Astronomy Investigator Rubric

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| **Criteria** | **Highly proficient (4)** | **Proficient (3)** | **Nearly proficient (2)** |
| **Photos represents the topic of the Sun, Moon, and Stars in our sky** | Photos clearly shows the topic and are connected to one another | Photos clearly show the topic | Three photos do not represent the topic |
| **Explanation of science and connection to learning target:  I can develop and use a model of the Earth-Sun-Moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun, Moon, and seasons. (MS-ESS1-1)** | Scientific explanation is clear and convincing with elaborate detail of scientific ideas. Relates aspects of the photo with science. All of the proficiency requirements are met. | Student's scientific explanation is able to explain the relationships between the Sun, Moon, and Earth in the photo, including one of the following for each photo:  (a) the Earth rotates on its titled axis once in an Earth's day (b) the Moon orbits on its axis approximately once a month (c) the relationship between the Earth and the Moon (d) the relationship between the Earth–Moon system and the Sun (e) solar energy travels in a straight line from the Sun to the Earth and the Moon so that the side of the Earth or the Moon that faces the Sun is illuminated (f) solar energy reflects off the side of the Moon that faces the Sun and can travel to Earth (g) solar energy hits different parts of the Earth at different angles because of the curvature of the Earth | Explanation is unclear with sparse detail. Relation between photo and science is marginal.  Does not attempt to explain the relationship between the Sun, Moon, and Earth. |
| **Language used to represent topic** | Scientific vocabulary is clear, convincing, and accurate for the topic. | Scientific vocabulary expresses idea but may lack clarity and some accuracy. | Scientific vocabulary is limited. |
| **Display and presentation** | Writing is organized and edited for mistakes | Writing is somewhat organized and edited for mistakes | Writing is poorly organized and needs editing |

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| **Websites that support each opposing claim** | |
| “Our solar system is huge.” | “Our solar system is tiny.” |
| <http://joshworth.com/dev/pixelspace/pixelspace_solarsystem.html>  <http://www.universetoday.com/104486/how-big-is-our-solar-system/>  <http://earthsky.org/space/what-is-the-astronomical-unit#def>  <http://joshworth.com/dev/pixelspace/pixelspace_solarsystem.html>  <http://htwins.net/scale2/> | <http://www.universetoday.com/102920/what-is-the-closest-star/>  <http://www.numbersleuth.org/universe/>  <http://www.cfa.harvard.edu/seuforum/howfar/index.html>  <https://www.youtube.com/watch?v=1Eh5BpSnBBw>  <https://www.youtube.com/watch?v=RDZLmZf-F3Q> |