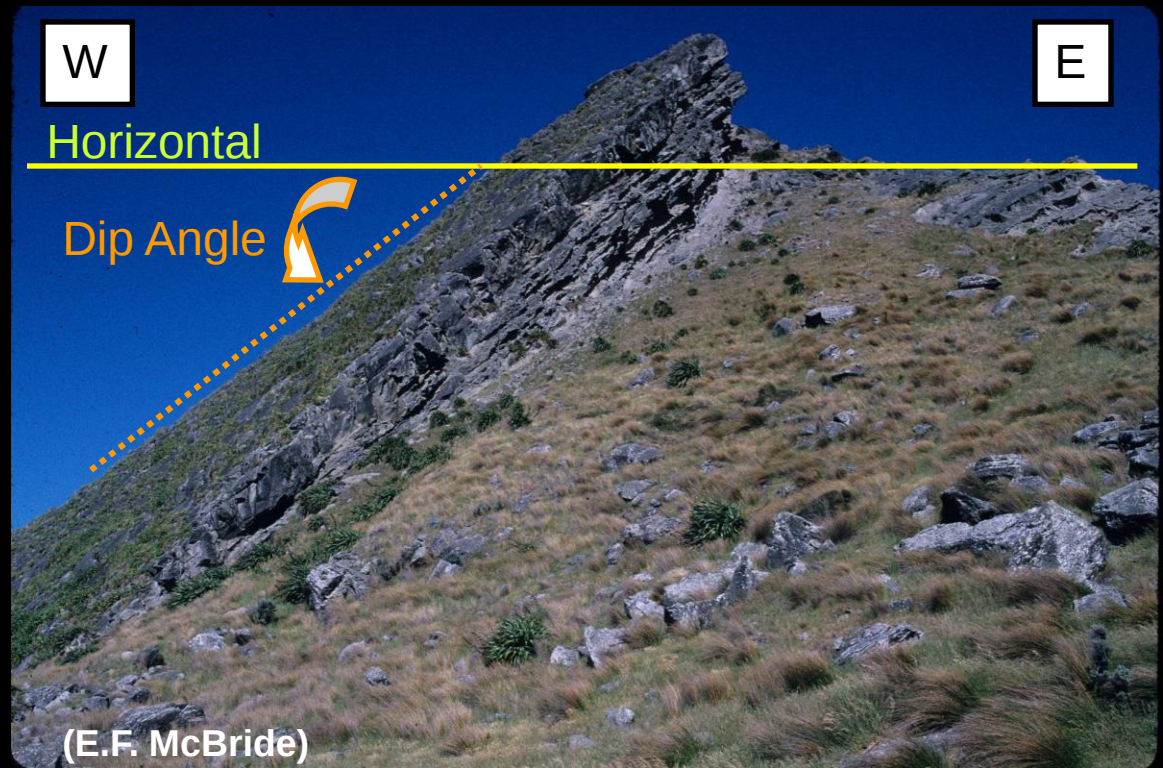
Images from: <http://courses.geo.ucalgary.ca/glgy203/images/sd.htm>

Measuring Dip

Dip: The maximum slope of a plane, measured from horizontal. The dip direction is always perpendicular to strike.

The dip direction is:

- The “fall line” in skiing
- The direction water runs down a sloping surface
- The direction a pebble rolls down a sloping surface



Measuring Dip



Measuring Dip



Images from:

<http://courses.geo.ucalgary.ca/glgy203/images/sd.htm>

- Place compass on its side, perpendicular to strike



- Level the clinometer (center the bubble)



- Read the dip, i.e. 36°

Recording Strike & Dip

Shorthand Notation:

337/36°

or

337/36° NE

- “NE” records the dip direction, but is redundant if the right-hand rule is followed



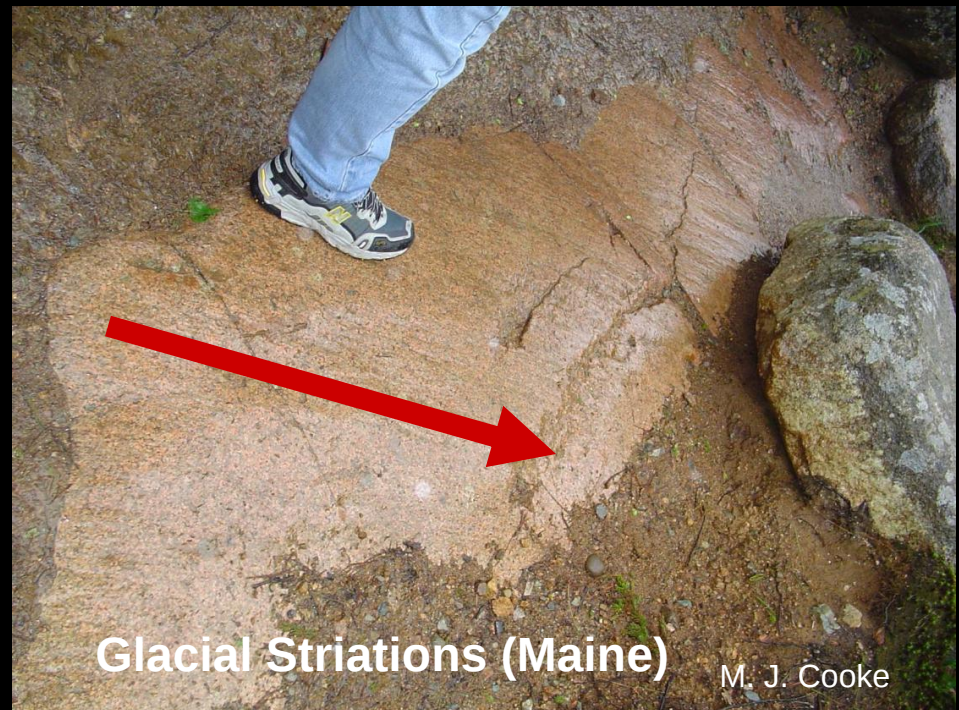
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Measuring the Trend of a Linear Feature

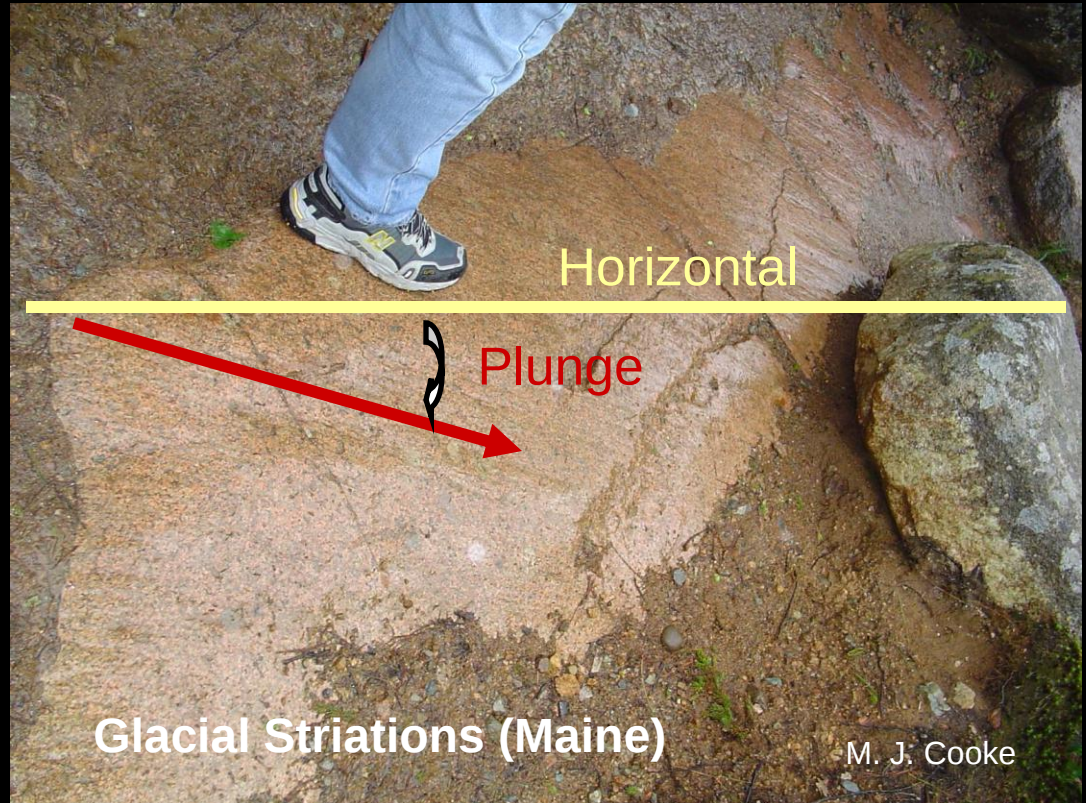
Trend: The orientation of a line, in the direction that it is inclined.

1. Point the Sighting Arm of compass parallel to the direction the feature plunges
2. Hold compass level
3. Read the white end of the compass needle



Measuring the Plunge of a Linear Feature

1. Place the side of the compass parallel the feature
2. Measure the angle of the line from horizontal with the clinometer, as done for dip



Recording Trend and Plunge of a Line

Shorthand Notation:
“25°/150°”

Reads:

“plunges 25
degrees toward a
bearing of 150°”

