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00:00:00,000 --> 00:00:09,940

We come to our last and our most distinguished speaker, a man who is certainly qualified

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00:00:09,940 --> 00:00:15,120

probably as no other president is to give us an accurate idea of what space visitors,

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00:00:15,120 --> 00:00:19,000

if and when, will look like.

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00:00:19,000 --> 00:00:24,320

What you've seen, after all, is the testimony of people.

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00:00:24,320 --> 00:00:29,520

We have no evidence that these creatures actually existed in anything else than the

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00:00:29,520 --> 00:00:33,080

imaginings of the people who reported them.

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00:00:33,080 --> 00:00:39,240

We have the tales of the people who have messages from big brotherly visitors.

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00:00:39,240 --> 00:00:49,120

We have no evidence, and for lack of evidence, we can simply try to apply our minds to what,

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00:00:49,120 --> 00:00:52,920

if and when I repeat, space visitors come, they will look like.

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00:00:52,920 --> 00:00:59,360

And we are very fortunate tonight to have the man, as I say, who can tell us more authoritatively

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00:00:59,360 --> 00:01:04,280

what space visitors will look like than probably anybody else.

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00:01:04,280 --> 00:01:06,760

You know I'm speaking of Mr. Willie Lay.

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00:01:06,760 --> 00:01:17,760

Mr. Lay has been interested in space travel for a good many years, despite his useful appearance.

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00:01:17,760 --> 00:01:27,840

In fact, his first book was entitled, Tripped Into Space, and that book was written or published

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00:01:27,840 --> 00:01:30,080

twenty-nine years ago.

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00:01:30,080 --> 00:01:36,800

That is the extent of Mr. Lay's history of interest in space travel.

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00:01:36,800 --> 00:01:41,960

He has written many other books since then, not only on space travel, but also on one

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00:01:41,960 --> 00:01:49,800

of his specialties, which is biology, biology.

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00:01:49,800 --> 00:01:54,080

Some of those books, for instance, you probably know about, they have delightful titles, the

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00:01:54,080 --> 00:01:58,760

longfish, the dodo, and the unicorn.

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00:01:58,760 --> 00:02:01,280

Salamanders and other wonders.

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00:02:01,280 --> 00:02:10,000

Incidentally, both of those books have the subtitle, An Excursion into Romantic Zoology,

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00:02:10,000 --> 00:02:16,240

and I would be in time to make a private guest to myself, that this is a term which might

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00:02:16,240 --> 00:02:24,120

describe Mr. Lay's conception of reports of space visitors as of the present time, Romantic

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00:02:24,120 --> 00:02:25,120

Zoology.

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00:02:25,120 --> 00:02:26,120

I don't know.

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00:02:26,120 --> 00:02:34,000

Without any further word, then, I'll turn the platform over to Mr. Lay, and he will

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00:02:34,000 --> 00:02:41,520

tell you what will certainly be the most solid and worthwhile information of the evening.

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00:02:42,520 --> 00:02:49,040

Ladies and gentlemen, what I am carrying here are not notes for a speech, but the invitation

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00:02:49,040 --> 00:02:53,560

which you have all seen giving me the timing.

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00:02:53,560 --> 00:03:00,760

That's not a new invitation, and it says for me, nine-fifty to ten-fifteen-twenty-five

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00:03:00,760 --> 00:03:01,760

minutes.

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00:03:01,760 --> 00:03:06,200

According to this, we are running five minutes late.

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00:03:06,640 --> 00:03:13,880

However, the CAA regulations state that the pilot does not have to report deviations from

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00:03:13,880 --> 00:03:18,240

the flight plan if they are less than ten minutes.

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00:03:18,240 --> 00:03:24,880

So I think my justice will go ahead, whether I will speak for twenty-five minutes or not,

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00:03:24,880 --> 00:03:28,280

is something I simply do not know.

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00:03:28,280 --> 00:03:35,520

Now, let me first state, so to speak, a statement of qualifications.

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00:03:35,520 --> 00:03:42,320

Secondly, a statement of attitude, and then I go into the theme, power.

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00:03:42,320 --> 00:03:49,320

The statement of qualifications is that I have read most of the books written on flying

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00:03:49,320 --> 00:03:58,360

saucers, if in some cases being annoyed by obvious nonsense, I may have skipped a few

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00:03:58,360 --> 00:03:59,360

pages.

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00:03:59,360 --> 00:04:06,760

Second of attitude is that I do not say people are lawyers because they have seen something

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00:04:06,760 --> 00:04:15,760

in the sky that cannot be explained, but that I believe this term is used here in the non-religious

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00:04:15,760 --> 00:04:28,920

sense, that I think that UFOs, provided they exist at all, exist only inside the atmosphere

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00:04:28,920 --> 00:04:32,600

and are natural phenomena.

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00:04:32,600 --> 00:04:40,560

My reason for expressing this inside the atmosphere is something which is not as well known as

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00:04:40,560 --> 00:04:50,280

it could be, and that is that for quite some time, intensive searches were made of space

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00:04:50,280 --> 00:04:53,720

in the vicinity of Earth.

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00:04:53,720 --> 00:05:01,440

One of the reasons for these intense searches were the forthcoming artificial satellites.

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00:05:01,440 --> 00:05:11,040

It was known to the people involved that artificial satellites would happen sooner or later.

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00:05:11,040 --> 00:05:19,600

It was believed at the time that artificial satellites would broadcast in the literal

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00:05:19,600 --> 00:05:28,040

sense their presence by means of transmitters, but it was also thought correctly so that

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00:05:28,040 --> 00:05:33,280

these transmitters would be battery-powered and the batteries would go out, and then all

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00:05:33,280 --> 00:05:39,920

you had left was visual tracking with optical instruments and tracking with sharp ways by

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00:05:39,920 --> 00:05:42,480

radar.

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00:05:42,480 --> 00:05:50,880

And in order to do that effectively, you had to make very sure that there were no natural

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00:05:50,880 --> 00:05:57,440

bodies in space which you might misunderstand for artificial satellites.

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00:05:57,440 --> 00:06:08,680

And for this reason, a very thorough search was instituted for the space between the Earth

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00:06:08,680 --> 00:06:17,320

and our natural moon, and in this search absolutely nothing turned up.

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00:06:17,320 --> 00:06:25,920

No natural satellites, no planned espionage of the artificial satellites, and no space

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00:06:25,920 --> 00:06:30,200

ships coming from elsewhere or going to elsewhere.

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00:06:30,200 --> 00:06:36,400

Of course, it is always possible to make the hypothesis that wasn't advanced technology.

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00:06:36,400 --> 00:06:43,520

Obviously things are both invisible and undetectable by radar, but I like personality or like one

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00:06:43,520 --> 00:06:46,240

hypothesis at a time.

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00:06:46,240 --> 00:06:53,520

So having stated my personal convictions, I'll go to the theme for which I was really

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00:06:53,520 --> 00:06:55,520

asked to speak.

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00:06:55,520 --> 00:06:59,920

I must say I brought this all by myself.

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00:06:59,920 --> 00:07:03,600

I was invited for lunch by the editors of this week.

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00:07:04,080 --> 00:07:09,200

Now I should just have let them buy me a few cocktails and the lunch, and I should have

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00:07:09,200 --> 00:07:11,200

kept my mouth shut.

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00:07:11,200 --> 00:07:12,560

No, what did I do?

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00:07:12,560 --> 00:07:14,800

I answered questions.

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00:07:14,800 --> 00:07:24,800

And the result of answering what I suspected to be well-meaning questions, I wrote an article.

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00:07:24,800 --> 00:07:30,400

But this article had a flaw, my God, which I did not write myself.

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00:07:31,200 --> 00:07:40,560

Lester Del Rey spoke here first essentially as a science fiction author.

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00:07:40,560 --> 00:07:49,360

And the past origin of this article I wrote was for science fictional purposes.

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00:07:49,360 --> 00:07:59,040

I have been in the habit all my life to look at the history of everything that comes my way.

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00:07:59,040 --> 00:08:06,320

As a matter of fact, as I said recently somewhere else, at Basal, if you have to know, I'm a member

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00:08:06,320 --> 00:08:12,160

of the history of science society, and of course our pride and glory there always is to

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00:08:12,160 --> 00:08:17,680

know earlier sources than the men who are speaking.

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00:08:17,680 --> 00:08:26,720

And so all my life I've been in the habit of looking for earlier sources.

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00:08:26,720 --> 00:08:37,760

So I, when I began reading American science fiction, I tried to find Ulla science fiction.

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00:08:37,760 --> 00:08:43,360

And I like to give you a very quick rundown because this is pertinent to the story.

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00:08:43,360 --> 00:08:50,240

Science fiction does go back to 160 AD, that's the first science fiction story in all.

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00:08:50,240 --> 00:08:54,560

The next one came 1600 years later.

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00:08:54,560 --> 00:09:04,000

In both cases nobody visits us, but people from Earth, technically absolutely inadequate means,

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00:09:04,800 --> 00:09:11,600

go to the moon. Because I can't even believe the others for having used technically inadequate

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00:09:11,600 --> 00:09:19,120

means, characters hadn't been invented at the moment. The first story which I have been able to find

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00:09:19,360 --> 00:09:28,240

in which people from Earth's work come to Earth is a German novel that was written in 1893.

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00:09:29,280 --> 00:09:36,880

So some 20 years ago I was sitting with Sprague de Camp, another well-known science fiction

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00:09:36,880 --> 00:09:43,840

author in his apartment here in New York, and I was mentioning this novel to him.

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00:09:43,840 --> 00:09:47,600

He didn't know it because it had never been translated into English.

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00:09:48,560 --> 00:09:56,800

And he said, well, how do these visitors look? Well, I said in this particular case they are

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00:09:56,800 --> 00:10:02,800

so human that they even can cross-breathe. And then we started thinking of

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00:10:03,600 --> 00:10:09,040

then-reasoned science fiction stories and how the extraterrestrials had looked.

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00:10:10,000 --> 00:10:15,440

And the extraterrestrials had been all kinds of impossible mixtures. You know,

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00:10:15,520 --> 00:10:20,800

70 peats with 20-pound wings aerodynamically completely impossible.

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00:10:22,160 --> 00:10:28,400

Something like lobster's worth, a few appendages, not precisely propellers, no,

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00:10:28,400 --> 00:10:34,800

the artist didn't go that far, but also something that neurologically made no sense.

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00:10:36,080 --> 00:10:44,080

And so the two of us, Sprague de Camp and I, then sat down and said, now what would an

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00:10:44,160 --> 00:10:49,680

extraterrestrial actually look like from the scientific point of view?

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00:10:50,800 --> 00:10:56,240

Let's assume that there are some. What would they look like?

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00:10:57,920 --> 00:11:06,400

We quickly discovered that we could not pin down extraterrestrial life as a whole.

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00:11:06,400 --> 00:11:14,880

You do have these enormous differences on Earth between the sandy peat and the jellyfish,

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00:11:15,920 --> 00:11:27,120

the bird and a moorie star. But what we could pin down or thought we could pin down

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00:11:27,120 --> 00:11:31,520

was the question of how would intelligent life look.

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00:11:32,400 --> 00:11:35,600

Now, a few things were quite obvious in the first place.

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00:11:36,400 --> 00:11:41,920

Intelligent life shows its intelligence by building things, by making things,

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00:11:41,920 --> 00:11:47,280

and it grows more intelligent in the process. And finally, it comes across methods.

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00:11:48,640 --> 00:11:56,960

Therefore, if it has to use methods in the end, it cannot be an underwater civilization.

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00:11:57,360 --> 00:12:03,760

You might theoretically have an underwater civilization of the cultural and technological

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00:12:03,760 --> 00:12:11,680

equivalent of the Neanderthal men, but you cannot even go to the Chroma and Yon because

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00:12:11,680 --> 00:12:18,000

he already needed methods. Metals must be smelted and that cannot be done underwater.

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00:12:18,240 --> 00:12:28,160

I don't want to bore you with every detail which we reasoned out. It took us two days of debate.

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00:12:29,280 --> 00:12:36,720

I'd just like to say something or to repeat something that Lester Del Rey said about the

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00:12:36,720 --> 00:12:46,320

books of the contactees, what they called, namely that eight years after this article was written

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00:12:46,320 --> 00:12:51,120

and published, was written by a great decay and what we discussed it together,

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00:12:52,000 --> 00:12:57,920

eight years after it was written and published, I have found out that the Dutch scientists had

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00:12:57,920 --> 00:13:08,880

done the same thing 200 years before us. His name is well known in the history of science.

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00:13:09,760 --> 00:13:18,480

I'm going to pronounce it the way he did. I wish to point out that I do not have a respiratory

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00:13:18,480 --> 00:13:29,120

infection. Some Dutch names just sound that way. His name is Christian Heufens. Christian Heufens,

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00:13:29,760 --> 00:13:36,960

in about 1700, pointed out that the inhabitants of other planets must have

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00:13:37,920 --> 00:13:47,600

eyes to see what. We can pin this down a little more. Last night I was driven home by an Air Force

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00:13:47,600 --> 00:13:58,160

Colonel who expressed his surprise that our eyes utilized only such a small part of all the possible

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00:13:58,160 --> 00:14:05,840

ways. Well, the reason why our eyes do is a very simple one. Our eyes utilized that part of the

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00:14:05,920 --> 00:14:15,840

spectrum to which our atmosphere is transparent. Our eyes cannot see X-rays. I'm simplifying this,

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00:14:15,840 --> 00:14:23,200

of course, in the course of long evolution that has come about that. But our eyes do not see X-rays

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00:14:23,200 --> 00:14:33,520

because X-rays, which started 200 miles away, wouldn't get to them. So our eyes work on those

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00:14:33,520 --> 00:14:39,520

rays to which our atmosphere happens to be transparent. That's what we can add to evidence.

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00:14:40,320 --> 00:14:54,160

Heufens said furthermore that the intelligent beings must have organs like hands or other of the

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00:14:54,160 --> 00:15:02,080

functional hands to manipulate things. We can add to that that that leaves out a tentative, tentative

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00:15:02,080 --> 00:15:09,600

like organ, like the elephant's tent, which is very strong in pulling but is not for lack of

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00:15:09,600 --> 00:15:18,080

internal brazing strong in pushing. Obviously an intelligent being must be able to move around.

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00:15:18,720 --> 00:15:27,840

Therefore it has to have legs of some kind. One of the things that old Huygens 200 years ago did

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00:15:27,840 --> 00:15:34,640

not mention but would surprise, first break became and me, when we thought about it and discussed it,

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00:15:35,520 --> 00:15:47,360

is to think that of all creatures with an internal skeleton on earth, you never had more than four

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00:15:47,360 --> 00:15:59,040

limbs. It just doesn't exist. What we do not know, what we cannot tell is whether this is a sheer

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00:15:59,040 --> 00:16:06,960

accident of terrestrial evolution or whether there is a natural law that we simply do not

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00:16:07,040 --> 00:16:19,520

happen to know. At any event, I want to pull this together, we came to the result that an intelligent

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00:16:19,520 --> 00:16:29,360

being of another planet cannot be much smaller than a human being because then there would be

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00:16:29,360 --> 00:16:35,280

not enough body cells to support the brain cells and there must be so and so many brain cells because

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00:16:35,280 --> 00:16:42,640

we have postulated that it is intelligent. Now can it be much larger than something else

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00:16:42,640 --> 00:16:50,640

comes in which is known as the square pubular and which makes it very clumsy. In short, we ended up

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00:16:51,920 --> 00:16:59,760

with a creature, which as I have phrased it later, if somebody who needs glasses but doesn't wear any

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00:16:59,760 --> 00:17:10,000

in dust, seen from a distance would not at once be able to tell from a human. This of course does not

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00:17:10,000 --> 00:17:18,400

mean minor accidents of evolution. A minor accident of evolution is whether my ears are large and

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00:17:18,400 --> 00:17:24,640

floppy or whether there aren't any external ears. A minor accident of evolution is whether I have

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00:17:24,720 --> 00:17:32,000

hair all over or none at all. Even smaller accidents of course is a different skin coloring.

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00:17:32,640 --> 00:17:40,640

A very small accident would be the procession or absence of the tail. So as soon as somebody

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00:17:40,640 --> 00:17:47,680

tells me I have contact with people looking just like us, I already have all the biological reasons

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00:17:47,680 --> 00:17:55,440

and the words for not believing it. How large the differences might be is something we can't tell

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00:17:56,160 --> 00:18:04,800

but the living body has to fulfill certain functions and there must be a general resonance.

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00:18:06,160 --> 00:18:13,280

In conclusion, I'd like to say one more thing. In all this reasoning,

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00:18:14,000 --> 00:18:24,000

one main assumption has been made without being mentioned. Namely that the chemical constitution

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00:18:24,640 --> 00:18:37,360

of the non-terrestrial life is similar or more precisely the same, very much the same as ours.

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00:18:38,160 --> 00:18:46,080

Are we justified in making such an assumption? In some cases, ignorance is a justification.

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00:18:46,800 --> 00:18:57,280

We are talking here somewhat from ignorance. Our bodies are built on the carbon atom. The

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00:18:57,280 --> 00:19:05,680

carbon atom has three characteristics which are quite unique. One is it combines readily with

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00:19:05,680 --> 00:19:15,680

almost anything, either neon-crypton and so on, being obvious exceptions. However, it does not

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00:19:15,680 --> 00:19:24,240

favor anything unduly, any other atom for combination. And the third characteristic is that carbon

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00:19:24,240 --> 00:19:32,000

likes to look into itself and form enormous chains thereby producing molecules of the size and

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00:19:32,000 --> 00:19:43,920

complexity necessary for what we call life. And it has been said, oh in about 1900, that there

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00:19:43,920 --> 00:19:52,800

might be a life form in which the silicon atom replaces the carbon atom. This of course would

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00:19:52,800 --> 00:20:00,160

lead to very interesting creatures. But in the first place, silicon is not as versatile

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00:20:00,240 --> 00:20:11,680

in the second place, silicon favors oxygen in a very pronounced manner. In other words, if you

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00:20:11,680 --> 00:20:20,960

have any silicon hydrogen compound, a single molecule of excellent oxidant coming wafting along

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00:20:21,040 --> 00:20:30,000

will break this up. So you do not get the complexity of the compounds to fulfill

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00:20:31,600 --> 00:20:39,040

the life processes. In other words, we are pretty sure now that although silicon is quite similar

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00:20:39,040 --> 00:20:47,760

to oxygen, to carbon, it is not similar enough to be a substitute. And if silicon

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00:20:48,080 --> 00:20:54,880

life exists anywhere in the universe, it would be on a planet where there is no free oxygen around.

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00:20:55,920 --> 00:21:06,320

And it probably would be about as intelligent and as mobile as an average, not too type of stuff.

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00:21:07,760 --> 00:21:13,520

I make, being brought mind that although I was cautioned in the beginning not to be,

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00:21:13,600 --> 00:21:20,240

being brought mind that I made one possible exception. So far I am spoken about life at

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00:21:20,240 --> 00:21:28,240

temperatures which we would find either comfortable or at least bearable, not killing.

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00:21:29,520 --> 00:21:38,240

It has been suggested that at very low temperatures, those temperatures which on earth happen when

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00:21:38,480 --> 00:21:48,960

somebody makes liquid oxygen, that there is another life chemistry possible. Well,

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00:21:49,760 --> 00:21:57,920

we do not know enough chemistry to say that it is possible. Since we do not know enough chemistry,

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00:21:57,920 --> 00:22:06,000

we also cannot say it is impossible. So I have to leave this open. Now to sum up,

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00:22:06,000 --> 00:22:16,480

I believe A, that life exists elsewhere in the universe. On the other hand, I do not believe

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00:22:17,200 --> 00:22:29,280

that the so-called UFOs can even exist outside of our atmosphere. I think they are natural

phenomena,

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00:22:29,680 --> 00:22:40,960

but if we ever get a visit from space, I believe that the life forms, the intelligent life forms

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00:22:41,600 --> 00:22:50,320

that built this ship will be built along the lines of our chemistry and will obey the mechanical

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00:22:50,320 --> 00:22:58,320

laws which have come into play in building the bodies of earth creatures. Thank you.