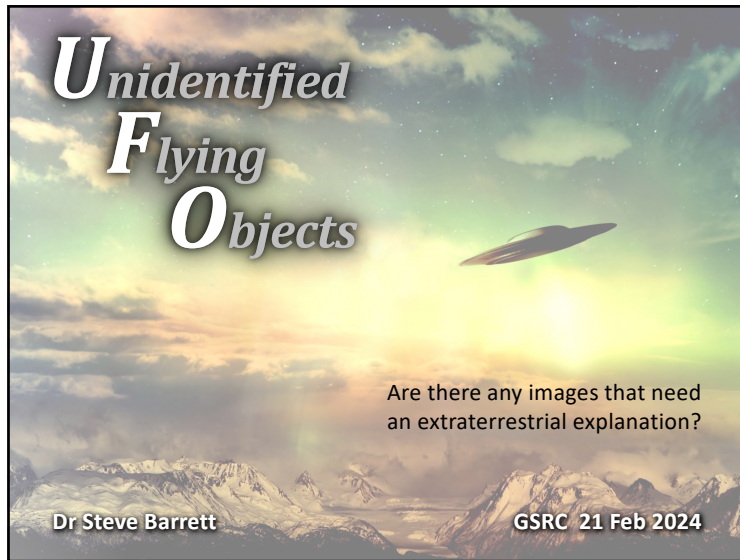


UFOs



Statistics Don't Lie

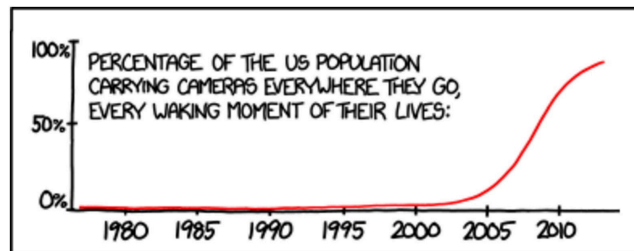
Have extraterrestrial aliens visited Earth? ✓ 40%

Are extraterrestrial aliens visiting *now*? ✓ 35%

That's less than the number who believe in ghosts (60%)
but greater than telekinesis (25%)
or Bigfoot (20%)

[... or evolution (31%)]

UFOs? Isn't It Now Settled?



IN THE LAST FEW YEARS, WITH VERY LITTLE FANFARE, WE'VE CONCLUSIVELY SETTLED THE QUESTIONS OF FLYING SAUCERS, LAKE MONSTERS, GHOSTS, AND BIGFOOT.

No, It's Not Settled

Google hits for "UFO" > 250 million

This implies that, despite so many cameras, it's *not* settled

UFO images could be ...

- Manmade Objects
- Natural Objects
- Image Artefacts
- Deliberately Faked
- Extraterrestrial Spacecraft

UFOs

Definitions and Claims

I will conform to the conventional usage of the acronym UFO to mean an object observed in the sky that is not readily identified.

Regarding an extraterrestrial origin, I side with Carl Sagan:

"Extraordinary claims require extraordinary evidence"

Another useful tool for a rational scientist is Occam's Razor:

"If there are two explanations for an observation, then the one that requires the least speculation is usually better"

or

"Simpler solutions are more likely to be correct than complex ones"

Reliable Information



Ideal UFO



... clear, detailed, in focus, no camera shake, well-exposed ...

Typical UFO



... blurred, out of focus, camera movement, over-exposed ...

UFOs

The First UFOs?




Seti I Ramses II

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UFOs might be ...

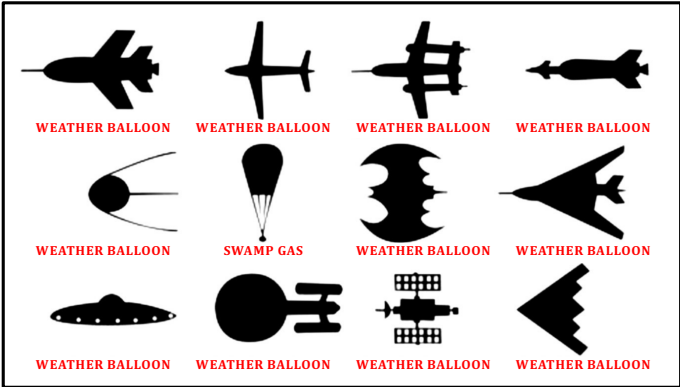
Manmade Objects



10

Identifying a UFO


U.S. AIR FORCE AIRCRAFT IDENTIFICATION CHART



WEATHER BALLOON WEATHER BALLOON WEATHER BALLOON WEATHER BALLOON


WEATHER BALLOON SWAMP GAS WEATHER BALLOON WEATHER BALLOON

WEATHER BALLOON WEATHER BALLOON WEATHER BALLOON WEATHER BALLOON



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UFOs in Formation




A long exposure photo of a fleet of UFOs flying in formation?

No, it's the

'Pylon of the Month'
December 2019

www.pylonofthemonth.org



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UFOs

Space Jellyfish



Who could see this
and not think ...

UFO!

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The image shows a bright, glowing, jellyfish-like object in the night sky, with a cityscape visible in the background. The object has a central bright spot and a long, wispy tail.

Falcon Tails



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The image shows two people standing on a beach at night, looking up at a bright, glowing object in the sky that resembles a comet or a meteor with multiple tails. The University of Liverpool logo is visible in the bottom left corner.

Falcon Nebula




BRIAN B. HALDET, 2018

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The image shows a complex, multi-colored nebula in space, with a bright central region and various structures. The University of Liverpool logo is visible in the bottom left corner.

Rocket Trails



Seay Photography

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The image shows a large, multi-colored, glowing object in the sky, resembling a comet or a meteor with multiple tails, set against a dark background. The University of Liverpool logo is visible in the bottom left corner.

UFOs

AZURE

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APOD 8 Apr 2019 17

Strange Lights in the Sky

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Precision Drone Control

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19

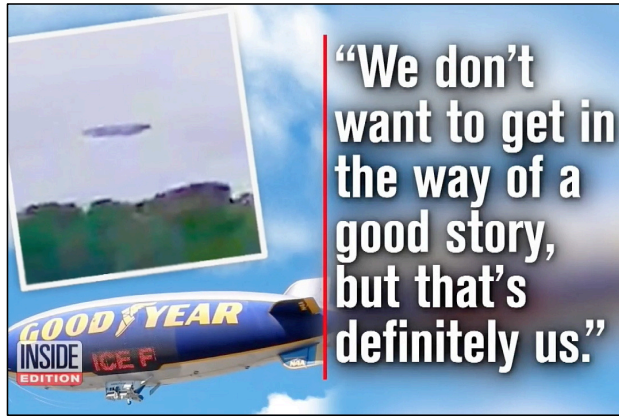
UFOs Landing

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UFOs

A Good Year For UFOs



"Super Clear" Footage



YouTube Videos

One YouTube video in particular piqued my interest ...

"Puerto Rico's close proximity to [the Bermuda Triangle] may explain why it's a known hotbed for UFOs."

There have been countless UFO sightings over the years, but many experts consider this next piece of footage the Gold Standard."

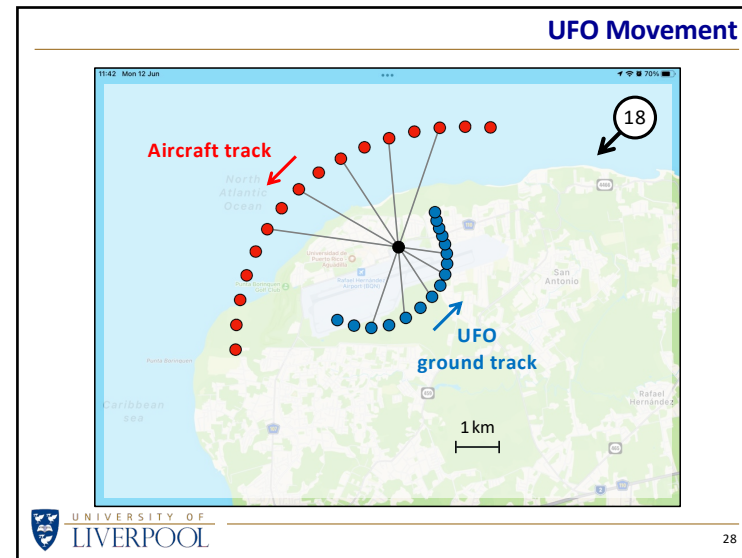
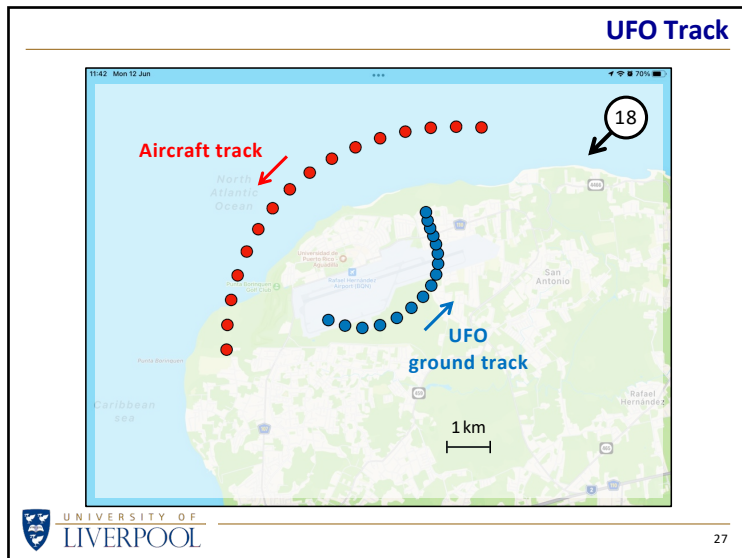
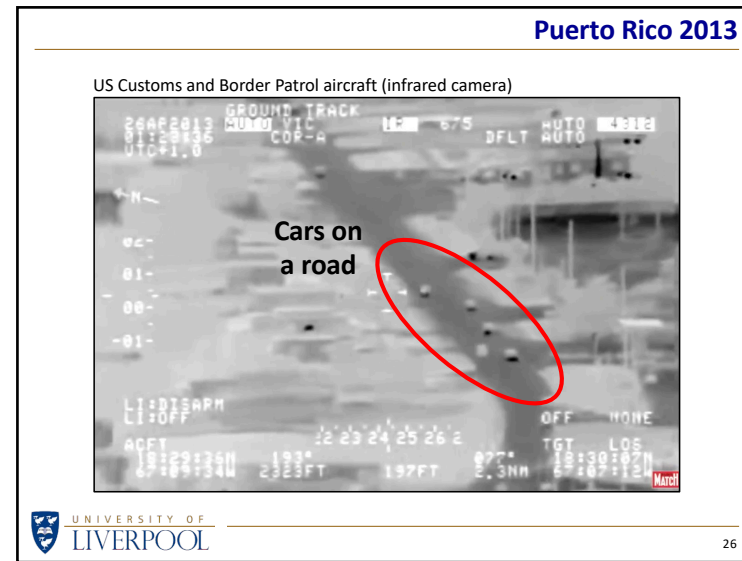
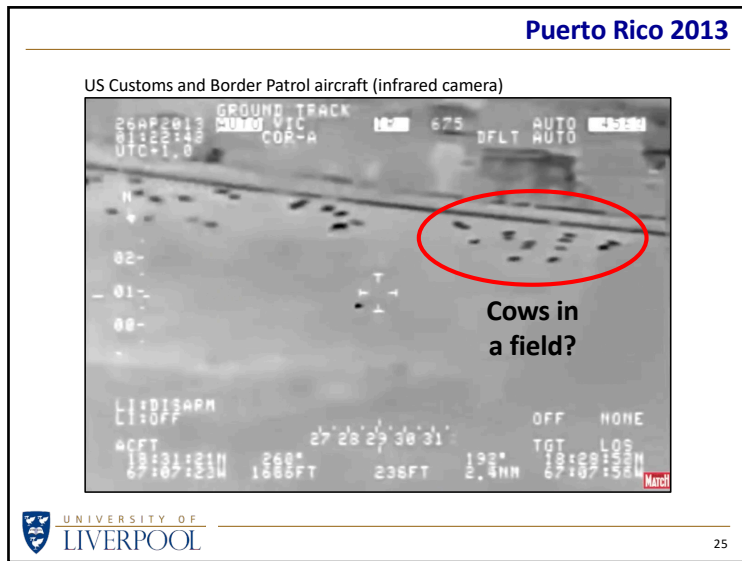
Does this 'Gold Standard' for UFO sightings stand up to scrutiny?

Puerto Rico 2013

US Customs and Border Patrol aircraft (infrared camera)



UFOs



UFOs

Occam's Razor


"Of countless UFO sightings, many experts consider this the Gold Standard."

The YouTube description:

A metallic orb ...
... moving at incredible speed
... with no obvious propulsion
... into a 18mph headwind


The infrared camera sees an object that "does not match anything we know of".

An alternative explanation:
The object is essentially static
It is drifting slowly downwind
It is probably a balloon


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UFOs might be ...

Natural Objects

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Clouds of the Month



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Unusual Clouds



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UFOs

Light Pillars



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APOD 18 Dec 2013 33

Light Pillars



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APOD 24 Oct 2018 34

Light Pillars



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Fluctuating Lights




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APOD 8 Nov 2011 36

UFOs

Red Sprites



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APOD 2 Oct 2023 37

Arc-Shaped UFO over Ontario

"Nearing the end of the day ...
I sat down on my deck facing west ... something caught my eye ... it was brilliant white ...

In truth I cannot be sure what it truly is ... my conclusion is a 'UFO'.

My friend ... thinks the object is as big as two airliners ... I thought one airliner, but maybe he's right!"



still frame - enhanced

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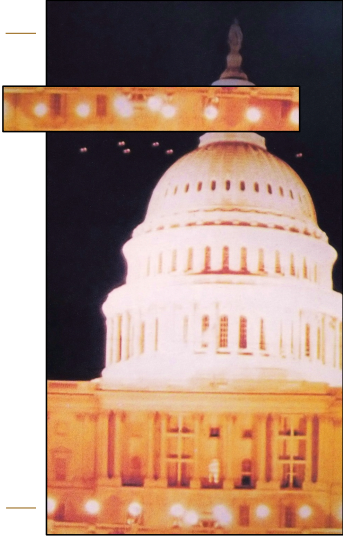
UFOs might be ...

Image Artefacts

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UFOs in the USA?



Mysterious lights in the sky photographed over Washington DC in 1952

... or maybe they are just reflections of lights in the foreground

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UFOs

UFO? – Image Artefacts

"The large craft came so close to the photographer that the windows can even be seen in the image."

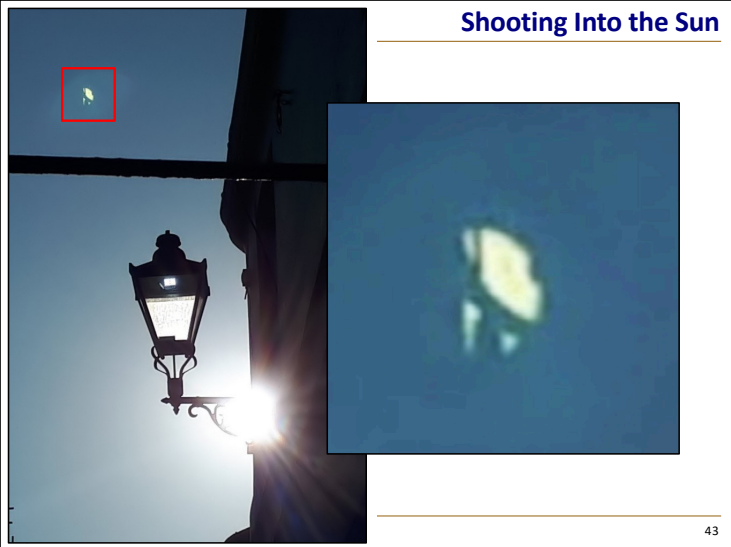


"UFO sighting is 100% proof ALIENS are here on Earth."

UFO? – Image Artefacts



Shooting Into the Sun



No Camera Jerk



"Note the power lines in the photo. As you see, the wires show absolutely no distortion which would indicate no camera jerk. Also based on the wires in the photo you can tell we were shooting almost straight up."

UFOs

Huge Slab in Sky



"... what appears to be a flat, rectangular aircraft with lights around its edges hovering in the air."

"UFO enthusiasts and conspiracy theorists have claimed it is an advanced type of spy craft known as a TR-3B."

UFOs might be ...

Faked

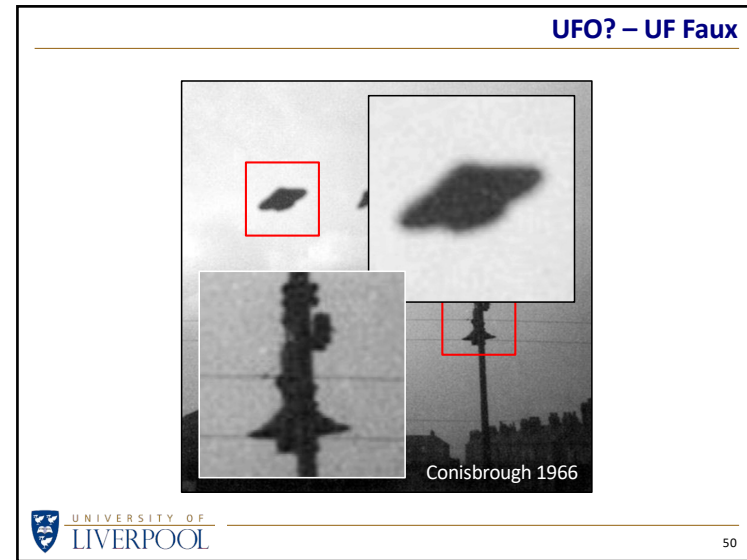
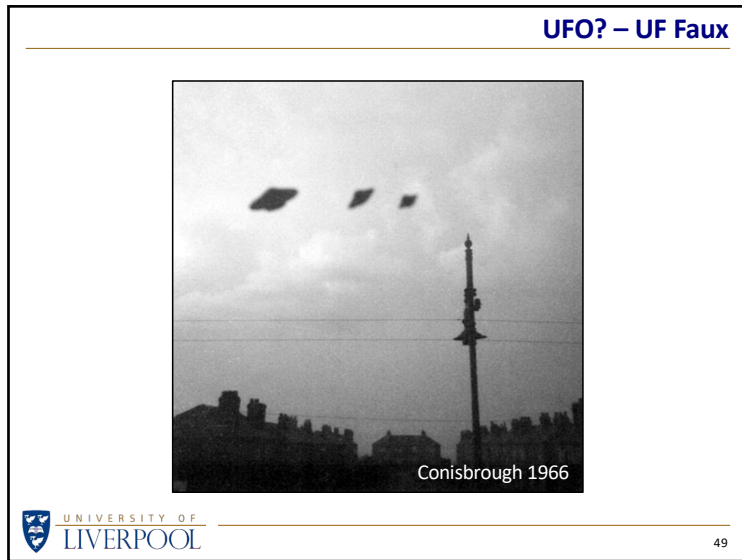
UFO? – UF Faux



UFO? – UF Faux



UFOs



UFOs

UFO? – UF Faux

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UFO? – UF Faux

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UFO? – UF Faux

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UFOs might be ...


Extraterrestrial Spacecraft

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UFOs

NASA Report



"Extraordinary claims require extraordinary evidence."

"Metadata ... are often absent, making ... a thorough understanding of context difficult."

"There is no conclusive evidence suggesting an extraterrestrial origin for UAP."

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Extraterrestrials?

The lack of evidence for extraterrestrial UFOs leads to a question ...

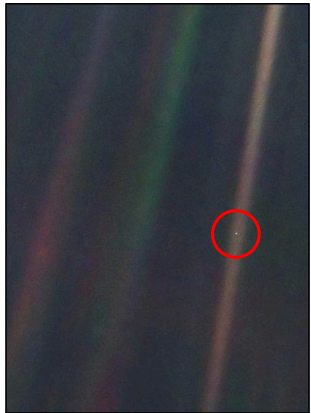
The number of stars in the Milky Way	≈	300 billion
Most have planetary systems	÷ 2 ⇒	150 billion
Quite a few planets are Earth-like	÷ 3 ⇒	50 billion
Life may have originated	÷ 100 ⇒	500 million
Complex life may have evolved	÷ 100 ⇒	5 million
Intelligent life may have evolved	÷ 100 ⇒	50 thousand

So if the galaxy is full of civilisations – **Where are they?**

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Extraterrestrials?



"Look again at that dot. That's here. That's home. That's us. On it ... every human being who ever was, lived out their lives ...

– on a mote of dust suspended in a sunbeam."

Pale Blue Dot
Carl Sagan 1994

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Unidentified Flying Objects

www.liverpool.ac.uk/~sdb/Talks

Dr Steve Barrett

GSRC 21 Feb 2024