

Annular Solar Eclipse Expedition And Education Session in Lampung

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Abstract. The first solar eclipse in the year 2009 was started with the Annular Solar Eclipse on January 26th, 2009. This particular eclipse was visible from an area that covers the Indian Ocean and western Indonesia. The cities of Kotabumi and Telukbetung experienced more than six minutes of annularity. Langitselatan team, made an expedition to Bandar Lampung to observe the eclipse. In Lampung, aside from the observation session, langitselatan also held an astronomy education class to educate people on safe eclipse observation and building astronomy awareness for students, teachers and public in Lampung at Lampung University.

Langitselatan also visited a small village named Karang Rejo District to teach and to share astronomy for the people there. In this paper, we will give a report about the expedition.

Keywords. langitselatan, annular, solar, eclipse, Lampung

1. Introduction

On January 26th, 2009, the first solar eclipse of 2009 occurs and the annular eclipse was visible from a wide track that traverses the Indian Ocean and western Indonesia. A partial eclipse also seen in larger path of the Moon's penumbral shadow, which includes the southern third of Africa, Madagascar, Australia except Tasmania, southeast India, Southeast Asia and Indonesia. This annular solar eclipse is part of Solar Eclipses of Saros 131. All Solar Eclipses of Saros 131 occur at the Moons ascending node and the Moon moves southward with each eclipse.

January 26th Greatest eclipse occur with annular duration 7 minutes 54 seconds, above the flat horizon formed by the open ocean. The central track continues northeast where it finally encounters land in the form of the Cocos Islands and onward to southern Sumatra and western Java. One of the best place to observe the eclipse is in Tanjung Karang, Teluk Betung, Lampung, Indonesia, since the annular duration in this location is 6 minutes 18 second.

To get the longest period of annular solar eclipse as well as to share information on Solar Eclipse to public, langitselatan team choose Lampung as the location for our observation session. In Lampung, we cooperate with Physics students in Lampung University to have a workshops on how to do safe solar eclipse observation. We also visited LBPP LIA and a small village named Karang Rejo District to share and have an astronomy session with the children of the village.



Figure 1. Annular Solar Eclipse Introduction in LBPP LIA

2. Purposes

The main goal of the expedition is conducting annular solar eclipse observation in Lampung. Besides the observation we introduced what solar eclipse is to Lampung University (UNILA) students and the public who had interest and shared to them how to do safe observation.

Annular solar eclipse is a rare phenomenon so it was a great opportunities for us to bring astronomy for public. We give them a short workshops on how to build a tool for safe sun observation and introduction to astronomy. Aside of that, we also give a basic knowledge of telescope. The purposes of all these activities are to build astronomy awareness among students and public.

3. Educational Sessions

During Annular Solar Eclipse in Lampung, langitselatan conduct several astronomy session. Started on January 23rd, 2009, we hold an astronomy session in LBPP LIA, a language course institution in Lampung. The class was attended by 80 students. On January 26th, langitselatan cooperate with Lampung University conduct a paralel workshop and astronomy session in Lampung University. In this session, we invited students and their science teachers from senior high school nearby to join solar eclipse introduction and observation in Lampung University.

In solar eclipse introduction we divided the participants into three paralel classes, i.e class for teacher, class for UNILA students, and class for high school students. We expected from this division that they could absorbed as much as they can the materials given by the tutor.

At the same time, langitselatan also conduct an astronomy session in a remote area at Trimukti Village, Karang Redjo District, 2,5 hours by car from Lampung University. It is a small village where children is very enthusiast on astronomy subject, but they have very limited resources for astronomy and almost all subjects of science and social



Figure 2. Astronomy session in Lampung University

science. Education for the children here still something expensive and they have limited transportation to reach school. The school nearby is located 30 minutes away by car.

Children of Trimukti Village, accompanied by their parents, were introduced to solar system and solar eclipse using simple model of solar system planetarium and solar filter. Story-telling was applied here in order to draw their interest in heavenly bodies. A telescope session also raise villagers interest. The children very exciting look through You Are Galileo Telescope. Using this simple 4 cm telescope they look to faraway object. The observation session was concluded with safe solar-observation using solar filter.

4. Annular Solar Eclipse Observation Sessions

After conducting astronomy education session, all langitselatan team gathered with UNILA students and public to observe Annular Eclipse in UNILA football field. During the eclipse, high altitude clouds/haze was present all the time and low altitude clouds came and go. One time, we were lucky to view (and photograph) the eclipse without using any filters due to thick clouds. We also had some moments when the sun totally disappeared behind the clouds. A report from Trimukti Villagers, they could watch the Annular Solar Eclipse using the solar filter we left.

We could observe almost all contact during Annular Solar Eclipse, except the last contact. After the eclipse we planned to conduct a star party but unfortunately the rain fall and we changed the session with telescope training for students.

5. Results and Conclusions

langitselatan Annular Solar Eclipse expedition went well and gained a success photographed by our crew. The education session in 3 places gave us chance to share astronomy for public. Although it was only for a day, but this could give them an insight on astronomy and build astronomy awareness upon them.



Figure 3. Solar System session in Trimukti Village



Figure 4. Sun Observation using solar filter

Months after the events, a student from UNILA decided to have a short visit in Bosscha Observatory to learn more about Sun. Another report from our community member in Lampung, she build an astronomy community with her students.

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Figure 5. Annular Solar Eclipse photographed by F.M.Simatupang



Figure 6. Annular Solar Eclipse observation in UNILA football field

References

NASA Eclipse Website 2009, <http://eclipse.gsfc.nasa.gov/OH/OH2009.html>



Figure 7. langitselatan Annular Solar Eclipse january 26th, 2009 observer