Global atmospheric reanalysis data is indispensable for meteorology. Japan Meteorological Agency (JMA) is now creating a new state-of-the-art reanalysis data JRA-55 (Ebita et al., 2011) with a period after the mid-20th century which will be completed during 2013. The biggest improvement from the previous version JRA-25 is data assimilation system, four-dimensional variational data assimilation (4D-Var) with Variational Bias Correction (VarBC) is used in JRA-55 which enables not only to directly handle observed physical elements such as radiation by satellite but also to ingest non-scheduled observation data. Accordingly, we are developing an extra reanalysis data AMY-reanalysis for the years 2008-2010 by putting a special observation data collected by AMY (Asian Monsoon Years) project into the reanalysis system and the observation data used in JRA-55. In this presentation, the impact of AMY observation on making atmospheric reanalysis data will be presented.