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The Cause and Prevention of Major Earthquakes in the World

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Abstract: On February 6, 2023, a series of severe earthquakes occurred in eastern Turkey and neighboring areas of Syria. It was the largest earthquake in the world in more than a year, and the largest earthquake in the history of Turkey. Living under the fear of earthquakes, the people in Turkey and other earthquake zones have hoped again and again to change their fate, but they have to resign themselves to fate. Thus, the author analyzed the causes of large earthquakes such as Turkey earthquake, and found that some of the world's potential seismic zones have been eroded by sea water or river water for a long time to create a series of surface faults. When the moon gets close to these faults, it will have a huge gravitational pull on them, and even cause the fault to move, resulting in strong earthquakes. Especially in some seismic zones, earthquakes are occurring more and more frequently and their intensity is getting bigger and bigger. The main reason is that the opening of the Arctic shipping route and the exploration and exploitation of oil and gas have caused the melting of the Arctic ice sheet and the loss of glaciers, which has led to the weakening of the Arctic vortex and the reduction of the compression ability of the polar vortices to the clouds, thus slowing down the rotation of the Earth and thus the revolution of the moon. So the moon gradually moves in a spiral toward the Earth; as the moon orbit close to the Earth, the moon's gravity on the surface faults will gradually strengthen, so it is easy to cause the surface fault dislocations, resulting in frequent earthquakes or strong earthquakes. So the author puts forward some measures to prevent frequent and strong earthquakes.

Key words: Major earthquakes, cause, prevention, fault, the moon.

1. Introduction

On February 6, 2023, a series of severe earthquakes occurred in eastern Turkey and neighboring areas of Syria. The first strong earthquake occurred at 9:17 on February 6, 2023, Beijing time (4:17 on February 6, local time). The earthquake measured 7.8 on the Richter scale, with the epicenter at 37.15 °north latitude and 36.15 ° east longitude. The second strong earthquake occurred at 18:24 Beijing time on February 6, 2023 (13:24 local time on February 6) with a magnitude of 7.5 on the Richter scale. The epicenter was located at 38 ° north latitude and 37.15 ° east longitude, as shown in Fig. 1 below.

The February 6, 2023 earthquake in Turkey was the largest earthquake in the world in more than a year, and the largest earthquake in the history of Turkey. It was very destructive, causing 50,000 deaths, more than 20,000 buildings collapsed, and 13.5 million people were directly affected [1]. Turkey, a country on the Anatolian fault line, has been hit by many powerful earthquakes over the past 100 years. Living under the fear of earthquakes, the Turkish people have hoped again and again to change their fate, but they have to resign themselves to fate.

2. The Causes of Earthquakes

In fact, Turks, like others in earthquake zones, need not be so pessimistic. Because it depends on man, man can conquer nature. As long as people understand the causes of strong earthquakes, they can prevent earthquakes or reduce their frequency and intensity. First, let us take Turkey earthquake as an example to illustrate the causes of earthquakes. As Turkey is surrounded by sea on three sides, the Black Sea in the north, the Aegean Sea and the Sea of Marmara in the

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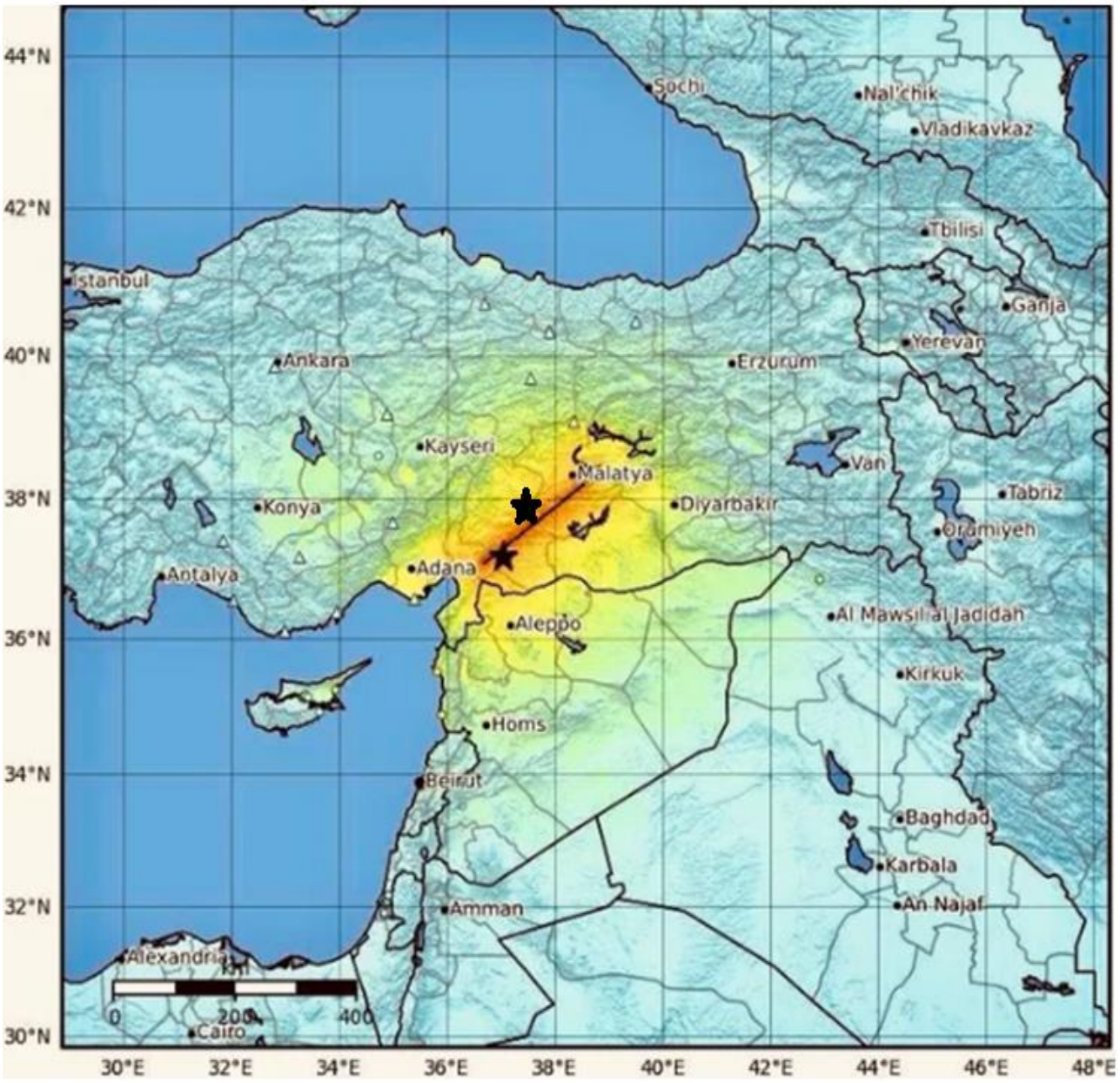

Fig. 1 Location of the Turkey double earthquakes on February 6, 2023.

west, and the Mediterranean Sea in the south [2], the coastline is 7,200 km long, as shown in Fig. 2. Due to the long-term erosion of the sea around Turkey, two major fault zones have appeared in Turkey: the North Anatolian fault zone [3] and the East Anatolian fault zone [4]. Turkey is called the Land of Stars and Moons because of its proximity to the Arctic Circle, and the moon often passes over Turkey when it goes north or south from the North Pole. When the Anatolian fault zone is seriously eroded by sea water, if the moon over the transit fault zone is close to the fault zone, it will generate huge gravity on the fault zone, which is easy to cause the sudden dislocation of underground faults, resulting in earthquakes. For example, this is how the massive earthquake in Turkey occurred on February 6, 2023.

In addition, on September 12, 2016, a team of earthquake physics researchers from the University of Tokyo published a report in the online edition of the *British Journal Nature Geoscience*, suggesting that

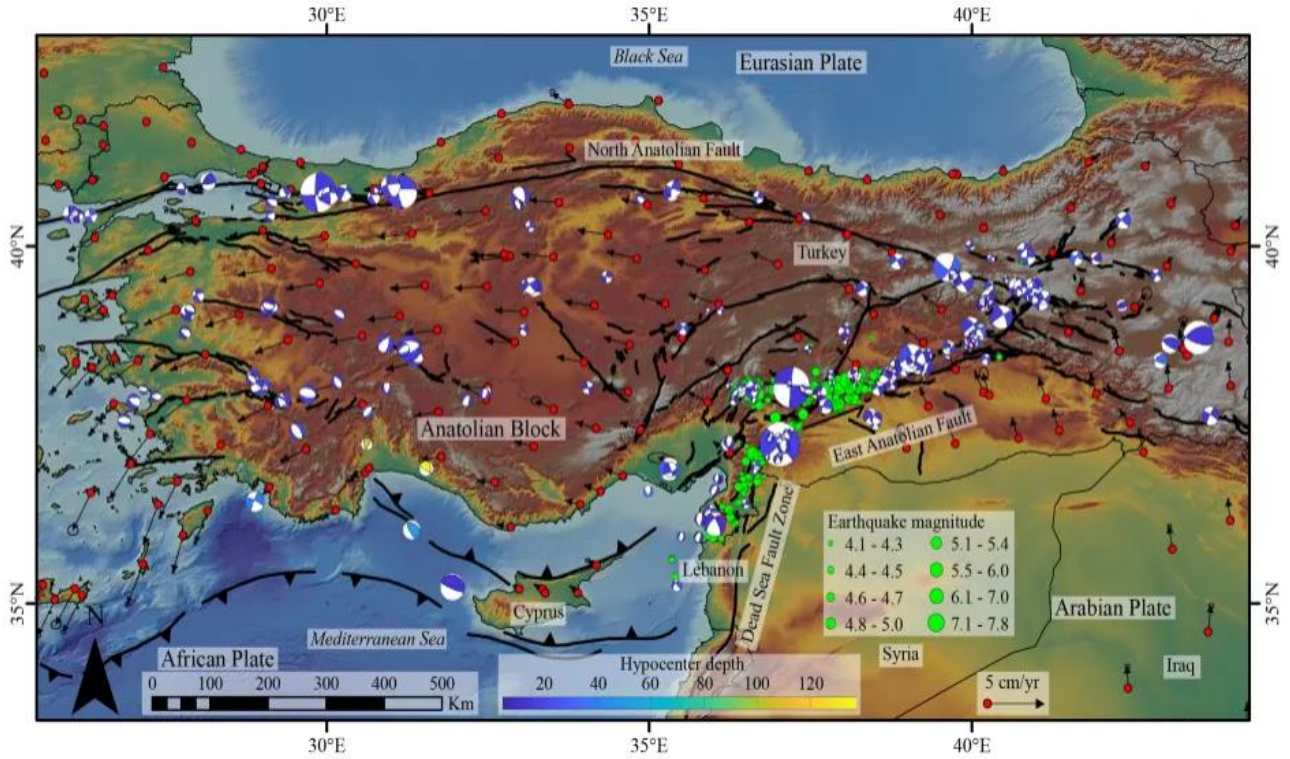

Fig. 2 Tectonic setting of Turkey.

large earthquakes may be related to the moon's gravity. They compared the tides of earthquakes of magnitude 5.5 or greater that have occurred around the world over the past 20 years. It found that 10 of the 12 earthquakes with a magnitude of 8.2 or greater occurred around high water tides, when the moon's gravity was stronger. So their findings coincide with mine. In fact, I did not know about the Japanese research team's work until I came to the conclusion that "the moon's gravitational effect on underground faults can cause sudden dislocation of underground faults and lead to earthquakes". I only found out the team's work recently when I was searching for data on the world's major earthquakes, but the Japanese research team has not come up with an effective way to hold up the moon to prevent earthquakes.

3. The Reason Why Earthquakes Are Becoming More Frequent and More Violent around the World

Due to the opening of the Arctic shipping route and the exploration and exploitation of oil and gas, the Arctic ice sheet is melting a lot, glaciers are losing, permanent permafrost is falling, the polar basin edge is subsiding, and sea levels are also dropping dramatically in the Arctic [5], leading to the weakening of the Arctic vortices [6, 7], the reduction of the polar vortices' compression ability to cloud gas, and the deceleration of the Earth's rotation and thus the moon's revolution. So the moon is getting closer to the earth in a spiral. As the moon's orbit gets closer to the Earth, the moon's gravity on surface faults will gradually strengthen, so it is easy to cause the dislocation of surface faults, resulting in earthquakes. This is an important reason why earthquakes are becoming more frequent and more violent around the world.

4. Strategies to Prevent Global Earthquakes from Becoming More Frequent and More Violent

According to the previous analysis results on the causes of the frequent and violent global earthquakes, in order to prevent the global earthquakes from

becoming more frequent and violent [8], it is necessary to prevent the Arctic ice sheet from melting and glacier retreating, make the Arctic vortex recover its strong posture, enhance the polar vortex's compression ability on cloud gas, and accelerate the earth's rotation and drive the moon's revolution so that the moon rotates along the helix appropriate away from the Earth, to reduce the earthquake. Since the retreat of polar ice is caused by human activity in the polar regions, human behavior should be controlled to prevent global earthquakes from becoming frequent and violent. To this end, people should take the following measures:

(1) Strengthening the banks of the Arctic shipping route to prevent mass loss of glaciers;

(2) Filling areas where combustible ice and natural gas are mined with wood, stone and sand to stabilize the ice base and prevent the Arctic ice sheet from shrinking and permanent permafrost from melting;

(3) Reduce people's tourism, combustible ice and natural gas exploitation activities in the polar regions, so as to keep the polar glaciers from melting or retreating, the environmental temperature from rising but falling, and the polar basin edge from sinking.

5. Conclusions

Sudden changes in the global climate are making people increasingly uneasy. To respond effectively to global environmental change, we must grasp the pulse of global change, and then apply the right measures. For this reason, the author reanalyzed the various factors that caused the environmental sudden change, and found that the moon was gradually getting closer to the Earth due to the retreat of polar ice, which caused a series of environmental sudden change. In order to solve these problems, the author put forward the corresponding countermeasures [9].

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