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Title: Disturbing Sun

Author: Robert S. Richardson

Illustrator: Kelly Freas

Release date: January 3, 2008 [eBook #24150]

Language: English

Credits: Produced by Greg Weeks, Bruce Albrecht, Mary Meehan and the Online Distributed Proofreading Team at <http://www.pgdp.net>

*** START OF THE PROJECT GUTENBERG EBOOK DISTURBING SUN ***

DISTURBING SUN

By **PHILIP LATHAM**

Illustrated by Freas

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This, be it understood, is fiction—nothing but fiction—and not, under any circumstances, to be considered as having any truth whatever to it. It's obviously utterly impossible ... isn't it?

An interview with Dr. I. M. Niemand, Director of the Psychophysical Institute of Solar and Terrestrial Relations, Camarillo, California.

In the closing days of December, 1957, at the meeting of the American Association for the Advancement of Science in New York, Dr. Niemand delivered a paper entitled simply, "On the Nature of the Solar S-Regions." Owing to its unassuming title the startling implications contained in the paper were completely overlooked by the press. These implications are discussed here in an exclusive interview with Dr. Niemand by Philip Latham.

LATHAM. Dr. Niemand, what would you say is your main job?

NIEMAND. I suppose you might say my main job today is to find out all I can between activity on the Sun and various forms of activity on the Earth.

LATHAM. What do you mean by activity on the Sun?

NIEMAND. Well, a sunspot is a form of solar activity.

LATHAM. Just what is a sunspot?

NIEMAND. I'm afraid I can't say just what a sunspot is. I can only describe it. A sunspot is a region on the Sun that is cooler than its surroundings. That's why it looks dark. It isn't so hot. Therefore not so bright.

LATHAM. Isn't it true that the number of spots on the Sun rises and falls in a cycle of eleven years?

NIEMAND. The number of spots on the Sun rises and falls in a cycle of *about* eleven years. That word *about* makes quite a difference.

LATHAM. In what way?

NIEMAND. It means you can only approximately predict the future course of sunspot activity. Sunspots are mighty treacherous things.

LATHAM. Haven't there been a great many correlations announced between sunspots and various effects on the Earth?

NIEMAND. Scores of them.

LATHAM. What is your opinion of these correlations?

NIEMAND. Pure bosh in most cases.

LATHAM. But some are valid?

NIEMAND. A few. There is unquestionably a correlation between sunspots and disturbances of the Earth's magnetic field ... radio fade-outs ... auroras ... things like that.

LATHAM. Now, Dr. Niemand, I understand that you have been investigating solar and terrestrial relationships along rather unorthodox lines.

NIEMAND. Yes, I suppose some people would say so.

LATHAM. You have broken new ground?

NIEMAND. That's true.

LATHAM. In what way have your investigations differed from those of others?

NIEMAND. I think our biggest advance was the discovery that sunspots themselves are not the direct cause of the disturbances we have been studying on the Earth. It's something like the eruptions in rubeola. Attention is concentrated on the bright red papules because they're such a conspicuous symptom of the disease. Whereas the real cause is an invisible filterable virus. In the solar case it turned out to be these S-Regions.

LATHAM. Why S-Regions?

NIEMAND. We had to call them something. Named after the Sun, I suppose.

LATHAM. You say an S-Region is invisible?

NIEMAND. It is quite invisible to the eye but readily detected by suitable instrumental methods. It is extremely doubtful, however, if the radiation we detect is the actual cause of the disturbing effects observed.

LATHAM. Just what are these effects?

NIEMAND. Well, they're common enough, goodness knows. As old as the world, in fact. Yet strangely enough it's hard to describe them in exact terms.

LATHAM. Can you give us a general idea?

NIEMAND. I'll try. Let's see ... remember that speech from "Julius Caesar" where Cassius is bewailing the evil times that beset ancient Rome? I believe it went like this: "The fault, dear Brutus, is not in our stars but in ourselves that we are underlings."

LATHAM. I'm afraid I don't see—

NIEMAND. Well, Shakespeare would have been nearer the truth if he had put it the other way around. "The fault, dear Brutus, is not in ourselves but in our stars" or better "in the Sun."

LATHAM. In the Sun?

NIEMAND. That's right, in the Sun. I suppose the oldest problem in the world is the origin of human evil. Philosophers have wrestled with it ever since the days of Job. And like Job they have usually given up in despair, convinced that the origin of evil is too deep for the human mind to solve. Generally they have concluded that man is inherently wicked and sinful and that is the end of it. Now for the first time science has thrown new light on this subject.

LATHAM. How is that?

NIEMAND. Consider the record of history. There are occasional periods when conditions are fairly calm and peaceful. Art and industry flourished. Man at last seemed to be making progress toward some higher goal. Then suddenly—for *no detectable reason*—conditions are reversed. Wars rage. People go mad. The world is plunged into an orgy of bloodshed and misery.

LATHAM. But weren't there reasons?

NIEMAND. What reasons?

LATHAM. Well, disputes over boundaries ... economic rivalry ... border incidents....

NIEMAND. Nonsense. Men always make some flimsy excuse for going to war. The truth of the matter is that men go to war because they want to go to war. They can't help themselves. They are impelled by forces over which they have no control. By forces outside of themselves.

LATHAM. Those are broad, sweeping statements. Can't you be more specific?

NIEMAND. Perhaps I'd better go back to the beginning. Let me see.... It all started back in March, 1955, when I started getting patients suffering from a complex of symptoms, such as profound mental depression, anxiety, insomnia, alternating with fits of violent rage and resentment against life and the world in general. These people were deeply disturbed. No doubt about that. Yet they were not psychotic and hardly more than mildly neurotic. Now every doctor gets a good many patients of this type. Such a syndrome is characteristic of menopausal women and some men during the climacteric, but these people failed to fit into this picture. They were married and single persons of both sexes and of all ages. They came from all walks of life. The onset of their attack was invariably sudden and with scarcely any warning. They would be going about their work feeling perfectly all right. Then in a minute the whole world was like some scene from a nightmare. A week or ten days later the attack would cease as mysteriously as it had come and they would be their old self again.

LATHAM. Aren't such attacks characteristic of the stress and strain of modern life?

NIEMAND. I'm afraid that old stress-and-strain theory has been badly overworked. Been hearing about it ever since I was a pre-med student at UCLA. Even as a boy I can remember my grandfather deploring the stress and strain of modern life when he was a country doctor practicing in Indiana. In my opinion one of the most valuable contributions anthropologists have made in recent years is the discovery that primitive man is afflicted with essentially the same neurotic conditions as those of us who live a so-called civilized life. They have found savages displaying every symptom of a nervous breakdown among the mountain tribes of the Elgoni and the Aruntas of Australia. No, Mr. Latham, it's time the stress-and-strain theory was relegated to the junk pile along with demoniac possession and blood letting.

LATHAM. You must have done something for your patients—

NIEMAND. A doctor must always do something for the patients who come to his office seeking help. First I gave them a thorough physical examination. I turned up some minor ailments—a slight heart murmur or a trace of albumin in the urine—but nothing of any significance. On the whole they were a remarkably healthy bunch of individuals, much more so than an average sample of the population. Then I made a searching inquiry into their personal life. Here again I drew a blank. They had no particular financial worries. Their sex life was generally satisfactory. There was no history of mental illness in the family. In fact, the only thing that seemed to be the matter with them was that there were times when they felt like hell.

LATHAM. I suppose you tried tranquilizers?

NIEMAND. Oh, yes. In a few cases in which I tried tranquilizing pills of the meproamate type there was some slight improvement. I want to emphasize, however, that I do not believe in prescribing shotgun remedies for a patient. To my way of thinking it is a lazy slipshod way of carrying on the practice of medicine. The only thing for which I do give myself credit was that I asked my patients to keep a detailed record of their symptoms taking special care to note the time of exacerbation—*increase in the severity of the symptoms*—as accurately as possible.

LATHAM. And this gave you a clue?

NIEMAND. It was the beginning. In most instances patients reported the attack struck with almost the impact of a physical blow. The prodromal symptoms were usually slight ... a sudden feeling of uneasiness and guilt ... hot and cold flashes ... dizziness ... double vision. Then this ghastly sense of depression coupled with a blind insensate rage at life. One man said he felt as if the world were closing in on him. Another that he felt the people around him were plotting his destruction. One housewife made her husband lock her in her room for fear she would injure the children. I pored over these case histories for a long time getting absolutely nowhere. Then finally a pattern began to emerge.

LATHAM. What sort of pattern?

NIEMAND. The first thing that struck me was that the attacks all occurred during the daytime, between the hours of about seven in the morning and five in the evening. Then there were these coincidences—

LATHAM. Coincidences?

NIEMAND. Total strangers miles apart were stricken at almost the same moment. At first I thought nothing of it but as my records accumulated I became convinced it could not be attributed to chance. A mathematical analysis showed the number of coincidences followed a Poisson distribution very closely. I couldn't possibly see what daylight had to do with it. There is some evidence that mental patients are most disturbed around the time of full moon, but a search of medical literature failed to reveal any connection with the Sun.

LATHAM. What did you do?

NIEMAND. Naturally I said nothing of this to my patients. I did, however, take pains to impress upon them the necessity of keeping an exact record of the onset of an attack. The better records they kept the more conclusive was the evidence. Men and women were experiencing nearly simultaneous attacks of rage and depression all over southern California, which was as far as my practice extended. One day it occurred to me: if people a few miles apart could be stricken simultaneously, why not people hundreds or thousands of miles apart? It was this idea that prompted me to get in touch with an old colleague of mine I had known at UC medical school, Dr. Max Hillyard, who was in practice in Utica, New York.

LATHAM. With what result?

NIEMAND. I was afraid the result would be that my old roommate would think I had gone completely crazy. Imagine my surprise and gratification on receiving an answer by return mail to the effect that he also had been getting an increasing number of patients suffering with the same identical symptoms as my own. Furthermore, upon exchanging records we *did* find that in many cases patients three thousand miles apart had been stricken simultaneously—

LATHAM. Just a minute. I would like to know how you define "simultaneous."

NIEMAND. We say an attack is simultaneous when one occurred on the east coast, for example, not earlier or later than five minutes of an attack on the west coast. That is about as close as you can hope to time a subjective effect of this nature. And now another fact emerged which gave us another clue.

LATHAM. Which was?

NIEMAND. In every case of a simultaneous attack the Sun was shining at both New York and California.

LATHAM. You mean if it was cloudy—

NIEMAND. No, no. The weather had nothing to do with it. I mean the Sun had to be above the horizon at both places. A person might undergo an attack soon after sunrise in New York but there would be no corresponding record of an attack in California where it was still dark. Conversely, a person might be stricken late in the afternoon in California without a corresponding attack in New York where the Sun had set. Dr. Hillyard and I had been searching desperately for a clue. We had both noticed that the attacks occurred only during the daylight hours but this had not seemed especially significant. Here we had evidence pointing directly to the source of trouble. It must have some connection with the Sun.

LATHAM. That must have had you badly puzzled at first.

NIEMAND. It certainly did. It looked as if we were headed back to the Middle Ages when astrology and medicine went hand in hand. But since it was our only lead we had no other choice but to follow it regardless of the consequences. Here luck played somewhat of a part, for Hillyard happened to have a contact that proved invaluable to us. Several years before Hillyard had gotten to know a young astrophysicist, Henry Middletown, who had come to him suffering from a severe case of myositis in the arms and shoulders. Hillyard had been able to effect a complete cure for which the boy was very grateful, and they had kept up a desultory correspondence. Middletown was now specializing in radio astronomy at the government's new solar observatory on Turtle Back Mountain in Arizona. If it had not been for Middletown's help I'm afraid our investigation would never have gotten past the clinical stage.

LATHAM. In what way was Middletown of assistance?

NIEMAND. It was the old case of workers in one field of science being completely ignorant of what was going on in another field. Someday we will have to establish a clearing house in science instead of keeping it in tight little compartments as we do at present. Well, Hillyard and I packed up for Arizona with considerable misgivings. We were afraid Middletown wouldn't take our findings seriously but somewhat to our surprise he heard our story with the closest attention. I guess astronomers have gotten so used to hearing from flying saucer enthusiasts and science-fiction addicts that nothing surprises them any more. When we had finished he asked to see our

records. Hillyard had them all set down for easy numerical tabulation. Middletown went to work with scarcely a word. Within an hour he had produced a chart that was simply astounding.

LATHAM. Can you describe this chart for us?

NIEMAND. It was really quite simple. But if it had not been for Middletown's experience in charting other solar phenomena it would never have occurred to us to do it. First, he laid out a series of about thirty squares horizontally across a sheet of graph paper. He dated these beginning March 1, 1955, when our records began. In each square he put a number from 1 to 10 that was a rough index of the number and intensity of the attacks reported on that day. Then he laid out another horizontal row below the first one dated twenty-seven days later. That is, the square under March 1st in the top row was dated March 28th in the row below it. He filled in the chart until he had an array of dozens of rows that included all our data down to May, 1958.

When Middletown had finished it was easy to see that the squares of highest index number did not fall at random on the chart. Instead they fell in slightly slanting parallel series so that you could draw straight lines down through them. The connection with the Sun was obvious.

LATHAM. In what way?

NIEMAND. Why, because twenty-seven days is about the synodic period of solar rotation. That is, if you see a large spot at the center of the Sun's disk today, there is a good chance if it survives that you will see it at the same place twenty-seven days later. But that night Middletown produced another chart that showed the connection with the Sun in a way that was even more convincing.

LATHAM. How was that?

NIEMAND. I said that the lines drawn down through the days of greatest mental disturbance slanted slightly. On this second chart the squares were dated under one another not at intervals of twenty-seven days, but at intervals of twenty-seven point three days.

LATHAM. Why is that so important?

NIEMAND. Because the average period of solar rotation in the sunspot zone is not twenty-seven days but twenty-seven point three days. And on this chart the lines did not slant but went vertically downward. The correlation with the synodic rotation of the Sun was practically perfect.

LATHAM. But how did you get onto the S-Regions?

NIEMAND. Middletown was immediately struck by the resemblance between the chart of mental disturbance and one he had been plotting over the years from his radio observations. Now when he compared the two charts the resemblance between the two was unmistakable. The pattern shown by the chart of mental disturbance corresponded in a striking way with the solar chart but with this difference. The disturbances on the Earth started two days later on the average than the disturbances due to the S-Regions on the Sun. In other words, there was a lag of about forty-eight hours between the two. But otherwise they were almost identical.

LATHAM. But if these S-Regions of Middletown's are invisible how could he detect them?

NIEMAND. The S-Regions are invisible to the eye through an *optical* telescope, but are detected with ease by a *radio* telescope. Middletown had discovered them when he was a graduate student working on radio astronomy in Australia, and he had followed up his researches with the more powerful equipment at Turtle Back Mountain. The formation of an S-Region is heralded by a long series of bursts of a few seconds duration, when the radiation may increase up to several thousand times that of the background intensity. These noise storms have been recorded simultaneously on wavelengths of from one to fifteen meters, which so far is the upper limit of the observations. In a few instances, however, intense bursts have also been detected down to fifty cm.

LATHAM. I believe you said the periods of mental disturbance last for about ten or twelve days. How does that tie-in with the S-Regions?

NIEMAND. Very closely. You see it takes about twelve days for an S-Region to pass across the face of the Sun, since the synodic rotation is twenty-seven point three days.

LATHAM. I should think it would be nearer thirteen or fourteen days.

NIEMAND. Apparently an S-Region is not particularly effective when it is just coming on or just going off the disk of the Sun.

LATHAM. Are the S-Regions associated with sunspots?

NIEMAND. They are connected in this way: that sunspot activity and S-Region activity certainly go together. The more sunspots the more violent and intense is the S-Region activity. But there is not a one-to-one correspondence between sunspots and S-Regions. That is, you cannot connect a particular sunspot group with a particular S-Region. The same thing is true of sunspots and magnetic storms.

LATHAM. How do you account for this?

NIEMAND. We don't account for it.

LATHAM. What other properties of the S-Regions have you discovered?

NIEMAND. Middletown says that the radio waves emanating from them are strongly circularly polarized. Moreover, the sense of rotation remains constant while one is passing across the Sun. If the magnetic field associated with an S-Region extends into the high solar corona through which the rays pass, then the sense of rotation corresponds to the ordinary ray of the magneto-ionic theory.

LATHAM. Does this mean that the mental disturbances arise from some form of electromagnetic radiation?

NIEMAND. We doubt it. As I said before, the charts show a lag of about forty-eight hours between the development of an S-Region and the onset of mental disturbance. This indicates that the malignant energy emanating from an S-Region consists of some highly penetrating form of corpuscular radiation, as yet unidentified.^[A]

LATHAM. A question that puzzles me is why some people are affected by the S-Regions while others are not.

NIEMAND. Our latest results indicate that probably *no one* is completely immune. All are affected in *some* degree. Just why some should be affected so much more than others is still a matter of speculation.

LATHAM. How long does an S-Region last?

NIEMAND. An S-Region may have a lifetime of from three to perhaps a dozen solar rotations. Then it dies out and for a time we are free from this malignant radiation. Then a new region develops in perhaps an entirely different region of the Sun. Sometimes there may be several different S-Regions all going at once.

LATHAM. Why were not the S-Regions discovered long ago?

NIEMAND. Because the radio exploration of the Sun only began since the end of World War II.

LATHAM. How does it happen that you only got patients suffering from S-radiation since about 1955?

NIEMAND. I think we did get such patients previously but not in large enough numbers to attract attention. Also the present sunspot cycle started its rise to maximum about 1954.

LATHAM. Is there no way of escaping the S-radiation?

NIEMAND. I'm afraid the only sure way is to keep on the unilluminated side of the Earth which is rather difficult to do. Apparently the corpuscular beam from an S-Region is several degrees wide and not very sharply defined, since its effects are felt simultaneously over the entire continent. Hillyard and Middletown are working on some form of shielding device but so far without success.

LATHAM. What is the present state of S-Region activity?

NIEMAND. At the present moment there happens to be no S-Region activity on the Sun. But a new one may develop at any time. Also, the outlook for a decrease in activity is not very favorable. Sunspot activity continues at a high level and is steadily mounting in violence. The last sunspot cycle had the highest maximum of any since 1780, but the present cycle bids fair to set an all time record.

LATHAM. And so you believe that the S-Regions are the cause of most of the present trouble in the world. That it is not ourselves but something outside ourselves—

NIEMAND. That is the logical outcome of our investigation. We are controlled and swayed by forces which in many cases we are powerless to resist.

LATHAM. Could we not be warned of the presence of an S-Region?

NIEMAND. The trouble is they seem to develop at random on the Sun. I'm afraid any warning system would be worse than useless. We would be crying WOLF! all the time.

LATHAM. How may a person who is not particularly susceptible to this malignant radiation know that one of these regions is active?

NIEMAND. If you have a feeling of restlessness and anxiety, if you are unable to concentrate, if you feel suddenly depressed and discouraged about yourself, or are filled with resentment toward the world, then you may be pretty sure that an S-Region is passing across the face of the Sun. Keep a tight rein on yourself. For it seems that evil will always be with us ... as long as the Sun shall continue to shine upon this little world.

[A] Middletown believes that the Intense radiation recently discovered from information derived from Explorer I and III has no connection with the corpuscular S-radiation.

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