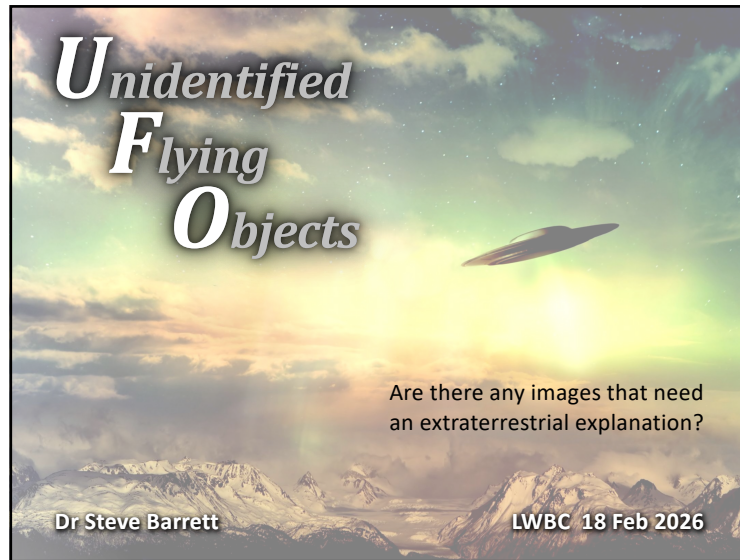


UFOs



Statistics Don't Lie

Have extraterrestrial aliens visited Earth? ✓ 40%

Are extraterrestrial aliens visiting *now*? ✓ 35%

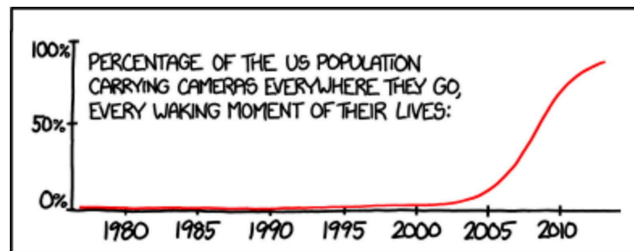
That's less than the number who believe in ghosts (60%)
but greater than telekinesis (25%)
or Bigfoot (20%)

[... or evolution (31%)]



Chapman University Survey 2018 2

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.

xkcd.com



3

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



4

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"



5

Reliable Information



6

Ideal UFO



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



7

Typical UFO



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



8

UFOs

The First UFOs?



9

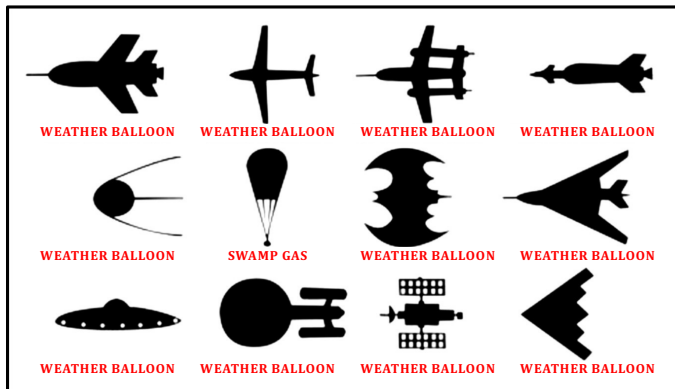
UFOs might be ...

Manmade Objects

10

Identifying a UFO

U.S. AIR FORCE AIRCRAFT IDENTIFICATION CHART



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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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Falcon Tails



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Falcon Nebula



BRIAN B. HALDET, 2018

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Rocket Trails



Seay Photography

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UFOs

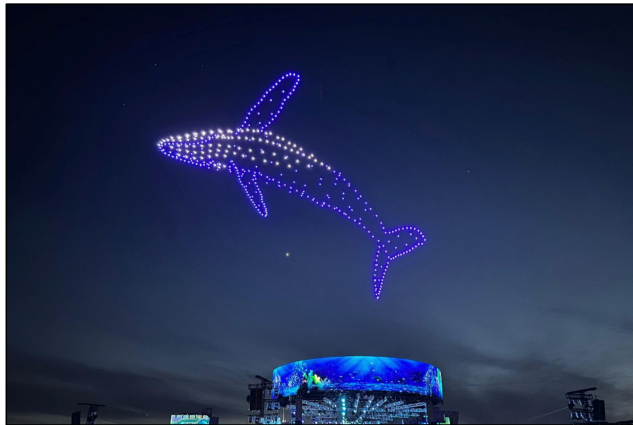
AZURE



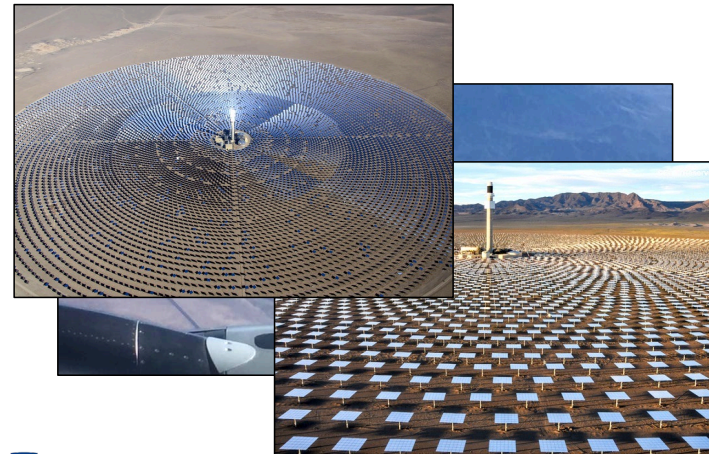
Strange Lights in the Sky



Precision Drone Control

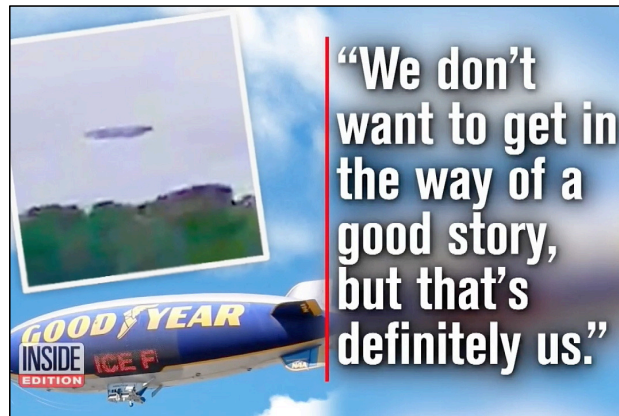


UFOs Landing



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

Puerto Rico 2013

US Customs and Border Patrol aircraft (infrared camera)

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Puerto Rico 2013

US Customs and Border Patrol aircraft (infrared camera)

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UFO Track

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UFO Movement

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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

UFOs might be ...

Natural Objects

Clouds of the Month



Unusual Clouds



Light Pillars



© www.salamapaja.fi

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APOD 18 Dec 2013 33

Light Pillars



VINCENTBRADY.COM

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APOD 24 Oct 2018 34

Light Pillars



@WisconsinWeatherPhotography @TomPurdyWI @TomPurdyWI

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35

Fluctuating Lights



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APOD 8 Nov 2011 36

UFOs

Red Sprites



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'.

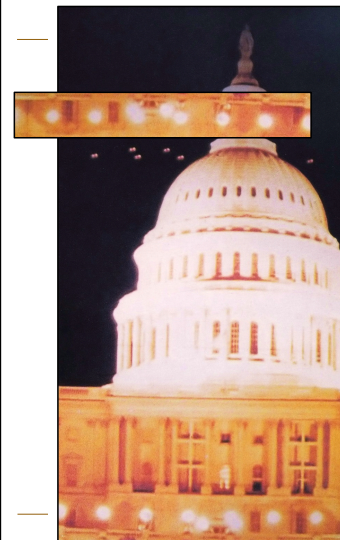
My friend ... thinks the object
is as big as two airliners ...
I thought one airliner, but
maybe he's right!"



UFOs might be ...

Image Artefacts

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

UFOs

UFO? – Image Artefacts

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

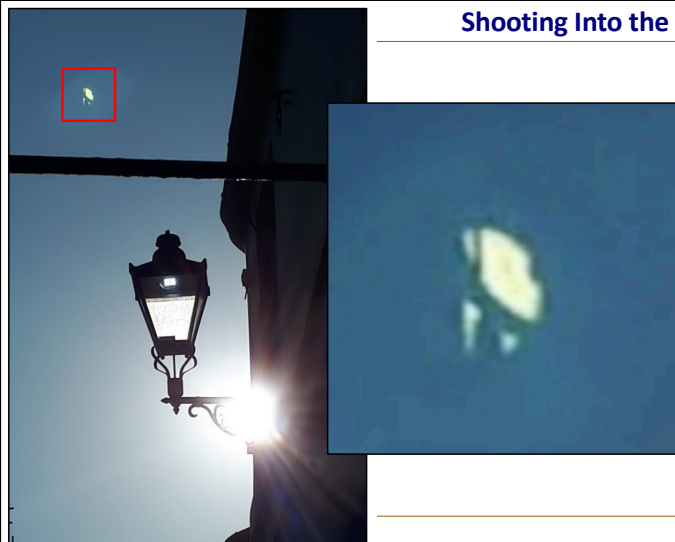


"UFO sighting is 100% proof ALIENS are here on Earth."

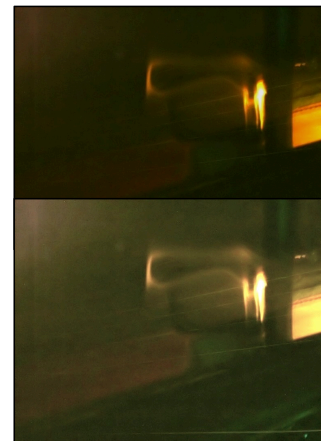
UFO? – Image Artefacts



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

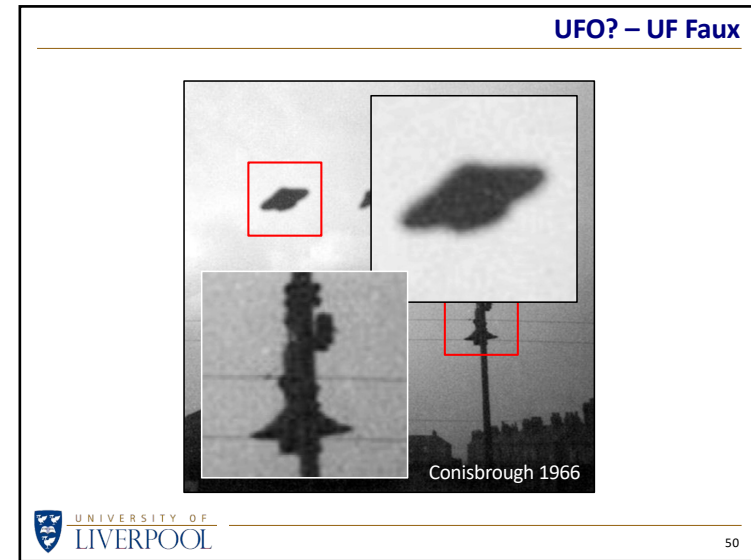
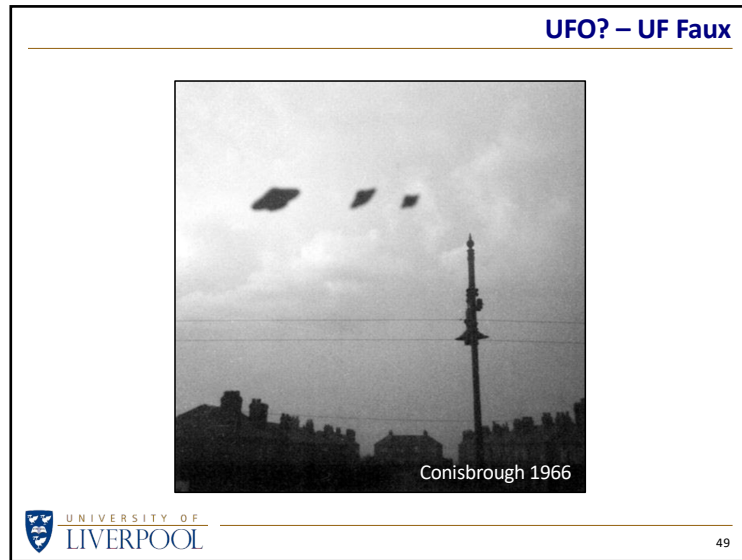
UFO? – UF Faux



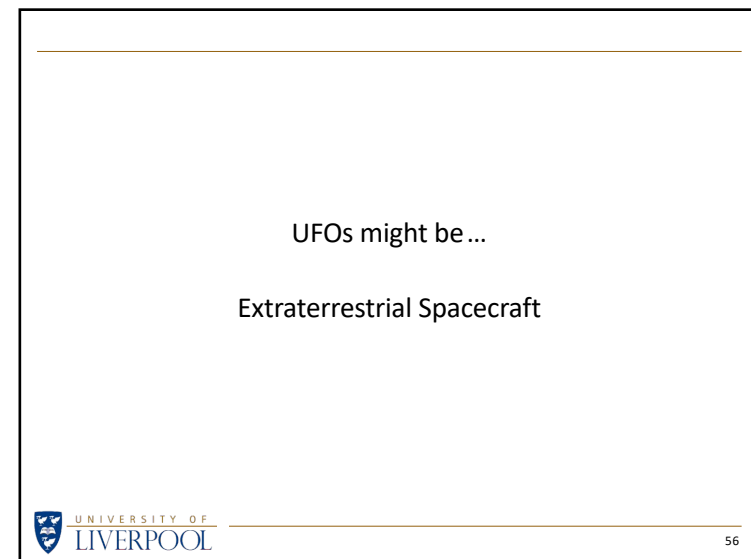
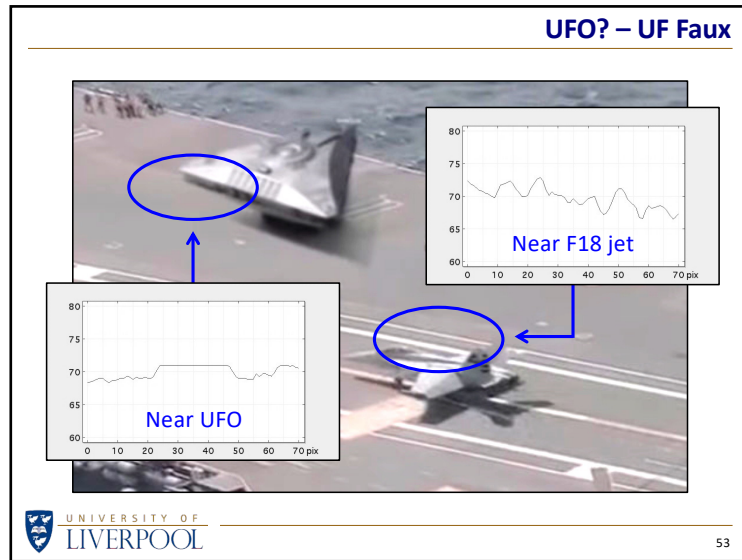
UFO? – UF Faux



UFOs



UFOs



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."

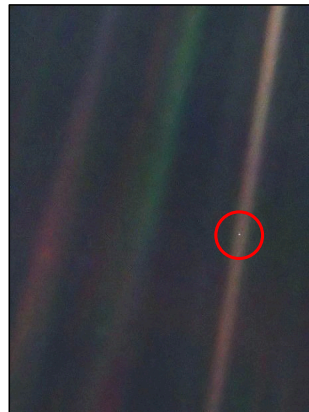
Extraterrestrials?

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?**

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

