

Conclusions

Philippines 2022

The Science, Technology and Society of the Faculty of Science, technology and Mathematics collaborated with the Network for Astronomy School Education in the conduct of the NASE boxes online – Astrophysics: A workshop in astronomy for in-service teachers. The workshop was conducted online last July 13-16, 2022 with an average of 80 participants every night. Most of the participants are teachers in the Junior and Senior Highschool.

NASE invited three resource speakers namely Josep Corominas, Valeria Buenrostro and Parham Eisvandi to discuss and facilitate the four workshops. Josep Corominas talked about the solar spectrum and sunspots. In his session, he has explained about the structure of the sun and he has shown activities about polarization using polarized films and sunglasses. He has also shown the oil-drop experiment to determine the luminosity of different materials. Lastly, the participants were most amazed when he demonstrated the concept of light scattering for blue skies and red sunsets using glue sticks and a light source. Parham Eisvandi shared about stellar lives. He has shown activities on parallax and on the law of inverse square. He has also showed how to determine the age of open clusters. The last two topics, Astronomy beyond the visible and expansion of the universe, was explained by Valeria Buenrostro. She discussed the different parts of the electromagnetic spectrum. Part of this work is to create a spectrometer with the CD or DVD serving as a diffraction grating. Using the spectrometer, the participants saw the comparison between the spectrum created by different light sources. She has also introduced the activity for determining and seeing the infrared radiation using thermometers and a prism. The other activities demonstrated are detecting radio waves using old AM radios and infrared from television remote controls. The next topic, expansion of the universe explained the doppler effect by whirling a ringing alarm clock or cellphone. This was shown through a video and the sound was observed as the object moves overhead. An activity showing the expansion of the universe was also demonstrated using rubber band, ruler, and marker and the calculation of the Hubble's constant. Lastly, the participants enjoyed the demonstration of deformation using the foot of a wine glass and deformation of space using a wine glass filled with red wine or dark soda. These activities were able to show different phenomena such as the arc fragment, Einstein Cross, and Einstein ring.

The participants appreciated all the workshops, and they believe that the level of discussion was just right as shown in the evaluation below. They also believe that the workshop will be useful in their profession and that they plan to use the materials and activities presented in their classes.

