

## North American Sundial Society

[www.sundials.org](http://www.sundials.org)

# Horizontal Paper Cut-Out Sundials 20° to 54°

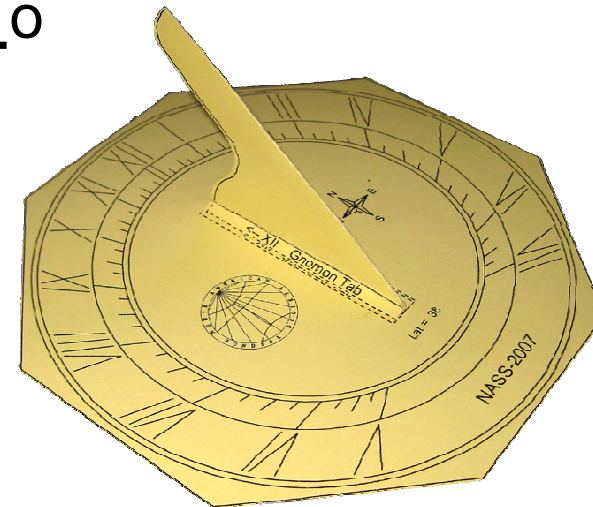
Cut out the Sundial nearest to your Latitude. Assemble following the instructions on the sundial sheet.

Take the Sundial outdoors, point the dial to true North and read the shadow cast by the top of the gnomon to tell local solar time. This is correct sun time.

To obtain clock time, you'll need to do a little math if you want accuracy: Subtract your west longitude from your time zone longitude, multiply the result by 4 to get minutes, then add the Equation of Time correction from the chart on the next page

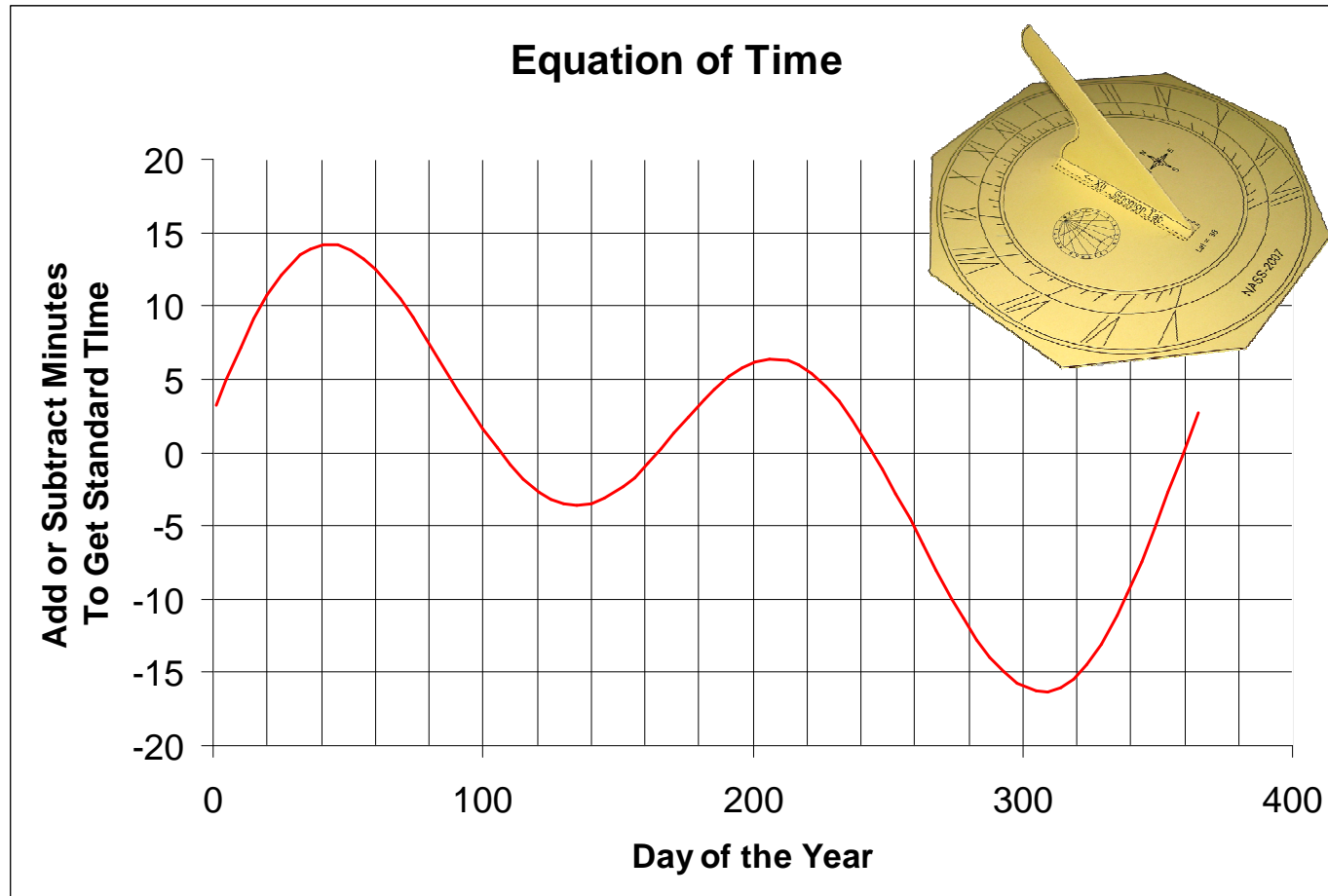
Example: Our Dial is located at longitude 77 West and reads 10:05 on March 1<sup>st</sup> (day 60 of the year). The Dial is in the Eastern Time Zone that has a longitude of 75 W.

Central Time Zone = 90 W, Mountain Time Zone = 105 W, Pacific Time Zone = 120 W, and Hawaii = 150 W

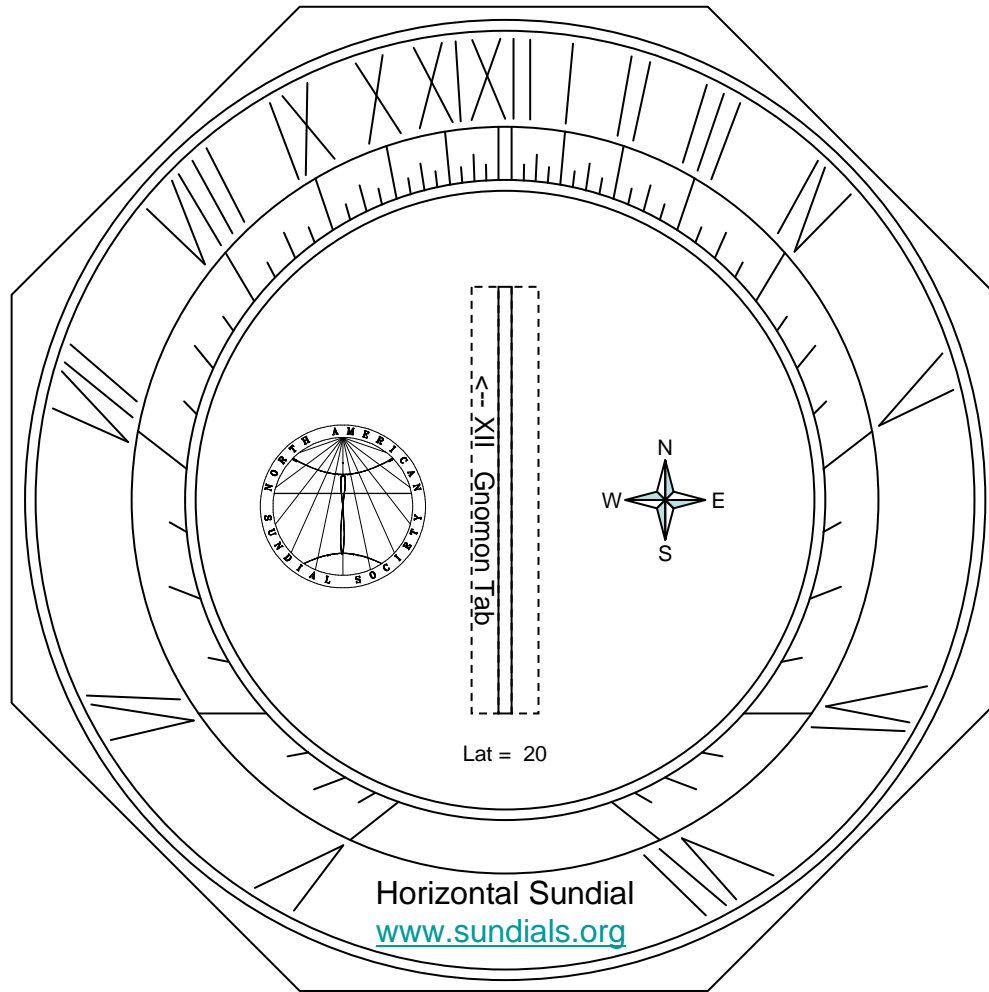


Solar Time from Dial =	10h 05 min
Longitude Correction 4x(77-75) =	+ 8 min
Equation of Time for day 60 =	+ 12 min
<hr/> Clock Time =	<hr/> 10h 25 min

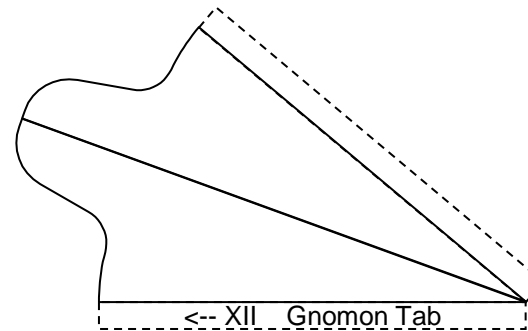
# The Sundial Compared to Mean Time



**Latitude = 20°**

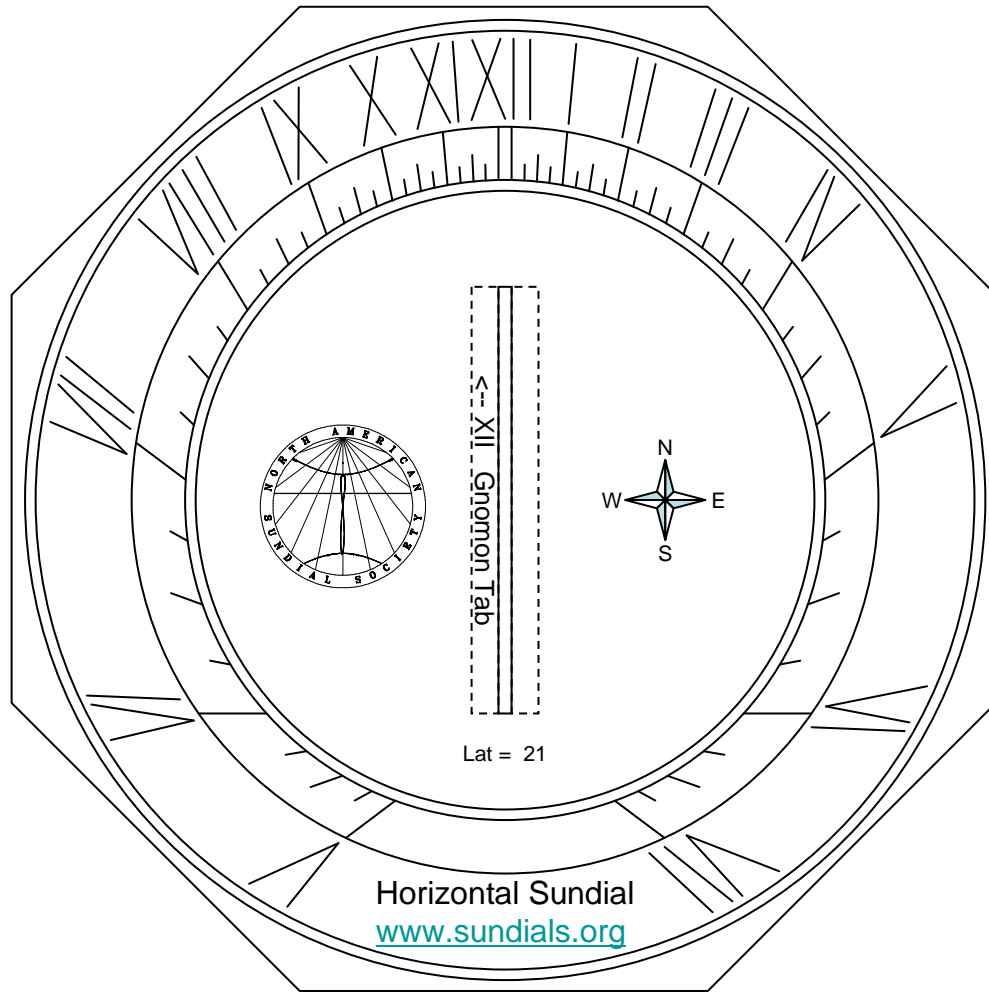


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

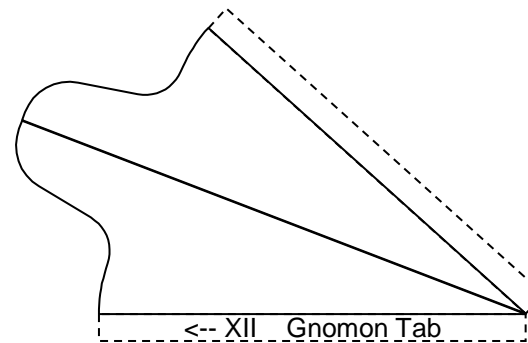


Gnomon

Latitude = 21°

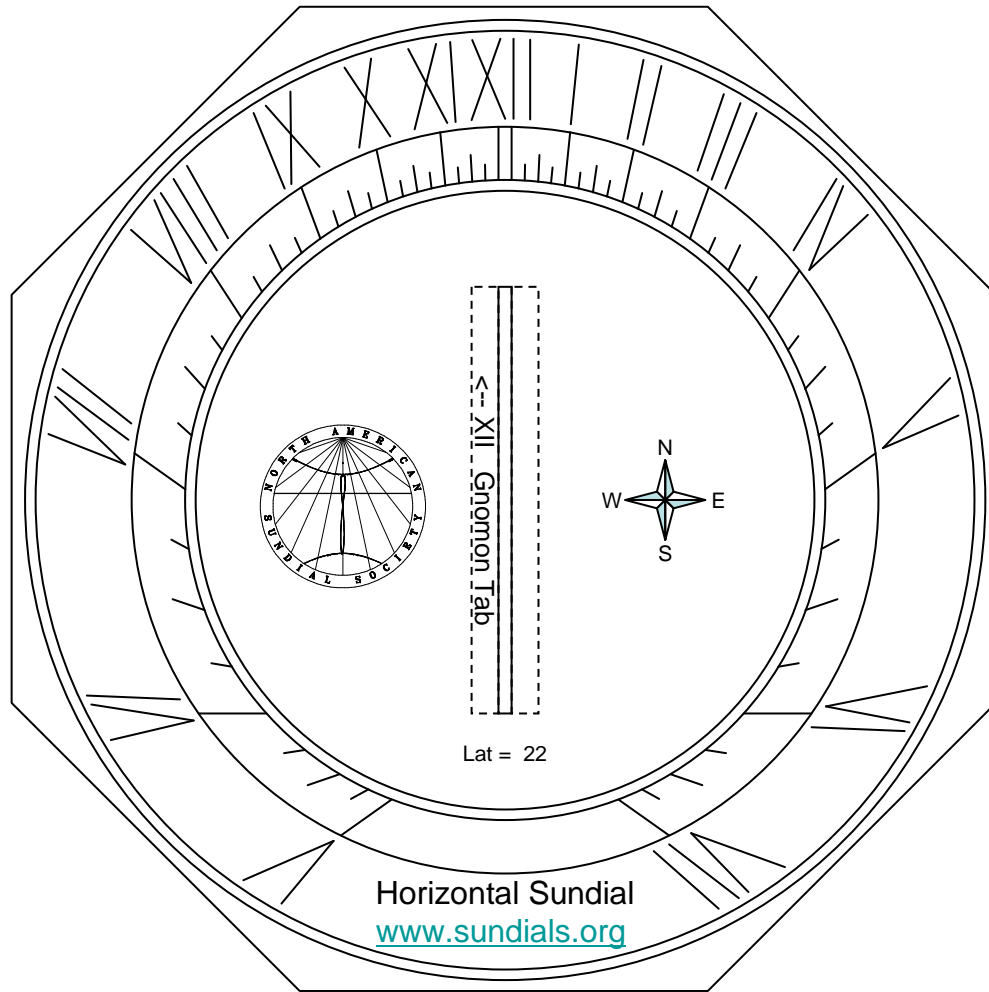


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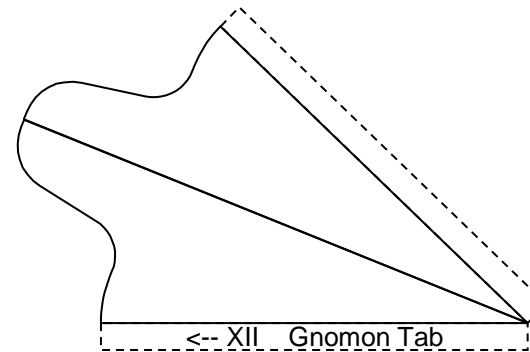


Gnomon

Latitude = 22°

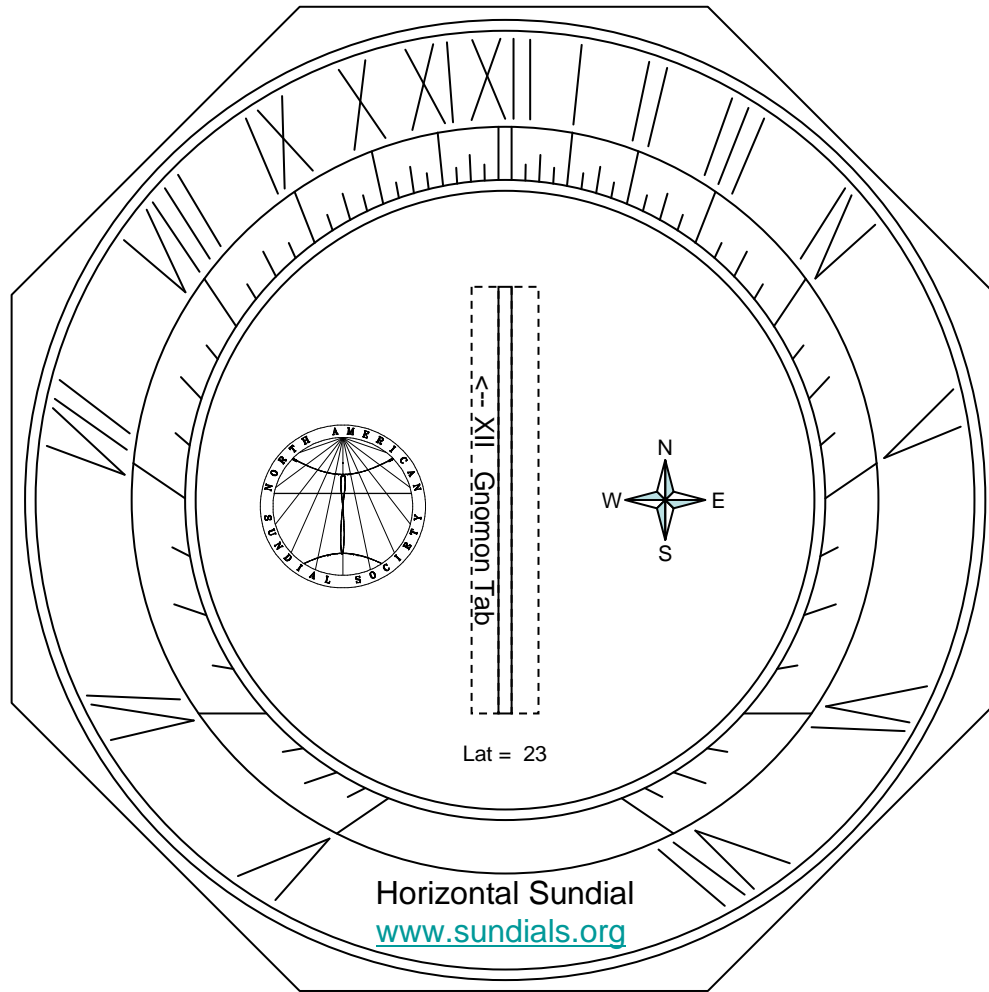


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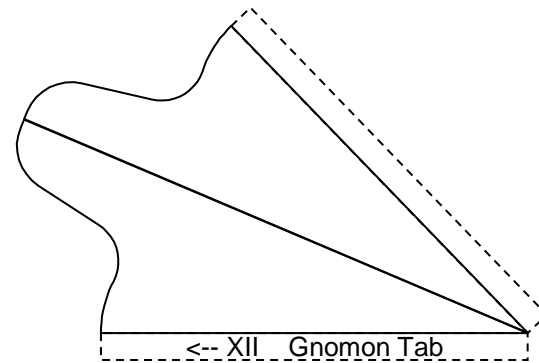


Gnomon

Latitude = 23°

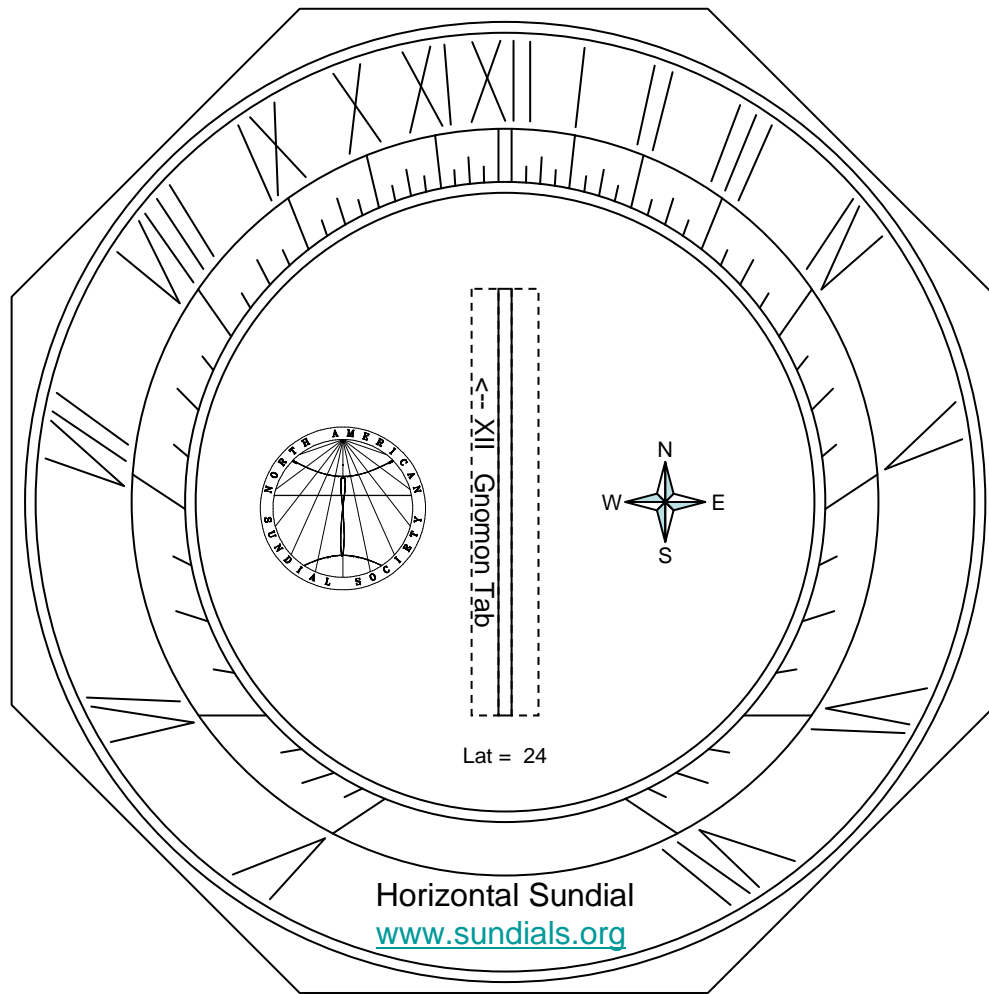


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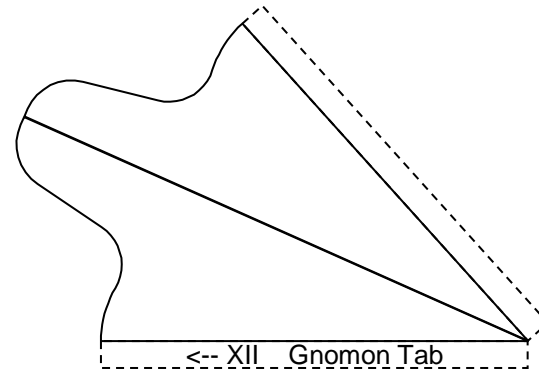


Gnomon

**Latitude = 24°**

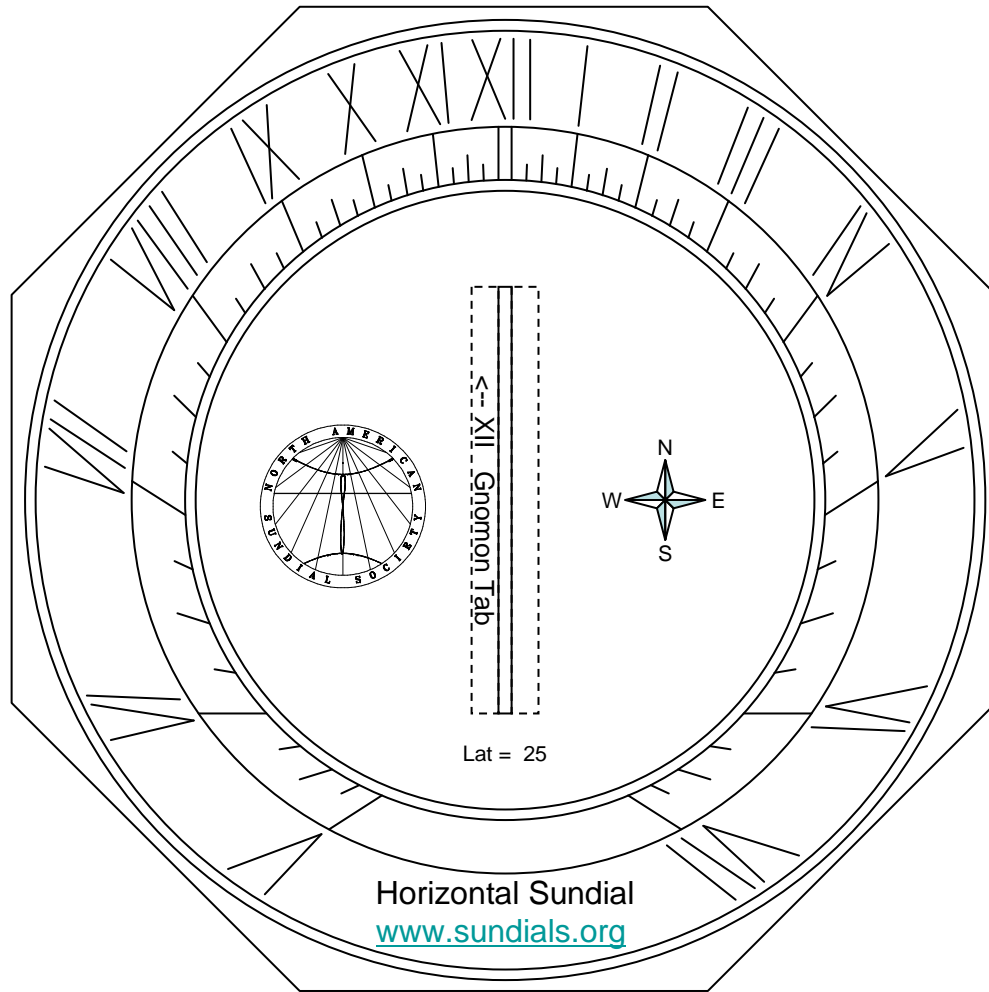


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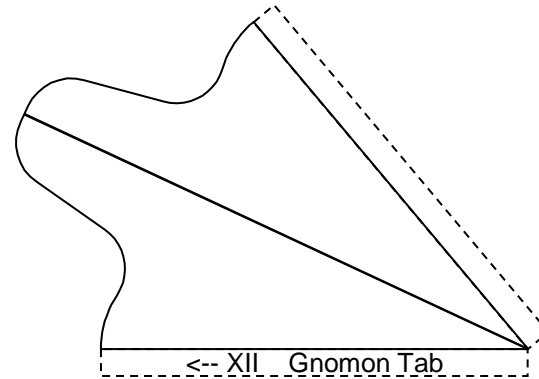


Gnomon

Latitude = 25°



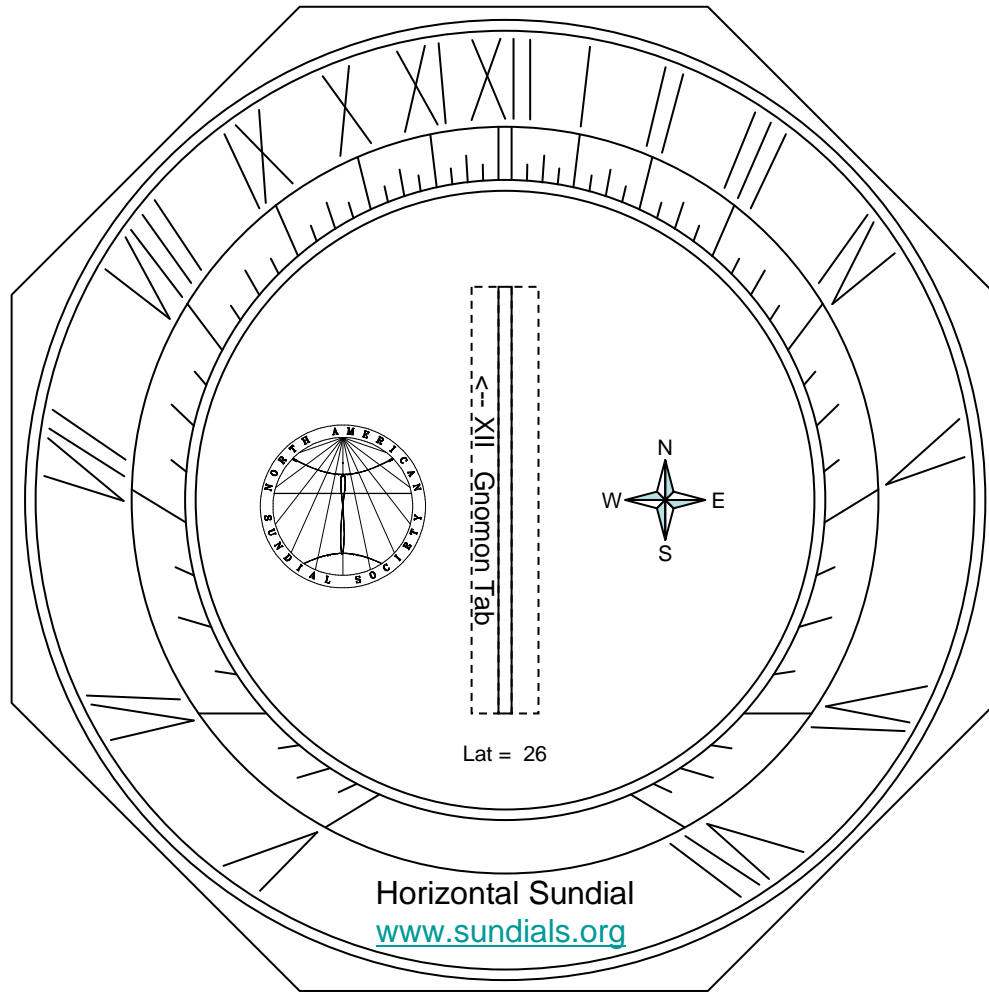
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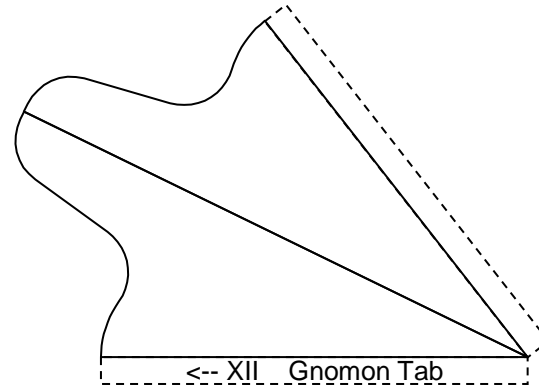
Gnomon



**Latitude = 26°**

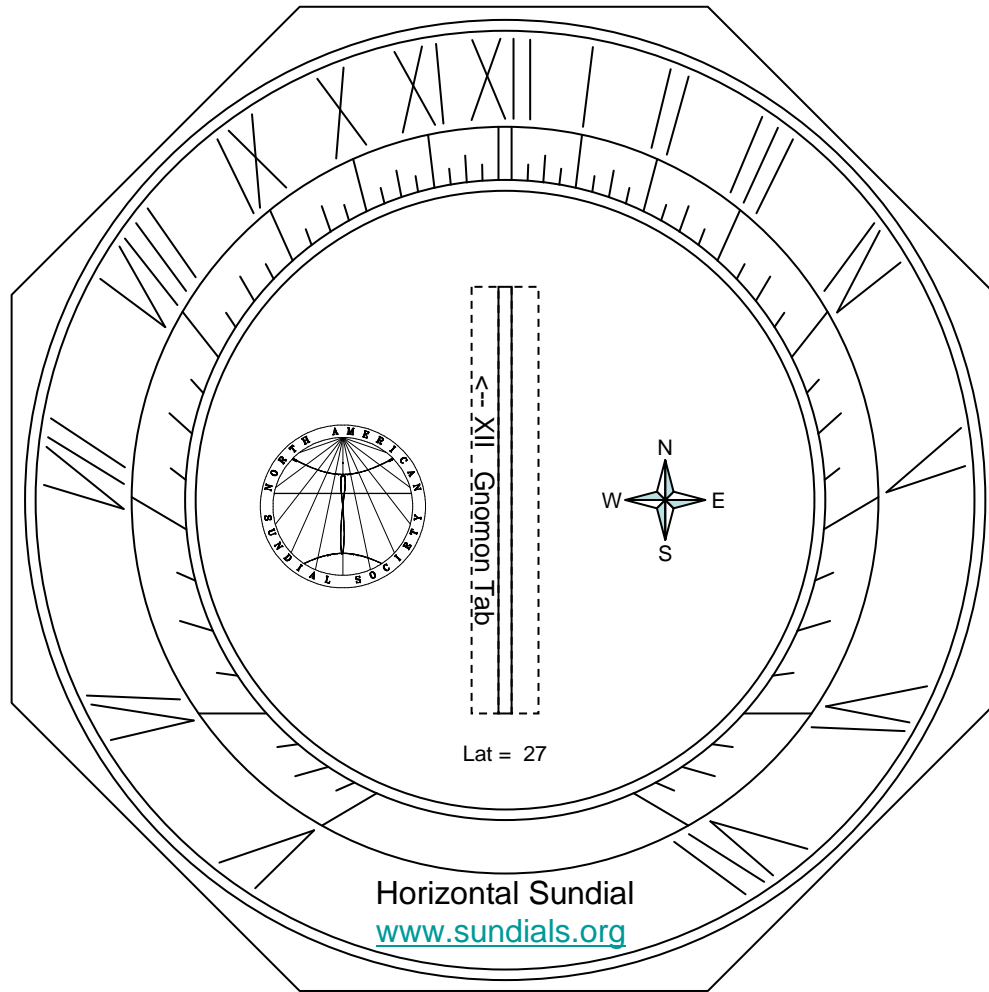


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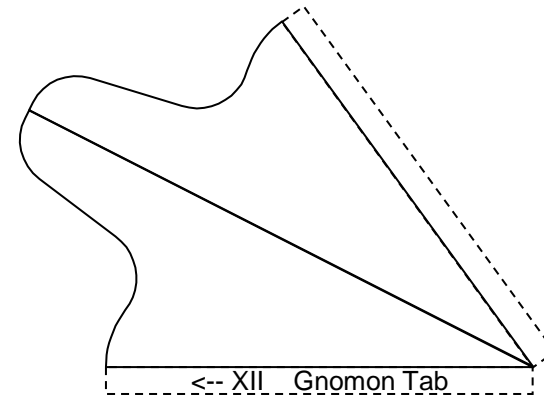


Gnomon

**Latitude = 27°**

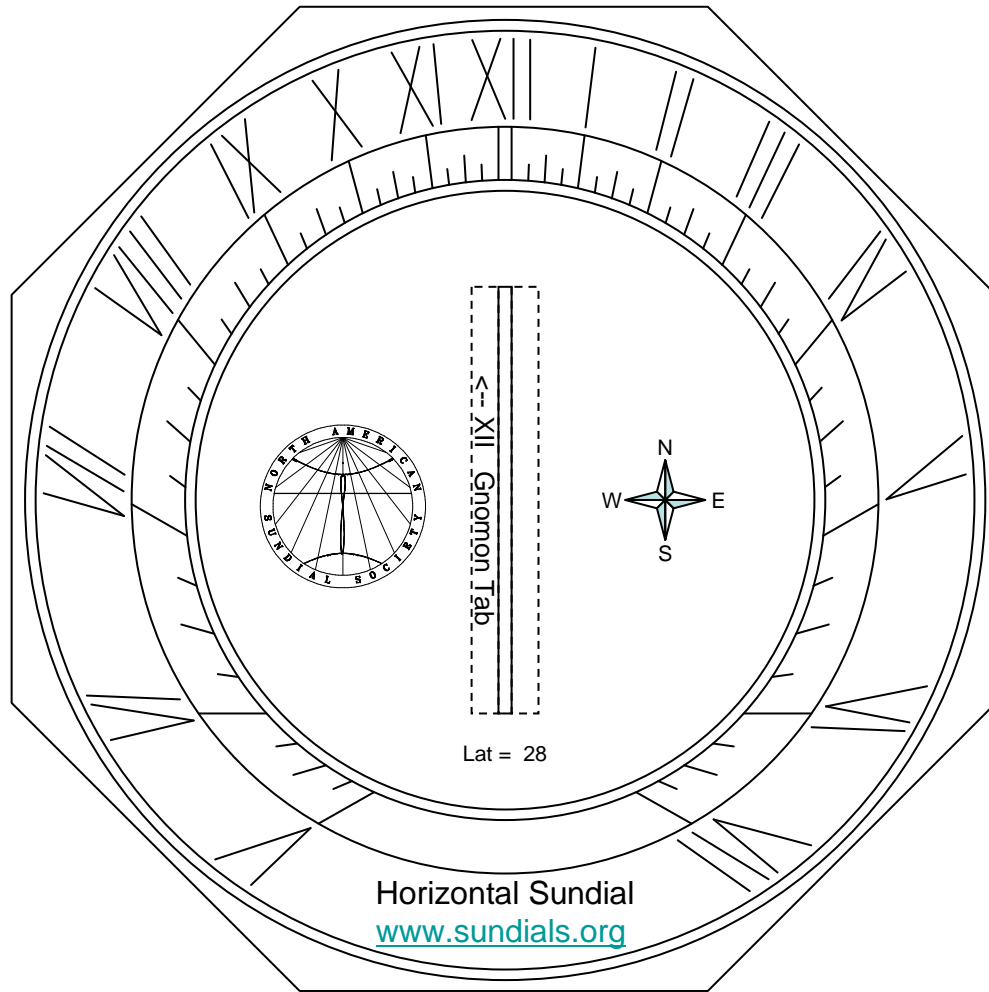


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Gnomon

Latitude = 28°

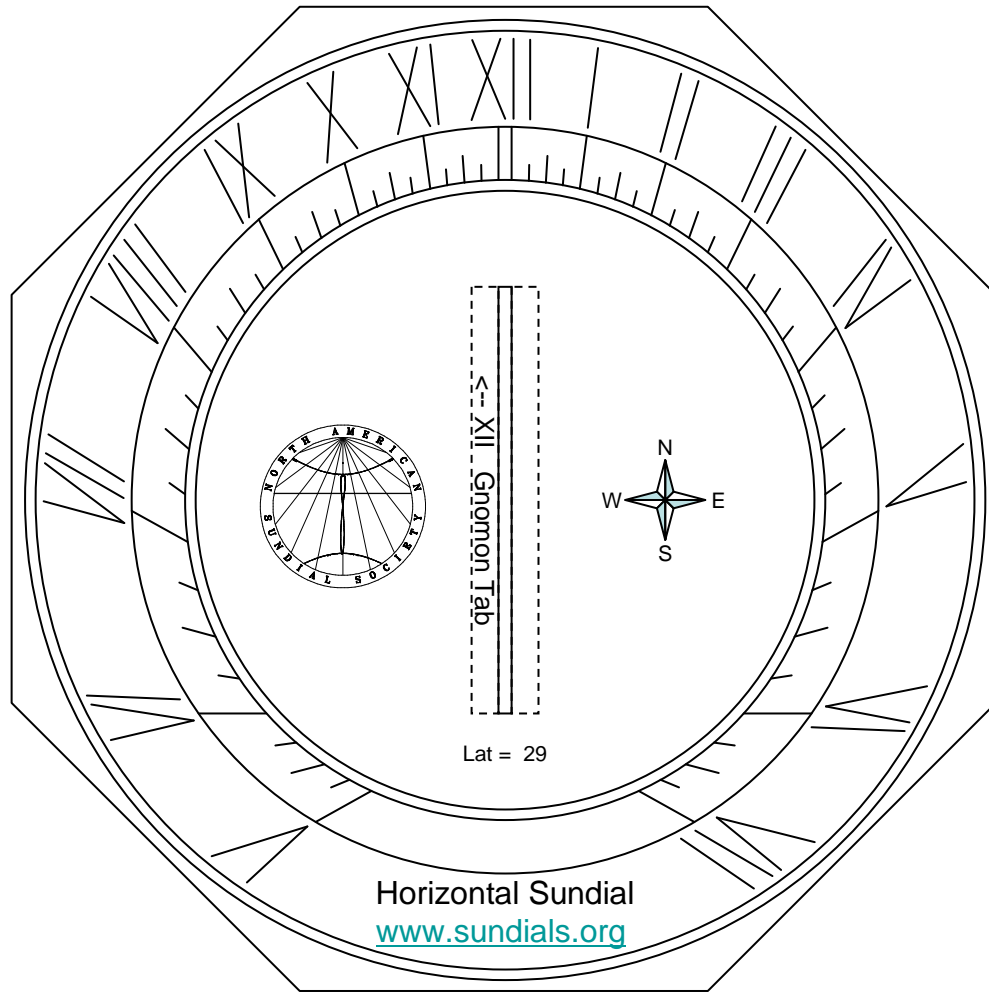


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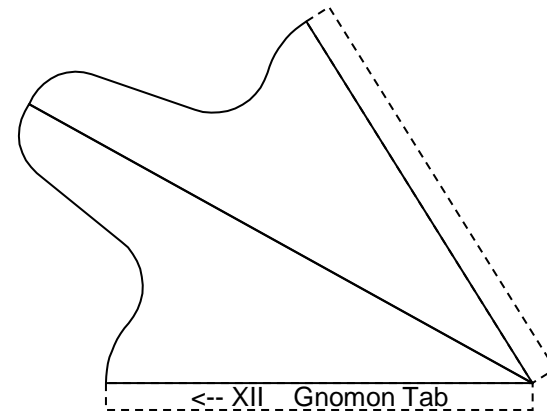


Gnomon

Latitude = 29°

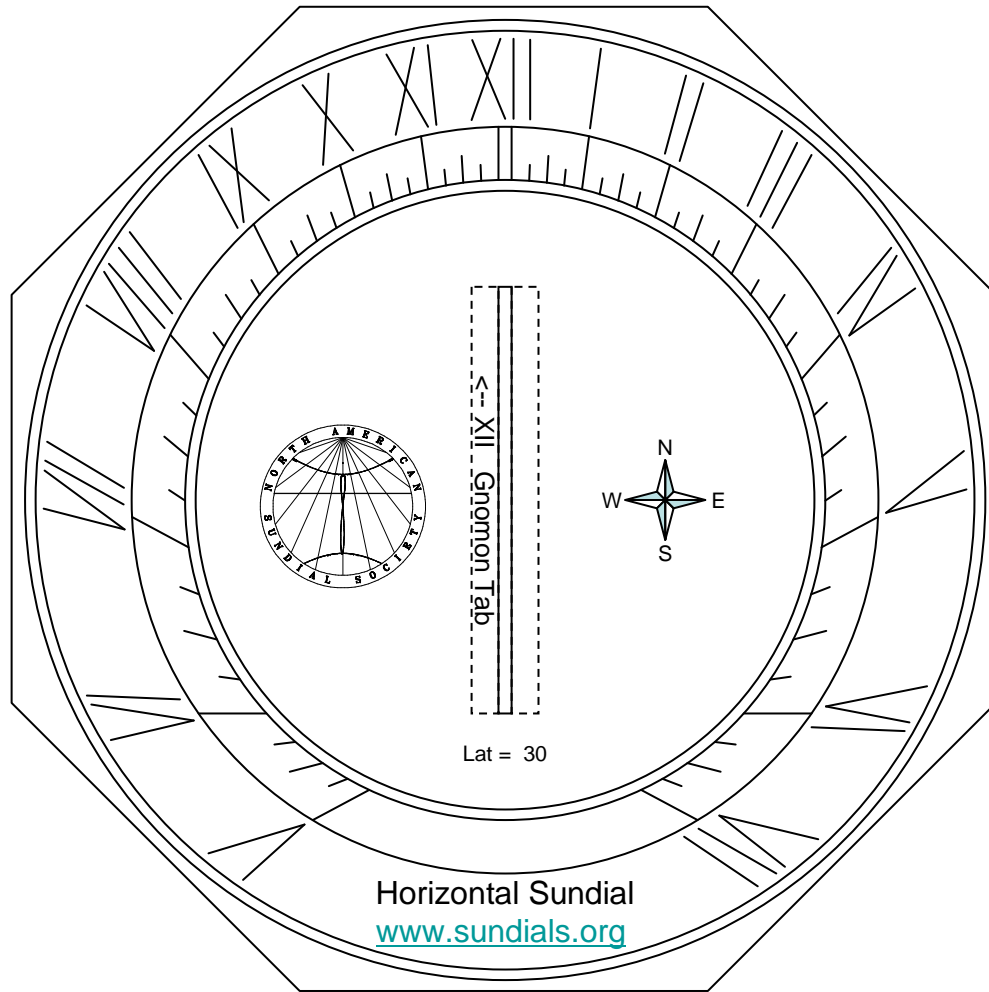


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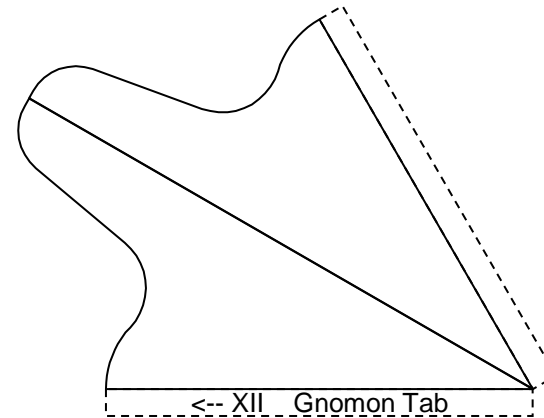


Gnomon

Latitude = 30°

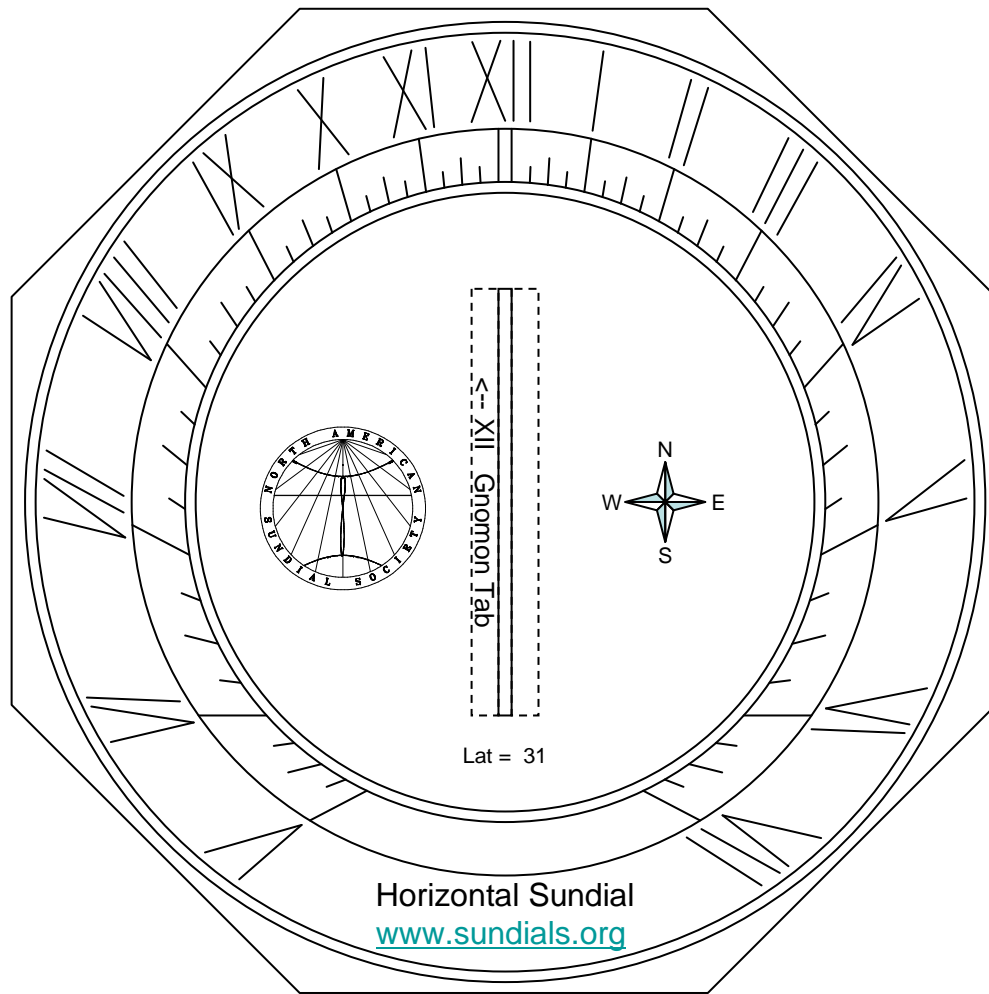


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Gnomon

Latitude = 31°

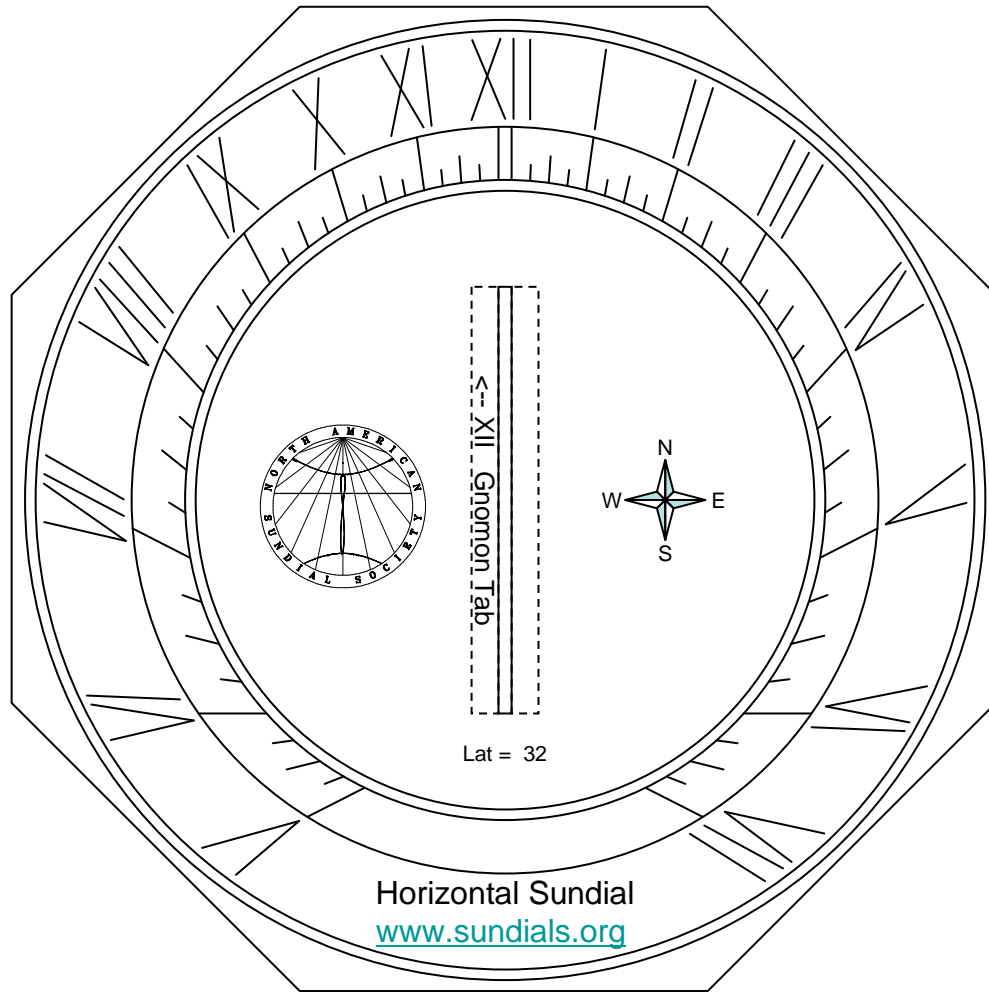


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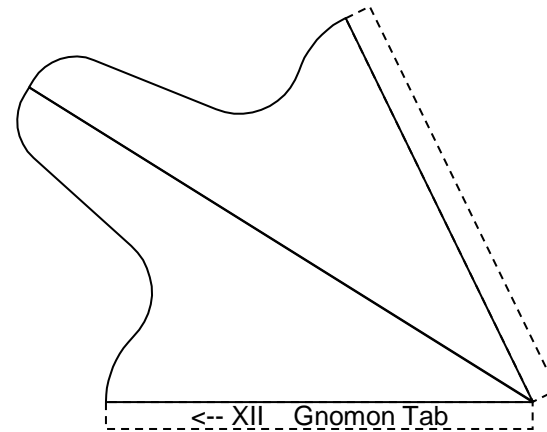


Gnomon

Latitude = 32°

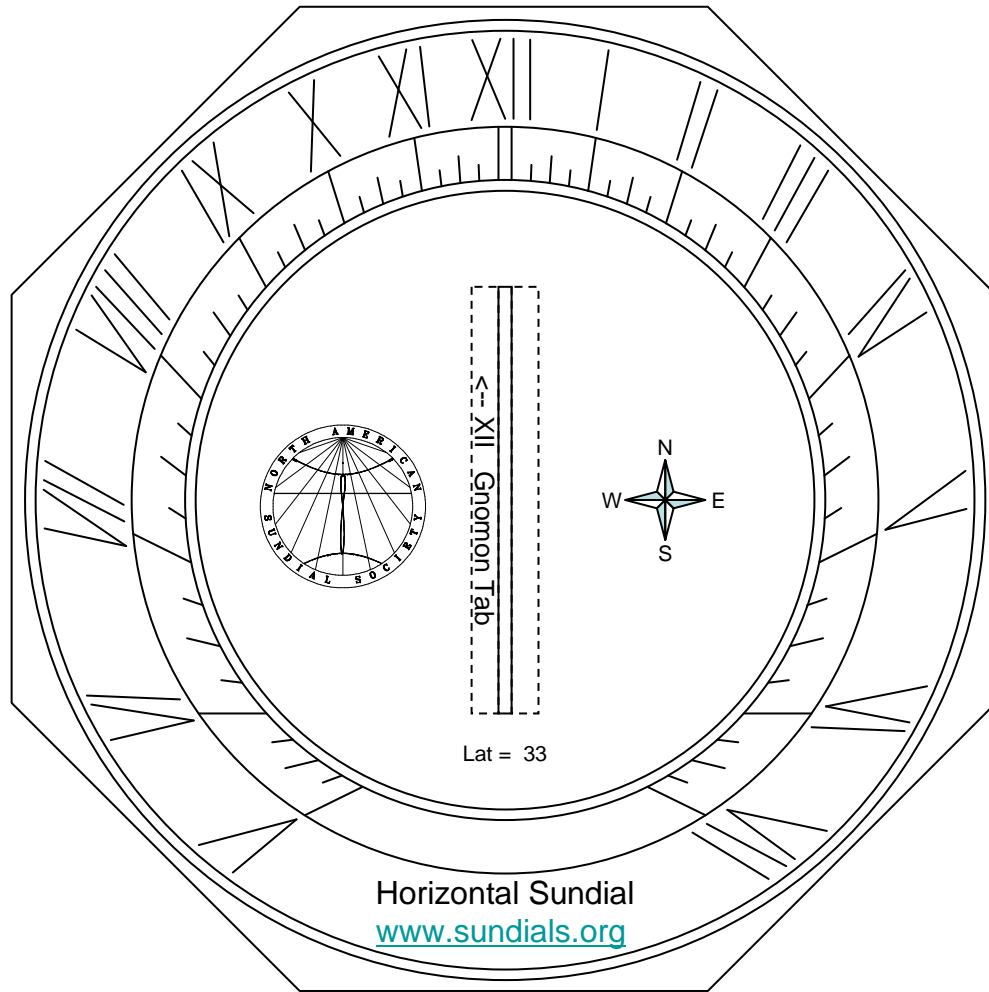


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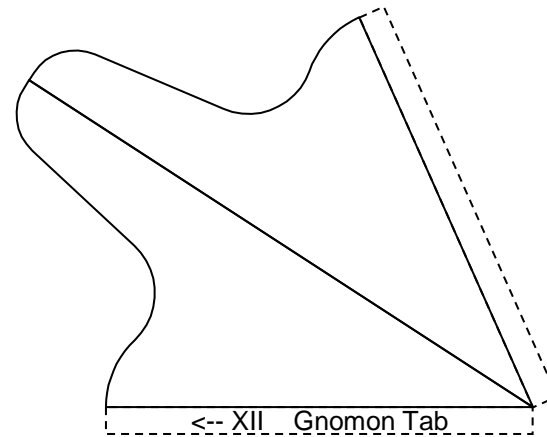


Gnomon

Latitude = 33°



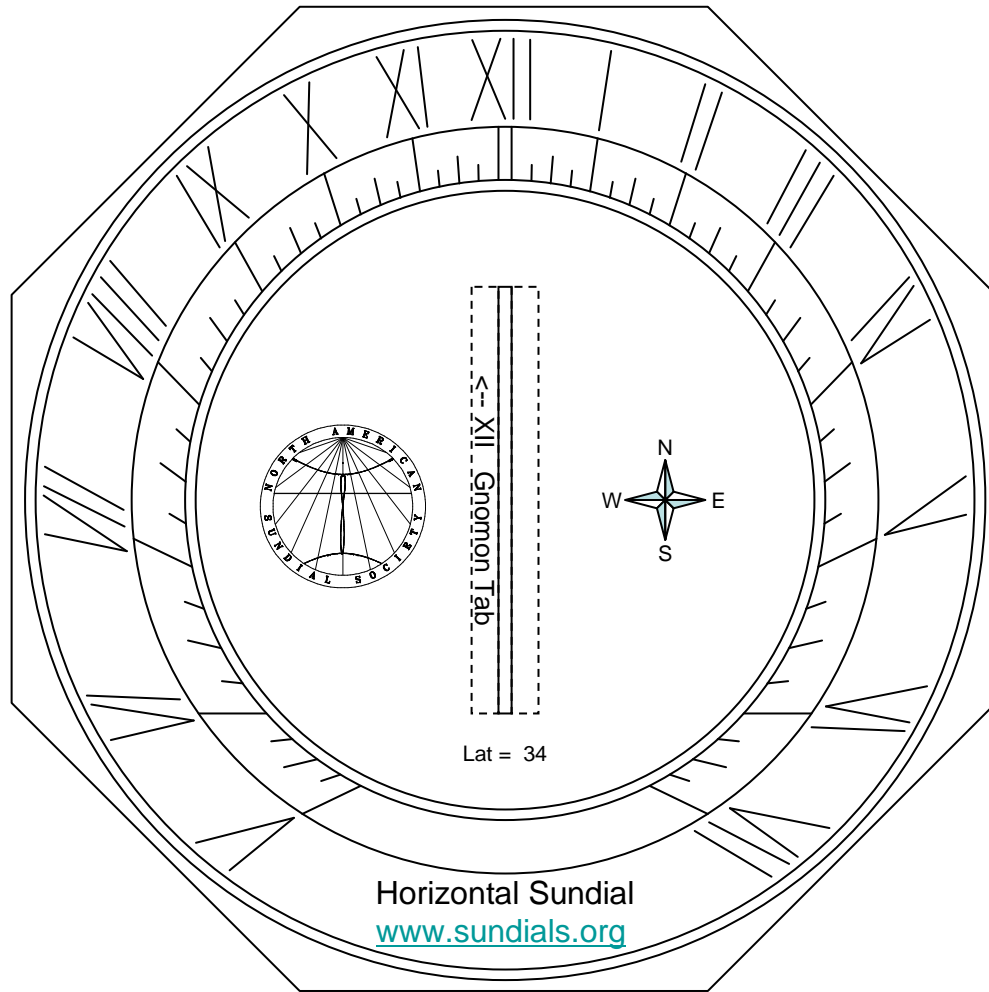
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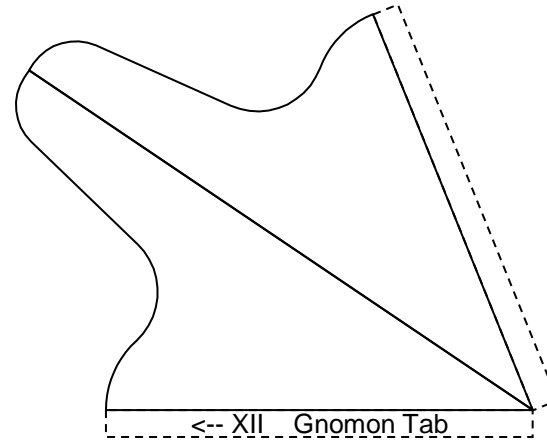
Gnomon



**Latitude = 34°**

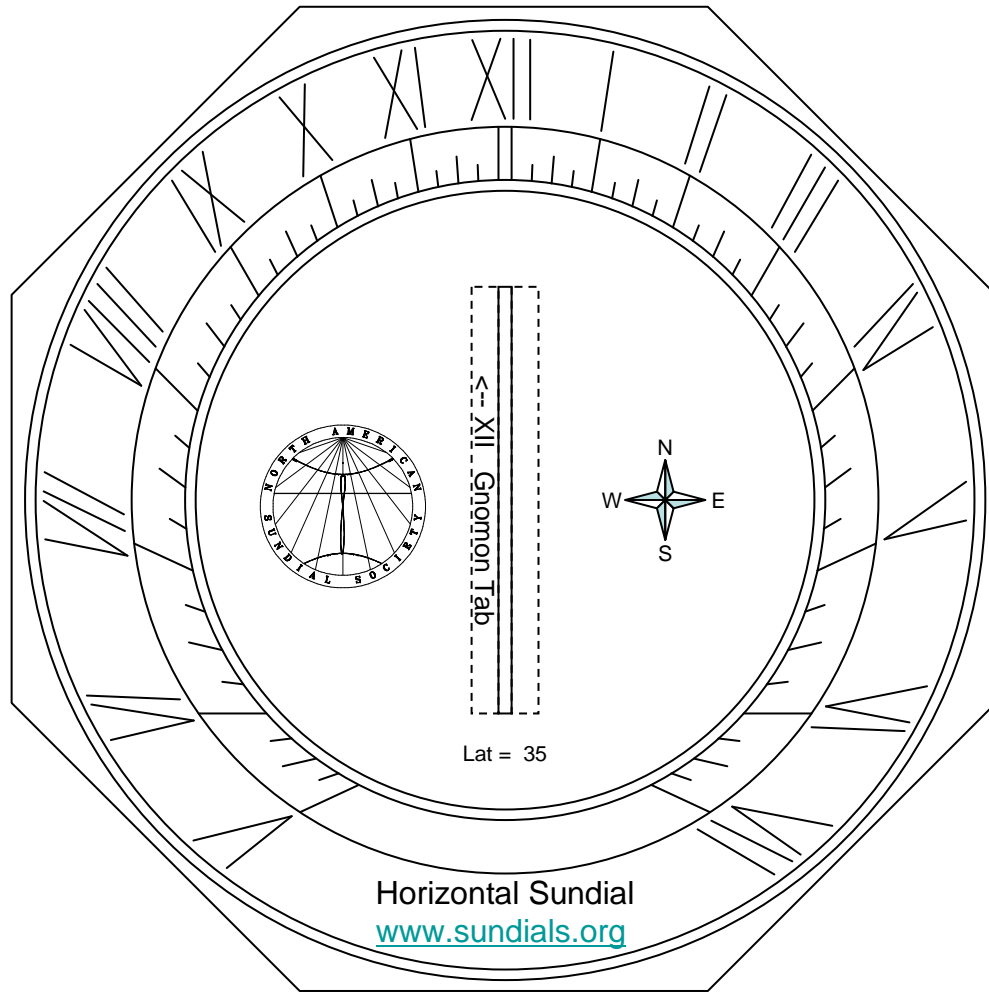


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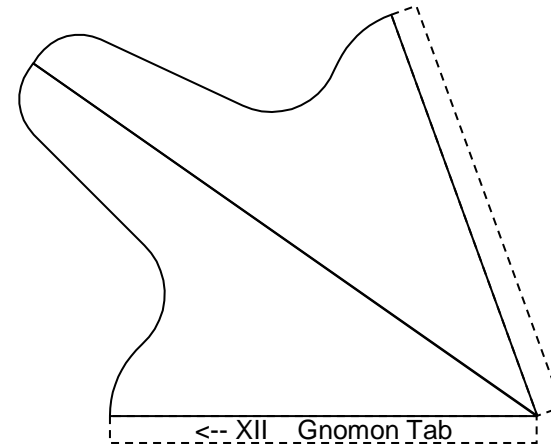


Gnomon

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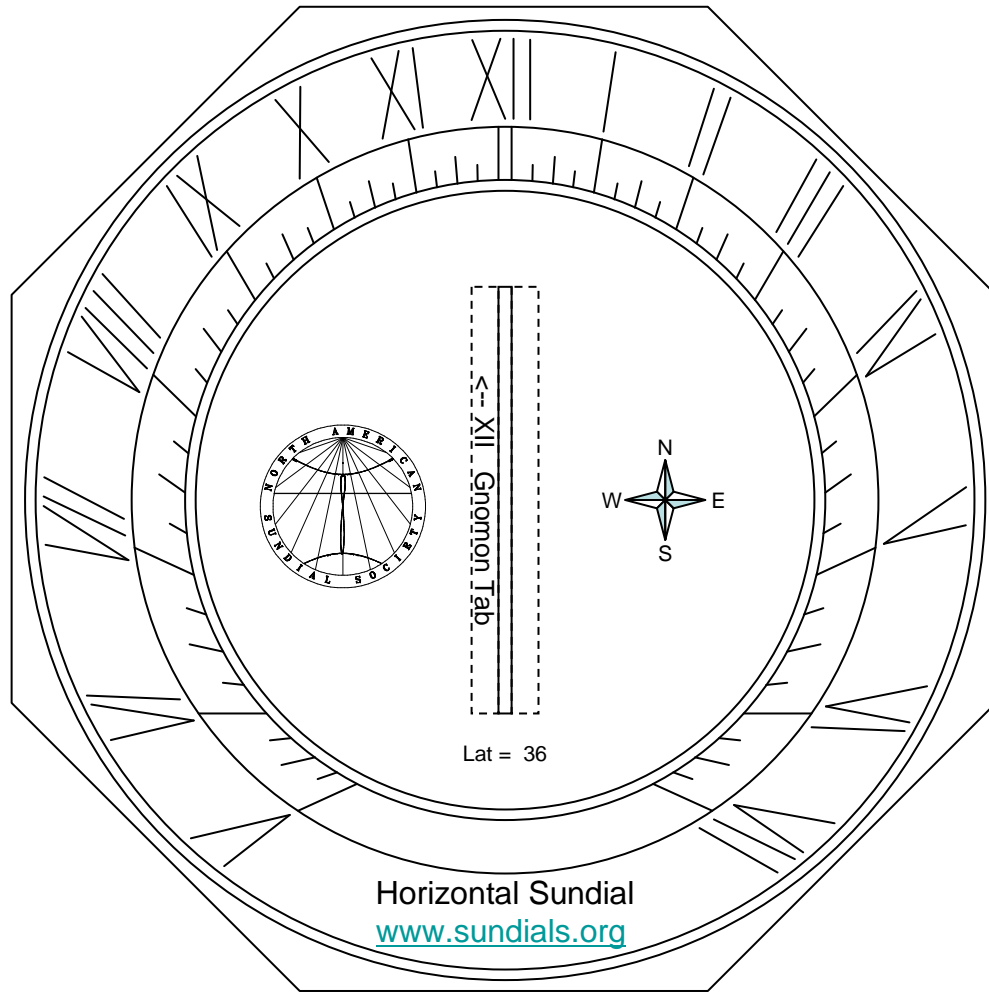


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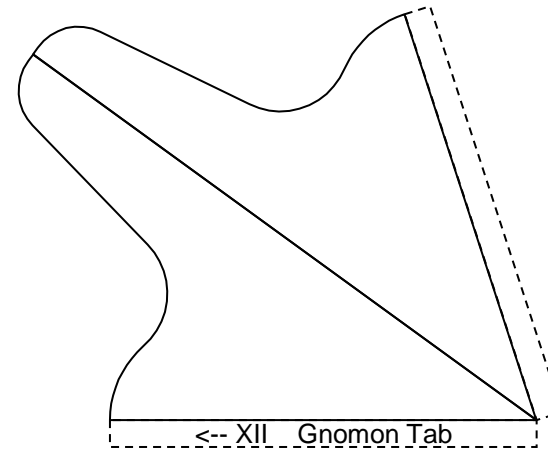


Gnomon

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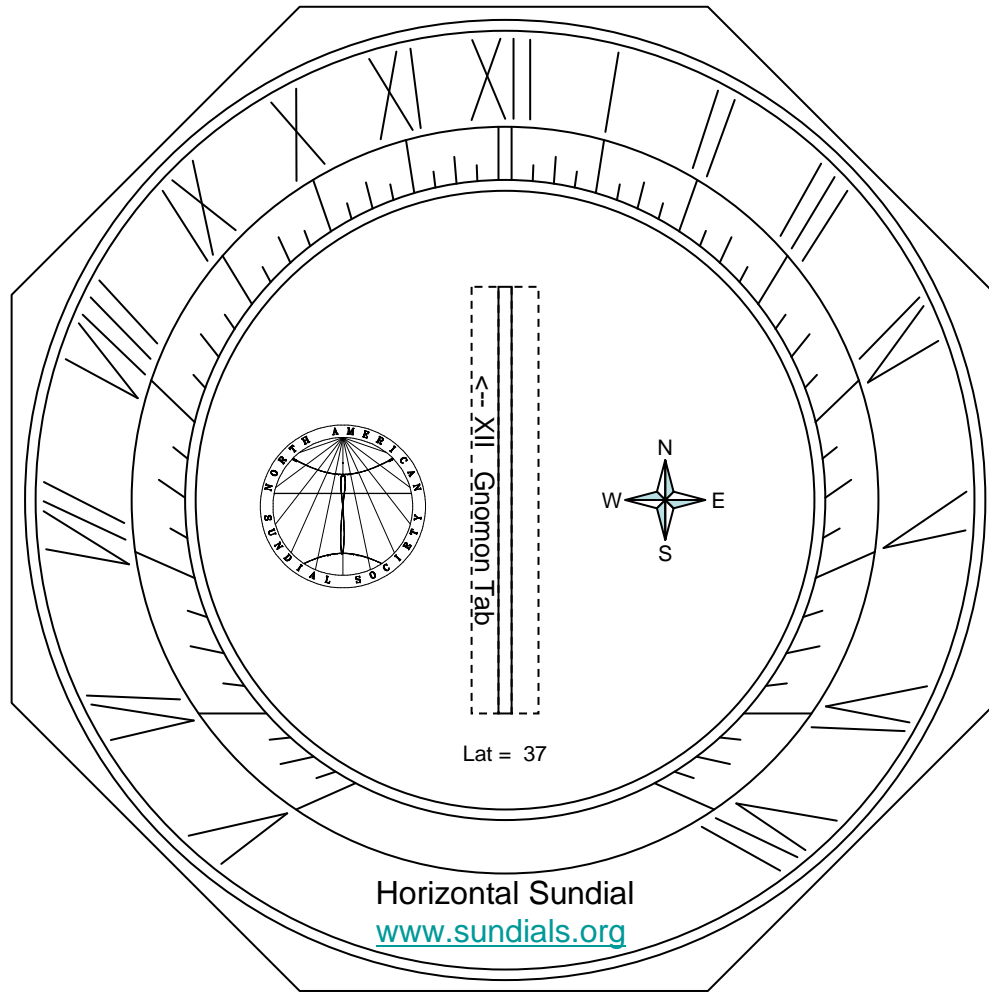


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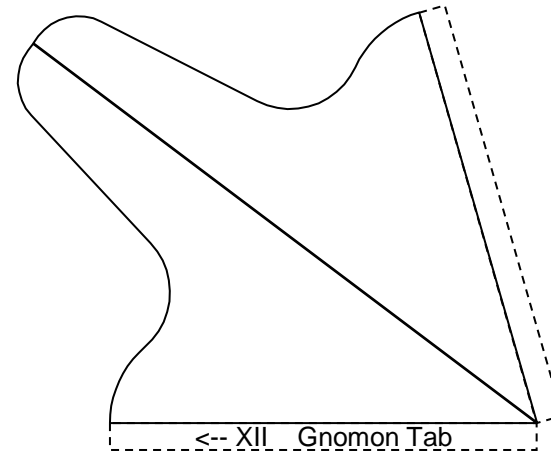


Gnomon

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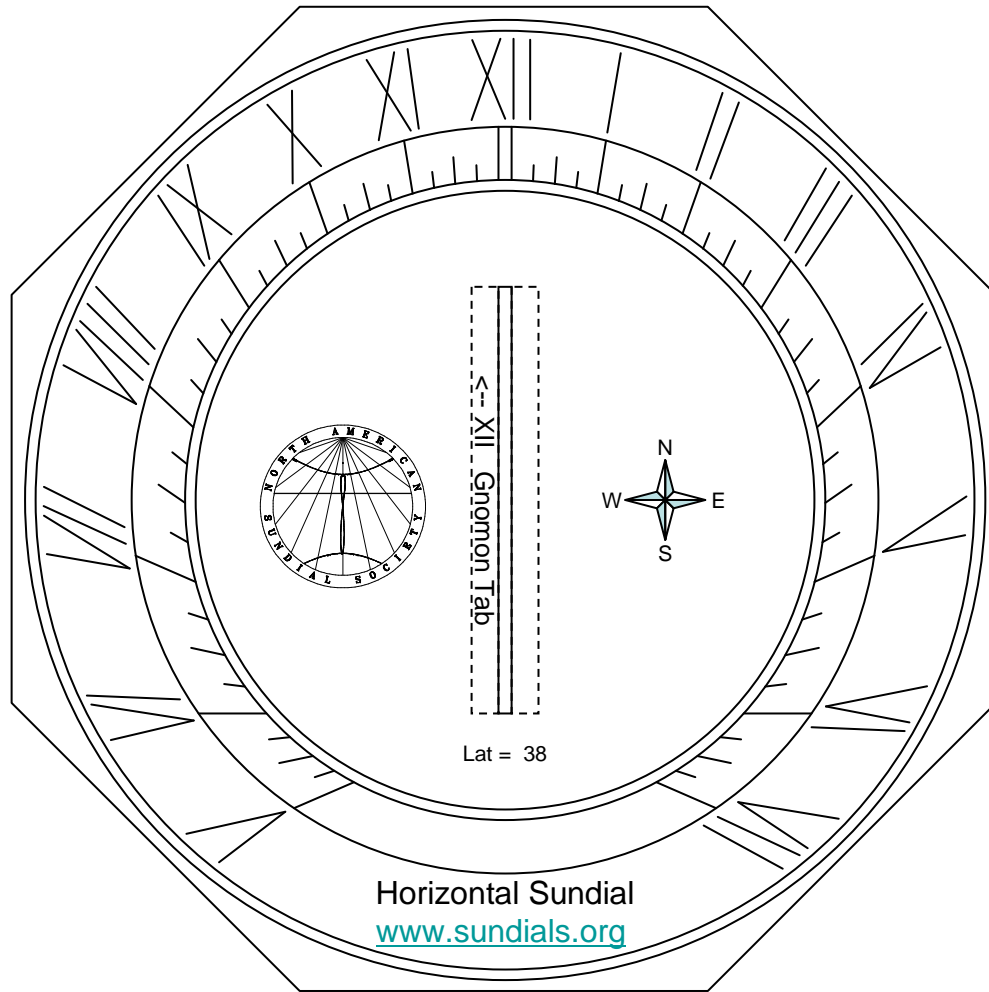


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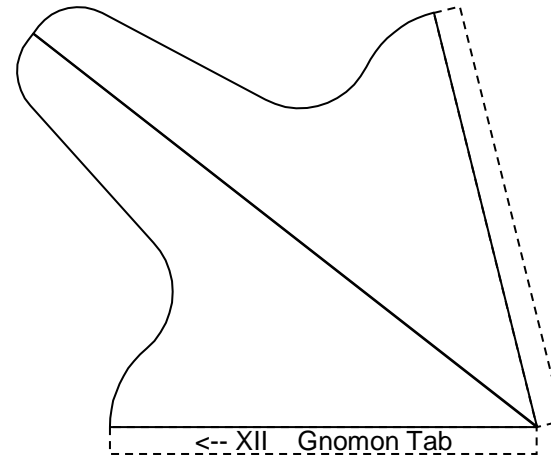


Gnomon

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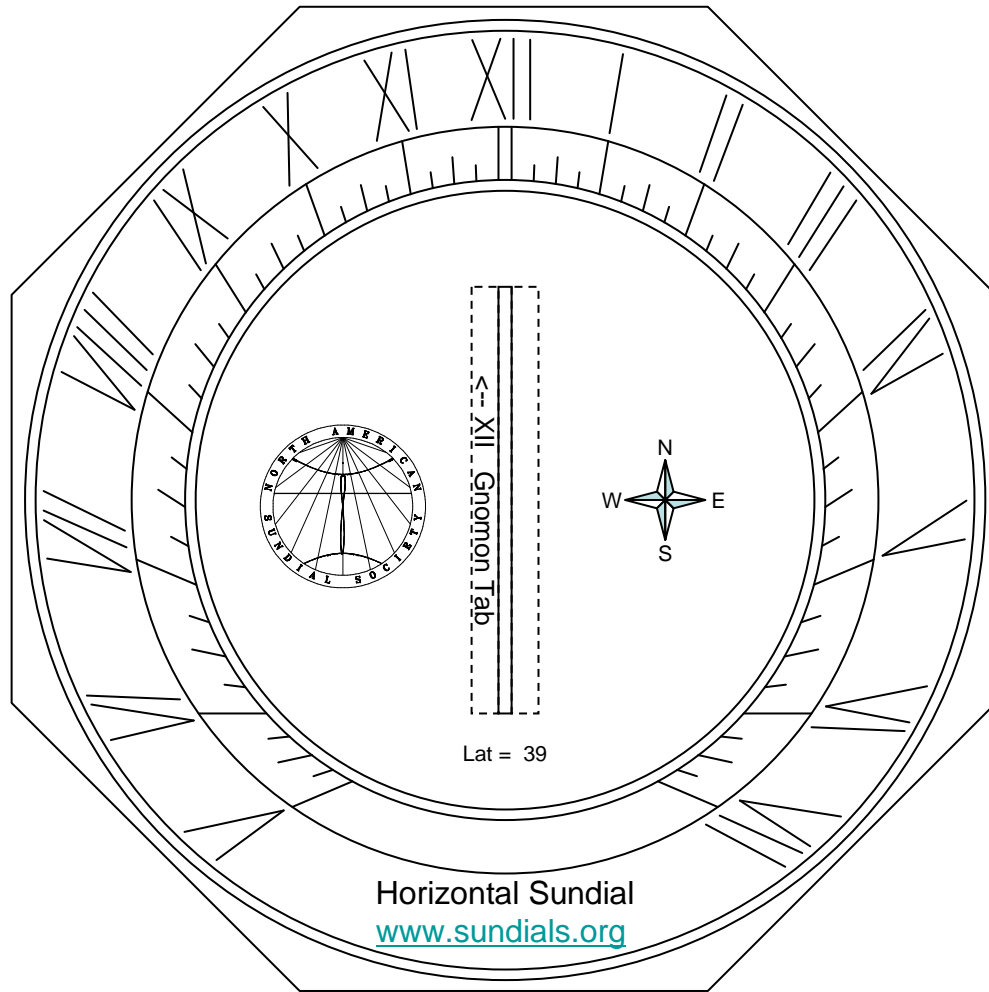


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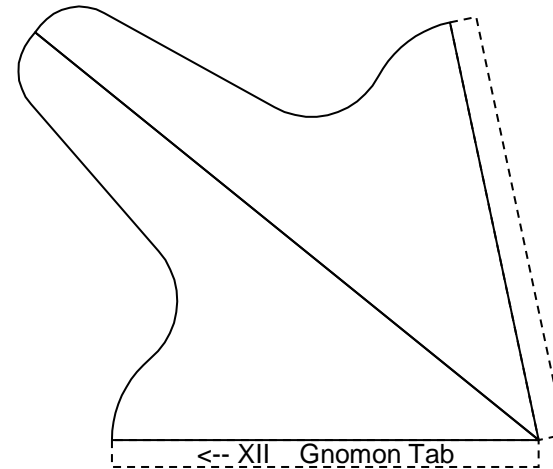


Gnomon

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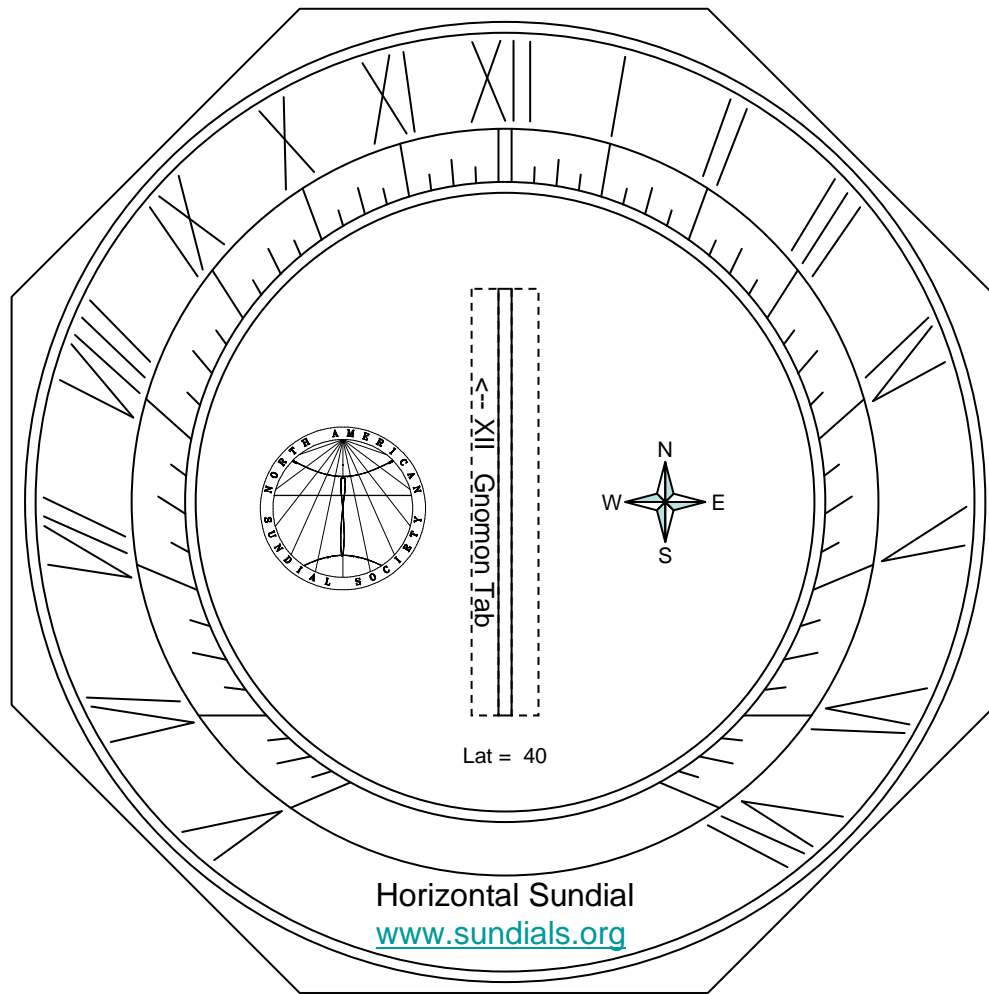


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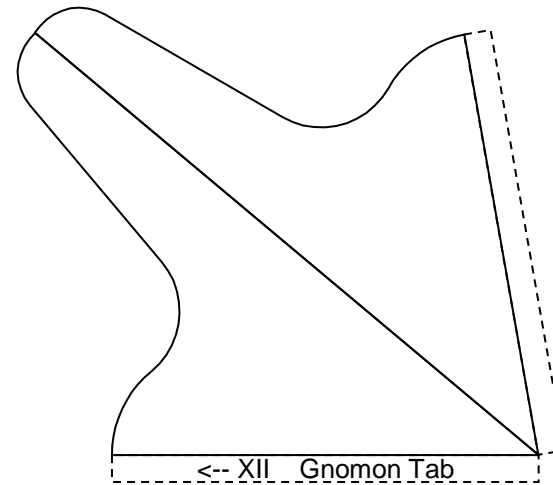


Gnomon

**Latitude = 40°**

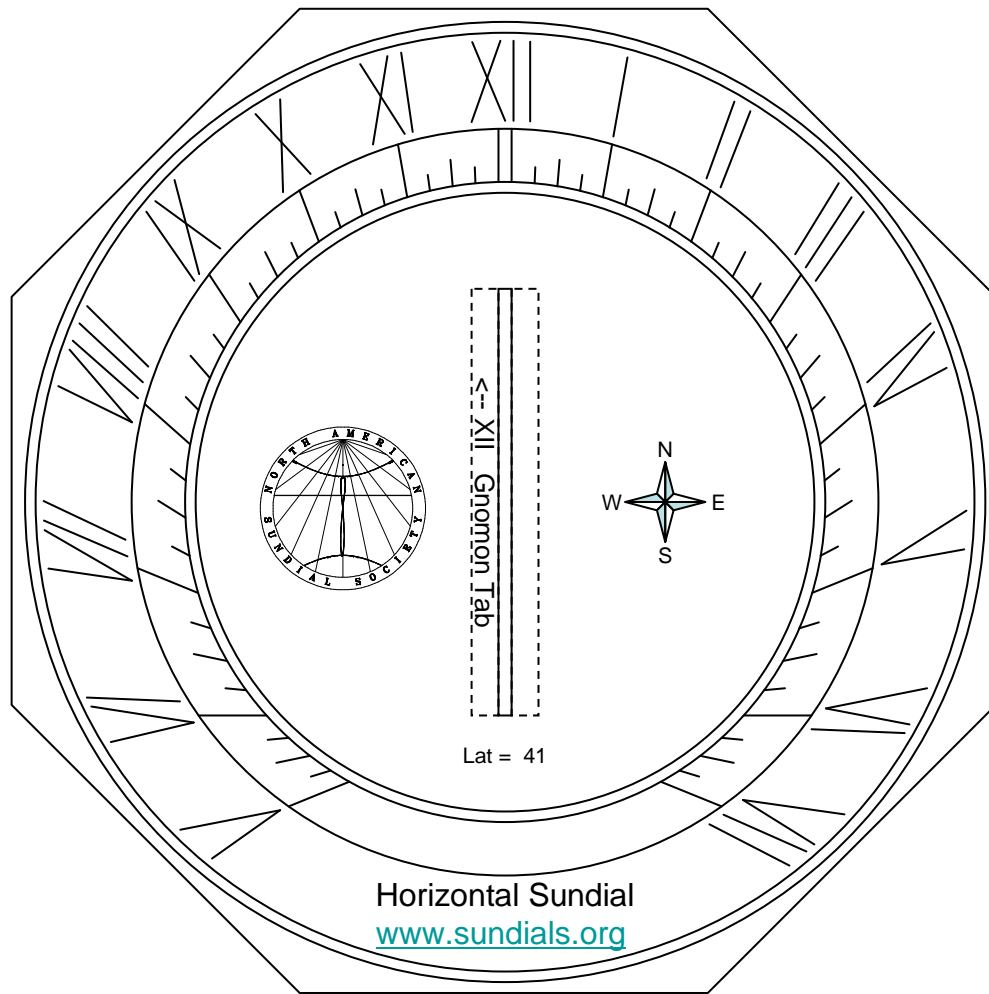


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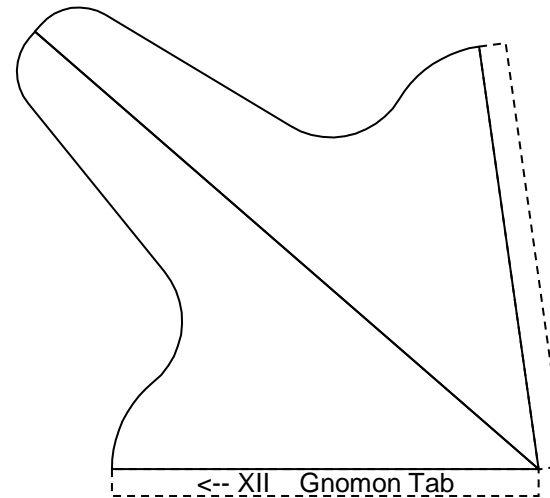


Gnomon

**Latitude = 41°**



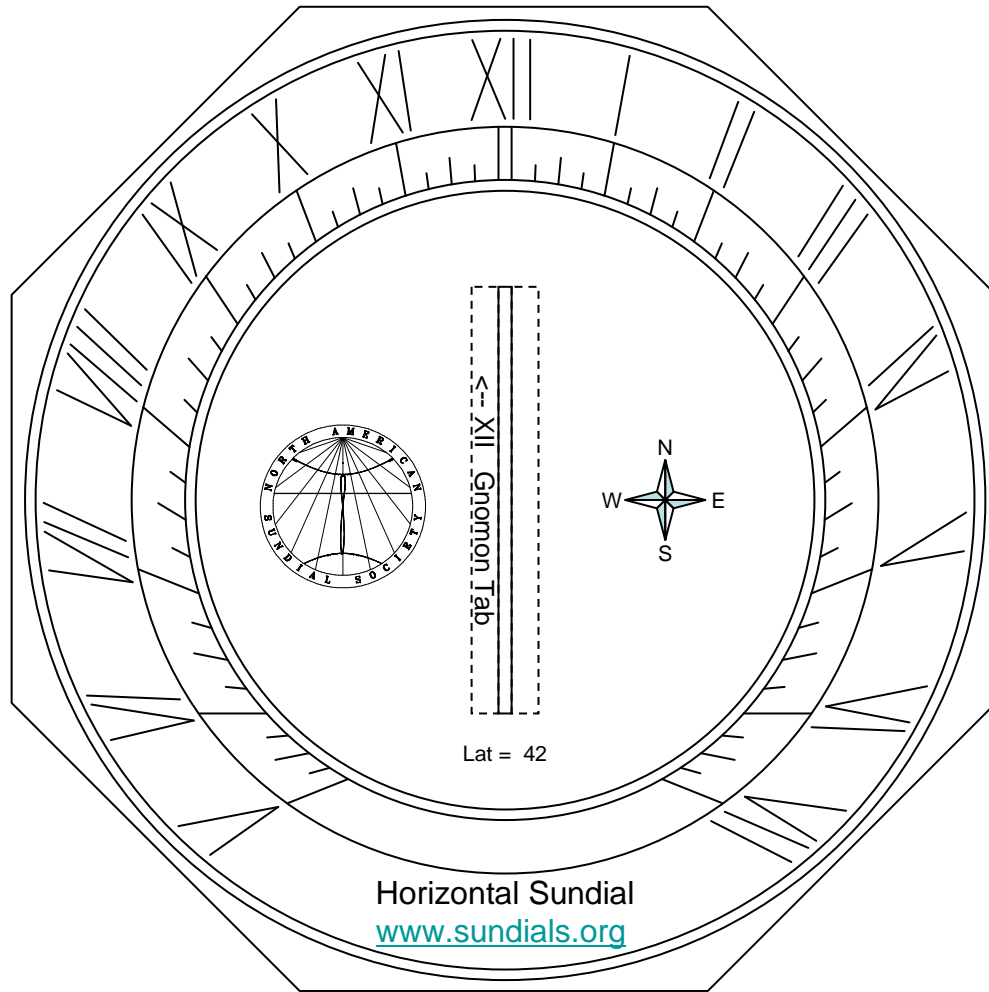
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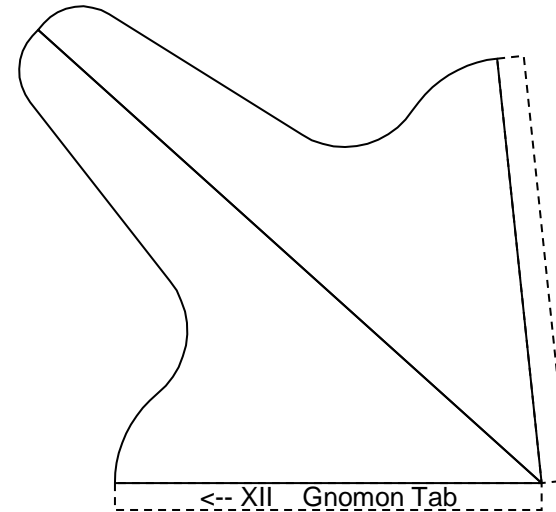
Gnomon



Latitude = 42°

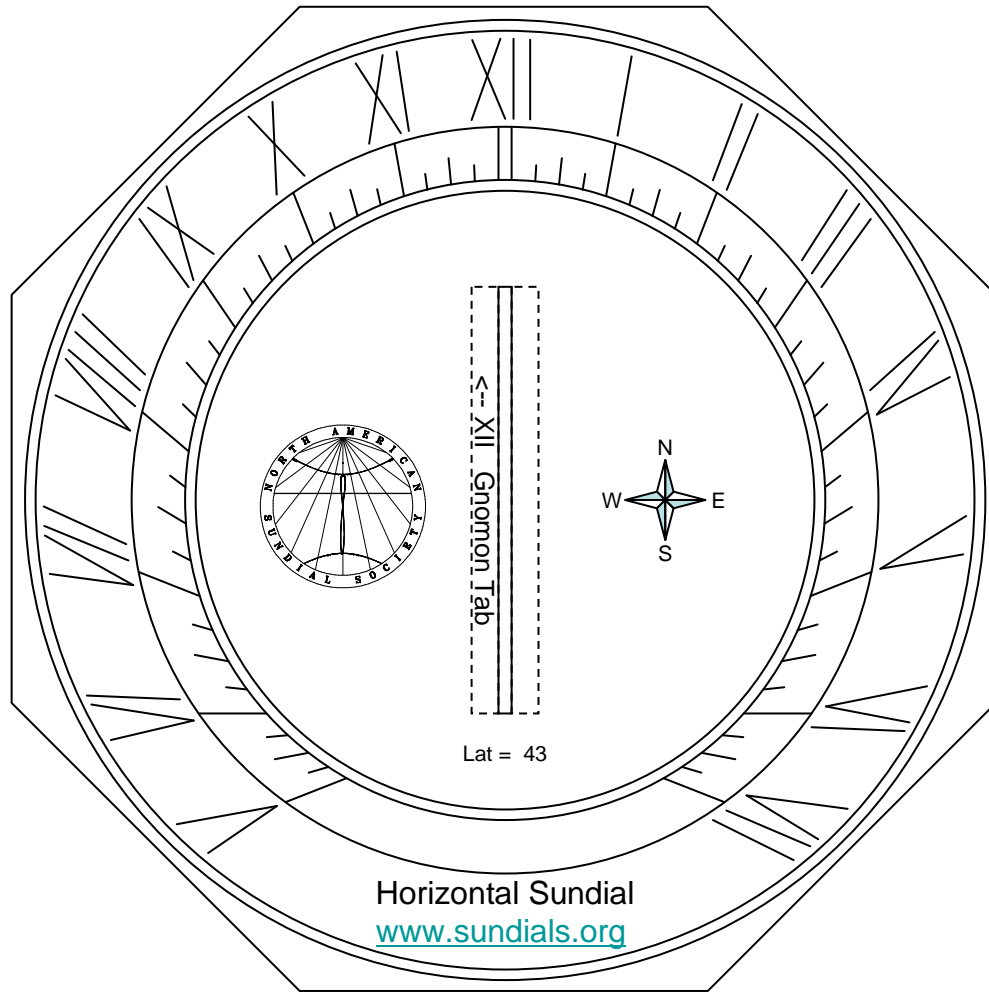


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  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

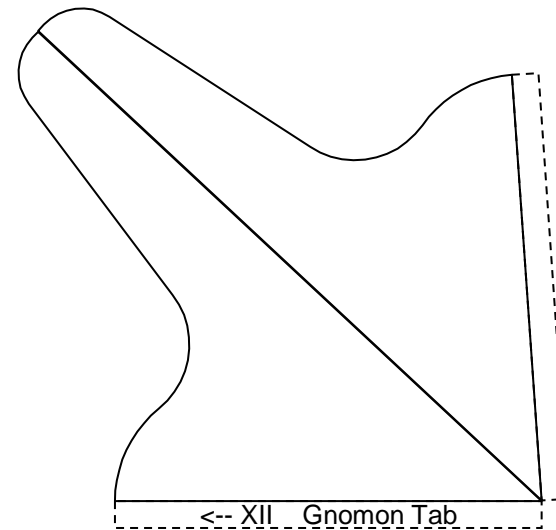


Gnomon

Latitude = 43°

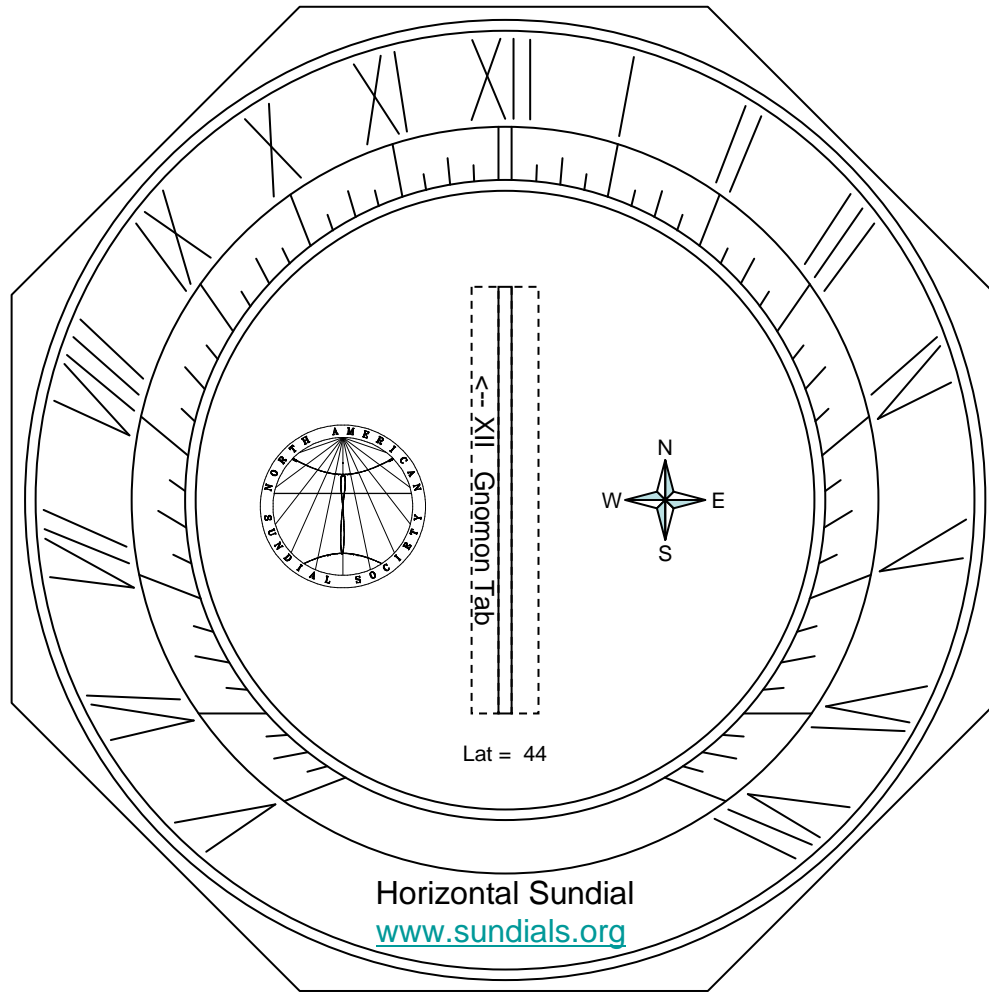


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

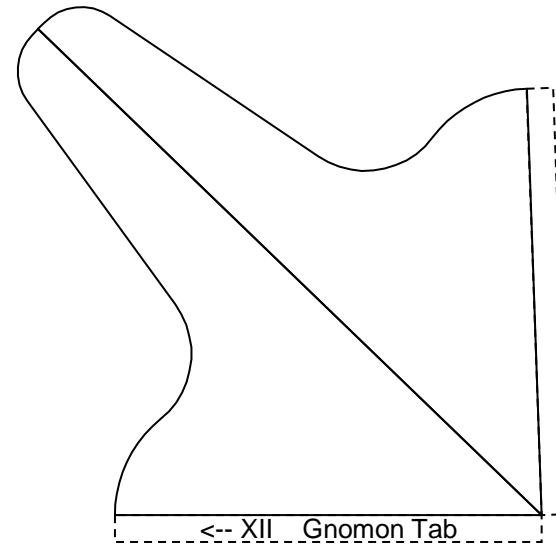


Gnomon

**Latitude = 44°**

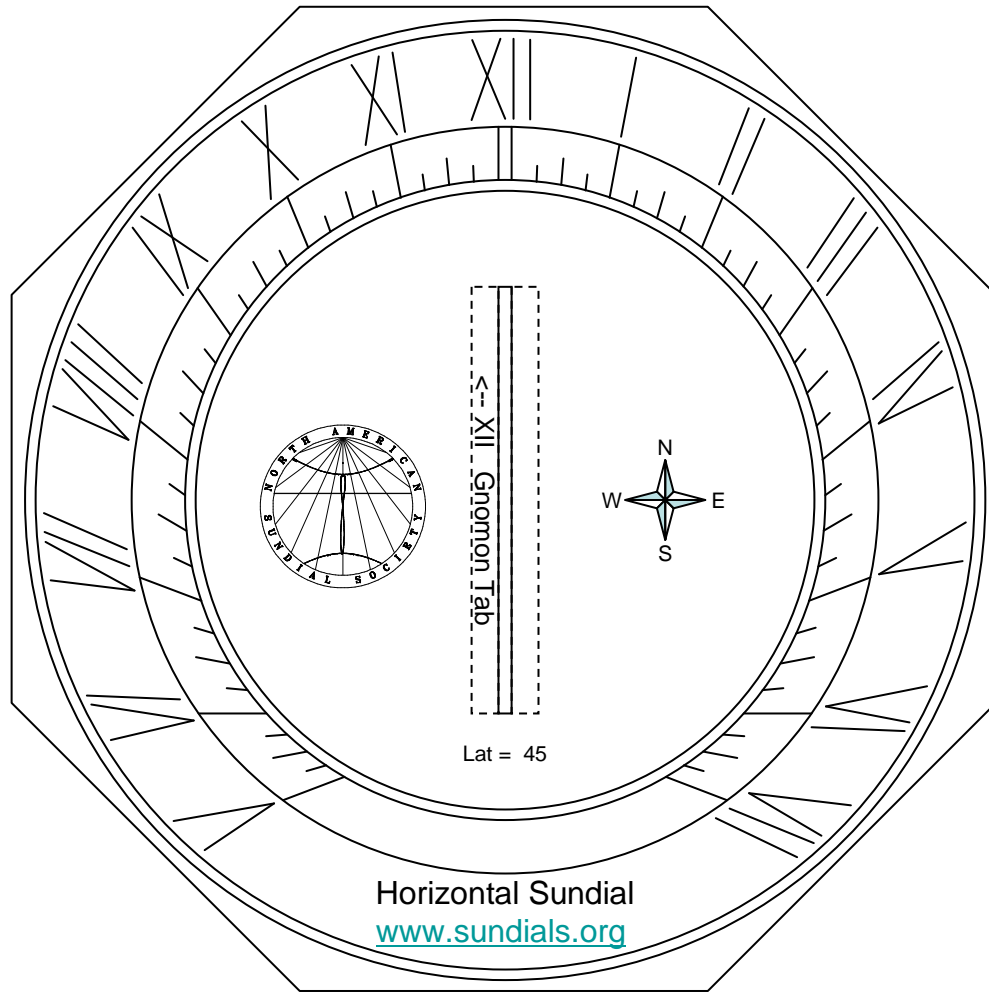


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

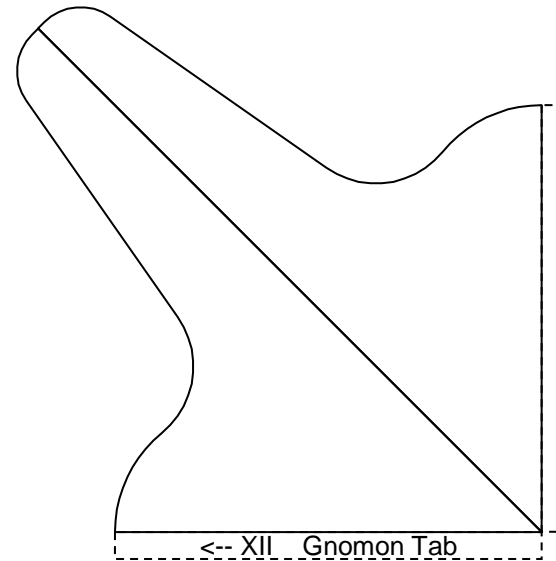


Gnomon

Latitude = 45°

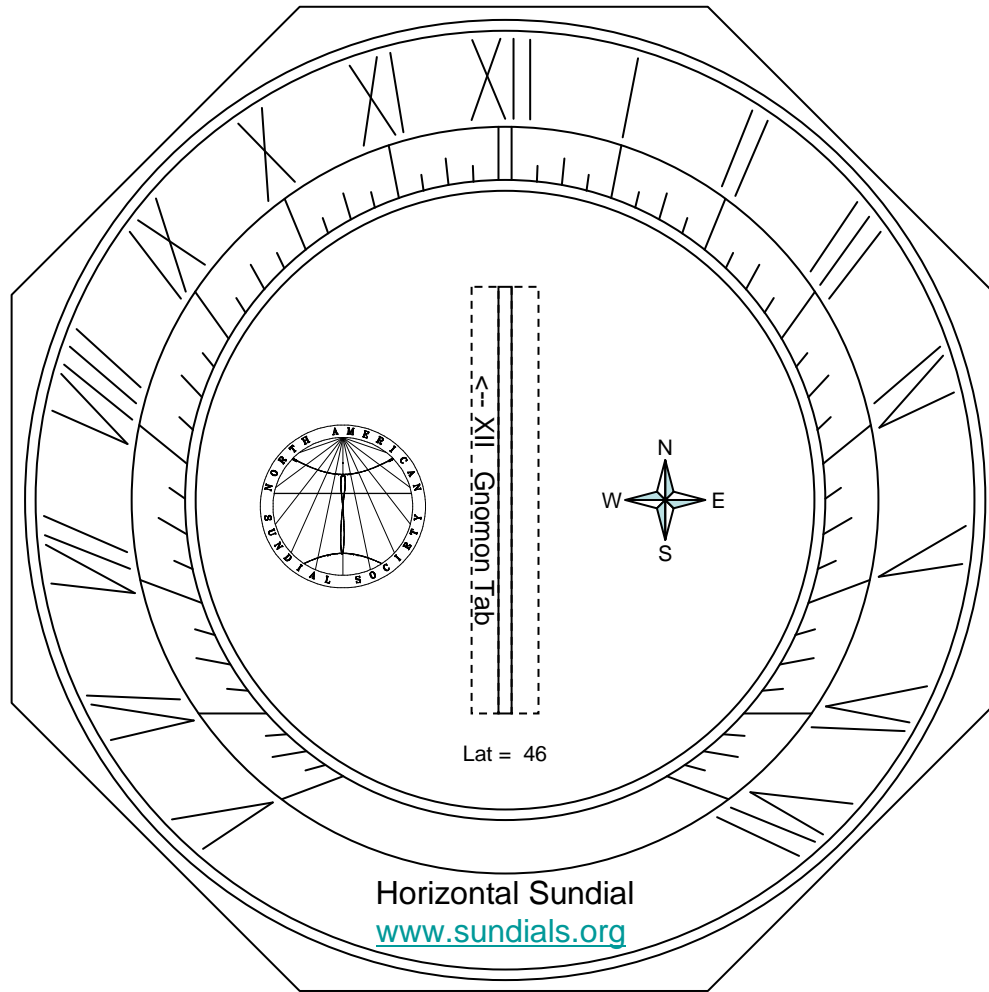


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

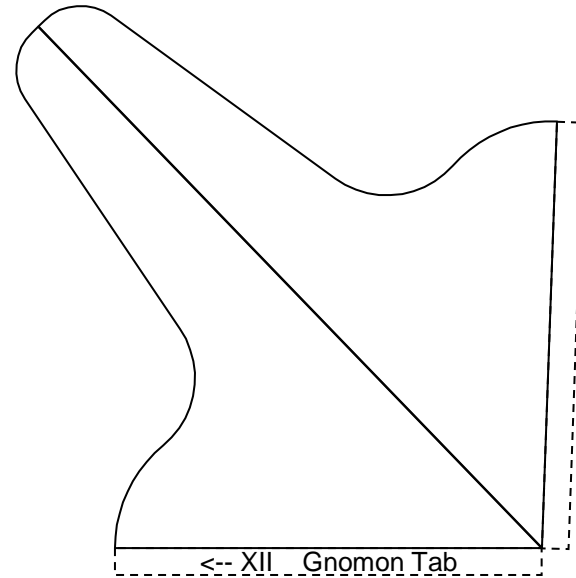


Gnomon

**Latitude = 46°**

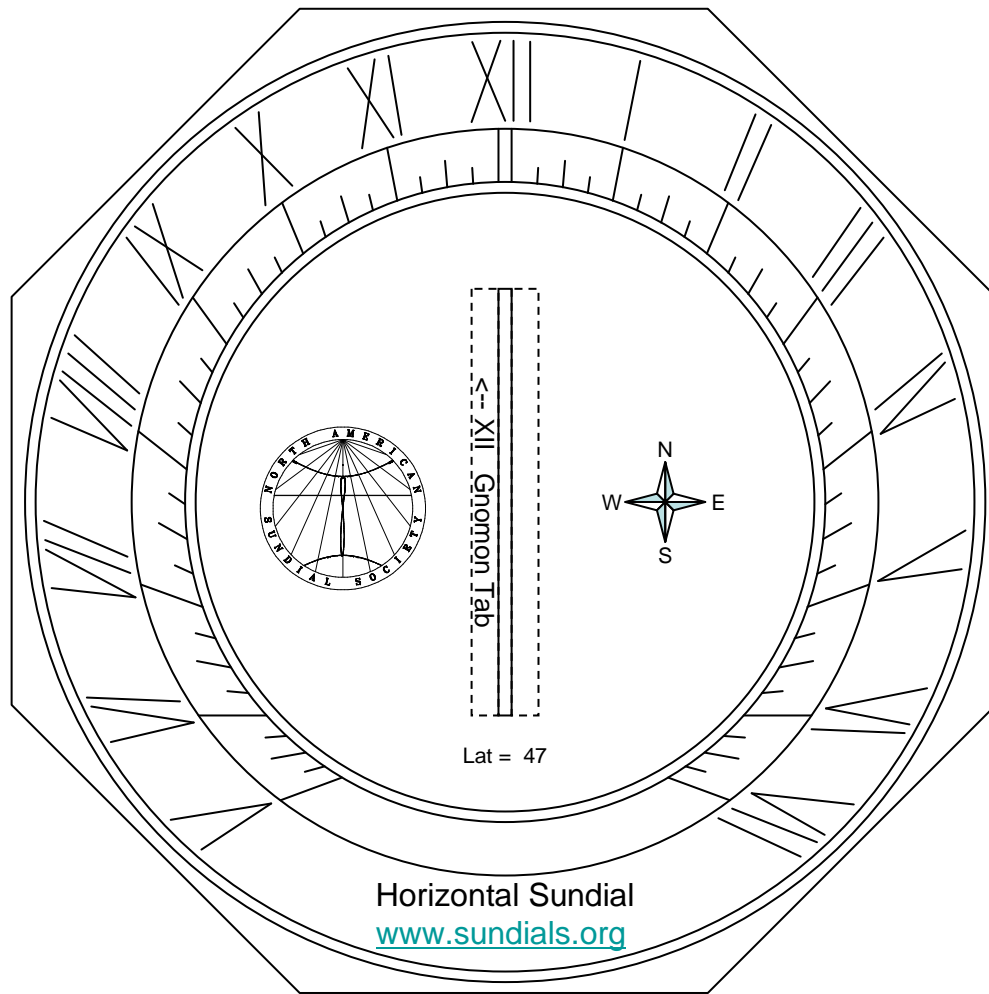


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

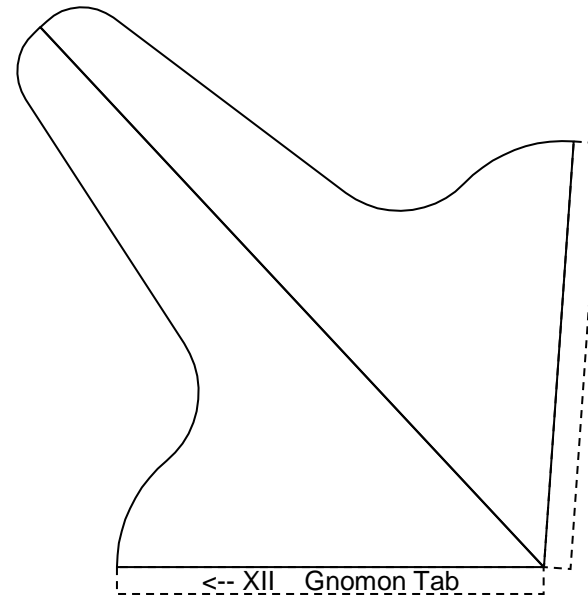


Gnomon

**Latitude = 47°**

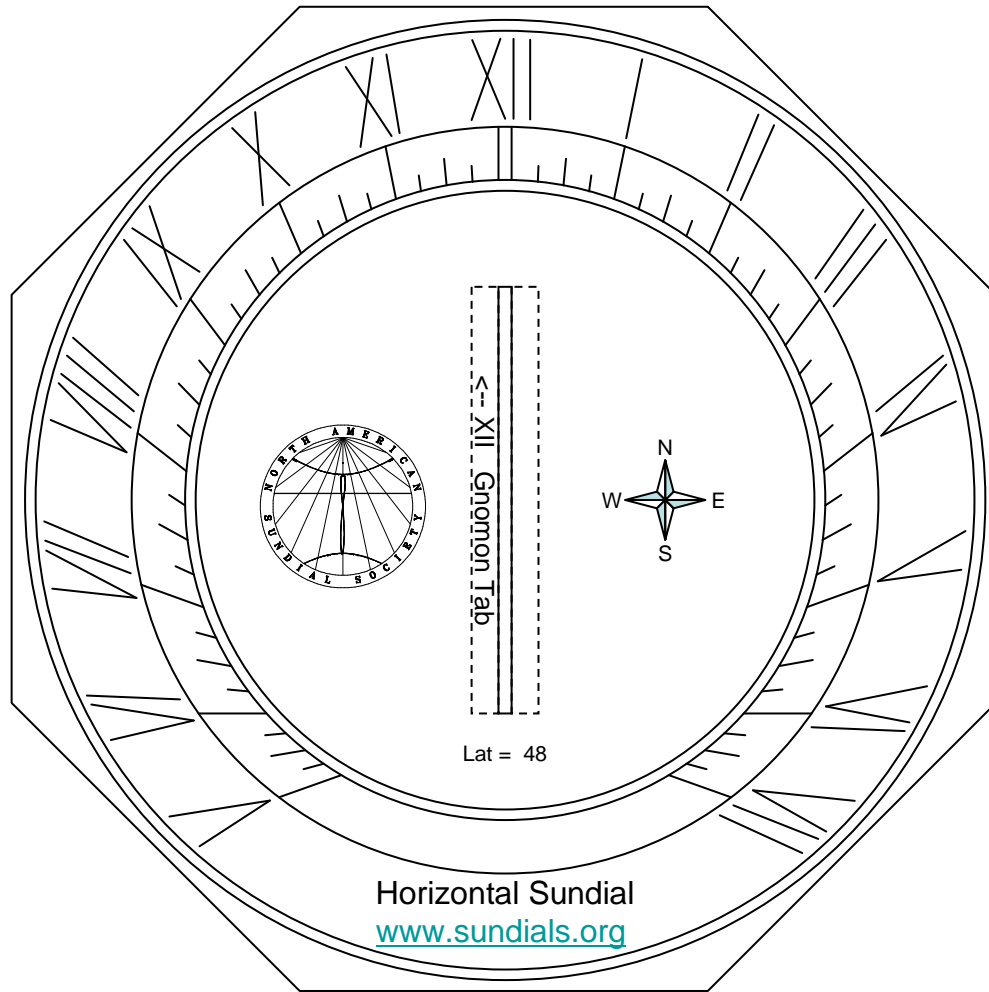


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
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  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

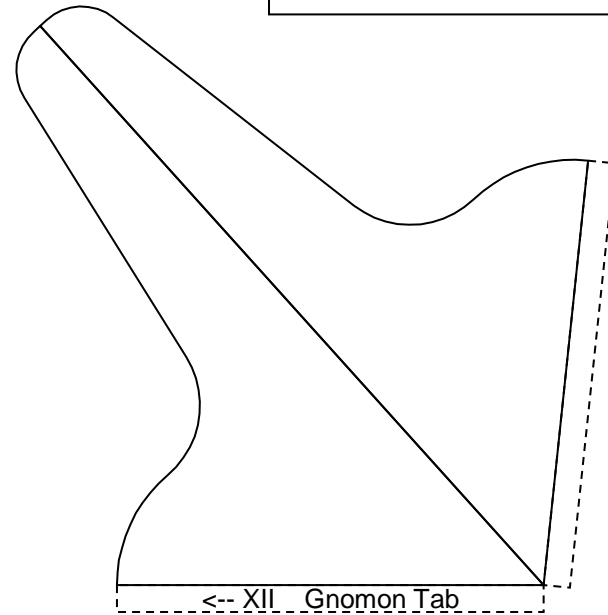


Gnomon

Latitude = 48°

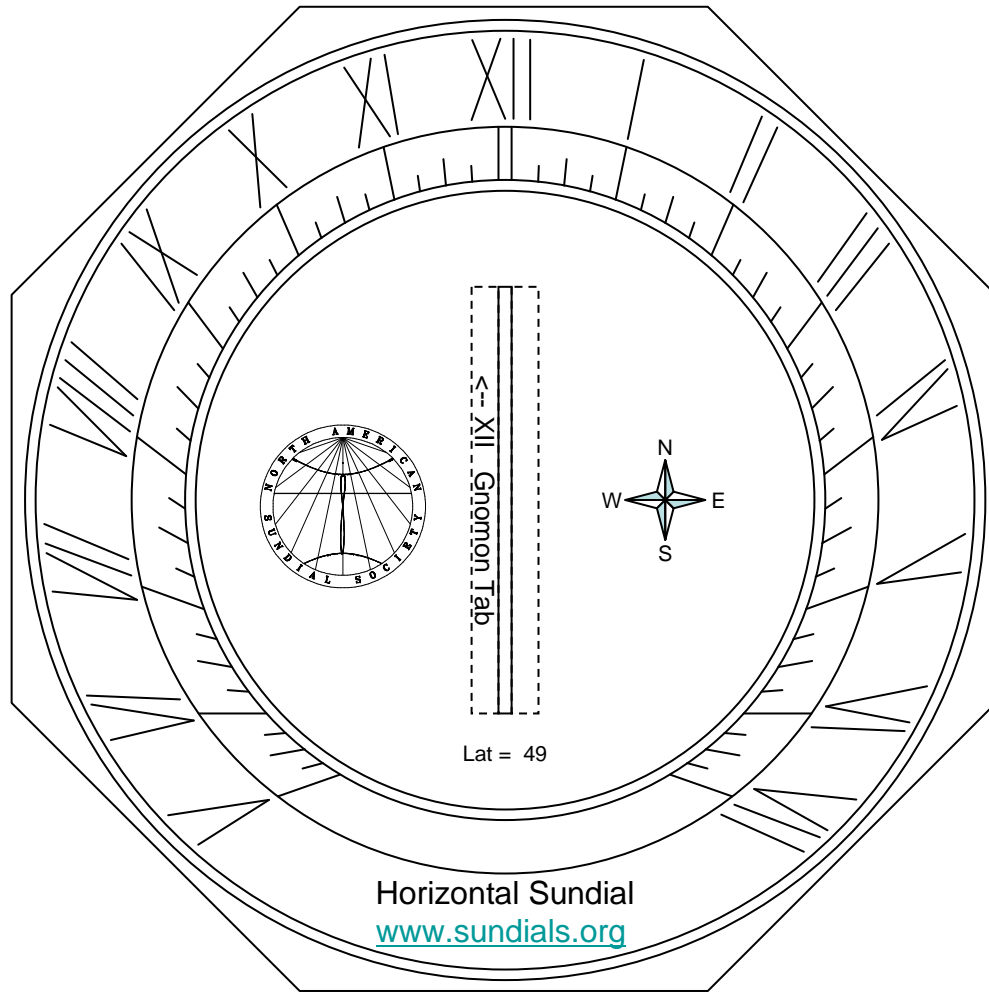


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
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  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

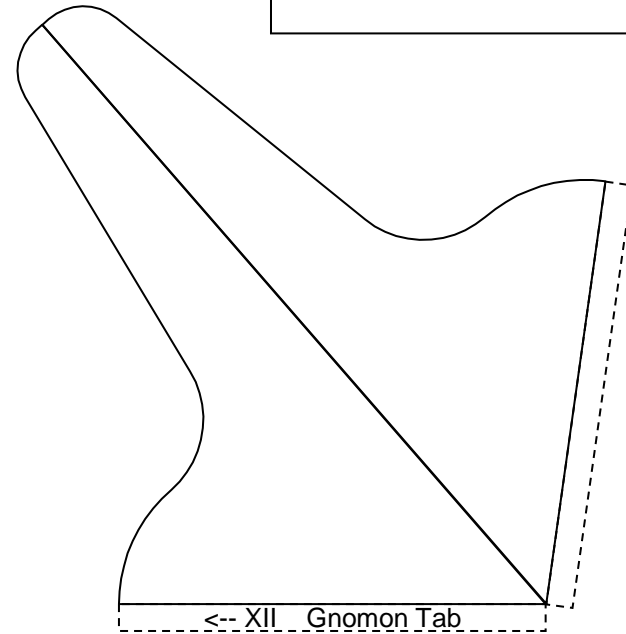


Gnomon

**Latitude = 49°**



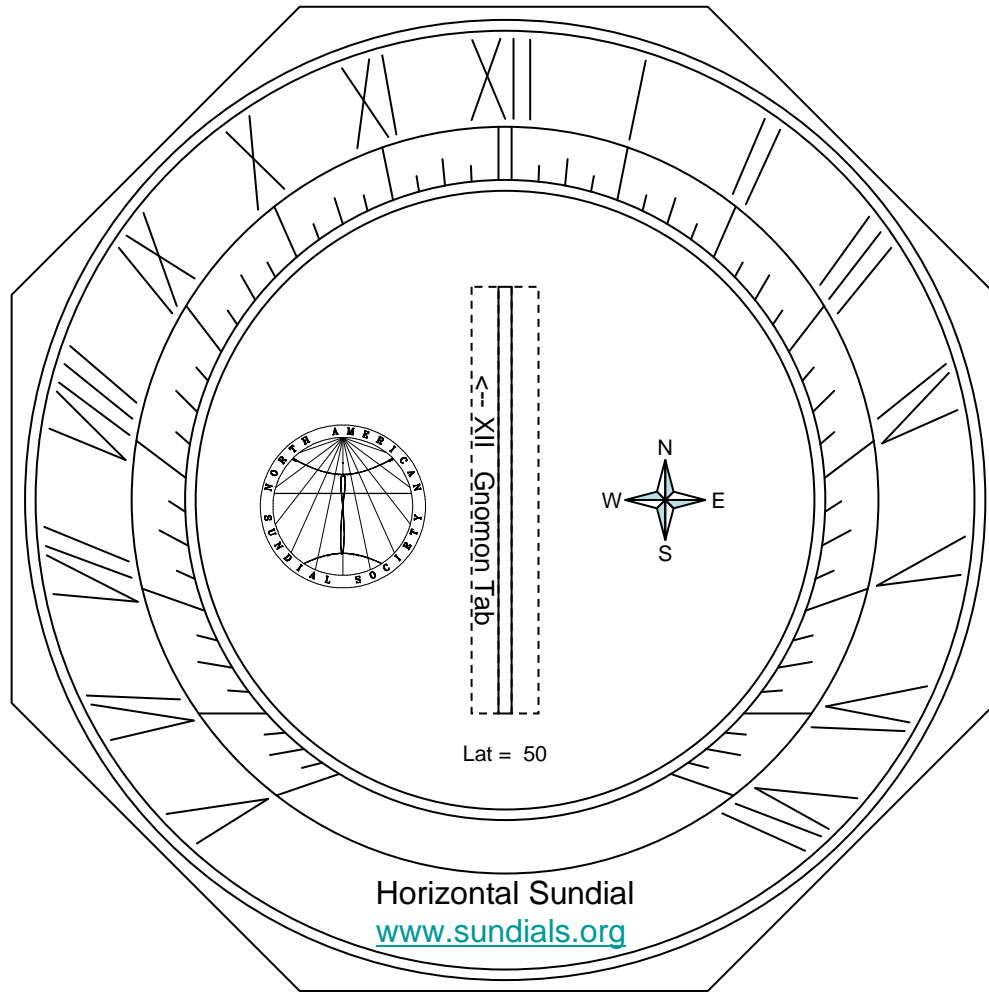
- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.



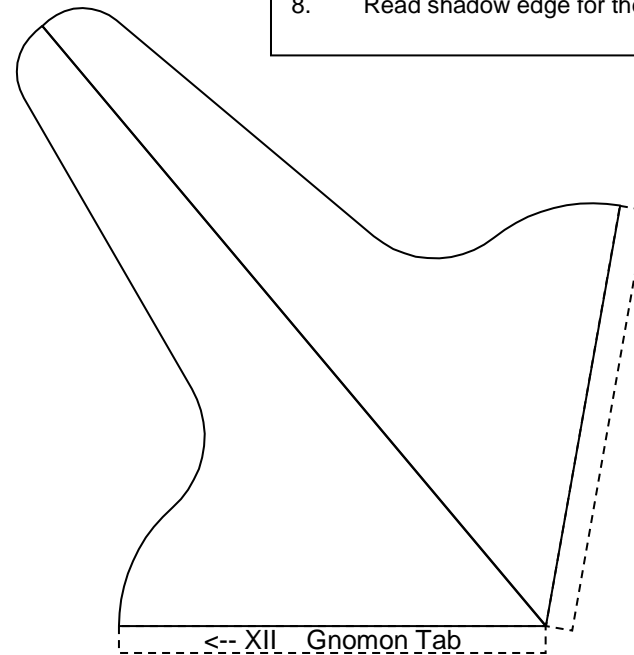
Gnomon



**Latitude = 50°**

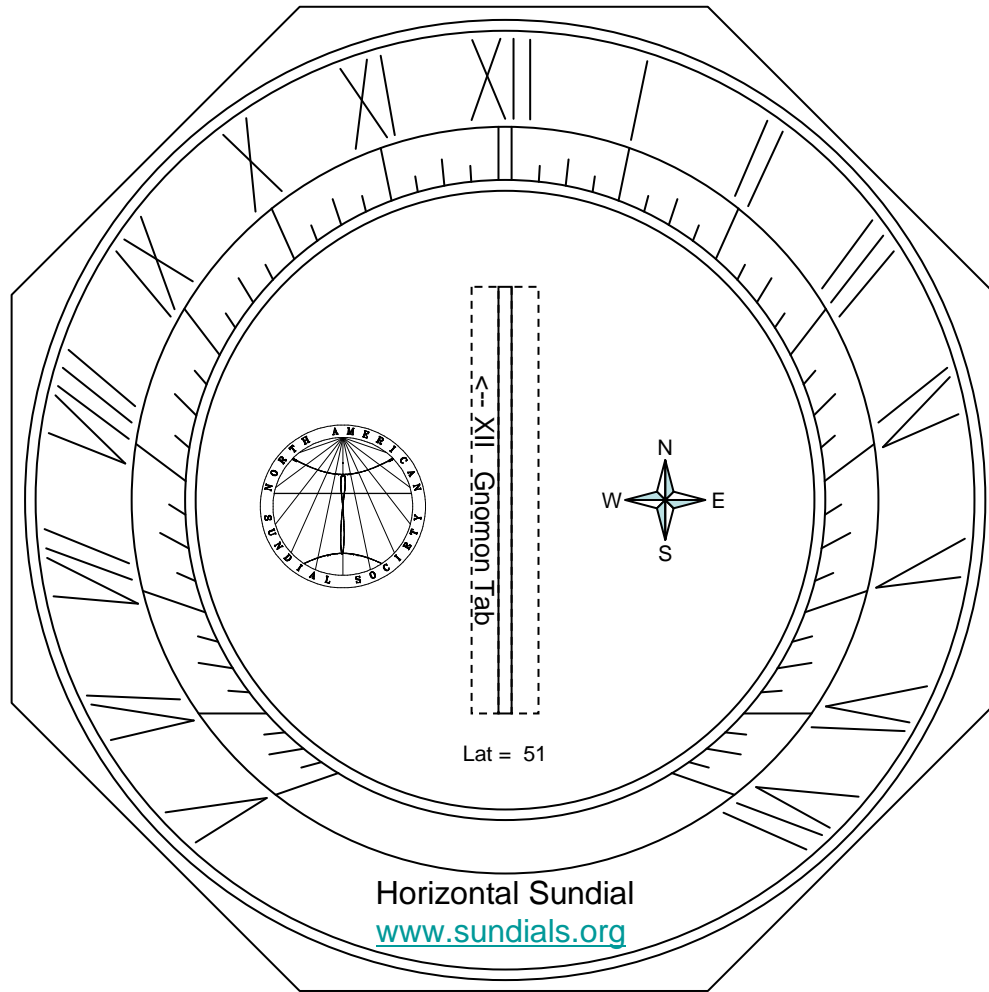


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
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  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

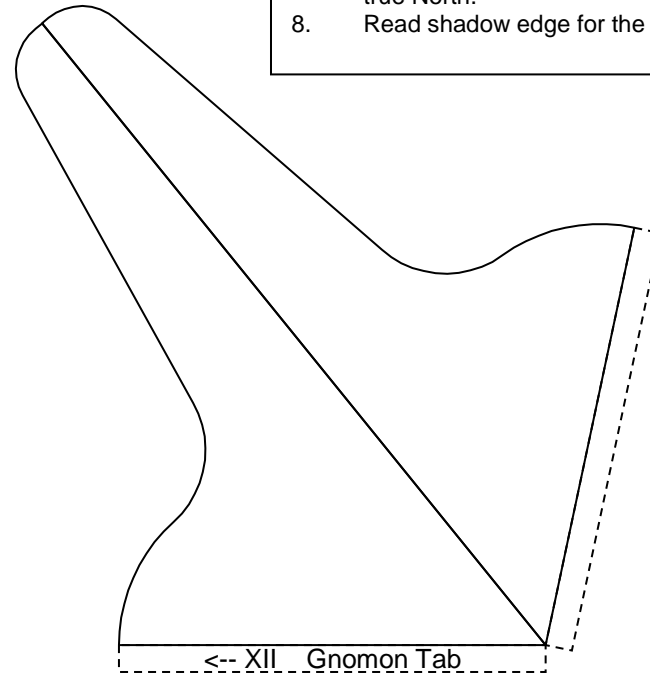


Gnomon

Latitude = 51°

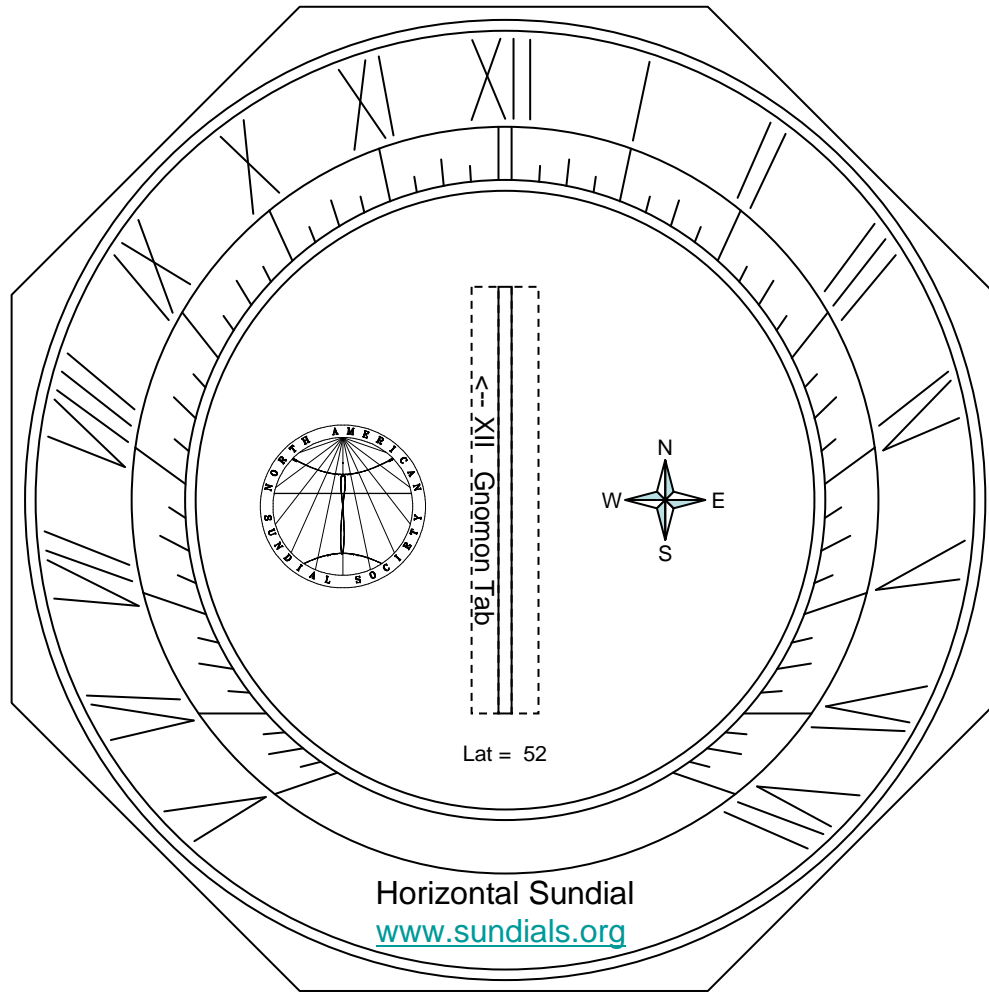


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
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  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

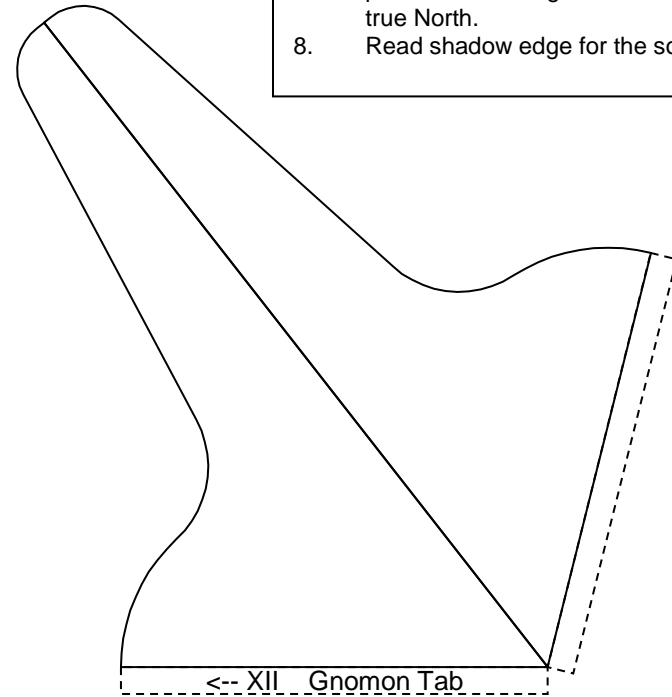


Gnomon

**Latitude = 52°**

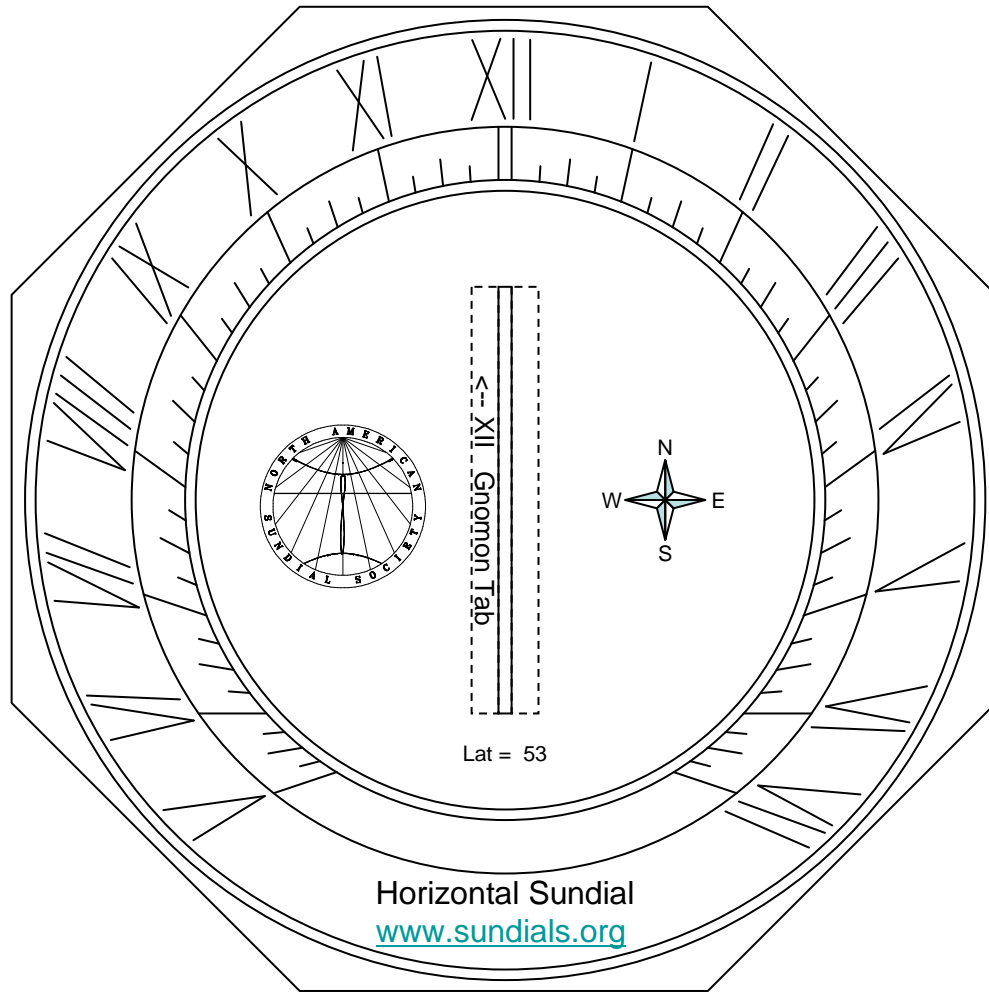


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.

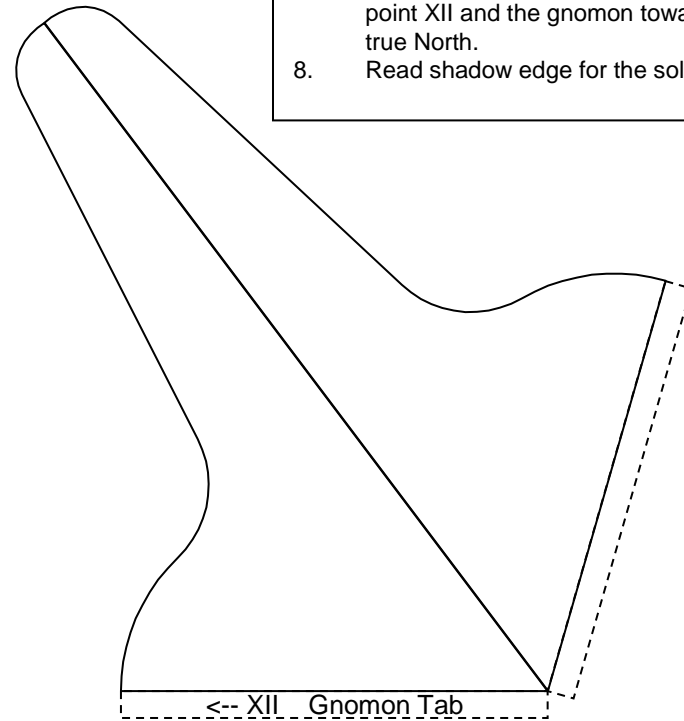


Gnomon

Latitude = 53°

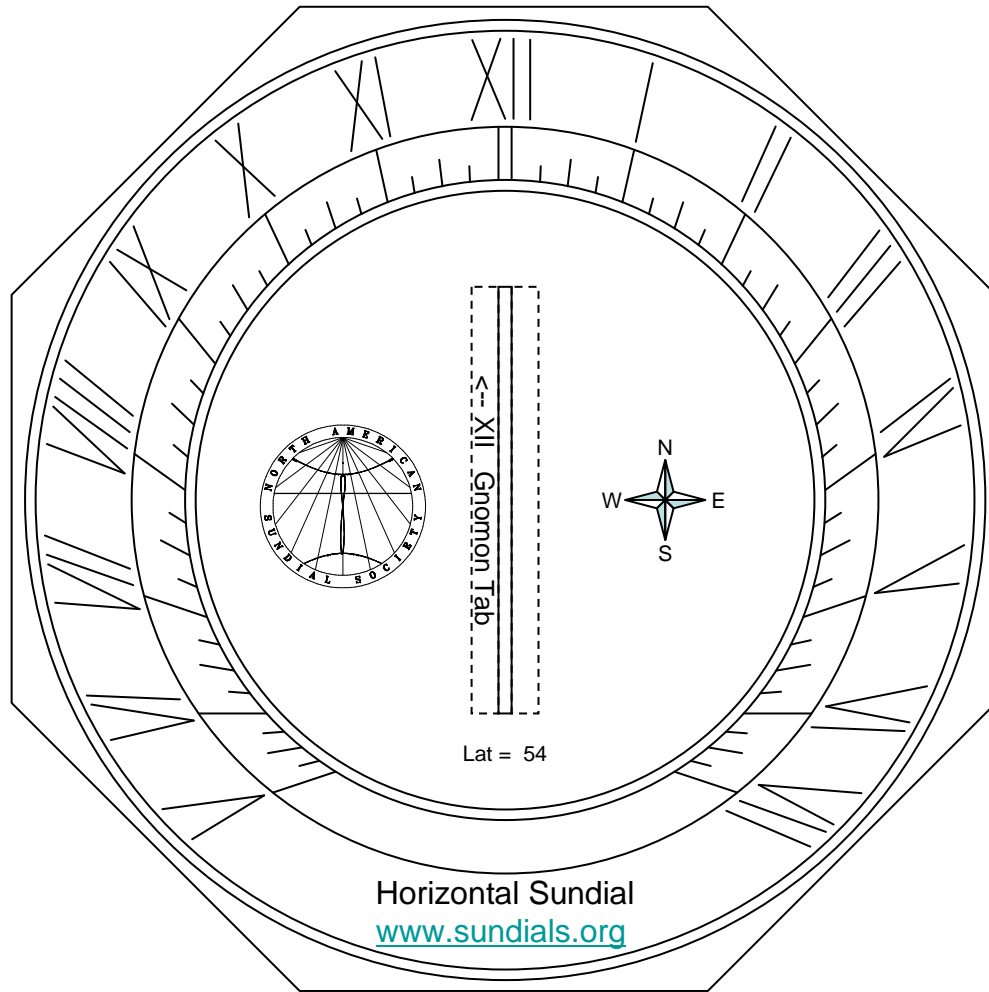


- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
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  8. Read shadow edge for the solar time.

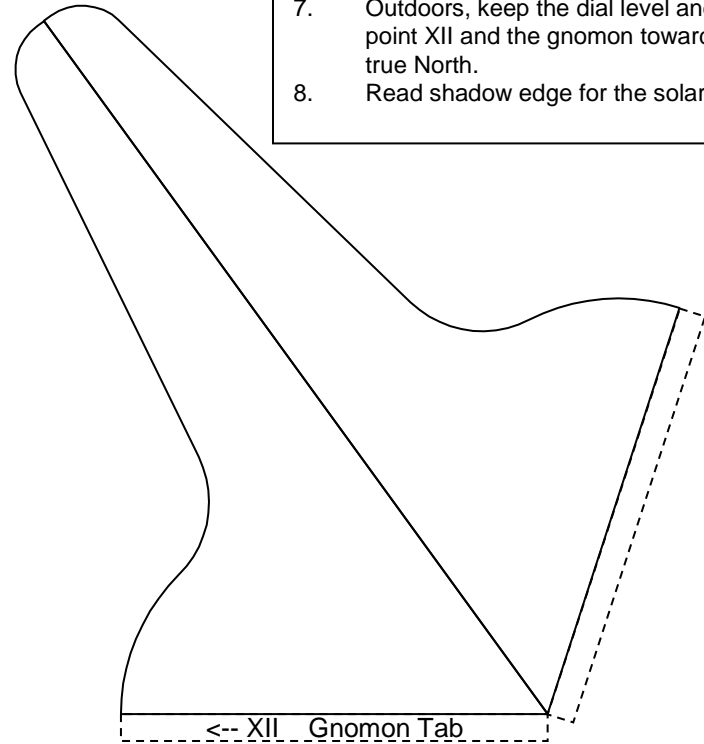


Gnomon

Latitude = 54°



- Instructions
1. Cut out the 8-sided octagonal dial.
  2. Cut out the gnomon. Make sure that you include the gnomon tabs
  3. Fold the gnomon in half on the middle line.
  4. Fold the tabs out to make a footing for the gnomon to stand upright.
  5. Glue the inside of the gnomon and press the sides together
  6. Glue the footing tabs and press the gnomon onto the dial. Tall end goes toward noon (XII)
  7. Outdoors, keep the dial level and point XII and the gnomon toward true North.
  8. Read shadow edge for the solar time.



Gnomon