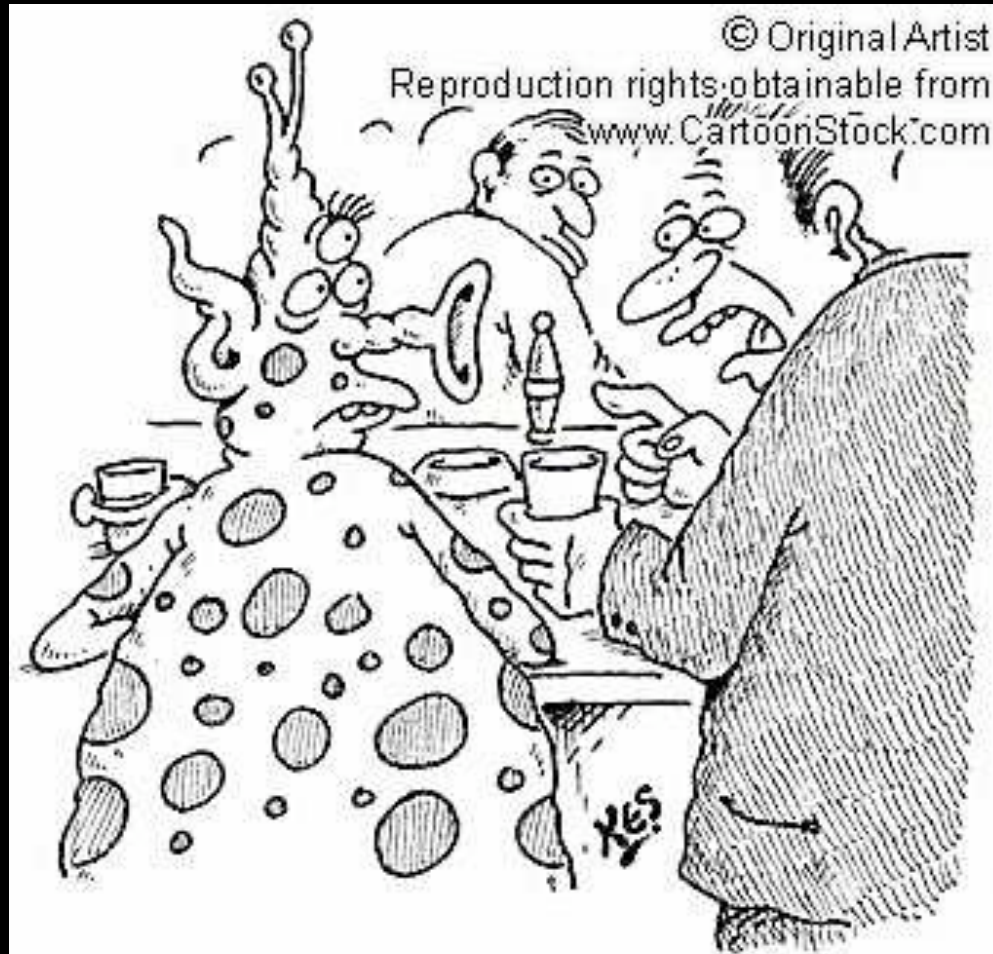


ASTR 380

UFOs and Alien Visits



"You're not from around here are you?"

Outline

- Parallel example: monsters of the deep
- The burden of proof
- Claimed evidence: pyramids and other accomplishments of the ancients
- Claimed evidence: UFOs and abductions
- Perspectives

ASTR 380

UFOs and Alien Visits

First – to state it clearly....

I am aware of no scientifically verified data which support the hypothesis that we are being visited by extraterrestrial beings or have been visited in the past, anywhere.

I have not seen and/or heard any strong evidence which would lead me to suspect that extraterrestrials exist on or visit the Earth.

All of the astronomers that I know personally, perhaps hundreds, have no personal evidence for the presence of extraterrestrials.

ASTR 380

UFOs and Alien Visits

All of that said, let's look at the evidence and claims that exist and try to understand likelihood of UFOs and alien visitors.....

Perception and Human context – lessons from the sea

Underestimating human ingenuity and the power of mass labor – the Pyramids and other examples

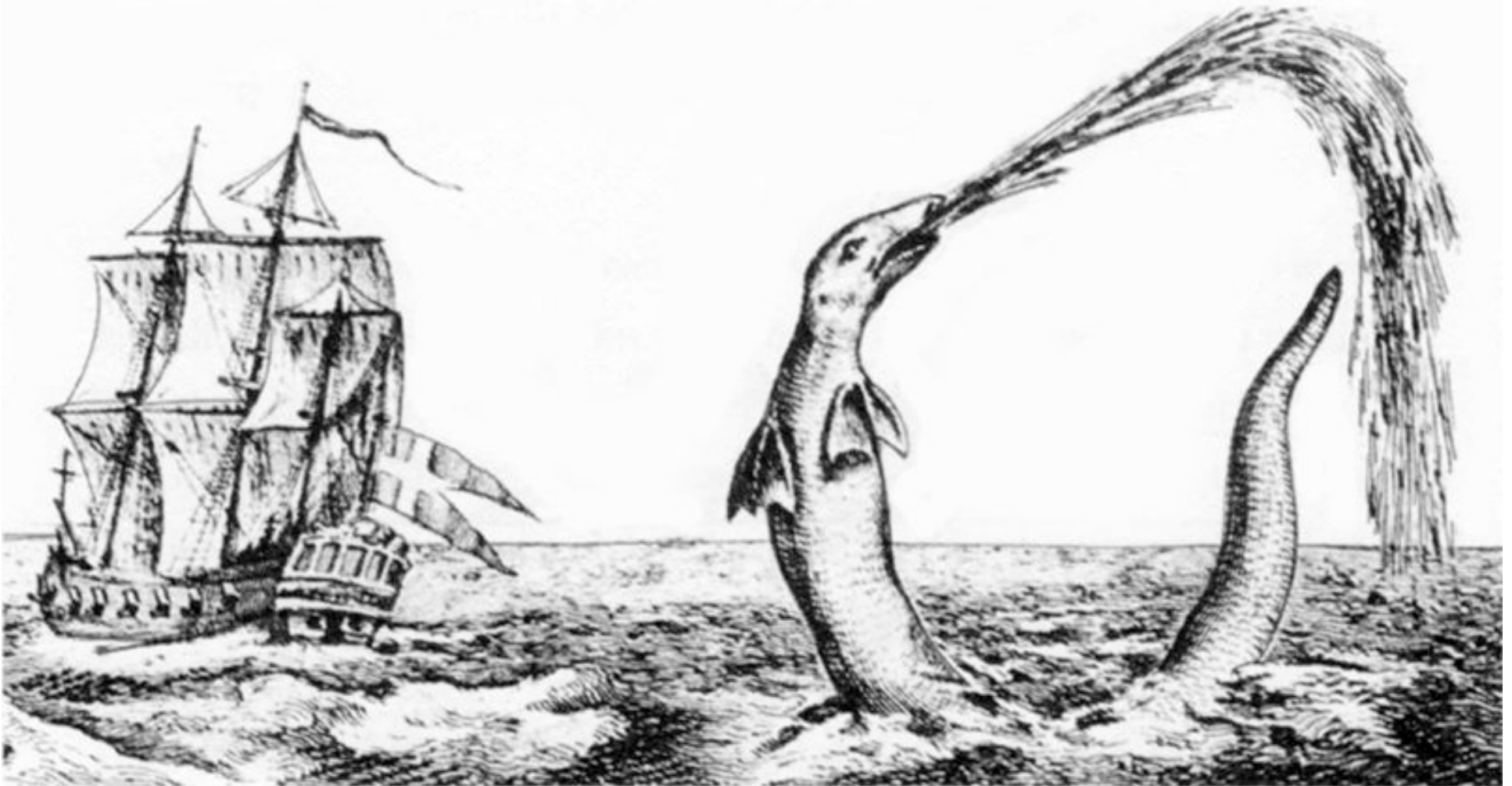
Levels of Belief

- Several levels can be distinguished:
Believe no matter what
Can accept specific disproof, but not general
Neutral
Can accept specific proof, but not general
Disbelieve no matter what
- Most alien believers are between 1 and 2

ASTR 380

UFOs and Alien Visits

Sea Serpents: Fact or fiction?



ASTR 380

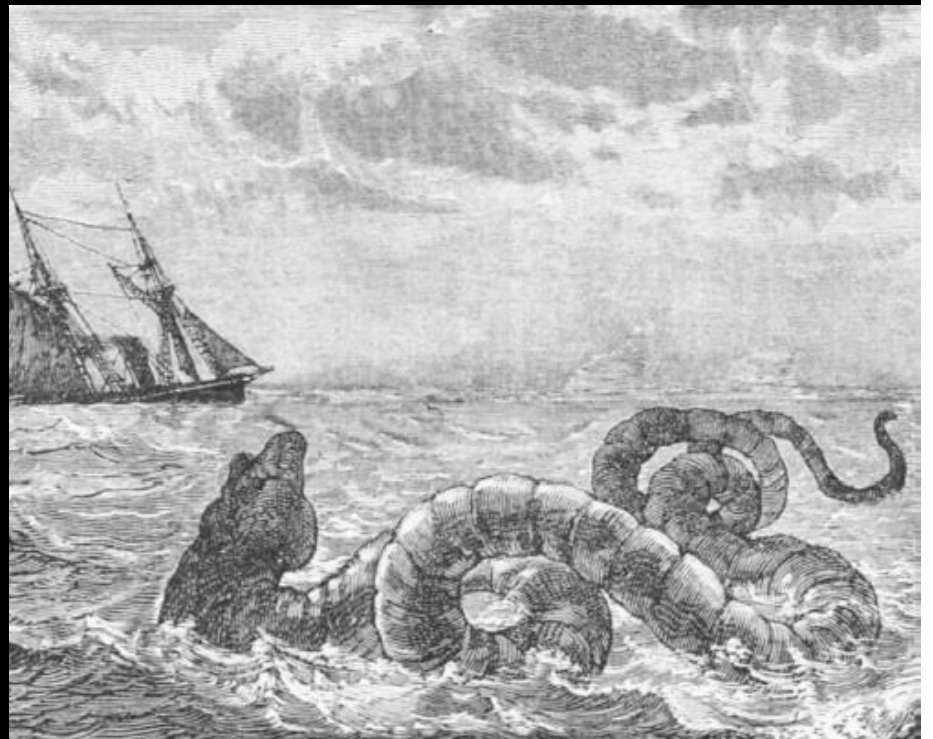
UFOs and Alien Visits

Sea Serpents: Fact or fiction?

Reports of sightings for 100s of years from many sources. Many sightings in the 1800's, last major sightings in the early 1900's....

Did they die out?

A coincidence?



ASTR 380

UFOs and Alien Visits

Perhaps some sightings are misidentifications....

Giant squid can be up to 13 meters long and weighs 500 or more pounds.

First confirmed to exist in the mid 1800s



ASTR 380

UFOs and Alien Visits

Nature's oddities... the Coelacanth: fact or fiction?

A deep sea fish known only from fossils dating 410 Myrs to 65 Myrs ago.

Extinct 65 Myrs ago....

Or not?



ASTR 380

UFOs and Alien Visits

Nature's oddities... the Coelacanth

First specimen found in 1938

First live photo in 1988

Perhaps survived because they can almost hibernate

A 400 Myr old
living fossil!



ASTR 380

UFOs and Alien Visits

Mermaids: fact or fiction?

First known stories of them date from 1000 BC.

Stories continued into the 1800's....

But there never has been credible evidence of a Mer-body.



ASTR 380

UFOs and Alien Visits

Mermaids: fact or fiction?

First known stories of them date from 1000 BC.

Stories continued into the 1800's....

But there never has been credible evidence of a Mer-body.



The real thing: a dugong

<http://www.aquarium.co.jp/english/images/dugong04.jpg>

ASTR 380

UFOs and Alien Visits

So what are the chances that sea serpents, mermaids, or other creatures of sea lore exist?

Fishing fleets comb the waters driving standard species to record low populations.

Commercial fishing techniques utilize radar, airplane spotters, and satellite information.

Could creatures of lore escape discovery now... yet be seen regularly in the past with lesser capabilities?

Are fishermen in a conspiracy to hide their findings?

The Burden of Proof

- Suppose I claim to have seen an alien
- Is it up to you to disprove me?
- No!
- Carl Sagan: “Extraordinary claims require extraordinary proof”
- What does this mean in practice?

First Claim

- Suppose I told you that yesterday I saw a friend walking down the street
- Would you believe me? If not, what level of proof would you require?



Second Claim

- Now suppose I told you that yesterday I saw a 100-foot tall cyclops walking down the street
- Would you believe me? If not, what level of proof would you require?



<http://bearah718.tripod.com/sitebuildercontent/sitebuilderpictures/cyclops.jpg>

Importance of Discovery

- Suppose visits by aliens were established beyond any question
- This would be the most important discovery in history
- As a result, we need to apply the highest standards of evidence to any alien claim
Must be absolutely indisputable
- What is the actual status of claims?

ASTR 380

UFOs and Alien Visits

Evidence of past visits:

The pyramids of Egypt were put forward as an example of alien influence when it was thought incredible that the ancient Egyptians could build them...

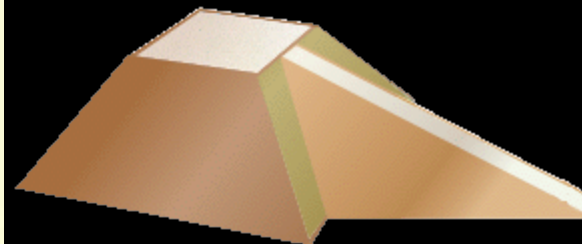
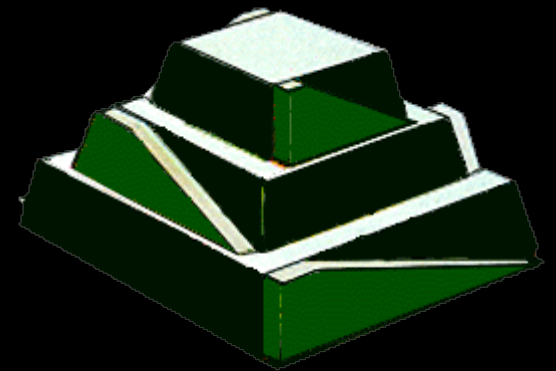


ASTR 380

UFOs and Alien Visits

Evidence of past visits:

Through studies and records, we now know better their development history, techniques, and labor pool.



UFOs and Alien Visits

Easter Island statue heads – some 800 of them – were a surprising find on this isolated, small island (roughly 63 square miles).



ASTR 380

UFOs and Alien Visits

When Europeans arrived on Easter Island, there were some 8,000 natives living subsistence lives and worshipping the statues without knowledge of how they were created...

The archeological story is that Polynesians first inhabited the island around 1000 AD.

They thrived and grew and depleted the island's resources.

At its height, the culture built the statues. By the time that Europeans found Easter Island, they had declined through war, famine, and scarcity of resources

ASTR 380

UFOs and Alien Visits

Drawings in Chile and Peru
“too large” for ancient people to make.

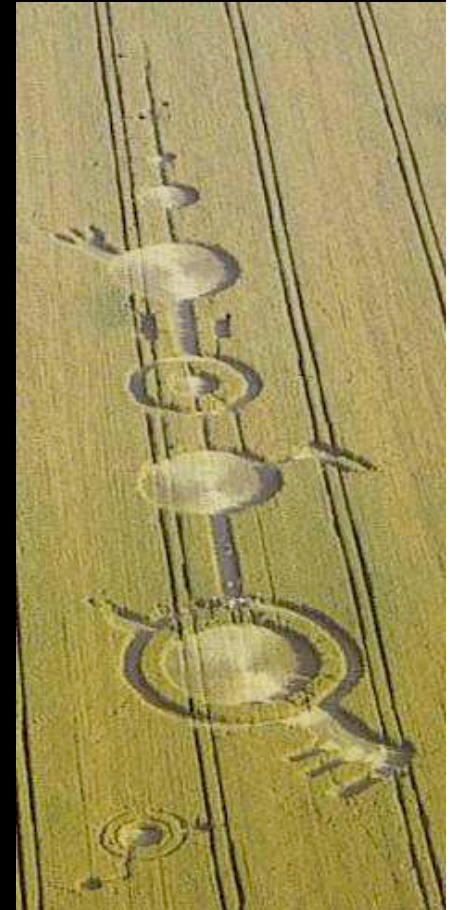
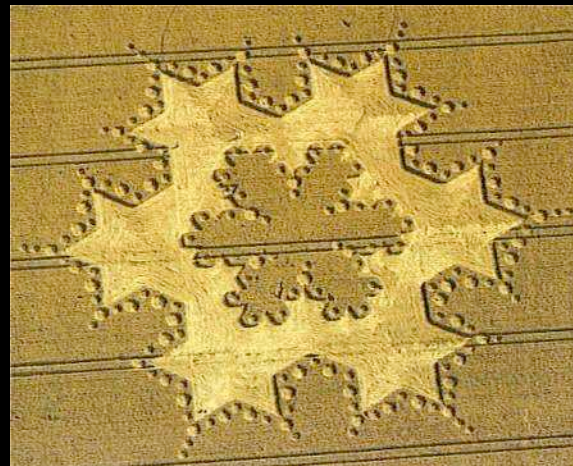
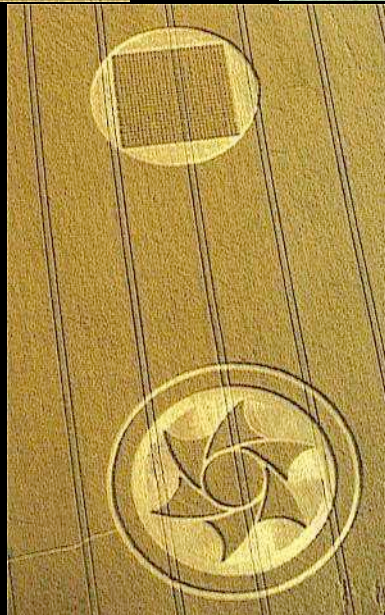
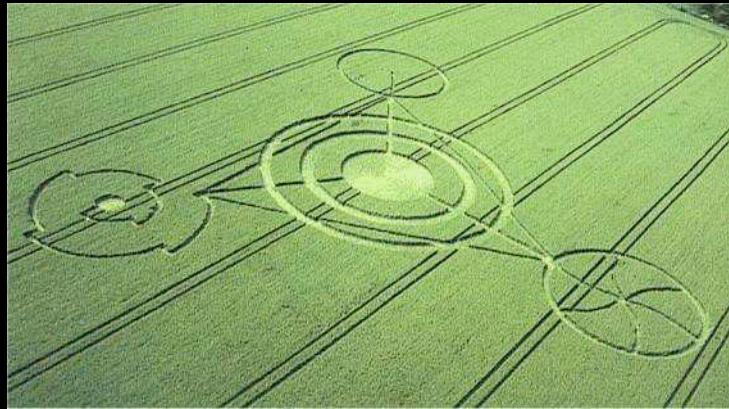
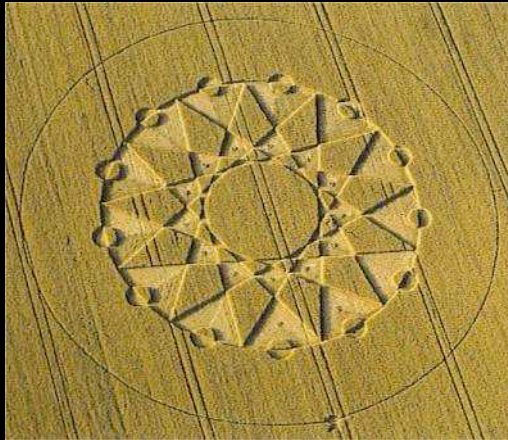
Evidence of aliens or ingenious
people trying to make themselves
known to their gods or enemies?



ASTR 380

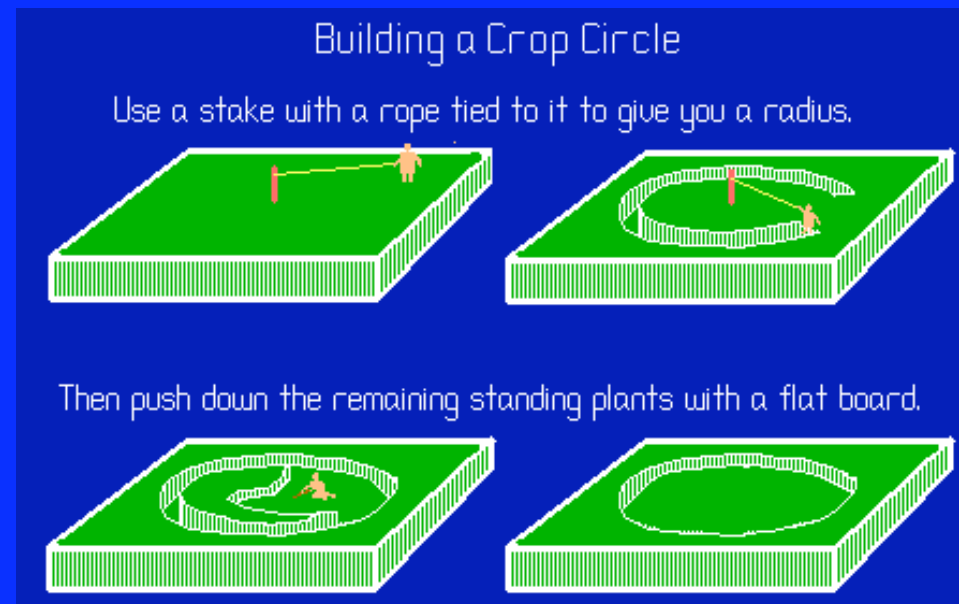
UFOs and Alien Visits

Crop Circles: Alien symbols or ingenious tricksters ?



Admission: Crop Circles are Hoaxes

- Many statements made about “impossibility” of faking circles
- 1991: Doug Bower, Dave Chorley admit to faking, show how
- Reaction of believers? “But they couldn’t have made all the circles!”



<http://www.unmuseum.org/cropinst.gif>

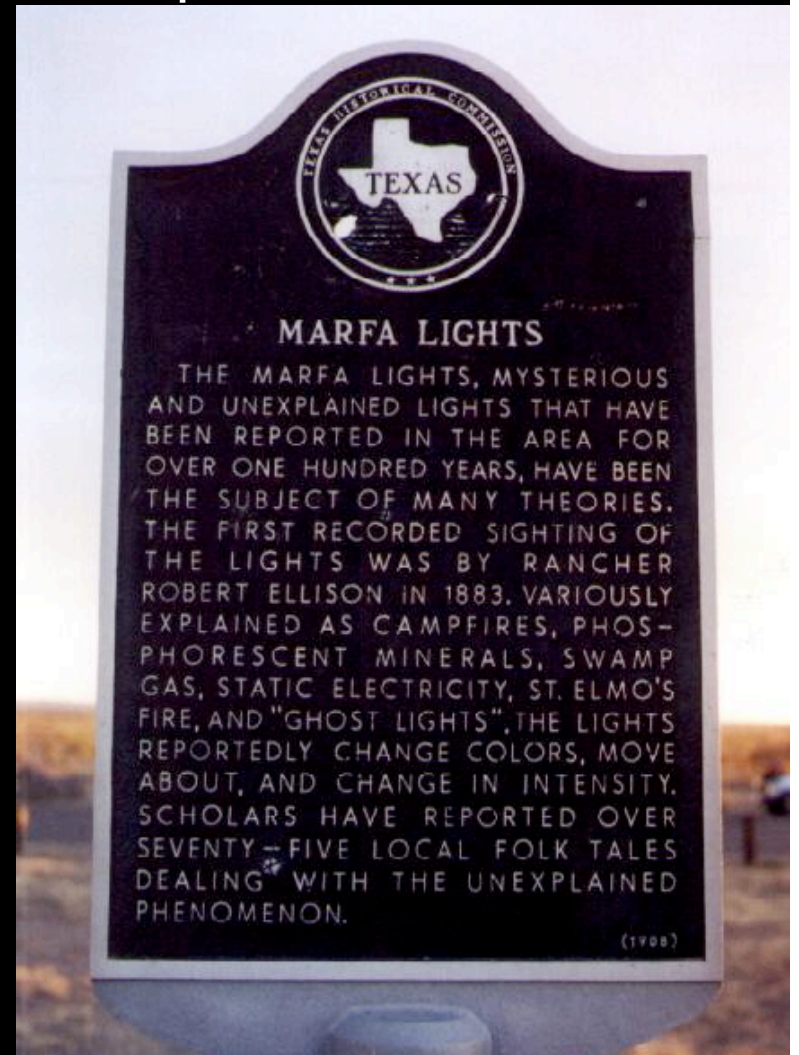
ASTR 380

UFOs and Alien Visits

Natural phenomena can also be hard to explain...

Marfa lights in isolated west Texas..

Have various possible explanations
But none proven for all claims of
lights.



ASTR 380

UFOs and Alien Visits

Natural phenomena can also be hard to explain...

It is proven that under certain conditions, the lights from distant cars can appear to hang in the sky due to refraction effects – but that only explains lights in the direction of the main highway...

McDonald Observatory is located about 100 miles from Marfa -- in operation for 75 years with no alien sightings!



ASTR 380

UFOs and Alien Visits

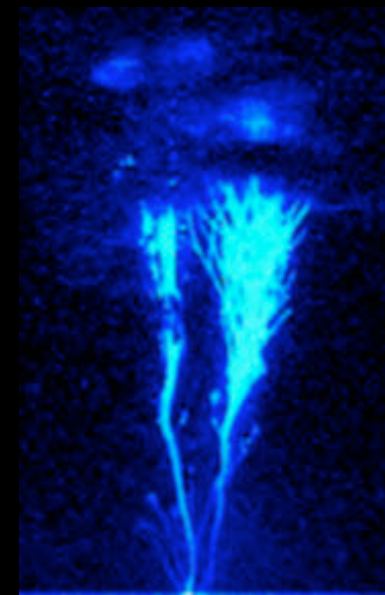
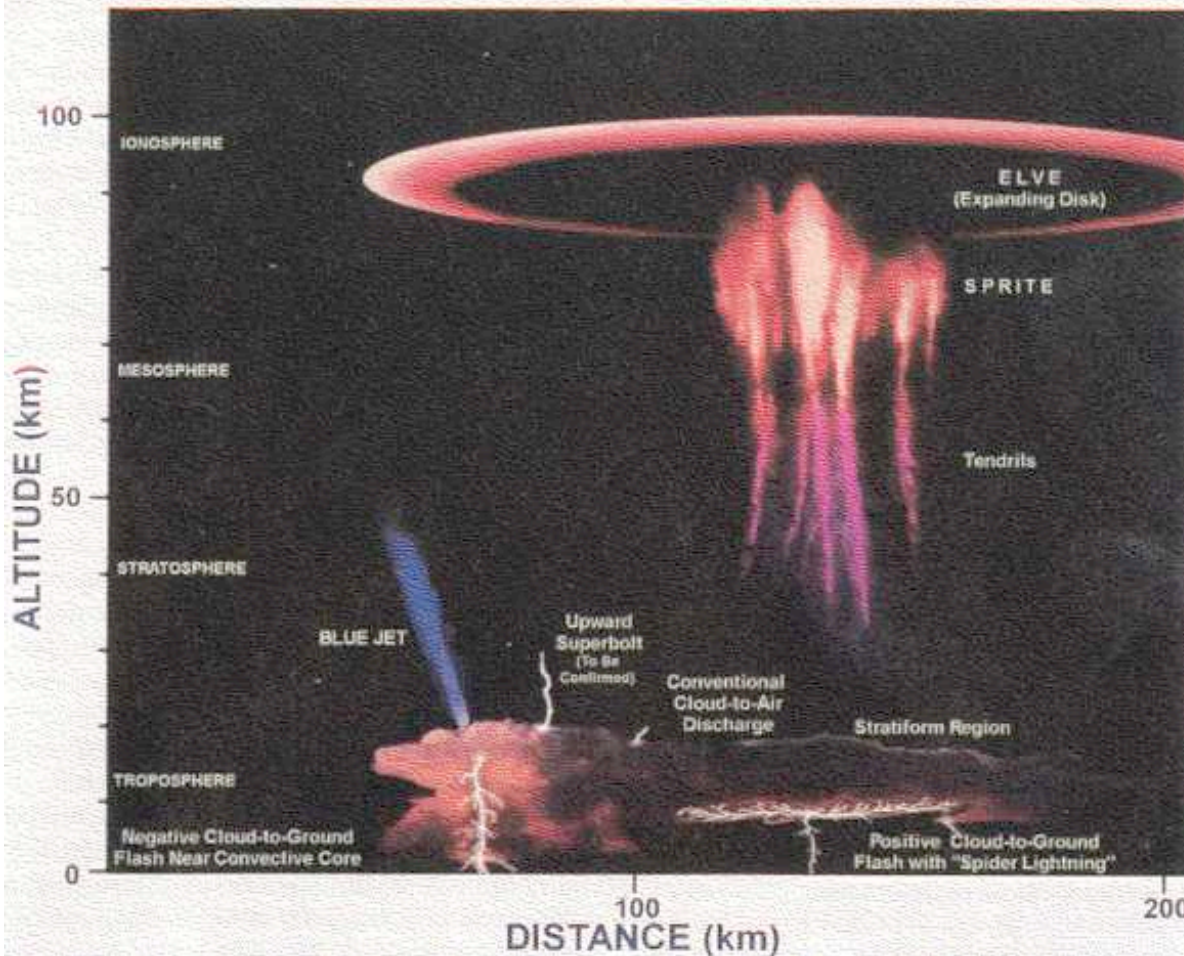
Natural phenomena can also be hard to explain...
Lightning has proven to be complex with unexpected effects...



ASTR 380

UFOs and Alien Visits

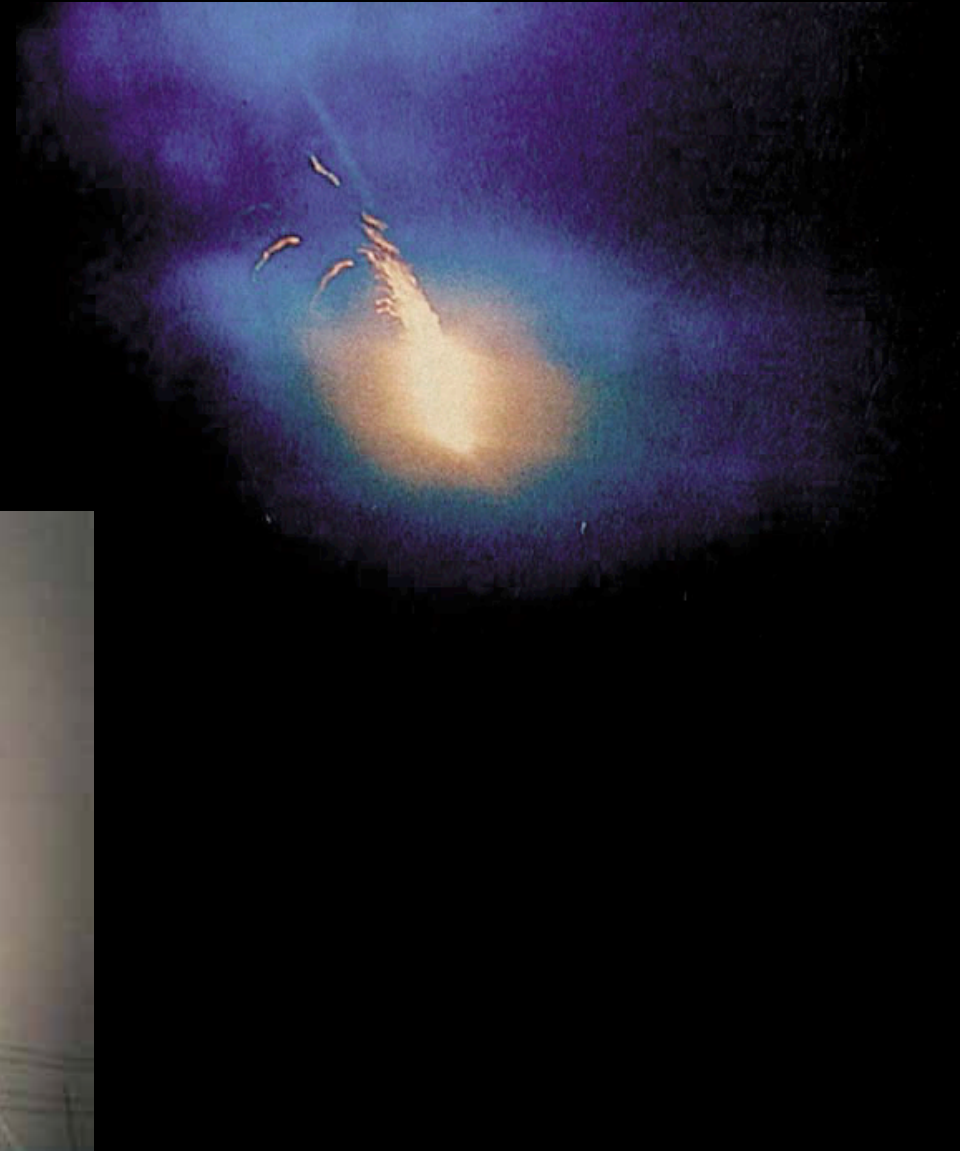
Lightning: sprites and blue jets



ASTR 380

UFOs and Alien Visits

Lightning: Ball lightning

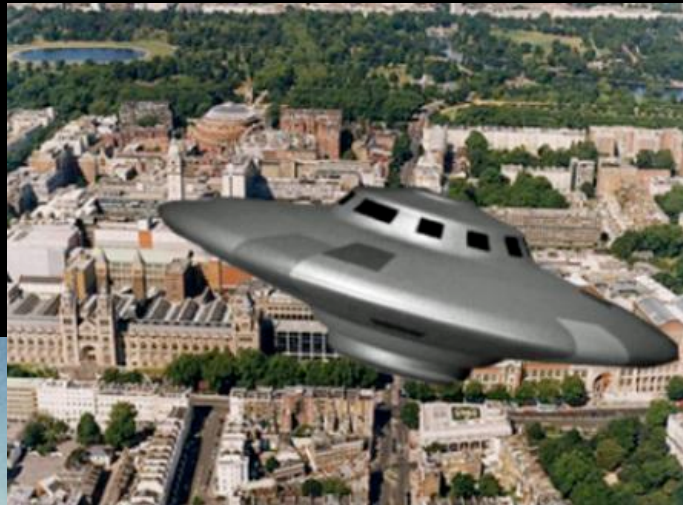


ASTR 380

UFOs and Alien Visits

What evidence is there for UFOs?

Few credible photographs evident on the internet...



and what can you trust?



The Problem of Photoshop

- Now more difficult than ever to tell
- Easily-useable public software exists that can put together saucers with photos
Requires expert analysis to disprove
- Now possible to fake very realistic-looking movies
- What would you believe?



<http://symonsez.files.wordpress.com/2009/06/aliensbush1.jpg>

ASTR 380

UFOs and Alien Visits

Area 51: is...

Air force base on the southern edge of a dry salt lake in southern Nevada. Used for study of enemy aircraft and development of experimental aircraft.

UFO conspiracy theory maintains that crashed alien spacecraft are being studied are reverse engineered there.

Video of an Alien being
Interviewed... in
Area 51....



ASTR 380

UFOs and Alien Visits

Roswell UFO Incident:

Roswell New Mexico — claimed site of a UFO crash in which the military recovered the crashed spacecraft.

Originally explained as a weather balloon and ignored for 30 years.

The “incident” was revived in earnest in the 1990’s.



ASTR 380

UFOs and Alien Visits

Roswell UFO Incident:

Numerous books have been written based on 30-40 year old memories and no physical evidence.

Few firsthand witnesses exist and, as you might expect, the stories evolve over time.

The Air Force says that the Roswell incident was the “crash” of a weather balloon with equipment being developed to detect soviet nuclear activity – consistent with the general purpose of the base.

Conspiracy Theories

- A special category
- Aliens, JFK death, ...
- Basic idea:
government has all
the secret information
but hides it
- How is this applied to
aliens in particular?



Alien Conspiracy?

- US gov hiding proof of aliens
Why don't scientists speak up?
- Because government silences them
But then what about many claims?
- Apparently heroes evade government
Then US gov isn't so effective, right? Why weren't they able to hide Watergate?
- They want to *seem* incompetent
- Basically, nothing disproves conspir. theory

ASTR 380

UFOs and Alien Visits

Alien Abductions: No scientific physical evidence.

Abductions are personal recollections – which cannot be evaluated scientifically. There is no case with broad, independent, first-hand verification.



Waking Dreams

- Ever have a waking dream, just before sleep or just after waking up?
- Can be scary!
- Also, sleep paralysis: limbs won't move
- Can combine to have feeling of something else in room, plus helplessness



http://content.answers.com/main/content/wp/en-commons/thumb/5/54/500px-John_Henry_Fuseli_-_The_Nightmare.J

ASTR 380

UFOs and Alien Visits

Passing the sniff test.... Questions to ask:

If aliens are here.....

Why are they so good at avoiding definitive detection
yet not so good at avoiding ordinary people?

Why are they interested in
sneaking around instead of making real contact?

What is their purpose? This is a large expenditure of
resources... for what purpose?

Why would university scientists keep it secret?

Perspective: Human Exploration

- Think about how humans have explored
- Long sea voyages, many resources used
- No hiding; rather, attempts to contact and explore
- Can't guarantee alien psychology, but it seems a long trip to harass people on lonely rural roads!

Summary

- Would be really cool discovery!
- But because of that, we have to have a really high bar to believe in evidence of alien visitation
- No current evidence remotely reaches this standard
- It does, however, tell us a lot about human psychology