The latest changes of the global ozone layer

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By analyzing the data of the satellite-borne TOMS instrument, obtained in the period 1978-2002, it is established that 30-50 % of the long-term total ozone changes in the middle and high latitudes of the Northern Hemisphere can be accounted for by changes in the index of the Artic (or North Atlantic) Oscillation. Using the longest total ozone data set since 1926 (Arosa, Switzerland) as an example, it is shown that the quantitative characteristics of solar activity and the Arctic (or North Atlantic) Oscillation with the ozone layer in different time periods remain unchanged. Based on the investigations of the time variation of total ozone in different latitudinal belts, it is inferred that in the equatorial and middle latitudes of both hemispheres total ozone minimum has been passed, and in the nearest future, the beginning of the ozone layer restoration in high latitudes must also be expected. This conclusion is confirmed by the total ozone behavior in the period of the springtime Antarctic ozone anomaly in the last three years as well as in the Arctic during the last decade. As for most latitudes, this minimum occurred prior to the observation of the maximum content in the stratosphere of the so-called “ozone-depleting” substances (chlorofluorocarbons), it is concluded that long-term ozone layer variations are primarily associated with global climatic changes.