



Space Generation Advisory Council

in support of the United Nations Programme on Space Applications

Winner of the SGAC IYA 2009 Essay Competition

ASTRONOMY

The Great Expectation within Desperation.

ABSTRACT

The starry night, is not ordinary view for some people. For those who are very interested in the “world” above, it can be a place where they put their expectation in order to continue the life of organism of the earth. People will not able to communicate with this universe and all its miracles without keeping in touch with its components. Maybe, starring at the starry night will be enjoyment for peculiar because, there they can find something different from what common people think. The learning enjoyment will comes up when they observe the millions of exquisite elements that adorn the sky.

People in common-especially in Indonesia- are often misunderstanding about the astronomy. The activities in observing the sky and effort to discovery the something above seems ridiculous action. But nowadays, regarding to some conferences held in Indonesia, people begin aware that actually they are touch closely with astronomy. It happened since their ancient live in Indonesia and how they actually relied on the astronomy so much in doing their live activities.

This article actually tries to redolent of the astronomy contribution in our live, especially from the point of view Indonesian people.

INTRODUCTION

Recently, People think that studying about astronomy has not given any contribution for their live. Being an astronomer is considered as the activity for people who are on the dole, just staring the sky, as if there is nothing to do. Nonetheless, behind those all assumption, people do not realize about their dependence on astronomy. They are not aware that so far, they are very close with something that they think as ridiculous obsession. Asserting it or not, people have expectation which is covered by their desperation. It has been improved by ancient people how they are very excited to use the astronomy for either as problem solving or guidance of their live.

HOW ASTRONOMY GIVES EXPECTATION TO PEOPLE

In Indonesia, especially in Sunda, Java, Lombok until Papua, when we talk about the astronomy and human’s dependence, we will find much astronomy’s contribution in this life. It can be observed from their ability to give name to the constellation. In common, people usually use the constellation name from Greek mythology. On the other hand, ancient people in Indonesia had been able to give their own term based on their own imagination for each constellation, for example Waluku for Orion, Wuluh refers to Pleiades, Kalapa Doyong for Scorpio, and Sapi Gumarang as a name for Taurus. It is obviously give us clear view how people actually need the astronomy in their live.

First, Astronomy as the directional guidance. Talking about the navigation, we will see how worthy astronomy for people. Once they get lost on the ocean or in other unfamiliar places without being able to identify the direction, the solution is by seeing the stars constellation. They will not be able to flee from unidentified place without any knowledge about stars constellation.



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The sailors have to know certain constellations that point certain direction and the period the constellations emerge. Indeed, it requires the understanding about sky map. Just visualize when the sailors get a lost in unfamiliar sea or ocean and they do not have any compass. The way out is by looking at stars constellation. They should look for the Crux as Southern Cross, or Cygnus as Northern Cross to be able to determine the direction, because each direction will be shown by one constellation. Unfortunately, although the sky is bright and full of stars, they will not able to recognize any constellation if they never know about the stars formation before and how it works. For instance, in order to determine where is south direction, they must know about Crux, and able to work with it. How they realize about the Gamma Crux and Alpha Crux, so that they can pull draw a straight line from Gamma Crux to Alpha Crux and lengthen it about 4.5 times. This line will point to the South Pole. Any kind information about astronomy is needed. By using their sufficient knowledge about astronomy, at least about stars constellation, people will be able to travel in ocean or around the world. It will help them much to escape from unfamiliar place and find out the way to continue their journey. Just see, that actually their understanding about astronomy will make them out from trouble. People who know about astronomy or constellation and sky map will put their expectation upon it to solve that such problem.

Second, Astronomy as the signal of a planting gives many advantages in agriculture. Ancient people usually used the knowledge about astronomy to determine the proper time to plant the rice and other crops. Soepardiono Sobirin, an expert of forestry and environment, in his presentation in Astroarcheology conference in Boscha Observatory, stated that ancient people in Indonesia had been able to determine to right time for their agriculture activity and for irrigation. Thus, they could avoid the flood and dryness. One of the examples, when Lintang Waluku (Orion) appears, people believe that it is a time to plan the rice since it is a signal that the rainy season will come and the water for irrigating will available. Nowadays, though people are modern and they use calendar for their agriculture activities, it can be said as the very advancement. Calendar can be change, but the micro and macro cosmos cycle always exactly appropriate. As the example, durian will be bear fruit when Sapi Gumarang (Taurus) in the east at dawn, and the DUKU will be in luxuriant at the time Gubuk Penceng (Crux) emerges in the east at twilight. Sobirin in that conference propose the idea to built city forest that can solve the drainage problem and cut back the effect of pollution. This idea can be realized by planting Flamboyan. It will blossom when Crux is in east at dawn. Of course, this kind of knowledge will help people in signaling the proper time to solve problems like pollution, agriculture or drainage in our country. Moreover, it will help very much for solving global warming in this world.

Third, the astronomy also be as medium of veneration for people in past time. Bambang Budi Utomo, an archeologist from Indonesia, explained that this kind of activity could be analyzed from the Zodiac Vase “MINTAQLBURUJ” that is used by Tenggerese People who live in Bromo Mountain slope for their sacred ceremony. In addition, the temples in Indonesia also have close interrelatedness with astronomy. Borobudur, the famous temple in Indonesia, based on prediction was built as the indicator that Polaris was invisible from Java and Polaris just is seen from horizon.

Fourth, the other contribution of astronomy for people is as the signal of changing season. In Indonesia, the altering season is not really significant since Indonesian has only two seasons, dry and rainy. If talking about Indonesia, the position of astronomy significantly if it relates to season and agricultural as the writer explained above.



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The Orion or Rasi Waluku is the signal of rainy season. But for other place that has more than two seasons, of course it needs a kind of preparation in order to face the next season. Here, the astronomy actually takes a big involvement. For example, before the winter comes, usually Capella appears almost exactly above our heads. When people see this constellation, they will prepare everything in order to commemorate the winter season. Afterwards, the Arcturus follows it as the hint of spring. When Vega emerges in, it means that the summer will come, because Vega with Altair (+0.8) from Aquila and Deneb (+1.2) from Cygnus constellation form the Summer Triangle. By recognizing such kind of stars constellation, people will be able to avoid some problems like provide more coal before the winter or build cabin for them in order to save from frozen. Stars seem offering a wish for people in special times.

Fifth, in sea world, astronomy is also used to recognize the appropriate time when anglers look for fish. It relates to the moon activity. When the moon is full, its gravitation will make the high tide in our sea, and of course, people will think that it is danger for them to look for fish. They most likely sailing when the sea has low tide. In full moon time, people in seashore assume it as the bad time because they cannot sell fish or other sea yield since they do not get much. If people want to think more to use the high tide event, it will also give them many advantages. Think about it, when the water comes up, it will recover the beach wider than usual. We can abuse the coral around the beach and build such kind of tourism

Sixth, the development of astronomy makes people hope for the new life. Just imagine that our own solar system consists of 9 planets. Our solar system is just a part of our galaxy “Milky Way” with billion stars and each star as the center of solar system. How many galaxies in this universe? How many possibilities have another life in other place? Maybe in a corner of this space? With the enormous people in this earth, people feel so worried. How will they live with this kind of crowd ness? We know that nowadays, it is difficult to find out the space. The dilapidation of forests as Oxygen producers have been replaced by the factories that produce the acid and Carbon dioxide. Now, as the result, the global warming gives us more problems. Obviously, what astronomy brings arise people optimism. We know that universe has no spatial boundary, but nevertheless maybe spatial finite. This theory means that actually we still have possibility to find another place in this universe that appropriate for us to live in. NASA Spacecraft Detects Buried Glaciers on Mars. Doesn't it mean something? Though people do not know what it is exactly, but they begin to believe any possibility about another living hood.

Those astronomy's contribution have risen up people excitement to learn and study more about astronomy, since they know that there is great expectation in it. What the writer elucidated above just a little contribution of astronomy. Of course, we all here need to explore deeper to know what the other expectation and promising hope between those magnificent universe and outer space.



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CURRICULUM VITAE

This essay is written by MIFTACHUL HASANA, an Indonesian citizen who has a dream to continue her study in Astronomy. But her wish never comes true. She finds astronomy as her second world, where she can express her feeling among the stars above. Her hobby is observing the starry night. Since of her unfortunate, she tries to always keep contact with some young astronomers in Indonesia in order to study and study about astronomy.

The writer's data

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