

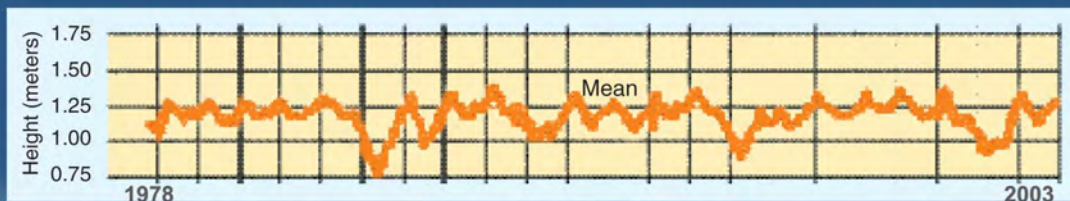
21st CENTURY SCIENCE & TECHNOLOGY

FALL 2007

www.21stcenturysciencetech.com

\$5.00

What Sea Level Rise?



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INTERVIEW: DR. NILS-AXEL MÖRNER



Sea-level Expert: It's Not Rising!

*Why coastal dwellers
should not live
in fear of inundation.*

Question: I would like to start with a little bit about your background.

I am a sea-level specialist. There are many good sea-level people in the world, but let's put it this way: There's no one who's beaten me. I took my thesis in 1969, devoted to a large extent to the sea-level problem. From then on I have launched most of the new theories, in the '70s, '80s, and '90s. I was the one who understood the problem of the gravitational potential surface, the theory that it changes with time. I'm the one who studied the rotation of the Earth, how it affected the redistribution of the oceans' masses. And so on.

I was president of INQUA, an international fraternal association, their Commission on Sea-Level Changes and Coastal



www.actualmaldives.com

The North and South Malosmadulu Atolls in the Maldives, as viewed from a seaplane.

Dr. Nils-Axel Mörner has studied sea level and its effects on coastal areas for some 35 years. Recently retired as director of the Paleogeophysics and Geodynamics Department at Stockholm University, Mörner is past president (1999-2003) of the INQUA Commission on Sea Level Changes and Coastal Evolution, and leader of the Maldives Sea Level Project.

Mörner was interviewed by Associate Editor Gregory Murphy on June 6. The interview here is abridged; a full version appeared in Executive Intelligence Review, June 22, 2007.

Evolution, from 1999 to 2003. And in order to do something intelligent there, we launched a special international sea-level research project in the Maldives, because that's the hottest spot on Earth for [this topic]—there are so many variables interacting there, so it was interesting, and also people had claimed that the Maldives—about 1,200 small islands—were doomed to disappear in 50 years, or at most, 100 years. So that was a very important target.

I have had my own research institute at Stockholm University, which was devoted to something called paleogeophysics and geodynamics. It's primarily a research institute, but lots of students came, I have several Ph.D. theses at my institute, and lots of visiting professors and research scientists came to learn about sea level. Working in this field, I don't think there's a spot on the Earth I haven't been in! In the northmost, Greenland; and in Antarctica; and all around the Earth, and very much at the coasts.

So I have primary data from so many places, that when I'm speaking, I don't do it out of ignorance, but on the contrary, I know what I'm talking about. And I have interaction with other scientific branches, because it's very important to see the problems not just from one eye, but from many different aspects. Sometimes you dig up some very important thing in some geodesic paper which no other geologist would read. And you must have the time and the courage to go into the big questions, and I think I have done that.

The last 10 years or so, of course, everything has been the discussion on sea level, which they say is drowning us. In the early '90s, I was in Washington giving a paper on how the sea level is *not* rising, as they said. That had some echoes around the world.

Question: What is the real state of the sea-level?

You have to look at that in a lot of different ways. That is what I have done in a lot of different papers, so we can confine ourselves to the short story here. One way is to look at the global picture, to try to find the essence of what is going on. And then we can see that the sea level was indeed rising, from, let us say, 1850 to 1930-1940. And that rise had a rate in the order of 1 millimeter per year; 1.1 is the exact figure. Not more. And we can check that, because Holland is a subsiding area; it has been subsiding for many millions of years; and Sweden, after the last Ice Age, was uplifted. So if you balance those, there is only one solution, and it will be this figure....

There's another way of checking it, because if the radius of the Earth increases as a result of sea level rise, then immediately the Earth's rate of rotation would slow down. That is a physical law, right? You have it in figure-skating: when skaters rotate very fast, the arms are close to the body; and then when they increase the radius, by putting out their arms, they stop by themselves. So you can look at the rotation and you see the same thing: Yes, it might be 1.1 mm per year, but absolutely not more. It could be less, because there could be other factors affecting the Earth, but it certainly could not be more. Absolutely not! Again, it's a matter of physics.

So, we have this 1 mm per year up to 1930, by observation, and we have it by rotation recording. So we go with those two. They go up and down, but there's no trend in it; it was up until



Earth Observatory/NASA

A satellite view of the Maldives chain of small coral islands in the northern Indian Ocean.

1930, and then down again. There's no trend, *absolutely no trend*.

Another way of looking at what is going on is the tide gauge. Tide gauging is very complicated, because it gives different answers for wherever you are in the world. We have to rely on geology when we interpret it. So, for example, those people in the IPCC [Intergovernmental Panel on Climate Change], choose Hong Kong, which has six tide gauges, and they choose the record of one, which gives a 2.3 mm per year rise of sea level. Every geologist knows that that is a subsiding area. It's the compaction of sediment; it is the only record which you *should not* use.

And if that [2.3 mm] figure is correct, then Holland would not be subsiding, it would be uplifting. And that is just ridiculous. Not even ignorance could be responsible for a thing like that. So tide gauges, you have to treat very, very carefully.

Now back to satellite altimetry, which shows the water, not just the coasts, but in the whole of the ocean, as measured by satellite. From 1992 to 2002, [the graph of the sea level] was a straight line, variability along a straight line, but absolutely no trend whatsoever. We could see spikes: a very rapid rise, but then in half a year, they fall back again. But absolutely no trend, and to have a sea-level rise, you need a trend.

Data Fudged

Then, in 2003, the same data set, which in their [IPCC's] publications, in their website, was a straight line—suddenly it changed, and showed a very strong line of uplift, 2.3 mm per year, the same as from the tide gauge. And that didn't look so nice. It looked as though they had recorded something, *but they hadn't recorded anything*. It was the original data which they suddenly twisted up, because they entered a "correction factor," which they took from the tide gauge.

So it was not a measured thing, but a figure introduced from outside. I accused them of this at the Academy of Sciences meeting in Moscow—I said you have introduced factors from outside; it's not a measurement. It looks like it is measured from the satellite, but you don't say what really happened. And they answered, that we had to do it, because otherwise we would not have gotten any trend!

That is terrible! As a matter of fact, it is a falsification of the data set. Why? Because they know the answer. And there you come to the point: They "know" the answer; the rest of us, we are *searching* for the answer. Because we are field geologists; they are computer scientists. So all this talk that sea level is rising, this stems from the computer modelling, not from observations. The observations don't find it!

I have been an expert reviewer for the IPCC, both in 2000 and last year. The first time I read it [the report], I was exceptionally surprised. First of all, it had 22 authors, but none of them—*none*—were sea-level specialists. They were given this mission, because they promised to answer the right thing. Again, it was a computer issue. This is the typical thing: The meteorological community works with computers, simple computers. Geologists don't do that! We go out in the field and observe, and then we can try to make a model with computerization; but it's not the first thing.

So there we are. Then we went to the Maldives. I traced a drop in sea level in the 1970s, and the fishermen told me, "Yes, you are correct, because we remember"—things in their sailing routes have changed, things in their harbor have changed. I worked in the lagoon, I drilled in the sea, I drilled in lakes, I looked at the shore morphology—so many different environments. Always the same thing: In about 1970, the sea fell about 20 cm, for reasons involving probably evaporation or something. Not a change in volume or something like that—it was a rapid thing. The new level, which has been stable, has not

changed in the last 35 years. You can trace it so very, very carefully. No rise at all is the answer there.

The Case of Tuvalu

Another famous place is the Tuvalu Islands, which are supposed to soon disappear because they've put out too much carbon dioxide. There we have a tide gauge record, a variograph record, from 1978, so it's 30 years. And again, if you look there, *absolutely no trend*, no rise.

So, from where do they get this rise in the Tuvalu Islands?

We know in the Tuvalu Islands that there was a Japanese pineapple industry which extracted too much fresh water from the inland, and those islands have very little fresh water available from precipitation, rain. So, if you take out too much, you destroy the water magazine, and you bring seawater into the magazine, which is not nice. So they took out too much freshwater and in came salt water. And of course the local people were upset. But then it was much easier to say, "No, no! It's the global sea level rising! It has nothing to do with our extraction of freshwater." So there you have it. This is a local industry which doesn't pay.

You have Vanuatu, and also in the Pacific, north of New Zealand and Fiji—there is the island Tegua. They said they had to evacuate it, because the sea level was rising. But again, you look at the tide-gauge record: There is absolutely no signal that the sea level is rising. If anything, you could say that maybe the tide is lowering a little bit, but absolutely no rising.

And again, where do they [the IPCC] get it from? They get it from their inspiration, their hopes, their computer models, but not from observation, which is terrible.



A satellite view of Venice, Italy. If you look at the 300-year record, the sea level has gone up and down, around the subsidence rate.

We have Venice. Venice is well known, because that area is tectonically, because of the delta, slowly subsiding. The rate has been constant over time. A rising sea level would immediately accelerate the flooding. And it would be so simple to record it. And if you look at that 300-year record: In the 20th Century it was going up and down, around the subsidence rate. In 1970, you should have an acceleration, but instead, the rise almost finished. So it was the opposite.

If you go around the globe, you find no rise anywhere. But they need the rise, because if there is no rise, there is no death threat. They say there is nothing good to come from a sea-level rise, only problems, coastal problems. If you have a temperature rise, if it's a problem in one area, it's beneficial in another area. But sea level is the real "bad guy," and therefore they have talked very much about it. But the real thing is, that it doesn't exist in observational data, only in computer modelling....

I'll tell you another thing: When I came to the Maldives, to our enormous surprise, one morning we were on an island, and I said, "This is something strange, the storm level has gone down; it has not gone up, it has gone *down*." And then I started to check the level all around, and I asked the others in the group, "Do you see anything here on the beach?" And after a while they found it too. And as we had investigated, and we were sure, I said we cannot leave the Maldives and go home and say the sea level is not rising, it's not respectful to the people. I have to say it to Maldivian television.

So we made a very nice program for Maldivian television, but it was forbidden by the government (!) because they thought that they would lose money. They accuse the West for putting out carbon dioxide, and therefore we have to pay for our damage and the flooding. So they wanted the flooding scenario to go on.

This tree [see photo], which I showed in the documentary, is interesting. This is a prison island, and when people left the island, from the '50s, it was a marker for them, when they saw this tree alone out there, they said, "Ah, freedom!" ... I knew that this tree was in that terrible position already in the 1950s. So the slightest rise, and it would have been gone. I used it in my writings and for television.

You know what happened? There came an Australian sea-level team, which was for the IPCC and against me. Then the students pulled down the tree by hand! They destroyed the evidence. What kind of people are those? And we came to launch this film "Doomsday Called Off," right after that, and the tree was still green. And I heard from the locals that they had seen the people who had pulled it down. So I put it up again, by hand, and made my TV program....

They call themselves scientists, and they're destroying evidence! A scientist should always be open for



Courtesy of Nils-Axel Mörrer

This tree, near the coast in the Maldives, would have been swept away by high tides if sea levels were rising. An Australian sea-level team pulled the tree down, so it would not remain as proof that sea levels were not rising! But shortly thereafter, when Mörrer returned to the Maldives to make a film, he found the torn-down tree, still green, and placed it in the ground to take this photo.

reinterpretation, but you can *never* destroy evidence. And they were being *watched*, thinking they were clever.

Question: How does the IPCC get these small island nations so worked up about worrying that they're going to be flooded tomorrow?

Because they get support; they get money, so their idea is to attract money from the industrial countries. And they believe that if the story is not sustained, they will lose it. So, they *love* this story. But the local people in the Maldives—it would be terrible to raise children—why should they go to school, if in 50 years everything will be gone? The only thing you should do, is learn how to swim....

Yes, and it's much better to blame something else. Then they can wash their hands and say, "It's not our fault. It's the U.S., they're putting out too much carbon dioxide."

Question: Which is laughable, this idea that CO₂ is driving global warming.

Precisely, that's another thing.

And like this *State of Fear* [book], by Michael Crichton, when he talks about ice. Where is ice melting? Some Alpine glaciers are melting, others are advancing. Antarctic ice is certainly *not* melting; all the Antarctic records show expansion of ice. Greenland is the dark horse here for sure; the Arctic may be melting, but it doesn't matter, because they're already floating, and it has no effect.

A glacier like Kilimanjaro, which is important, on the Equator, is *only* melting because of deforestation. At the foot of the Kilimanjaro, there was a rain forest; from the rain forest came

moisture, from that came snow, and snow became ice. Now, they have cut down the rain forest, and instead of moisture, there comes heat; heat melts the ice, and there's no more snow to generate the ice. So it's a simple thing, but has nothing to do with temperature. It's the misbehavior of the people around the mountain. So again, it's like Tuvalu: We should say this is deforestation, that's the thing. But instead they say, "No, no, it's global warming!"

Question: Here, over the last few days, there was a group that sent out a power-point presentation on melting glaciers, and how this is going to raise sea level and create all kinds of problems.

The only place that has that potential is Greenland, and Greenland east is not melting; Greenland west, the Disco Bay is melting, but it has been melting for 200 years, at least, and the rate of melting decreased in the last 50-100 years. So, that's another falsification.

But more important, in the last 5,000 years, the whole of the Northern Hemisphere experienced warming, the Holocene Warm Optimum, and it was 2.5 degrees warmer than today. And still, no problem with Antarctica, or with Greenland; still, no higher sea level.

Observations Vs. Computer Models

Question: These scare stories are being used for political purposes.

Yes. Again, this is for me, the line of demarcation between the meteorological community and us: They work with computers; we geologists work with observations, and the observations do not fit with these scenarios. So what should you change? We cannot change observations, so we have to change the scenarios!

Instead of doing this, they give an endless amount of money to the side which agrees with the IPCC. The European Community, which has gone far in this thing: If you want a grant for a research project in climatology, it is written into the document that there *must* be a focus on global warming. All the rest of us, we can never get a coin there, because we are not fulfilling the basic obligations. That is really bad, because then you start asking for the answer you want to get. That's what dictatorships did, autocracies. They demanded that scientists produce what they wanted....

You frighten a lot of scientists. If they say that climate is not changing, they lose their research grants. And some people cannot afford that; they become silent, or a few of us speak up, because we think that it's for the honesty of science, that we have to do it.

Question: In one of your papers, you mentioned how the expansion of sea level changed the Earth's rotation into different modes—that was quite an eye-opener.



One example of an environmentalist campaign to save island nations from mythical sea-level rise: "Save submerging Tuvalu," a poster by Hitachi-sk, which warns employees about "the impending danger of global warming."

Yes, but it is exceptionally hard to get these papers published also. The publishers compare it to IPCC's modelling, and say, "Oh, this isn't the IPCC." Well, luckily it's not! But you cannot say that....

When I became president of the INQUA Commission on Sea-Level Change and Coastal Evolution, we made a research project, and we had this up for discussion at five international meetings. And all the true sea level specialists agreed on this figure, that in 100 years, we might have a rise of 10 cm, with an uncertainty of plus or minus 10 cm—that's not very much. [See Figure 3, p. 32.] And in recent years, I even improved it, by considering also that we're going into a cold phase in 40 years. That gives 5 cm rise, plus or minus a few centimeters. That's our best estimate. But that's very, very different from the IPCC statement.

Ours is just a continuation of the pattern of sea level going back in time. Then you have absolutely maximum figures, like when we had all the ice in the vanishing ice caps that happened to be too far south in latitude after the Ice Age. You couldn't

have more melting than after the Ice Age. You reach up to 10 mm per year—that was the *super*-maximum: 1 meter in 100 years....

People have been saying, 1 meter, 3 meters. It's not feasible! These are figures which are so large, that only when the ice caps were vanishing, did we have those types of rates. They are absolutely extreme.... We are basing ourselves on the observations—in the past, in the present, and then predicting it into the future, with the best of the "feet on the ground" data that we can get, not from the computer.

Question: Isn't some of what people are talking about just shoreline erosion, as opposed to sea-level rise?

Yes, and I have very nice pictures of it. If you have a coast, with some stability of the sea level, the waves make a kind of equilibrium profile—what they are transporting into the sea and what they are transporting onshore. If the sea rises a little, yes, it attacks, but the attack is not so vigorous. On the other hand, if the sea goes down, it is eating away at the old equilibrium level. There is a much larger redistribution of sand.

We had an island, where there was heavy erosion, everything was falling into the sea, trees and so on. But if you looked at what happened: The sand which disappeared there, if the sea level had gone up, that sand would have been placed higher, on top of the previous land. But it is being placed below the previous beach. We can see the previous beach, and it is 20-30 cm above the current beach. So this is erosion because the sea level fell, not because the sea level *rose*. And it is more common that erosion is caused by a falling sea level, than by a rising sea level.

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.

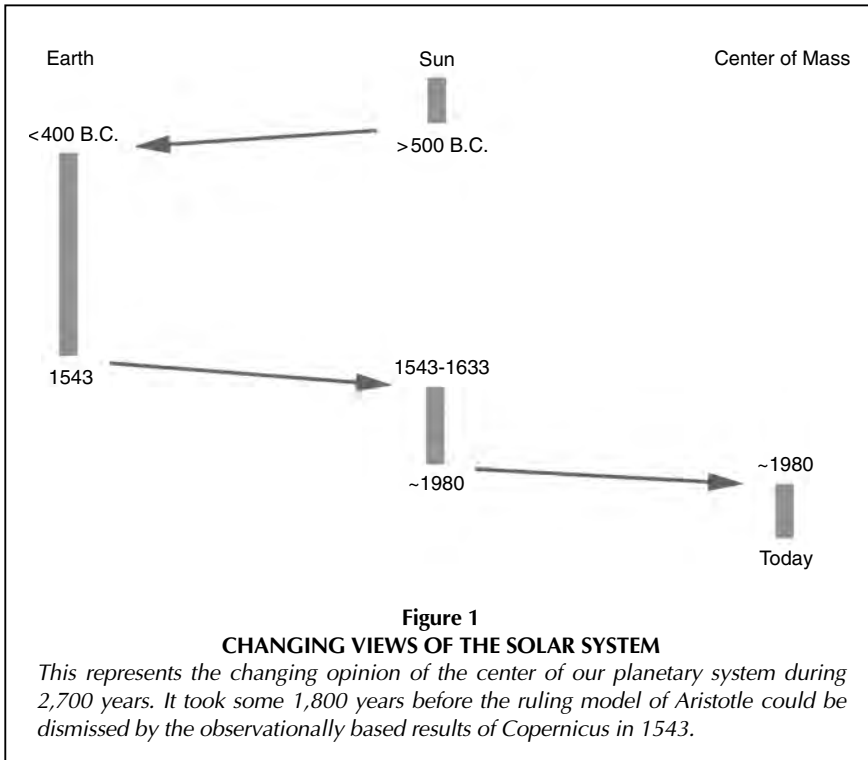
In about 40 years we will be in a new Solar Minimum and are hence likely to experience a new Little Ice Age. All this reveals the danger of ruling models, and calls for a return to basic observational facts. Scientific integrity has become vital.

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

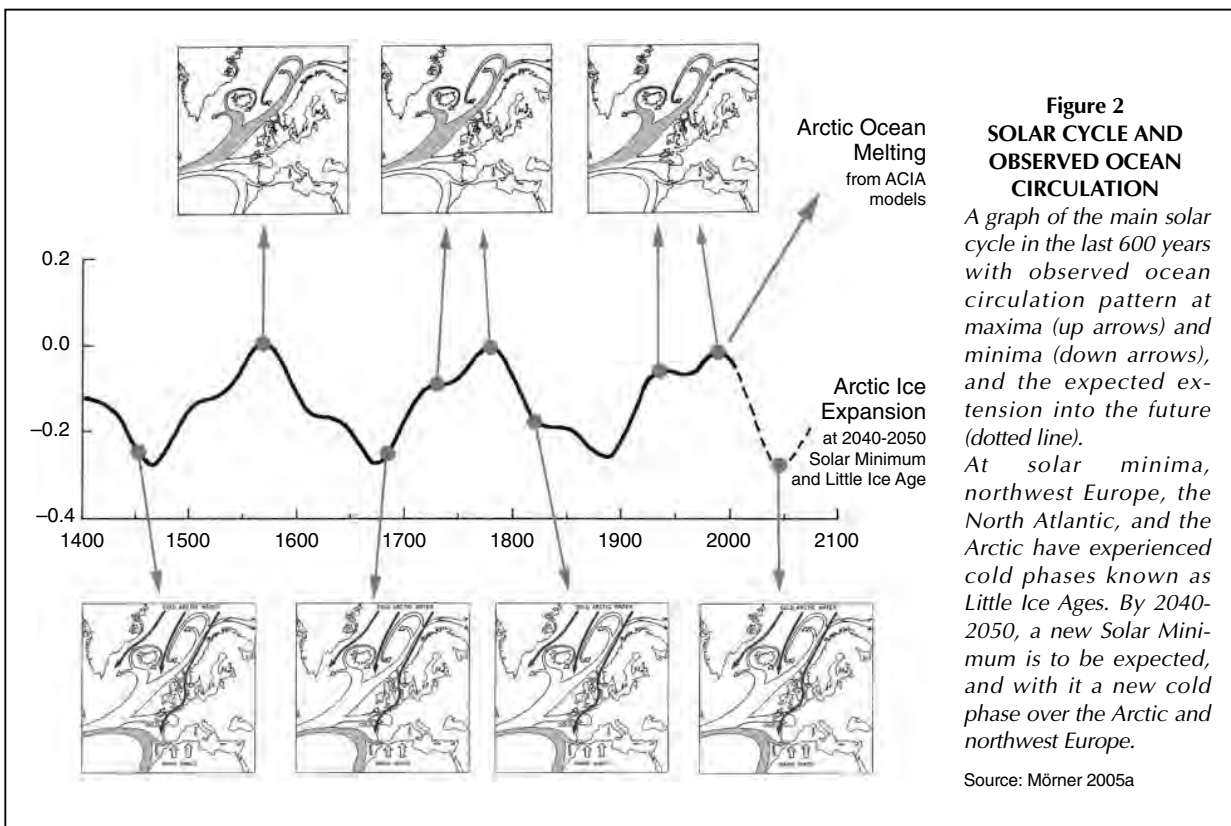
Nils-Axe Mörner is Professor Emeritus of Paleogeophysics and Geodynamics, at the University of Stockholm, Sweden. He is past president (1999-2003) of the INQUA Commission on Sea Level Changes and Coastal Evolution, and leader of the Maldives Sea Level Project. He can be reached at morner@pog.nu.



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



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.

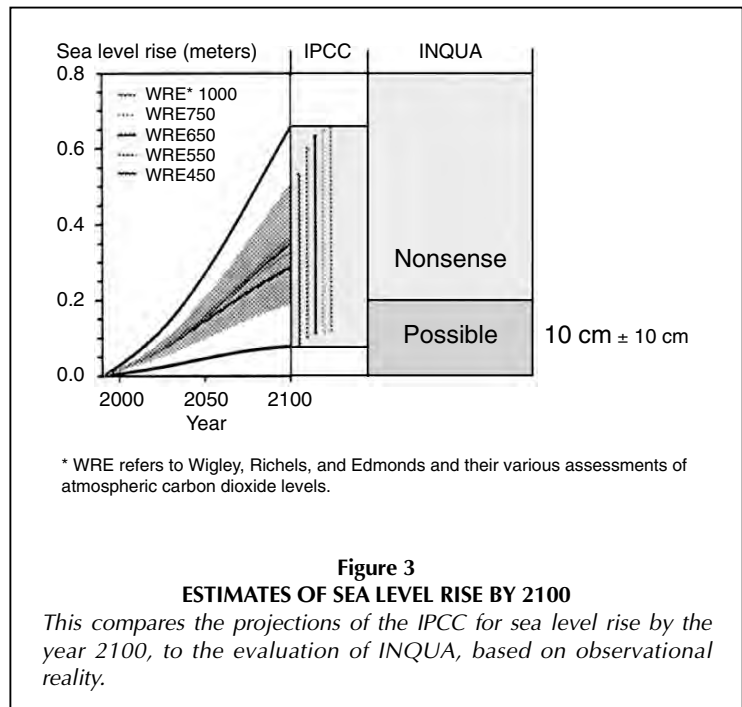
In the IPCC's scenario, we will face a rapidly increasing temperature in the near future, which will cause an opening of the Arctic Basin (ACIA 2004). Such a view implies that we neglect the Solar influence (Mörner 2005a). It is as if the IPCC and Kyoto Protocol enthusiasts want to switch off the Sun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

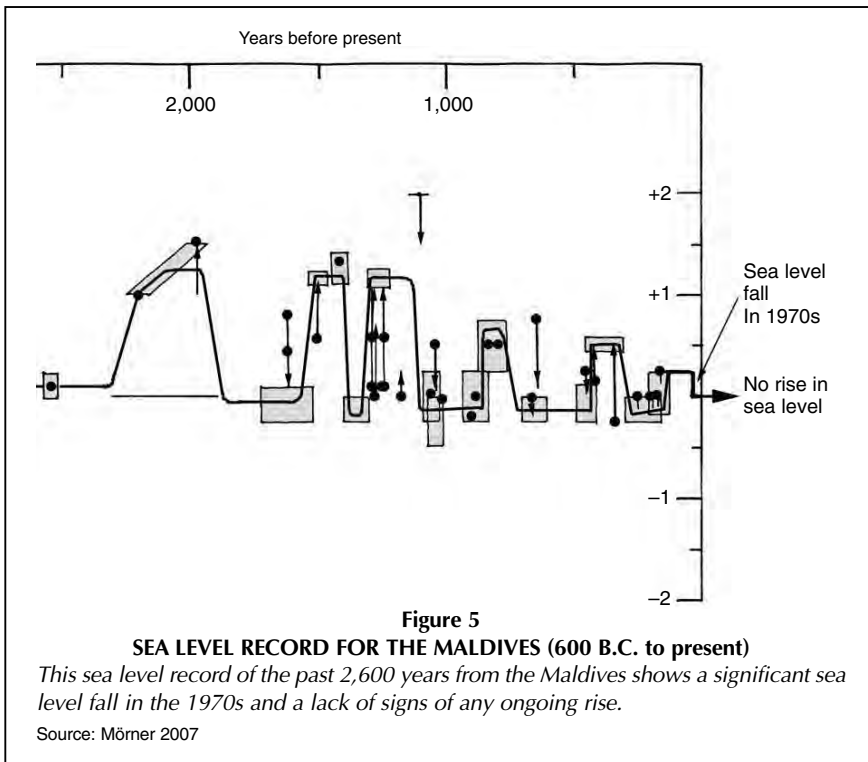
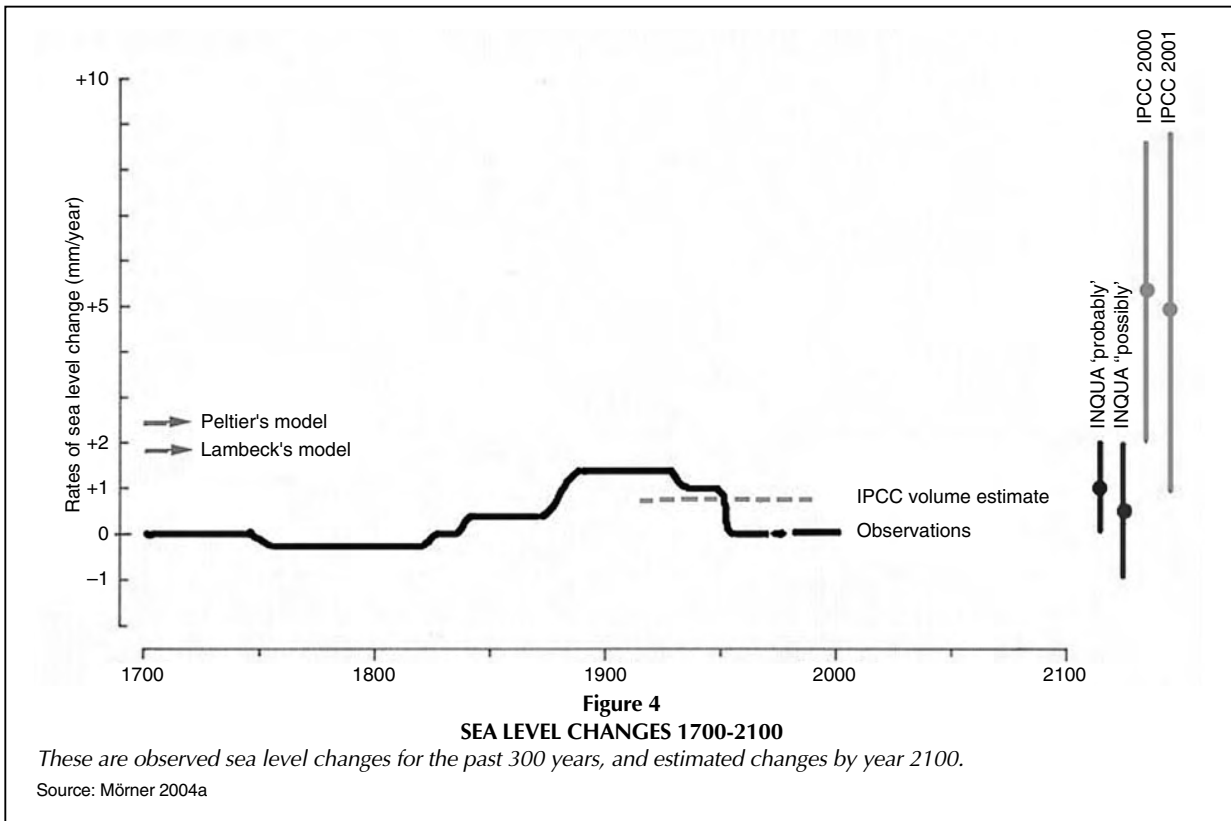
In the global warming concept, it has been constantly claimed that there will be a causal rise in sea level: a rise that is allegedly already in the accelerating mode, which in the near



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).

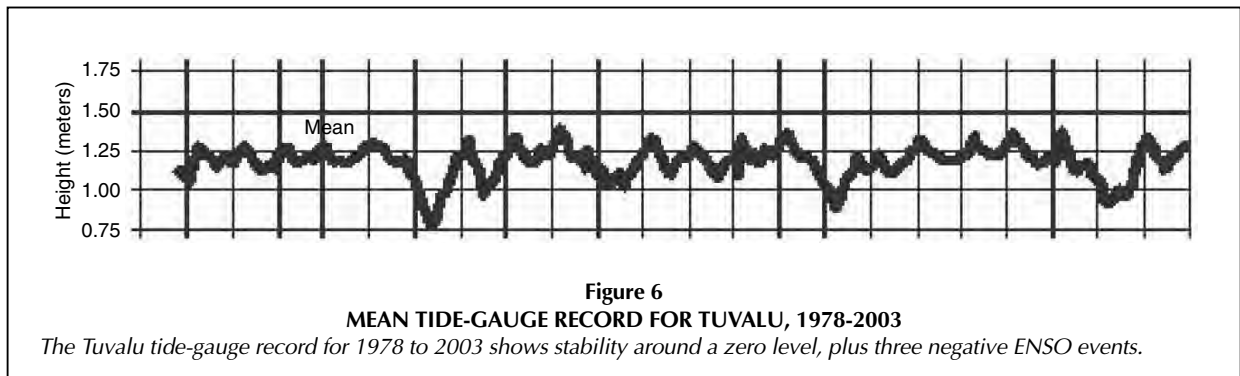


This is illustrated in Figure 4.

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



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.

This paper is adapted from an article to appear in Quaternary Studies (Maria Assuncao Araujo, Ed.), journal of the Portuguese Association for Quaternary Research (APEQ), No. 5, 2007.

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