Have We Been Visited?

Bracewell Probes

Unmanned

Orbit around another star

Wait for civilization to appear

Establish contact

Radio results to Earth

Is there a Bracewell Probe in Solar System?

Long-delayed echoes(1-30 sec)

Duncan Lunan 1973

- →Epsilon Boötes (Binary star)
- →Contact attemped

now discounted

If use Daedalus technology (fusion)

 $R_M = 150$ (need to decelerate)

Visits in the Past?

- In historical times?
- Erich von Daniken is most famous promoter
 - Pyramids, precision stone work
 - Drawings on Nazca plain
 - Easter island statues
 - Note western bias
 - No need for aliens to help with Stonehenge

Ongoing visits?

- Flying saucers (after WWII)
- Neutral term: Unidentified Flying Objects (UFOS)
- Evidence is primarily anecdotal

Reliability

e.g. Night advertising aircraft

< 10% correctly described these

⇒ Unreliable witnesses ⇒ some ordinary objects will fall into UFO category

Statistics of UFO cases

90% of UFOs eventually identified (IFO)

No difference between UFOs and IFOs in time of day, duration, age or gender of witness, occupation, or UFO interest

Both UFO and IFO incidents involve people who, on average, are much more interested in UFOs.

Statistics of UFO belief

"UFOs are extraterrestrial visitors"

40 - 50% of people nationally

Previous 309L classes Yes (before class) Yes (after class)

UFOs exist? 68% (61%) 40 - 50%

If Yes, controlled by E.T.? 76% (52%) 45 - 55%

This class

Expect this class to attract more believers, **BUT**

Austin also seems more credulous

Student polls 1983, 1995

~ 80% Believe in UFOs

Education: High School or Less Doctorate or

Working on it

62% 88%

50% believe Government covers up UFO evidence

What we Believe

1983 1995

1. ETs are friendly 84% 53%

1995

2. ETs are friendly males females

47% 58%

3. By ethnicity

Asian-Am African-Am Hispanic White

Believe in UFOs 35% 61% 77% 81%

Attitudes of Scientific Community

Generally much more skeptical
Repeated studies found no evidence of alien connection
2 studies suggested UFOs worthy of further research

- 1. Allen Hynek
 - → Categories
- 2. Stanford Panel 1997

Peter Sturrock, von Eshleman, Thomas Holzer "Deserves Scientific Study" but no evidence of "involvement of an extraterrestrial intelligence"

Categories of UFOs

1. Nocturnal lights

Clear weather, usually 8-11 PM

2. Daylight Disks

Usually disks, some cigar shaped

3. Radar-visuals

Detected by radar as well

4. Close encounters

First Kind - UFO seen closer than 500 feet

Second Kind - Physical effects - burnt vegetation, electrical problems

Third Kind - Observation or encounter with Aliens

A. Hynek

Detection of Alien Spacecraft

Matter-antimatter annhilation $\rightarrow \gamma$ -rays We have γ -ray detectors on satellites

1. Military - to watch for nuclear tests reported γ -ray bursts from space



2. NASA satellite: Gamma-ray observatory (GRO) was in orbit from 1991 to 2000

could detect annihilation 0.02 grams F

2

sec 1AU

⇒ No spacecraft decelerating within 1 AU with mass of ship exceeding 90 grams since 1991.

Assumes electron-positron annihilation for specific numbers

Case Study: The Roswell Incident

1947 Rancher finds strange debris
Rumors of "flying saucer"
Attributed to weather balloon

1978 Marcel (Intelligence officer at AFB in 1947)

Talks to <u>Inquirer</u> → big UFO interest

Claims of Exotic Matter (originally

balsa wood, tin foil, rubber, tape, paper)

Claims (& movies) of Alien Autopsy

Claims of a Government cover-up

Case Study: The Roswell Incident

~ 1994 -1995

Congressional inquiry → GAO

USAF finally tells the story

Project Mogul

High altitude balloons to "listen" for nuclear bomb detonations (it did detect 1st Soviet bomb - 1949)

But winds → pushed balloons out of range → discontinued in 1950

One tracked to near where debris found - then contact lost

Photos of debris match description of Mogul balloons

Secrecy → Conspiracy theories

UFO Pictures...



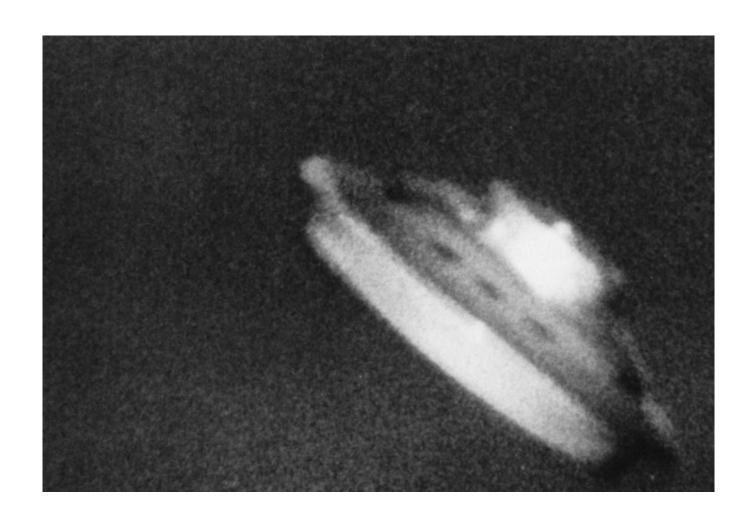




















Ultrasound confirms the incredible!

A SPACE ALIEN MADE ME PREGNANT

Tests show healthy fetus has 2 hearts — and gills like a fish!



TV star Robert Conrad helps rescue two women from savage attacker

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Experts reveal after four-year study...

UFOS ARE PILOTED BY ANGELS FROM GOD

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Fall from bed bumps dying boy back to life PAGE 7