Earth Science

Names:

Understanding Earth-Moon Interactions

Moonrise Patterns

What time did the Moon rise today? ________________________________

To find out, go to http://www.usno.navy.mil/USNO/astronomical-applications

Then go to Complete Sun and Moon Data for One Day (http://aa.usno.navy.mil/data/docs/RS_OneDay.php) and follow the links to “Englewood, NJ.”

What time did the Moon rise yesterday? ________________________________

What time will it rise tomorrow? ________________________________

What do you notice about what you have learned so far?

How does the time of moonrise compare with the time in other locations?
Select two other locations. Use the same link, but type in their information.
Record the times for moonrise there.

Location 1 ________________________________ moonrise ________________________________

Location 2 ________________________________ moonrise ________________________________

What might explain any differences? How could you test your explanation? Do this.
What does the pattern of moonrises look like over longer periods of time?

Go back to [http://www.usno.navy.mil/USNO/astronomical-applications](http://www.usno.navy.mil/USNO/astronomical-applications) and then select *Sun or Moon Rise/Set Table for One Year* ([http://aa.usno.navy.mil/data/docs/RS_OneYear.php](http://aa.usno.navy.mil/data/docs/RS_OneYear.php))
In “Type of table,” select “moonrise/moonset”.

(Keep this open for later use during the activity.)

Follow the links to see the table for Englewood, NJ.
Describe at least three patterns you observe.

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Phases of the Moon

Go back to [Complete Sun and Moon Data for One Day](http://aa.usno.navy.mil/data/docs/RS_OneDay.php)

What is today’s “phase of the Moon”? ___________________________ with _______% illuminated

How does this compare with the phase at the other locations you looked at? What can you conclude from this?

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Make a drawing of how the Moon looks.
On what dates are the four main phases of the Moon in this month and next?

Complete the table:

<table>
<thead>
<tr>
<th>Month:</th>
<th>Month:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Moon</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Quarter</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe at least three things you notice.

Now let's try to put several things together.

First, copy the information above into table of the dates for the phases.
Now go to [Sun or Moon Rise/Set Table for One Year](http://aa.usno.navy.mil/data/docs/RS_OneYear.php) and add the moonrise times for these dates.

<table>
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</table>
Describe what you observe. If possible, give an explanation.