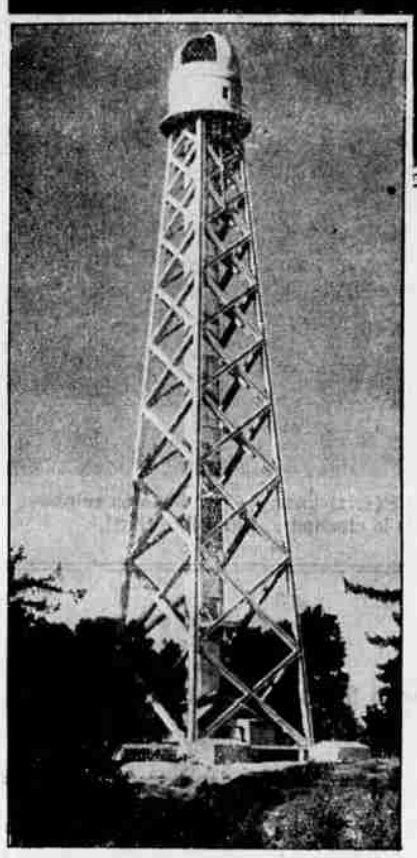
OLD MAN SUN *Misbehaving again*



Constant observation of the sun is made from this 185-foot tower located at the Mount Wilson Observatory

Scientists Are Preparing for an Intensive Study of a Double Climax Due in 1939—Will That Be a Dangerous Year for Mankind?—Floods, Typhoons, Earthquakes Are Anticipated

By G. K. Spencer

WATCH out for sunspots! The Old Man of the Heavens is misbehaving again. He will be cutting antics for the next three years, climaxing his strange doings in 1939. World-famous scientists have marshaled their forces to learn all they can and determine more definitely just what effect sunspots have on this world of ours.

According to these scientists, we are in for a double dose of sunspots in 1939. Not only will we face the climax of what is known as the 11.1-year cycle but also the 1400-year cycle will coincide in the same year, the first time in the history of the universe, so far as scientists are able to determine.

Astronomers, volcanologists, seismologists are all active with their observations, keeping in close touch with each other and reporting every visible change on the face of the sun. Why are they so anxious to know more about these spots? Well, we know that the sun has a tremendous influence upon our lives and well-being.

FIRST in importance, perhaps, the work on the coming 1939 sunspot maximum is expected to refine methods of predicting weather, volcano eruptions, earthquakes and other physical effects.

Second, the secret of the sudden onslaught of Spanish influenza in 1918, a year of sunspot maxima, will be further sought on the supposed principle that the impulses from the sun under certain conditions favor noxious germ life. Finally, a vast field of electrical magnetic, gravity, thermal and chemical reactions will be exploited.

As was expected in many quarters the appearance in 1935 of the vanguard of sunspot "flow" in the inexorable march to the 1939 maximum was ushered in to the accompaniment of earthquakes in many parts of the world, notably those in Formosa, Quetta, India; Mount Ararat, in Asia Minor, with numerous others in somewhat minor key in the United States later in the year.

With these phenomena science got strictly down to "cases." At Santa Clara University Observatory, in California, where the late Father Jerome S. Ricard, first of the great sunspot specialists, originated the attacks of science on sunspots decades ago, his successor, Dr. Albert J. Newlin, arranged for "two-point observation" during the coming four years with Father A. R. Nuttall, S.J., United States Government astronomer at Manila, Philippine Islands.

"We are now entering the period of maxima," said Dr. Newlin, "and intensive study is under way. We shall make careful check of effects in progress."

The great observatory on Mount Wilson, California, one of whose telescopes is the largest in the world, is taking "progress photographs" of the sun daily by direct photography through a special sun telescope and taking frequent spectrographs, which are at once relayed to the sun laboratory for chemical analysis.

Part of this great system of sun observation, exchanging data with the telescopic observatories, is the volcano observatory of Hawaii, directed by Dr. T. A. Jaggar.

Dr. Jaggar is the man who not only proved specific effects on earth's material of the 11.1-year sunspot cycle but also is the discoverer of the 132-year supercycle. He found his pet volcanoes performing like thermometers, with their great lava tubes showing a rise and fall of lava in sympathy with the sun's variations, just as the mercury in a small thermometer rises and falls with the varying degrees of heat.

By these volcano observations Dr Jaggar for the first time predicted actual volcano eruptions to take place late in 1935.

ANOTHER reason for the unusual concentration on the present march to maximum of the sunspots is that there will ocur in 1939, coincident with the 11.1-year cycle of maxima, the end of one of the great 1400-year cycles and the beginning of a new 1400-year cycle. This 1400-year cycle was discovered by Father Ricard, who, when he died, was also studying possibilities of a thirty-seven-year cycle, an eighty-three-year cycle and a 300-year cycle.

What effect will coincidence of the 11.1-year cycle and the 1400-year cycle have in 1939? Nobody knows, but astronomers and volcanologists alike remember that for the first time in the history of modern sunspot observation a double maximum occurred in 1928-1929. That is, there was a period of maximum sunspots in 1928 and another, not normally due for 11.1 years, came along just one year later. Rising and falling of many islands in the Pacific, the great Long Beach earthquake, the Baffin Bay earthquake and action by every "live" volcano in the world were coincidents of that cycle and the period immediately afterward in which its effects were still flowing.

Do sun cycles, by varying the outflow of energy from the sun, actually cause disease germs to become more active or is it that they reduce the energy and defenses of human bodies—and probably others—against some forms of germ life? This is a question science also seeks to solve.

On the side of the theory that it is the human energy which is reduced there is the fact that in every great 1400-year sun cycle humanity proceeds through about 900 years of reduced activity and 500 years of hectic, rapid progress. The 900 years, in our present 1400-year cycle, which commenced in 539 A. D., were what historians call the "Middle Ages" or sometimes the "Dark Ages."

"Middle Ages" occurred in the 1400-year cycle before ours. That one began in 861 B. C., and near its end came the fall of the Roman Empire after economic troubles, doles, Government relief and many of the troubles we know today. In the 1400-year cycle before that one, with its beginning far back in 2261 B. C., there were also "Middle Ages," and the end of the cycle in 861 B. C. came just after the fall of the nation Solomon built up.

If the 1400-year cycle beginning just four years from now runs true to form a sort of "Middle Ages" should start in 1939 and continue until about 2839. But it will come in a period when man appreciates knowledge and science enough to properly preserve hard-won information. In that period would occur no such catastrophe as, for instance, the burning of the Alexandrine Library, which was an irreparable loss to mankind. Secrets in chemistry and history perished there which have never been rediscovered.

Nor will science have to find refuge in monasteries for preservation, as during the last "Middle Ages."

"Middle Ages" are not as dark as they seem for the average man. They are livable, but science slows up. Man's energy, which in more active times runs high and insists on political independence and forms of democracy, in "Middle Ages" ebbs a bit, so that he welcomes dictatorships, feudalism and anything in fact which will relieve him of the strain of governing himself.

THERE is another interesting fact about this 1400-year cycle. If you trace it back through the centuries you find that in precisely the year the old Hebraic calendar sets as the year of the Creation, a 1400-year sun cycle began; that was the year 3661 B. C.

But this is no stranger than the discovery that the old Hebrew prophets of the Bible themselves made their predictions either with knowledge of or in coincidence with a regular rhythm in human events which exactly coincides with 11.1-year sunspot effects.

Checking back 11.1-year sunspot maxima also reveals the fact a great number of the vaster movements in history, such as the beginning of Genghis Khan's march from the Kerulon River on his path to the conquest of Asia and Northern Europe, are in accordance with what is at least coincidence with the sunspot maxima.

Some time ago Harvard University scientists checked back the 11.1-year cycles of maxima to a period about 200 years ago. This has now been extended back to 5000 B. C.

In the future, archeologists and geologists who have determind the approximate prehistoric date of a great catastrophe in nature or in human progress may be able to turn to a sunspot cycle and bring their computations to a high degree of refinement.

We who are alive today actually live in what might be termed by future historians the "days of the giants," as referring to those men who will receive the plaudits of history for originating a great science of the sun. Such men as Dr. C. G. Abbot and Dr. Walter S. Adams, the former of the Smithsonian Institution and the latter director of Mount Wilson Observatory, have given us the very basis of sunspot cycle mathematics, and they are still with us and will add to their works. Future historians may be hard put to decide which was the greater development of our generation, the evolution of aerodynamics or discovery of cyclical values from the sun which will benefit all the generations to come.

Yet, withal, there is a suspicion that all this was discovered on the earth before and actually used by great and powerful peoples. Jewish prophets who predicted coming events with cyclical knowledge of some kind, it has been suggested, had only preserved a part of some knowledge discovered by vast lost empires which perished in a world catastrophe, leaving merely population remnants to carry on and repopulate the earth.

Definitely, archeologists have discovered that the Mayans, who flourished in a far-past geological age and were utterly wiped out so that many feet of solid lava cover their ruins in Central America, worshiped the cycle—archeologists use the term "wheel" when writing on the subject. The Mayans, it seems, believed the cycle or wheel to be sacred. When you ask why, the answer is, of course, that no one knows now.

Egyptian empires of the past have left signs that they also worshiped the sun; these empires flourished at the time the pyramids were built, not as tombs, as popularly supposed, but as refuges from vast floods.

WE DO know that the slightest changes in the thermal values or the slightest magnetic changes in the sun immediately affect the earth.

Dr. Jaggar has long been working on a problem which if solved may reveal why sunspots affect us. It may, in fact, reveal how the sun controls us at all times; he wants to know the cause of it, the physics, chemistry and magnetics of it. And he leaves the problem to us laymen with this hypothesis. It is this:

"If you ask why sunspots should have anything to do with volcanoes, the answer is that nobody knows. Times of maximum sunspots affect radio reception on earth, magnetism on earth and aurorae in the Arctic regions. Sunspots are accompanied by gigantic eruptions of gas on the sun and colossal electrical phenomena in the whole solar system. If earth magnetism and electricity are in some way associated with gravity, volcanism may be affected."

Here are shown the ruins of a sun temple, used centuries ago by a race of sun worshipers. It is in the Mesa Verde National Park

Here are actual close-up pictures of sunspots. They are really whirling pits of burning gases. The dot, lower left, shows the size of the earth in comparison with the sunspots