Pre-/Post-Conference Assessment ANSWER KEY

1. What is the ISS EarthKAM? How is it unique?

   International Space Station Earth Knowledge Acquired by Middle School Students. Students are able to request via the Internet that specific images be taken to support their classroom investigations.

2. List three ways scientists and geographers might use information they gather from space-based photography to understand changes on the Earth.

   For urban planning, studies of climate change, archaeology, agriculture, and weather patterns, topographic mapping, etc.

3. Define remote sensing.

   The science of gathering data on an object or area from a considerable distance, (e.g., using cameras, radar, infrared photography, or other sensors), to observe the Earth, a heavenly body, or any distant object.

4. What is the part of the electromagnetic spectrum that can be seen by the naked eye called?

   The visible spectrum (wavelengths between 380–760 nm long).

5. What is the difference between a false color and a true color image?

   False Color Image- Changing the colors of an image so that it looks different than the target being examined would to the naked eye (i.e., cold water might be represented by blue and warm water by red).

   True Color Image- An image that looks the same as the target would to the human eye: a green tree appears green, a blue ocean appears blue, etc.

6. Why is it important to look for different wavelengths of energy in Earth studies?

   Different types of information can be obtained from different wavelengths, permitting scientists to analyze additional properties of an object or place. For example, infrared wave-engths indicate heat (warmer water, deserts), while 380-760 nm are colors visible to the human eye, so vegetation and lakes are identifiable by their colors.

7. Describe the relationship between the wavelength of a wave and the energy of a wave.

   There is an inverse relationship between a wave's wavelength and its energy. In other words, shorter waves have more energy than longer waves.

8. Describe how satellite images and maps are different and similar (you could use a Venn diagram).

   Answers will vary. Maps were initially hand made to help people get from one place to another, including guiding landmarks. A map is usually made for limited purposes (e.g. navigation or to show the types of vegetation at different locations) so maps have a lot of blank spaces or big patches of the same color. Satellite images are made of data – e.g., temperature data throughout the world is changed into colors, so they can also have a lot of patches of the same color. Now that we can use satellite data to make maps, it's possible that satellite images and maps will become very similar.

9. Identify at least one unusual use for remote sensing.

   To learn more about: ancient civilizations (the Angkor Ancient Ruins), Dead Sea Scrolls, etc.

10. Identify five different features of land or water in the following image.

    Mountains, large body of water (Mediterranean Sea), vegetation, inlets, islands, peninsulas, etc.