

# A potential cause for global warming.

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## Abstract

It is extremely unlikely that global warming is caused by humans, rather it appears to have a gravitational origin.

## 1 The argument.

The argument really is very simple and follows from post Newtonian physics; the earth rotates around its axis which causes it to be a spheroid rather than a sphere. This means its intrinsic curvature gets higher around the equator and less curved at the poles. This in turn means that the magmatic pressures (and temperature) at the poles will be lower than near the equator which decreases the temperature near the poles relative to the equator. Given that the south pole rests on land, and since land is a worse conductor of heat than water is, it is more cold on the south pole than on the north pole neglecting atmospheric differences. There are several gravitational effects to be taken into account: (a) one could consider that magma has only motion due to rotation around the axis and internal degrees of freedom: in that case, heat flowing through the crust will lower the rotational speed. Consequently, the poles get hotter and the equator decrease its temperature (still under the condition of course that the temperature at the poles is lower than at the equator), an effect which is explained the reshaping of the earth towards a sphere which makes it more curved at the poles and less curved at the equator. Another effect, in this line of thought is that the heat capacity of water increases with temperature and is sufficiently low near the melting point; therefore, heat coming from the sun will warm up more water at the north pole which causes more ice to melt which increases polar temperature. This effect is counterbalanced by oceanic flows away from the poles (which further decreases the rotational speed of the earth assuming the angular momentum due to water to be constant and neglecting gravitational effects of oceans) and gravitational heating at the poles due to a slower rotation. A second line of thought (b) is to consider the magma as a heat bath at constant temperature over sufficiently long epochs due to other degrees of freedom, kinetical and internal. In that case, heat can flow through the crust, lowering the rotational speed a bit, but keeping the magma at a constant temperature. In that event, the melting of the north pole will slightly decrease gravitationally. Finally, melting of ice may be explained by increased temperature fluxes while lowering the rotational speed only slightly, this could

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be for example due to the equation of state of the magma (for example due to inhomogeneities) or due to heat coming from the earth core. The latter could emerge from chemical combustion or absorption of gravitational energy from the sun. Clearly, there is a point where the heating of the atmosphere will stop and some ice will always remain at the north pole; then the internal temperature of earth will slowly start to sink or the rotation will drop which causes earth to shrink gravitationally which might either make it rotate faster again or heat it up further. The effect will be that the oceans will cool down again and ice packs around the poles, this will speed up the rotation of the earth again a bit and a new cycle may begin. Since the primary force is gravitational and there is very little if nothing we can do about it, the end result will be a global cooling since the rotational energy is expected to die out eventually.

Hence, earth must have rotated faster in the past if one ignores supplementary gravitational as well as electromagnetic effects and it will rotate faster again in the future until the sun dies out and then everything cools down and earth disappears too.