**Phases of the Moon**

Xiaohan Ding, Gheorghe Tecuci

Learning Agent Center and Computer Science Department, George Mason University

xding2@masonlive.gmu.edu, tecuci@gmu.edu, <http://lac.gmu.edu>

**1. Introduction**

This exercise was adapted from:

Jonathan Osbome, Sibel Erduran, Shirley Simon, *Ideas, Evidence & Argument in Science* (IDEAS), King's College London, 2004, pp. 23-25, <https://www.stem.org.uk/elibrary/collection/3308>

<https://www.stem.org.uk/resources/elibrary/resource/28125/ideas-resources>

The aim of this exercise is to develop different arguments for what causes the phases of the moon. Section 2 presents the inquiry and Section 3 presents the corresponding argumentation developed with the sInvestigator system.

sInvestigator may be downloaded from <http://lac.gmu.edu/sInvestigator/>

The knowledge base containing the argumentation may be downloaded from

<http://lac.gmu.edu/sInvestigator/CaseStudies/PhasesOfTheMoon.zkb>

**2. Inquiry: Why does the Moon has phases?**

During the course of a month the moon changes it shape that is it goes through several phases. The following are some hypotheses of why the moon has phases:

* The moon spins around so that the half of the moon that gives out light is not always facing us.
* The moon shrinks and then gets bigger during each month.
* The rest of the moon is blocked out by clouds.
* We cannot always see all the part of the moon which is lit up by the sun.
* The moon moves in and out of the earth's shadow and so light from the sun cannot always reach the moon.

Which hypothesis is true?

**3. Analysis**











