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Opinion
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Relation Sunshine Activities with Weather/Climatic Variability and Case Study Its'Relation with Impact to the Environment During 1950 - 2018 Over Indonesia Maritime Continent

Paulus Agus Winarso*

State College Meteorology Climatology & Geophysics of Indonesia, Indonesia

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***Corresponding author:** Paulus Agus Winarso, State College Meteorology Climatology & Geophysics of Indonesia, Indonesia, Email: pawinarso@gmail.com

Opinion

Sunshine could the main source of the energy from the galaxy where the earth could be one of the planets to circulate annually with the sun as the center as part of the revolution of the earth. Measuring the sun's activities would be applied from the number of solar flares and the sunspot based upon solar cycle which has average period per cycle to be 11.5 years. Based upon the observation, it has been done from the previous observation by the National Aeronautics Space Administration to be the Agency of the United States of America responsible for the civilian space program as well as aeronautics and aerospace since the beginning observation in the 18 century. There are 24 solar cycles with the main indicator from the total number of the sunspot on certain basis ranging daily, monthly, yearly up to cycle. Each solar cycle will be represented with the record of the sunspot number each month for a consecutive period of the solar cycle, for the understanding of the solar cycle or sunspot cycle would be represented inFigure 1 as follows,

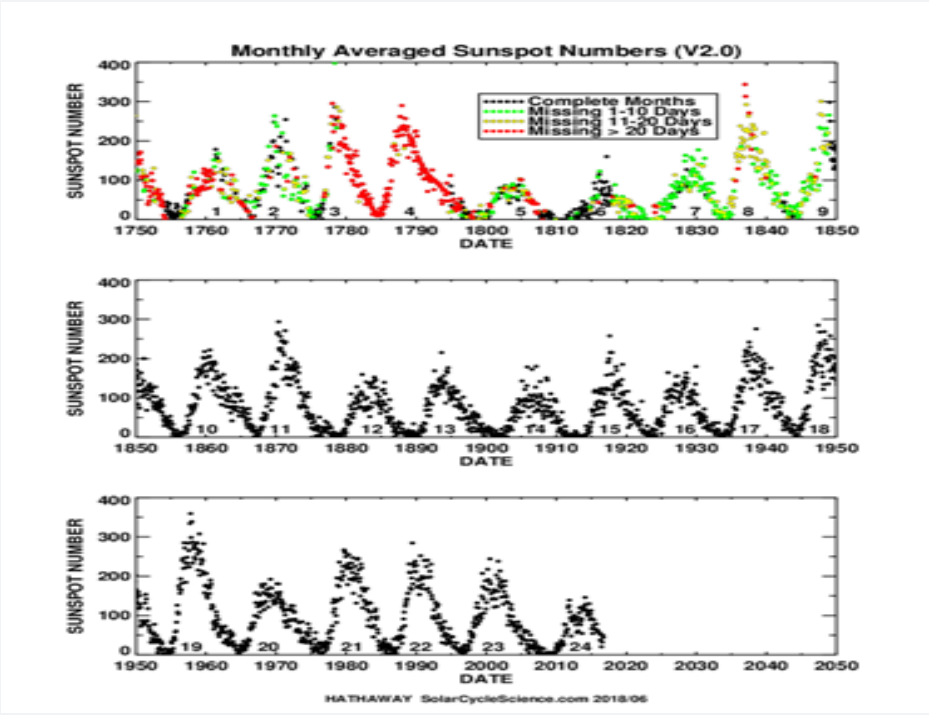

Figure 1: Description Solar Cycle or Sunspot cycle (http://solarcyclescience.com/solarcycle.html).

Based from the Figure 1, it can be stated that Solar Cycle has been changed and varied with respect with the time since the beginning (solar cycle1 on the period 1760-1772) up to the present (solar cycle 24 in the current period 2010-present/2018). From almost the three decades, there is variability of the solar cycle with solar cycle number 1 in the period 1750-1962 and the last solar cycle of number 24 in the period 2010 up to present time in the middle 2018. These solar cycles would represent the solar activity such that almost from the three centuries showed the variability of the sunspots number from each solar cycles.

As the sunspots would release of the photon energy of the sun as part of the sun's radiation, increasing sunspots number (up to 100 sunspots/month) would have relation with increasing of the sun's radiation that this radiation spread out to the universe as well as received by the earth as part warming episode of the.

Reversal condition would be during fewer sunspots number (less of the 100 sunspots/month), the cooling episode of the earth would realize such as in the current solar activities for the solar cycle no. 24 (2010- presently of mid-2018). Looking from the beginning period record of the solar activities in the year 1745 up to the current time in the middle 2018, there is variability of the sunspot number part of the solar activities. When the total sunspots number recorded to be less 100 sunspots on the monthly basis, it could be so called inactive condition of the solar activities and reversal for sunspots number on the monthly basis up 100 sunspots with the active condition. Based upon 24 solar cycles, there would be both inactive and active condition of the solar activities. Where from 24 solar cycles generally characterize inactive condition during beginning up to mid from nineteenth, twentieth and it could be twenty-first century (current century of the period 2001-2018) and the end period of eighteenth, nineteenth and twentieth centuries with the active condition of the solar activities. Another word from almost the three centuries there would be variability with the inactive condition of the solar activities in the beginning century and the active condition of the solar activities in the end century.

From previous natural condition especially in the lower atmosphere of the earth where the weather and climatic condition have been created since the beginning of the earth up to the present time. Weather & Climate over the lower atmosphere would have relation with solar radiation where unequal solar radiation received by earth's surface. Based upon the weather & climate variability over the earth's surface, these variabilities have been continued since the beginning of the earth up to present time with ice ages, normal ages and warming ages at consecutive time such that there is no record of the weather and climatic condition. After the meteorological observation was introduced somewhere around the end eighteen- beginning nineteen century with proper data especially rainfall data to be recorded somewhere beyond the middle nineteen century. They improved with more modern and sophisticated facilities for meteorological observation and record somewhere middle of the twenty century such that more proper meteorology data could be useful for further study. Another side, the changing of the environment might start approaching, in the end, twenty century with the reality of the increasing of the human population to cause the changing of the environment and other natural factors such as land cover change, raising pollution and others. Such that climatic changes convention and ratification would be considered by the global community such as United Organization with additional situation and condition during the end of the twenty century with global warming. Because at least period 1981-2000 the warming episode was active with frequent warming episode over the wide area (as the global scale)over the Tropical Pacific Ocean with the so-called " El Nino". These global phenomena raised to coincide with global warming issue at the end of twenty century with increasing sea surface temperature over the equatorial area over the middle-Eastern Pacific Ocean. These phenomena might cause the global impact especially in on Asia and Africa continents with drought and increasing surface temperatures more frequent and longer period than normal. Where in Indonesia Maritime Continent area would occur more frequent drought condition with supporting high surface temperature during dry season, the wildfires created in the first time in El Nino episode 1982/83 over wildland and forestry areas.These disaster phenomena became frequent to occur and high surface temperature and longer episode of occurrence of the longest El Nino episode 1990-1994 and the strong in an intensity of El Nino episode 1997/98(high anomaly sea surface temperatures over the Pacific Ocean). These El Nino episodes developed more frequent and increasing its intensity to destroy agricultural harvest and damaging wildland and forestry with wildfires. The wildfires would cause enlarging the haze or "smog" (smoke and fog) in Indonesia and adjoining area such that introducing "Transboundary Haze Pollution with the longest period and the widest area in 1997. So that the Indonesia government had been declared the Wildland and Forest Fires and Transboundary Haze in 1997. And in the world at last 1997 raised the issue of the global economic crises with this disaster to have the contribution in the global economic crises.

From the solar cycle number 19 up to 23, the maximum sunspot number every solar cycle reaches more than 100 sunspots/month. It could be mentioned that warming episodes had been created with the possibility there would store solar radiation in term of heat energy by the earth surface.These storage energieswould be used coincide with increasing human population that it might start somewhere around 1981 and then they support the development of the longest warming episode over earth surface with El Nino episode 1990-1994. And starting up to present time in the current year of the middle 2018 there would create cooling episode such that cooling episode in term of the La Nina episode more frequent and longer than during warming episode on the period 198-2010. This cooling episode became clear starting beginning the year 2018 with extending

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the winter season over the Northern hemisphere with frequent snowstorm over Northern hemisphere until March 2018. Now, in the beginning July 2018 some area especially in the southern area of Indonesia area were lower minimum surface temperature than usual, it could be from the minimum number of the sunspots over solar's surface.Based upon those explanations, they can be summarized that variability of the solar cycles from the variability of the sunspots number to encourage the weather and climate variability coincide with increasing population to change to the environment with creating the warming and cooling episodes of the lower atmosphere. Where warming episode could contribute to the development of the economic crises in year last 1997 and cooling episode could contribute wet and cooled the environment such as in the current year 2018.

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