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# Anthropocene, Vernal Point, Solar cycle and el Niño 2015-2016

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The time scale is based on internationally recognized formal chronostratigraphical/geochronological subdivisions of time: The Phanerozoic Eonathem/Eon; the Cenozoic Erathem/Era; the Quaternary System/Period; the Pleistocene and Holocene Series/Epoch. The Quaternary is divided into: (1) The Pleistocene characterized by cycles of glaciations (intervals between 40,000 and 100,000 years). (2) The Holocene as an interglacial period that began about 12,000 years ago. It is believed that the Milankovitch cycles (eccentricity, axial tilt and the precession of the equinoxes) were responsible for the glacial and interglacial Holocene period.[1] The magnetostratigraphic units have been widely used for global correlations in the Quaternary. The gravitational influence of the Sun and Moon on the equatorial bulges of the mantle of the rotating Earth causes the precession of the Earth. The retrograde motion of the vernal point through the zodiacal band is 26,000 years. The Vernal point passes through each constellation in an average of 2000 years and this period of time was correlated to Bond events that are North Atlantic climate fluctuations occurring every ≈1,470 ± 500 years throughout the Holocene. The vernal point retrogrades one precessional degree approximately in 72 years (Gleissberg-cycle [2]) and approximately enters into the Aquarius constellation on March 20, 1940. On Earth this entry was verify through: a) stability of the magnetic equator in the south central zone of Peru and in the north zone of Bolivia, b) the greater intensity of equatorial electrojet (EEJ) in Peru and Bolivia since 1940.

With the completion of the Holocene and the beginning of the Anthropocene (widely popularized by Paul Crutzen [3]) the date of March 20, 1940 was proposed as the beginning of the Anthropocene. The date proposed was correlated to the work presented in the IUGG (Italy 2007) with the title “Cusco base meridian for the study of geophysical data”; Cusco was proposed as a prime meridian that was based on: (1) the new prime meridian (72º W == 0º) was parallel to the Andes and its projection the meridian (108° E == 180º) intersects the Tibetan plate (Asia). (2) On Earth these two areas present the greatest thickness of the crust with an average depth of 70 kilometers. The aim was to synchronize the Earth sciences phenomena (e.g. geology, geophysics, etc.). During the Holocene the vernal point retrograde 12,000 years and enters into the Aquarius constellation on March 20, 1940. That date was proposed as the beginning of the Anthropocene because on that date proposed the vernal point passes from the Pisces constellation to Aquarius constellation, besides that event around the date proposed, the Second World War begun. This event was a global change in the Earth. The base of the Anthropocene was defined by the passage of the vernal point from the Pisces Constellation to the Aquarius constellation.

The first degree of the Anthropocene is in the period of March 20, 2012 and is verified by the phenomenon of the El Niño 2015-2016 that together with 1997-1998, 1982-1983 is among the strongest since 1940. Likewise synchronized with the solar variability is currently in Cycle 24, which began in 2008 - 2019 approximately, is the weakest cycle in 60-90 years, and is known as the Gleissberg Cycle.

*References:*

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[3] Will Steffen et al. (2011) Phil. Trans. R. Soc. A 369: 842-867