

1

00:00:00,000 --> 00:00:04,000

You know, I've been around for a while.

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00:00:04,000 --> 00:00:06,000

Met some interesting people.

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00:00:06,000 --> 00:00:08,000

Done some crazy things.

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00:00:08,000 --> 00:00:11,000

See, you just might think that there's not much

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00:00:11,000 --> 00:00:14,000

that can take me by surprise.

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00:00:14,000 --> 00:00:17,000

You'd be wrong.

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00:00:21,000 --> 00:00:24,000

The world is full of stories,

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00:00:24,000 --> 00:00:27,000

science, and things that amaze you.

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00:00:27,000 --> 00:00:30,000

Every single day, incredible mysteries

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00:00:30,000 --> 00:00:32,000

that keep me awake at night.

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00:00:32,000 --> 00:00:34,000

Some I can answer.

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00:00:34,000 --> 00:00:36,000

Oh, there's just...

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00:00:36,000 --> 00:00:38,000

Stify logic.

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00:00:39,000 --> 00:00:42,000

Is the end of the world upon us?

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00:00:42,000 --> 00:00:45,000

In Wyoming, a deadly force is sleeping

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00:00:45,000 --> 00:00:48,000

underneath Yellowstone National Park.

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00:00:48,000 --> 00:00:51,000

Could it awake and destroy the planet?

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00:00:51,000 --> 00:00:54,000

It could happen today. It could happen tomorrow.

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00:00:54,000 --> 00:00:56,000

It's a race against time.

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00:00:56,000 --> 00:01:00,000

In Alabama, a NASA scientist makes a remarkable discovery.

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00:01:00,000 --> 00:01:04,000

Is it killer solar storm coming our way?

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00:01:04,000 --> 00:01:07,000

If we're hit today, it would knock us out,

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00:01:07,000 --> 00:01:10,000

would knock civilization to its knees.

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00:01:10,000 --> 00:01:12,000

And across the world comes the threat

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00:01:12,000 --> 00:01:14,000

of an invasion by robots.

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00:01:16,000 --> 00:01:19,000

Could the Terminator be real?

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00:01:19,000 --> 00:01:22,000

Yeah.

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00:01:22,000 --> 00:01:26,000

It's a weird world, and I love it.

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00:01:49,000 --> 00:01:52,000

You believe in prophecy.

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00:01:52,000 --> 00:01:54,000

Some of the biggest events in history

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00:01:54,000 --> 00:01:57,000

have been foreseen by some of the greatest minds.

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00:01:57,000 --> 00:02:00,000

Master Damos predicted World War I,

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00:02:00,000 --> 00:02:04,000

Hitler and Napoleon, the election of US President Barack Obama,

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00:02:04,000 --> 00:02:10,000

and the atomic destruction of Hiroshima and Nagasaki.

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00:02:10,000 --> 00:02:12,000

How did he do that?

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00:02:12,000 --> 00:02:14,000

And why can't I do that?

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00:02:14,000 --> 00:02:17,000

Were they simply lucky to be able to do that?

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00:02:17,000 --> 00:02:20,000

Were they simply lucky guesses?

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00:02:20,000 --> 00:02:25,000

Can we somehow see with incredible accuracy

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00:02:25,000 --> 00:02:31,000

what will happen hundreds or perhaps thousands of years into the future?

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00:02:31,000 --> 00:02:37,000

And if we can, do we really want to know what's coming?

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00:02:39,000 --> 00:02:42,000

Patrick Gerald is an astronomer.

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00:02:42,000 --> 00:02:46,000

In 1996, he did something extraordinary.

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00:02:47,000 --> 00:02:51,000

He devoted his life to studying the complex and mysterious texts

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00:02:51,000 --> 00:02:54,000

of the ancient Mayans.

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00:02:54,000 --> 00:02:59,000

What he found is now the stuff of Hollywood.

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00:02:59,000 --> 00:03:04,000

The world is coming to an end, and soon.

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00:03:04,000 --> 00:03:08,000

What captivated me the most after reading the Mayan prophecies

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00:03:08,000 --> 00:03:13,000

was that they calculated this huge cataclysm at the end of 2012.

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00:03:13,000 --> 00:03:17,000

This was very disturbing information for me.

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00:03:17,000 --> 00:03:22,000

I said, wow, gee, my whole future and the whole future of everybody

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00:03:22,000 --> 00:03:25,000

will be destroyed in a few years.

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00:03:25,000 --> 00:03:29,000

What am I going to do? And that changed my whole life.

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00:03:29,000 --> 00:03:34,000

But knowing when the world would end wasn't enough.

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00:03:34,000 --> 00:03:38,000

Patrick had to know how it would happen.

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00:03:38,000 --> 00:03:43,000

For the next two years, using complex mathematical formulas,

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00:03:43,000 --> 00:03:47,000

he set out to decode the Mayan's hidden messages.

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00:03:47,000 --> 00:03:53,000

I was immediately grasped by the fact that they had very high accuracy

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00:03:53,000 --> 00:03:59,000

and that they were able to calculate something very spectacular into the future.

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00:03:59,000 --> 00:04:02,000

And it took me several years to decode it,

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00:04:02,000 --> 00:04:06,000

but I found what will happen in 2012.

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00:04:07,000 --> 00:04:10,000

What did Patrick find?

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00:04:10,000 --> 00:04:12,000

Is it an asteroid?

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00:04:12,000 --> 00:04:14,000

Nuclear war?

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00:04:14,000 --> 00:04:17,000

How will the world end?

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00:04:17,000 --> 00:04:21,000

Gerald leaves on December 12th, 2012.

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00:04:21,000 --> 00:04:25,000

A sleeping giant will awake here.

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00:04:28,000 --> 00:04:34,000

The super volcano will erupt and that will destroy completely our civilization.

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00:04:34,000 --> 00:04:38,000

There are at least seven known super volcanoes on Earth.

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00:04:38,000 --> 00:04:44,000

They contain massive amounts of molten rock which is trapped inside them below the Earth's crust.

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00:04:44,000 --> 00:04:49,000

The pressure builds until finally it bursts,

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00:04:49,000 --> 00:04:57,000

exploding in a catastrophic eruption thousands of times more powerful than a regular volcano.

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00:04:57,000 --> 00:05:02,000

The last eruption occurred over 70,000 years ago.

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00:05:02,000 --> 00:05:06,000

Could one of these giants be a threat to us now?

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00:05:06,000 --> 00:05:10,000

Remarkably, the answer could be yes.

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00:05:10,000 --> 00:05:14,000

And it's underneath Yellowstone National Park.

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00:05:14,000 --> 00:05:18,000

Over two million tourists visit Yellowstone every year.

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00:05:18,000 --> 00:05:23,000

Little do they know that under the surface lies one of the deadliest forces on the planet.

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00:05:23,000 --> 00:05:29,000

Incredibly, this sleeping super volcano may be coming to life.

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00:05:30,000 --> 00:05:35,000

In 2004, scientists detected the ground starting to bulge around Yellowstone.

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00:05:35,000 --> 00:05:40,000

Soon after, over 1,000 mini-Earthquakes occurred there in just a few months.

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00:05:40,000 --> 00:05:47,000

Some dismiss it, but others say it can only mean one thing.

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00:05:47,000 --> 00:05:53,000

The scientists that are saying that while the rumbling at Yellowstone Park is normal, well,

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00:05:53,000 --> 00:05:56,000

they don't know what the Maya knew.

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00:05:56,000 --> 00:05:59,000

The rotation from the Earth will change.

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00:05:59,000 --> 00:06:04,000

Once the inner core of the Earth starts moving on its head,

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00:06:04,000 --> 00:06:11,000

then the lava that is around the inner core will be pushed also very sharply to the crust.

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00:06:11,000 --> 00:06:17,000

We will have an eruption of the Yellowstone at the end of 2012.

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00:06:17,000 --> 00:06:21,000

Did Patrick Gerald unlock the Mayan secret?

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00:06:21,000 --> 00:06:25,000

Is the Yellowstone Supervolcano about to erupt?

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00:06:25,000 --> 00:06:29,000

And could it mean the end of the world?

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00:06:29,000 --> 00:06:33,000

Robert DeSino is an entrepreneur and survivalist.

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00:06:33,000 --> 00:06:35,000

He's not waiting to find out.

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00:06:35,000 --> 00:06:38,000

You thought Mount St. Helens was something to see.

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00:06:38,000 --> 00:06:41,000

Wait till you see Yellowstone go.

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00:06:41,000 --> 00:06:48,000

In 2003, Robert decided that there was only one way to survive the blast of a super volcano.

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00:06:48,000 --> 00:06:53,000

By building volcano-proof bunkers all over America.

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00:06:53,000 --> 00:06:55,000

It's a race against time.

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00:06:55,000 --> 00:06:59,000

To get our shelters built, you could say it isn't so.

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00:06:59,000 --> 00:07:02,000

And ignore the possibilities.

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00:07:02,000 --> 00:07:05,000

But it's not going to make it go away.

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00:07:05,000 --> 00:07:11,000

Made of concrete and steel, these self-contained bunkers are buried underground.

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00:07:11,000 --> 00:07:17,000

They can house up to 1,000 people and store enough food for a year.

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00:07:17,000 --> 00:07:20,000

But who is going to use them?

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00:07:20,000 --> 00:07:24,000

We have about 10,000 members currently signed up from all over the world.

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00:07:24,000 --> 00:07:27,000

When I first mentioned it to people, they thought it was crazy.

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00:07:27,000 --> 00:07:33,000

I found that the reactions have changed in the last year and even more specifically this year, 2011.

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00:07:33,000 --> 00:07:40,000

Now they're really wanting to know where is it and how big are they and how do we get in and how much does it cost?

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00:07:40,000 --> 00:07:43,000

Because I think people are starting to realize it's coming.

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00:07:43,000 --> 00:07:49,000

Could DeSino and his friends someday be the only surviving members of the human race?

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00:07:49,000 --> 00:07:54,000

If Yellowstone blows, you're looking at a life extinction event.

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00:07:54,000 --> 00:07:58,000

The only parties that are going to survive are those that are underground.

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00:07:58,000 --> 00:08:01,000

It could happen today. It could happen tomorrow.

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00:08:01,000 --> 00:08:04,000

I think the Mayans knew something.

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00:08:04,000 --> 00:08:07,000

How they knew, I don't know.

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00:08:07,000 --> 00:08:12,000

Were they informed by some other culture?

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00:08:12,000 --> 00:08:14,000

Did they know? Were they able to see into the future?

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00:08:14,000 --> 00:08:23,000

Were they able to calculate the patterns of the solar system in the heavens to know when the alignments are going to happen and when this happens, that'll happen?

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00:08:23,000 --> 00:08:28,000

Did they exist in the last go around 3600 years ago?

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00:08:28,000 --> 00:08:31,000

Or did somebody tell them?

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00:08:31,000 --> 00:08:35,000

Does this survivalist know something we don't?

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00:08:35,000 --> 00:08:39,000

Whatever the truth is, he's taking no chances.

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00:08:39,000 --> 00:08:46,000

I don't know what inspired Noah, but I would imagine he was as passionate about what he was doing as I am.

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00:08:46,000 --> 00:08:52,000

Are Robert DeSino and Patrick Gerald simply prophets of doom?

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00:08:52,000 --> 00:08:55,000

Or could they be right?

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00:08:55,000 --> 00:08:59,000

Will a supervolcano cause the end of the world?

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00:09:03,000 --> 00:09:05,000

Crazy.

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00:09:05,000 --> 00:09:14,000

If you listen to every doomsday prediction, prophecy or conspiracy theory, you'd never leave the house, right?

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00:09:14,000 --> 00:09:16,000

I mean, what is it with these people?

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00:09:16,000 --> 00:09:22,000

Do they think that just because I say a giant volcano is going to rip through this planet and wipe us out, that we're going to believe it?

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00:09:22,000 --> 00:09:26,000

I don't believe a word they say. I'm just being careful.

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00:09:27,000 --> 00:09:35,000

A man decoding the texts of the ancient lions uncovers in the stung prophecy.

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00:09:35,000 --> 00:09:39,000

Will a supervolcano with Yellowstone destroy our planet?

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00:09:39,000 --> 00:09:48,000

Stanley Ambrose is an anthropologist. He thinks we have reason to believe it might.

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00:09:48,000 --> 00:09:57,000

I suppose if you really wanted to stay around in a place that was struck by an apocalypse, that would be a good idea. I'd rather move.

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00:09:57,000 --> 00:10:06,000

A lifetime spent studying supervolcanoes has convinced Ambrose. They are forced to be feared.

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00:10:06,000 --> 00:10:16,000

If Yellowstone blows, it would eject a huge amount of dust and gases up to 50 kilometers into the stratosphere.

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00:10:16,000 --> 00:10:24,000

We have to fear global famine. We can imagine complete loss of crop production for decades to centuries.

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00:10:24,000 --> 00:10:32,000

In 1980, Mount St. Helens erupted in Washington State, sending volcanic ash over 10 kilometers into the air.

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00:10:34,000 --> 00:10:39,000

Ambrose thinks this massive eruption would be dwarfed by Yellowstone.

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00:10:40,000 --> 00:10:49,000

Could humans survive this kind of catastrophic explosion? We may know the answer because it's already happened.

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00:10:49,000 --> 00:10:56,000

The volcanic eruption of Toba stands among the most explosive and largest in Earth history.

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00:10:57,000 --> 00:11:10,000

Around 70,000 years ago, a supervolcano exploded at Toba in Indonesia. It was so powerful, it left a crater 100 kilometers long, still visible today.

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00:11:10,000 --> 00:11:16,000

Volcanic ash rained down over an area larger than the size of the United States. That's big.

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00:11:16,000 --> 00:11:26,000

The Earth was surrounded by this thick blanket of sulfuric acid haze. The sun weakened. Much solar energy was reflected back into outer space.

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00:11:26,000 --> 00:11:43,000

The landscape around the world was basically de-vegetated. If you lived anywhere from Southeast Asia, across to India and Pakistan, the land would have been covered with a very, very fine white dust.

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00:11:43,000 --> 00:11:54,000

That's the volcanic ash. And it is really fine and it is really white. And like snow, it reflects sunlight off of the land surface.

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00:11:54,000 --> 00:12:03,000

Unlike snow, it didn't melt. It had to be washed away by the rains whenever the rains occurred. And that doesn't seem to have been very often.

149

00:12:03,000 --> 00:12:09,000

It's a global shock to the world system, what I call an insta-dice age.

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00:12:09,000 --> 00:12:21,000

Before the eruption at Toba, the Earth was home to a healthy population of humans. Ambrose believes we can judge our fate by looking at what happened to them.

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00:12:21,000 --> 00:12:35,000

The volcanic eruption caused a population crash, unlike any that had been seen previously in human history. And during the next 10,000 years, there were very few archaeological traces of humans.

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00:12:36,000 --> 00:12:44,000

Did a supervolcano take us to the brink of extinction? Could Yellowstone do the same now?

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00:12:44,000 --> 00:12:51,000

Everything within the blast zone would be buried. There would probably be general infrastructure failure.

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00:12:51,000 --> 00:12:58,000

Agricultural production would of course be hammered. The United States would lose its entire grain belt.

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00:12:58,000 --> 00:13:07,000

And if the whole world got cold the way it did with Toba, then there would be few choices of where to go to get food.

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00:13:07,000 --> 00:13:19,000

It's an alarming scenario. Should we heed the warning? Could Stanley Ambrose be right? Are billions of people in imminent danger of death by supervolcano?

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00:13:20,000 --> 00:13:26,000

Jake Lowenstern is the chief scientist at the Yellowstone Volcano Observatory.

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00:13:26,000 --> 00:13:30,000

It's my job to worry about whether Yellowstone's going to erupt.

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00:13:30,000 --> 00:13:38,000

Jake studied the supervolcano's behavior. He believes it's not a monster, but a pussycat.

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00:13:38,000 --> 00:13:43,000

People talk about the impending doom because they know there have been eruptions in Yellowstone's past.

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00:13:43,000 --> 00:13:49,000

There have been very, very large eruptions at Yellowstone, the size eruptions that people will call super eruptions.

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00:13:49,000 --> 00:13:54,000

One of the things that you'll hear about when people talk about Yellowstone is somehow that it's overdue.

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00:13:54,000 --> 00:13:59,000

And they throw out this number of 600,000 years for an interval between these large eruptions.

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00:13:59,000 --> 00:14:04,000

Well that number is pretty much taken out of nowhere.

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00:14:04,000 --> 00:14:13,000

If you did the math on those three big eruptions at Yellowstone, the number for the interval would be about 730,000 years.

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00:14:13,000 --> 00:14:21,000

Of course the last eruption was 640,000 years, so the number 600,000 is more appealing if you're trying to build the case that somehow it's overdue.

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00:14:21,000 --> 00:14:30,000

But second of all, here you're doing statistics based on a sample population of two, the interval between the first and second, and the second and third, large eruptions at Yellowstone.

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00:14:30,000 --> 00:14:38,000

Sample population of two, not very big, not really statistically meaningful to talk about how often big eruptions occur at Yellowstone.

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00:14:38,000 --> 00:14:44,000

And finally, in terms of this, there's no guarantee that Yellowstone will have another one of these super eruptions.

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00:14:44,000 --> 00:14:49,000

Volcanoes have life cycles. They are born, they live their lives, they die.

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00:14:49,000 --> 00:14:55,000

There are very few places that we can point to around the world that have had more than three very large eruptions.

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00:14:56,000 --> 00:15:03,000

Why is Jake so sure? He thinks there is something the prophets of doom have overlooked.

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00:15:03,000 --> 00:15:18,000

Well, the way that Yellowstone has erupted most of the time is through these smaller lava flows, which are similar to those that happened in Hawaii, which as you can imagine would be locally very interesting, but not an international problem.

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00:15:19,000 --> 00:15:27,000

In the last two million years, the Yellowstone Supervolcano has had three giant eruptions.

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00:15:27,000 --> 00:15:32,000

Jake believes a crucial fact is preventing another one.

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00:15:32,000 --> 00:15:40,000

Yellowstone erupts all the time, but on such a tiny scale, it produces nothing but harmless flows of lava.

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00:15:40,000 --> 00:15:52,000

Lava flows can block roads, forest fires might start, but they sort of roll very slowly across the ground, and you can generally outrun them very easily so they're not very damaging events.

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00:15:52,000 --> 00:16:00,000

Far from causing a disaster, Jake thinks these lava flows are keeping a lid on the sleeping giant.

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00:16:00,000 --> 00:16:10,000

Any time that you're having a volcanic eruption, you're removing pressure on the magma chamber, it seems to be a relatively common place for Yellowstone to have this kind of activity.

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00:16:10,000 --> 00:16:19,000

Are many eruptions at Yellowstone keeping us safe from the supervolcano? Do they explain its recent rumblings?

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00:16:20,000 --> 00:16:30,000

Around 2009, 2010, we had a couple earthquake swarms. In a swarm, you have a number of medium sized earthquakes, and they have an all in one particular location.

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00:16:30,000 --> 00:16:33,000

They were among the larger ones that we've had.

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00:16:33,000 --> 00:16:36,000

But what caused the quakes?

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00:16:36,000 --> 00:16:47,000

Scientists believe magma is flowing into the volcanic chamber, pushing up the crust. Is this a sign of an impending giant eruption?

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00:16:47,000 --> 00:17:02,000

It rose about 25 centimeters or 10 inches, something like this, above Yellowstone, between 1925 and 1975. It rose about three times that amount, so that that uplift doesn't in particular seem very worrying to me.

186

00:17:04,000 --> 00:17:14,000

Were the ancient Mayans right? Will a supervolcano wipe out the human race and the greatest mass extinction since the Big Bang?

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00:17:14,000 --> 00:17:24,000

Or is Yellowstone's sleeping giant nothing more than a harmless firecracker? Weird or what?

188

00:17:45,000 --> 00:17:50,000

Everywhere you look, our planet is turning with life.

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00:17:50,000 --> 00:17:58,000

Whether a single-celled amoeba, a snail, or incredibly complex organisms and species like us.

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00:17:58,000 --> 00:18:08,000

But all life forms, on Earth, have one thing in common. Our very existence depends upon, in fact, is at the mercy of just one thing.

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00:18:09,000 --> 00:18:17,000

If it's in trouble, then there's trouble for all of us.

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00:18:17,000 --> 00:18:22,000

They say you shouldn't stare directly into the sun.

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00:18:22,000 --> 00:18:29,000

But for over three decades, NASA scientist David Hathaway has done exactly that.

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00:18:29,000 --> 00:18:33,000

In 2005, you noticed something very strange.

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00:18:33,000 --> 00:18:40,000

It was a little unexpected by many of us, myself included.

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00:18:40,000 --> 00:18:48,000

Hathaway was tracking sunspots in giant regions of intense magnetic activity that occur on the surface of the sun.

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00:18:51,000 --> 00:18:58,000

But the greatest danger to our planet is what explodes out of them. Solar flares.

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00:18:58,000 --> 00:19:03,000

Solar flares can blast material off of the sun a million miles an hour.

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00:19:03,000 --> 00:19:14,000

With a force of 10 billion atomic bombs, solar flares catapult billions of tons of red-hot plasma into space and sometimes directly at Earth.

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00:19:16,000 --> 00:19:23,000

When it strikes the Earth, it can shape the Earth's magnetic field, does some spectacular things like produce aurora borealis,

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00:19:23,000 --> 00:19:32,000

can also do things to our technology in particular. Solar flares and cosmic satellites that de-orbit and ultimately re-enter the Earth's atmosphere and burn-ups.

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00:19:32,000 --> 00:19:34,000

You literally lose the satellite.

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00:19:35,000 --> 00:19:43,000

Solar flares and sunspots occur in regular cycles, but in 2008, Hathaway discovered something remarkable.

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00:19:44,000 --> 00:19:50,000

Suddenly, they appear to mysteriously stop.

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00:19:51,000 --> 00:19:57,000

We're seeing the sunspot cycle the smallest we've seen in at least 100 years or perhaps 200 years.

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00:19:57,000 --> 00:20:02,000

We didn't see sunspots for literally months at a time. That had us a little surprised.

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00:20:03,000 --> 00:20:10,000

Some scientists believe the change in the sunspot cycles is the calm before an unprecedented solar star.

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00:20:10,000 --> 00:20:16,000

A wave of solar flares so destructive, scientists call it space Katrina.

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00:20:20,000 --> 00:20:27,000

But now, other ominous signs suggest the sun could be waking from its deep slumber.

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00:20:28,000 --> 00:20:36,000

We've gone from those sunspots to 20 or 30 sunspots on the sun on a given day now. We've also seen the number of flares increase.

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00:20:37,000 --> 00:20:41,000

Is there something wrong with a star that gives life to all things on Earth?

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00:20:42,000 --> 00:20:49,000

Nassim Haramang is a scientist. He believes he has the answer.

213

00:20:50,000 --> 00:20:57,000

In 2009, he made a remarkable discovery when viewing images taken by a NASA satellite.

214

00:20:59,000 --> 00:21:05,000

What I notice is when I was looking at this, first of all, we see two objects appear.

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00:21:05,000 --> 00:21:10,000

Those two objects seem to have moved together and have moved across the frame.

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00:21:10,000 --> 00:21:24,000

What's strange about this particular sequence is that when you follow this object, they make almost a 90-degree angle turn and then entering the sun.

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00:21:25,000 --> 00:21:30,000

NASA claimed the objects were simply comets or glitches.

218

00:21:30,000 --> 00:21:35,000

But when Nassim studied them more closely, he came to an amazing conclusion.

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00:21:36,000 --> 00:21:41,000

And when I started to see these objects, I couldn't believe my eyes. They were immense.

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00:21:42,000 --> 00:21:50,000

I mean, they only looked like little dots on the data, but a little dot beside the sun means that the object is almost the size of the Earth.

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00:21:52,000 --> 00:21:56,000

Planet-size objects entering the sun.

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00:21:57,000 --> 00:22:04,000

Had Nassim found something extraordinary that even NASA had missed? He thinks there's only one explanation.

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00:22:05,000 --> 00:22:11,000

I believe these objects may be intergalactic ships from advanced civilization.

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00:22:12,000 --> 00:22:25,000

They appear to be under intelligence control. They don't appear to act in a natural way that you would expect from cosmological objects like comets

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00:22:26,000 --> 00:22:28,000

and meteorites and so on.

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00:22:29,000 --> 00:22:38,000

It may sound completely outrageous, but imagine a civilization that's like thousands, if not millions of years ahead of us.

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00:22:39,000 --> 00:22:43,000

Look at what we did in 150 years of advanced technology.

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00:22:44,000 --> 00:22:54,000

We went from literally horse and buggy to having rockets that are going to the moon and space shuttle and space stations and all this in 150 years.

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00:22:54,000 --> 00:23:01,000

Imagine if we had a thousand years of advancements in technology or a million years in advancements.

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00:23:02,000 --> 00:23:06,000

What would our ships look like? Well, they might be the size of planets.

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00:23:07,000 --> 00:23:15,000

Could this explain the sun's odd behavior? Are changes in its sunspot and solar flare activity being caused by alien ships?

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00:23:16,000 --> 00:23:23,000

The solar flare appears to emanate right after the objects impact the sun.

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00:23:24,000 --> 00:23:36,000

To me, clear that the two are absolutely related in the sun flare is most likely the shockwave resulting from the penetration of the objects through the surface of the sun.

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00:23:38,000 --> 00:23:43,000

Is our sun part of an intergalactic highway being used by alien traffic?

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00:23:43,000 --> 00:23:49,000

Are they responsible for disrupting its natural cycles and threatening the Earth?

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00:23:51,000 --> 00:23:57,000

Now, we did some pretty strange things on the Enterprise, but this is weird or what. Let me see if I got this straight.

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00:23:58,000 --> 00:24:08,000

NASA scientists say our sun's sunspot cycles are behaving weirdly and this could cause a giant killer solar flare to head towards Earth, right?

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00:24:08,000 --> 00:24:18,000

While another guy, Nassim, thinks that there's something else causing these solar flares. He thinks aliens.

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00:24:21,000 --> 00:24:28,000

In space ships the size of the Earth are crashing in and out of the sun, wreaking havoc.

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00:24:29,000 --> 00:24:34,000

Nassim's theory seems crazy, right? Or is it?

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00:24:35,000 --> 00:24:43,000

Our sun is acting like an oddball. Are its natural cycles being disrupted by giant UFOs?

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00:24:46,000 --> 00:24:49,000

Is a fatal solar storm on its way to Earth?

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00:24:51,000 --> 00:24:59,000

NASA researcher David Hathaway has an explanation that's far more down to Earth. He thinks we have nothing to worry about.

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00:25:00,000 --> 00:25:07,000

This recent sunspot cycle has started later than expected and I think I understand it.

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00:25:08,000 --> 00:25:12,000

The sunspot cycle is caused by magnetic fields. It's those magnetic fields that make the sunspots.

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00:25:13,000 --> 00:25:21,000

And we've known for decades that it's the flows within the sun that take those magnetic fields, amplify them and produce sunspots every 11 years.

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00:25:22,000 --> 00:25:28,000

But the devil is in the details. Exactly what flows are there inside the sun that do this? What are the structure of those flows?

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00:25:29,000 --> 00:25:33,000

We're getting a better handle on that but we're still not quite there yet.

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00:25:34,000 --> 00:25:40,000

We still really haven't got a model for how the sun does this where we can take the equations and march them forward in time.

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00:25:41,000 --> 00:25:47,000

The way meteorologists might do with the equations for flows in the Earth's atmosphere.

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00:25:48,000 --> 00:25:53,000

The sun's magnetic fields violently swirl around the surface like powerful ocean currents.

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00:25:54,000 --> 00:26:00,000

They produce sunspots and solar flares until finally something bizarre happens.

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00:26:01,000 --> 00:26:03,000

The sun's magnetic field flips.

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00:26:04,000 --> 00:26:08,000

Every 11 years the sun's magnetic poles do a back flip.

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00:26:09,000 --> 00:26:17,000

Scientists believe this causes a dramatic decrease in sunspot and solar flare activity. But does it threaten us now?

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00:26:18,000 --> 00:26:23,000

We had weak magnetic fields produced on the surface of the sun during the last sunspot cycle.

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00:26:24,000 --> 00:26:28,000

But because they were weak we'll survive this without any major inconvenience.

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00:26:29,000 --> 00:26:33,000

The end of the worlders almost certainly have it wrong. The timing's just way off.

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00:26:34,000 --> 00:26:39,000

We may say for the moment, but could Omega's solar storm hit us in the future?

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00:26:40,000 --> 00:26:43,000

And what would happen if it did?

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00:26:44,000 --> 00:26:48,000

Lawrence Joseph is a science journalist.

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00:26:49,000 --> 00:26:55,000

If a solar storm hit today would knock us out, would knock civilization to its knees without any exaggeration.

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00:26:56,000 --> 00:26:57,000

How?

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00:26:58,000 --> 00:27:01,000

A historical event could provide the answer.

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00:27:03,000 --> 00:27:12,000

On September 1st, 1859 British astronomer Richard Carrington was looking through his telescope when a giant solar flare

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00:27:13,000 --> 00:27:15,000

exploded onto the earth.

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00:27:19,000 --> 00:27:25,000

It caused the Northern Lights to dance down to the equator. You could read a book at midnight outside because of the incredible radiation.

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00:27:26,000 --> 00:27:34,000

The Carrington event caused some fires in telegraph offices and caused some disruption. Basically it didn't inflict great damage.

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00:27:35,000 --> 00:27:38,000

Why didn't this massive flare destroy us?

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00:27:38,000 --> 00:27:45,000

There was no power grid holding society together. There was no telecom. None of the things that we've come to rely upon existed back then.

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00:27:47,000 --> 00:27:54,000

Joseph believes that if a similar solar flare hit us today, our massive reliance on electricity would be our downfall.

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00:27:58,000 --> 00:28:05,000

We're talking a blackout that could last months or years. We could cover half to two-thirds of the continent.

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00:28:06,000 --> 00:28:12,000

After a month, I can't really see anything but anarchy at the beginning of it.

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00:28:13,000 --> 00:28:19,000

It's in the paradox of progress, I call it. We have become more vulnerable to these storms and the storms are headed our way.

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00:28:20,000 --> 00:28:22,000

The shields are down, Scotty.

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00:28:23,000 --> 00:28:32,000

In 1989, a small solar flare knocked out the Quebec power grid and left six million people without power in the dead of winter.

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00:28:33,000 --> 00:28:43,000

Joseph believes a giant flare would destroy every power grid on the planet. No electricity means no food.

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00:28:44,000 --> 00:28:50,000

I'm damn concerned. People would really begin to die off in large numbers. So what are you going to do? We don't know.

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00:28:51,000 --> 00:28:55,000

I mean, people would go ahead for the hills. What are you going to do to the hills? I don't know what to do in the hills. Most people don't.

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00:28:56,000 --> 00:29:02,000

Have our advances in technology made us vulnerable to a super solar storm?

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00:29:03,000 --> 00:29:13,000

Is the sun's mysterious behavior natural or are aliens to blame? Weird or what?

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00:29:25,000 --> 00:29:35,000

A world-renowned inventor makes an astonishing prediction.

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00:29:36,000 --> 00:29:39,000

Twenty years from now, computers will be operating fully at human levels.

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00:29:40,000 --> 00:29:46,000

Are we facing an uprising of killer machines? Could the Terminator be real?

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00:29:46,000 --> 00:29:56,000

It's incredible, isn't it? If we were to believe the ancient prophecies or our modern-day doomsday theorists or even some of our best scientists,

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00:29:57,000 --> 00:30:07,000

then not only is the end of the world going to happen, but there's lots of ways that nature destroys. And none of them are nice.

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00:30:07,000 --> 00:30:20,000

But what if they're all wrong? What if the thing that will wipe us out has nothing to do with volcanoes or solar storms?

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00:30:21,000 --> 00:30:32,000

What if there's something, aside from nuclear weapons, of course, that we've created that's an even bigger threat?

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00:30:32,000 --> 00:30:39,000

Weird or what?

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00:30:40,000 --> 00:30:50,000

In 1984, Hollywood gave the world a futuristic science-fiction blockbuster. The story of a cyborg assassin sent back in time from 2029.

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00:30:51,000 --> 00:30:57,000

The Terminator posed a remarkable question. Could robots take over and destroy us?

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00:30:57,000 --> 00:31:02,000

Nearly three decades later, we may have the answer.

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00:31:03,000 --> 00:31:13,000

Ray Kurzweil is a world-renowned inventor and futurist. He believes science-fiction will become reality sooner than we think.

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00:31:14,000 --> 00:31:19,000

It's in the last 15 years we've seen millions-fold improvement in the power of computers.

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00:31:20,000 --> 00:31:23,000

And this is not just an idle speculation about the future, that's what we've seen.

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00:31:23,000 --> 00:31:27,000

Twenty years from now, computers will be operating fully at human levels.

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00:31:28,000 --> 00:31:37,000

It's an extraordinary theory based on an extraordinary fact. Today's computers are 100 billion times more powerful than they were a century ago.

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00:31:38,000 --> 00:31:44,000

And their power is growing. Kurzweil believes they are rapidly catching us.

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00:31:45,000 --> 00:31:50,000

Computers already exceed humans at logical thinking like playing games.

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00:31:51,000 --> 00:31:55,000

There are robotic cars without artificial intelligence that are driving without human drivers.

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00:31:56,000 --> 00:32:00,000

Computers today can look at an electric cardiogram and diagnose it with the accuracy of doctors.

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00:32:01,000 --> 00:32:05,000

And that's something that wasn't feasible even a couple of years ago. So things are moving more and more quickly.

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00:32:06,000 --> 00:32:09,000

Are we experiencing the rise of the machines?

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00:32:10,000 --> 00:32:15,000

Are our PCs more than simply harmless pieces of plastic and metal?

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00:32:16,000 --> 00:32:21,000

We'll continue to grow exponentially in the basic hardware power more than doubling in power every year.

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00:32:22,000 --> 00:32:27,000

We'll get to human levels of intelligence and machine by my estimates around 2029.

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00:32:28,000 --> 00:32:29,000

Wait a minute, what did you say?

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00:32:29,000 --> 00:32:30,000

There's no answer to the relevant mistakes.

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00:32:31,000 --> 00:32:35,000

We'll get to human levels of intelligence and machine by my estimates around 2029.

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00:32:36,000 --> 00:32:41,000

2029 is the year from which the terminator made its return.

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00:32:42,000 --> 00:32:47,000

Will machines equal then surpass our brain power in just 20 years?

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00:32:48,000 --> 00:32:51,000

Incredibly, Kurzweil believes it won't end there.

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00:32:52,000 --> 00:33:01,000

By my calculations when we get to around 2045, we will have multiplied the intelligence of our human machine civilization a billion fold

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00:33:01,000 --> 00:33:05,000

by merging with this intelligent technology we're creating.

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00:33:06,000 --> 00:33:12,000

That will be such a profound singular transformation when we can actually vastly multiply our own intelligence.

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00:33:15,000 --> 00:33:20,000

Will man and machine merge before the middle of the century?

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00:33:21,000 --> 00:33:23,000

And if so, what does it mean for us?

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00:33:24,000 --> 00:33:27,000

It's not an invasion, you know, from another planet.

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00:33:27,000 --> 00:33:29,000

People say, oh, we'll lose our humanity.

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00:33:29,000 --> 00:33:32,000

In my mind, that is our humanity.

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00:33:32,000 --> 00:33:33,000

That's part of who we are.

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00:33:34,000 --> 00:33:37,000

Our computers, our technology is part of the human civilization.

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00:33:38,000 --> 00:33:41,000

So we will transcend our biology, not our humanity.

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00:33:42,000 --> 00:33:45,000

I believe we will embody our human values in these machines.

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00:33:46,000 --> 00:33:48,000

They're part of human civilization already.

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00:33:49,000 --> 00:33:52,000

I don't like the term transhumanism because it implies they're going to transcend our humanity.

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00:33:52,000 --> 00:33:58,000

I think the goal anyway is to keep our humanity and transcend the limitations of our biology.

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00:33:58,000 --> 00:33:59,000

And that's not a new story.

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00:34:00,000 --> 00:34:05,000

If we hadn't done that, human life expectancy would still be 23, which is what it was 1,000 years ago.

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00:34:07,000 --> 00:34:13,000

Could our world end not by natural disaster, but with humankind simply becoming obsolete?

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00:34:14,000 --> 00:34:19,000

John Leslie is a professor of philosophy at the University of Guelph in Canada.

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00:34:20,000 --> 00:34:27,000

It could be in the next 20, 30 years we have computers which are more intelligent than humans

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00:34:28,000 --> 00:34:31,000

and which take over control of our lives.

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00:34:32,000 --> 00:34:35,000

And there's an obvious possibility that things could go badly wrong.

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00:34:36,000 --> 00:34:38,000

John believes that far from advancing humanity,

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00:34:38,000 --> 00:34:41,000

creating uber-intelligent robots and computers could backfire on all of us.

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00:34:43,000 --> 00:34:48,000

Are the machines we've created going to turn on us and take over our planet?

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00:34:49,000 --> 00:34:51,000

Is Hollywood right?

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00:34:52,000 --> 00:34:57,000

You have to remember that the science fiction of today quite often turns out to be the science fact of tomorrow.

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00:34:58,000 --> 00:35:01,000

Down there, sir, it's very clear that we're going to be the scientists.

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00:35:01,000 --> 00:35:06,000

According to John, it's not only terminators that pose a very real threat to our survival.

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00:35:08,000 --> 00:35:13,000

In fact, one of the dangers here is that it may be that computers are in charge of the system which controls new clip-ons.

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00:35:14,000 --> 00:35:19,000

We simply don't know to what extent they are in charge of the destructive forces.

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00:35:20,000 --> 00:35:24,000

The fact that computers are in charge of the systems which control new clip-ons,

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00:35:25,000 --> 00:35:30,000

we simply don't know to what extent they are in charge of the destructive forces.

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00:35:32,000 --> 00:35:35,000

Could a machine deliberately trigger a nuclear holocaust?

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00:35:36,000 --> 00:35:41,000

It's a terrifying scenario, but Leslie has an even more frightening theory.

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00:35:42,000 --> 00:35:47,000

The ultimate threat to the human race is already in our homes.

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00:35:48,000 --> 00:35:54,000

You could argue that the Internet is at present a gigantic computer

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00:35:55,000 --> 00:35:59,000

and that its intelligence so far exceeds the intelligence of any individual human.

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00:35:59,000 --> 00:36:07,000

Certainly, the amount of knowledge you can get very, very rapidly on the Internet is much bigger than you could get by consulting the greatest memory experts.

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00:36:08,000 --> 00:36:18,000

I believe that the future of the Internet is pretty certainly going to push it in the direction of more and more intelligence.

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00:36:19,000 --> 00:36:21,000

Every day, over two billion people log on to the Internet.

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00:36:22,000 --> 00:36:28,000

It connects most of the world's computers and databases, moving information around the planet.

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00:36:30,000 --> 00:36:38,000

John believes the Internet could evolve into a central brain that leads a cybernetic revolt against mankind.

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00:36:39,000 --> 00:36:45,000

It could become immensely intelligent and become therefore what takes over world governments

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00:36:46,000 --> 00:36:50,000

and possibly then decides that humans are relevant and gets rid of them.

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00:36:51,000 --> 00:36:55,000

That's just one way in which we could be annihilated almost immediately.

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00:36:56,000 --> 00:36:59,000

Will robots blow us up with our own nuclear weapons?

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00:37:00,000 --> 00:37:02,000

Is the Internet going to destroy us?

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00:37:04,000 --> 00:37:07,000

Will man be enslaved by machines?

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00:37:12,000 --> 00:37:14,000

You know, I never thought machines were that smart.

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00:37:15,000 --> 00:37:20,000

I mean, most of the cats that I have are incapable of doing anything useful at all, let alone the sighting Shakespeare.

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00:37:20,000 --> 00:37:28,000

But if we believe what some of the world's greatest minds are telling us, these things we've created are going to take us over,

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00:37:29,000 --> 00:37:36,000

blow us up with our own weapons and enslave us for the rest of time, could that be possible?

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00:37:38,000 --> 00:37:40,000

Not today, my friends.

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00:37:41,000 --> 00:37:47,000

Leading scientists believe machines are becoming so intelligent that they will overtake humans by 2050.

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00:37:48,000 --> 00:37:52,000

Will they become terminators and annihilate us?

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00:37:56,000 --> 00:38:01,000

Noel Sharkey is a professor of artificial intelligence and robotics at the University of Sheffield, England.

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00:38:02,000 --> 00:38:07,000

We're really a long way off at the moment of creating the kind of technology you see in the likes of the Terminator,

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00:38:08,000 --> 00:38:12,000

with big humanoid robots armed with machine guns plodding across the battlefield.

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00:38:12,000 --> 00:38:19,000

Some of the world's greatest minds disagree, but Sharkey believes they haven't asked one simple question.

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00:38:20,000 --> 00:38:21,000

Why?

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00:38:21,000 --> 00:38:30,000

As a scientist, I need evidence and there's no evidence of any kind of really smart intelligence or any kind of desire or robots would have a desire to take over the world

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00:38:30,000 --> 00:38:33,000

any more than a washing machine would want to take over the world.

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00:38:33,000 --> 00:38:40,000

Not only does Sharkey think that machines aren't a threat, but they're not nearly as smart as we make them out to be.

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00:38:42,000 --> 00:38:47,000

A lot of people talk about artificial intelligence at the moment being at the level of the rat or the slug,

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00:38:47,000 --> 00:38:50,000

and it's going to get so much smarter and be like the human later.

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00:38:51,000 --> 00:38:58,000

But for me, I've studied animals all my life, really, and I would say that current robots weren't at the intelligence of a bacteria,

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00:38:58,000 --> 00:39:01,000

because bacteria can feed themselves and they know how to survive.

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00:39:01,000 --> 00:39:03,000

Robots don't. They're dependent on me.

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00:39:03,000 --> 00:39:07,000

And essentially, they're not bright enough to be called stupid.

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00:39:07,000 --> 00:39:20,000

But even if robots and computers are nothing more than digital dummies, couldn't someone use them for evil rather than good?

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00:39:21,000 --> 00:39:25,000

Well, the problem is that robots are very limited in what they can do.

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00:39:25,000 --> 00:39:29,000

You just program a robot, but it's all up to what the programmer puts in there.

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00:39:29,000 --> 00:39:33,000

There's no reason why the robot themselves would do anything that we haven't told them to do,

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00:39:33,000 --> 00:39:38,000

and I certainly wouldn't be programming a robot to tell it to take over the world, and I don't think anybody else would.

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00:39:40,000 --> 00:39:44,000

Instead of creatures with a super intelligence that surpasses humans,

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00:39:45,000 --> 00:39:53,000

Sharky thinks machines are our moronic slaves that lack the one essential ingredient for a robot-led Armageddon.

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00:39:54,000 --> 00:39:55,000

Human emotion.

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00:39:56,000 --> 00:40:01,000

We have consciousness, and we use that in our everyday lives, in our thought, in our desires,

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00:40:01,000 --> 00:40:06,000

whereas robots have a really rigid, silicon intelligence. No desires, no wants.

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00:40:07,000 --> 00:40:14,000

But if robots have neither the brains nor the drive for world domination, why do so many others believe it will happen?

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00:40:16,000 --> 00:40:20,000

The whole idea of a robot takeover is quite odd, and it's really the subject of science fiction.

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00:40:20,000 --> 00:40:29,000

Right back since the word was invented in 1921, all science fiction movies have been about robots killing humans and taking over the world.

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00:40:29,000 --> 00:40:37,000

But it is, as it says, fiction. One of my big concerns at the minute is that there are 43 countries worldwide that are developing military robots.

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00:40:38,000 --> 00:40:44,000

And one of the problems is the military seem to have this idea, science fiction idea of robots, that they could be that kind, have that kind of intelligence,

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00:40:45,000 --> 00:40:50,000

but in actual fact they can't tell the difference between a soldier and a civilian, and so a lot of people will die.

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00:40:50,000 --> 00:40:55,000

But it won't be through the intentions of robots, it'll be through the misuse by humans of a dangerous weapon.

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00:40:56,000 --> 00:41:05,000

Are robots just mindless heaps of metal? Or will man and machine merge and destroy the human race?

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00:41:07,000 --> 00:41:11,000

What does have to wait and find out? Weird or what?

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00:41:25,000 --> 00:41:40,000

So here we have it. Doomsday stories from the Earth and beyond.

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00:41:41,000 --> 00:41:45,000

In Wyoming, a deadly supervolcano lies dormant.

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00:41:46,000 --> 00:41:51,000

It was explored in 2012 and fulfilled a Mayan prophecy.

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00:41:52,000 --> 00:41:56,000

In Alabama, a NASA scientist discovers the unthinkable.

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00:41:57,000 --> 00:42:02,000

A giant solar storm could be on its way to destroy the Earth.

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00:42:03,000 --> 00:42:07,000

And one of the world's greatest minds makes a startling prediction.

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00:42:08,000 --> 00:42:12,000

Man and machine will merge by 2050.

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00:42:13,000 --> 00:42:17,000

Will robots take over? Are we facing a Terminator Armageddon?

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00:42:18,000 --> 00:42:22,000

Are these stories evidence that the end of the world is nigh?

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00:42:23,000 --> 00:42:27,000

Can we dismiss those who claim these things are true?

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00:42:28,000 --> 00:42:30,000

You decide.

