**Sydney Observatory Streaming Sessions**

**15 November 2017**

**Session 1 – Days of Darkness (year 5)**

*Background: A hoax is making the rounds of the internet saying that NASA has confirmed the Earth will experience 15 days of darkness starting on November 15.* [*http://reflectionofmind.org/nasa-confirms-earth-will-experience-15-days-darkness-november-2017/*](http://reflectionofmind.org/nasa-confirms-earth-will-experience-15-days-darkness-november-2017/)

|  |  |  |
| --- | --- | --- |
| **Time** | **What** | **Syllabus reference** |
| 9.30 – 9.35 | Introduce “Days of Darkness” hoax with animation |  |
| 9.35 – 9.45 | Previous ideas about the universe and models of the solar system – idea of scientific evidence debunking myths | Research the important contributions made by people from a range of cultures and organisations, using technologies of the time, to advancing scientific understanding of the solar system such as Aryabhata, Copernicus, Galileo, CSIRO and NASA (NSW) |
| 9.45 – 9.55 | A brief history of the Sydney Observatory 1858—2017 |  |
| 9.55 – 10.05 | Explain how telescopes work with reference to the telescopes housed at the Sydney Observatory | Explore objects and devices that include parts that involve the reflection, absorption or refraction of light such as mirrors, sunglasses and prisms (Aus Curr)  Draw simple ray diagrams to show the paths of light from a source to our eyes (Aus Curr) |
| 10.05 – 10.20 | Observing – use previously recorded night time footage, compare to footage/images from observatory away from light pollution. Concentrate on solar system observations…how do these observations answer key questions about the solar system? | Research the key features of the planets of the solar system and compare how long each takes to orbit the Sun (NSW)  Demonstrate using models that the Earth revolves around the Sun and the Moon revolves around the Earth (NSW) |
| 10.20 – 10.30 | Explain how scientific observations debunk the “Days of Darkness” myth and maybe leave them with a question/puzzle?  Also note what they can do on a visit to Sydney Observatory |  |

**Session 2 – Reasons for Seasons & Days in a Phase (year 7)**

*Background: There are all sorts of myths and misconceptions surrounding the concepts of seasons and lunar phases. This session will hopefully clear everything up.*

|  |  |  |
| --- | --- | --- |
| **Time** | **What** | **Syllabus reference** |
| 1.30-1.40 | Brief history of the Sydney Observatory and what seasons/lunar phases meant to the 19th century workmen who built it…religion vs. science (remembering that the Observatory was built around the same time Darwin published *On the origin of species*). Talk about the story of William Scott, the astronomer who supervised the construction of the Observatory and was also a clergyman. |  |
| 1.40 – 1.55 | Ideas about seasons; describe how astronomical observations explain seasons (refer to Observatory telescopes); use model and/or animation to demonstrate | Explain that predictable phenomena on the Earth, including day and night, seasons and eclipses are caused by the relative positions of the sun, the Earth and the moon (NSW)  Demonstrate, using examples, how ideas by people from different cultures have contributed to the current understanding of the solar system (NSW)  Compare historical and current models of the solar system to show how models are modified or rejected as a result of new scientific evidence (NSW |
| 1.55 – 2.10 | All about gravity (in reference to the solar system, orbit of Earth around Sun and Moon around Earth) | Use the term 'field' in describing forces acting at a distance (NSW)  Identify that the Earth's gravity pulls objects towards the centre of the Earth (NSW) |
| 2.10 – 2.15 | Talk about phases of the Moon with reference to pre-recorded Observatory images. What phase is it on the filming date? Myths etc. Use model/animations. Also refer to eclipses | Explain that predictable phenomena on the Earth, including day and night, seasons and eclipses are caused by the relative positions of the sun, the Earth and the moon (NSW)  Compare times for the rotation of Earth, the Sun and Moon, and comparing the times for the orbits of Earth and the Moon (Aus Curr) |
| 2.15 – 2.30 | Talk about what the students can do/see on a trip to the Observatory |  |

*Note: These timings are a rough guide only and we will fit in any questions we receive via live chat or Twitter*