

**Have We Been Visited?**

## Many classes of “evidence” claimed:

- ***UFO sightings***--historical; 40s and 50s; large-scale investigations, polls, psychological profiles; statistics of unexplained fraction; multiple witness events; photographic evidence?
- ***Unexplained phenomena***--pictograms (e.g. Nazca geoglyphs), crop circles (2013: Termites!); Tunguska explosion; animal mutilations,...
- ***Reports of strange creatures*** (e.g. “Thetis Monster,” Thetis Lake, B.C., Canada)
- ***Textual interpretations***--e.g. Indian Sanskrit texts; Ezekiel, Old Testament
- ***Cultural interpretations***--e.g. the Dogon people (Africa) and their visitations by the Nommos from planet orbiting Sirius [mistranslations]
- ***Government coverups*** (the “Federal Hypothesis”)--e.g. NASA missions; Roswell,N.M.; Bob Lazar; alien autopsies,...
- ***Abduction phenomena***--history; characteristics; sleep paralysis; multiple abductions; implants; missing fetus syndrome,...
- ***Interpretations of all of human history in terms of alien intervention*** (e.g. W. Bramley, *The Gods of Eden*, 1989)

*We will concentrate on UFO sightings, but give a few other examples.*

# Bracewell Probes

- Unmanned
- Orbit around another star
- Wait for civilization to appear
- Establish contact
- Radio results to Earth (or whatever parent planet)

## Is there a Bracewell Probe in Solar System?

- Best-known (most publicized) claim: Duncan Lunan (Scottish science writer) 1973. “Deciphered” long-delayed radio echoes (1- 30 sec). Claimed echoes were message from space probe orbiting moon, sent by inhabitants from planet orbiting double star Epsilon Bootis. Now discounted as fraud—see Wiki under “long-delayed echoes,” for 15 proposed natural explanations. Lunan still professes no belief or interest in “UFOs.”

## What would it take to send a Bracewell probe?

If used Daedalus technology (fusion)  $R_M = 150$  (need to decelerate)

# Visits in the Past?

## In historical times?

--Cave paintings 30,000-15,000 yr ago.

--Indian Sanskrit texts (e.g. Mahabharata) describe flying machines called “vimanas,” controlled by gods.

--Old Testament--Book of Exodus (~1400 BC), ch.13, v.21-22, “pillar of fire;” 2nd Book of Kings (~900 BC), ch.2; Elijah (prophet) crosses river Jordon, sees “chariots of fire”, “Elijah went up by a whirlwind into heaven.” Book of Ezekiel (~600BC)--4 visions (chaps.1,8,10,43)

--Alexander the Great (b.356BC)--large “flying shields”, silver, shot beams of light that shattered the defenses of the citadels of the enemy (in Lebanon).

--Many Roman writers ~216-66BC: “ships in the sky,” “globe of fire,” “night suns” (Pliny),...

--Medieval times--dragons, people being “stolen by goblins;” succubi, incubi, insemination of sleeping human females; people being taken to “castles in the sky” by “faeries”; ...

## Historical Visits (cont'd)

### **Erich von Daniken is most famous promoter**

Book “Chariot of the Gods;” popular movie; then more books, ... Loads of “evidence,” much now known to be fabricated or unreasonably presented.

Biggest draws were:

--Egyptian Pyramids: precision stone work

--Drawings on Nazca plain

Lines are near Lima, Peru; straight lines, geometric shapes, drawings of animals, etched in ground 200BC to 600AD.



Archeologists offer variations of explanations, most involving burial of pottery.

See A. Aveni (2000) *Between the lines: The mystery of...*; at [amazon.com](http://amazon.com) will see many varied accounts.

--Easter island statues

Thor Heyerdahl and others expeditions demonstrated no need for aliens.

--Stonehenge, ...No need for aliens here, either.

# Ongoing visits?

- Flying saucers (after WWII)

Modern era began in 1947, pilot Kenneth Arnold's sighting of nine disks, June 24. He saw "formation of very bright objects" (*not* disks), estimated speed at 1700mph (error—can't get speed without distance). In definite formation, but erratic "like a saucer would if you skipped it across water": term *flying saucer* was born. Arnold later believed they were an unknown species of stratospheric animals.

--After Arnold's story hit headlines, 850 reports of UFOs by July 16.

--1952--worldwide wave in Africa, Americas, Asia, Europe. Hundreds of sightings reported every month.

--Wave of 1954 in France (why France??)--many sightings, aliens seen, landings.

--Many more waves, e.g. after movie ET, after book "Communion," and during the popularity of the TV show "The X-Files."

- Neutral term: Unidentified Flying Objects (UFOS)

- Evidence is primarily anecdotal (and repeated and distorted multiple times in most cases)

# Reliability of reports

- **Only small percentage of sightings are hoaxes,** or by “cranks” or “delusionals.”
- **Most UFOs are ordinary objects,** e.g. Venus, weather balloons, noctilucent clouds, nocturnal advertising aircraft, ...

One study: Out of ~200 sightings that can unambiguously be identified as nocturnal advertising aircraft, 90% of witnesses described not what was perceptually available to them but instead said they saw a rotating, disk-shaped form. 10% saw a dome on top!

- **Witnesses project expectations**

Most interesting are multiple witness events: Louisiana--1970s football stadium, 45,000 people; China--1991 “wise man’s prediction,” hundreds witnessed, some drew pictures of saucers with dome and portholes! But prediction was made by an astronomer for a meteor shower!

- **Psychological profiles** (Spanos et al. Nov.1993, J. Abnormal Psychology)

Study of 49 people who described ufo sighting or close encounter, plus 127 people citing no ufo incident. The 2 groups showed about the same levels of intelligence, “psychological health”, hypnotizability, and tendency to fantasize.

# 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.
- UFO/IFO ratio is approximately constant (*this is probably important result*)
  - Percentage of unknowns does *not* vary with overall level of sightings. e.g. if total number of sightings (mostly IFOs) rises by factor of 3, so does the number of UFOs.
  - This is consistent with idea that all the UFOs would be IFOs if we had more information on those sightings. Otherwise, to interpret in terms of ETI, this result would mean that aliens deliberately increase their activities to keep the IFO/UFO ratio constant!



# Statistics of UFO belief

“UFOs are extraterrestrial visitors”

40 - 50% of people nationally answered “yes.” (Year?)

**Previous 309L classes:**

	<u>Yes (before class)</u>	<u>Yes (after class)</u>
UFOs exist?	68%	40 - 50%
If Yes, controlled by E.T.?	76%	45 - 55%

Expect this class (309L) to attract more believers, BUT Austin also seems more credulous than most cities in this regard.

**Student polls** 1983, 1995 ~ 80% “believe” in “UFOs”

**By education:** High School or Less 62%      Doctorate or Working on it 88% (?Could this be correct?)

50% (overall) believe Government covers up UFO evidence

*More of this on next slide...*

# What we Believe

1. “ETs are friendly” by year:      1983                      1995  
84%                                      53%

2. “ETs are friendly” by sex:      1995  
Males                      Females  
47%                      58%

3. “Believe in UFOs” by ethnicity:  
Asian-Am      African-Am      Hispanic      White  
35%              61%              77%              81%

# Attitudes of Scientific Community

Generally *much* more skeptical. Several “scientific” studies: Repeated studies found no evidence of alien connection, but 2 studies suggested UFOs worthy of further research:

## 1. Allen Hynek (USAF’s “Project Blue Book”)

Among other results, tried to establish categories of UFOs (“the Hyneksystem,” vs. “the Vallee system”), and investigated patterns of types of sightings, especially when he could identify a natural, non-alien cause (IFOs). Found no evidence for aliens, but also saw phenomenon as potentially important for psychological, sociological, etc. implications.

## 2. Stanford Panel 1997

“Deserves Scientific Study” but no evidence of “involvement of an extraterrestrial intelligence.”

→ Other studies advised that we should stop wasting funds on any further investigation: From “The Condon Report” to the closing of the 50-year investigation by the British Ministry of Defense in 2009.

**Conferences:** Most prominent was the MIT Conference of 1992—organized by eminent Harvard Medical School psychiatrist and writer John Mack, who had found abduction stories in hypnosis or otherwise (and written book). Mack was awarded the Ig Nobel Prize for his efforts in 1993, especially for his conclusion that “the focus of alien abductions is the production of children.”

## A. Hynek's 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. See Wiki for details on history of abduction accounts and much more.

# Detection of Alien Spacecraft

Matter-antimatter annihilation, or even lowly nuclear fusion, produce gamma-rays. We have gamma-ray detectors on satellites, so might gamma-ray surveys detect them?

1. Military - to monitor nuclear tests by other countries.

The release of their (previously classified) observations immediately impacted astronomy: Gamma-ray bursts (GRBs) throughout the universe. GRBs so frequent/numerous that the occasional starship would probably have been missed.

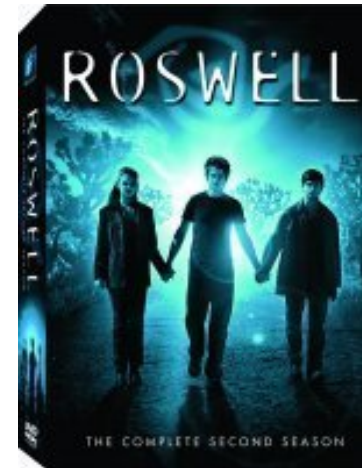
2. NASA satellite: Gamma-ray observatory (GRO) was in orbit from 1991 to 2000. In principle could detect annihilation events.

→ Limits from GRO indicated there has been no spacecraft decelerating within 1 AU with mass of ship exceeding 90 grams since 1991.

[The specific numbers assume electron-positron annihilation.]

# Case Study: The Roswell Incident

- Congressional inquiry ~ 1994-1995
- 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 was tracked to near where debris found - then contact lost.
  - Photos of debris match description of Mogul balloons
- But Secrecy/Conspiracy theories remained popular.



1999: Great TV series

# UFO Pictures...











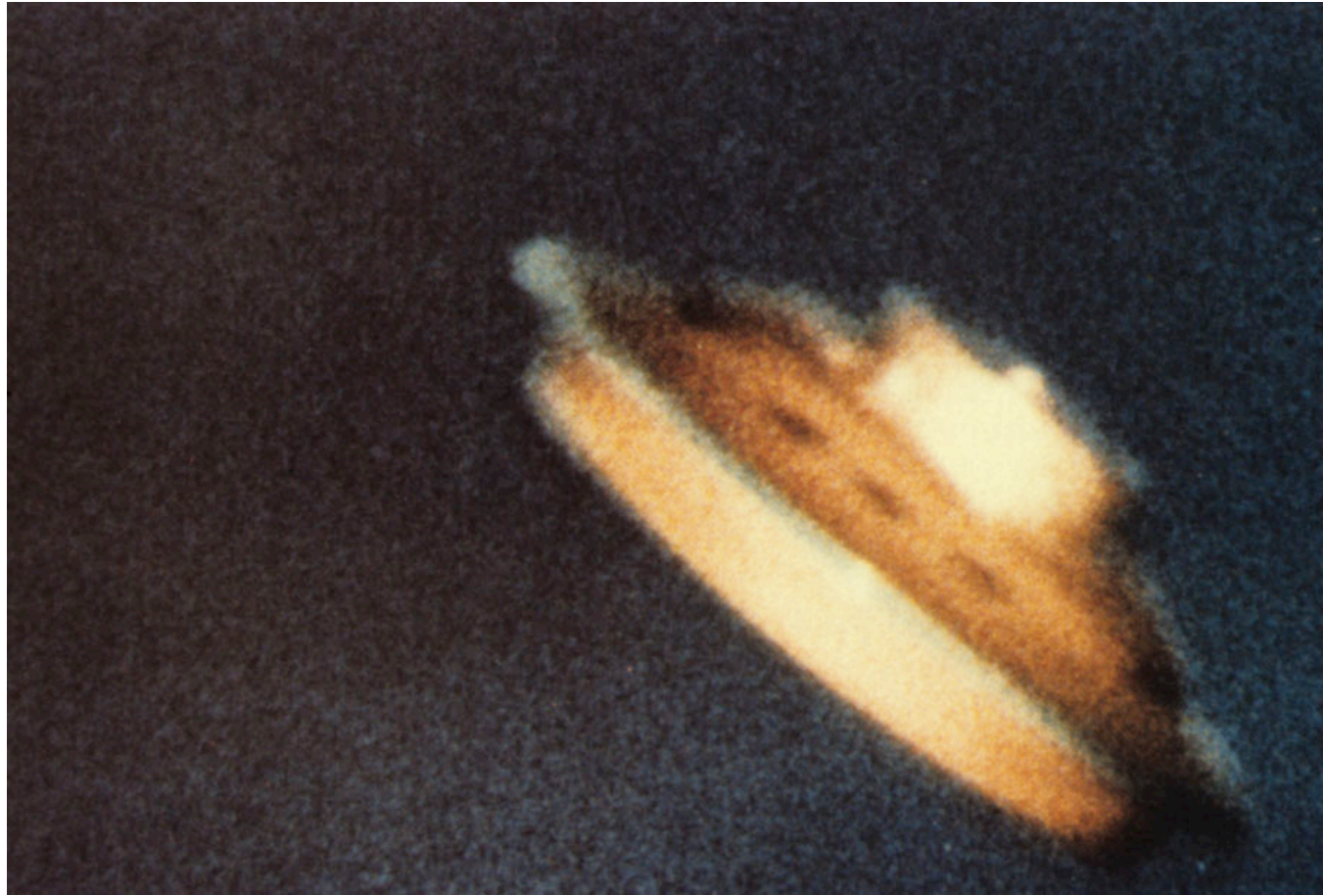
Photo by M. Dunham

















WEEKLY WORLD

# NEWS

August 11, 1992

85¢/95¢ CANADA

**Space visitor tells Democrats  
how to rebuild U.S. economy!**



# ALIEN BACKS CLINTON!



**'I'm happy he  
saw through  
Bush and  
Ross Perot'**

— GOV. BILL CLINTON





# KILLER PLANT EATS FARMER AND 2 COWS!

WEEKLY WORLD

55¢

# NEWS

February 9, 1968

30587

VOL. 9, Issue 18

## FREEWAY MIRACLE

Boy tumbles across 3-lane highway & comes up smiling!



Ultrasound confirms the incredible!

# A SPACE ALIEN MADE ME PREGNANT

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

WEEKLY WORLD

# NEWS

40c

11 A.M.  
C \$ .38

December 18, 1960

20587

VOL. 2, Issue 18

TV star Robert Conrad  
helps rescue two women  
from savage attacker



PAGE 5

Experts reveal after four-year study...

# UFOs ARE PILOTED BY ANGELS FROM GOD

PAGE 19

Fall from bed bumps  
dying boy back to life

PAGE 7