"Are these pictures real?": The aesthetics of astronomical images and their educational consequences

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Oral presentation

Abstract

The production of images of astronomical objects using data outside of the optical spectrum is a common practice within the discipline of Astronomy. This means that the final images that reach astronomy students and the public, represent astronomical objects in a way that deviates from what they would actually look like, if they were observable by the human eye. These pictures are given many aesthetic features, with colour, contrast and cropping [1], playing a significant role in the final result. The purpose fulfilled by this is twofold: there is an educational purpose, intending to convey the science of the depicted phenomena and an aesthetic purpose, aiming to invoke the interest of the audience, by conveying a sense of grandeur, mystery and exploration. In this presentation, we will explore how these two purposes relate to each other. To what extent do the added aesthetic features obstruct or facilitate the intended meaning making? We present examples of images from our lecture observations and textbook analysis from seven Higher Education Astronomy courses and analyze how different features of the images used convey the science. Following a social semiotic approach [2] we will discuss how we analyze images as meaning making resources [3] for communication purposes between Astronomy experts and newcomers to the discipline. Finally, we will showcase how transductions [4] and coordinations of these images with other semiotic systems (especially written language) can prove to be very insightful in revealing appresent aspects in the images [5]. These are aspects that are not directly observable in the images, but that Astronomy experts can infer given their wide knowledge of the discipline. Such aspects are clearly important for the teaching and learning of the discipline.

References

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