

Philippine summer monsoon onset -Intensive observation PALAU2013 and data rescue for 109 years-

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The Philippines is an archipelago country which is located in the western side of tropical western Pacific. There are distinct summer monsoon in the western side and winter monsoon in the eastern side of the country. This study focuses on the onset of summer monsoon in the western Philippines during May to July. Intensive observation of Pacific Area Long-term Atmospheric observation for Understanding of climate change (PALAU2013) was conducted by launching additional upper-air observation in Cebu, Laoag, and Puerto Princesa during May to August 2013. We captured the onset of summer monsoon in June 10, 2013. Low level strong southwesterly wind associated with moistening air was penetrated in the central Philippines during the onset. We compared the behavior of Philippines summer monsoon onset when there was no continuous upper-air observation in reanalysis data. The recovery of historical station back to 1903 called 'Data rescue' was performed using Monthly Bulletins of Philippine Weather Bureau from 1903 to 1940. We created rainfall dataset in the Philippines from 1903 to 2012 by connecting recovered data and PAGASA station data. Summer monsoon onset was defined by using 8 station rainfall data in the western Philippines. The onset date becomes earlier after 1990s and tends to occur in middle May. Early onsets were also seen in early 20th century.

Keywords: Philippines, monsoon onset, data rescue, Asian summer monsoon