

1

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

From the Viking Age comes a legend.

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

Wow, look at this!

3

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

Of a crystal with mysterious powers.

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00:00:10,000 --> 00:00:13,000

Look at that. That's amazing.

5

00:00:13,000 --> 00:00:16,000

But is the magic real?

6

00:00:16,000 --> 00:00:18,000

I don't know how.

7

00:00:23,000 --> 00:00:25,000

Yes!

8

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

You ready?

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

My name is Josh Gates.

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

With a degree in archaeology and a passion for exploration.

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

I have a tendency to end up in some very strange situations.

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

There has got to be a better way to make a living.

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00:00:47,000 --> 00:00:49,000

My travels have taken me to the ends of the earth

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

as I investigate the greatest legends in history.

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

We're good to try. Let's go.

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

This is Expedition Unknown.

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

This is Expedition Unknown.

18

00:01:06,000 --> 00:01:08,000

The Vikings.

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00:01:08,000 --> 00:01:13,000

A thousand years after their reign, they still have a terrifying reputation.

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00:01:13,000 --> 00:01:17,000

In popular culture, they're portrayed as axe-wielding marauders

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00:01:17,000 --> 00:01:20,000

who pillaged their way across Europe.

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00:01:20,000 --> 00:01:23,000

But the Vikings were also maritime masters.

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00:01:23,000 --> 00:01:28,000

They managed to navigate deadly waters to establish remote colonies across Europe,

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00:01:28,000 --> 00:01:33,000

in Greenland, Iceland, and, sorry Columbus, maybe even North America.

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00:01:33,000 --> 00:01:37,000

And they did it all hundreds of years before the use of the magnetic compass.

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00:01:37,000 --> 00:01:41,000

How? What gave the Vikings such an edge?

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00:01:41,000 --> 00:01:47,000

According to ancient sagas, the great Viking king Olaf possessed a sunstone.

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00:01:47,000 --> 00:01:52,000

A magical crystal with unique powers, which allowed his people to navigate by the sun,

29

00:01:52,000 --> 00:01:56,000

even when it was hidden by clouds or below the horizon.

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00:01:56,000 --> 00:02:00,000

But were these magic crystals real? No one has ever found one.

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

That is, until now.

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00:02:03,000 --> 00:02:08,000

Recently, a mysterious crystal was discovered onboard a shipwreck in England,

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00:02:08,000 --> 00:02:12,000

and it has ignited a fierce debate that has some scientists believing

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00:02:12,000 --> 00:02:15,000

the power of the sunstone might be real after all.

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00:02:15,000 --> 00:02:19,000

I've been fascinated by the Vikings since I was just a kid,

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00:02:19,000 --> 00:02:23,000

and this new discovery could change the way we think about them forever.

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00:02:23,000 --> 00:02:26,000

Did they conquer the seas with a magic crystal?

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00:02:26,000 --> 00:02:30,000

I'm excited and determined to find out.

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00:02:34,000 --> 00:02:36,000

To find the truth behind the Viking sunstone,

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00:02:36,000 --> 00:02:40,000

I'm going to the only place in the world where one of them may have been found,

41

00:02:40,000 --> 00:02:42,000

the British island of Alderney.

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00:02:42,000 --> 00:02:44,000

I've already crossed the Atlantic and made it to England.

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00:02:44,000 --> 00:02:48,000

Now, I just need to fly to the island aboard...

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00:02:48,000 --> 00:02:50,000

whatever this is.

45

00:02:50,000 --> 00:02:54,000

What in the holy hell is this thing?

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00:02:54,000 --> 00:02:57,000

This, it turns out, is the Britain Norman Trilander,

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00:02:57,000 --> 00:03:03,000

which is named for the third engine which is bizarrely attached to the plane's stabilizer fin.

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

I've been on some kooky planes before, but this takes the cake.

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00:03:08,000 --> 00:03:11,000

On board, the headroom is a little tight for a guy my size,

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00:03:11,000 --> 00:03:14,000

but hey, at least it's a short flight.

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00:03:14,000 --> 00:03:20,000

In no time at all, we cross the English Channel and touch down on the tiny island.

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00:03:20,000 --> 00:03:24,000

Ladies and gentlemen, welcome to Alderney.

53

00:03:26,000 --> 00:03:30,000

Oh man, I hope there's a chiropractor on this island.

54

00:03:31,000 --> 00:03:37,000

The one benefit of flying on a plane with 18 seats is that the baggage claim is pretty straightforward.

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00:03:42,000 --> 00:03:44,000

Okay, well, that was easy.

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00:03:48,000 --> 00:03:49,000

So, a bit of geography.

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00:03:49,000 --> 00:03:53,000

You go about eight miles that way, you run into France and the beaches of Normandy,

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00:03:53,000 --> 00:03:56,000

60 miles that way, south coast of England,

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00:03:56,000 --> 00:03:59,000

and out here in the Atlantic, the very tiny island of Alderney.

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

It's only about three and a half miles long, has less than 2,000 residents,

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00:04:02,000 --> 00:04:07,000

and on face value seems like a weird place to look for a Viking artifact.

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

But that's the thing about Alderney, this island is full of surprises.

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00:04:12,000 --> 00:04:15,000

There are remains of Roman walls from the 4th century,

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00:04:15,000 --> 00:04:19,000

Victorian-era forts built by the British in case the French decided to show up,

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00:04:19,000 --> 00:04:23,000

and Nazi forts built by the Germans who did show up.

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00:04:23,000 --> 00:04:27,000

In fact, this is the only part of England occupied during World War II.

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00:04:28,000 --> 00:04:31,000

Today though, it's just a sleepy little island.

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00:04:31,000 --> 00:04:33,000

So why am I here?

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00:04:33,000 --> 00:04:38,000

Well, recently, an unusual crystal was discovered in a shipwreck just offshore.

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00:04:38,000 --> 00:04:43,000

Archaeologists believe this may be the first Viking Sunstone ever recovered.

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00:04:43,000 --> 00:04:47,000

The islanders have been all too happy to capitalize on the find,

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00:04:47,000 --> 00:04:52,000

with a Viking-themed mural and even a shop on the main street that sells Sunstone memorabilia.

73

00:04:53,000 --> 00:04:54,000

Hello.

74

00:04:54,000 --> 00:04:55,000

Hi, good morning.

75

00:04:55,000 --> 00:04:58,000

Look at this, the Viking Sunstone, right there.

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00:04:58,000 --> 00:04:59,000

That's it.

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

You've got it.

78

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

I found it.

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00:05:01,000 --> 00:05:03,000

Who knew it would be available here for sale?

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00:05:03,000 --> 00:05:04,000

Incredible.

81

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

Now, it's very small.

82

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

Do you think that I could actually use this to find land?

83

00:05:09,000 --> 00:05:13,000

If it doesn't work, bring it back, and we'll give you your money back.

84

00:05:13,000 --> 00:05:15,000

Sure, but if it doesn't work, I'm going to be lost at sea,

85

00:05:15,000 --> 00:05:17,000

so it's going to be very difficult for me to return this.

86

00:05:17,000 --> 00:05:19,000

Well, I knew that.

87

00:05:19,000 --> 00:05:21,000

I hope you didn't.

88

00:05:22,000 --> 00:05:25,000

Okay, they may not be actual Viking Sunstones,

89

00:05:25,000 --> 00:05:28,000

but that won't stop me from getting a jump on my Christmas shopping.

90

00:05:28,000 --> 00:05:30,000

I'm literally going to go bankrupt in this one store.

91

00:05:35,000 --> 00:05:38,000

I've got a little time before my next meeting,

92

00:05:38,000 --> 00:05:42,000

so I decide to grab a beer at the promiseingly named Divers Pub.

93

00:05:44,000 --> 00:05:45,000

I'll begin this, please.

94

00:05:45,000 --> 00:05:46,000

Yes, sir.

95

00:05:48,000 --> 00:05:49,000

I haven't even started drinking yet,

96

00:05:49,000 --> 00:05:51,000

but I'm pretty sure that that's a dog at the bar.

97

00:05:52,000 --> 00:05:53,000

Does he come in a lot?

98

00:05:53,000 --> 00:05:55,000

Yeah, regular customer likes his ale.

99

00:05:55,000 --> 00:05:56,000

Good tipper?

100

00:05:56,000 --> 00:05:57,000

Yeah, good tipper.

101

00:05:57,000 --> 00:05:58,000

Great.

102

00:06:00,000 --> 00:06:03,000

After a pint, I start to get a little bit of a drink.

103

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

I stroll over to the Alderney Maritime Museum,

104

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

where I meet with trustee Mike Harrison.

105

00:06:08,000 --> 00:06:11,000

Amidst the impressive collection are the remains

106

00:06:11,000 --> 00:06:13,000

of a 16th century English warship

107

00:06:13,000 --> 00:06:15,000

that was discovered just offshore.

108

00:06:17,000 --> 00:06:20,000

How many Elizabethan-era warships have been found in British waters?

109

00:06:20,000 --> 00:06:21,000

None.

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00:06:21,000 --> 00:06:22,000

This is the only one.

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00:06:23,000 --> 00:06:25,000

So a very significant wreck in its own right,

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00:06:25,000 --> 00:06:28,000

but how do we tie it to the Vikings?

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

The connection to the Vikings is this extraordinary crystal.

114

00:06:34,000 --> 00:06:36,000

That was found on the wreck site,

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00:06:36,000 --> 00:06:40,000

quite close to a pair of navigational dividers.

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00:06:40,000 --> 00:06:43,000

And it wasn't until some time later that people began to wonder

117

00:06:43,000 --> 00:06:47,000

whether it could possibly have been a Viking Sunstone.

118

00:06:48,000 --> 00:06:51,000

According to the legend, the Viking King Olaf

119

00:06:51,000 --> 00:06:53,000

used the Sunstone in dark weather,

120

00:06:53,000 --> 00:06:56,000

where it revealed the position of the Sun.

121

00:06:57,000 --> 00:06:59,000

But he had to look through the clear crystal.

122

00:06:59,000 --> 00:07:01,000

So if this was once a Sunstone,

123

00:07:01,000 --> 00:07:03,000

it seemed better days.

124

00:07:03,000 --> 00:07:05,000

Not very clear though anymore.

125

00:07:05,000 --> 00:07:06,000

No, it's very cloudy.

126

00:07:06,000 --> 00:07:09,000

It's been worked on by the salts and sea water.

127

00:07:09,000 --> 00:07:11,000

Do you think there are other artifacts down in the wreck?

128

00:07:11,000 --> 00:07:13,000

Could there be other crystals down in the wreck, you think?

129

00:07:13,000 --> 00:07:16,000

There are undoubtedly many other artifacts,

130

00:07:16,000 --> 00:07:19,000

but the only way to find out is to go on exploring.

131

00:07:21,000 --> 00:07:25,000

I head down to the harbor to meet with commercial diver Mark Traul.

132

00:07:25,000 --> 00:07:28,000

Mark has agreed to let me join him on a mission to explore the wreck

133

00:07:28,000 --> 00:07:30,000

for other Viking artifacts.

134

00:07:30,000 --> 00:07:33,000

And maybe even a better preserved Sunstone.

135

00:07:33,000 --> 00:07:36,000

This constitutes kind of a sunny day here, right?

136

00:07:36,000 --> 00:07:38,000

Yeah, it's boiling today.

137

00:07:39,000 --> 00:07:42,000

We're in our t-shirts and thongs before you know it.

138

00:07:42,000 --> 00:07:46,000

Along with the cold, this dive is extremely dangerous for another reason.

139

00:07:46,000 --> 00:07:49,000

The tides here run at nearly 15 knots,

140

00:07:49,000 --> 00:07:52,000

and fierce currents rip over the wreck for most of the day.

141

00:07:52,000 --> 00:07:54,000

We've got only two slacks a day.

142

00:07:54,000 --> 00:07:56,000

You mean you only have a short window in terms of the tides?

143

00:07:56,000 --> 00:07:57,000

Yeah, absolutely.

144

00:07:57,000 --> 00:08:00,000

The only times the dive here are during the slack tides.

145

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

The brief windows between tidal changes where the water is relatively still.

146

00:08:04,000 --> 00:08:06,000

How big is that window?

147

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

We've got 30 minutes.

148

00:08:08,000 --> 00:08:10,000

30 minutes? Wow, so pretty tight window.

149

00:08:16,000 --> 00:08:19,000

After arriving at the dive boat, we suit up as quickly as possible.

150

00:08:19,000 --> 00:08:21,000

We can't afford to miss the dive window,

151

00:08:21,000 --> 00:08:24,000

and we won't have much time to explore the bottom.

152

00:08:24,000 --> 00:08:26,000

Okay, let's go diving.

153

00:08:28,000 --> 00:08:30,000

We're going to the bottom.

154

00:08:34,000 --> 00:08:36,000

Our mission is to attempt to relocate the wreck

155

00:08:36,000 --> 00:08:38,000

and look for a less clouded crystal.

156

00:08:38,000 --> 00:08:41,000

After all, without a clear sunstone to examine,

157

00:08:41,000 --> 00:08:43,000

we'll never know if the legend is true.

158

00:08:45,000 --> 00:08:47,000

No sign of the bottom yet.

159

00:08:47,000 --> 00:08:49,000

It just drops off into darkness.

160

00:08:49,000 --> 00:08:53,000

With almost no visibility, we need to stay close to the dive line and each other.

161

00:08:53,000 --> 00:08:56,000

An experienced diver died on this wreck just last year.

162

00:08:58,000 --> 00:09:01,000

I can see the bottom coming up.

163

00:09:01,000 --> 00:09:04,000

Both teams, we are at the bottom.

164

00:09:05,000 --> 00:09:08,000

Just keep your eyes open and stay together, please.

165

00:09:08,000 --> 00:09:10,000

By the time we reach the bottom,

166

00:09:10,000 --> 00:09:14,000

there are only 15 minutes left before the tides begin to turn.

167

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

We've got no time to lose.

168

00:09:17,000 --> 00:09:21,000

Apparently, few of us are very sandy bottom.

169

00:09:21,000 --> 00:09:24,000

A few bits of rock popping up here and there.

170

00:09:25,000 --> 00:09:28,000

At the moment, I can hardly see anything, really.

171

00:09:28,000 --> 00:09:32,000

Then, out of the darkness, I see something incredible.

172

00:09:32,000 --> 00:09:36,000

The actual remains of an English cannon from a 16th century warship.

173

00:09:38,000 --> 00:09:40,000

Absolutely beautiful.

174

00:09:40,000 --> 00:09:41,000

You can see it.

175

00:09:41,000 --> 00:09:43,000

I mean, it's just clear as bad.

176

00:09:43,000 --> 00:09:45,000

You're just sitting on the bottom.

177

00:09:45,000 --> 00:09:48,000

Come over here, Josh. I think I found another timber.

178

00:09:48,000 --> 00:09:50,000

Down here at the bottom.

179

00:09:50,000 --> 00:09:51,000

It's over 100 years.

180

00:09:51,000 --> 00:09:54,000

Looks like it was dropped down here yesterday.

181

00:09:54,000 --> 00:09:58,000

The shifting sands may reveal never-before-seen sections of the wreck,

182

00:09:58,000 --> 00:10:02,000

and we quickly advance to the area where the crystal was recently found.

183

00:10:02,000 --> 00:10:06,000

We've got about 10 minutes left, Josh. Let's start making our way back.

184

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

We've had little time to explore, and it's already time to ascend.

185

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

Follow me.

186

00:10:11,000 --> 00:10:13,000

Oh, f\*\*\*!

187

00:10:13,000 --> 00:10:15,000

Look at that!

188

00:10:15,000 --> 00:10:18,000

Look at that f\*\*\*ing incredible!

189

00:10:22,000 --> 00:10:25,000

I'm deep beneath the surface of the English Channel,

190

00:10:25,000 --> 00:10:28,000

exploring the sunken wreck of a 16th century warship.

191

00:10:28,000 --> 00:10:33,000

A crystal that some believe was a mystical Viking sunstone was discovered here,

192

00:10:33,000 --> 00:10:34,000

but it's damaged.

193

00:10:34,000 --> 00:10:36,000

I'm looking for another one.

194

00:10:36,000 --> 00:10:40,000

Unfortunately, the tides are shifting, and time is running out.

195

00:10:40,000 --> 00:10:42,000

Okay, Josh, we've got about five minutes left.

196

00:10:42,000 --> 00:10:44,000

We need to get out. That tide starts moving.

197

00:10:44,000 --> 00:10:46,000

Otherwise, we're going to get washed away.

198

00:10:46,000 --> 00:10:48,000

Come on, be back. Follow me.

199

00:10:48,000 --> 00:10:49,000

Go!

200

00:10:51,000 --> 00:10:53,000

I see something f\*\*\*ing f\*\*\*ing f\*\*\*ing!

201

00:10:53,000 --> 00:10:54,000

Look at that!

202

00:10:54,000 --> 00:10:56,000

We've got something down here.

203

00:10:56,000 --> 00:10:59,000

I see something sticking out of the sand

204

00:10:59,000 --> 00:11:02,000

and examine it in the hopes that it might be a clue.

205

00:11:02,000 --> 00:11:04,000

There's something blue here.

206

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

Maybe a piece of metal.

207

00:11:06,000 --> 00:11:09,000

Could be a sweat bleed, or something off the hip.

208

00:11:09,000 --> 00:11:12,000

No sign of any other crystal down here, Mark.

209

00:11:12,000 --> 00:11:15,000

The debris appears to be iron from the wreckage,

210

00:11:15,000 --> 00:11:19,000

which, while historically important, isn't the crystal I'm looking for.

211

00:11:20,000 --> 00:11:22,000

We've got very little time left.

212

00:11:23,000 --> 00:11:26,000

I'd like to stay longer, but we need to ascend now

213

00:11:26,000 --> 00:11:28,000

before the tidal current shifts.

214

00:11:34,000 --> 00:11:36,000

Just as the current begins to pick up,

215

00:11:36,000 --> 00:11:40,000

we break the surface and arrive safely back at the stern of the boat.

216

00:11:42,000 --> 00:11:45,000

Absolutely amazing to see a wreck down there, not old.

217

00:11:45,000 --> 00:11:48,000

Still see timbers from the deck of the boat.

218

00:11:48,000 --> 00:11:50,000

Absolutely incredible.

219

00:11:50,000 --> 00:11:53,000

No Viking sunstones, but that's okay.

220

00:11:53,000 --> 00:11:55,000

Pretty amazing in and of itself.

221

00:11:55,000 --> 00:11:57,000

The hunt continues.

222

00:11:57,000 --> 00:12:00,000

There may be one other sunstone in the world,

223

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

the original one mentioned in the legend.

224

00:12:02,000 --> 00:12:05,000

To find it, I'll need to travel to the Viking homeland.

225

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

I jet from the English Isle of Alderney to Trondheim, Norway,

226

00:12:12,000 --> 00:12:15,000

the former capital of the Viking world.

227

00:12:18,000 --> 00:12:21,000

Founded in the year 997 as a trading outpost,

228

00:12:21,000 --> 00:12:25,000

Trondheim rose to become the seat of the great Viking kings.

229

00:12:25,000 --> 00:12:29,000

But now, a millennium later, it's pretty darn serene around here.

230

00:12:29,000 --> 00:12:33,000

University students, cobblestone streets, stunning coastal waterways.

231

00:12:33,000 --> 00:12:36,000

It's positively, well, perfect.

232

00:12:38,000 --> 00:12:40,000

I haven't eaten since I was in England,

233

00:12:40,000 --> 00:12:44,000

so I pop into a local café for my first taste of Norwegian cuisine.

234

00:12:45,000 --> 00:12:46,000

Hello.

235

00:12:46,000 --> 00:12:47,000

How are you?

236

00:12:47,000 --> 00:12:48,000

I'm fine, thanks.

237

00:12:48,000 --> 00:12:49,000

Look at this.

238

00:12:49,000 --> 00:12:51,000

This looks amazing.

239

00:12:51,000 --> 00:12:53,000

This is a lot of different herrings.

240

00:12:53,000 --> 00:12:55,000

So this is this is herring?

241

00:12:55,000 --> 00:12:56,000

Yes.

242

00:12:56,000 --> 00:12:57,000

And this is herring?

243

00:12:57,000 --> 00:12:58,000

Yes.

244

00:12:58,000 --> 00:12:59,000

It's all herring?

245

00:12:59,000 --> 00:13:00,000

Yes, it is.

246

00:13:00,000 --> 00:13:01,000

It's all herring.

247

00:13:01,000 --> 00:13:02,000

Great.

248

00:13:02,000 --> 00:13:03,000

Okay, good.

249

00:13:03,000 --> 00:13:05,000

Okay, let's try herring and purry.

250

00:13:10,000 --> 00:13:11,000

Fishy.

251

00:13:11,000 --> 00:13:13,000

This is herring with blueberries here.

252

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

That is herring pickles.

253

00:13:15,000 --> 00:13:17,000

This here is a herring salad.

254

00:13:17,000 --> 00:13:19,000

Along with the herring is a plate of rakfisk,

255

00:13:19,000 --> 00:13:23,000

a local delicacy consisting of fish that's been buried in the ground

256

00:13:23,000 --> 00:13:25,000

to ferment for a few months.

257

00:13:25,000 --> 00:13:27,000

This is this is this is this is rotten fish.

258

00:13:27,000 --> 00:13:28,000

Got it.

259

00:13:28,000 --> 00:13:30,000

Okay, here we go.

260

00:13:34,000 --> 00:13:35,000

Yeah.

261

00:13:36,000 --> 00:13:37,000

What?

262

00:13:37,000 --> 00:13:40,000

Oh yeah, that's a piece of rotten fish right there.

263

00:13:40,000 --> 00:13:44,000

That is a piece of rotten old old dead fish.

264

00:13:44,000 --> 00:13:47,000

That's not going to taste like something that really should be in my mouth.

265

00:13:47,000 --> 00:13:48,000

I'm being honest.

266

00:13:50,000 --> 00:13:52,000

Okay, that's it.

267

00:13:52,000 --> 00:13:55,000

I'm ready for dessert, which I assume is herring.

268

00:13:55,000 --> 00:13:59,000

Having had my fill of rotted fish, it's time to get back on the case.

269

00:13:59,000 --> 00:14:02,000

Since I struck out finding a clear sunstone in England,

270

00:14:02,000 --> 00:14:05,000

perhaps I can get my hands on the original,

271

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

which according to legend was in the hands of the Viking King Olaf.

272

00:14:10,000 --> 00:14:15,000

Olaf united much of Norway in the 11th century through a series of daring battles,

273

00:14:15,000 --> 00:14:20,000

using the mystical sunstone to guide his forces in dark or stormy weather.

274

00:14:20,000 --> 00:14:23,000

Olaf is also famous for having brought Christianity to Norway,

275

00:14:23,000 --> 00:14:27,000

and it's alive and well at the Soaring Nidros Cathedral.

276

00:14:27,000 --> 00:14:30,000

This is the northernmost medieval church in the world.

277

00:14:30,000 --> 00:14:33,000

Construction began over a thousand years ago,

278

00:14:33,000 --> 00:14:35,000

and it hasn't stopped since.

279

00:14:35,000 --> 00:14:39,000

Olaf is believed to be buried somewhere under the massive cathedral,

280

00:14:39,000 --> 00:14:41,000

possibly with his sacred sunstone.

281

00:14:42,000 --> 00:14:43,000

Hello.

282

00:14:43,000 --> 00:14:45,000

Hello, so nice to meet you.

283

00:14:45,000 --> 00:14:47,000

I'm meeting with church official Ingrid Vindanest

284

00:14:47,000 --> 00:14:50,000

to learn more about St. Olaf's final resting place.

285

00:14:50,000 --> 00:14:52,000

Where exactly is he buried?

286

00:14:52,000 --> 00:14:54,000

Actually, we don't know today. It's still a mystery.

287

00:14:54,000 --> 00:14:57,000

Somewhere in the building, we know that for a fact.

288

00:14:57,000 --> 00:14:58,000

Okay, so we're close.

289

00:14:58,000 --> 00:15:00,000

We are close, but we can't find him,

290

00:15:00,000 --> 00:15:02,000

because there's so many graves under the floor here.

291

00:15:02,000 --> 00:15:05,000

But we have some theories where he could be buried.

292

00:15:05,000 --> 00:15:07,000

Would it be possible to see the place that you think he's buried?

293

00:15:07,000 --> 00:15:08,000

Of course.

294

00:15:08,000 --> 00:15:09,000

Let me show you.

295

00:15:09,000 --> 00:15:10,000

Let's go.

296

00:15:10,000 --> 00:15:13,000

As impressive as the cathedral is above ground,

297

00:15:13,000 --> 00:15:16,000

there's a whole other world beneath my feet.

298

00:15:16,000 --> 00:15:18,000

All right, lead on.

299

00:15:18,000 --> 00:15:20,000

Spooky.

300

00:15:29,000 --> 00:15:31,000

Here, in the seemingly endless catacombs,

301

00:15:31,000 --> 00:15:34,000

there are thousands of burials spanning a millennia.

302

00:15:34,000 --> 00:15:36,000

It's like a maze down here.

303

00:15:36,000 --> 00:15:41,000

It's like a lab, but you have little tunnels in every direction.

304

00:15:43,000 --> 00:15:46,000

There's no telling what might be lurking in these tunnels.

305

00:15:46,000 --> 00:15:49,000

And just around the next corner, I get a terrifying surprise.

306

00:15:49,000 --> 00:15:51,000

Look at this.

307

00:15:51,000 --> 00:15:52,000

Wow.

308

00:15:58,000 --> 00:16:01,000

My quest to find out the truth about the legendary Viking Sunstone

309

00:16:01,000 --> 00:16:05,000

leads to deep catacombs beneath a cathedral in Norway.

310

00:16:05,000 --> 00:16:08,000

The Viking King Saint Olaf may have been buried down here

311

00:16:08,000 --> 00:16:10,000

with this magic crystal.

312

00:16:10,000 --> 00:16:14,000

But before we can reach his tomb, we run into something else.

313

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

Wow, look at this.

314

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

Amazing.

315

00:16:17,000 --> 00:16:20,000

I wasn't actually expecting to see skeletons down here.

316

00:16:20,000 --> 00:16:24,000

No, we did need it, actually, but we found this just a couple of years ago.

317

00:16:24,000 --> 00:16:26,000

But we're certain that this isn't Olaf.

318

00:16:26,000 --> 00:16:30,000

Very certain it isn't Olaf, because we have the skeleton of Saint Olaf's half-brother,

319

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

so we have compared some DNA, just to be sure.

320

00:16:33,000 --> 00:16:37,000

We think he was a warrior, and he was buried by the entrance of the Getiro,

321

00:16:37,000 --> 00:16:39,000

which meant that he was very important.

322

00:16:39,000 --> 00:16:41,000

He's in remarkable shape.

323

00:16:41,000 --> 00:16:42,000

Except his head.

324

00:16:42,000 --> 00:16:43,000

But look at his teeth.

325

00:16:43,000 --> 00:16:44,000

Yes.

326

00:16:44,000 --> 00:16:46,000

This guy has better teeth than I do.

327

00:16:46,000 --> 00:16:47,000

Really?

328

00:16:47,000 --> 00:16:50,000

Somewhere there is lost to history an amazing Viking orthodontist.

329

00:16:50,000 --> 00:16:52,000

Oh, many of them, perhaps.

330

00:16:52,000 --> 00:16:53,000

Yeah, maybe many.

331

00:16:53,000 --> 00:16:56,000

Okay, so how far from here to where we think Olaf is?

332

00:16:56,000 --> 00:16:58,000

We have to go a bit further inside the tunnels.

333

00:16:58,000 --> 00:16:59,000

Of course we do.

334

00:16:59,000 --> 00:17:00,000

Of course we do.

335

00:17:00,000 --> 00:17:01,000

All right, lead on.

336

00:17:01,000 --> 00:17:02,000

No, no, no, please.

337

00:17:02,000 --> 00:17:05,000

A pitch black crypt full of skeletons was to be scared of.

338

00:17:05,000 --> 00:17:07,000

Please, you go first, though.

339

00:17:12,000 --> 00:17:14,000

In the farthest corner of the catacombs,

340

00:17:14,000 --> 00:17:18,000

we finally arrive at the resting place of the Viking king.

341

00:17:18,000 --> 00:17:20,000

So this is it.

342

00:17:21,000 --> 00:17:22,000

Amazing.

343

00:17:23,000 --> 00:17:26,000

So this may be the tomb of Saint Olaf.

344

00:17:26,000 --> 00:17:27,000

Yes.

345

00:17:28,000 --> 00:17:31,000

But there are thousands of skeletons entombed down here,

346

00:17:31,000 --> 00:17:35,000

and since the church isn't certain exactly where Olaf is buried,

347

00:17:35,000 --> 00:17:38,000

they've decided not to disturb any of the graves.

348

00:17:38,000 --> 00:17:42,000

To know that we may be only inches away from the famed Viking king

349

00:17:42,000 --> 00:17:45,000

is both exhilarating and frustrating.

350

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

All right, well, if this is the grave of Olaf, then Olaf,

351

00:17:50,000 --> 00:17:52,000

great to meet you.

352

00:17:52,000 --> 00:17:53,000

We're off.

353

00:17:53,000 --> 00:17:55,000

Unable to open Olaf's grave,

354

00:17:55,000 --> 00:17:58,000

I may be out of luck finding an ancient working sunstone,

355

00:17:58,000 --> 00:18:02,000

but new evidence suggests I might be able to make one.

356

00:18:06,000 --> 00:18:07,000

To continue my investigation,

357

00:18:07,000 --> 00:18:11,000

I'm making the 400-mile drive to the modern capital of Oslo.

358

00:18:14,000 --> 00:18:16,000

This used to be known as the King's Road.

359

00:18:16,000 --> 00:18:19,000

For hundreds of years, people traveled this route

360

00:18:19,000 --> 00:18:22,000

to visit King Olaf's final resting place.

361

00:18:24,000 --> 00:18:27,000

All right, welcome to Oslo.

362

00:18:31,000 --> 00:18:34,000

Situated along the stunning Oslo fjord,

363

00:18:34,000 --> 00:18:38,000

this place is a seemingly impossible fusion of pristine nature

364

00:18:38,000 --> 00:18:42,000

that somehow coexists alongside a cosmopolitan city.

365

00:18:46,000 --> 00:18:48,000

Here's your quick starter kit for Norway.

366

00:18:48,000 --> 00:18:50,000

You're thinking about moving here. Here's what you need to know.

367

00:18:50,000 --> 00:18:51,000

It's beautiful.

368

00:18:51,000 --> 00:18:52,000

It's rustic.

369

00:18:52,000 --> 00:18:55,000

It is incredibly clean and safe,

370

00:18:55,000 --> 00:18:58,000

and also it is unbelievably expensive.

371

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

Gas here is about \$9 a gallon.

372

00:19:00,000 --> 00:19:04,000

I pay about 50% taxes and have a 25% sales tax,

373

00:19:04,000 --> 00:19:08,000

but you get free health care, you get free education,

374

00:19:08,000 --> 00:19:10,000

free daycare, good pensions,

375

00:19:10,000 --> 00:19:13,000

and as much reindeer meat as you can eat.

376

00:19:16,000 --> 00:19:17,000

What's that?

377

00:19:17,000 --> 00:19:18,000

This is reindeer sausage.

378

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

Reindeer sausage?

379

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

Yes.

380

00:19:20,000 --> 00:19:22,000

It's very, very nice.

381

00:19:22,000 --> 00:19:24,000

Reindeer sausage?

382

00:19:24,000 --> 00:19:25,000

Wow.

383

00:19:25,000 --> 00:19:26,000

100%.

384

00:19:29,000 --> 00:19:31,000

There's a whole last verse to that Rudolph song

385

00:19:31,000 --> 00:19:34,000

that I never knew about.

386

00:19:36,000 --> 00:19:37,000

He's delicious.

387

00:19:37,000 --> 00:19:39,000

Oslo may be hip and chic,

388

00:19:39,000 --> 00:19:42,000

but its Viking seafarer heritage is everywhere.

389

00:19:42,000 --> 00:19:44,000

This is the gateway to the North Sea,

390

00:19:44,000 --> 00:19:47,000

where Norwegian drilling rigs reign supreme.

391

00:19:47,000 --> 00:19:49,000

Oslo is also home to the Fran,

392

00:19:49,000 --> 00:19:51,000

the vessel that brought Norwegian explorer,

393

00:19:51,000 --> 00:19:55,000

Rald Almondsen, on his historic journey to the South Pole,

394

00:19:55,000 --> 00:19:58,000

as well as Kanteke, the raft that carried adventurer

395

00:19:58,000 --> 00:20:00,000

and my fellow explorers club member,

396

00:20:00,000 --> 00:20:04,000

Thor Heierendall, on his voyage across the Pacific Ocean.

397

00:20:04,000 --> 00:20:06,000

At the nearby Viking Ship Museum,

398

00:20:06,000 --> 00:20:09,000

it's clear where Norwegians got their nautical skills.

399

00:20:09,000 --> 00:20:11,000

This is the Osseberg ship.

400

00:20:11,000 --> 00:20:16,000

Built in 820 AD, it is the oldest intact Viking vessel ever found,

401

00:20:16,000 --> 00:20:18,000

and it is a thing of pure awesomeness.

402

00:20:18,000 --> 00:20:21,000

I mean, just look at this thing.

403

00:20:21,000 --> 00:20:24,000

The craftsmanship is nothing short of astounding

404

00:20:24,000 --> 00:20:26,000

and clearly built to last.

405

00:20:26,000 --> 00:20:29,000

I'm here to meet with archaeologist Jan Bill

406

00:20:29,000 --> 00:20:33,000

to hear about a new theory that may prove that the Sun Stone was real.

407

00:20:33,000 --> 00:20:36,000

It's really hundreds of years after the Viking Age

408

00:20:36,000 --> 00:20:39,000

when the magnetic compass becomes widely used.

409

00:20:39,000 --> 00:20:41,000

Do you think that the legend of the Sun Stone is real?

410

00:20:41,000 --> 00:20:44,000

Well, I think that it's much more than a legend.

411

00:20:44,000 --> 00:20:49,000

The practical value of that out on sea would be terrific.

412

00:20:49,000 --> 00:20:53,000

Jan tells me that analysis of the crystal found in the Alderney Shipwreck

413

00:20:53,000 --> 00:20:56,000

has shown that it is a rare form of calcite,

414

00:20:56,000 --> 00:20:59,000

a crystal that refracts light in a very unique way.

415

00:20:59,000 --> 00:21:03,000

Some experts are now arguing that the Sun Stone's legendary magic

416

00:21:03,000 --> 00:21:07,000

may be based in science, but it's never been proven in the field.

417

00:21:07,000 --> 00:21:11,000

I don't think that it has actually been employed today for navigation.

418

00:21:11,000 --> 00:21:13,000

I'd like to test the theory myself,

419

00:21:13,000 --> 00:21:15,000

but since I don't have an ancient Sun Stone,

420

00:21:15,000 --> 00:21:18,000

I'll need something else, a brand new one.

421

00:21:18,000 --> 00:21:20,000

But it won't be easy.

422

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

I'm going to need a very large and very pure piece of calcite.

423

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

To find it, Jan directs me to an old mine outside of Oslo,

424

00:21:28,000 --> 00:21:30,000

near the city of Kongsberg.

425

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

The mine has long been out of operation,

426

00:21:32,000 --> 00:21:35,000

but it is still rich in mineral deposits.

427

00:21:35,000 --> 00:21:38,000

After driving along lonely Norwegian back roads

428

00:21:38,000 --> 00:21:41,000

until well after sunset, I finally arrive.

429

00:21:41,000 --> 00:21:43,000

I'm meeting with Christian Berg,

430

00:21:43,000 --> 00:21:47,000

who, based on his get up, knows something about mining.

431

00:21:47,000 --> 00:21:48,000

Hello, are you Christian?

432

00:21:48,000 --> 00:21:49,000

Yeah.

433

00:21:49,000 --> 00:21:50,000

Hey, I'm Josh.

434

00:21:50,000 --> 00:21:51,000

Yeah.

435

00:21:51,000 --> 00:21:52,000

Nice to meet you.

436

00:21:52,000 --> 00:21:53,000

Nice to meet you too.

437

00:21:53,000 --> 00:21:55,000

So I was told that you are a man in the know when it comes to calcite.

438

00:21:55,000 --> 00:21:56,000

Yeah, I can find some.

439

00:21:56,000 --> 00:21:57,000

You can?

440

00:21:57,000 --> 00:21:58,000

Yeah.

441

00:21:58,000 --> 00:21:59,000

Okay, you ready?

442

00:21:59,000 --> 00:22:00,000

Yeah.

443

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

Okay, let's do it.

444

00:22:04,000 --> 00:22:06,000

How old is the mine?

445

00:22:06,000 --> 00:22:09,000

It's about 16, 23.

446

00:22:09,000 --> 00:22:11,000

That's ridiculous.

447

00:22:11,000 --> 00:22:12,000

Yeah.

448

00:22:12,000 --> 00:22:15,000

An average of 20 miners died every year of its construction,

449

00:22:15,000 --> 00:22:18,000

and it contains more than 37 miles of tunnels,

450

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

something I'm trying not to think about as we head deeper under the mountain.

451

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

Until at last, we reach the end of the line.

452

00:22:27,000 --> 00:22:28,000

Coming up.

453

00:22:29,000 --> 00:22:32,000

Give us three more Viking Indian soldiers.

454

00:22:33,000 --> 00:22:34,000

Yes!

455

00:22:37,000 --> 00:22:41,000

I'm hundreds of feet down in a centuries-old mine in Norway,

456

00:22:41,000 --> 00:22:44,000

looking for a clear sample of calcite crystal

457

00:22:44,000 --> 00:22:47,000

to prove that the Viking Sunstone really works.

458

00:22:47,000 --> 00:22:49,000

The tracks come to a dead end,

459

00:22:49,000 --> 00:22:51,000

but we've got farther to go.

460

00:22:54,000 --> 00:22:55,000

And now we're on foot.

461

00:22:55,000 --> 00:22:56,000

Yeah.

462

00:22:58,000 --> 00:23:00,000

My guide and mining expert, Christian,

463

00:23:00,000 --> 00:23:03,000

is taking me to normally off-limits in the mountains

464

00:23:03,000 --> 00:23:05,000

to look for calcite deposits.

465

00:23:05,000 --> 00:23:09,000

Just as I'm trying to figure out how long it will take to descend on foot,

466

00:23:09,000 --> 00:23:12,000

we come across something I have never seen before.

467

00:23:14,000 --> 00:23:15,000

What is this thing?

468

00:23:15,000 --> 00:23:18,000

This is an elevator from 8081.

469

00:23:18,000 --> 00:23:19,000

That's an elevator?

470

00:23:19,000 --> 00:23:20,000

Yeah.

471

00:23:20,000 --> 00:23:22,000

And when did it stop working?

472

00:23:22,000 --> 00:23:24,000

It's still running.

473

00:23:24,000 --> 00:23:25,000

This works?

474

00:23:25,000 --> 00:23:26,000

Yeah.

475

00:23:29,000 --> 00:23:30,000

Shut up.

476

00:23:31,000 --> 00:23:32,000

Shut up.

477

00:23:32,000 --> 00:23:33,000

Okay?

478

00:23:33,000 --> 00:23:34,000

I don't really get how it works.

479

00:23:34,000 --> 00:23:36,000

Where's the elevator section?

480

00:23:36,000 --> 00:23:37,000

This is the elevator.

481

00:23:37,000 --> 00:23:39,000

You have to stand on the platform?

482

00:23:39,000 --> 00:23:40,000

Stand on the platform?

483

00:23:40,000 --> 00:23:41,000

Yeah.

484

00:23:41,000 --> 00:23:42,000

Oh, wait.

485

00:23:42,000 --> 00:23:43,000

Yeah.

486

00:23:43,000 --> 00:23:44,000

You hold on here, and the platform goes down.

487

00:23:44,000 --> 00:23:45,000

Yeah.

488

00:23:45,000 --> 00:23:46,000

And you switch.

489

00:23:46,000 --> 00:23:48,000

And then you switch to the next platform,

490

00:23:48,000 --> 00:23:49,000

and then that goes down?

491

00:23:49,000 --> 00:23:50,000

Yeah.

492

00:23:50,000 --> 00:23:51,000

I see.

493

00:23:51,000 --> 00:23:52,000

No.

494

00:23:52,000 --> 00:23:53,000

You're a little confused.

495

00:23:53,000 --> 00:23:54,000

This is not an elevator.

496

00:23:54,000 --> 00:23:55,000

This is a video game.

497

00:23:55,000 --> 00:23:56,000

Okay.

498

00:23:56,000 --> 00:23:57,000

And how far down does it go?

499

00:23:57,000 --> 00:23:58,000

900 feet?

500

00:23:59,000 --> 00:24:01,000

What happens if you slip, you fall 900 feet?

501

00:24:01,000 --> 00:24:02,000

You don't do that.

502

00:24:02,000 --> 00:24:03,000

You don't do that.

503

00:24:03,000 --> 00:24:04,000

Great.

504

00:24:06,000 --> 00:24:07,000

Now.

505

00:24:08,000 --> 00:24:09,000

See you at the bottom.

506

00:24:09,000 --> 00:24:10,000

Yeah.

507

00:24:10,000 --> 00:24:11,000

Have a nice ride.

508

00:24:11,000 --> 00:24:12,000

And we're off.

509

00:24:12,000 --> 00:24:14,000

Cue the elevator music.

510

00:24:16,000 --> 00:24:18,000

This is insane.

511

00:24:19,000 --> 00:24:20,000

Transferring?

512

00:24:22,000 --> 00:24:25,000

After a very focused ride deeper into the mine,

513

00:24:25,000 --> 00:24:28,000

Christian and I finally get off on our floor.

514

00:24:31,000 --> 00:24:32,000

That's amazing.

515

00:24:35,000 --> 00:24:37,000

We hike on into the darkness,

516

00:24:37,000 --> 00:24:39,000

and before long, we come to our next hurdle.

517

00:24:41,000 --> 00:24:42,000

Whoa.

518

00:24:42,000 --> 00:24:43,000

Okay.

519

00:24:43,000 --> 00:24:44,000

Now we have to climb.

520

00:24:44,000 --> 00:24:45,000

Come on.

521

00:24:45,000 --> 00:24:46,000

You don't have like another kooky elevator?

522

00:24:46,000 --> 00:24:47,000

No.

523

00:24:48,000 --> 00:24:52,000

Norwegians are officially the most nonchalant people I have ever met.

524

00:24:52,000 --> 00:24:55,000

But their laid back reaction to what looks like certain death

525

00:24:55,000 --> 00:24:57,000

is somewhat confidence inspiring.

526

00:24:58,000 --> 00:24:59,000

Okay.

527

00:24:59,000 --> 00:25:01,000

Christian breaks out his climbing gear,

528

00:25:01,000 --> 00:25:03,000

and we suit up for a descent to the next level.

529

00:25:04,000 --> 00:25:05,000

Here we go.

530

00:25:05,000 --> 00:25:06,000

Yeah.

531

00:25:06,000 --> 00:25:07,000

Good.

532

00:25:07,000 --> 00:25:08,000

Boy, you really just got to jump right off this thing, don't you?

533

00:25:08,000 --> 00:25:09,000

Yeah.

534

00:25:10,000 --> 00:25:11,000

Okay.

535

00:25:12,000 --> 00:25:13,000

That's a little freaky.

536

00:25:18,000 --> 00:25:19,000

It's about to be.

537

00:25:19,000 --> 00:25:21,000

It's got to be an easier way.

538

00:25:21,000 --> 00:25:24,000

Can I just go to like a gym shop or something?

539

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

As I step into the darkness,

540

00:25:26,000 --> 00:25:29,000

I realize I haven't a clue how far down the drop is

541

00:25:29,000 --> 00:25:31,000

or how stable the walls are.

542

00:25:32,000 --> 00:25:34,000

Passing by these old timbers.

543

00:25:35,000 --> 00:25:37,000

They don't look particularly secure.

544

00:25:39,000 --> 00:25:40,000

Okay.

545

00:25:40,000 --> 00:25:44,000

Tucking under a second old support beam here.

546

00:25:46,000 --> 00:25:47,000

Tight squeeze.

547

00:25:48,000 --> 00:25:50,000

I can see the bottom.

548

00:25:51,000 --> 00:25:52,000

Yeah.

549

00:25:54,000 --> 00:25:55,000

Okay.

550

00:25:55,000 --> 00:25:56,000

I'm down.

551

00:25:56,000 --> 00:25:57,000

Was it okay?

552

00:25:57,000 --> 00:25:58,000

Uh, yeah, was it okay?

553

00:25:58,000 --> 00:25:59,000

It was great.

554

00:25:59,000 --> 00:26:02,000

I think I peed my pants a little, but it was okay.

555

00:26:03,000 --> 00:26:05,000

That was, uh, a long way down.

556

00:26:06,000 --> 00:26:07,000

Okay.

557

00:26:08,000 --> 00:26:10,000

You came down that a little faster than I did.

558

00:26:10,000 --> 00:26:11,000

Yeah.

559

00:26:11,000 --> 00:26:12,000

Okay.

560

00:26:12,000 --> 00:26:13,000

Lead on. Let's go.

561

00:26:13,000 --> 00:26:17,000

We are now over a thousand feet below the earth's surface.

562

00:26:17,000 --> 00:26:19,000

There is no light here of any kind.

563

00:26:19,000 --> 00:26:22,000

And we're exploring passages that were carved hundreds of years ago.

564

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

The silence and cold are eerie.

565

00:26:28,000 --> 00:26:32,000

I'm lost in my thoughts when suddenly Christian spots something.

566

00:26:32,000 --> 00:26:34,000

Hey Josh, what do you have to see this?

567

00:26:37,000 --> 00:26:38,000

It's a big wave.

568

00:26:38,000 --> 00:26:39,000

It's a big wave.

569

00:26:39,000 --> 00:26:40,000

It's a big wave.

570

00:26:40,000 --> 00:26:41,000

It's a big wave.

571

00:26:41,000 --> 00:26:42,000

It's a big wave.

572

00:26:42,000 --> 00:26:43,000

Calcite.

573

00:26:43,000 --> 00:26:44,000

Oh, there's lots of calcite.

574

00:26:44,000 --> 00:26:45,000

Look at that.

575

00:26:45,000 --> 00:26:46,000

Big one.

576

00:26:47,000 --> 00:26:48,000

Big crystals right there.

577

00:26:48,000 --> 00:26:49,000

See that?

578

00:26:49,000 --> 00:26:54,000

Not all calcite is clear, but there are samples here that look absolutely perfect.

579

00:26:54,000 --> 00:26:57,000

Okay Christian, we need a good clear piece.

580

00:26:57,000 --> 00:26:59,000

Okay, let's start chipping.

581

00:27:01,000 --> 00:27:06,000

How do you know when you're chipping away at rock that the whole thing's not going to fall down on you?

582

00:27:08,000 --> 00:27:09,000

Pure luck.

583

00:27:09,000 --> 00:27:11,000

I don't think that's true.

584

00:27:11,000 --> 00:27:12,000

I hope that's not true.

585

00:27:14,000 --> 00:27:16,000

Oh, that's a good piece.

586

00:27:16,000 --> 00:27:17,000

See that?

587

00:27:17,000 --> 00:27:18,000

That's perfect.

588

00:27:18,000 --> 00:27:19,000

That's exactly what we need.

589

00:27:19,000 --> 00:27:21,000

Let's see if we can get that out of there without splitting it.

590

00:27:22,000 --> 00:27:23,000

Good.

591

00:27:23,000 --> 00:27:26,000

If we just get behind it, we can try to crack it off on the back.

592

00:27:30,000 --> 00:27:31,000

Oh, there we go.

593

00:27:31,000 --> 00:27:32,000

Got it.

594

00:27:32,000 --> 00:27:33,000

Look at that.

595

00:27:33,000 --> 00:27:34,000

We got it.

596

00:27:35,000 --> 00:27:36,000

Look at that.

597

00:27:37,000 --> 00:27:39,000

That could be a Viking Sunstone right there.

598

00:27:39,000 --> 00:27:40,000

Christian, nice work.

599

00:27:41,000 --> 00:27:46,000

Now, we just have to casually make our way back out of the mine so I can figure out how I'm going to test it.

600

00:27:51,000 --> 00:27:59,000

Back above ground, I make the trip back to Oslo to meet with Dr. Balash Bernof, an expert in light polarization that has been studying the Sunstone.

601

00:27:59,000 --> 00:28:02,000

He believes the Sunstone might actually work.

602

00:28:02,000 --> 00:28:06,000

What is it about this particular crystal that makes it so special?

603

00:28:06,000 --> 00:28:10,000

It creates two images of a single ray.

604

00:28:10,000 --> 00:28:20,000

In theory, the Vikings could have prepared the stone by adding an arrow pointing along the width of

the crystal, and then partially covering the rest of it to create a wide slit.

605

00:28:20,000 --> 00:28:25,000

But because calcite splits light, you'd see two slits on the other side.

606

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

And so how does that in theory help you navigate?

607

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

One of the pictures will be fainter, the other will be stronger.

608

00:28:34,000 --> 00:28:45,000

If you orientate your crystal in a way that you see them to be equal, then you have a reference from which you can say the Sun is that way.

609

00:28:45,000 --> 00:28:47,000

It's a startlingly simple idea.

610

00:28:47,000 --> 00:28:51,000

Find the angle where the two double images look the same, and bingo!

611

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

Your arrow is pointing to the hidden Sun, even if it's below the horizon.

612

00:28:55,000 --> 00:28:59,000

However, you'd need more information than that to truly navigate.

613

00:28:59,000 --> 00:29:08,000

The Sunstone potentially could show you the location of the Sun, but it can't really show you north, south, east and west, right?

614

00:29:08,000 --> 00:29:21,000

Yes. If you have a proper working Sunstone, then you will need a twilight board, which is a kind of sun compass, and a shadow stick, which can work instead of the shadow, which you will not see.

615

00:29:21,000 --> 00:29:27,000

A twilight board is a sort of sundial, but instead of the Sun's shadow showing time, it shows direction.

616

00:29:27,000 --> 00:29:31,000

When the Sun is hidden, a so-called shadow stick is used instead.

617

00:29:31,000 --> 00:29:39,000

Based on the location of the Sun as determined by the Sunstone, the shadow stick can then be used to calculate direction.

618

00:29:39,000 --> 00:29:44,000

Have any twilight boards or sun compasses or shadow sticks ever been found?

619

00:29:44,000 --> 00:29:50,000

There is one artifact which was found about 60 years ago in Greenland.

620

00:29:51,000 --> 00:29:57,000

The reconstructions tell us that it might have been a twilight board.

621

00:29:57,000 --> 00:30:04,000

This artifact may be a clue, a device that worked with the Sunstone, but can it be proven?

622

00:30:04,000 --> 00:30:11,000

Has anybody taken a piece of calcite and tried to construct these items and tested them out on the open seas to see if they can be used to navigate?

623

00:30:11,000 --> 00:30:15,000

I have never heard that anybody has actually tested it on the sea.

624

00:30:15,000 --> 00:30:22,000

Incredibly, we could be the first to test this on the water and prove that we can actually use the crystal to navigate.

625

00:30:22,000 --> 00:30:26,000

This is the break I've been searching for, but how do I get a twilight board?

626

00:30:26,000 --> 00:30:33,000

If we're going to do the Sunstone experiment, not only do I need a stone, it looks like I need these other components, this twilight board and the shadow stick.

627

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

So for that, I'm going to need to find some Viking craftsmen, I guess?

628

00:30:38,000 --> 00:30:40,000

I know just the place.

629

00:30:40,000 --> 00:30:49,000

Jan Biel at the Viking Museum in Oslo told me about an amazing woodworker named Gaida.

630

00:30:49,000 --> 00:30:54,000

I'm told that he's also a student of the ancient Viking way of life.

631

00:30:54,000 --> 00:30:58,000

I'm not sure exactly what that means, but I can't wait to find out.

632

00:31:09,000 --> 00:31:12,000

And I'm in Game of Thrones.

633

00:31:18,000 --> 00:31:23,000

My quest to discover the truth about the Viking Sunstone myth has brought me to Oslo, Norway.

634

00:31:23,000 --> 00:31:32,000

I'm looking for a craftsman named Gaida to help me build a Viking twilight board and test whether the Sunstone can really be used to navigate in the open seas.

635

00:31:32,000 --> 00:31:34,000

I'm told I'll find him here.

636

00:31:39,000 --> 00:31:42,000

And I'm in Game of Thrones.

637

00:31:46,000 --> 00:31:48,000

This is Norway.

638

00:31:48,000 --> 00:31:49,000

Oh boy.

639

00:31:49,000 --> 00:31:58,000

As it existed a thousand years ago, here in the midst of modern Europe, this community of people are preserving the Viking way of life.

640

00:31:58,000 --> 00:32:00,000

The weapons are real.

641

00:32:00,000 --> 00:32:03,000

The construction of the hall historically perfect.

642

00:32:03,000 --> 00:32:06,000

And dinner is bloody and sizzling.

643

00:32:07,000 --> 00:32:09,000

Even the children are living the part.

644

00:32:09,000 --> 00:32:14,000

At the center of it all is this extremely intimidating man, Gaida.

645

00:32:14,000 --> 00:32:16,000

You got it, friendly.

646

00:32:16,000 --> 00:32:20,000

Since I stick out like a sore thumb, it isn't long before I have to explain myself.

647

00:32:20,000 --> 00:32:21,000

Hello.

648

00:32:21,000 --> 00:32:22,000

Hello.

649

00:32:22,000 --> 00:32:25,000

Are you a friend or enemy?

650

00:32:25,000 --> 00:32:27,000

Oh, a friend, an unarmed friend.

651

00:32:27,000 --> 00:32:28,000

Hello.

652

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

Very nice to meet you.

653

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

Welcome.

654

00:32:30,000 --> 00:32:31,000

Thank you very much.

655

00:32:31,000 --> 00:32:33,000

You look incredible.

656

00:32:33,000 --> 00:32:35,000

In England they described the Vikings.

657

00:32:35,000 --> 00:32:38,000

They were tall, they were bearded, they have long hair.

658

00:32:38,000 --> 00:32:39,000

Yes.

659

00:32:39,000 --> 00:32:41,000

They were terror from the north.

660

00:32:41,000 --> 00:32:44,000

Yes, sir, you're just describing yourself right now.

661

00:32:44,000 --> 00:32:45,000

Okay.

662

00:32:45,000 --> 00:32:46,000

How about that?

663

00:32:46,000 --> 00:32:52,000

So to help me unravel the mystery of the Sunstone, I wanted to come to a real Viking as close to a Viking as I could get.

664

00:32:52,000 --> 00:32:53,000

Do you believe in it?

665

00:32:53,000 --> 00:32:55,000

Do you think it was really used by the Vikings?

666

00:32:55,000 --> 00:32:59,000

Since they have described it in our saga, I think they use it.

667

00:32:59,000 --> 00:33:01,000

So what's your advice?

668

00:33:01,000 --> 00:33:03,000

What do you need to do to understand this Sunstone?

669

00:33:03,000 --> 00:33:06,000

I think you must be more Viking in your soul.

670

00:33:06,000 --> 00:33:07,000

I have to become a Viking.

671

00:33:07,000 --> 00:33:08,000

Come on.

672

00:33:08,000 --> 00:33:09,000

Oh, okay.

673

00:33:09,000 --> 00:33:10,000

I feel a little bit out of place here.

674

00:33:10,000 --> 00:33:11,000

Yes.

675

00:33:11,000 --> 00:33:16,000

But maybe I can offer you some better clothes.

676

00:33:16,000 --> 00:33:23,000

I guess if I'm going to ask Gaiora to make me a twilight board, I can't exactly turn down his request to give me a makeover.

677

00:33:23,000 --> 00:33:25,000

Also, he's sort of terrifying.

678

00:33:25,000 --> 00:33:28,000

So let's try this entrance one more time.

679

00:33:31,000 --> 00:33:35,000

I feel ridiculous, but I'm hoping the locals approve.

680

00:33:35,000 --> 00:33:39,000

Otherwise, I sense they're going to throw me in the fire.

681

00:33:40,000 --> 00:33:43,000

Here, you truly proud.

682

00:33:45,000 --> 00:33:47,000

Yes!

683

00:33:48,000 --> 00:33:49,000

I'm in?

684

00:33:49,000 --> 00:33:50,000

You are in?

685

00:33:50,000 --> 00:33:51,000

Yes!

686

00:33:51,000 --> 00:33:52,000

Yes!

687

00:33:52,000 --> 00:33:53,000

Welcome.

688

00:33:53,000 --> 00:33:54,000

Thank you very much.

689

00:33:54,000 --> 00:33:56,000

And now, here we have the horn.

690

00:33:56,000 --> 00:34:00,000

And they say give horn or skull.

691

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

Skull!

692

00:34:01,000 --> 00:34:02,000

Skull!

693

00:34:07,000 --> 00:34:08,000

Oh!

694

00:34:08,000 --> 00:34:10,000

Do you think it tastes good?

695

00:34:10,000 --> 00:34:11,000

I don't know.

696

00:34:11,000 --> 00:34:12,000

Yes.

697

00:34:12,000 --> 00:34:13,000

It tastes sort of good.

698

00:34:13,000 --> 00:34:15,000

Yes, it tastes sort of good.

699

00:34:15,000 --> 00:34:16,000

Now what happens?

700

00:34:16,000 --> 00:34:17,000

We go outside.

701

00:34:17,000 --> 00:34:24,000

Outside the hall, life carries on much as it did in the Viking Age.

702

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

And before I can get down to business, I'm being invited to learn how to handle myself in battle.

703

00:34:29,000 --> 00:34:31,000

Okay, so this is Viking Archery 101.

704

00:34:31,000 --> 00:34:32,000

Yes.

705

00:34:32,000 --> 00:34:33,000

You are my teacher?

706

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

Yes.

707

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

What is your name?

708

00:34:35,000 --> 00:34:36,000

Erika.

709

00:34:36,000 --> 00:34:37,000

Erika.

710

00:34:37,000 --> 00:34:38,000

Yeah.

711

00:34:38,000 --> 00:34:39,000

Alright, here we go.

712

00:34:39,000 --> 00:34:40,000

What do I do?

713

00:34:40,000 --> 00:34:41,000

Yes, you put your, on this side.

714

00:34:41,000 --> 00:34:42,000

Yes.

715

00:34:42,000 --> 00:34:43,000

Left side.

716

00:34:43,000 --> 00:34:44,000

Yes.

717

00:34:44,000 --> 00:34:45,000

And you raise your bow like this.

718

00:34:45,000 --> 00:34:46,000

Elbow like this?

719

00:34:46,000 --> 00:34:47,000

Alright.

720

00:34:51,000 --> 00:34:52,000

Come on.

721

00:34:52,000 --> 00:34:54,000

Alright, that was very intimidating.

722

00:34:54,000 --> 00:34:56,000

And a little bit sexy.

723

00:34:56,000 --> 00:34:57,000

Here we go.

724

00:35:01,000 --> 00:35:02,000

Very good.

725

00:35:02,000 --> 00:35:03,000

I'm on the board.

726

00:35:03,000 --> 00:35:04,000

Very good.

727

00:35:04,000 --> 00:35:05,000

I'm on the board.

728

00:35:05,000 --> 00:35:06,000

Is it the size of the bow?

729

00:35:06,000 --> 00:35:08,000

Now it's the lower limb.

730

00:35:08,000 --> 00:35:11,000

It's a little stiffer than the upper.

731

00:35:11,000 --> 00:35:13,000

So it's not the size of the bow, it's the stiffness.

732

00:35:15,000 --> 00:35:16,000

Okay.

733

00:35:22,000 --> 00:35:23,000

Good.

734

00:35:23,000 --> 00:35:24,000

Better?

735

00:35:32,000 --> 00:35:36,000

With playtime over, it's time to see if Gaeta can help me with my mission.

736

00:35:36,000 --> 00:35:42,000

To recreate an authentic Viking Twilight board and shadow stick from Dr. Balash's diagrams.

737

00:35:42,000 --> 00:35:45,000

You are obviously skilled with woodworking, yes?

738

00:35:45,000 --> 00:35:46,000

Yes.

739

00:35:46,000 --> 00:35:47,000

Is fully possible?

740

00:35:47,000 --> 00:35:48,000

Yes.

741

00:35:48,000 --> 00:35:51,000

And I will make it of the best wood I have.

742

00:35:53,000 --> 00:35:56,000

Gaeta gets to work and quickly proves that Vikings aren't just lethal.

743

00:35:56,000 --> 00:35:58,000

They're really talented.

744

00:35:58,000 --> 00:35:59,000

Let me see.

745

00:35:59,000 --> 00:36:02,000

How about that?

746

00:36:05,000 --> 00:36:09,000

Less than an hour later, he's brought the diagrams to life.

747

00:36:09,000 --> 00:36:10,000

It's really good.

748

00:36:10,000 --> 00:36:12,000

I mean, it's a perfect match.

749

00:36:12,000 --> 00:36:17,000

We will take your craftsmanship and the Sun Stone and we'll see if we can make it work.

750

00:36:17,000 --> 00:36:21,000

Gaeta may have just created the missing piece of the Sun Stone puzzle.

751

00:36:21,000 --> 00:36:24,000

Now all that's left to do is test it out.

752

00:36:24,000 --> 00:36:29,000

And lucky for me, his woodworking skills involve Viking designs that are bigger than a wooden compass.

753

00:36:29,000 --> 00:36:31,000

When you said you had a boat, I didn't picture this.

754

00:36:31,000 --> 00:36:32,000

This.

755

00:36:32,000 --> 00:36:33,000

This I bought.

756

00:36:33,000 --> 00:36:43,000

This is a perfect replica of the Asseberg ship that I saw in the Viking Museum.

757

00:36:43,000 --> 00:36:51,000

It is a masterpiece of historical construction and the perfect vessel to test out whether the Sun Stone can be used to navigate.

758

00:36:51,000 --> 00:36:52,000

How are you?

759

00:36:52,000 --> 00:36:53,000

Hello, Josh.

760

00:36:53,000 --> 00:36:54,000

Nice to see you.

761

00:36:54,000 --> 00:36:55,000

Yes, good to see you again.

762

00:36:55,000 --> 00:36:56,000

Are you sure you want to go out?

763

00:36:56,000 --> 00:36:57,000

Yes, I'm sure.

764

00:36:57,000 --> 00:37:01,000

If there was ever a day when we needed a Sun Stone to work, this is it.

765

00:37:01,000 --> 00:37:04,000

We are a big challenge if you look at the weather.

766

00:37:04,000 --> 00:37:05,000

Well, we will do our best.

767

00:37:05,000 --> 00:37:06,000

A huge challenge is why we're here.

768

00:37:06,000 --> 00:37:07,000

Are you ready?

769

00:37:07,000 --> 00:37:08,000

I'm ready.

770

00:37:08,000 --> 00:37:10,000

Let's hit the high seas.

771

00:37:10,000 --> 00:37:19,000

Once we board the vessel, we cast off from the dock and begin to raise the sail, which on an ancient boat turns out to be something of a team effort.

772

00:37:19,000 --> 00:37:20,000

Ah!

773

00:37:20,000 --> 00:37:22,000

Oh!

774

00:37:22,000 --> 00:37:23,000

Oink!

775

00:37:23,000 --> 00:37:24,000

Oink!

776

00:37:24,000 --> 00:37:25,000

Oink!

777

00:37:25,000 --> 00:37:28,000

With the sail unfurled, we're underway.

778

00:37:28,000 --> 00:37:30,000

The weather is bad.

779

00:37:30,000 --> 00:37:35,000

The boat is a design that predates the horse and plow, but this is the moment.

780

00:37:35,000 --> 00:37:41,000

Will the Sun Stone reveal its mystical qualities, or are we about to be lost at sea?

781

00:37:41,000 --> 00:37:43,000

We're going!

782

00:37:48,000 --> 00:37:54,000

I'm off the coast of Norway on an authentic Viking vessel, wearing authentic Viking clothes,

783

00:37:54,000 --> 00:37:58,000

hanging out with a bunch of dudes that I'm pretty sure are actual Vikings.

784

00:37:58,000 --> 00:38:00,000

This is the moment we've been waiting for.

785

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

The weather is bad and getting worse, and navigating here without a compass seems an impossible challenge.

786

00:38:07,000 --> 00:38:09,000

Alright, here is the Sun Stone.

787

00:38:09,000 --> 00:38:11,000

So let's talk about what's been done to the stone here.

788

00:38:11,000 --> 00:38:13,000

You have two slits now.

789

00:38:13,000 --> 00:38:19,000

You have to look through this slit, and you will see two images.

790

00:38:19,000 --> 00:38:20,000

I do.

791

00:38:20,000 --> 00:38:23,000

When I look through this, I see a double image of the slit on the backside.

792

00:38:23,000 --> 00:38:33,000

If you find the position where the two just seem equal, then your arrow will show you which way the Sun is.

793

00:38:33,000 --> 00:38:35,000

Let's hope it will work.

794

00:38:35,000 --> 00:38:39,000

By holding up the crystal in the haze, the double image of the slit appears.

795

00:38:39,000 --> 00:38:41,000

One side darker, one lighter.

796

00:38:41,000 --> 00:38:44,000

But by rotating the crystal, they should match.

797

00:38:44,000 --> 00:38:47,000

When they do, the arrow should point to the Sun.

798

00:38:50,000 --> 00:38:51,000

You ready?

799

00:38:51,000 --> 00:38:53,000

I'm really excited.

800

00:38:53,000 --> 00:38:55,000

Sun Stone, here we come.

801

00:38:58,000 --> 00:39:04,000

I scan the sky in an attempt to find the spot where the two images on the far side of the crystal appear the same.

802

00:39:04,000 --> 00:39:09,000

The differences are subtle, and I'm not having an easy time making it work.

803

00:39:09,000 --> 00:39:11,000

But then, I find it.

804

00:39:11,000 --> 00:39:12,000

There.

805

00:39:12,000 --> 00:39:16,000

Okay, remember the way, which way the arrow is showing this?

806

00:39:16,000 --> 00:39:20,000

The arrow is pointing this way, so this is telling me if this is working, that the Sun is somewhere this way.

807

00:39:20,000 --> 00:39:23,000

It's okay, just look for another point and do the same.

808

00:39:25,000 --> 00:39:33,000

The idea is to do the experiment twice, using the intersection of the two arrow lines to find the exact position of the Sun.

809

00:39:33,000 --> 00:39:36,000

I'm trying to not drop the Sun Stone in the sea.

810

00:39:38,000 --> 00:39:40,000

There, right there, right there. That's equal.

811

00:39:40,000 --> 00:39:43,000

Now try to estimate the intersection.

812

00:39:43,000 --> 00:39:47,000

Okay, the first estimation was pointing this way, the second estimation was pointing this way.

813

00:39:47,000 --> 00:39:52,000

Okay, so just follow those lines and try to say where the Sun is.

814

00:39:52,000 --> 00:39:54,000

The Sun should be here.

815

00:39:55,000 --> 00:40:00,000

With the Sun possibly located, we break out the twilight board and shadow stick to take a measurement.

816

00:40:00,000 --> 00:40:04,000

I don't really know how to use it, so now I really need your help.

817

00:40:04,000 --> 00:40:10,000

Okay, you think the Sun should be there, so you basically aim that point at the position of the Sun.

818

00:40:10,000 --> 00:40:11,000

Got it.

819

00:40:11,000 --> 00:40:12,000

You have measured with the Sun Stone.

820

00:40:12,000 --> 00:40:15,000

And then the compass underneath should become accurate.

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00:40:15,000 --> 00:40:16,000

Yes, that's the idea.

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00:40:16,000 --> 00:40:19,000

So in order to test that, we need a real compass.

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00:40:19,000 --> 00:40:20,000

Yes.

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00:40:20,000 --> 00:40:21,000

You have a real compass?

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00:40:21,000 --> 00:40:22,000

Uh, yeah.

826

00:40:23,000 --> 00:40:25,000

Let's see how we did here. What do you think?

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00:40:25,000 --> 00:40:26,000

I think it will work.

828

00:40:26,000 --> 00:40:27,000

Yeah.

829

00:40:27,000 --> 00:40:29,000

Because, um...

830

00:40:29,000 --> 00:40:31,000

Because you made it.

831

00:40:31,000 --> 00:40:32,000

Yes, of course.

832

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

Balash takes a bearing with his magnetic compass, something not in use in the Viking Age.

833

00:40:38,000 --> 00:40:43,000

The test now is to see how well my compass, which is nothing more than a crystal and a piece of wood, compares.

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00:40:43,000 --> 00:40:44,000

Here, let's line it up.

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00:40:47,000 --> 00:40:48,000

It works!

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00:40:49,000 --> 00:40:53,000

That is unbelievable. The bearings are nearly identical.

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00:40:53,000 --> 00:40:58,000

This is the first successful test on the water that proves the Sun Stone is real.

838

00:40:58,000 --> 00:41:00,000

That's almost a perfect match.

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

Well, I'm amazed.

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00:41:02,000 --> 00:41:04,000

North, north. It lines up almost exactly.

841

00:41:04,000 --> 00:41:05,000

It's a bicycle.

842

00:41:07,000 --> 00:41:12,000

This is a device that potentially could have been in use hundreds of years before the magnetic compass was being used in Europe.

843

00:41:12,000 --> 00:41:13,000

Yes.

844

00:41:13,000 --> 00:41:17,000

Because if you have no alternative, then, well, it's pretty good.

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00:41:17,000 --> 00:41:19,000

Viking Sun Stone. Check.

846

00:41:20,000 --> 00:41:22,000

Maybe we could sail out to Greenland now.

847

00:41:22,000 --> 00:41:24,000

Oh, you think so? You're feeling confident?

848

00:41:24,000 --> 00:41:25,000

Oh, of course.

849

00:41:25,000 --> 00:41:27,000

Okay, to Greenland, guys. Let's go.

850

00:41:27,000 --> 00:41:29,000

Let's get this thing in gear. Come on.

851

00:41:33,000 --> 00:41:37,000

And like gazing through the crystal, I now see things here in a different light.

852

00:41:37,000 --> 00:41:42,000

The Vikings' reputation for violence and brutality may be well earned,

853

00:41:42,000 --> 00:41:45,000

but they were also fiercely clever engineers and mariners

854

00:41:45,000 --> 00:41:49,000

and more artistically accomplished than we've given them credit for.

855

00:41:49,000 --> 00:41:52,000

And while the Sun Stone may have given the Vikings an edge,

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00:41:52,000 --> 00:41:57,000

there's something in the cultural DNA of Norway that's also undeniable.

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

The spirit that made the Vikings so dominant has carried forward in time

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00:42:02,000 --> 00:42:08,000

to polar explorers and adventurers, to fishing villages, and offshore modern marvels.

859

00:42:10,000 --> 00:42:16,000

Their sagas speak of a magic Sun Stone, and we now know that the legend is true.

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00:42:16,000 --> 00:42:20,000

But the real magic is the ingenuity of the Vikings themselves,

861

00:42:20,000 --> 00:42:25,000

who turned simple materials into a powerful tool to conquer the seas.