UAPs
Day 2

Center for Learning in Retirement

Delaware Valley University

September 29, 2026

Glen Maxson

Presentation Link: https://seniortechadvisor.com/wp-content/uploads/2026/09/00UAP.pdf

Format

Day 1 – UFOs and Aliens (September 22)

Day 2 – UAPs (today)

- Why discuss as separate topics?
  - UFOs and Aliens – a human fascination since the dawn of time
    - 37% of Americans believe at least some UFOs have been alien spacecraft visiting Earth from other planets or galaxies
  - UAPs - removes past sensationalism and uses rigorous, data-driven frameworks

- Jesse Michels
- Robert Hastings

- Abraham (Avi) Loeb
- Kenneth Knuth
- Neil deGrasse Tyson

Who is Jesse Michels?



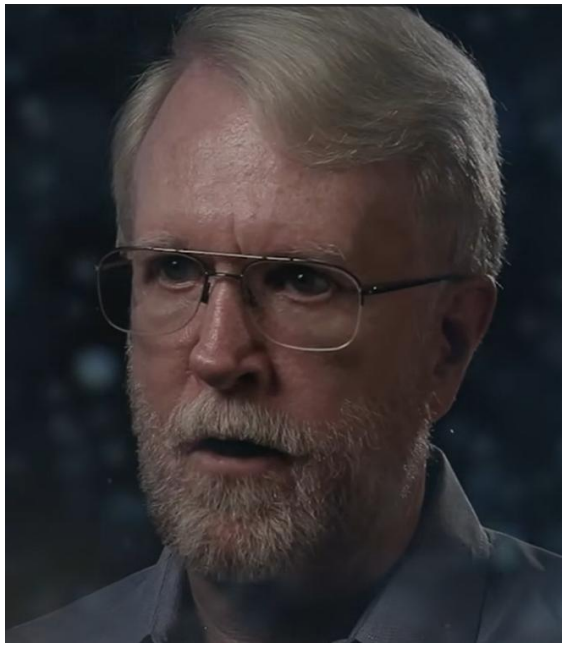
- **Jesse Michels** is an investor and show host. He runs the YouTube channel American Alchemy, which discusses unorthodox and contrarian views in science, philosophy, geopolitics, and the nature of reality. The show has hosted various prominent thinkers, scientists, investors, and entrepreneurs, such as Garry Nolan, Eric Weinstein, Avi Loeb, and Jacques Vallée. He also manages a venture portfolio on behalf of Thiel Capital.

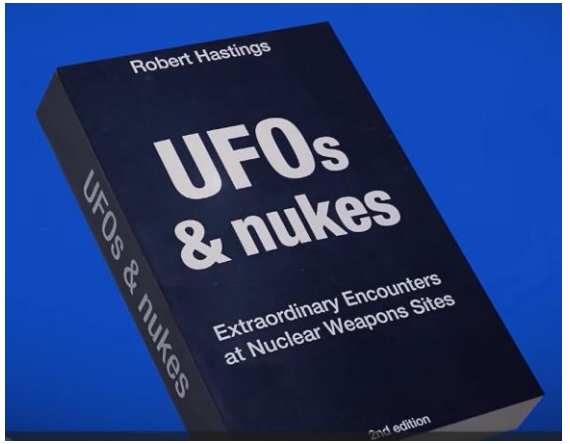
Some of Jesse's recent interviews:

Eric Weinstein Reveals UFO Physics! (Exclusive Interview)
"We Have Antigravity UFOs!" (ft. Nick Cook)
The CIA Scientist Who Built UFOs Before Bob Lazar (Townsend Brown Documentary)
UFOs & Religion: Vatican Reveals Hidden Link (Ft. Diana Pasulka)
How I Know David Grusch Is Not Lying...
"Aliens Are Humans From The Future!" (Ft. Mike Masters & David Grusch)
If You Still Think UFOs Are Fake, Watch This (David Grusch Interview)
Graham Hancock: Aliens, Atlantis & the Apocalypse
He's Seen More UFO Evidence Than Anyone Alive (Ft. Jacques Vallee)
UFOs & Nukes: The Bizarre Truth Ft. RedPandaKoala
"Artificial Intelligence Is An Alien Life Form" -Google Whistleblower (Blake Lemoine)
Martin Shkreli on Life in Prison, Pharma, UFO's
I Searched for UFOs on Skinwalker Ranch...
Tyler Cowen: Satoshi Identity, UFOs, Esoteric Jesus
Eric Weinstein Debates CIA UFO Expert Hal Puthoff
Harvard is Studying UFOs (Ft. Avi Loeb)
The 26 Year Old Prodigy Reverse Engineering UFOs (Ft. Deep Prasad)
"These Are Parts Of an Alien UFO!" -Stanford Scientist Garry Nolan

Who is Robert Hastings?

- **Robert Lambert Hastings** is an American ufologist, author, and filmmaker known for claims regarding UFOs and Malmstrom Air Force Base. Hastings believes the earth is "being visited by beings from another world, who for whatever reason have taken an interest in the nuclear arms race" and claims that "a global conspiracy exists in which all major governments have been covering up evidence of UFOs for decades."





I Found The Missing Witness To The Most INTENSE Alien Abduction



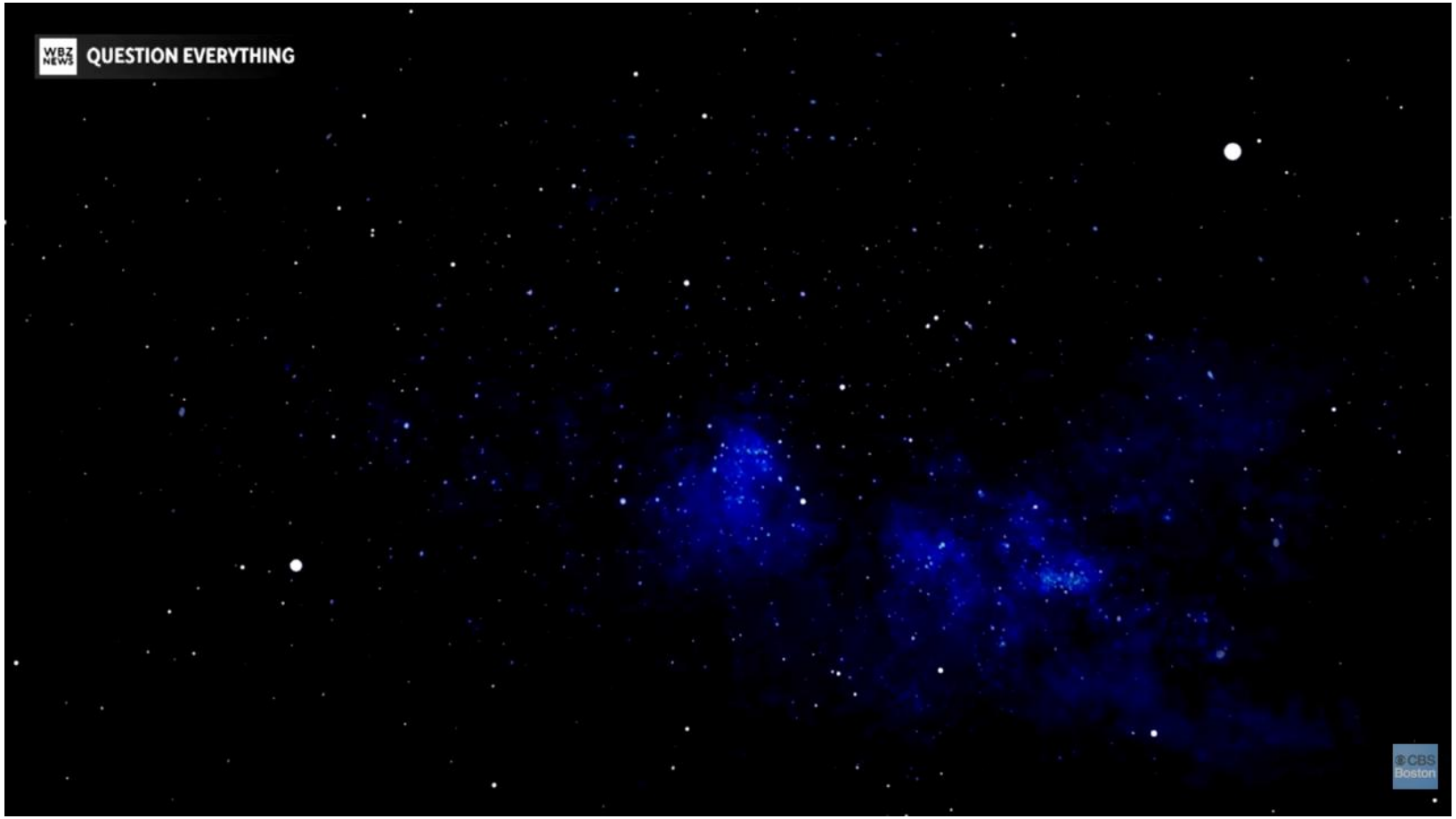
Who is Abraham (Avi) Loeb?



Abraham (Avi) Loeb is the *Frank B. Baird, Jr., Professor of Science* at Harvard University and a bestselling author (in lists of the New York Times,Wall Street Journal, Publishers Weekly, Die Zeit, Der Spiegel, L'Express and more). He received a PhD in Physics from the Hebrew University of Jerusalem in Israel at age 24 (1980-1986), led the first international project supported by the Strategic Defense Initiative (1983-1988), and was subsequently a long-term member of the Institute for Advanced Study at Princeton (1988-1993).

Loeb has written 9 books, including most recently, *Extraterrestrial* and *Interstellar*, as well as over a thousand scientific papers on a wide range of topics, including black holes, the first stars, the search for extraterrestrial life and the future of the Universe.

Harvard professor Avi Loeb on interstellar object theories



Who is Kenneth Knuth?



A Physicist Enters the Field

Kevin Knuth: from exoplanets to UAP physics

Kevin Knuth

Professor of Physics
University at Albany

Mainly studies exoplanets — planets orbiting other stars. But also applies physics to UAP cases, drawn by the possibility that "this really could be the biggest discovery in human history."

His Approach

- Learned about the AATIP program and the five "observables"
- Focused on the Nimitz 2004 incident for its rich data
- Applied physics to estimate accelerations and speeds from radar data
- Remains skeptical — but not to the point of shutting down inquiry

How AI & Physics Are Unlocking the Truth

UFOs: Investigating the Unknown | Nat Geo



BASED ON "UFOs: INVESTIGATING THE UNKNOWN" — NAT GEO

How AI & Physics Are Unlocking the Truth

The scientific case for studying UAPs — from stigma to instrumentation

Based on provided interview transcript

The Core Question

Reframing the UAP debate through the lens of science

> **"The question is not whether to believe — the question is whether to investigate."**

The Old Posture

Dismiss, ridicule, or ignore. Treat the subject as taboo. Scientific study of UAPs was considered "professional suicide."

The New Posture

Detect, characterize, and share data. Build instruments, apply physics, and let the evidence decide — whatever it is.

2017 Changed Everything

The year UAPs entered the scientific conversation

Dec 2017

NYT Investigation

The New York Times revealed the Pentagon had been studying UFOs for years, validating the topic for many scientists.

2017-2019

Navy Videos Released

Three Navy pilot videos were declassified, showing objects performing maneuvers that defied conventional explanation.

After 2017

Scientists Take Note

More scientists became aware that UAPs could justify scientific investigation. The question shifted from "are they real?" to "what are they?"

The realization: "Oh my God, some aspect of this is real." — and it deserved scientific attention.

What Changed After 2017

From "are they real?" to "what are they?"

Before 2017

- UAP study was career-ending
- No government acknowledgment
- Scientists stayed silent
- The topic belonged to fringe culture

After 2017

- Pentagon confirmed UAP study programs
- Navy videos declassified and verified
- Scientists could ask "what are these?"
- The subject entered mainstream science

"We are now no longer talking about whether there are UFOs/UAP. The question now is: what are these things, and where are they coming from?"

The New Scientific Posture

Not "prove aliens" — "identify the unidentified"

> **"We are trying to bring this subject to the mainstream of science. Look forward to identifying the unidentified."**

Detect

Build instruments to observe and record UAP phenomena with controlled, calibrated sensors.

Characterize

Measure speed, acceleration, signatures, and material properties with scientific rigor.

Share

Publish data openly so the broader scientific community can analyze and verify findings.

What Is an Anomaly?

Observations that resist explanation in terms of prevailing beliefs

Anomalies are observations or phenomena that resist explanation in terms of prevailing beliefs. They are often not immediately taken seriously by scientists — but they are exactly where new discovery lives.

The Challenge

Push aside popular explanations to acknowledge the phenomenon itself is real. Separate the phenomenon from the mythology that surrounds it.

The Opportunity

UAP phenomena fall outside what we expect. That makes them exciting — not threatening. "This really could be the biggest discovery in human history."

Meteorites: The Historical Precedent

A once-ridiculed phenomenon that overturned a scientific assumption

For Centuries

Denied

Rocks falling from the sky was presumed magical. The phenomenon was widely ridiculed by the scientific establishment.

Late 1700s

Mass Sightings

Multiple mass sightings occurred. Material was recovered. Physicist Ernst Chladni examined nearly 20 cases and concluded the phenomenon was real.

The Discovery

Overturned

Chladni proposed these rocks come from outer space — overturning the belief that interplanetary space is completely empty.

The lesson: what seems impossible today may be the discovery that reshapes science tomorrow. The same logic now applies to UAPs.

AATIP's Five Observables

Five characteristics unique to UAPs, as defined by the Pentagon program

1 Transmedium Travel

Ability to travel from one medium to another — typically air to water — without apparent damage.

2 Instantaneous Acceleration

Going from zero to extremely high velocity in a very short period of time.

3 Hypersonic Without Boom

Flying at hypersonic speeds without a sonic boom or fireball.

4 Low Visibility / Cloaking

Objects that fade away, disappear, and reappear again.

5 No Apparent Propulsion

Objects that fly with no visible wings, engines, or exhaust.

The Nimitz Encounter (2004)

Radar, pilot visual, and video — all converging on real objects

In November 2004, the USS Princeton directed Navy Commander F/A-18 pilots to investigate objects on radar. The pilots encountered a long, cylindrical, white object — no windows, no wings, no visible propulsion — roughly 40 feet long, shaped like "a giant Tic-Tac."

Radar

Objects tracked dropping from 28,000 ft to sea level in 0.78 seconds. Radar was not malfunctioning — pilots found objects every time they were directed to them.

Visual

Commander Fravor saw the object "bouncing like a ping-pong ball off a wall." It accelerated to his nose and disappeared.

Video

The encounter was captured on the now-famous Navy video — the same one declassified years later.

The Acceleration Data

Physics applied to the Nimitz radar record

28,000 ft

to sea level

Five and a half miles of altitude lost in a single maneuver

0.78 sec

elapsed time

Estimated from radar operator data on the altitude drop

~5,000 G

acceleration

The F-35's wings rip off at only 13.5 Gs

The Interpretation

If the data is accurate, these objects go faster than most of our spaceships. Could they be interstellar spacecraft? Yes. Could they be foreign adversary tech? Possibly — but if so, why wouldn't they be used? They would be incredibly useful for the military.

The Interpretation Problem

Multiple hypotheses — none yet confirmed

Foreign Adversary Tech

Next-generation craft from a rival nation. But if so, why would they not be used operationally?

Possible but unlikely

Sensor Error

Radar or instrument malfunction. But pilots visually confirmed objects every time they were directed to them.

Partially ruled out

Unknown Physics

Technology operating on principles we don't yet understand. This is where science gets interesting.

Open question

Interstellar Craft

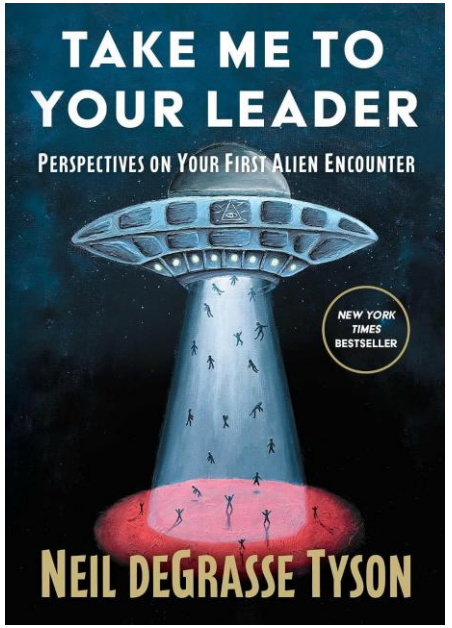
The speeds and accelerations are consistent with interstellar travel. "These could be excellent interstellar craft."

Hypothesis, not proof

Neil deGrasse Tyson

- Neil deGrasse Tyson is a famous American astrophysicist, author, and science communicator.
- Serves as the Frederick P. Rose Director of the Hayden Planetarium at the American Museum of Natural History in New York City.
- Works as a research associate in the astrophysics department at the museum.
- Hosts the popular science podcast StarTalk.
- Completed a master's and a doctorate in astrophysics at Columbia University.
- Hosted the television series *Cosmos: A SpaceTime Odyssey* and *Cosmos: Possible Worlds*.
- Authored numerous books explaining space and science for the general public, including *Starry Messenger*.





Do the Laws of Physics apply Everywhere?



BASED ON THE BOOK "TAKE ME TO YOUR LEADER"

Neil deGrasse Tyson on Aliens, UFOs, AI, and Scientific Thinking

Probability is not evidence. Mystery is not proof. Good data beats testimony.

Based on provided interview transcript

The Core Question

Reframing the alien debate through the lens of science

The question isn't "Are aliens real?"

As an astrophysicist, you reframe it: "What are the chances there's life elsewhere in the universe?"

And that is so high as to be a near certainty.

High Likelihood

Life elsewhere in the universe is highly likely given its age, size, and common ingredients.

No Evidence of Contact

High likelihood of life does not constitute evidence that extraterrestrials have visited Earth.

Reframing the Question

An astrophysicist asks it differently

"Are aliens real?" is not how a scientist asks the question.

"What are the chances there's life elsewhere in the universe?"

And that is so high as to be a near certainty.

13.8B

Years

The age of the universe provides vast time for life to emerge

95%

of Earth's Timeline

Life has existed for nearly all of Earth's habitable history

Quick

Start

Life got started almost as quickly as it possibly could have

We Are Made of the Most Common Ingredients

The same elements rank in life and in the universe

Top Elements (excluding helium — chemically inert)			
1	**Hydrogen**	In Universe	In Life
2	**Oxygen**	In Universe	In Life
3	**Carbon**	In Universe	In Life
4	**Nitrogen**	In Universe	In Life

Removing helium, we are one-for-one the top ingredients in the universe. If life was anything on Earth, it was opportunistic.

The Exoplanet Revolution

From zero to 6,000+ in three decades

1995

First

exoplanet discovered — a planet orbiting another star

→

TODAY

6,000+

exoplanets catalogued as telescopes are tuned for this

The Implication

To suggest we are alone, you'd only think that for philosophical or religious reasons, not scientific ones.

The Laws of Physics Apply Everywhere

A cottage industry of physicists checks this constantly

There is a cottage industry of physicists who check whether the laws of physics measured on Earth apply on the moon, on the sun, on nearby stars, across the galaxy, across the universe. And as you go across the universe, you're seeing back in time.

The base laws of physics apply not only here, but there and forever in the past.

So if you're an alien visiting us and you're of this universe, your laws of physics are going to be the same as ours.

Technology vs. Laws of Physics

Give aliens advanced tech — but not physics violations

You Can Grant

Any technology beyond ours:

- Wormholes
- Warp drives
- Technologies we haven't dreamed of
- Green blood (copper-based hemoglobin)

You Cannot Violate

Known, well-tested laws of physics:

- Supersonic movement without shock waves
- Instant direction changes (sonic boom required)
- Underwater supersonic travel without a wake

BASED ON THE DIARY OF A CEO PODCAST

Neil deGrasse Tyson: Aliens, Evidence, and Cosmic Perspective

The whistleblowers raised the stakes. Tyson says the answer is still: better tools, better data, and humility.

Based on provided podcast transcript

Why We Look Up

Curiosity is in our DNA — and the night sky is where it begins

The Night Sky in Our DNA

Why humans have always looked up

Humans are among the few animals comfortable sleeping on their backs — belly exposed, face to the sky. When you wake outdoors at night, the universe presents itself: comets, meteors, the moon changing shape, lights that move. How could we not be curious?

Pop Culture Shapes Belief

After the movie Ghost came out, polls showed more people believed in ghosts than before. Pop culture is a huge force on what we believe is true.

The Hayden Planetarium

Tyson's first encounter with the night sky was a planetarium in New York. He thought everyone would want to study the universe. Not everyone does — but everyone looks up.

Gods, Aliens, and Things Beyond Us

The line between deity and extraterrestrial is thinner than we think

Where are most people's gods? In the sky. Even in ancient Greece, they lived on Mount Olympus — in high places. Religious posters show sunbeams through clouds. Our images of deity could pass for aliens: Medusa with snakes for hair, Jesus floating, walking on water.

Not "Aliens" Specifically

Tyson doesn't think "alien" is something specific in our DNA. But imagining things beyond ourselves — that is (in our DNA). He lumps gods and aliens together in that respect.

The Apex Predator Theory

The host suggests we're so comfortable as apex predators that we can sleep on our backs — and aliens are the only thing that could threaten that. Tyson laughs: ancient people weren't dreaming up aliens. Just the night sky itself.

The Powers-of-Ten Reset

Small compared with galaxies — huge compared with atoms

Think in powers of 10. Ten times bigger than us, ten times bigger than that, and so on to galaxies. Then go the other way: one-tenth our size, one-tenth that, into molecules, atoms, particles. We are in the middle — and the laws of physics manifest differently on different scales.

No Human-Sized Insects

Their legs would break under their own weight. Forces don't interact the same way at every scale.

Surface Tension

In A Bug's Life, a mosquito orders a Bloody Mary — served as a blob, no glass. Surface tension matters to insects, not to us.

Life at Any Scale?

Could life be the size of a galaxy? Or a molecule? We are biased by what our senses can drink in from our own size scale.

Don't Feel Small — Feel Connected

The universe is alive within us

"You only felt small because you went in there with an ego that was unjustifiably too large to begin with." The elements in our body — oxygen, carbon, nitrogen, iron — were forged in stars that exploded. Early in the universe, we didn't have these ingredients. We could not exist in our current form.

Not Only Alive — Solar Powered

A cow is a machine we invented to turn grass into steak. Plants receive sunlight. Nearly 100% of our calories trace back to the sun. You are solar powered.

The Spiritual Fact

"Not only are we alive in this universe — the universe is alive within us. And that fact borders on the spiritual." It is an astrophysical fact that gives you a pathway of relevance.

Science at the Edge of Belief

Belief systems, the Big Bang, and what we call the unknown

Belief Systems vs. Testable Claims

Why Tyson engages religion differently now

Belief systems don't have to make sense — that's why they're belief systems. If something in your belief system can be tested, science can test it. But if the test shows your belief is false, most people don't stop believing. That's the difference between belief and objective truth.

Why He Changed

Tyson started reading religious tracts. He owes believers a more informed engagement because of the power religion has exercised on history — cultural, political, economic.

The God Delusion

Richard Dawkins' book title is "fighting words." Tyson rejects that approach. "I'm not that guy." He has behavior that would be rejected by any modern atheist thinker.

The Big Bang in Plain English

13.8 billion years — and still expanding

Everything began in an infinitesimal point. Energy, compacted and hot, expanded and cooled. As it cooled, $E=mc^2$ turned energy into matter. Stars and galaxies formed. We are still expanding today — and the expansion is accelerating.

$E = mc^2$

Einstein, 1905. Energy on one side, mass on the other. c^2 is just the speed of light — a constant. It made so much of the universe make sense.

Dark Energy

A pressure in the vacuum of space making the universe expand faster than gravity alone would allow. Won the 1998 Nobel Prize.

Dark Matter

Sources of gravity we can't identify. Together with dark energy, they account for 95% of what drives the universe.

Fred, Wilma, and the 95%

Placeholder names for what we don't understand

"Don't call it dark and don't call it energy — call it Fred." We don't know what it is at all. Same for dark matter — call that Wilma. We have Fred and Wilma, and we don't know what either of them is. Everything we know and love — biology, chemistry, physics, food, calories — is 5% of what's going on.

Are We Smart Enough?

Sometimes Tyson wonders whether we are smart enough to figure out the entirety of the universe — or just our little fraction of it, and live happily ever after within it.

Einstein's Rejected Term

Dark energy is a term in Einstein's equation that he rejected — "there can't be negative gravity." He set its value to zero. Then we discovered it. It won a Nobel Prize.

Before, Beyond, Infinite

The frontier of what we don't know

What was before the Big Bang? "We have no idea." There might have been a multiverse — a medium pumping out universes, of which we are one. What caused the multiverse? We don't know. "There's no crime in asking the question at the frontier of our knowledge."

The Copernicus Lesson

Copernicus made orbits perfect circles because God is perfect and the circle is perfect. They weren't. We've imposed philosophical preferences on the universe before. It failed.

Can the Universe Be Infinite?

"I will not say the universe can't be infinite." Just because infinity is hard for the human brain doesn't mean the universe can't or shouldn't be.

Aliens, UFOs, and Evidence

Whistleblowers raised the stakes — not the verdict

Obama, Area 51, and Scientific Literacy

"They're real" is not the same as "we have them"

Obama said: aliens probably exist in the universe — anyone scientifically literate arrives at that conclusion. "But I haven't seen them, and they're not being kept in Area 51 — unless they hid it from the president." People twisted "aliens are real" into "the government has aliens."

Trump's Response

Trump seemed to stoke the idea: "He gave classified information. He's not supposed to be doing that." Shortly after, the UFO files were announced for release.

What Obama Actually Said

Exactly what any scientifically literate person would say: aliens probably exist given the size of the universe. That's not the same as the US government having them in custody.

Whistleblowers Raise the Stakes

Not the verdict — the level of attention

High-ranking whistleblowers — former intelligence officers, military personnel — came forward with sworn testimony in Congress. Tyson says: "No longer can you discount the testimony the way you might have before with the farmer in the back 40 who saw something but didn't take a picture." Official government testimony deserves a higher level of attention.

Republicans and Democrats

Tyson noted Republicans and Democrats sitting side by side asking questions about aliens. "I thought that was a beautiful fact." Bipartisan engagement on a process in Washington.

But Attention Is Not Belief

"Bring out the alien. The moment you do, no one will ever have to ask again." People have testified we have aliens, crash parts, reverse-engineered technology. Show it.

Why Life Elsewhere Seems Plausible

Given the size, age, and ingredients

Life got underway on Earth within 100 million years of it being possible — about 5% of Earth's timeline. Almost as fast as it could happen. If it happened that swiftly here, who among those who study the problem would doubt it could happen elsewhere?

6,000 Exoplanets

Cataloged so far — in a tiny circle around the sun. The first was discovered in 1995. Now we're rising through 6,000.

100 Billion Stars

In our galaxy alone. At least 100 billion galaxies in the observable universe. Possibly hundreds of billions more beyond our horizon.

Not Knowing Is Not No Clue

Not having an exact count of stars is not the same as having no clue. We can calculate from mass and star size — within a factor of two.

Intelligence Is Not Just Us

If aliens came, we might be fourth on their list

Brain size rankings: whales, dolphins, elephants, then humans — fourth. We told ourselves we're tops because of brain-to-body ratio. But even that only puts us first among mammals. Magpies and parrots beat us on that measure. The efforts we take to distinguish ourselves are "quite the exercise in ego stoking."

Technology vs. Intelligence

The whale isn't building telescopes. But we have art, civilization, technology. The Roman Empire was intelligent — but couldn't receive radio signals. Would they count?

What We Can't Do

Birds fly. Newts regenerate limbs. Crustaceans regenerate. We can't. We want to think we're special in the tree of life — and we work hard at it.

UFO Footage Is Not Proof

"I don't know what it is" is not the same as "alien"

Most UFO sightings have natural explanations — cloud formations, lightning, twilight conditions. But some no one knows how to explain. Tyson doesn't have a problem with that. The footage is typically monochromatic, low resolution. "It's something we don't know what it is." The Tic Tac is "fun" — he doesn't know what it is, and that's what attracts a scientist.

The Tic Tac

It moves, it gimbals in one of the frames, combined with the pilots' shock and surprise. It looks like the Close Encounters spacecraft. But "fun" is not "proof."

Would We Tell the Public?

"Of course we're ready. Hollywood has prepped us for decades." What would surprise Tyson most: if the alien were humanoid. Most life on Earth isn't humanoid — oak trees, worms, lobsters.

Alien Assumptions

Archetypes, DMT, and why tools matter more than certainty

Alien sightings divide into archetypes: little green men, grays, Arcturans, Lyrans, tall whites, insectoids. People on DMT report meeting these same types. Tyson finds the commonality intriguing — but thinks it's more likely they all have human brains and the chemical excites the same part of each one.

English-Speaking Sightings

English-speaking cultures report vastly more alien sightings. Either aliens prefer English-speaking countries — or we just know better how to report what we see.

Why No Psychedelics

Tyson has never done psychedelics. "The brain barely works as it is." Science has dozens of senses — tools that measure what your brain cannot. That's why science exists.

And Another Physics Problem

Proxima Centauri b, the closest known exoplanet is located roughly **4.24 light-years** away

Travel Time Estimates

Propulsion Method / Reference	Cruise Speed	Estimated Travel Time
Standard Chemical Rocket (*New Horizons / Voyager*)	~15 km/s to 17 km/s (~38,000–40,000 mph)	**~75,000 to 80,000 years**
Solar Gravity Assist Peak (*Parker Solar Probe*)	~175 km/s (~390,000 mph)	**~7,000 to 7,300 years**
Ion Propulsion Systems (*Electric Thrusters*)	~50 km/s to 90 km/s (~112,000–200,000 mph)	**~14,000 to 25,000 years**

It's Just Too Far…

Using existing, flight-proven chemical or electric propulsion systems, an alien spacecraft departing Proxima Centauri b would take anywhere from **7,000 to 80,000 years** to reach Earth.

And Then There's the Deceleration Problem

If the craft intends to stop or enter Earth's orbit rather than perform a high-speed flyby, it must burn half its energy payload to slow down. Without speculative future tech (like fusion drives or laser sails), deceleration adds thousands of additional years to the journey.