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## Socialization of Astronomy in the Car Free Day Event in Palembang

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### ABSTRACT

Astronomy was born from the needs of society, such as in agriculture and marine fields. However, many people are not familiar with astronomical phenomena, and they tend to build myths about these phenomena. Efforts to introduce astronomy need to be spread to society. Academics have introduced astronomy, but they mostly did it in school place. Adding astronomy to a broader community is done by taking moments of car free day (CFD) activities, for instance, at CFD in Palembang. The event aimed to educate people about astronomical phenomena and observe the sun with a telescope and sunglasses. The community gave responses through questionnaires on a Likert scale. The society response was outstanding, with an average value of 3.53. As many as 95.83% of respondents stated that it was necessary to hold this activity again. In conclusion, the introduction of astronomy to the Palembang community received a good response.

### 1. Introduction

Astronomy was born from the needs of society, such as the need for a calendar to regulate farming times and the need to determine direction and navigation for sailors. Currently, Astronomy is still helping to meet the needs of society in the fields of agriculture, marine, and space. However, Astronomy is not only limited to meeting these needs. Modern astronomy is not only observing celestial phenomena but also studying the dynamics of celestial bodies to the final fate of this universal system.<sup>1</sup>

The dynamics of celestial bodies have an impact on celestial body phenomena such as eclipses, planetary conjunctions, meteor showers, and solar activity. This astronomical phenomenon has not been widely known to the public, so they are more likely to build myths about phenomena that occur in the sky. For example,

if there are "falling stars," then people will die, or there will be a disaster. People even call the meteor a shooting star which is not actually a star, and of course, it has nothing to do with the occurrence of someone dying. Therefore, many attempts have been made by academics to introduce astronomy into society. Some of these efforts are like floating observatories in several places, for example, the Astronomical Observatory. The observatory also serves to provide information about the importance of astronomy, the phenomenon of celestial bodies, as a training ground and astronomical studies. Another effort is to develop webcam learning astronomy through the development of an inexpensive technology-based acquisition system (telescope, spica, web camera, and laptop) and training for teachers.<sup>2,4</sup>

This program to popularize astronomy can be done by utilizing one of the car free day (CFD) activities carried out by the Palembang city government. This event is held every Sunday along the Kambang Iwak area. This astronomy socialization activity is packed with sun observations using telescopes and sunglasses and provides brief explanations of astronomical phenomena to the public. The purpose of this community service is to introduce astronomy to the public by educating the public about astronomy phenomena, especially those close to everyday life.

## 2. Methods

The community service method in the Astronomy in Palembang car free day activity is community education in the form of counseling or material delivery. The purpose of counseling and material delivery in this activity is to increase public understanding of Astronomy. The educational materials provided to the public are parts and ways of using telescopes and sunglasses to observe the sun, solar anatomy, and astronomical phenomena. Meanwhile, to determine the achievement of this goal, a response test was carried out on the community.<sup>4-6</sup>

This community service activity consists of three main activities, the first is the preparation of both tools and media, the second is the implementation of service at the car free day (CFD), and the third is to analyze the results of the community's response to this activity. The first activity consists of preparing brochures, equipment (telescope, solar filters, sunglasses), and questionnaires as evaluation instruments. The second activity includes setting up equipment at the car free day location, distributing leaflets and questionnaires, educating the public about astronomical phenomena (knowledge of the sun), educating the use of sunglasses, and inviting people to see the sun through telescopes and sunglasses. The third activity is analyzing the results of the community response.<sup>7</sup> The data collection

instrument used was the response form. This response form is used to determine the user's response to this brochure and activities. Instruments for the community in the form of a response questionnaire using a Likert scale. The data obtained from the community response questionnaire were then analyzed. Answers are categorized into options: (a) very good, good, fairly good, and not good, (b) very useful, useful, fairly useful, not useful, (c) very important, important, quite important, not important, (d) very attractive, attractive, quite attractive, unattractive, (e) very easy, easy, fairly easy, not easy, (f) serving very well, serving well, serving fairly well, not serving well, (g) indispensable, necessary, enough necessary, not necessary.<sup>8-10</sup>

## 3. Results and Discussion

The Astronomy in CFD activity was held on Sunday, December 22<sup>nd</sup>, 2019. Details of the activities that have been carried out are preparation, implementation, and analysis of community responses. Preparation stage with compilers of questionnaires and material brochures that will be delivered to the public with the material "getting to know the sun". Other equipment prepared is a telescope with a solar filter and sunglasses.

The implementation stage begins with setting up the telescope at the service location. This service was carried out in collaboration with the Astronomy and Physics community of Palembang. The service is carried out by educating the public about the Astronomy phenomenon, and the community is given a service package. The community is then educated to be able to use telescopes and sunglasses. After the public is well educated by delivering materials, using a telescope, and sunglasses, the community is asked to fill out a questionnaire. This questionnaire is useful for knowing the public response regarding the brochure and the implementation of this service.



Figure 1. Socialization of astronomy.

The results of the analysis related to the response of the community who participated in this service were more than the response data obtained. The questionnaire was given to 72 respondents. The questionnaire consisted of one respondent's personal data, namely profession, 7 questions related to brochures and the course of the service with the answer choices consisting of 4 categories, and 1 question with 2 categories of yes and no answers. Seven questions with answer choices consist of 4 categories. The response profession consists of 53.30% students, 33.30%, 5.33% others, and 5.30% students. The other 5.33% are like housewives. The question "Does Astronomy in CFD always need to be held?" 95.83% stated that it was necessary always to hold it, and 4.16% did not need to be holding it. Regarding the purpose of public education in the use of telescopes and sunglasses, respondents said it was very good, with an average score of 3.51. Therefore, based on the results of the questionnaire, dedication in the form of efforts to socialize astronomy through Astronomy in car free day (CFD) Palembang obtained an average score of 3.53. Based on the community response, this service for the community is declared very good. Therefore, the goal of this service can be stated as achieved.

The aim of astronomy socialization in the community is to promote public awareness and understanding of astronomy, its significance, and its relevance to our daily lives.<sup>11</sup> The goal is to engage people of all ages and backgrounds in exploring the

wonders of the universe and to encourage them to pursue an interest in astronomy. Through astronomy socialization activities, communities can learn about the latest astronomical discoveries, technologies, and research. This can help to increase scientific literacy and inspire future generations of scientists, engineers, and explorers. Additionally, astronomy socialization can also promote cultural exchange and cross-cultural understanding, as many cultures have unique astronomical traditions and beliefs.<sup>12-14</sup> By sharing these traditions and exploring the science behind them, communities can gain a greater appreciation of the diversity of human experience. Overall, astronomy socialization in the community aims to foster curiosity, education, and a greater appreciation of the natural world and our place in the universe.

#### 4. Conclusion

The introduction of astronomy to the Palembang community received a good response.

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