

1

00:00:00,000 --> 00:00:09,640

Could a small piece of aircraft debris found on a remote desert island finally solve America's

2

00:00:09,640 --> 00:00:12,120

greatest aviation mystery?

3

00:00:12,120 --> 00:00:16,960

Is this part of a familiar heart's airplane?

4

00:00:16,960 --> 00:00:22,840

Why are space agencies like NASA scouring the deepest parts of the ocean for signs of

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00:00:22,840 --> 00:00:25,520

extraterrestrial life?

6

00:00:25,520 --> 00:00:32,320

We know more about the surface of Mars than we know about our deep seas.

7

00:00:32,320 --> 00:00:39,880

And what could explain the hundreds of mysterious ghost ships washing up on the shores of Japan?

8

00:00:39,880 --> 00:00:46,120

Could the North Koreans be sending spies to Japan in these boats?

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00:00:46,120 --> 00:00:50,680

The underwater realm is another dimension.

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00:00:50,680 --> 00:01:00,680

It's a physically hostile place where dreams of promise can sink into darkness.

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00:01:00,680 --> 00:01:06,400

I'm Jeremy Wade and I'm searching the world to bring you the most iconic and baffling

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00:01:06,400 --> 00:01:10,880

underwater mysteries known to science.

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00:01:10,880 --> 00:01:16,960

The vast majority of our ocean is unobserved, unmatched and unexplored.

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00:01:16,960 --> 00:01:22,000

It's a dangerous frontier that swallows evidence.

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00:01:22,000 --> 00:01:24,640

You have nowhere to run.

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00:01:24,640 --> 00:01:42,920

Where unknown is normal and understanding is rare.

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00:01:42,920 --> 00:01:46,760

It's one of history's most perplexing disappearances.

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00:01:46,760 --> 00:01:53,680

In 1937, aviation pioneer Amelia Earhart vanishes over the Pacific Ocean.

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00:01:53,680 --> 00:01:58,320

There are no traces of what happened to her or her aircraft.

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00:01:58,320 --> 00:02:04,160

This lack of evidence has opened the door to nearly 100 years of rumor, hearsay and wild

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00:02:04,160 --> 00:02:06,320

conspiracy theories.

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00:02:06,320 --> 00:02:13,280

But now can a small piece of aircraft debris found on the beach of a remote tropical island

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00:02:13,280 --> 00:02:22,080

finally help solve this mystery?

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00:02:22,080 --> 00:02:29,800

July 1937, Amelia Earhart and her navigator Fred Noonan are flying over the Pacific Ocean

25

00:02:29,800 --> 00:02:34,760

in their twin-engine Lockheed Electra.

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00:02:34,760 --> 00:02:42,360

Amelia Earhart is this glamorous, exciting aviatrix who's breaking glass ceilings with

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00:02:42,360 --> 00:02:48,440

her adventures and her flying.

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00:02:48,440 --> 00:02:53,240

She had already become the first woman to do a transatlantic flight.

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00:02:53,240 --> 00:02:59,320

She was on her way to becoming the first woman to circumnavigate the globe.

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00:02:59,320 --> 00:03:04,760

Earhart is 22,000 miles into this record-breaking journey.

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00:03:04,760 --> 00:03:12,320

Only one thing stands between her and Glory, the vast Pacific Ocean.

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00:03:12,320 --> 00:03:14,560

She was doing the hardest bit.

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00:03:14,560 --> 00:03:21,440

A 2,500-mile overwater flight to a tiny island in the middle of the Pacific called Howland

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00:03:21,440 --> 00:03:22,440

Island.

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00:03:22,440 --> 00:03:28,800

It's a tiny target for them to reach, but they're going to need to refuel there.

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00:03:28,800 --> 00:03:34,840

Luckily, Earhart and Noonan have a helping hand.

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00:03:34,840 --> 00:03:40,200

Anchored off the coast of the island is the Itasca, a US Coast Guard ship equipped with

38

00:03:40,200 --> 00:03:45,480

a radio transmitter to help guide them in.

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00:03:45,480 --> 00:03:55,200

But as Earhart closes in, things start to unravel.

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00:03:55,200 --> 00:04:03,040

She was unable to get a berry on the signal sent out by the Coast Guard.

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00:04:03,040 --> 00:04:05,960

There's a problem with their radio transmissions.

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00:04:05,960 --> 00:04:15,040

Howland Island wasn't there in front of them when they expected it to be.

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00:04:15,040 --> 00:04:21,520

Earhart isn't receiving or responding to the messages being sent out by the ship.

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00:04:21,520 --> 00:04:23,960

Earhart was calling the Itasca.

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00:04:23,960 --> 00:04:30,480

Itasca was replying, but Earhart was not hearing their replies.

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00:04:30,480 --> 00:04:38,400

The radio operators can only listen in horror as the drama unfolds, until all contact is

47

00:04:38,400 --> 00:04:45,800

lost.

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00:04:45,800 --> 00:04:46,800

Where did they go?

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00:04:46,800 --> 00:04:48,080

What happened to them?

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00:04:48,080 --> 00:04:51,720

It's one of the greatest mysteries of our time.

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00:04:51,720 --> 00:04:59,320

When Amelia Earhart was reported as overdue, missing, it was huge news all over the United

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00:04:59,880 --> 00:05:01,880

States, all over the world.

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00:05:01,880 --> 00:05:05,400

A massive rescue effort is launched.

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00:05:05,400 --> 00:05:14,000

But after weeks of searching, Amelia Earhart is officially declared lost at sea.

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00:05:14,000 --> 00:05:21,480

It's concluded she must have crashed into the water somewhere close to Howland Island.

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00:05:21,480 --> 00:05:27,040

The hunt for her aircraft deep beneath the waves continues to this day.

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00:05:27,040 --> 00:05:32,000

Many people believe this lost at sea theory, but no trace has ever been found of a crash

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00:05:32,000 --> 00:05:35,200

around Howland Island.

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00:05:35,200 --> 00:05:44,320

What if Amelia Earhart and her navigator didn't crash at sea at all?

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00:05:44,320 --> 00:05:51,200

In the days following her disappearance, something happens that supports this possibility.

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00:05:51,200 --> 00:05:56,680

People were saying that they were receiving signals, radio signals, even after the disappearance

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00:05:56,760 --> 00:05:58,800

of the airplanes.

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00:05:58,800 --> 00:06:03,040

These calls go on night after night.

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00:06:03,040 --> 00:06:10,520

They're hearing Amelia Earhart very clearly saying, SOS, SOS, this is Amelia Earhart.

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00:06:10,520 --> 00:06:16,160

But after finding no trace of Earhart or her plane, the official search dismisses these

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00:06:16,160 --> 00:06:22,000

radio messages as false reports or hoaxes.

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00:06:22,000 --> 00:06:25,000

But what if they were real?

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00:06:25,000 --> 00:06:29,640

Will Amelia miraculously survive and make it to dry land?

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00:06:29,640 --> 00:06:35,680

If so, the question is where?

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00:06:35,680 --> 00:06:42,720

Our best piece of information about what happened in the final moments, hours of Earhart's

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00:06:42,720 --> 00:06:46,240

flight are the radio logs.

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00:06:46,240 --> 00:06:51,960

This real-time record was transcribed by the radio operators aboard the US Coast Guard

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00:06:51,960 --> 00:06:55,960

vessel and it contains a tantalizing clue.

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00:06:55,960 --> 00:07:07,520

The last thing they heard or say was, we are on the line 157337, running on the line north

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00:07:07,520 --> 00:07:09,760

and south.

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00:07:09,760 --> 00:07:16,200

These numbers refer to a fixed navigation line that runs directly through Howland Island.

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00:07:16,200 --> 00:07:21,520

Amelia and Noonan were using it to try and get a fix on their location.

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00:07:21,520 --> 00:07:25,040

So they're running on the line looking for Howland Island, which is what they should

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00:07:25,040 --> 00:07:27,360

have done.

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00:07:27,360 --> 00:07:33,400

Crucially around 400 miles to the south on the same line lies another small piece of

81

00:07:33,400 --> 00:07:37,240

land, Gardner Island.

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00:07:37,240 --> 00:07:42,040

Gardner Island is a very small atoll.

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00:07:42,040 --> 00:07:44,960

It's got a fringing reef and an internal lagoon.

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00:07:44,960 --> 00:07:49,640

It's like an elongated triangle.

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00:07:49,640 --> 00:07:57,720

This uninhabited island was searched back in 1937, but only from the air.

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00:07:57,720 --> 00:08:03,040

Is it possible the official search missed something?

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00:08:03,040 --> 00:08:08,560

For over 30 years, Rick Gillespie has been leading a team of multi-disciplined researchers

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00:08:08,560 --> 00:08:14,760

who think this might be the case.

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00:08:14,760 --> 00:08:19,960

In the 1990s, they launched a series of ambitious expeditions.

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00:08:19,960 --> 00:08:27,800

We were the first people to go to that island and look for signs of a familiar heart.

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00:08:27,800 --> 00:08:34,560

They searched for clues above and below the water, using everything from metal detectors

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00:08:34,560 --> 00:08:38,920

to state-of-the-art sonar technology.

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00:08:38,920 --> 00:08:47,240

And they uncover profound evidence, including a 1930s pocket knife and a glass bottle that

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00:08:47,240 --> 00:08:52,200

used to contain women's antifreckle cream.

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00:08:52,200 --> 00:08:56,640

What's all this stuff doing there?

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00:08:56,640 --> 00:09:02,840

But it's not the decisive proof Rick and his team have travelled all this way to find.

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00:09:02,840 --> 00:09:07,240

Are there any signs of a familiar's aircraft?

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00:09:07,240 --> 00:09:13,200

Everybody talks about a smoking gun in the air heart mystery has to be the plane.

99

00:09:13,200 --> 00:09:15,360

Everybody wants the plane.

100

00:09:15,360 --> 00:09:20,800

Initially, there are no signs of it on the island or in the shallow reef that surrounds

101

00:09:20,800 --> 00:09:22,880

it.

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00:09:22,880 --> 00:09:26,160

Then finally, a breakthrough.

103

00:09:26,160 --> 00:09:30,480

And there's this piece of aluminum land right there on the surface.

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00:09:30,480 --> 00:09:36,040

At that point, you don't know whether it's something important or not.

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00:09:36,040 --> 00:09:43,160

The thin metal sheet has lines of rivet holes, an unmistakable indication that it came from

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00:09:43,160 --> 00:09:45,160

an aircraft.

107

00:09:45,160 --> 00:09:49,720

How did it get all the way out here to this uninhabited island?

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00:09:49,720 --> 00:09:53,320

Are these the remains of Amelia Earhart's airplane?

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00:09:53,320 --> 00:09:57,360

Is it the proof that she crashed somewhere near or even on this island?

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00:10:06,840 --> 00:10:12,280

When a team of researchers scour a remote Pacific island for signs of the long lost

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00:10:12,280 --> 00:10:17,120

aviator Amelia Earhart, they find a vital clue.

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00:10:17,120 --> 00:10:22,920

A small piece of aluminum with telltale signs that it came from an aircraft.

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00:10:22,920 --> 00:10:28,520

Raising the possibility that Earhart crash landed on the deserted island and lived out

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00:10:28,520 --> 00:10:31,600

her days as a castaway.

115

00:10:31,600 --> 00:10:34,600

Could this possibly be the case?

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00:10:35,320 --> 00:10:42,000

Could this possibly be part of Amelia Earhart's Lockheed Electra?

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00:10:42,000 --> 00:10:48,600

Rick's team begin the laborious task of comparing the rivet patterns on the aluminum with aircraft

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00:10:48,600 --> 00:10:50,600

from the same period.

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00:10:50,600 --> 00:10:57,480

We cannot forget that World War II is virtually contemporary with Amelia Earhart.

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00:10:57,480 --> 00:11:03,400

Wreckage from World War II planes litters the Pacific Ocean.

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00:11:03,400 --> 00:11:07,160

Does the aluminum sheet match with a Lockheed Electra?

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00:11:07,160 --> 00:11:09,680

The pattern doesn't quite fit.

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00:11:09,680 --> 00:11:13,760

It's like close but no cigar and it's got to be perfect.

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00:11:13,760 --> 00:11:17,840

But it doesn't appear to match with any other aircraft either.

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00:11:17,840 --> 00:11:18,840

We were stuck.

126

00:11:18,840 --> 00:11:23,480

We said we don't know where this thing came from.

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00:11:23,480 --> 00:11:25,840

It's a devastating blow.

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00:11:25,840 --> 00:11:30,840

What this piece of metal is and where it came from remain unclear.

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00:11:34,400 --> 00:11:39,400

Could the answer be hiding in plain sight?

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00:11:39,400 --> 00:11:45,400

Footage from Amelia's record-breaking journey shows one easily overlooked anomaly.

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00:11:45,400 --> 00:11:50,400

You can see that there was a repair done to the plane where there's a piece of sheet metal

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00:11:50,400 --> 00:11:55,400

that was added that you don't see in earlier legs of their trip.

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00:11:55,400 --> 00:12:01,400

Earhart's plane had a small navigation window in the back right-hand side of the fuselage.

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00:12:03,400 --> 00:12:08,400

But in later pictures, it's not there.

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00:12:08,400 --> 00:12:13,400

They took that window out and covered the hole with a plain aluminum patch.

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00:12:13,400 --> 00:12:19,400

This reignites interest in the aluminum sheet found on Gardner Island.

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00:12:19,400 --> 00:12:26,400

A custom repair job might explain why the rivet markings don't match with the Lockheed Electra

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00:12:26,400 --> 00:12:28,400

or any other aircraft.

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00:12:28,400 --> 00:12:34,400

Rick and his team put this theory to the test by checking the size and shape of the window patch.

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00:12:34,400 --> 00:12:40,400

It's almost like solving a puzzle and trying to figure out where the puzzle pieces fit.

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00:12:40,400 --> 00:12:47,400

They find that the size of the patch and that of a mystery piece of aluminum are a perfect match.

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00:12:50,400 --> 00:12:55,400

It's the biggest breakthrough yet, but not conclusive proof.

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00:12:55,400 --> 00:13:02,400

For that, direct evidence is needed that ties this small piece of aluminum to Amelia's aircraft.

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00:13:02,400 --> 00:13:10,400

Now we can use new technologies to help us gather more evidence and hopefully help us solve this mystery.

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00:13:10,400 --> 00:13:20,400

In 2021, Penn State University offered to analyze the piece of aluminum using their own nuclear reactor.

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00:13:20,400 --> 00:13:28,400

The team are using a neutron activation analysis to understand the construction of the metal.

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00:13:28,400 --> 00:13:37,400

By showering it with radioactive neutrons, they may reveal subatomic clues hidden on the surface of the aluminum.

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00:13:37,400 --> 00:13:44,400

Things like tiny traces of paint or indentations, for example, from serial marks.

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00:13:44,400 --> 00:13:49,400

Things like that which you just wouldn't be able to see with the naked eye.

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00:13:49,400 --> 00:13:53,400

We've gotten some preliminary reports from Penn State.

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00:13:53,400 --> 00:14:01,400

The researchers, Daniel Beck and Allison Portanova, spot hidden inscriptions etched into the metal.

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00:14:01,400 --> 00:14:09,400

Their system showed what appear to be three letters on the surface of the sheet.

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00:14:09,400 --> 00:14:13,400

This new discovery could be a game changer.

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00:14:13,400 --> 00:14:21,400

If these are tool marks or even better yet a serial number, this could be a direct link to Earhart's aircraft.

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00:14:26,400 --> 00:14:37,400

For now, what the letters mean remains unknown, but the scientists at Penn State have plans to apply new, more refined filters to their neutron imaging equipment.

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00:14:37,400 --> 00:14:45,400

With better resolution and more analysis, Rick and his team may be able to prove where this piece of aluminum came from,

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00:14:45,400 --> 00:14:52,400

and the answer could finally solve one of the most puzzling aviation mysteries of all time.

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00:14:52,400 --> 00:15:08,400

Over the past decade, hundreds of abandoned boats have washed up on the shores of Japan,

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00:15:08,400 --> 00:15:13,400

from small wooden rowing boats to larger steel vessels.

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00:15:13,400 --> 00:15:19,400

Where they come from and what happened to their crews is the subject of global speculation,

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00:15:19,400 --> 00:15:27,400

but can breakthrough satellite technology finally help solve the mystery of Japan's ghost ships.

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00:15:31,400 --> 00:15:40,400

Since 2017, the number of abandoned boats arriving on Japanese shores has increased to unprecedented levels.

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00:15:40,400 --> 00:15:44,400

There are sometimes hundreds every year washing ashore.

164

00:15:45,400 --> 00:15:49,400

Where are these boats coming from? What has happened to their crew?

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00:15:50,400 --> 00:15:58,400

Tragically, they aren't always empty. Some of these broken vessels contain the bodies of those who were sailing them.

166

00:16:00,400 --> 00:16:08,400

These corpses are occasionally found in a strange condition. Some are even missing their heads.

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00:16:08,400 --> 00:16:11,400

Heads missing? Ooh.

168

00:16:12,400 --> 00:16:22,400

Ships are turning up on the western coast of Japan, full of corpses. What's going on here?

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00:16:26,400 --> 00:16:32,400

The first step in unraveling this mystery is finding out where these boats are coming from.

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00:16:33,400 --> 00:16:39,400

The local police launch an investigation. The results are perplexing.

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00:16:39,400 --> 00:16:44,400

The Japanese authorities have identified that the vessels come from North Korea because of the artifacts within them.

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00:16:44,400 --> 00:16:53,400

It's a breakthrough that only partially solves the puzzle. North Korea lies over 600 miles away.

173

00:16:54,400 --> 00:17:00,400

How are these boats ending up in Japanese waters?

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00:17:03,400 --> 00:17:12,400

For many Japanese citizens, large numbers of mystery ships arriving from North Korea causes fear and paranoia.

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00:17:13,400 --> 00:17:22,400

The context here is that relations between Japan and North Korea are very strained because of years and years of North Korean ballistic missile tests.

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00:17:23,400 --> 00:17:27,400

In 2017, these missile tests ceased.

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00:17:28,400 --> 00:17:35,400

Their end coincided with the dramatic increase of abandoned boats finding their way to Japan.

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00:17:35,400 --> 00:17:48,400

But some people are convinced this is no coincidence and that instead of sending rockets towards Japan, the North Koreans are now sending ships full of spies.

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00:17:53,400 --> 00:18:08,400

As hundreds of abandoned boats wash up along the western shores of Japan, many local residents suspect foul play.

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00:18:08,400 --> 00:18:16,400

One new theory suggests these ghost ships actually belong to an unlikely group of people, North Korean spies.

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00:18:17,400 --> 00:18:27,400

It's a suspicion born from years of distrust between the two nations and a long history of North Korean espionage on Japanese soil.

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00:18:27,400 --> 00:18:33,400

Over recent decades, the North Korean state has abducted people from Japanese coastlines.

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00:18:34,400 --> 00:18:41,400

No one knows how many citizens have been taken, but the authorities believe it could number in the hundreds.

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00:18:41,400 --> 00:18:47,400

Are these so-called ghost ships simply a new tactic in this dirty war?

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00:18:47,400 --> 00:18:52,400

Could the North Koreans now be sending spies to Japan in these boats?

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00:18:54,400 --> 00:19:00,400

To find out, I'm talking to Professor Araki, an expert in North Korean politics.

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00:19:01,400 --> 00:19:05,400

Have you investigated any of these ghost ships yourself?

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00:19:11,400 --> 00:19:16,400

Have you found anything to support the idea they are being used by spies?

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00:19:26,400 --> 00:19:28,400

Do you think this hat belonged to a spy?

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00:19:41,400 --> 00:19:49,400

There are some groups that take fish from the North Korean army.

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00:19:49,400 --> 00:20:00,400

They are being taken to Japan by the Japanese government.

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00:20:02,400 --> 00:20:09,400

Professor Araki's theory is supported by the fishing equipment often found on board these abandoned vessels.

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00:20:10,400 --> 00:20:14,400

It also partially solves another unexplained detail.

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00:20:14,400 --> 00:20:20,400

Why some of these ghost ships still contain the decomposing corpses of their crew.

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00:20:21,400 --> 00:20:28,400

So we know where these vessels are coming from and who owned them, but we still don't understand what's happening to them.

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00:20:30,400 --> 00:20:36,400

Accidents at sea can and do happen, but why so many North Korean fishermen have been lost at sea defies explanation?

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00:20:39,400 --> 00:20:45,400

The Sea of Japan is one of the most fiercely contested bodies of water in the world.

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00:20:46,400 --> 00:20:56,400

The location of international boundaries is disputed and Japan, Russia, China and both South and North Korea all compete for the same fish.

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00:20:58,400 --> 00:21:06,400

To get an edge in this highly competitive piece of water, some of these countries have been accused of deploying so-called dark fleets.

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00:21:06,400 --> 00:21:12,400

They are fishing vessels that are doing their best to stay off the radar.

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00:21:13,400 --> 00:21:21,400

These flotillas can comprise hundreds of ships and they often fish illegally in other countries' waters.

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00:21:22,400 --> 00:21:27,400

They don't want to be detected by authorities or anybody that's monitoring them.

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00:21:27,400 --> 00:21:37,400

Now, state-of-the-art satellite technology is helping researchers find these clandestine fishing fleets.

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00:21:38,400 --> 00:21:45,400

So the fleets that were invisible and very, very hard to track now become trackable.

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00:21:46,400 --> 00:21:53,400

Pictures beamed from space reveal huge numbers of Chinese fishing vessels operating in Korean waters.

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00:21:54,400 --> 00:22:02,400

These illegal fleets are capable of decimating fish stocks and displacing North Korean fishermen.

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00:22:03,400 --> 00:22:13,400

What we think is happening are these North Korean vessels are going further and further out into the sea to try and make their quotas, to try and catch the amount of fish they need.

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00:22:14,400 --> 00:22:19,400

Most of these fishing vessels are not properly equipped for these sorts of long-distance voyages.

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00:22:20,400 --> 00:22:24,400

They don't have anything to send out an SOS if they get into trouble.

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00:22:25,400 --> 00:22:29,400

That crew, once they are beyond sight of land, are completely on their own.

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00:22:34,400 --> 00:22:40,400

Equipment failure and dangerous seas may go some way towards explaining Japan's ghost ships.

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00:22:41,400 --> 00:22:44,400

But one strange question remains unanswered.

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00:22:44,400 --> 00:22:49,400

Why are some of the corpses found on board missing their heads?

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00:22:50,400 --> 00:22:53,400

Around the world, fishing conflict is increasingly common.

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00:22:56,400 --> 00:23:00,400

Have the international disputes on the Sea of Japan turned violent?

216

00:23:01,400 --> 00:23:03,400

Or is there a less sinister possibility?

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00:23:04,400 --> 00:23:07,400

Could there be a natural explanation for this phenomenon?

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00:23:08,400 --> 00:23:14,400

It's thought many of these ghost ships spend months at sea before reaching the Japanese coast.

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00:23:15,400 --> 00:23:19,400

Some people have suggested that these heads were removed through natural decomposition processes.

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00:23:23,400 --> 00:23:28,400

The tale of Japan's ghost ships is something straight out of a horror movie.

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00:23:29,400 --> 00:23:36,400

But satellite technology has revealed that this real life story may in fact be about our over-exploiting history.

222

00:23:37,400 --> 00:23:39,400

The exploitation of the oceans.

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00:23:40,400 --> 00:23:48,400

And by exposing and clamping down on illegal fishing, we may be in sight of bringing this gruesome phenomenon to an end.

224

00:23:58,400 --> 00:24:04,400

In 2019, a swimmer off the coast of Israel spots something unusual on the seabed.

225

00:24:05,400 --> 00:24:14,400

Beneath him is a strange stone tablet covered in what look like ancient hieroglyphs from the time of the Egyptian pharaohs.

226

00:24:15,400 --> 00:24:20,400

Can an ongoing investigation help reveal what this bizarre artifact is?

227

00:24:21,400 --> 00:24:26,400

Is it genuine? And if so, how did it find its way to the bottom of the sea?

228

00:24:27,400 --> 00:24:34,400

After his incredible underwater discovery, Rafi Bahlul alerts Israel's antiquities authorities,

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00:24:35,400 --> 00:24:38,400

who dispatch a team to inspect and recover the artifact.

230

00:24:41,400 --> 00:24:46,400

The preservation is amazing. When you look at it, it almost looks as if it was made recently.

231

00:24:47,400 --> 00:24:51,400

Like perhaps it could be a fake, but in fact it's just very, very well preserved.

232

00:24:51,400 --> 00:24:58,400

If genuine, it's a wonder how this tablet has survived in such good condition, but that's not the only mystery.

233

00:24:59,400 --> 00:25:03,400

It is covered in what is unmistakably ancient Egyptian hieroglyphs.

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00:25:05,400 --> 00:25:12,400

Deciphering these markings may help reveal more about this strange stone and perhaps even its age.

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00:25:13,400 --> 00:25:22,400

Only a handful of characters are carved into the rock, giving Israel's leading scholars very little to go on to decode this puzzle.

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00:25:25,400 --> 00:25:32,400

Amazingly, they are able to use the style of the hieroglyphs to date the tablet to a specific era.

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00:25:33,400 --> 00:25:39,400

The iconography and the inscription that was made on that slab was done over three years ago.

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00:25:39,400 --> 00:25:46,400

It dates from the new kingdom, the golden age of ancient Egypt, when this once mighty empire was at its zenith.

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00:25:47,400 --> 00:25:52,400

The markings on this stone refer to an ancient Egyptian goddess called Seshat.

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00:25:54,400 --> 00:25:57,400

Seshat is the goddess of wisdom and knowledge.

241

00:25:58,400 --> 00:26:02,400

A lesser known deity seemed less frequently in ancient Egyptian hieroglyphics.

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00:26:03,400 --> 00:26:07,400

She's usually only mentioned in very important temples that were built by pharaohs.

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00:26:08,400 --> 00:26:12,400

So her appearance on a tablet found underwater is very mysterious.

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00:26:15,400 --> 00:26:22,400

This vital clue suggests that the stone tablet is a small piece of an ancient Egyptian temple.

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00:26:23,400 --> 00:26:29,400

Could the rest of the temple be a part of the ancient Egyptian temple?

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00:26:29,400 --> 00:26:34,400

Could the rest of it still be here in the same patch of seabed?

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00:26:35,400 --> 00:26:38,400

Is it a remnant of a lost city, of a lost settlement?

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00:26:39,400 --> 00:26:42,400

Is it an Egyptian version of Atlantis?

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00:26:42,400 --> 00:26:47,400

A strange stone tablet is found on the sea floor, close to the coast of Israel.

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00:26:48,400 --> 00:26:54,400

And some people think its discovery might point to a lost settlement, hidden beneath the water.

251

00:26:55,400 --> 00:27:01,400

Could it be that here in the sea, the stone tablet is found on the sea floor, close to the coast of Israel?

252

00:27:02,400 --> 00:27:08,400

And some people think its discovery might point to a lost settlement, hidden beneath the water.

253

00:27:08,400 --> 00:27:13,400

Could it be that here we have a newly found ancient Egyptian temple or even a city on the seabed?

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00:27:21,400 --> 00:27:23,400

It's a tantalizing possibility.

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00:27:24,400 --> 00:27:33,400

But the hopes of finding an Egyptian Atlantis are quickly dashed by one critical anomaly, located at the bottom of the stone tablet.

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00:27:34,400 --> 00:27:37,400

It has a hole cut or shaped into its side.

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00:27:38,400 --> 00:27:43,400

This circular feature is a giveaway sign of the stone tablet's true purpose.

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00:27:45,400 --> 00:27:51,400

What we have is an almost square rectangular stone with a large hole cut through it.

259

00:27:52,400 --> 00:27:56,400

In the Bronze Age, all anchors looked exactly like this.

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00:27:57,400 --> 00:28:02,400

It's a revelation that helps explain why this stone tablet was found underwater.

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00:28:04,400 --> 00:28:06,400

But something still doesn't make sense.

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00:28:08,400 --> 00:28:13,400

Most other ancient Egyptian anchors are plain and simple in design.

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00:28:14,400 --> 00:28:18,400

The mystery here is actually the quality of the tablet itself.

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00:28:19,400 --> 00:28:22,400

The hieroglyphs are beautifully carved.

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00:28:22,400 --> 00:28:24,400

They're very, very detailed and very clear.

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00:28:25,400 --> 00:28:29,400

They must have been carved by a highly skilled stone mason.

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00:28:30,400 --> 00:28:34,400

They say to us that this is something very special indeed.

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00:28:35,400 --> 00:28:43,400

You might want to ask the question, well, if it's this beautiful inscription, why do something so mundane with it?

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00:28:45,400 --> 00:28:48,400

Could the answer lie in ancient Egypt's world?

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00:28:49,400 --> 00:28:55,400

Could the answer lie in ancient Egypt's reputation as a seafaring powerhouse?

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00:28:56,400 --> 00:28:59,400

Ancient Egypt is one of the first maritime cultures in world history.

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00:29:01,400 --> 00:29:11,400

Then, as now, ships are great symbols of wealth and power, so often Egyptian pharaohs like building really grandiose vessels to display the monumentalism of their reign.

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00:29:12,400 --> 00:29:20,400

Is this stone anchor from a mega-yacht of the ancient world, perhaps even one belonging to a mighty pharaoh?

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00:29:21,400 --> 00:29:26,400

It's an exciting theory, but not one that everybody is ready to accept.

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00:29:27,400 --> 00:29:33,400

So if you look closely at this stone, it's very clear that some of the words are cut off in half.

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00:29:33,400 --> 00:29:40,400

Israel's antiquities experts also notice this subtle detail, and more.

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00:29:43,400 --> 00:29:50,400

At the bottom of the stone, the face of the goddess appears to have been purposely chiseled away.

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00:29:51,400 --> 00:29:54,400

What could explain this unusual damage?

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00:29:55,400 --> 00:30:07,400

This is a common thing that we see where certain iconography that has meaning or has some kind of religious or spiritual power might be removed, usually by people who don't believe in the same thing.

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00:30:09,400 --> 00:30:12,400

Unfortunately, this was all too common in ancient Egypt.

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00:30:13,400 --> 00:30:19,400

When one deity became less popular or for political reasons, people would go around defacing images of them.

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00:30:20,400 --> 00:30:26,400

If this stone tablet is originally from a temple, how did it end up in the sea?

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00:30:28,400 --> 00:30:38,400

This was clearly an architectural element from a building that was ripped off the building and cut up to be reused as a stone anchor.

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00:30:39,400 --> 00:30:47,400

This appears to be some form of ancient recycling where a sailor needed an anchor and found this abandoned stone and then created an anchor out of it.

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00:30:50,400 --> 00:30:58,400

The story of this strange stone tablet appears to be solved, but one detail remains unanswered.

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00:30:59,400 --> 00:31:03,400

The one piece that's missing from this discussion is actually about the ship that the anchor came from.

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00:31:04,400 --> 00:31:16,400

The identity of this vessel is unknown, but archaeologists suspect it may have sunk in a storm, explaining how this anchor finally came to rest on the seabed.

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00:31:17,400 --> 00:31:25,400

This stone tablet remains an unparalleled discovery, one of the best preserved ancient Egyptian anchors ever found.

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00:31:26,400 --> 00:31:34,400

And researchers are planning to return to the site where the anchor was found, hoping to unearth more treasures from the same shipwreck.

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00:31:35,400 --> 00:31:44,400

New findings may finally reveal where the anchor came from and who it belonged to, thereby solving the last pieces of this puzzle.

291

00:31:46,400 --> 00:31:59,400

Are we alone in the universe? It's one of life's greatest mysteries.

292

00:32:00,400 --> 00:32:06,400

With recent advancements in space exploration, we've never been closer to knowing.

293

00:32:06,400 --> 00:32:23,400

To find out where to look for extraterrestrial life and what it might look like, astronomers are now turning their telescopes around and pointing them not at the stars, but down into the depths of the unexplored oceans.

294

00:32:24,400 --> 00:32:37,400

2013, an ROV operating in the Indian Ocean near a drilling site records something strange.

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00:32:39,400 --> 00:32:44,400

What am I looking at here? Is it an animal?

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00:32:46,400 --> 00:32:50,400

It morphs shape in front of their eyes.

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00:32:54,400 --> 00:32:59,400

Before putting on a dazzling light display.

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00:33:00,400 --> 00:33:09,400

It's only once the footage gets back to the surface that this creature is identified as a potentially rare, shape-shifting tenor four.

299

00:33:10,400 --> 00:33:20,400

This alien-looking life form is known to science, but what other strange creatures could remain undiscovered in our vast underwater world?

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00:33:21,400 --> 00:33:31,400

70% of the surface of Earth is covered in ocean, yet 80% is unexplored, unobserved and unmapped.

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00:33:34,400 --> 00:33:41,400

The underwater realm includes some of the world's most extreme environments.

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00:33:43,400 --> 00:33:46,400

And it's filled with bizarre creatures.

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00:33:46,400 --> 00:34:04,400

If we can find life, even the smallest, simplest examples of it, in unexpected places on our planet, this does raise the notion that we could perhaps find it in other places within our solar system.

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00:34:04,400 --> 00:34:20,400

2017, a survey team drills holes to the seabed through 3,000 feet of Antarctic ice sheet.

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00:34:21,400 --> 00:34:27,400

It's a very, very extreme situation, both in terms of temperature and lack of light.

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00:34:28,400 --> 00:34:38,400

These pitch-black, sub-zero waters are one of the most hostile environments imaginable and an unlikely place to find signs of life.

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00:34:39,400 --> 00:34:49,400

The scientists are here to collect mud samples from the seafloor, but they are stunned by what they find, hidden away beneath the ice.

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00:34:50,400 --> 00:34:58,400

They spot 22 unidentified organisms, unknown to science, clinging to the side of a rock.

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00:34:59,400 --> 00:35:04,400

Somehow, in the darkness, organisms manage to survive.

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00:35:05,400 --> 00:35:09,400

How is this possible? What are these unknown creatures?

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00:35:20,400 --> 00:35:28,400

When researchers drill holes beneath the thick Antarctic ice, they find something no one can explain.

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00:35:29,400 --> 00:35:41,400

What researchers see underneath the Antarctic ice sheet are living creatures that are kilometers inside the edge of the shelf.

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00:35:42,400 --> 00:35:50,400

These mysterious life forms appear to be unidentified types of sea stalks and sponges.

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00:35:51,400 --> 00:35:54,400

Scientists do not expect to see animals in this environment.

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00:35:56,400 --> 00:36:03,400

People are most familiar with photosynthesis, where organisms on planet Earth get their energy from the sun.

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00:36:04,400 --> 00:36:07,400

That would be your plants, your algae, your phytoplankton.

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00:36:08,400 --> 00:36:16,400

Finding life here is so strange because unlike most other food chains, no light penetrates this far beneath the ice sheet.

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00:36:18,400 --> 00:36:26,400

Right now, scientists can only speculate how these creatures survive, but they think they might have evolved a unique way of gathering energy.

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00:36:27,400 --> 00:36:38,400

We call it chemosynthesis, the ability for organisms to get energy from chemicals that they're surrounded with as opposed to getting energy directly from the sun.

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00:36:40,400 --> 00:36:53,400

If life can survive on Earth in even the coldest and darkest environments, could it also survive in places even more extreme?

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00:36:54,400 --> 00:36:59,400

The bottom of the ocean is a very mysterious place, about which we know very little.

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00:37:01,400 --> 00:37:12,400

Its deepest parts are well over six miles beneath the surface. In this hostile environment, it's not just the lack of light that makes it so hard for life forms to survive.

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00:37:13,400 --> 00:37:19,400

They have to be able to cope with the high pressure because of all of that water weight coming from above.

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00:37:20,400 --> 00:37:23,400

It's a place that even scientists struggle to reach.

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00:37:24,400 --> 00:37:30,400

At these depths, the pressure is the equivalent of putting one ton of weight on the tip of your finger.

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00:37:32,400 --> 00:37:36,400

It takes specialized, reinforced submersibles to explore.

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00:37:37,400 --> 00:37:43,400

But the few people brave enough to venture this deep have reported weird and wonderful encounters.

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00:37:44,400 --> 00:37:51,400

Life in the deep ocean takes on forms that sometimes are even beyond our imaginations.

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00:37:53,400 --> 00:37:59,400

And incredibly, it's not just in the water where we are making groundbreaking discoveries.

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00:38:00,400 --> 00:38:10,400

In 2020, scientists examined core samples taken from hundreds of feet below the sea floor in a remote part of the Pacific Ocean.

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00:38:13,400 --> 00:38:23,400

What emerges stuns them and biologists around the world and could reshape our understanding of life.

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00:38:23,400 --> 00:38:43,400

When a team of scientists drill down deep beneath the floor of the Pacific Ocean, they find something they never expected. Life.

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00:38:43,400 --> 00:38:53,400

The core samples that emerge contain colonies of bacteria somehow thriving in ancient volcanic rock below the seabed.

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00:38:55,400 --> 00:39:01,400

We're talking about rock that could be anywhere from 10 million to 100 million years old.

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00:39:02,400 --> 00:39:09,400

Stranger yet, the bacteria were found more than 400 feet beneath the sea floor.

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00:39:10,400 --> 00:39:15,400

Leaving the puzzle of how they got here and how they survive.

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00:39:16,400 --> 00:39:24,400

When these rocks formed and then cooled on the seabed, microcracks appeared which were later infilled by clay minerals.

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00:39:26,400 --> 00:39:34,400

Trapped deep underground, it's speculated that the bacteria extract energy from chemicals in the surrounding clay.

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Their discovery could have radical implications for our search for extraterrestrial life.

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The key thing here is that conditions in the deep ocean beds are quite similar to some of the conditions on Mars.

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00:39:52,400 --> 00:39:55,400

All evidence suggests Mars was once a water world.

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00:39:56,400 --> 00:40:04,400

And though it lost its vast oceans billions of years ago, it could still have similar types of rock below its surface.

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If life can manage to survive within rocks that are 10 to 100 million years old in the deepest parts of the ocean, then certainly they should be able to handle the conditions that we see on many other planets.

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00:40:20,400 --> 00:40:27,400

The discovery of these incredibly hardy bacteria could also add weight to an even more radical theory.

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00:40:28,400 --> 00:40:31,400

Could life survive in the vacuum of outer space?

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00:40:33,400 --> 00:40:44,400

Some scientists speculate that simple life could be incubated on asteroids and other space debris in a similar way to the bacteria found beneath the Pacific Ocean.

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00:40:45,400 --> 00:40:49,400

We know that life first emerged on Earth at least 3.5 billion years ago,

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00:40:50,400 --> 00:40:57,400

but the exact mechanisms and nature behind the emergence of the first Earth life forms remains mysterious.

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00:40:59,400 --> 00:41:10,400

The conventional theory is that life emerged deep in our oceans around hydrothermal vents which spewed minerals and heat into the surrounding water.

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00:41:11,400 --> 00:41:15,400

But there are alternative and more controversial theories.

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00:41:16,400 --> 00:41:19,400

There's one theory called panspermia.

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That's the idea that life could potentially travel from one planetary body to the next.

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The idea of panspermia doesn't have a lot of evidence right now.

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00:41:32,400 --> 00:41:41,400

However, some believe that this might actually be a reasonable explanation on how life began here on Earth.

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00:41:44,400 --> 00:41:52,400

Discoveries being made in the deep corners of our oceans are radically changing our understanding of where and how life can survive.

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00:41:53,400 --> 00:41:59,400

And these insights are helping scientists continue their search for life elsewhere in the cosmos.

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00:42:01,400 --> 00:42:07,400

And may soon even lead us to the discovery of alien life on other worlds.