

ASTRONOMY EDUCATION FOR THE FORMATION OF THE CITIZEN SCIENTIST: METEOR ANALYSIS IN HIGH SCHOOL

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Introduction

The interest of the population and students of basic education by topics encompassing astronomy has eventually been aroused mainly when discoveries about the cosmos or astronomical phenomena occur.

However, this interest is not always encouraged, leaving the student unmotivated to learn about the subject (LANGHI, 2011).

Citizen science has been a new form of interaction between citizens and professional scientists, and more specifically in this project, astronomers. With this, an opportunity to engage with science and the scientific method is provided to the population (LANGHI, 2017). It is also seen in research that most of the population and teachers continue to persist with their personal explanations of common sense about celestial phenomena causing a failure of science teaching in basic education and teacher training.

Finally, it is interesting to note that there is a great lack of studies of this nature in the southern hemisphere.

Objectives

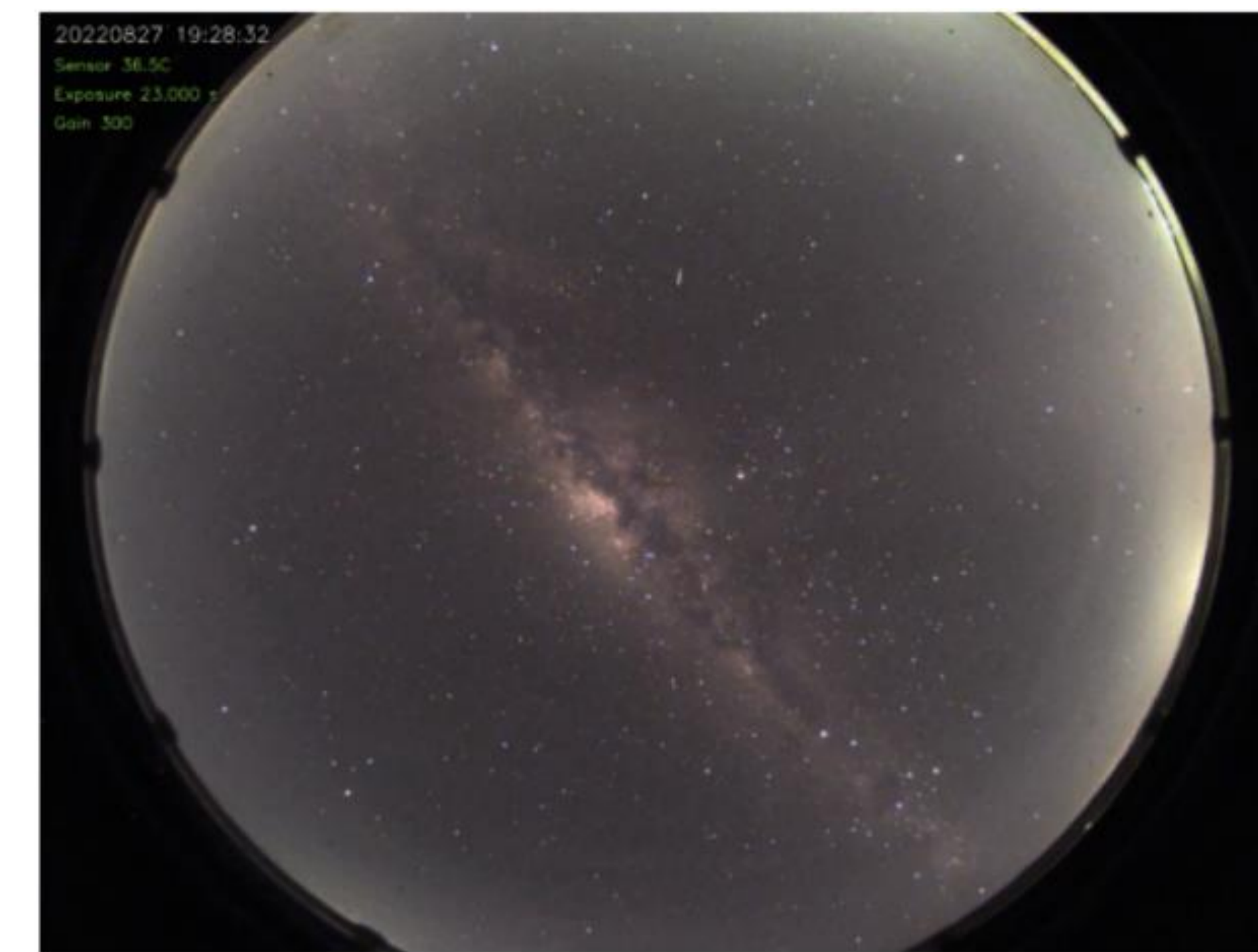
This research aimed to perform a content analysis of academic bibliographic production on meteors, astronomy teaching and citizen science. Based on the indicators emerging from this analysis, we present a proposal for the formation of high school students aiming at the development of scientific methodology skills for the analysis of photographic records of meteors.

Methods

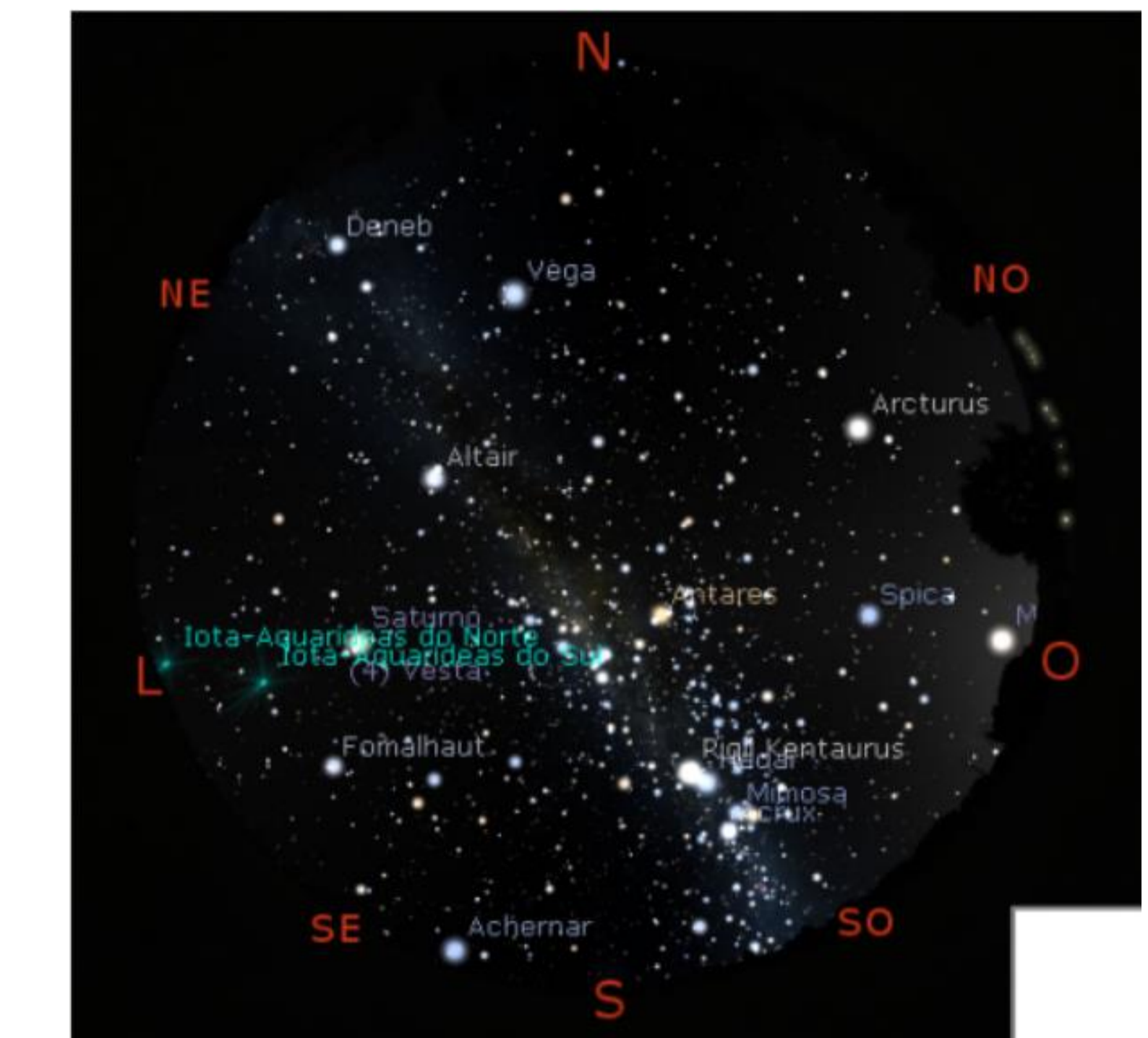
Content Analysis proposed by Bardin was used in order to analyze the scientific literature on the topics of Education in Astronomy, Citizen Science and Meteors, so that inferences can be made that provide subsidies to High School. For this, 15 articles were selected, separated into 3 categories: Challenges in the formation of students in science teaching; Elements of meteor analysis and their categorizations and The impact of citizen science.

With this, a training proposal was elaborated from the analysis of the indicators, in order to contribute to fill the gap in science teaching in the formation of young people.

For this to be possible, meetings should take place with previously selected high school students, teaching them how to use the programs, collect and analyze the data.



(a)



(b)

Figure 1: (a) Print of the video to be analyzed (example). (b) Stellarium placed in the same location, day and time as figure (a)

Conclusions

Content Analysis enabled the emergence of subsidies for the elaboration of a proposal of training of high school students on the subject of Astronomy, more particularly meteoroids and meteors. It was also possible to identify flaws in the teaching of this science during the basic education phase, as well as the potential of citizen science for the construction of scientific knowledge in children and adolescents - not only for the development of cognitive skills of the student, but also for socio-emotional skills, arousing interest for a meaningful learning and encouragement of shared learning.

The proposal can help teachers of basic education in science teaching - not only in the theme of astronomy - but also for the motivation to look for other citizen science programs and thus put students in touch with the scientific method. There's an extreme importance of training students under approaches in which Science is the fundamental part of the teaching and learning process, due to the intense dissemination of false information and news with conceptual errors.

Different teaching approaches, taking students out of the routine of traditional and expository classes = more motivation and new possibilities of proposals for the training of students can be addressed in continuation of this work.

References

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