**Magnetic Declination**

SLC UT = 11° 4’

# What is Magnetic Declination

2 “Norths” exist. True North (north pole) and Magnetic North (Magnetic pole)

Magnetic Declination = Difference between True North and Magnetic north.

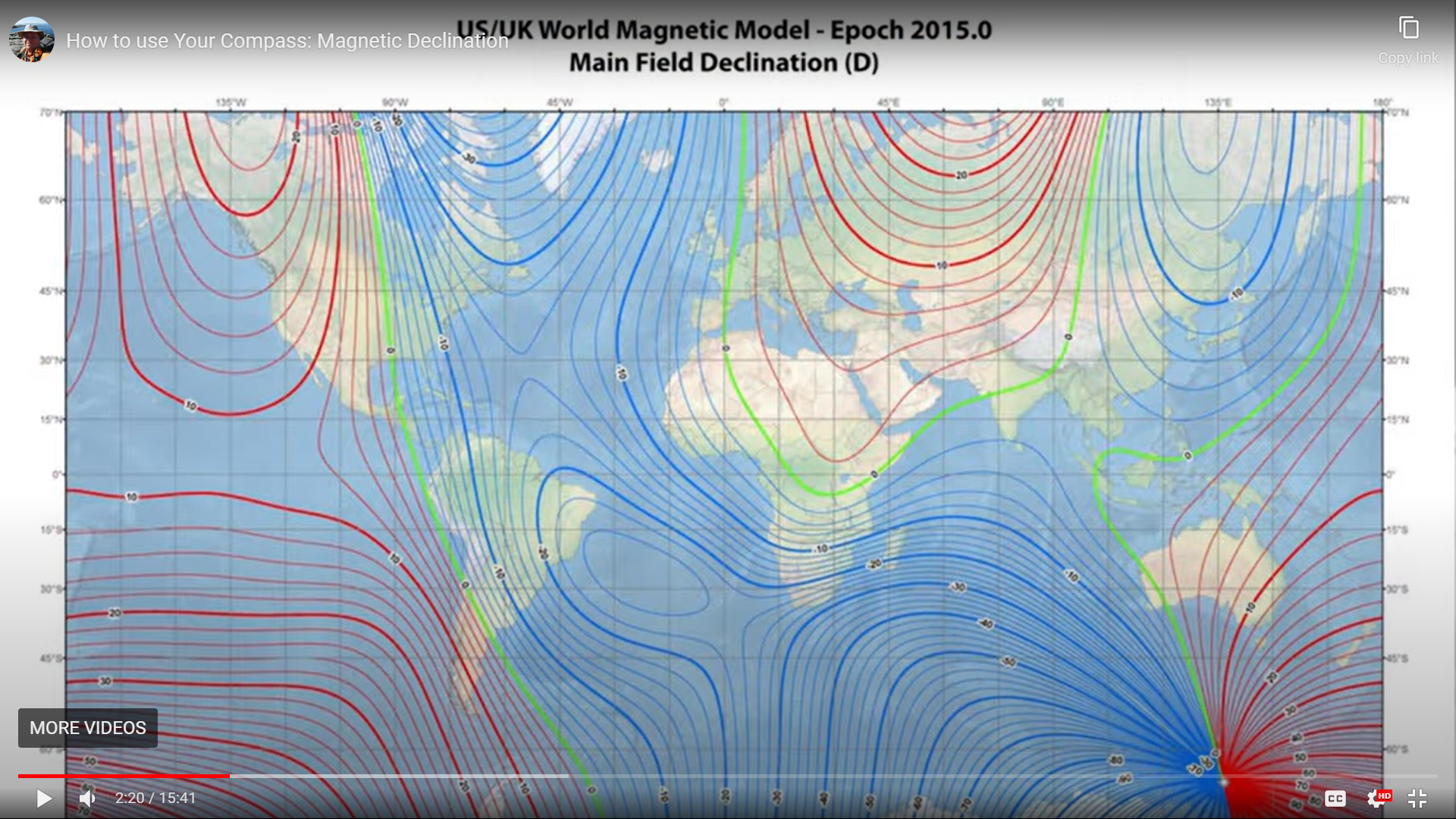
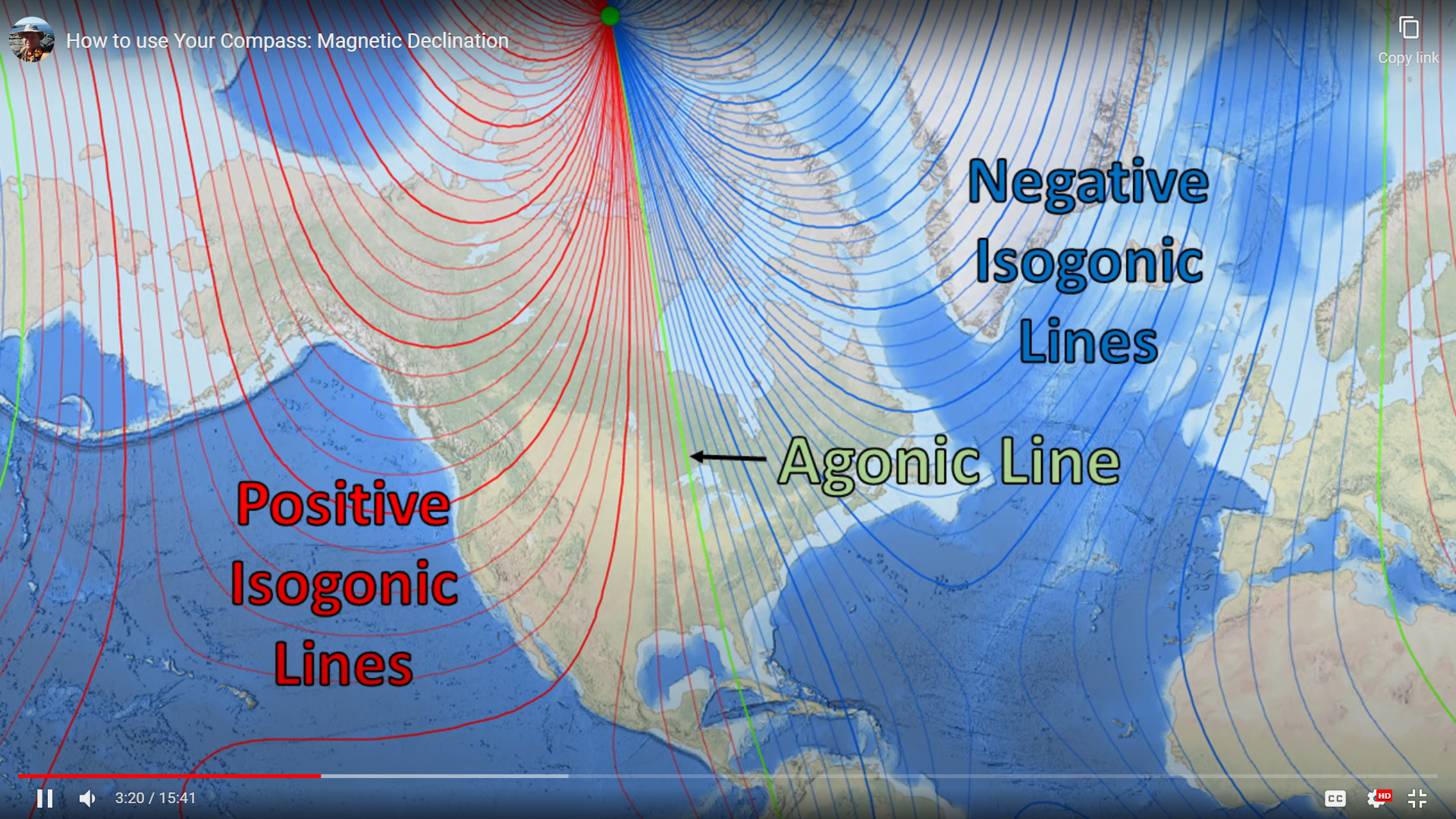


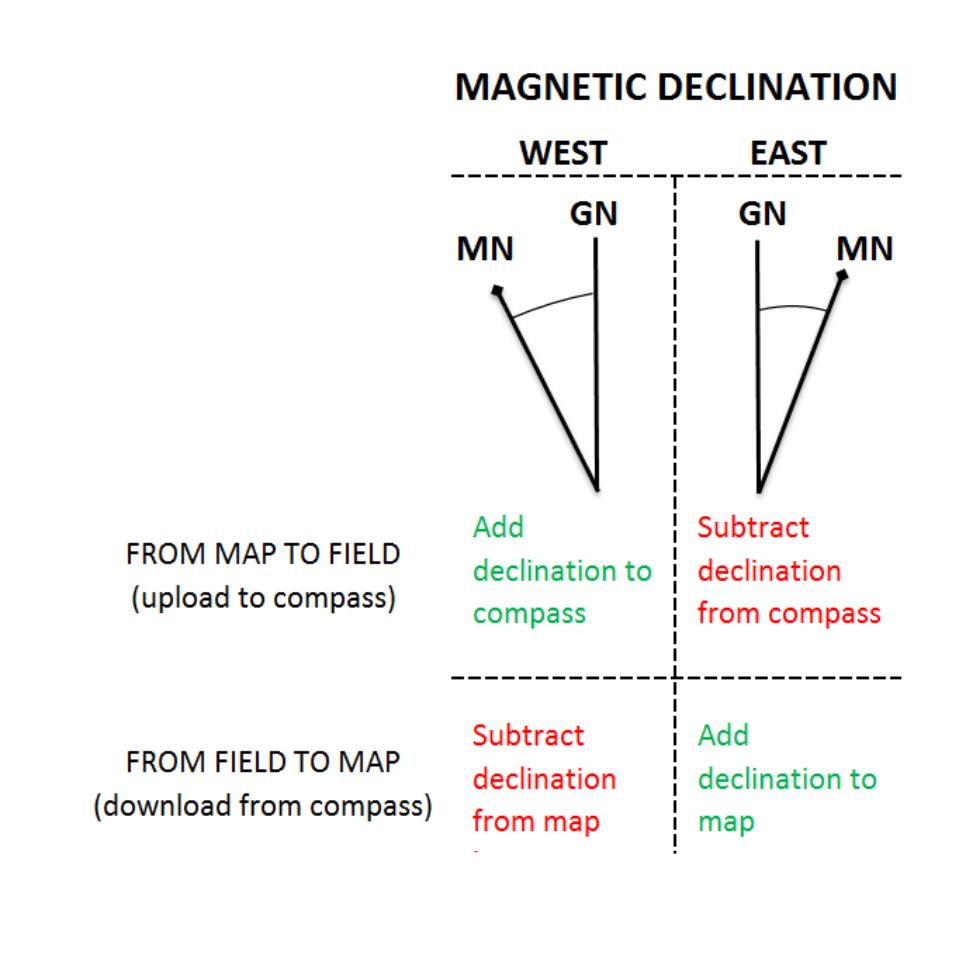
Image showing lines of magnetism. (Declination)



Showing Isogonic (magnetic lines)



Isogonic Chart for N. America – 2022

* Lines that lean left (west) are Western Declination lines
* Lines that lean right (east) are Eastern Declination lines
* UT has Eastern Declination of 11° 4’
* 

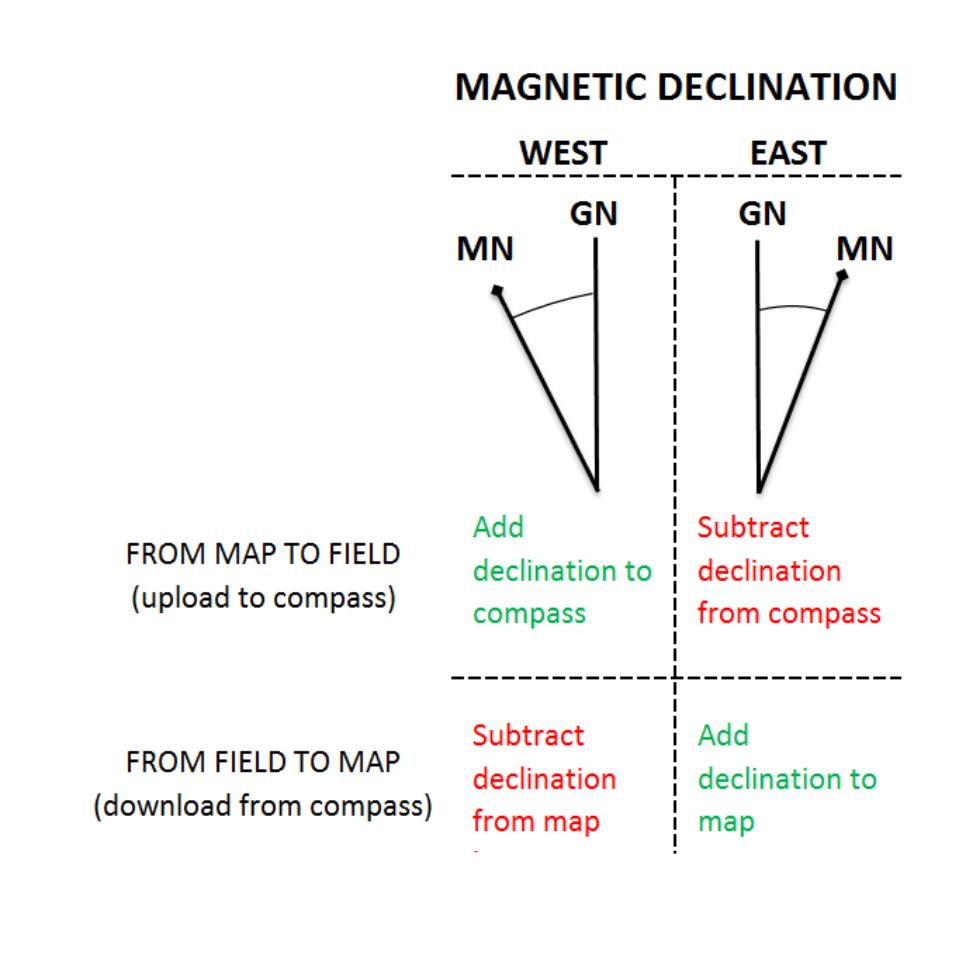
# 3 Methods of determine bearings with declination.

1. Adjust the compass for declination
2. Add or subtract declination for each bearing.
3. Adjust map for declination

## Adjust the compass for declination

* Point the compass baseplate in the direction of travel.
* To set declination.
  + Can use the declination diagram at the bottom of the map.
    - Rotate the bezel in the direction shown.
  + For EAST declination: (if your magnetic is East of True North – Positive inclination)
    - Subtract declination from North and set bezel
  + For West declination: (if your magnetic is West of True North – Negative inclination)
    - Add declination to North and set bezel

## Add or subtract declination for each bearing.



## To Calculate declination:

### To transfer Magnetic (Observed) Headings to TN map Bearings

* + Direction bearing + declination = TN map heading
    1. For EAST declination: (Positive inclination), Add declination to observed heading. Use a positive number in the formula.
    2. For West declination: (Negative inclination), Subtract declination from observed heading. Use a negative number in the formula

*Example: If you want to go to a heading of 50° magnetic at SLC Utah (11° 4’)*

* + *Direction bearing + declination = TN map heading*
  + *(50° + 11°) = 61° True North (on map)*

*Example: If you want to go to a heading of 50° magnetic at New York City (-13°)*

* + *Direction bearing + declination = TN map heading*
  + *(50° - 13°) = 37° True North (on map)*

### To transfer TN map Bearings to Magnetic (Observed) Headings.

* + TN map heading – declination = Direction Bearing

*Example: If you want to go to a Bearing of 50° TN at SLC Utah (11° 4’)*

* + *TN map heading – declination = Direction Bearing*
  + *(50° - 11°) = 39° Magnetic*
    - Rotate the compass bezel to 39°
    - Point marching arrow at a landmark with compass needle on and move in that direction for the required distance.

## 3. Adjust MAP for declination (Easiest Method)

Process:

* Check the diagram for accuracy. Measure it with a protractor.
* Get a nice long wide ruler. Line up with Magnetic declination diagram
* Draw lines on each side of the ruler, and continue across the map.
* Now you are ONLY using Magnetic compass lines on the map, NOT True North lines.
* All measurements are now correct and no calculation is required.

# Map Bag Contents

* Map(s) – Marked with magnetic lines (drawn on)
* Note Pad
* Pens and pencils w/eraser
* Hiking protractor
* Ruler/Straight edge
* Instructions
* Map Cover - Waterproof