

1

00:00:00,522 --> 00:00:18,082

This series presents information based in part on theory and conjecture.

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00:00:18,082 --> 00:00:22,602

The producer's purpose is to suggest some possible explanations, but not necessarily

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00:00:22,602 --> 00:00:26,082

the only ones to the mysteries we will examine.

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00:00:26,082 --> 00:00:27,082

Earth.

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00:00:28,082 --> 00:00:29,082

Earth.

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00:00:29,082 --> 00:00:32,082

The third planet from the sun.

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00:00:32,082 --> 00:00:39,082

For uncounted thousands of years, men looked to the sky and wondered if they were alone.

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00:00:39,082 --> 00:00:44,082

Finally, there were machines that could travel into space.

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00:00:50,082 --> 00:00:55,082

Men walked on the moon, but found no sign there of other intelligence.

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00:00:58,082 --> 00:01:04,082

But there are eight other planets moving around the same sun that kindled life on Earth.

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00:01:04,082 --> 00:01:07,082

Could it have happened only on our planet?

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00:01:07,082 --> 00:01:10,082

A spark that could evolve into intelligence?

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00:01:12,082 --> 00:01:18,082

The winter of 1976 would see another great step in search of life on other worlds.

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00:01:28,082 --> 00:01:33,082

The first sunrise for mankind occurred more than three million years ago.

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00:01:36,083 --> 00:01:42,083

Long, long before there were men, the sun was an insignificant cluster of dust and gas.

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00:01:51,083 --> 00:01:56,083

It wasn't long in the scheme of things before the gas and dust began to boil.

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00:01:58,083 --> 00:02:02,083

Mass becoming energy, energy becoming mass.

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00:02:07,083 --> 00:02:13,083

Other forces were at work as pressures built and the infant sun was at war with itself.

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00:02:19,083 --> 00:02:26,083

Nuclear fusion, the same force at work in the hydrogen bomb, created the sun

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00:02:26,083 --> 00:02:29,083

and has fueled it through the millennium.

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00:02:36,083 --> 00:02:43,083

In the convulsion of birth, great mass and enormous energy must have been thrown off into space.

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00:02:44,083 --> 00:02:49,083

The planets were the cinders left by this cosmic holocaust.

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00:02:49,083 --> 00:02:52,083

The same process was at work throughout the universe.

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00:02:52,083 --> 00:03:02,083

Uncounted stars, uncounted planets, uncounted possibilities for life.

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00:03:05,083 --> 00:03:11,083

Probes have been sent into space and new mathematics invented to help understand the dynamics of the universe.

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00:03:11,083 --> 00:03:16,083

Most of what is known about space has been learned only in the latter half of this century.

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00:03:16,083 --> 00:03:21,083

It would be arrogant to suppose therefore that we've done more than begin to ask the right questions.

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00:03:21,083 --> 00:03:29,083

Of course there's never been a shortage of answers. Before men had space probes and computers, they had imaginations.

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00:03:32,083 --> 00:03:35,083

Georges Millier was a pioneering filmmaker.

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00:03:36,083 --> 00:03:43,083

In the first quarter of the century that would see men actually walk on the moon, he created a vision of what that event might be like.

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00:03:46,083 --> 00:03:49,083

The first half of the century was the first of the first.

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00:04:05,083 --> 00:04:10,083

Essential to Millier's comic view of a landing on the moon was an encounter with aliens.

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00:04:10,083 --> 00:04:17,083

Such encounters have been dreamed of with mingled fear and hope for a long time.

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00:04:40,083 --> 00:04:57,084

Ironically, Millier's view of the return to Earth was not unlike a modern Apollo splashdown and recovery.

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00:05:01,084 --> 00:05:06,084

Percival Lowell was one of many who contemplated the possibilities of life on other worlds.

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00:05:06,084 --> 00:05:13,084

He was not a filmmaker but a man of science. Lowell's passion was something he saw on the face of Mars.

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00:05:15,084 --> 00:05:20,084

Lowell came to Flagstaff, Arizona in 1894 to build an observatory.

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00:05:22,084 --> 00:05:29,084

He hoped that the clear desert air would afford him a better look at Mars than any astronomer before him had been able to achieve.

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00:05:30,084 --> 00:05:38,084

The 24-inch refracting telescope Lowell installed on the site was the most advanced of the day.

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00:05:43,084 --> 00:05:46,084

When all was ready, Lowell trained his eye on Mars.

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00:05:47,084 --> 00:05:53,084

The conclusions he reached about what he saw made him one of the most controversial scientists of the age.

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00:05:54,084 --> 00:06:00,084

Arizona newspaper man George Hoyt has written a definitive biography of Percival Lowell.

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00:06:01,084 --> 00:06:08,084

His research focused on Lowell's fascination with Mars and with the remarkable conclusions he made after long study.

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00:06:09,084 --> 00:06:14,084

Percival Lowell thought that there was intelligent life of some form on Mars.

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00:06:15,084 --> 00:06:22,084

He deduced this logically from the existence of what he thought were canals on Mars, lines of the same kind.

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00:06:23,084 --> 00:06:36,084

The lines that he could see in the telescope, they were highly geometrical and he couldn't explain them in any other way except to assume that some intelligent beings had constructed these lines.

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00:06:40,084 --> 00:06:51,084

Lowell's observatory is still in use today. Its creator died in 1916, having fired the imaginations of many and tasted the ridicule of others.

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00:06:52,084 --> 00:07:02,084

Later research indicates that Lowell's canals were illusions, but the remarkable events of 1976 have proven the astronomer right on many of his other observations.

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00:07:03,084 --> 00:07:14,084

He thought that Mars was in what he called a terrestrial stage of planetary evolution and that was the stage after the one that the Earth was in, which was the Terracquious stage.

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00:07:14,084 --> 00:07:34,084

In short, the Earth had oceans. Mars, he thought, had already lost its oceans, but it did have oceans at one time. Mars was drying up, Mars was desiccating, and he coined the word desertism for

what was happening to Mars, and he thought that it was also just beginning to appear on Earth.

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00:07:36,084 --> 00:07:40,084

Lowell's observation about Earth's changing climate was profound.

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00:07:44,084 --> 00:07:49,085

The forces at work in the solar system have a rhythm and a reason beyond the grasp of most men.

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00:07:51,085 --> 00:07:56,085

Changes that are imperceptible from man's tiny window on the universe can have profound consequences.

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00:07:58,085 --> 00:08:08,085

Lowell believed that some small shift in the orbit of Mars or some fluctuation in the sun's rays had gradually deprived Mars of life-giving water.

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00:08:09,085 --> 00:08:13,085

He saw indications that the same processes were at work on Earth.

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00:08:14,085 --> 00:08:19,085

Could it be that some Martian scientist was able to warn his people in time?

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00:08:21,085 --> 00:08:32,085

At the Jet Propulsion Laboratory in Pasadena, California, scientists like Harold Klein are studying the similarities between Earth and Mars that Percival Lowell was the first to recognize.

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00:08:33,085 --> 00:08:42,085

Well, it's very difficult to talk about the evolution of a planet like Mars without too much information.

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00:08:43,085 --> 00:08:50,085

The general theory at present is that both Mars and the Earth were formed at the same time about five billion years ago.

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00:08:52,085 --> 00:09:00,085

One would then postulate that at the beginning, when the solar system was created, Mars had a much denser atmosphere than it has now,

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00:09:00,085 --> 00:09:12,085

and that in many ways it was much more similar to the Earth and perhaps, therefore, was conducive to the origin of life on that planet as we believe was the case on this planet.

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00:09:17,085 --> 00:09:21,085

Water would have been essential if life on Mars was to develop as we know it.

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00:09:22,085 --> 00:09:24,085

Gerald Soffin is a Mars geologist.

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00:09:25,085 --> 00:09:30,085

The important thing to understand is that both planets were at one time hydrological planets.

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00:09:31,085 --> 00:09:40,085

There were planets that had flooded amounts of water, and that that water, that simple molecule, dominated for a great period of time the course of the history of the planet.

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00:09:41,085 --> 00:09:47,085

Now, there's no water on Mars today. There's no flooding water. There's certainly atmospheric water, and we now know the poles of Mars are water.

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00:09:48,085 --> 00:09:55,085

So, somewhere along the way, Mars went one way, and the Earth went the other way.

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00:10:04,085 --> 00:10:10,085

We're asking the question, if there is life on Mars, was it a separate event from the evolution of

life on Earth?

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00:10:10,085 --> 00:10:25,085

It's entirely possible that what we find on Mars, possible, not likely, is so close to our own that we've discovered, in a sense, the same event, the terrestrial life and the Earth life, because we're related to the same event that took place some time ago.

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00:10:26,085 --> 00:10:28,085

Some time ago indeed.

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00:10:30,085 --> 00:10:39,085

And the question remains, could the birth of the Sun some five billion years ago have given life to two worlds instead of one?

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00:10:40,085 --> 00:10:42,085

That's right.

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00:10:50,085 --> 00:10:56,086

Mission control, the Jet Propulsion Laboratory in the foothills above Pasadena, California.

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00:10:57,086 --> 00:11:05,086

It is from here that an ambitious undertaking in space will be directed. The target is Mars, two hundred twelve million miles from Earth.

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00:11:06,086 --> 00:11:17,086

Men have walked on the moon, but this journey to Mars will take eleven months. Too long for man now, but not for his machines.

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00:11:18,086 --> 00:11:19,086

Copy, thank you.

77

00:11:20,086 --> 00:11:23,086

Man, the de-naught is in for two one five six zero two.

78

00:11:25,086 --> 00:11:26,086

Copy, thank you.

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00:11:27,086 --> 00:11:34,086

A Titan Centaur lifts off from Cape Kennedy. It is August twentieth, nineteen seventy five.

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00:11:35,086 --> 00:11:40,086

In the nose cone is a machine of ingenious artifice. It is called Viking.

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00:11:41,086 --> 00:11:49,086

Men have learned to extend their intelligence beyond the confines of their fragile bodies into icy space and onto unknown worlds.

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00:11:50,086 --> 00:11:54,086

The machine will go where men cannot for the present go.

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00:11:55,086 --> 00:12:02,086

It will obey the commands of the scientists in Pasadena sitting at their computers thirty five miles from the surfing beach at Malibu.

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00:12:06,086 --> 00:12:07,086

Roger.

85

00:12:08,086 --> 00:12:12,086

Roger, two one one three five zero eight three one three and four out of luck.

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00:12:13,086 --> 00:12:21,086

The voyage itself is largely uneventful. Soon however, the command center at Pasadena will be alive with activity.

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00:12:22,086 --> 00:12:26,086

Art, looking at the, I got the sheet here with me for the ranging for today.

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00:12:27,086 --> 00:12:28,086

Okay.

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00:12:29,086 --> 00:12:35,086

First range eight decimal two seven zero eight nine.

90

00:12:36,086 --> 00:12:38,086

Okay, how do the correlations go?

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00:12:38,086 --> 00:12:42,086

Ten months from liftoff, Viking one enters the orbit of Mars.

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00:12:43,086 --> 00:12:47,086

An instrument package descends to the surface and awaits instructions from Earth.

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00:12:48,086 --> 00:12:49,086

Countdown.

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00:12:51,086 --> 00:12:57,086

Now we chose Mars primarily because Mars is, I guess you would call Mars our true sister planet to Earth.

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00:12:58,086 --> 00:13:01,086

The biology that we know in the universe is focused mostly on the Earth.

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00:13:02,086 --> 00:13:03,086

That's the only life that we know our life.

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00:13:04,086 --> 00:13:06,086

We terrestrial beings, we the trees and we the people.

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00:13:06,086 --> 00:13:11,086

And our candidate for, for a search began with Mars.

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00:13:12,086 --> 00:13:16,086

Eight decimal two seven zero eight nine.

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00:13:17,086 --> 00:13:20,086

The first Viking lander is joined by a second six weeks later.

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00:13:21,086 --> 00:13:27,086

With infrared sensors and special television cameras, men get their first close look at Mars.

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00:13:28,086 --> 00:13:30,086

Nine seven second hour.

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00:13:31,086 --> 00:13:34,086

Calibrate out the effects of the solar corona.

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00:13:35,086 --> 00:13:38,086

Soil samples yield particularly fascinating results.

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00:13:39,086 --> 00:13:44,086

The data from both landers can be interpreted as being due to living organisms,

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00:13:45,086 --> 00:13:54,086

can also be interpreted from what we now know as being due to some kind of very active surface chemistry going on on the planet.

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00:13:54,086 --> 00:14:04,087

In Pasadena, a mock-up of the Viking lander is used to rehearse every move the real lander would be required to make.

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00:14:07,087 --> 00:14:09,087

The dexterity of the lander is amazing.

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00:14:10,087 --> 00:14:16,087

Citing through television eyes, programmers on Earth trigger Viking to scoop up samples of soil or rock.

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00:14:17,087 --> 00:14:23,087

Samples are dropped into a sifting mechanism that sorts particles for specific tests.

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00:14:24,087 --> 00:14:28,087

Dr. Leslie Orgel points out that the tests are inconclusive.

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00:14:29,087 --> 00:14:36,087

The experiments that we've done with the Viking on Mars this time doesn't give any evidence at all

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00:14:37,087 --> 00:14:42,087

for any compounds left over from life in the past on Mars.

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00:14:42,087 --> 00:14:46,087

But that doesn't of course mean at all that there wasn't any life on Mars.

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00:14:47,087 --> 00:14:50,087

There may have been compounds there and they may have been destroyed.

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00:14:51,087 --> 00:14:59,087

Well if you want to postulate a technological civilization on Mars which has died out,

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00:15:00,087 --> 00:15:09,087

you would then also have to have some mechanism to cover up, cover over any sort of buildings or any sort of vast projects.

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00:15:09,087 --> 00:15:21,087

It is conceivable that you might have had such a civilization which then got covered up by some cataclysmic events such as a massive Mars quake

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00:15:22,087 --> 00:15:29,087

which completely covered over everything and that all the artifacts of your ancient civilization are unburied in some way.

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00:15:30,087 --> 00:15:35,087

None of this is visible you see from our pictures now that we're taking from the Viking spacecraft

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00:15:35,087 --> 00:15:42,087

which could see objects as small as about 15 yards or bigger in size.

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00:15:45,087 --> 00:15:50,087

The Viking scientists believe that the Martian sky must at once resemble our own.

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00:15:51,087 --> 00:15:57,087

Whether some natural catastrophe obliterated an ancient Mars civilization, we don't know.

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00:15:58,087 --> 00:16:02,087

It seems however that Earth is not immune to the same forces that made Mars a desert.

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00:16:02,087 --> 00:16:10,087

There are three schools of thought. Some believe a slight tilt in the Earth's axis is bringing on a new ice age.

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00:16:11,087 --> 00:16:18,087

Others feel the Earth's climate is drying and the deserts are slowly encroaching on population centers.

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00:16:21,087 --> 00:16:27,087

Another view is that men have so altered the natural environment, no one can predict the future.

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00:16:28,087 --> 00:16:32,087

Tons of pollution pour into the air from the great cities of Earth.

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00:16:33,087 --> 00:16:39,087

The problem has been only recently recognized and the effects of man's tampering can only be guessed at.

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00:16:43,087 --> 00:16:47,087

Men have done worse things than pour smoke into the sky.

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00:16:57,087 --> 00:17:13,088

It is possible that all of Earth may one day resemble the Southwest American desert.

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00:17:14,088 --> 00:17:18,088

Mars looked much like this to the electronic eyes of Viking.

133

00:17:19,088 --> 00:17:23,088

The machines scanned the horizon and recorded no sign of intelligent life.

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00:17:23,088 --> 00:17:29,088

It is unlikely that life evolving elsewhere in the universe would follow the same path as life on Earth.

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00:17:30,088 --> 00:17:35,088

If that were to happen however, Mars would seem to be the likely host.

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00:17:36,088 --> 00:17:43,088

The two worlds have much in common even now. Perhaps Viking didn't see all there was to see.

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00:17:44,088 --> 00:17:54,088

Beyond that, could men recognize the works of a civilization radically different from his own?

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00:17:55,088 --> 00:18:05,088

If there were Martians and they knew what was happening to their planet, perhaps they chose to abandon it.

139

00:18:07,088 --> 00:18:14,088

On Earth, men have been able to see the world through the eyes of the Earth.

140

00:18:14,088 --> 00:18:18,088

The Earth is a planet. Perhaps they chose to abandon it.

141

00:18:23,088 --> 00:18:27,088

On Earth, men have developed the technology to create orbiting habitats.

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00:18:28,088 --> 00:18:33,088

Theoretically, these artificial worlds could be built on an immense scale in weightless space.

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00:18:34,088 --> 00:18:40,088

They could provide a safe refuge for long voyages in space. Voyages to new worlds.

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00:18:41,088 --> 00:18:50,088

It is not inconceivable that Earth once held the same promise and fascination for Martians that the red planet now holds for mankind.

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00:18:53,088 --> 00:18:57,088

Viking may be a step in the return voyage.

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00:19:10,088 --> 00:19:13,088

This is the beginning. This is really truly the beginning.

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00:19:13,088 --> 00:19:26,088

Regardless of what happens next year or even a decade from now, we have started what will become an adventure of mankind in searching for not only the lowly forms of life, but eventually I think to search for intelligent life.

148

00:19:27,088 --> 00:19:32,088

This is one of the milestones in the course of human destiny to find cousins.

149

00:19:32,088 --> 00:19:41,088

It is the inevitable path of man's destiny that he will explore the heavens. We're only to not talk about the timetable.

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00:19:46,088 --> 00:19:51,088

We'll adapt the environment to ourselves. We will change the atmosphere. We'll do what is called planetary engineering.

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00:19:51,088 --> 00:19:53,088

It doesn't exist yet, but it will someday.

152

00:19:54,088 --> 00:20:02,088

For example, with all that water at the pole of Mars, there's no point in leaving it frozen there. We might as well melt it and form an ocean.

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00:20:02,088 --> 00:20:07,088

And that's not so fantastic. It's possible to dream about things like that.

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00:20:10,088 --> 00:20:21,089

It is also possible to dream that should we reshape the Martian landscape, we would be settling an old, old account. Perhaps they did as much for us once.

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00:20:24,089 --> 00:20:33,089

If we, on the other hand, are unique in the universe, the time is approaching when we can spread our kind to the stars.

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00:20:34,089 --> 00:20:43,089

Albert Einstein believed the universe was shaped like a saddle. By traveling in a straight line, one could eventually wind up where he started.

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00:20:43,089 --> 00:20:49,089

With the universe, as with life, endings seem to merge with beginnings.

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00:20:50,089 --> 00:20:59,089

Was the end of some undiscovered civilization on Mars the beginning of our civilization on Earth? Will our first steps on some dusky Martian plain be a homecoming?

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00:20:59,089 --> 00:21:07,089

Only when we've been there can we prove or dismiss the notion that some calamity of nature or poverty of spirit can be found.

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00:21:07,089 --> 00:21:14,089

For it has been observed that those who cannot learn from the past are condemned to relive it.

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00:21:37,089 --> 00:21:46,089

Coming up next, in search of continues with an investigation of the claim that ancient aviators left traces of their visits in Peru.

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00:21:46,089 --> 00:21:54,089

Then, 20th century with Mike Wallace probes the controversy surrounding the sieges at Waco and Ruby Ridge.