

THE SUN RULES THE CLIMATE

There's No Danger of Global Sea Level Rise

by Nils-Axel Mörner

After 35 years of measuring sea levels worldwide, a Swedish expert reports that observational data seriously contradict the global warming scare scenario of rising sea levels.



Courtesy of Permanent Mission of the Republic of Maldives to the United Nations

The Maldives, a group of nearly 1,200 tiny islands in the Indian Ocean, have no signs of any ongoing sea level rise, and in the past have survived higher sea levels of at least +60 cm.

Aristotle presented the first global model: his model of the planetary system. It was totally wrong. Still, it ruled the world for 1,800 years until Copernicus presented an observationally based solution. To leave observational reality behind and to hang on to models and model predictions seems utterly dangerous and basically unscientific, but today we are still victims of many ruling models. The climate-modelling of the Intergovernmental Panel on Climate Change (IPCC) now totally rules the entire world. Still, it is based on very shaky ground including errors, falsifications, and misinterpretations. Sea level, for example, is by no means in a rising mode, and we can free the world from the condemnation of becoming flooded in the near future.

In about 40 years we will be in a new Solar Minimum and are hence likely to experience a new Little Ice Age. All this reveals the danger of ruling models, and calls for a return to basic observational facts. Scientific integrity has become vital.

In true natural science, we have always worked with a basic three-part scheme, viz. Observation, Interpretation, and Conclusion. In the case of more unified schema, we talk about a chain of Hypothesis, Theory, Paradigm. This is our scientific base; so it has been, and so it ought to be.

In recent years of computer modelling, a new and very dangerous scheme has entered the scientific scene, viz. Idea, Models, "the Truth."

Modelling is a powerful tool assisting us

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in our search for connections and interacting variables. It should never grow to become a subject in itself. There are bad cases of this in the past as well as at present (Mörner, 2006a, 2006b).

The First Model Ever Presented

In the Ionic settlement with the cities of Ephesos, Miletos, and Kos (today's southwest Turkey), a wonderful, free, natural philosophy flourished. In their understanding of the planetary system, the Sun was where it should be, that is, in the center (Figure 1), no questions about that. Especially with Aristotle, things changed. The Earth was placed in the center, and the Sun was proclaimed to move around the Earth. Aristotle presented a unified model—the first ever model of the planetary and celestial mechanics. Everything was explained by movements of the planetary and celestial bodies along 56 independent circular paths. No

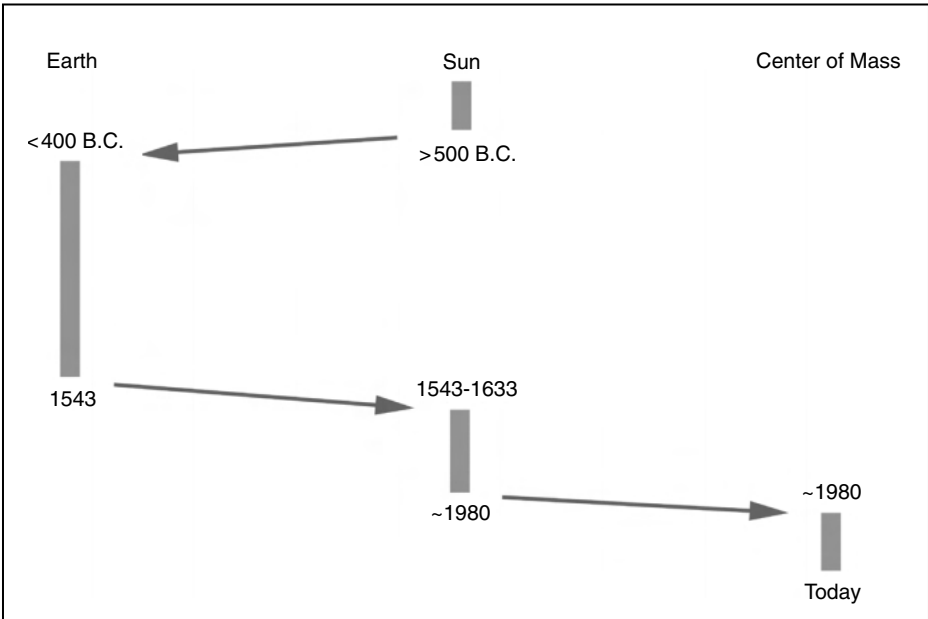


Figure 1
CHANGING VIEWS OF THE SOLAR SYSTEM

This represents the changing opinion of the center of our planetary system during 2,700 years. It took some 1,800 years before the ruling model of Aristotle could be dismissed by the observationally based results of Copernicus in 1543.

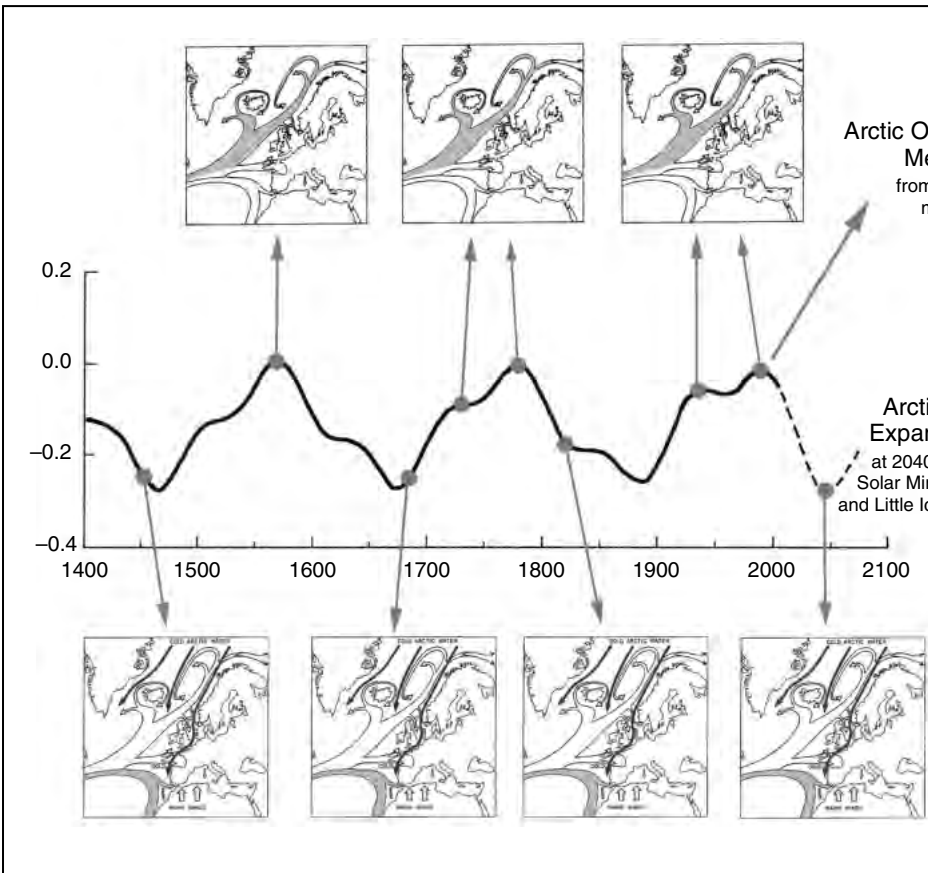


Figure 2
SOLAR CYCLE AND OBSERVED OCEAN CIRCULATION

A graph of the main solar cycle in the last 600 years with observed ocean circulation pattern at maxima (up arrows) and minima (down arrows), and the expected extension into the future (dotted line).

At solar minima, northwest Europe, the North Atlantic, and the Arctic have experienced cold phases known as Little Ice Ages. By 2040-2050, a new Solar Minimum is to be expected, and with it a new cold phase over the Arctic and northwest Europe.

Source: Mörner 2005a

objections were permitted to this masterly final solution, which was later updated by Ptolemy around 170 B.C.

It took about 1,800 years until reality caught up with the model illusion, and in 1543, Nicolaus Copernicus presented his outstanding observational facts proving that the Sun was in the center and the planets, including the Earth, were forced to circle around the Sun (Figure 1). Still, the Church refused to accept the truth. For this reason, Giordano Bruno was burned to death in 1600, and Galileo Galilei had to deny the facts in 1633.

The Global Warming Scenario

The IPCC's climate-modelling now totally rules the entire world, despite its errors. Sea level, for example, is by no means in a rising mode, as discussed below.

Climate is becoming increasingly warmer, we hear almost every day, in what has become known as Global Warming. The idea of the IPCC (2001) is that there is a linear relationship between CO₂ increase in the atmosphere and global temperature. The fact, however, is that temperature has constantly gone up and down. From 1850 to 1970, we see an almost linear relationship with Solar variability, not CO₂. For the last 30 years, our data sets are so contaminated by personal interpretations and personal choices that it is almost impossible to sort out the mess in reliable or unreliable data.

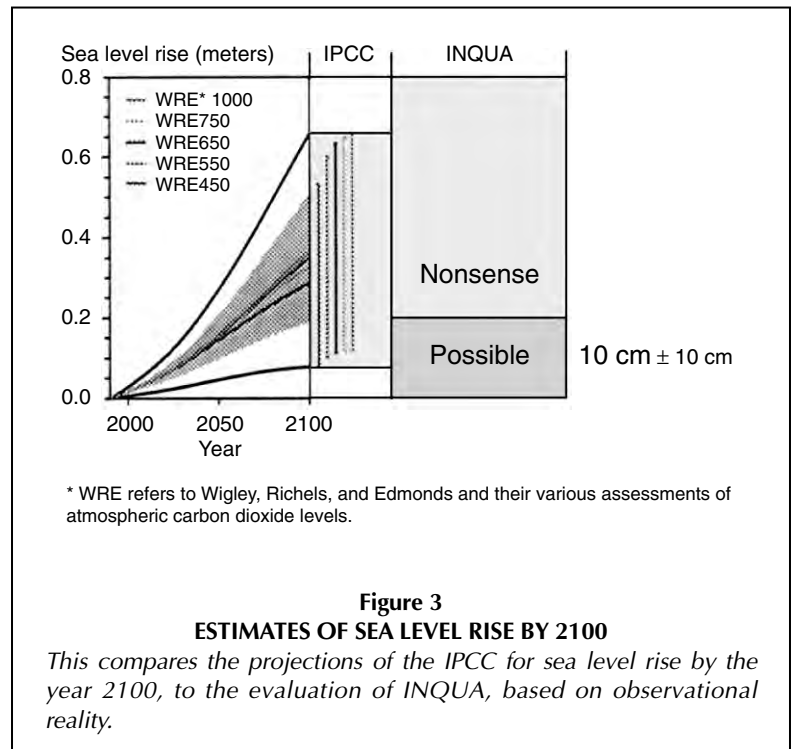
In the IPCC's scenario, we will face a rapidly increasing temperature in the near future, which will cause an opening of the Arctic Basin (ACIA 2004). Such a view implies that we neglect the Solar influence (Mörner 2005a). It is as if the IPCC and Kyoto Protocol enthusiasts want to switch off the Sun itself.

The fact is that the climatic changes during the last 600 years include cold periods around 1450, 1690, and 1815, which all correlate with periods of Solar Minima (the Spörer, Maunder, and Dalton Solar Minima). The driving cyclic solar forces can easily be extrapolated into the future (Figure 2). This would call for a new cold period or Little Ice Age to occur at around 2040-2050, in total contrast to the IPCC scenario. The solar influence is simply kept out of the Global Warming concept. It is high time to bring the Sun back into the center.

Prior to 5,000-6,000 years before the present, all sea level curves are dominated by a general rise in sea level in true glacial eustatic response to the melting of the continental ice caps. In the last 5,000 years, global mean sea level has been dominated by the redistribution of water masses over the globe. In the last 300 years, sea level has been oscillating close to the present level, with peak rates in the period 1890-1930 (Figure 3).

The Sea Level Nonsense

In the global warming concept, it has been constantly claimed that there will be a causal rise in sea level: a rise that is allegedly already in the accelerating mode, which in the near



future will cause extensive and disastrous flooding of low-lying coastal areas and islands. Is this fact or fiction? What lies behind this idea? And, especially, what do the true international sea level specialists think? (INQUA 2000; Mörner 2004a, 2005a)

The recording and understanding of past changes in sea level, and its relation to other variables (climate, glacial volume, potential gravity variations, rotational changes, ocean current variability, evaporation/precipitation changes, and so on.) are the keys to sound estimates of future changes in sea level (Mörner 2004a). The international organizations hosting the true specialists on sea level changes are to be found with the International Union for Quaternary Research (INQUA) commission on sea level changes, and the International Geoscience Program (IGCP) special projects on sea level changes. When I was president of the INQUA Commission on Sea Level Changes and Coastal Evolution, 1999-2003, we paid special attention just to this question; that is, the proposed rise in sea level and its relation to observational reality. We discussed the issue at five international meetings and by web-networking (INQUA 2000). Our best estimate for the next century was +10 cm ±10 cm (INQUA, 2000, Mörner 2004a), later revised by myself to +5cm ±15 cm (Mörner 2004a, 2005a, 2005b).

It is true that sea level rose in the order of 10-11 cm from 1850 to 1940 as a function of solar variability and related changes in global temperature and glacial volume. From 1940 to 1970, it stopped rising, and perhaps even fell a little. In the last 10-15 years, we see no true signs of any rise and, especially, no signs of any accelerating rise (as claimed by the IPCC), only a variability around zero (Mörner, 2004a, 2005b).

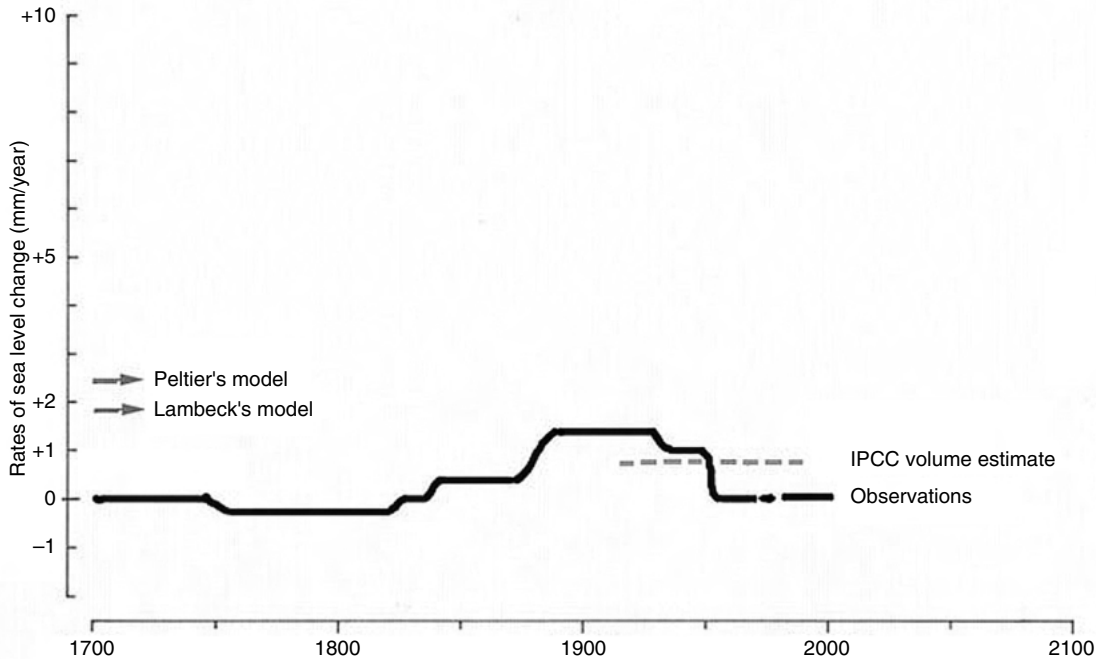


Figure 4
SEA LEVEL CHANGES 1700-2100

These are observed sea level changes for the past 300 years, and estimated changes by year 2100.

Source: Mörner 2004a

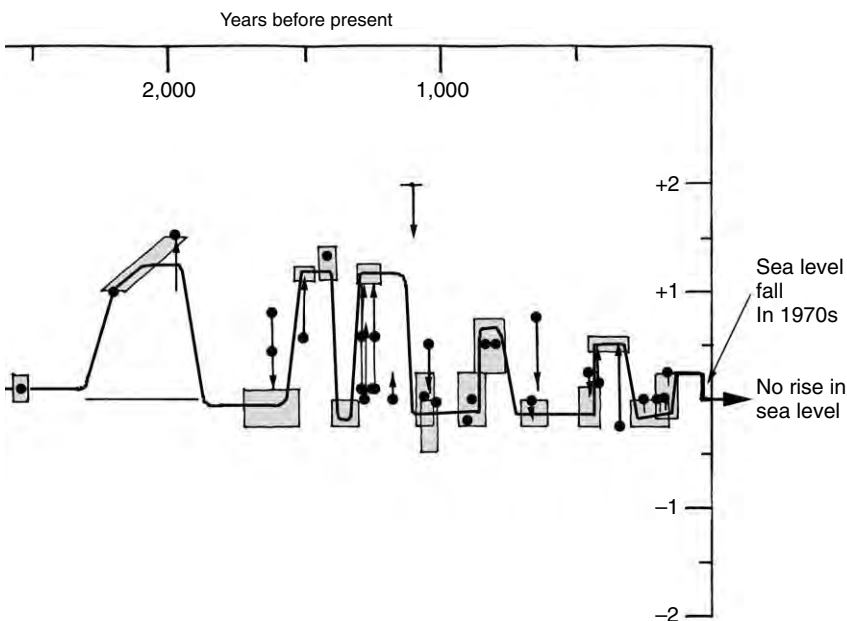


Figure 5
SEA LEVEL RECORD FOR THE MALDIVES (600 B.C. to present)

This sea level record of the past 2,600 years from the Maldives shows a significant sea level fall in the 1970s and a lack of signs of any ongoing rise.

Source: Mörner 2007

This is illustrated in Figure 4.

From 2000, we have run a special international sea level project in the Maldives (Mörner et al. 2004, Mörner 2007) including six field sessions and numerous radiocarbon dates. Our record for the last 2,600 years is given in Figure 5. There are no signs of any ongoing sea level rise. It seems all to be a myth. In fact, the people of the Maldives survived higher sea levels of at least +60 cm.

The same result is obtained if one examines other regions; for example, the records of the famous sites of Tuvalu and Venice, and the fundamental new data set from satellite altimetry (Mörner 2004a, 2004b, 2005a, 2005b).

It is claimed that the island of Tuvalu in the Pacific is in the process of being flooded by a rapid global sea level rise. The fact, however, is that the tide-gauge record of the last 25 years does not support this scenario. On the contrary, it shows a quite stable

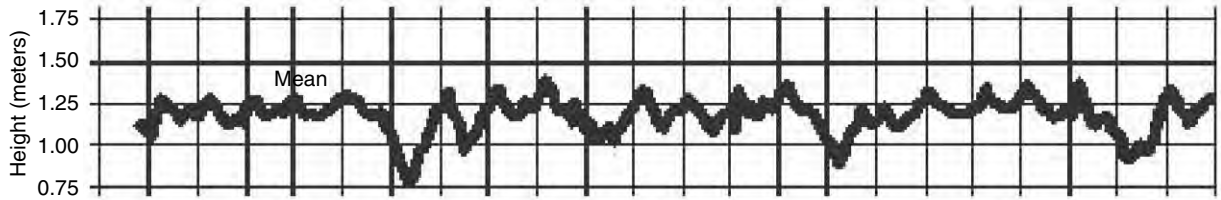


Figure 6
MEAN TIDE-GAUGE RECORD FOR TUVALU, 1978-2003

The Tuvalu tide-gauge record for 1978 to 2003 shows stability around a zero level, plus three negative ENSO events.

sea level for the last three decades, as shown in Figure 6 (Mörner 2004b, 2005a). The truth seems to be that a Japanese pineapple industry had withdrawn too much freshwater from the surface, thus forcing saltwater to invade the subsurface.

Venice, on the Po delta in northern Italy, represents a slowly subsiding area. Its sea level history is, therefore, dominated by a slowly rising relative sea level factor caused by local tectonics and sediment compaction. If global sea level were in a rising mode, it would have increased the rate of relative sea level rise significantly. This is not the case, however. On the contrary, the relative sea level rise decreased and even stopped in the 1970s, partly as a function of engineering work (Mörner 2005a).

The island of Tegua in the Vanuatu islands in the Pacific was recently told that it would be the first place where people would have to be relocated because of a rising sea level (Vanuatu 2005). But the background to this seems rather to be political than truly scientific.

Satellite altimetry is a powerful new tool for the recording of global sea level changes. Whilst the first record shows no signs of any rising trend, a later version has a strong rising trend. This trend, however, is imported from subjective analyses of tide-gauge records and does not refer to a true satellite altimetry record (Mörner 2004a, 2005a, 2005b). Whether this should be classified as misunderstanding or falsification, I leave for the readers to decide.

There is also the question of the contribution from melting glaciers. The Arctic ice doesn't matter in this case because it is a thin sea ice and because it is already floating in the sea. Small glaciers have very little effect on global sea level. Furthermore, a glacier, like the one on Mt. Kilimanjaro, is melting, not for climatic reasons but because of deforestation of its slopes and the surrounding area. A contribution from the Greenland ice cap would affect sea level. But sea levels do not record any such effects. Also, some areas melt while others expand, and it changes with time: increasing, decreasing, and changing sign. The huge Antarctic ice cap is expanding rather than melting. The best thing we can do is to continue recording and analyzing sea level. Up to now, there is nothing alarming to be reported, but rather the opposite—stability.

In conclusion; observational data do not support the sea level rise scenario. On the contrary, they seriously contradict it. Therefore, we should free the world from the fear of becoming

extensively flooded in the near future. Furthermore, in about 40 years, we will be in a new Solar Minimum with a related cold period.

Scientific Perspectives

Scientific progress has always been driven by hard work, sharpness, and unbounded curiosity. This is our true scientific resource, and it must be the driving force also in the future. This calls for increased independence of individual scientists and scientific organizations. Ruling models must not take over as guiding tools. Even ruling scientific paradigms must be questioned and tested. In view of this, I predict a total collapse of the global warming and sea-level-rise scenarios in the near future when observations have caught up with modelling.

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