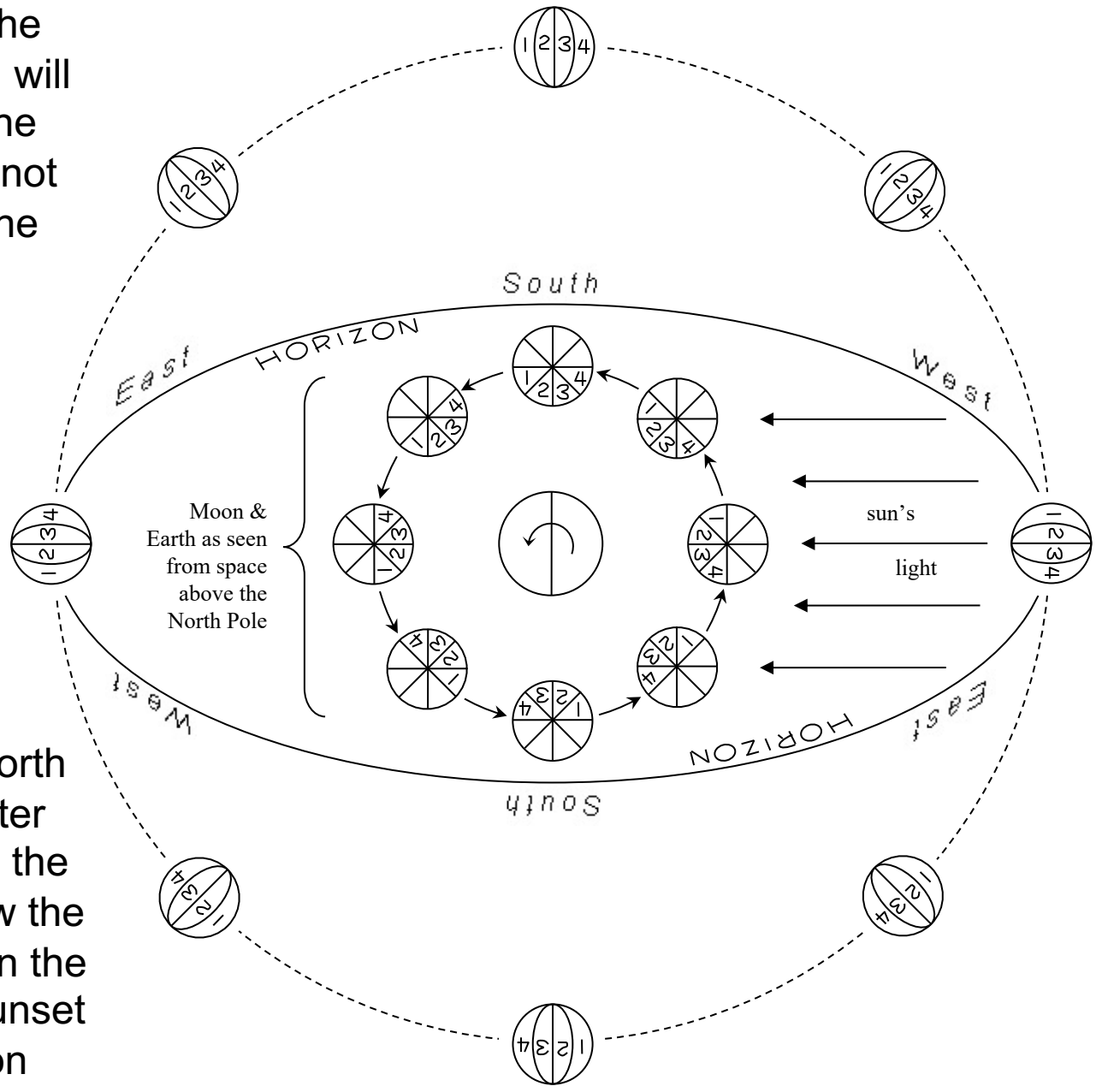


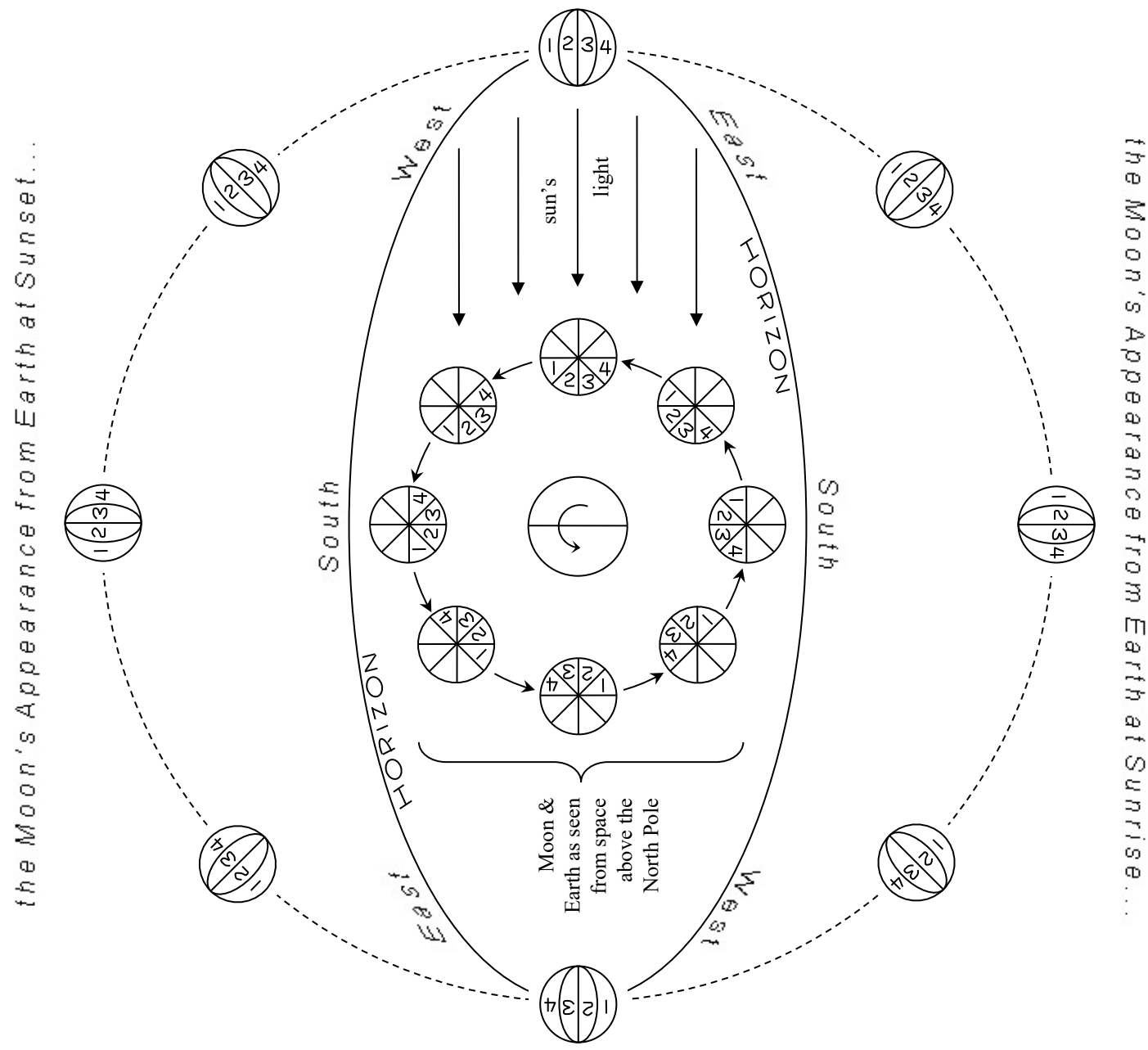
the Moon's Appearance from Earth at Sunset...

The goal is to produce a diagram illustrating the phases of the Moon. Using a pencil you will shade in certain parts of the Moon – the parts that are not illuminated by the Sun. The diagram shows two perspectives.



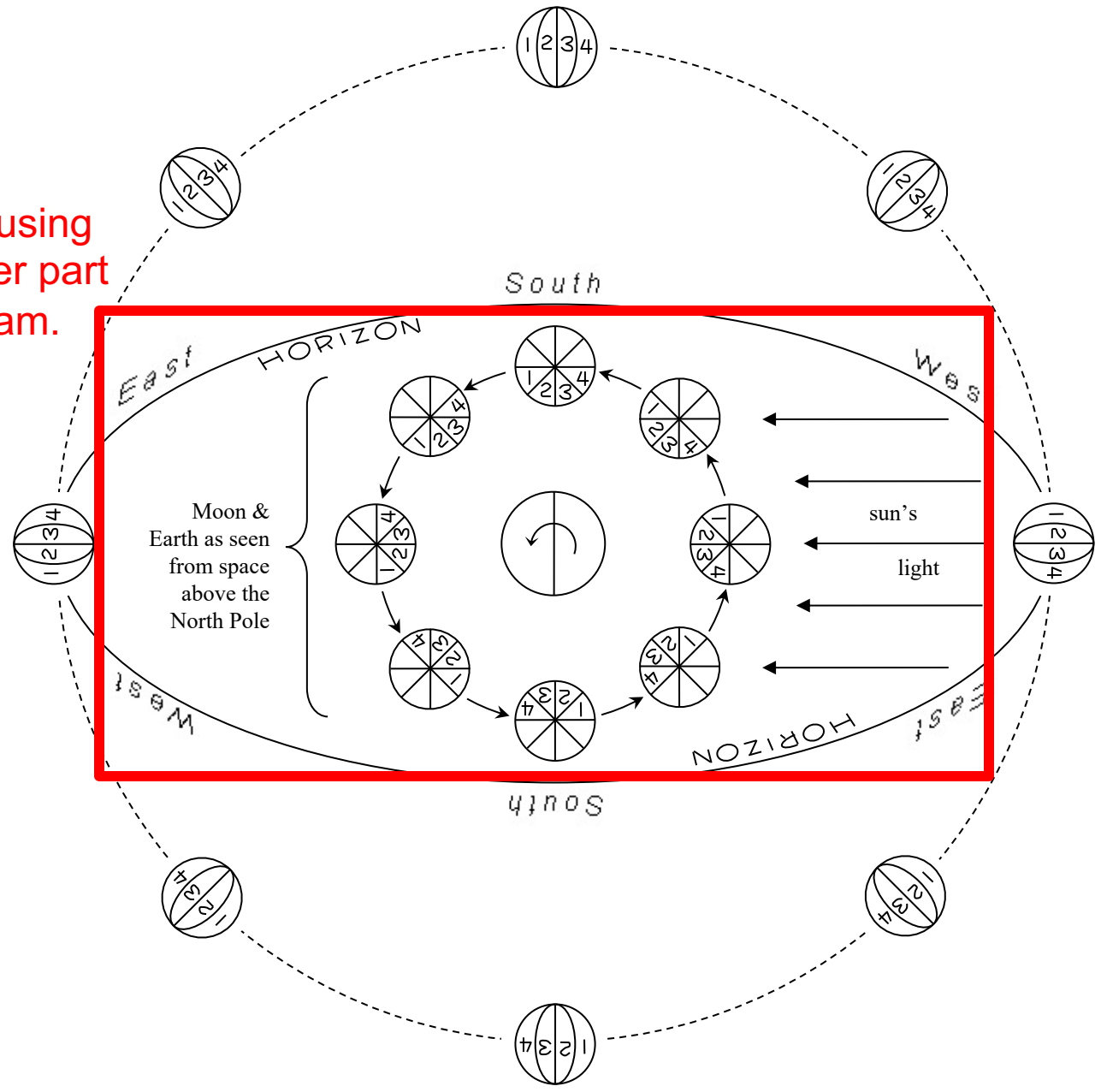
The center part illustrates the orbit of Moon "looking down" from "above" the North Pole of the Earth. The outer parts of the diagram, from the horizon line outward, show the appearance of the Moon in the observer's sky either at sunset or at sunrise, depending on which way it is turned.

the Moon's Appearance from Earth at Sunrise...



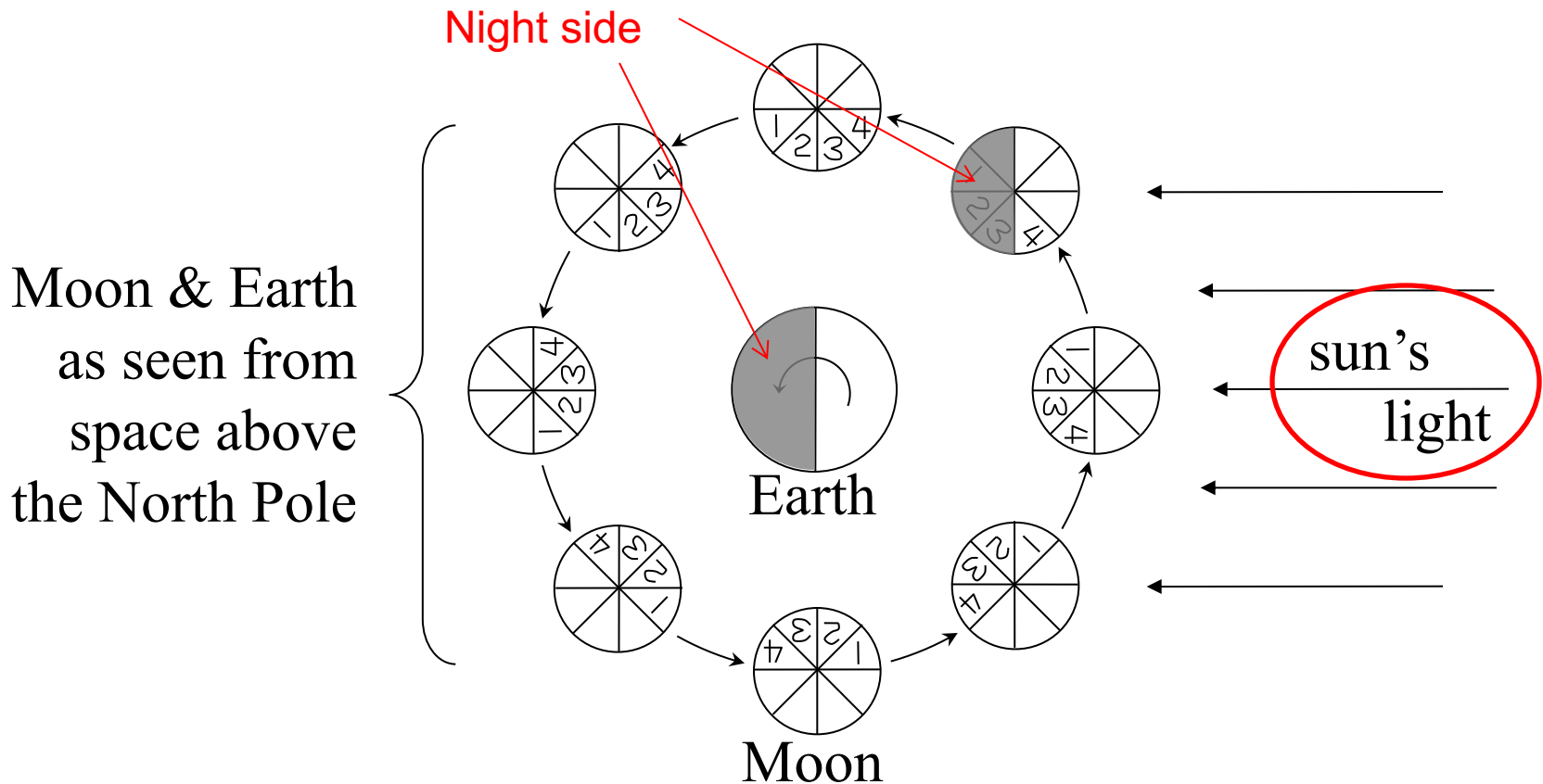
the Moon's Appearance from Earth at Sunset...

Start by focusing on the center part of the diagram.



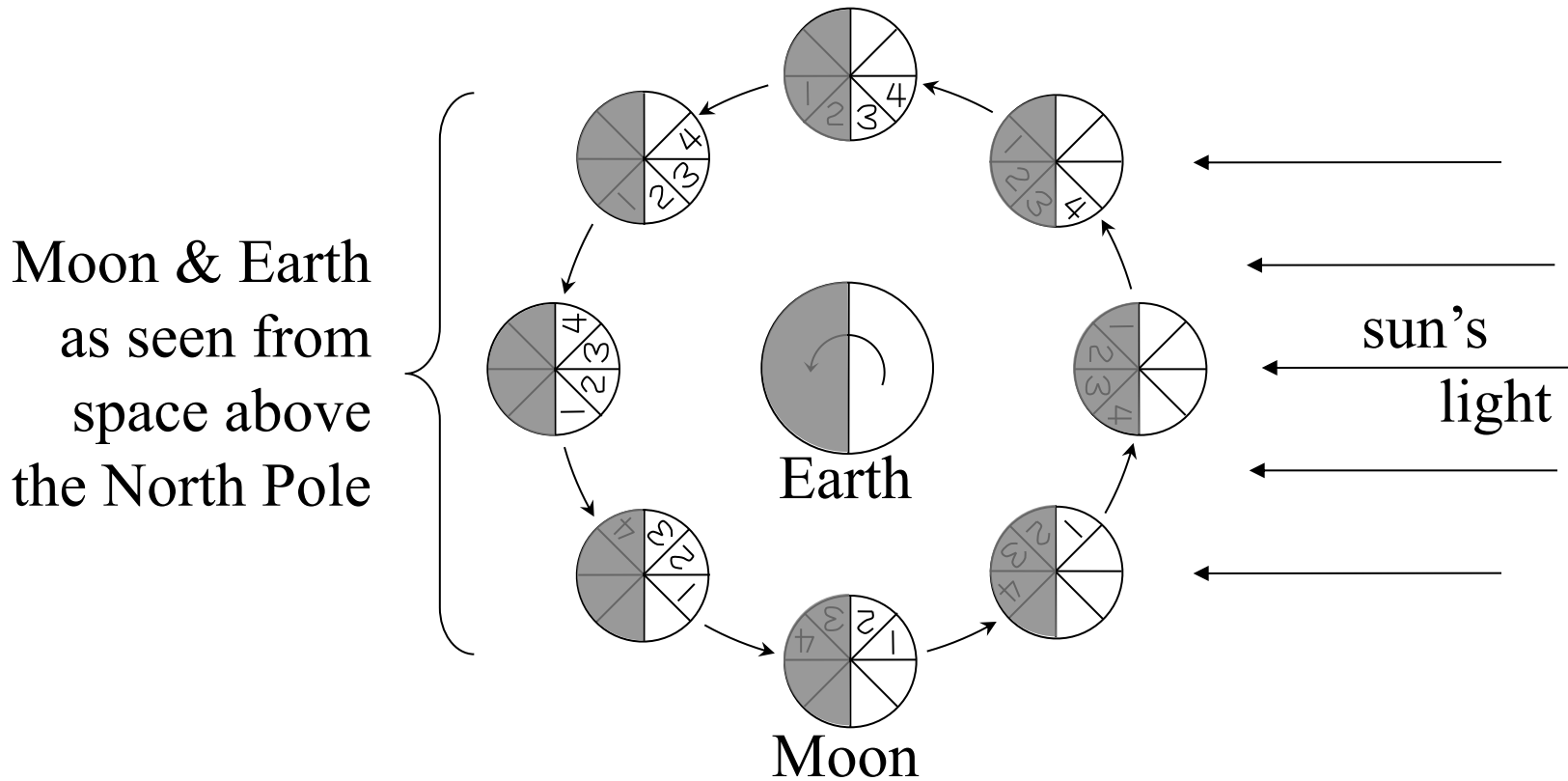
the Moon's Appearance from Earth at Sunrise...

Use a pencil/pen to darken the night side of the Earth.
Do the same for the Moon at each point in its orbit.



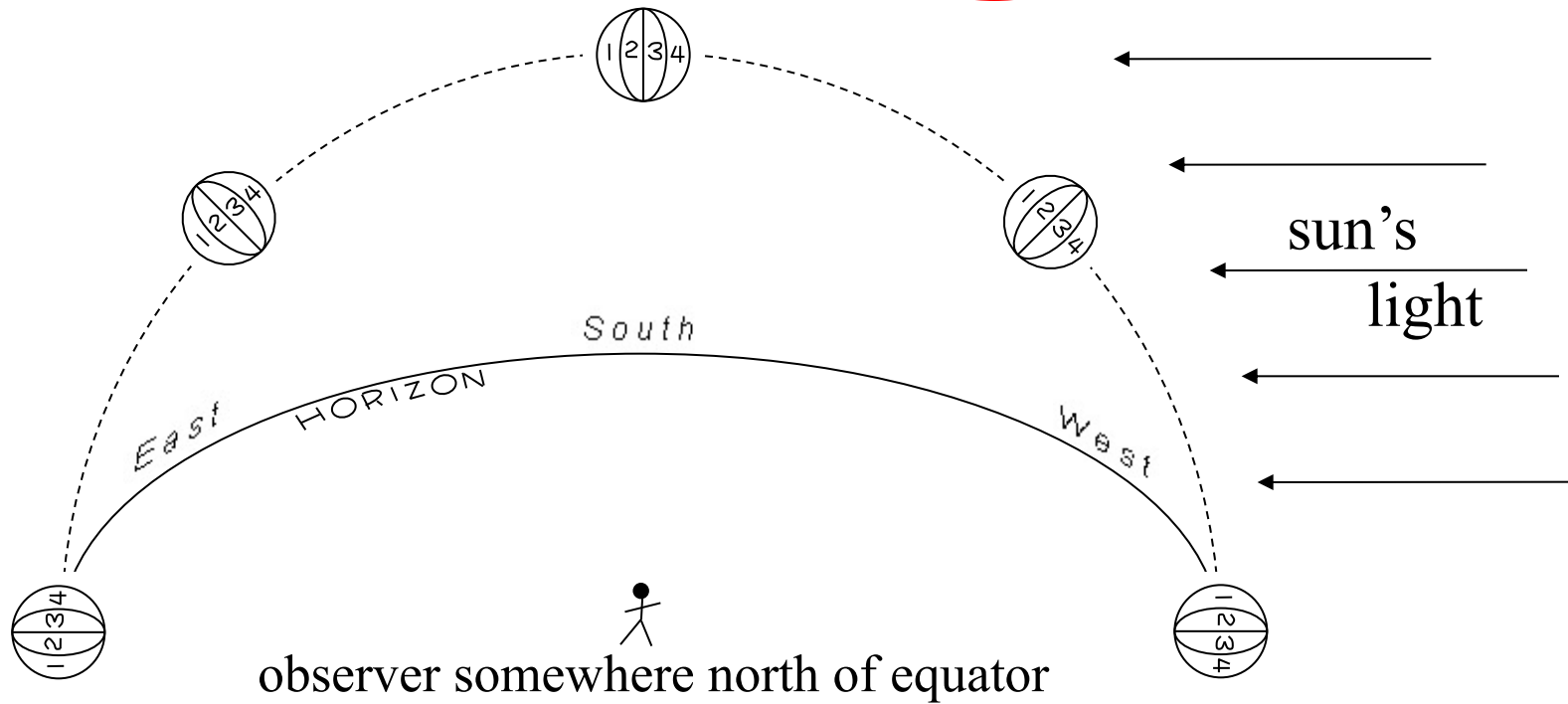
Note: The side of the Moon that always faces the Earth is divided into sectors labeled 1 thru 4.

Use a pencil/pen to darken the night side of the Earth.
Do the same for the Moon at each point in its orbit.



Note: The side of the Moon that always faces the Earth is divided into sectors labeled 1 thru 4.

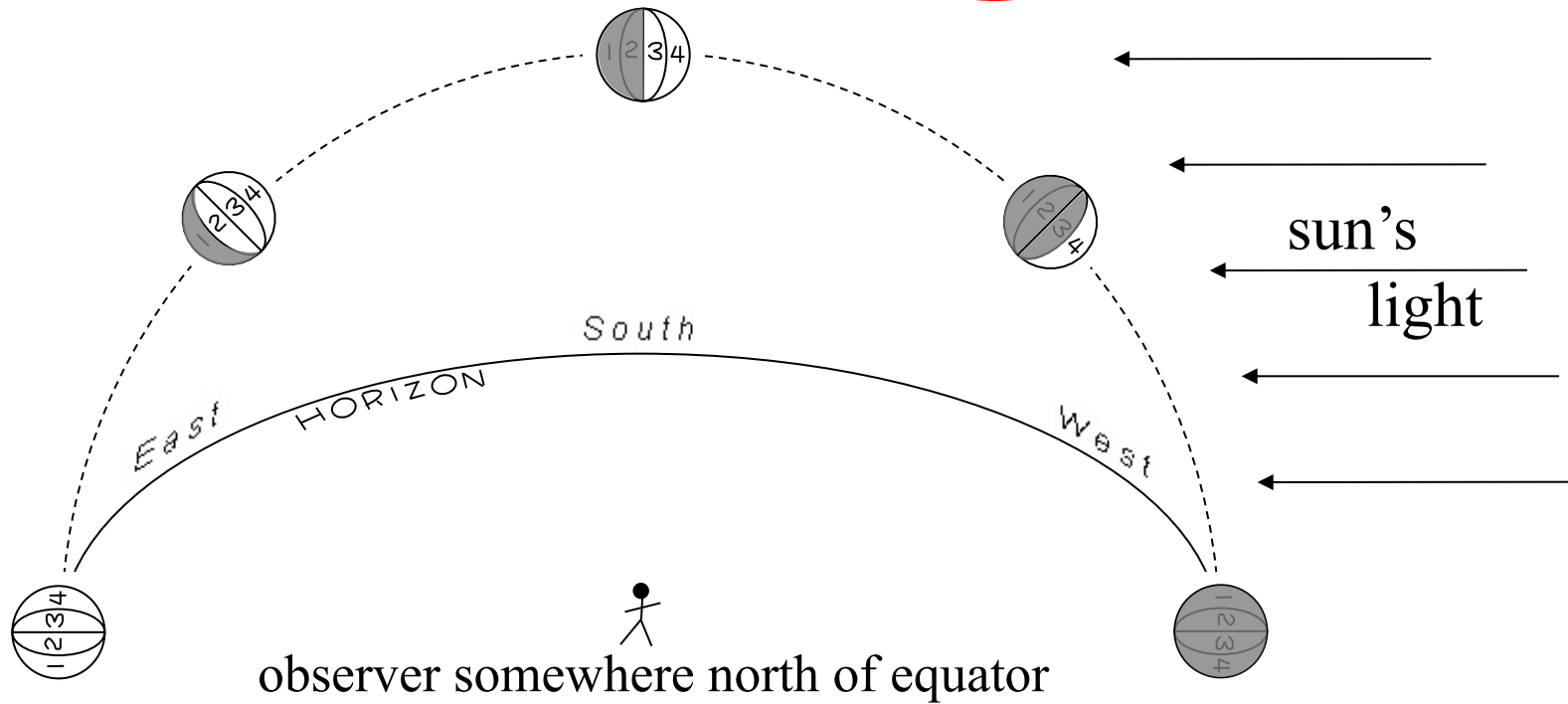
the Moon's Appearance from Earth at **Sunset**...



This part of the diagram shows the view from Earth at *sunset*. This is a different *perspective* of the same motion shown in the center of the page.

Darken the numbered sectors of the Moon's "near side" that were darkened in the previous step.

the Moon's Appearance from Earth at **Sunset**...

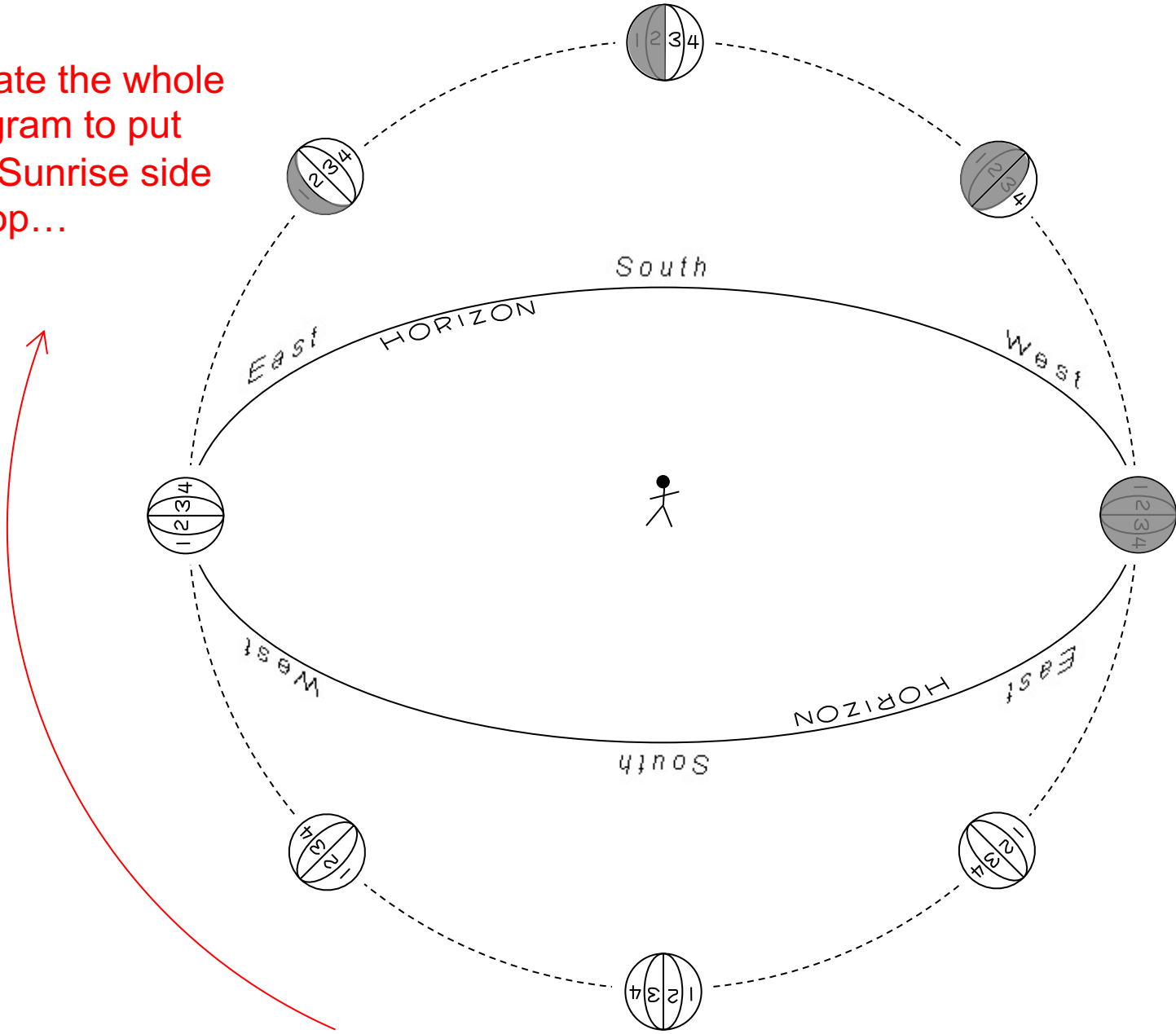


This part of the diagram shows the view from Earth at *sunset*. This is a different *perspective* of the same motion shown in the center of the page.

Darken the numbered sectors of the Moon's “near side” that were darkened in the previous step.

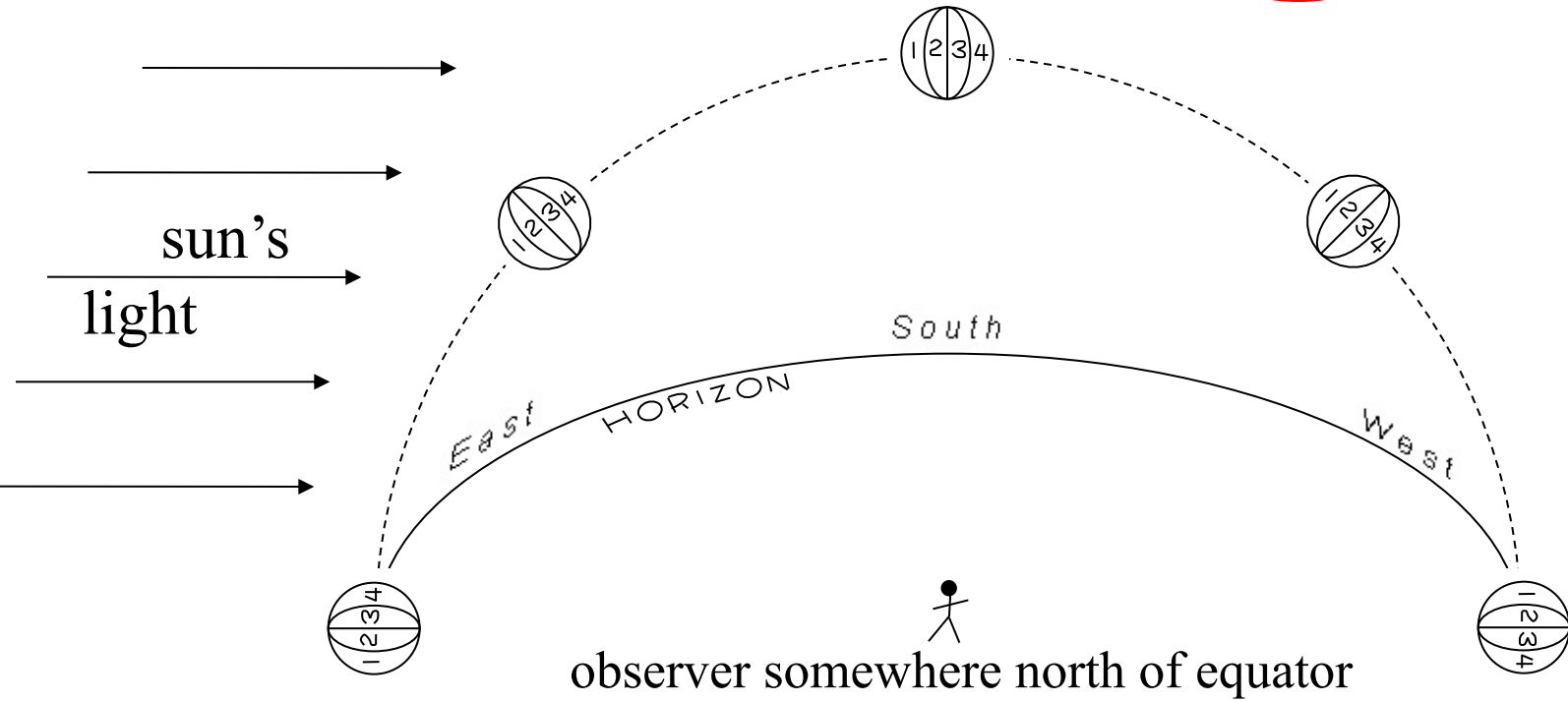
the Moon's Appearance from Earth at Sunset...

Rotate the whole diagram to put the Sunrise side at top...



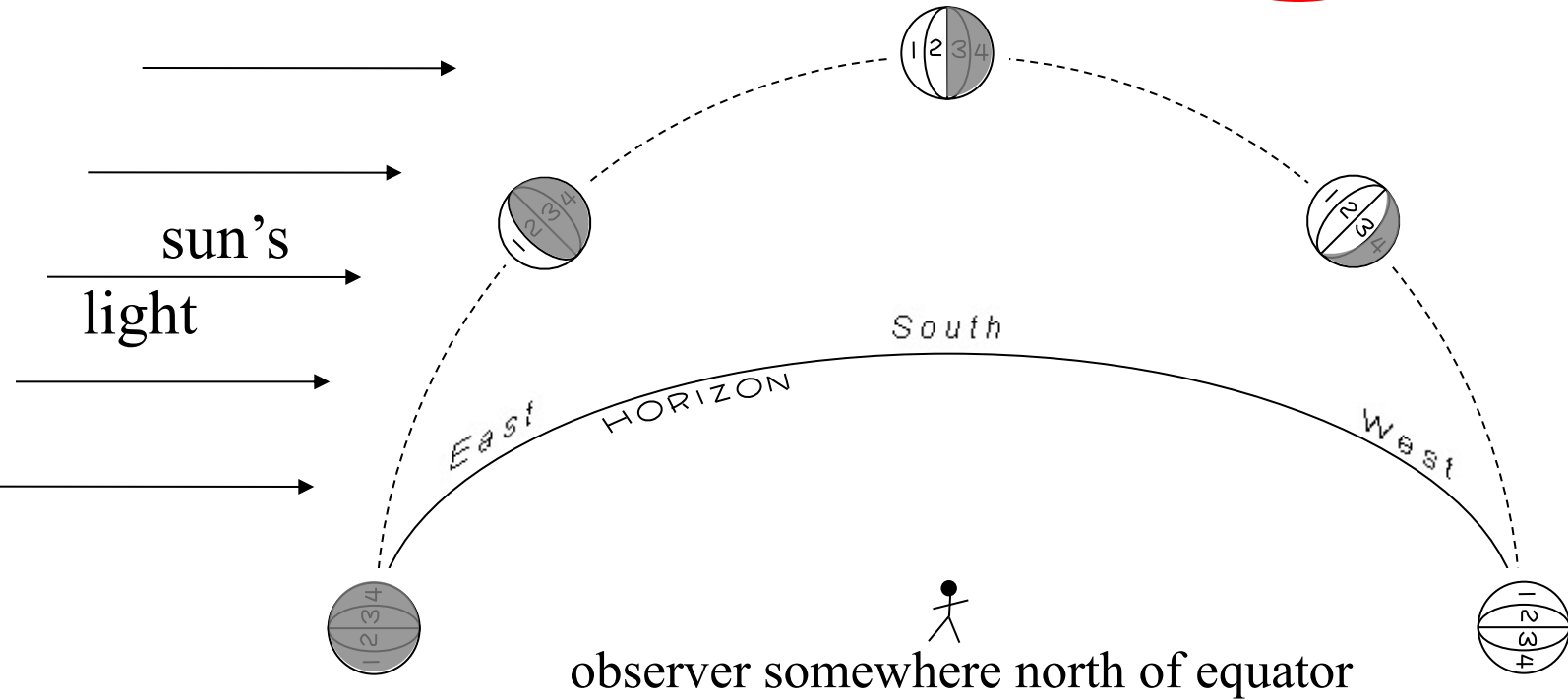
the Moon's Appearance from Earth at Sunrise...

the Moon's Appearance from Earth at Sunrise...



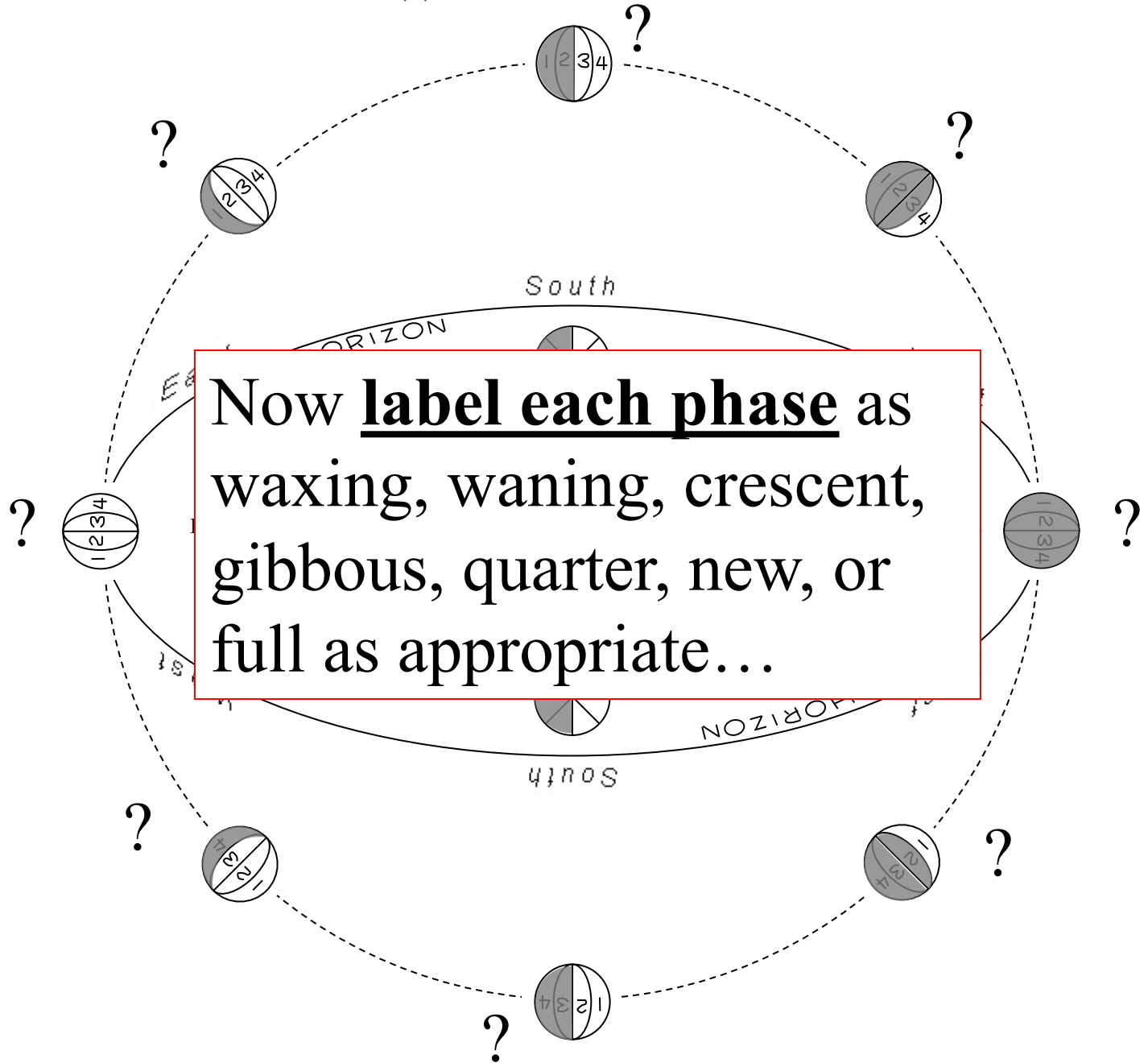
Repeat the process for the appearance of the Moon as seen from Earth at *sunrise*.

the Moon's Appearance from Earth at Sunrise...



Repeat the process for the appearance of the Moon as seen from Earth at *sunrise*.

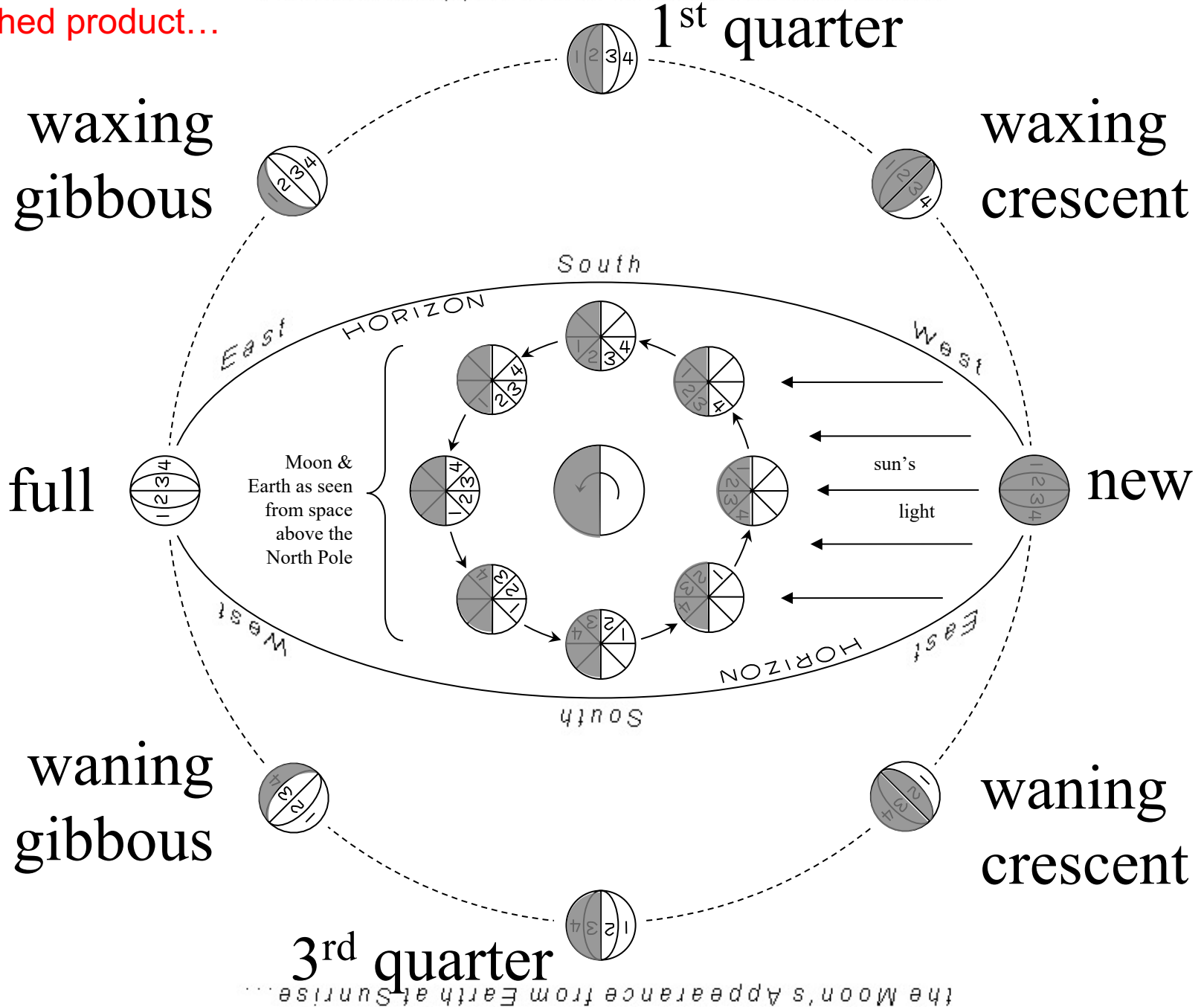
the Moon's Appearance from Earth at Sunset...



the Moon's Appearance from Earth at Sunrise...

Finished product...

the Moon's Appearance from Earth at Sunset...



the Moon's Appearance from Earth at Sunrise...