Program Level Outcome (PLO) Assessment Report Summary

Program Level Outcomes for Astronomy:

Upon successful completion of the Astronomy program, a student should be able to:

- Explain and discuss basic astronomical phenomena including, but not limited to:
  - Gravitation
  - The seasons
  - The phases of the moon
  - Eclipses
- Apply the laws of physics to explain the properties of planets, stars, galaxies, and the Universe.
- Explain and discuss the impact and history of scientific theories and their importance in the advancement of astronomy.
- Demonstrate proficiency in applying scientific procedures for making observations and measurements typical of modern astronomical research.

What we looked at: Explain and discuss the impact and history of scientific theories and their importance in the advancement of astronomy.

What we found: In general, we found that students had a difficult time with this outcome. Students were able to name the theory, but were unable to identify the major concepts of the theory. They were able to describe bits and pieces of the theory, but were unable to synthesize it as a whole. The average score for all classes on this assessment standard was 49% in the face to face lecture sections and even lower (23%) in the online section.

What our next steps are: More group activities will be developed to help students understand the important theories that involve the formation of the solar system and Universe. Also, there will be more practice questions for students to review using assessment tools such as Top Hat Monocle. For the online section, more videos and discussion questions will be included. We will also reassess this outcome in Fall 2014 for all sections to determine if the interventions were successful in increasing student understanding.