



EVOLUTION • PSEUDOSCIENCE • ANTHROPOGENIC GLOBAL WARMING
 ALIEN LIFE • HOMEOPATHY • VACCINATION • INTELLIGENT DESIGN
 MAGIC • PARANORMAL INVESTIGATION • COSMOLOGY • ASTROLOGY
 CONSPIRACY THEORIES • BALONEY DETECTION • SKEPTICISM • RATIONALITY
 AFTERLIFE • SCIENCE • PSYCHICS • QUANTUM THEORY • SPIRITUALITY
 Loch Ness Monster • Bigfoot • Artificial Intelligence • Global Warming
 Bible • Acupuncture • Critical Thinking • Education • Yeti
 Atheism • Black Holes • Consciousness • Fraud • Ghosts •

Is Intelligence Evolving? • A New Science Revolution • Yeti

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STEPHEN WOLFRAM
Scientific Breakthrough or Computer Wizardry?

The Future of Intelligence

Are We Getting Smarter or Dumber?
Why Smart People Believe Weird Things

TALKING TO THE DEAD

• Sylvia Browne Backs Randi Test
• Skeptic Infiltrate John Edward Seminar
• "What's the Harm?"

SCIENCE v. THE MEDIA
Why can't we

RICHARD DAWKINS • ARTIFICIAL INTELLIGENCE • PYRAMID POWER

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ARTIFICIAL INTELLIGENCE

CAN THE HUMAN BRAIN BE DUPLICATED?

INTELLIGENT DESIGN BATTLE HEATS UP

• **Richard Dawkins**

The Mission of Design
• Dover ID Trial: Victory
• Is ID As Scientific As SETI?
• Young Earth Creationist Conference
• Privileged Planet ID Film Review

• **David Brin**

Other Intelligent Design Theories



Dawkins with The Designer by James Bevel • The Man with the Camera Brain

9/11 CONSPIRACIES • BALL LIGHTNING • ALTERNATIVE MEDICINE

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9/11

WAS THERE A

CONSPIRACY?

CATASTROPHE AHEAD?—2012 OR LHC • VACCINES & AUTISM

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2012

The End of the World—Again?

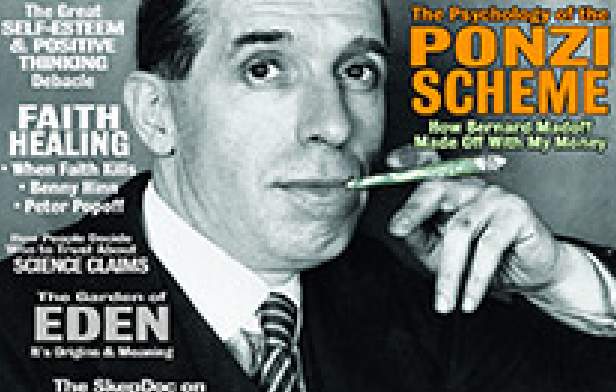
A NASA Scientist Answers the Top 20 Questions About 2012.
Plus: Large Hadron Collider Debate: Will Physicists Destroy the World?

Why Atheism & IQs Are Rising; Chiropractic, Vaccines & Autism

PSYCHIC SECRETS • PONZI SCHEMES • FAITH HEALING • JFK • KLAATU

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The Great SELF-ESTEEM & POSITIVE THINKING Debate

FAITH HEALING

• When Faith Kills
• Benny Hinn
• Peter Popoff

How People Believe in an Extraordinary SCIENCE CLAIMS

The Gardens of EDEN
It's Origins & Meaning

The Psychology of the PONZI SCHEME

How Bernard Madoff Made Off With My Money

The SkepDoc on GLOBAL WARMING WARS HEAT UP! • HOUDINI'S SEANCE • THERE BE DRAGONS

SKEPTIC

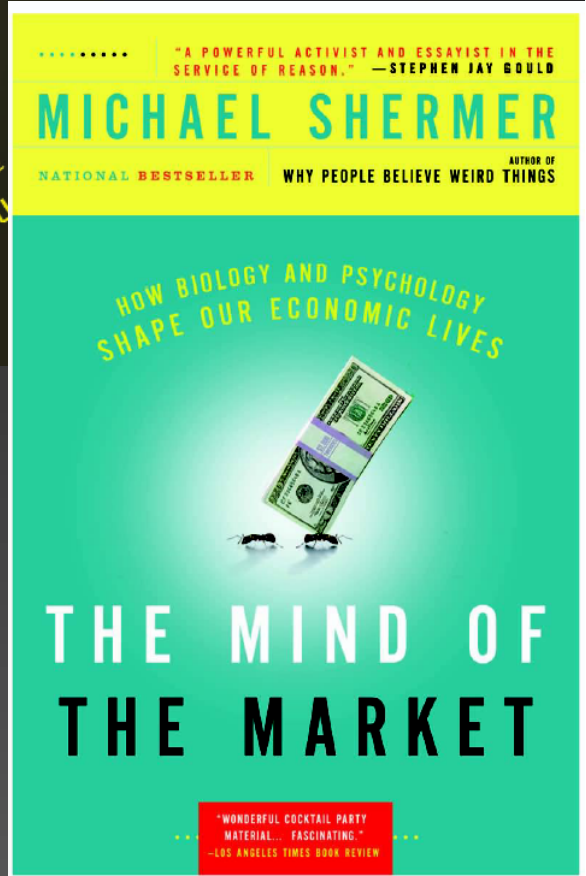
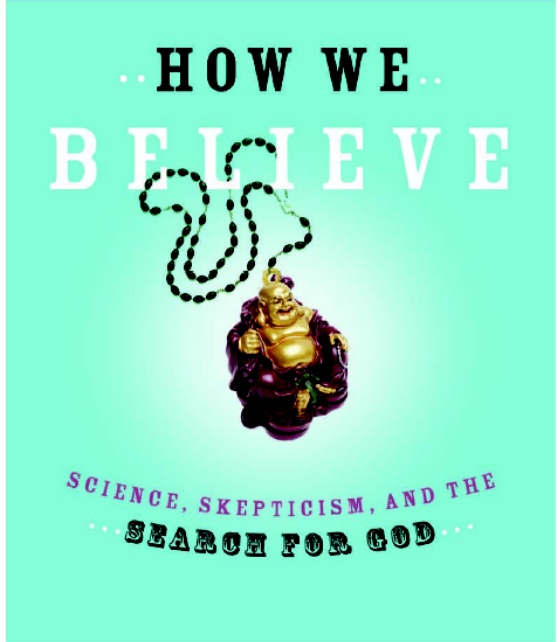
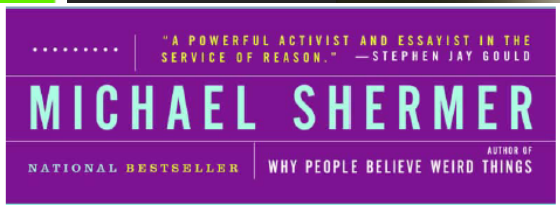
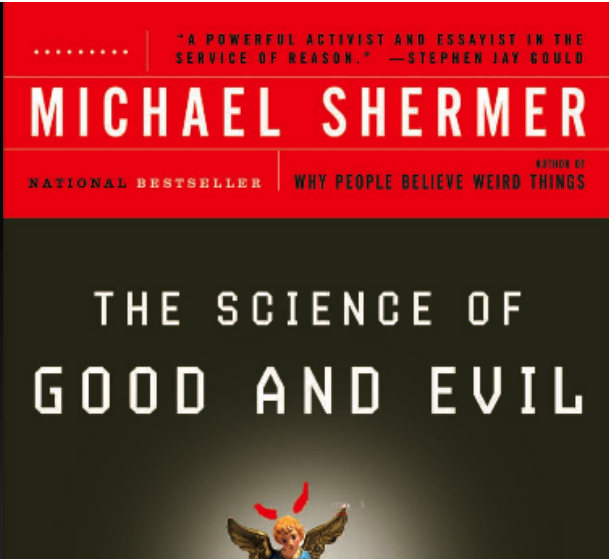
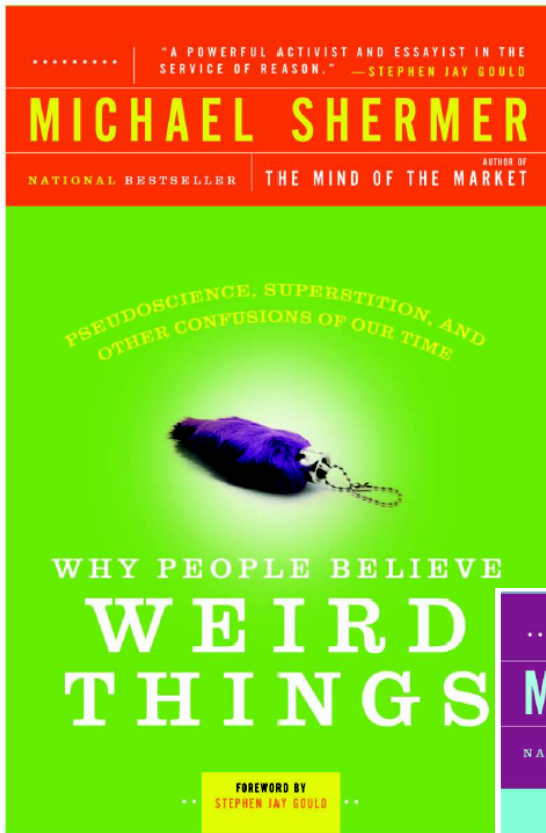
Extraordinary Claims, Revolutionary Ideas & the Promotion of Science—Vol. 10 No. 1 2008 \$6.95 USA and Canada



SPECIAL ISSUE: Global Warming Skepticism and the Problem with Predictions • Hydrogen Fuel Cell Skepticism How We Know Global Warming is Real • How to Save the Planet

Last Chance to Win Randi's Million; Houdini Conducts a Seance; King Kong & Loch Ness—a Surprise Connection; Anthropologists Not Skeptical Enough; What's Wrong with Broadcast Journalism; REVIEWS: What's so Great About Dinesh D'Souza; The Best Damn Evolution Book Period; Paul Davies' Cosmic Jackpot; Science Wars II: Norman Levitt v. Steve Fuller





HEAT, GOSSIP CARE, SHARE
W THE GOLDEN RU



Le Petit Mort



Psychic Fair

Cancelled

due to unforeseen
circumstances

In science we search for natural explanations for natural phenomena



Before we say something is out of this world
first make sure that it is not in this world



Are Aliens Coming to Earth? Are UFOs Their Spacecraft?



What is more likely?
UFOs = spacecraft from other worlds?
UFOs = anomalies from this world?





**I WANT TO
BELIEVE**

The
**BELIEVING
BRAIN**

From **GHOSTS** *and* **GODS** *to*
POLITICS *and* **CONSPIRACIES** —

*How We Construct Beliefs
and Reinforce Them as Truths*

**MICHAEL
SHERMER**

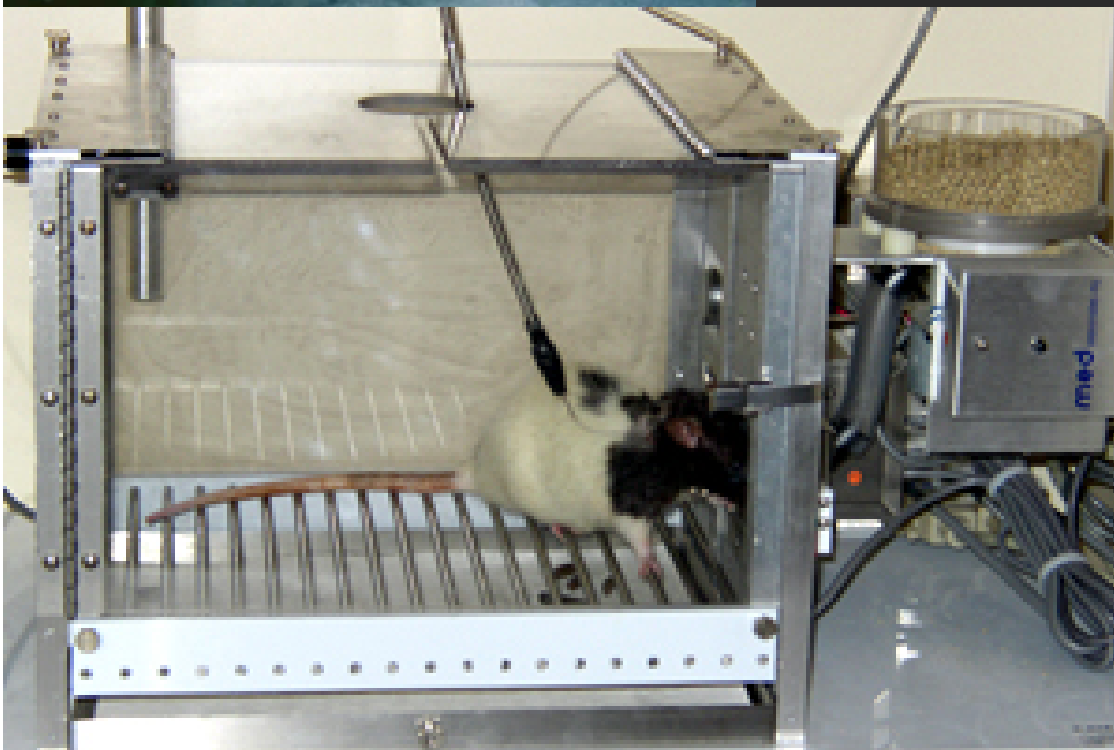
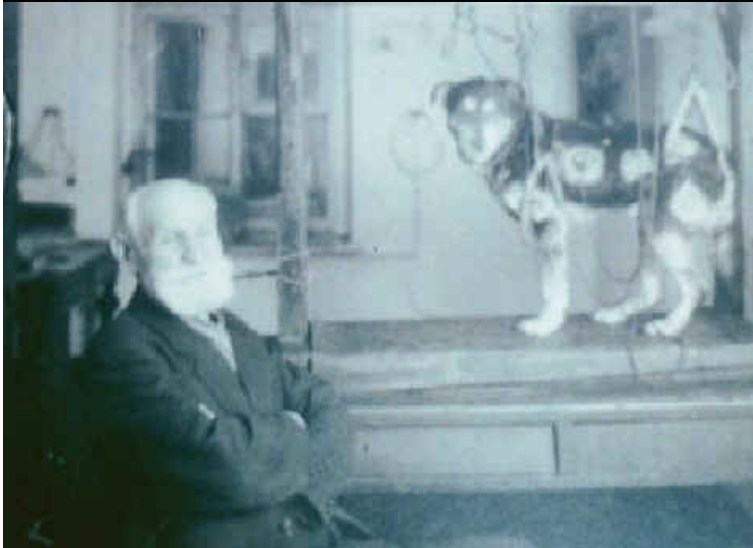
Author of **Why People Believe Weird Things**



The Belief Engine

Pattern-Seeking Primates
Connecting the dots

A appears connected to *B*
Association Learning



CRAIG SWANSON © WWW.PERSPICUITY.COM





Patternicity

Noun.

The tendency to find meaningful patterns in both meaningful and meaningless noise.

A **Type I error**, or a **false positive**, is believing a pattern is real when it is not (finding a nonexistent pattern).

A **Type II error**, or a **false negative**, is not believing a pattern is real when it is (not recognizing a real pattern).

A **Type I error**: believe that the rustle in the grass is a dangerous predator when it is just the wind (low cost).



A **Type II error**: believe that the rustle in the grass is just the wind when it is a dangerous predator (high cost).



$$P = c_{TI} < c_{TII}$$

Patternicity (P) will occur whenever the cost (c) of making a Type I error (TI) is less than the cost of making a Type II error (TII).

The Pattern Detection Problem

Assessing the difference between a Type I and Type II error is highly problematic, especially in split-second life & death situations, so the default position is to assume that all patterns are real.

Assume that all rustles of the grass are dangerous predators & not the wind.

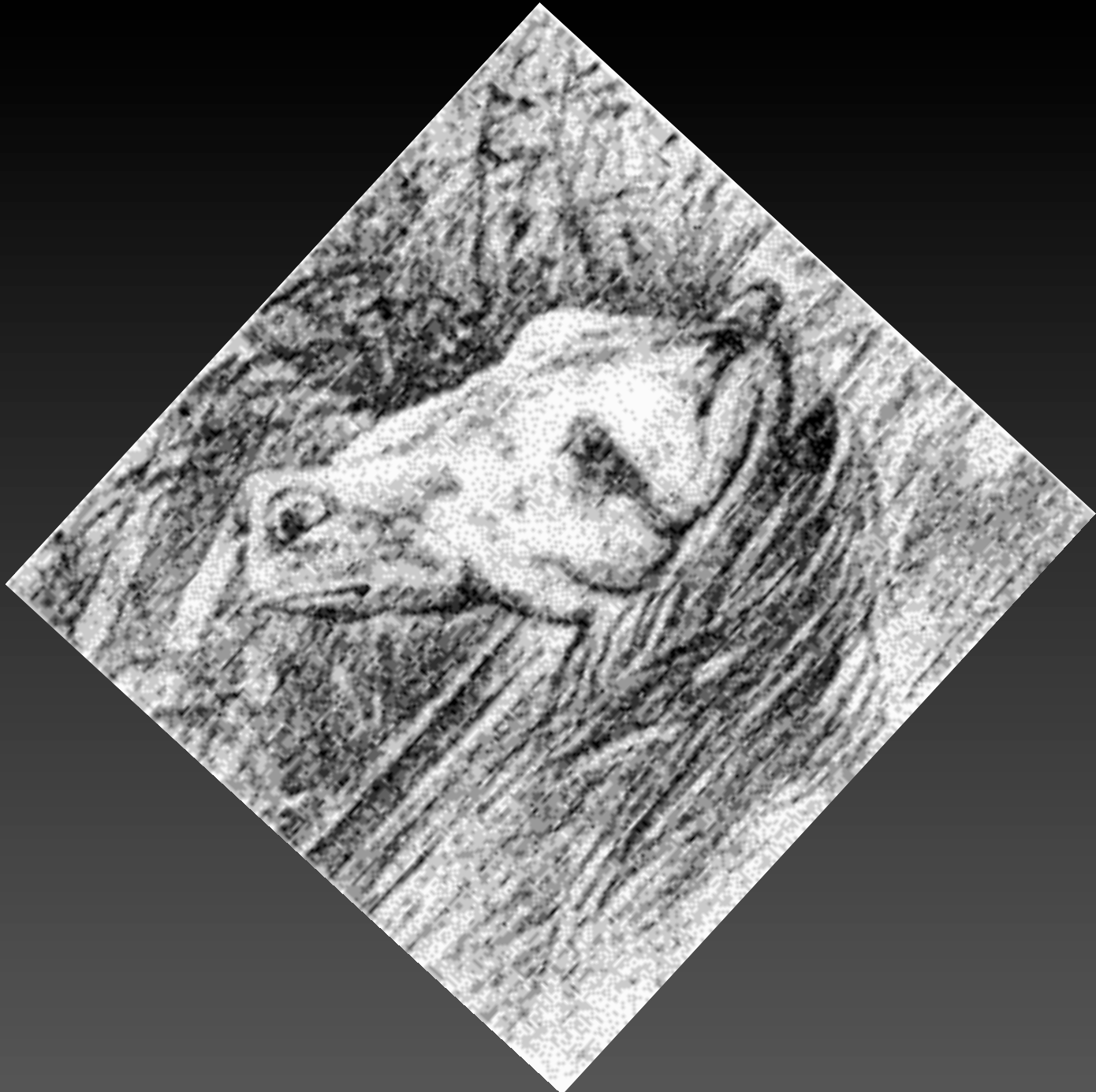
The Evolution of Patternicity

There was a natural selection for the cognitive process of assuming that all patterns are real and that all patternicities represent real and important phenomena.

We are the descendents of the most successful patternicity primates.

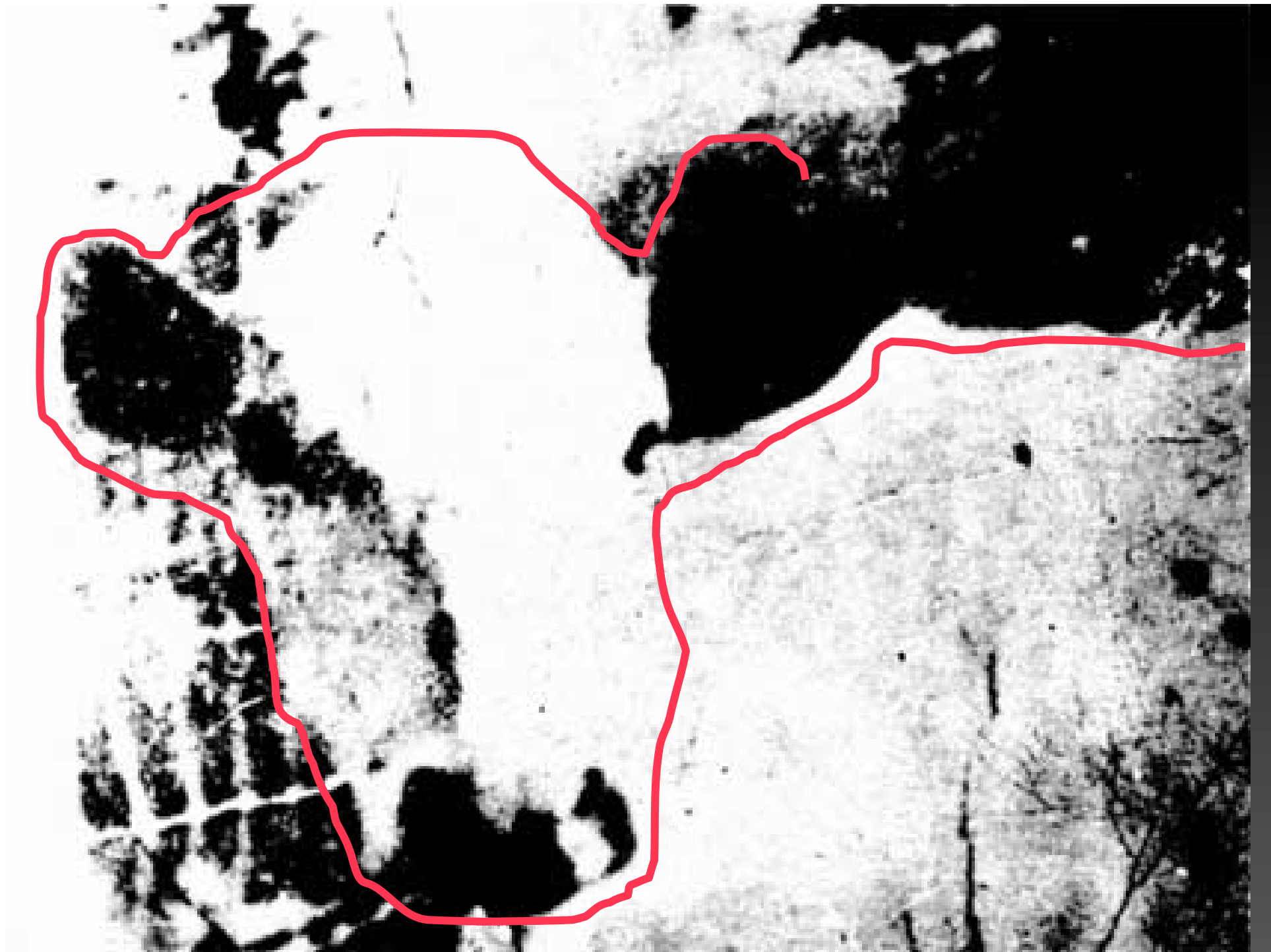












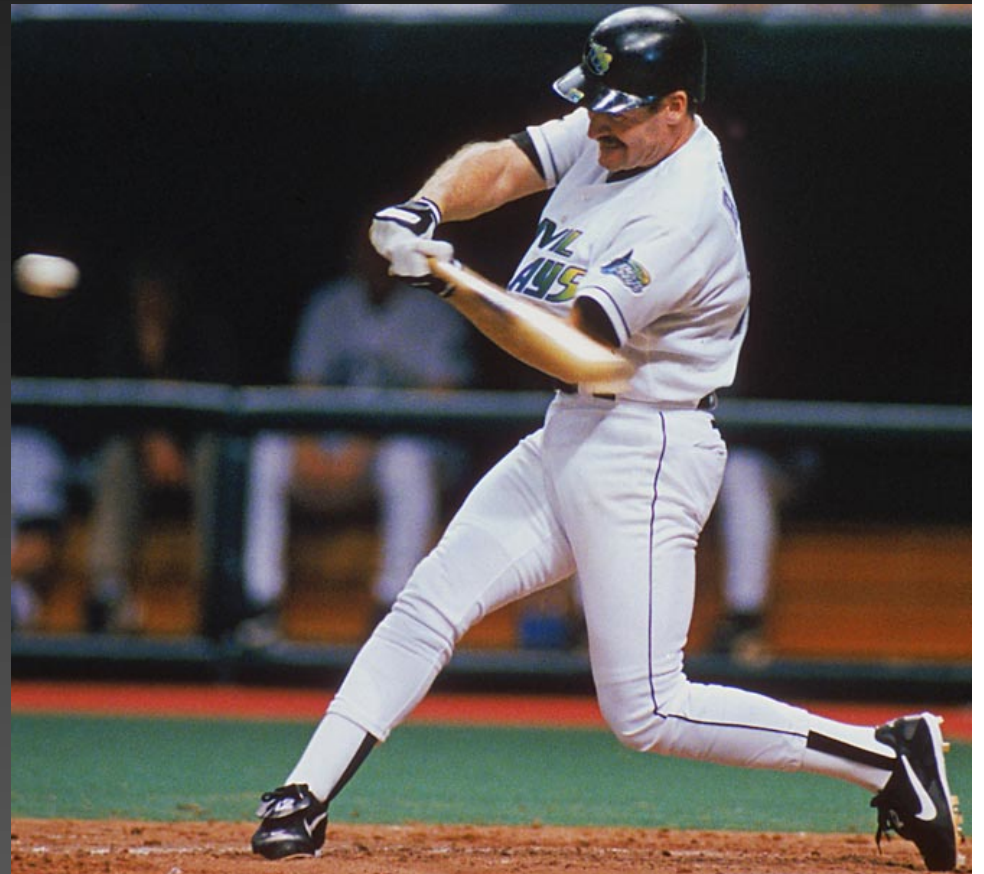




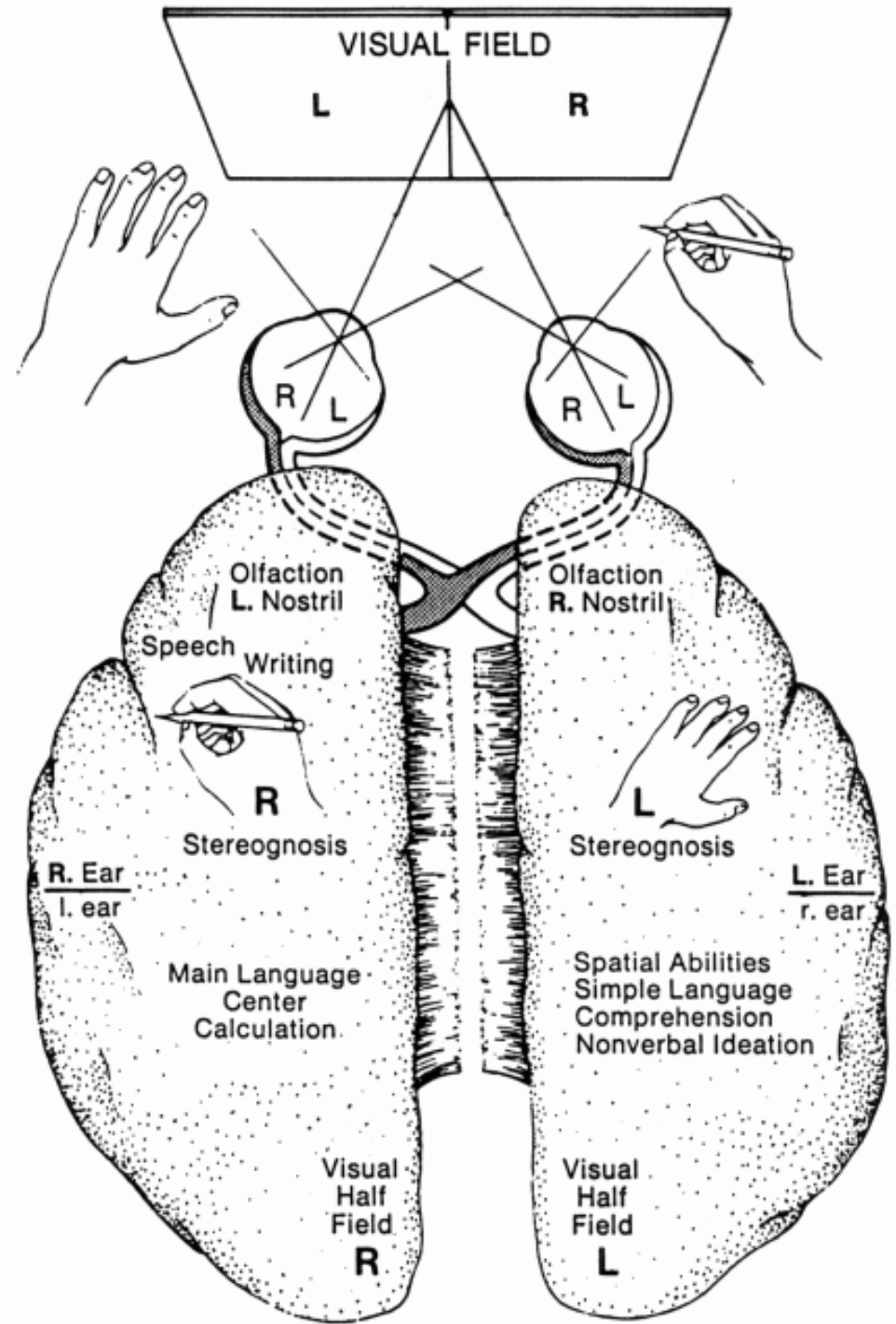




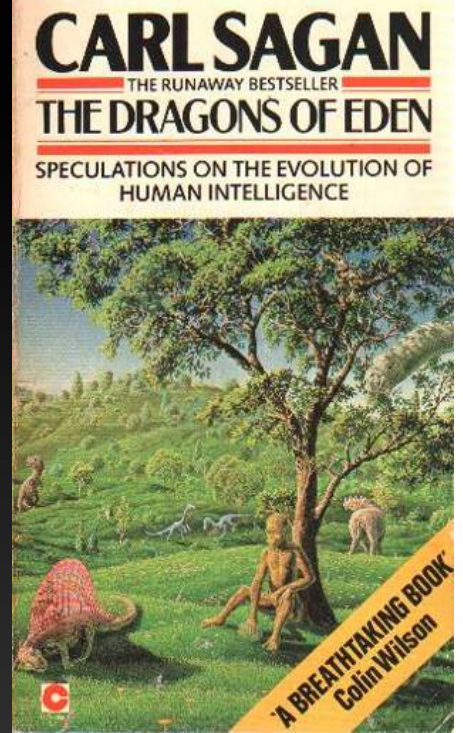
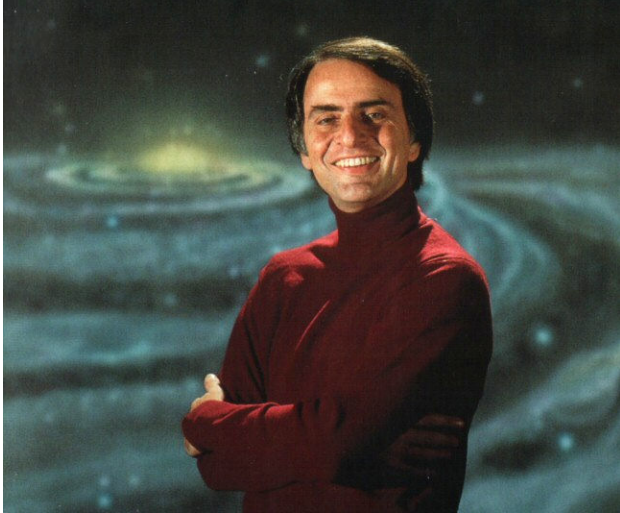
Patternicity, Superstition, Control



Peter Brugger found that significantly more meaningful patterns were perceived in the right hemisphere (via the left visual field) than in the left hemisphere (via the right visual field).



Right Hemisphere Brain



“There is no doubt that right-hemisphere intuitive thinking may perceive patterns and connections too difficult for the left hemisphere; but it may also detect patterns where none exist. Skeptical and critical thinking is not a hallmark of the right hemisphere.”

—Carl Sagan, *The Dragons of Eden*

EXPERIENCE =

USABILITY/ANALYTIC + DESIGN/CREATIVE

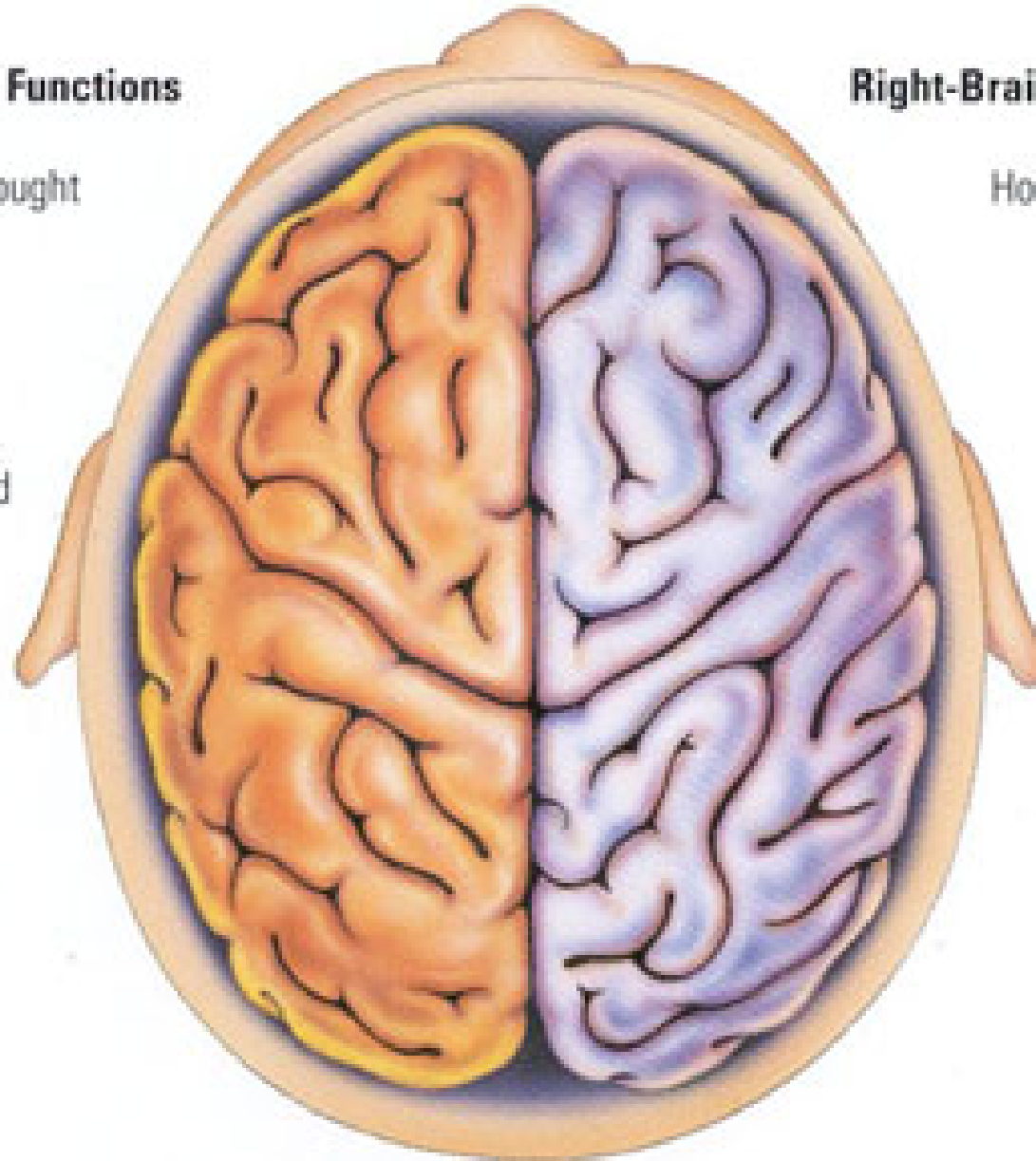
Left-Brain Functions

Analytic thought

Logic

Language

Science and
math



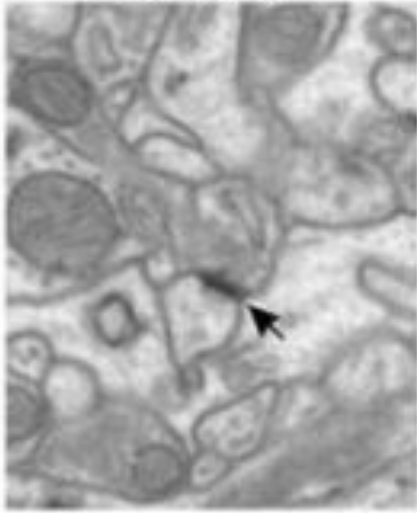
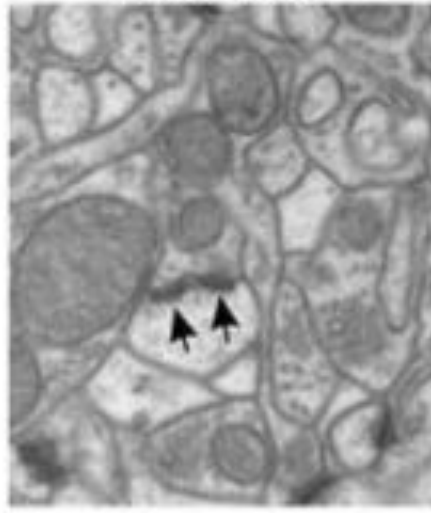
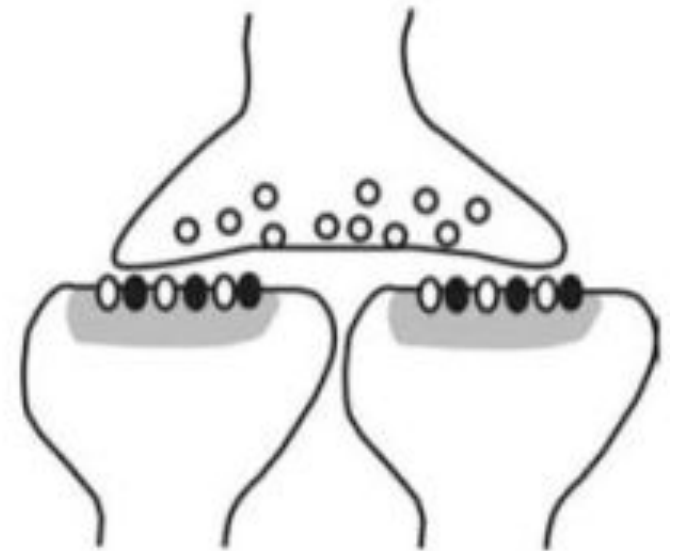
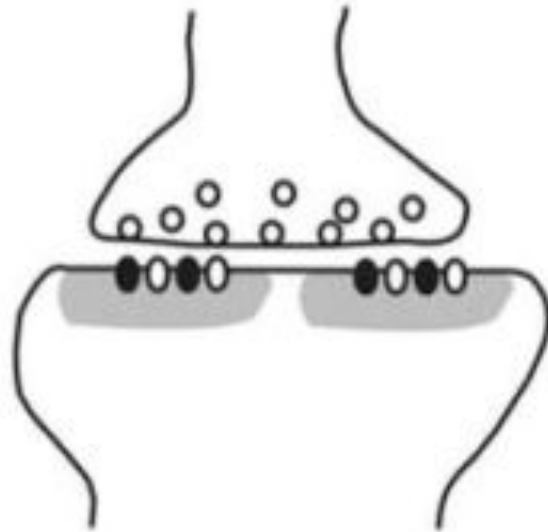
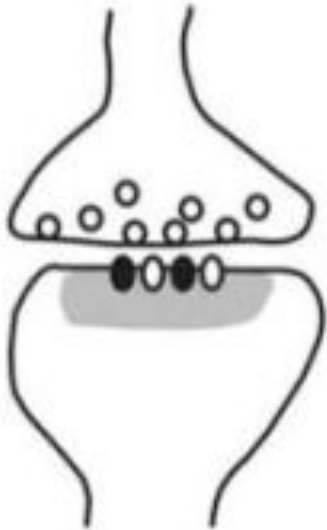
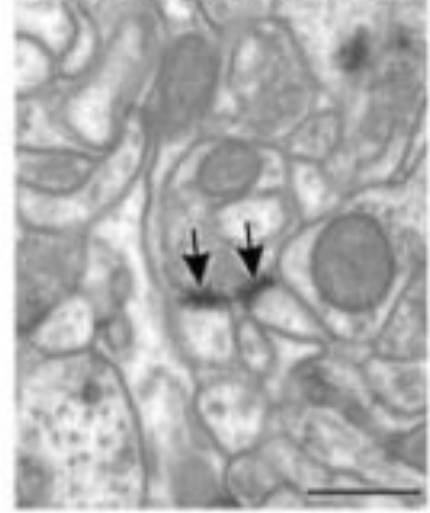
Right-Brain Functions

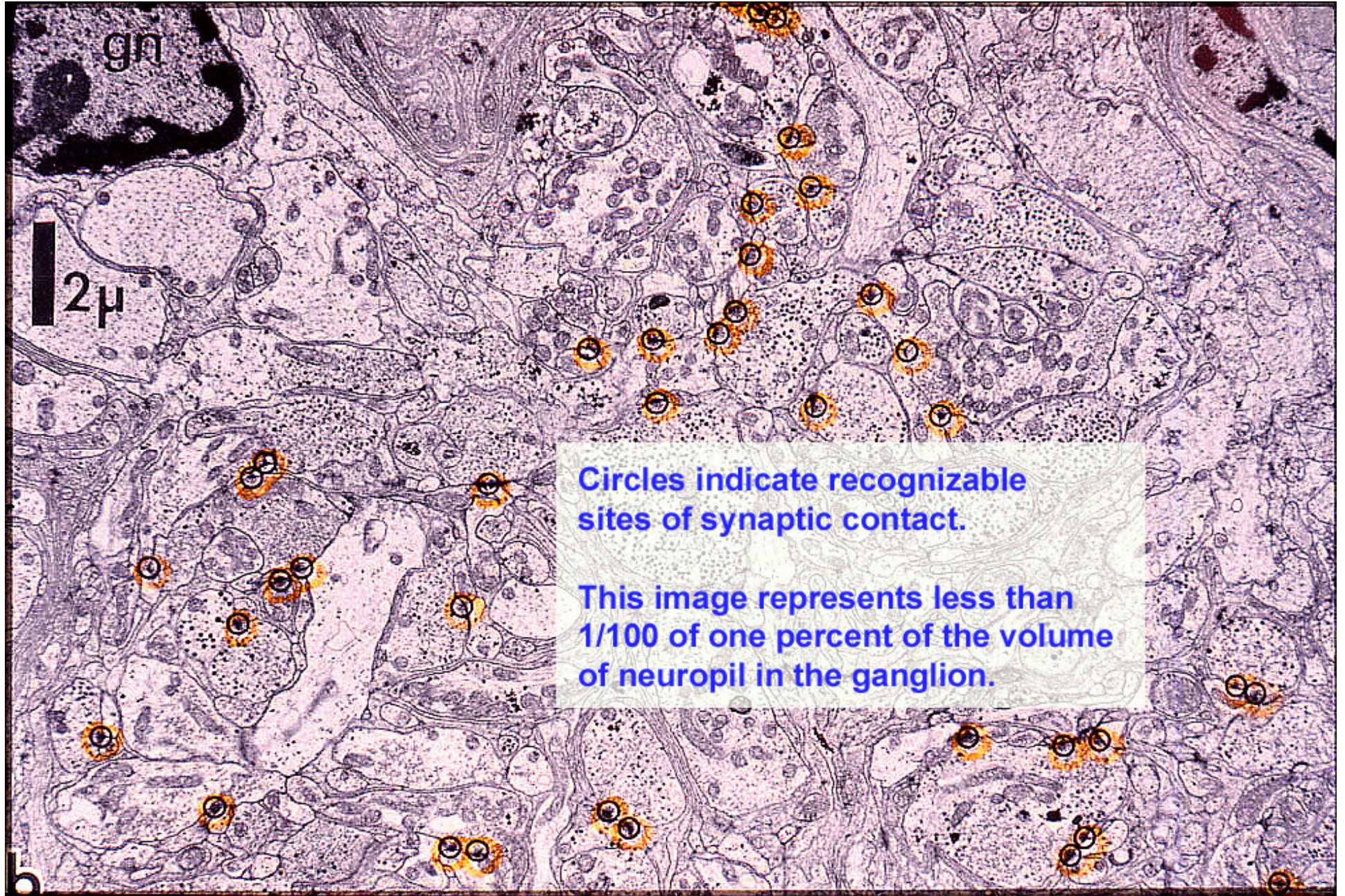
Holistic thought

Intuition

Creativity

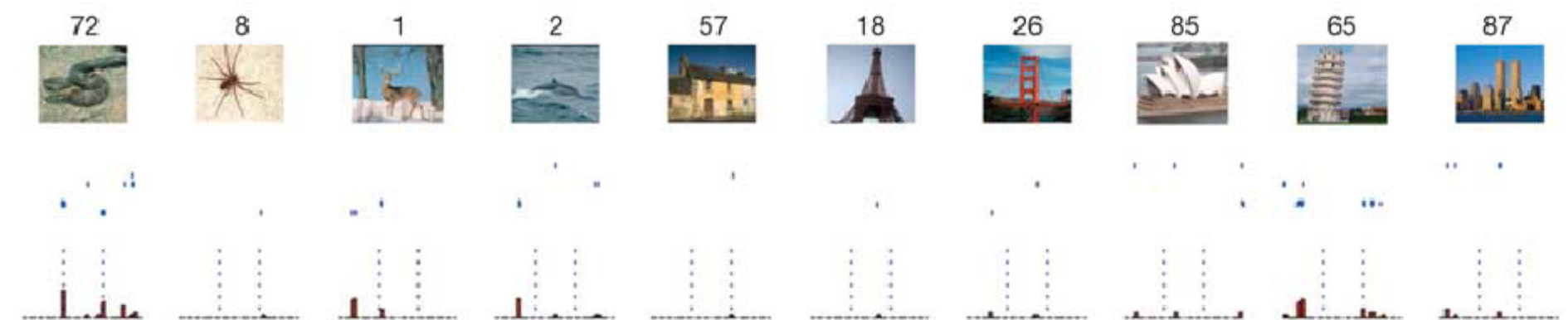
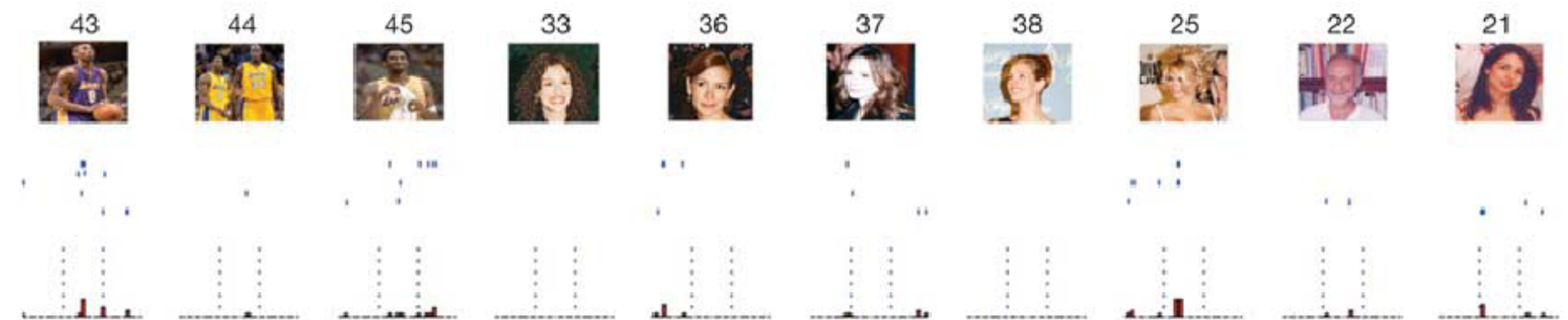
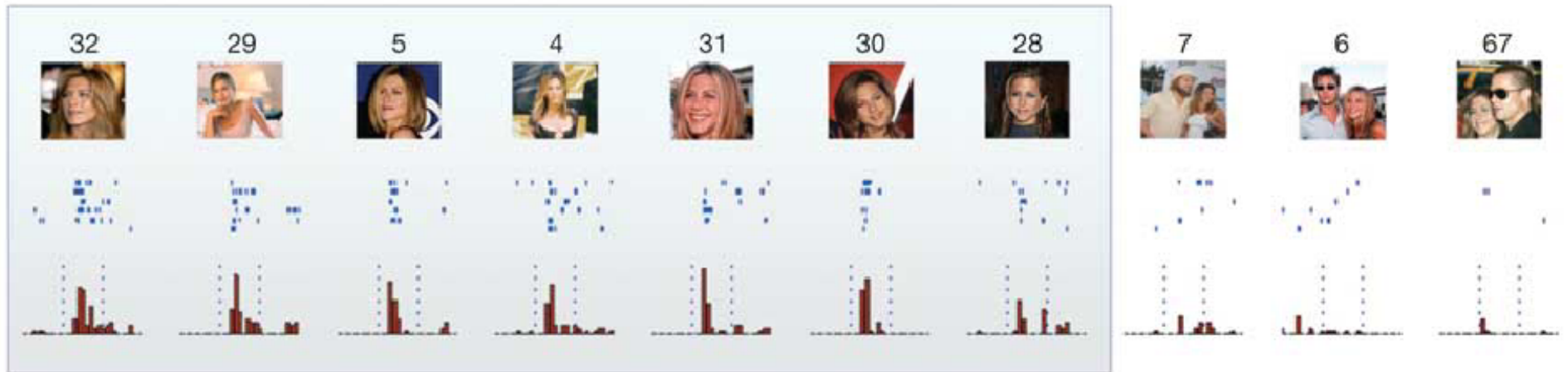
Art and
music

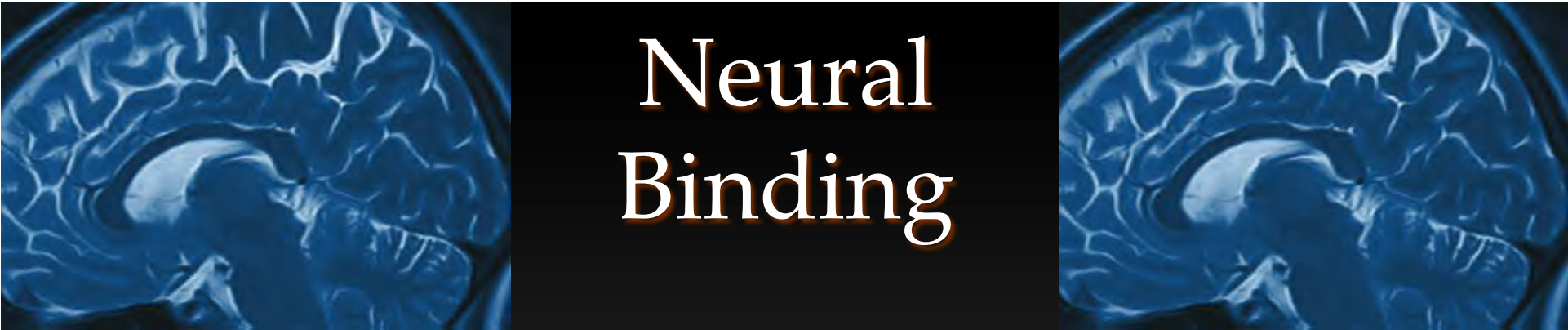
A**Simple****B****Perforated****C****Multiple Spine Bouton**



Circles indicate recognizable sites of synaptic contact.

This image represents less than 1/100 of one percent of the volume of neuropil in the ganglion.





Neural Binding

Combining 2 neural inputs into 1: “red circle”

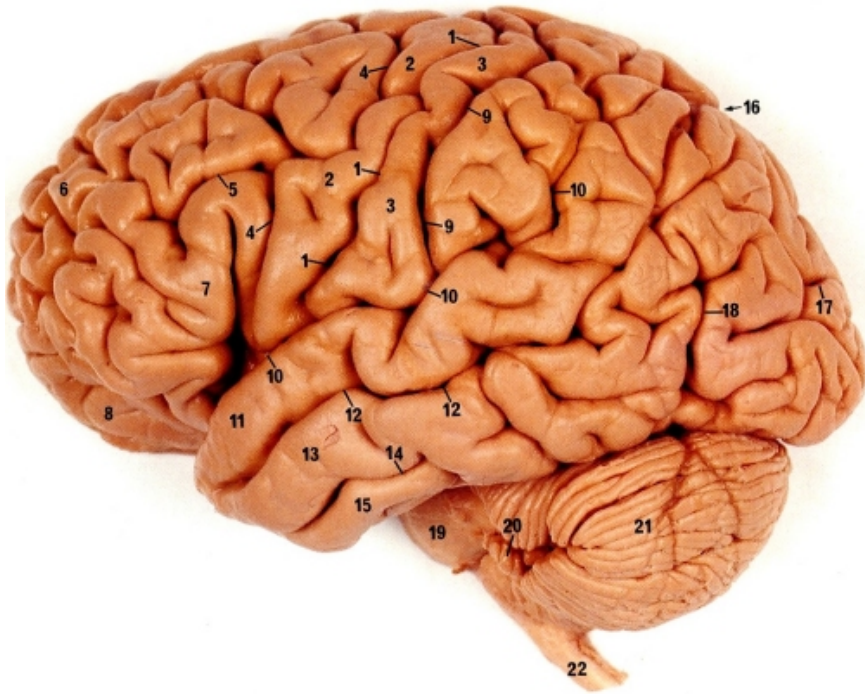
Downstream neural inputs: closer to muscles & sensory organs.

Upstream neural inputs: further away from muscles & sensory organs.

Neural pathways from downstream regions “converge” on their way upstream at “convergence zones”

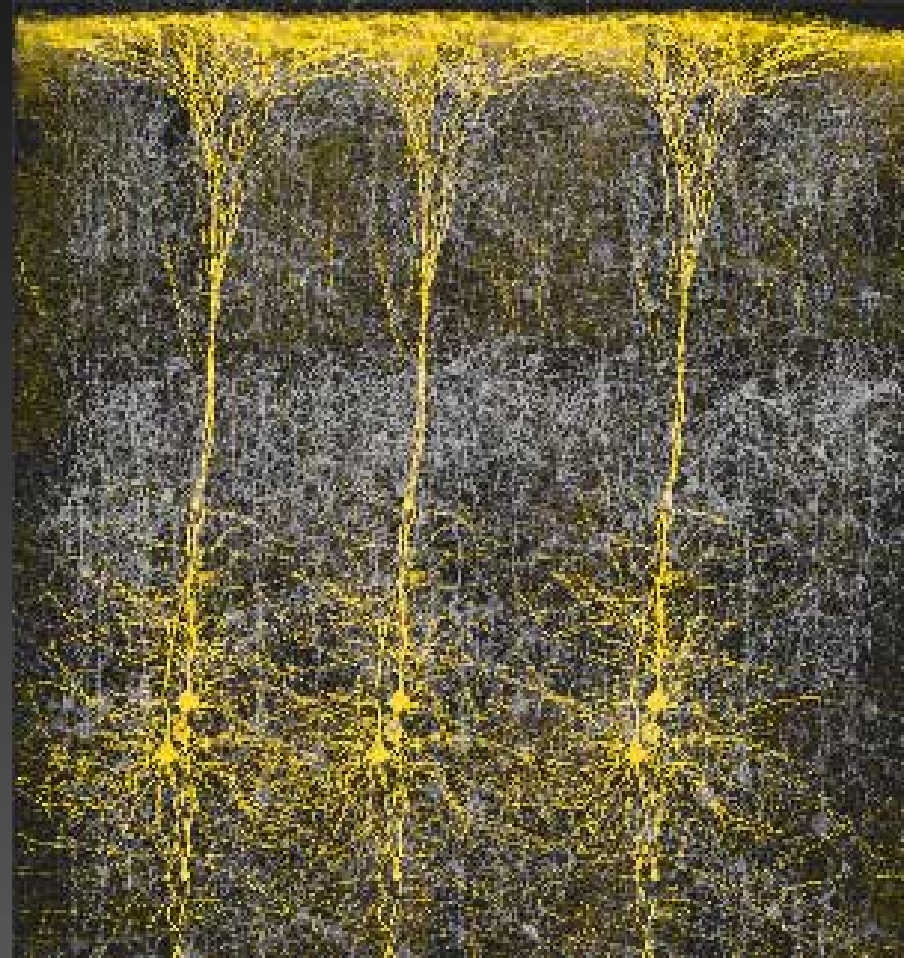
Information from downstream and upstream is integrated at convergence zones via neural binding.

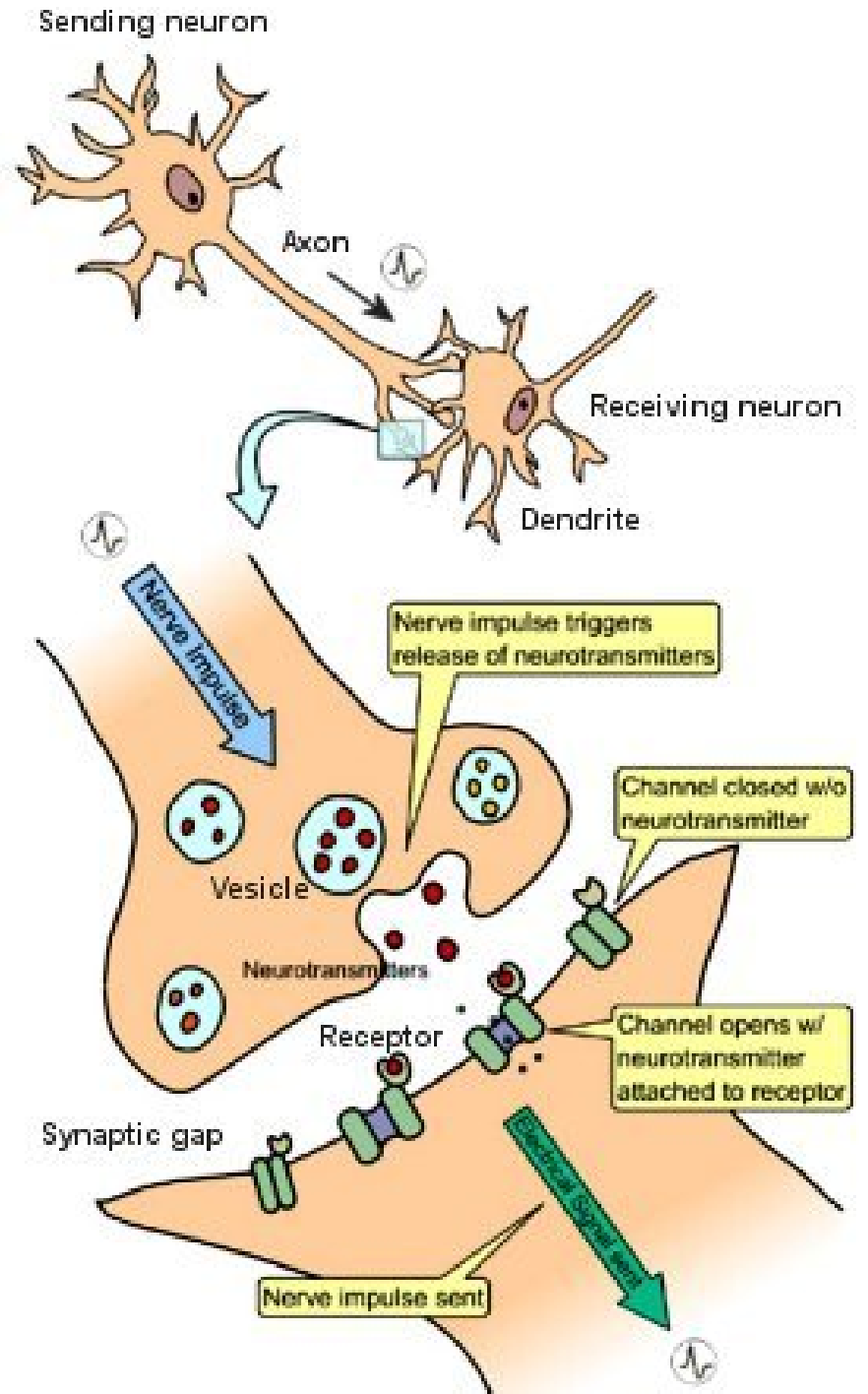
The brain consists of ~ a hundred billion neurons, 10^{11} , 100,000,000,000, ~ # stars in the Milky Way.



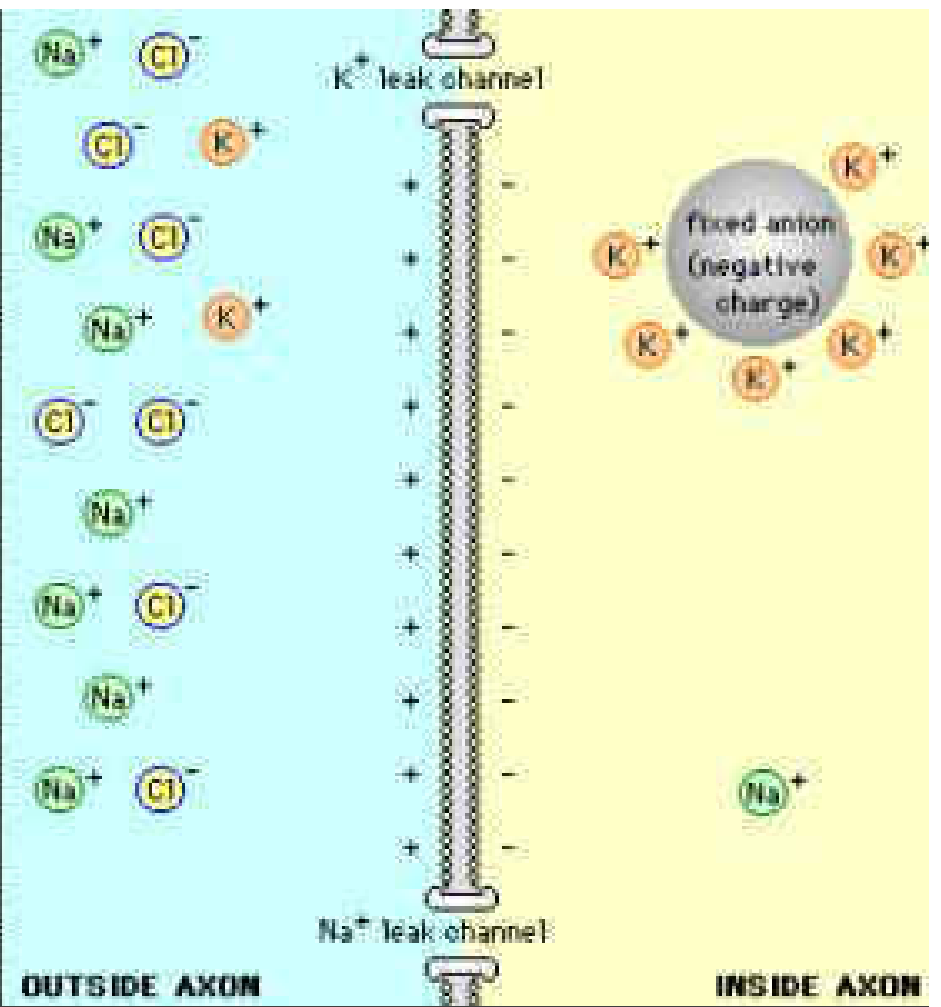
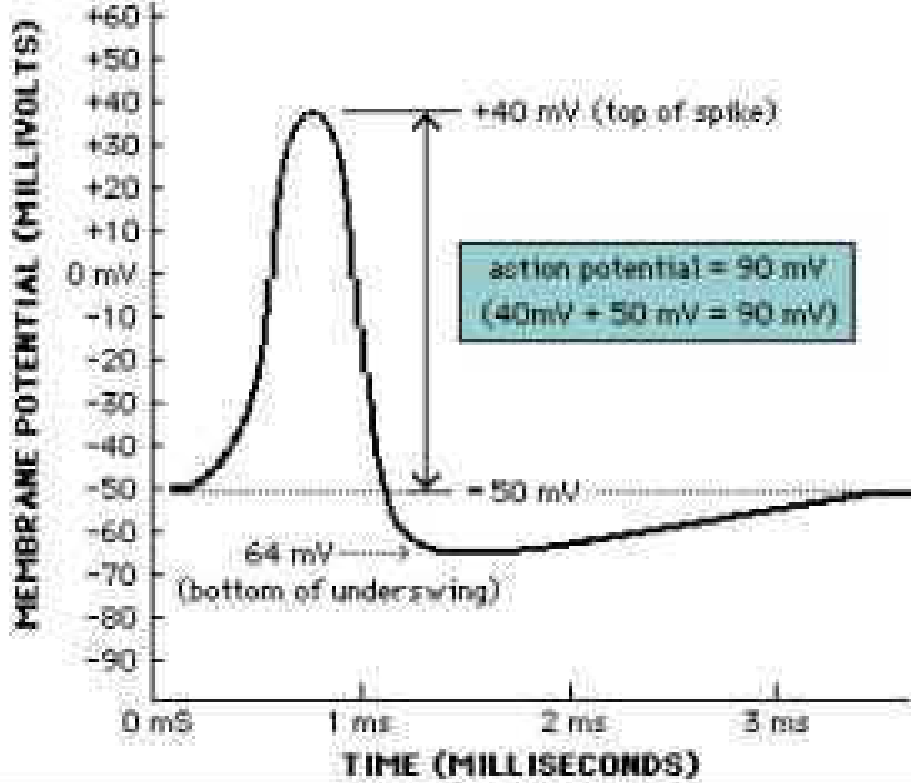
The brain consists of ~ a thousand trillion synaptic connections between the hundred billion neurons, 10^{15} , 1,000,000,000,000,000 ~ # seconds in 30 million years.

86,400 seconds/day
31,546,000 seconds/year
1 trillion sec. 30,000 yrs
1,000 trillion seconds =
30 million years



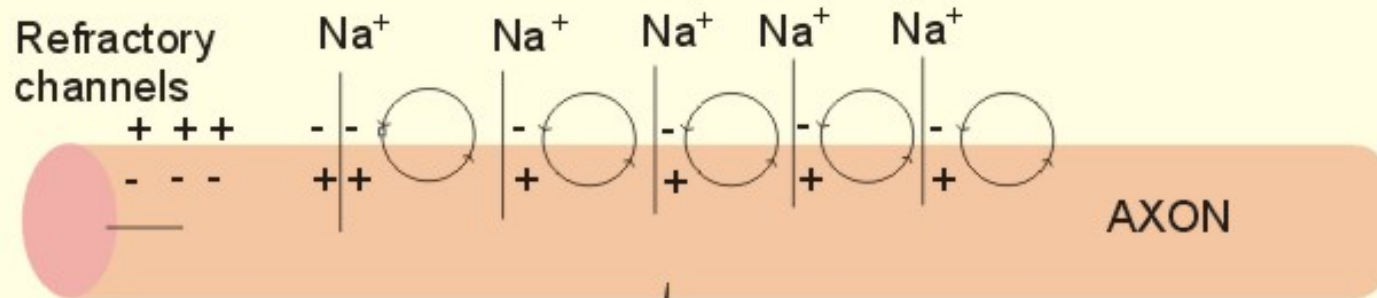
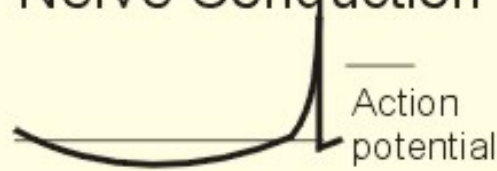


resting potential	top of spike	action potential	underswing
-50 mV	+40 mV	90 mV	-64 mV



Nerve Conduction

A: Slow Spread



B: Saltatory Spread



Node of Ranvier (Na⁺ - channels)

Schwann cell (oligodendrocyte)

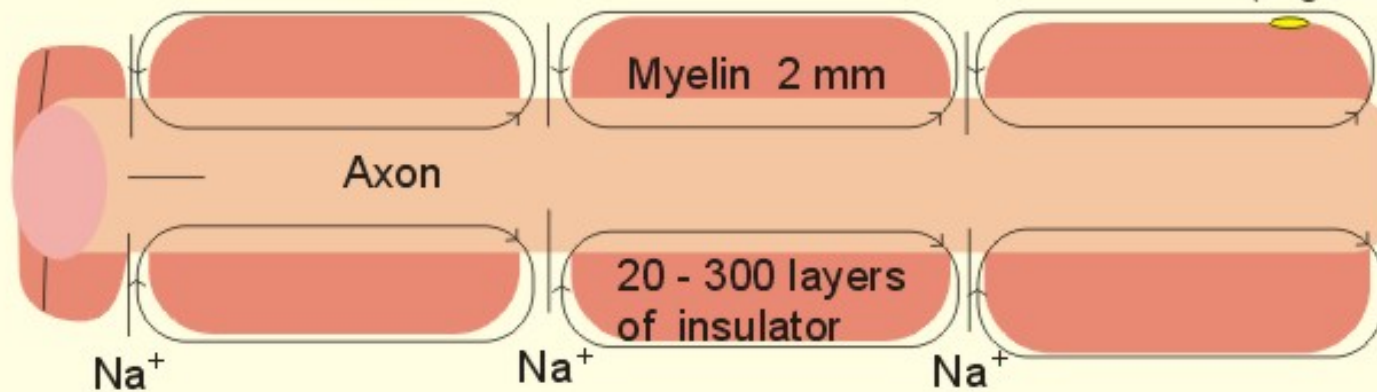
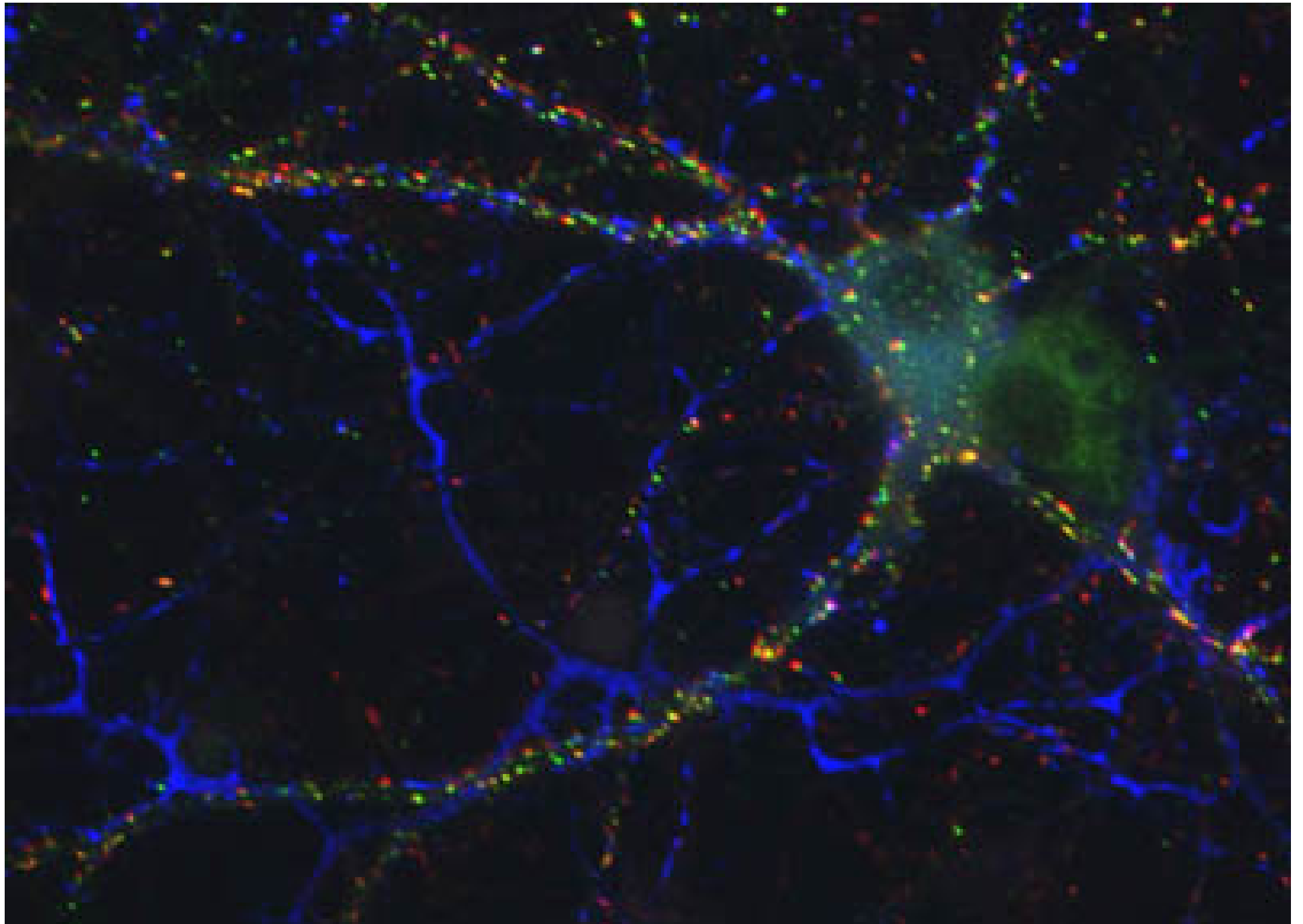
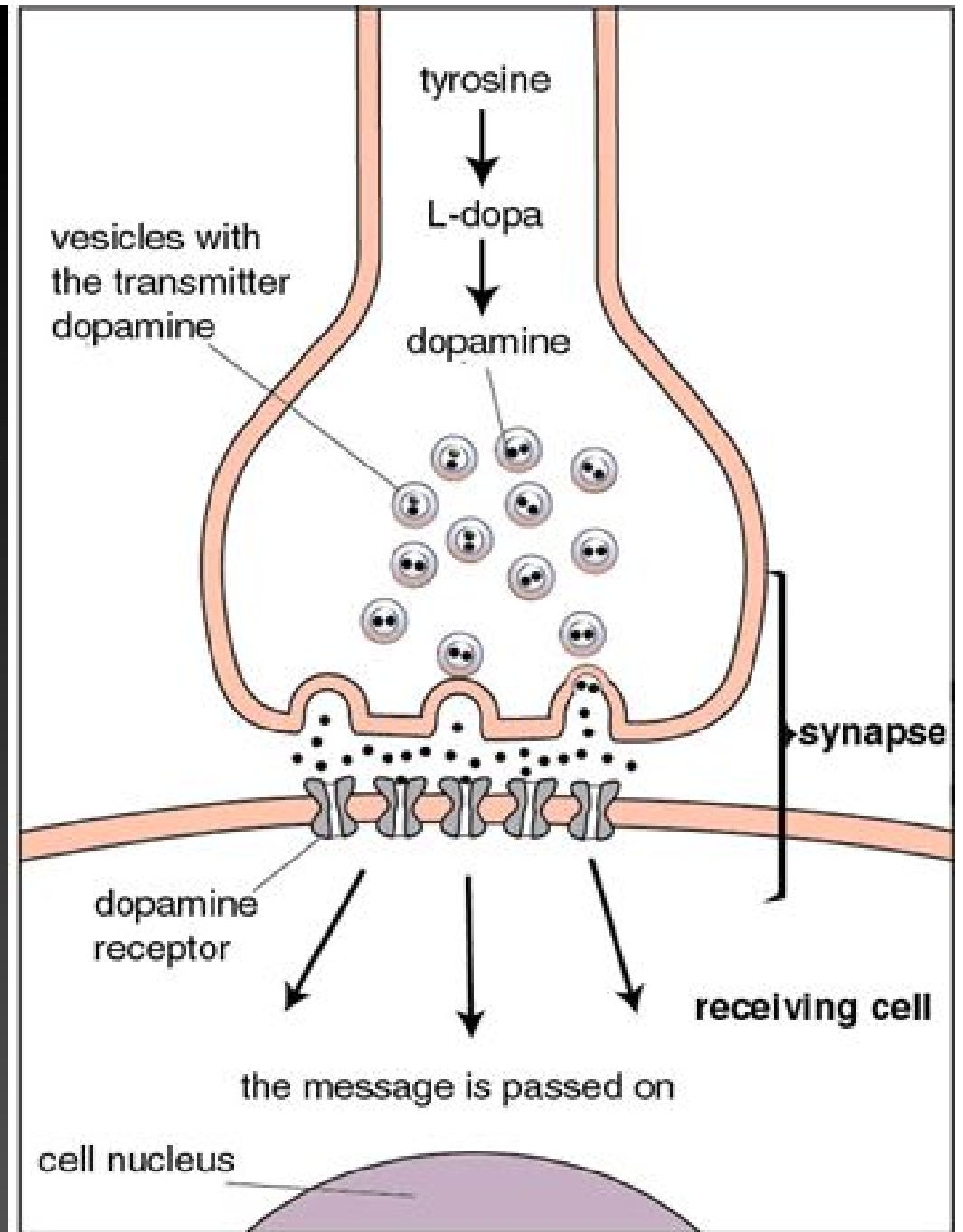


Fig. 1-8

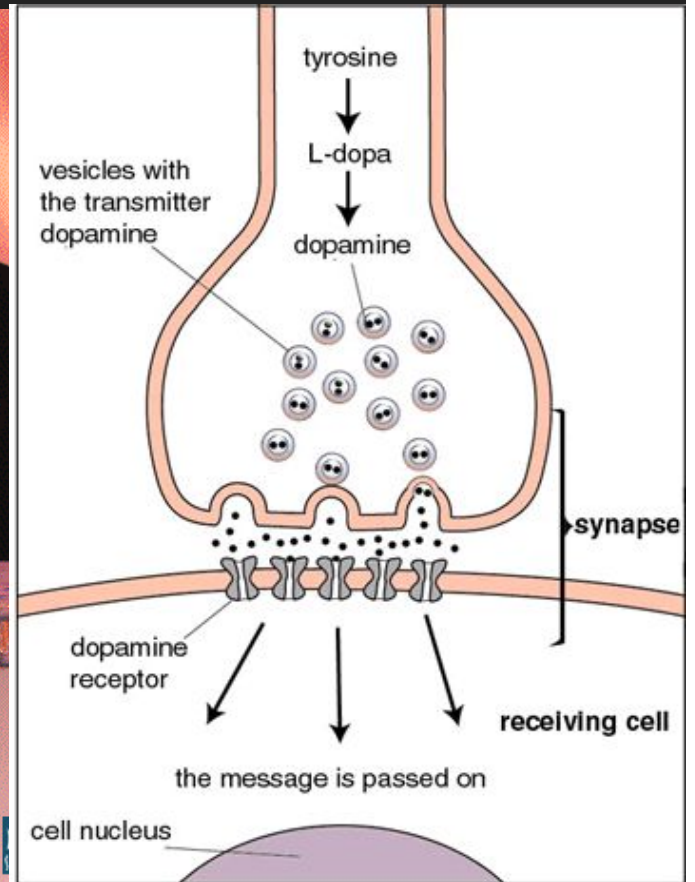
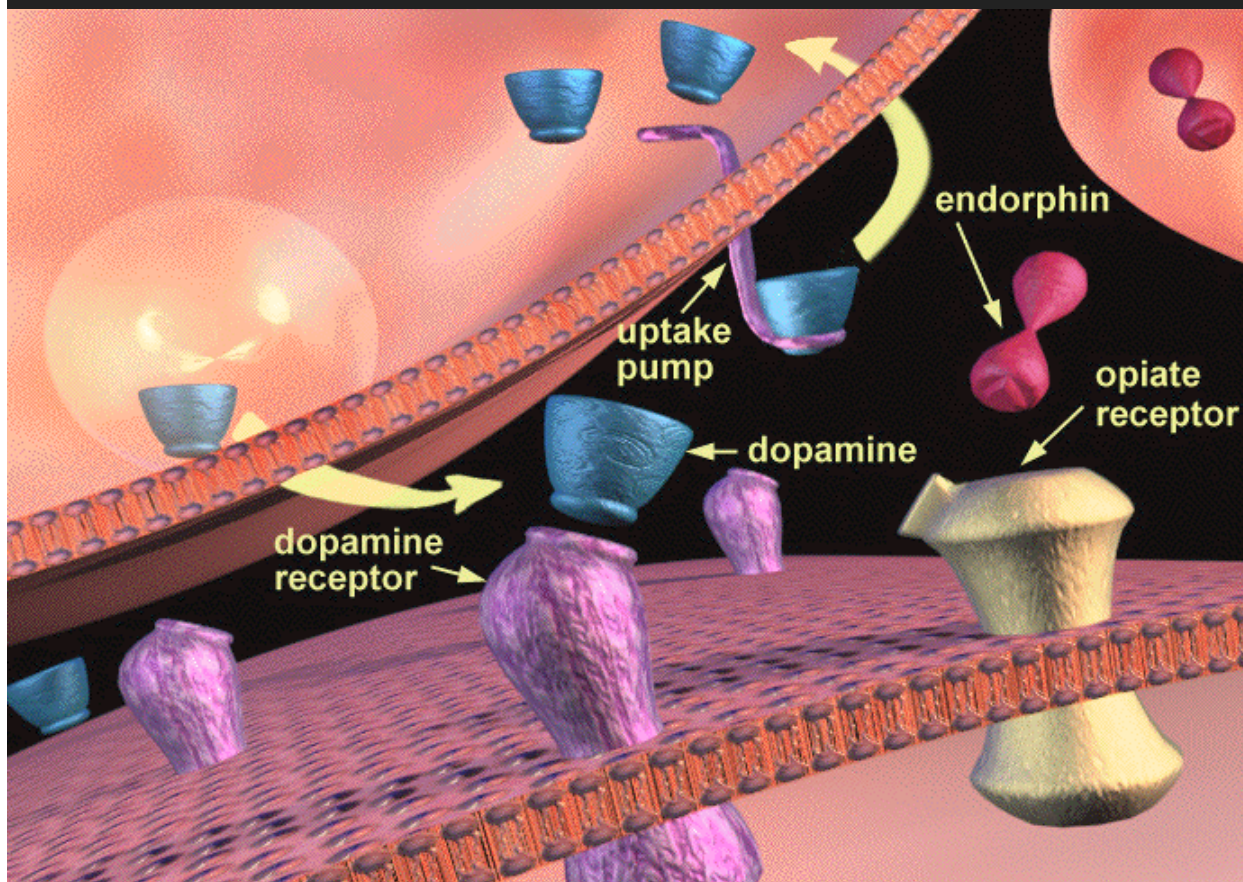




Brugger & Mohr: 40 subjects L-Dopa, increases the levels of dopamine. Caused believers & skeptics to identify scrambled faces & real and jumbled words as normal. Dopamine > patternicity Effect stronger with skeptics than believers.

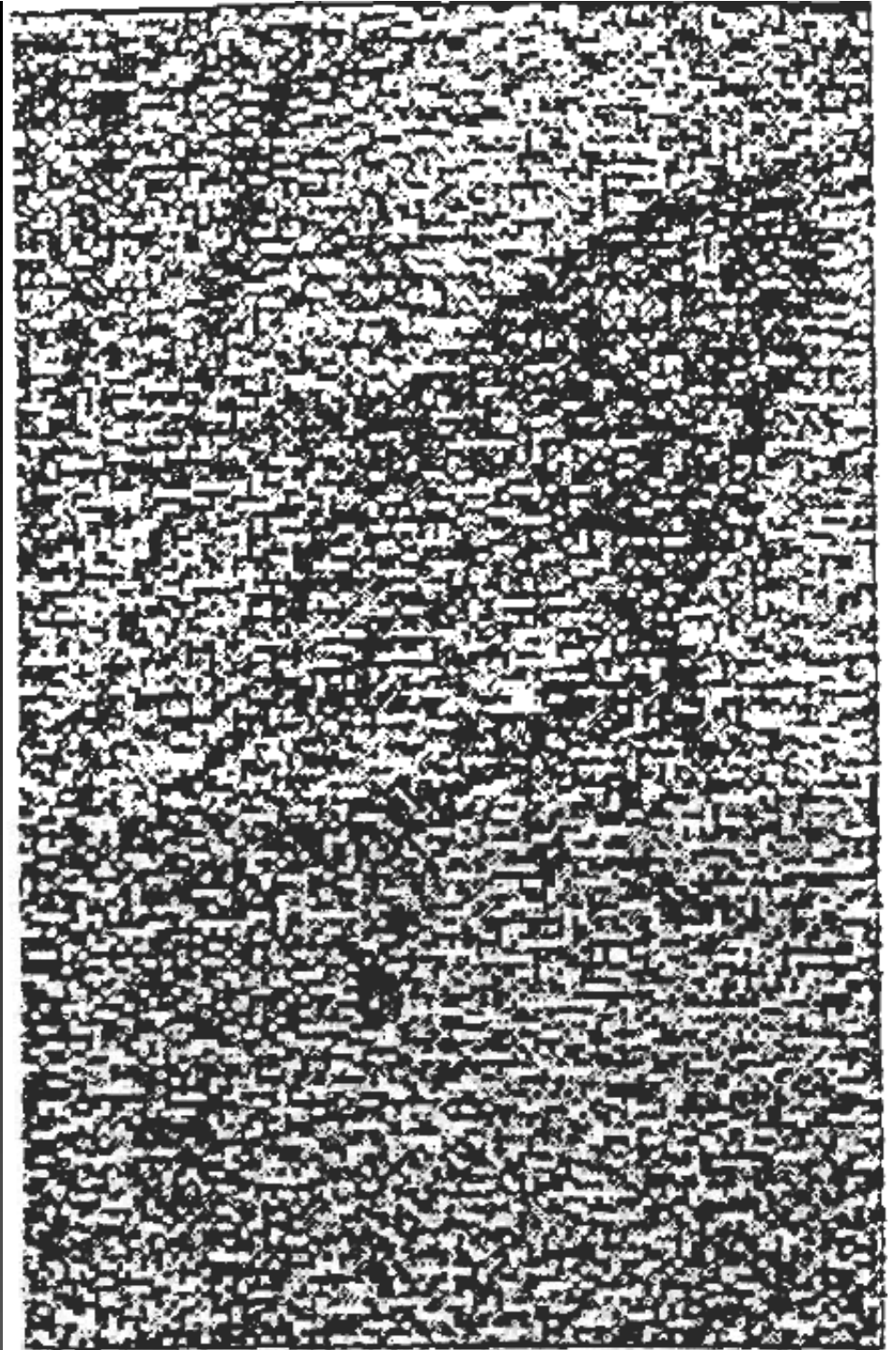


Dopamine, Patternicity, Creativity, & Madness

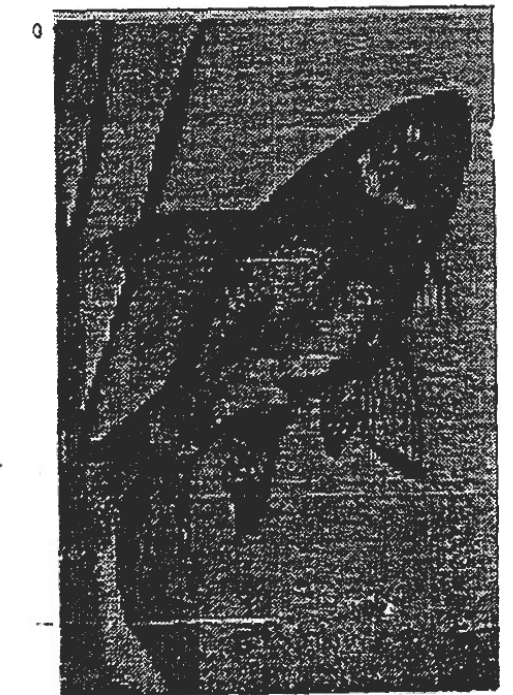
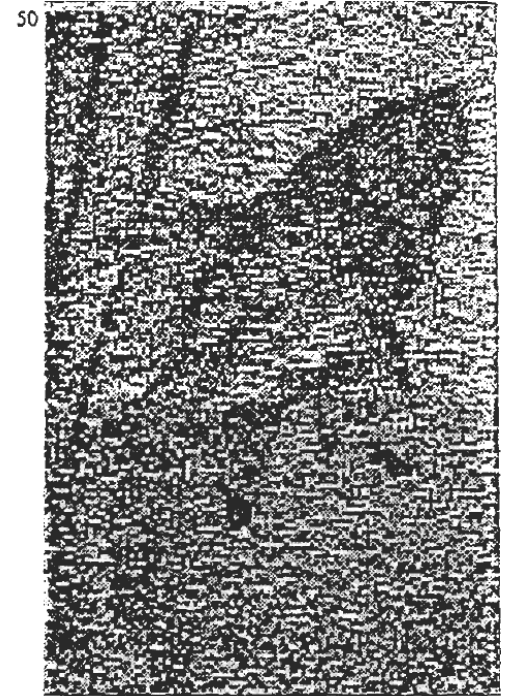
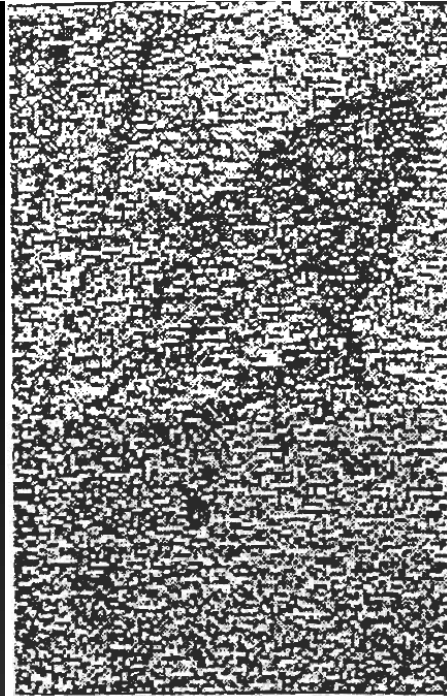


Patternicity & Paranormal Belief

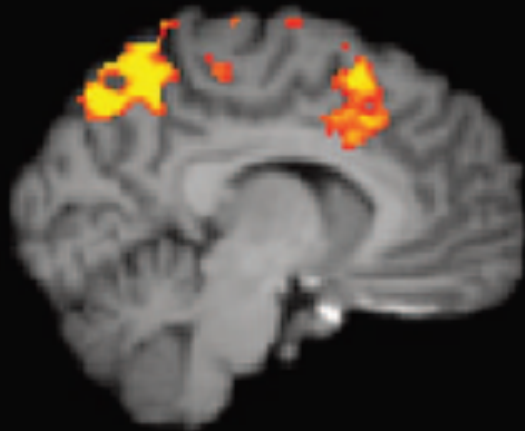
Believers in ESP
> to see objects
in 70%
degraded image
but incorrectly
identified it.



Did you see
a fish or
something
else?



fMRI Study by Sam Harris, Sameer Sheth,
Mark Cohen, *Annals of Neurology*, 12/07
14 adult subjects scanned while evaluating
statements as true, false, or undecidable, press a
button indicating their belief, disbelief or
uncertainty



Mathematical:

$$(2 + 6) + 8 = 16.$$

62 can be evenly divided by 9.

$$1.2^{57} = 32608.5153.$$

Factual:

Most people have 10 fingers and 10 toes.

Eagles are common pets.

The Dow Jones Industrial Average rose 1.2% last Tuesday.

Ethical:

It is bad to take pleasure at another's suffering.

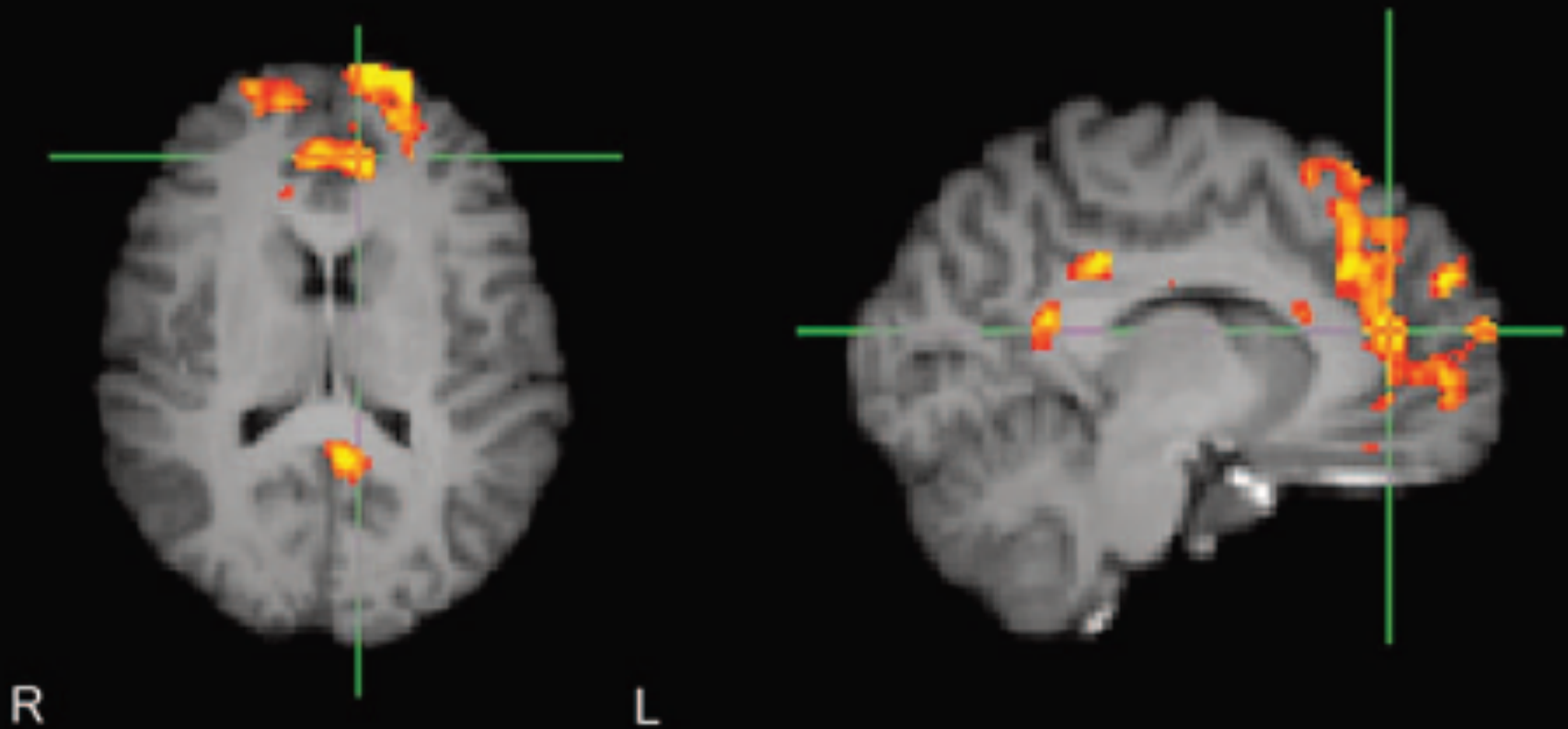
Children should have no rights until they can vote.

It is better to lie to a child than to an adult.

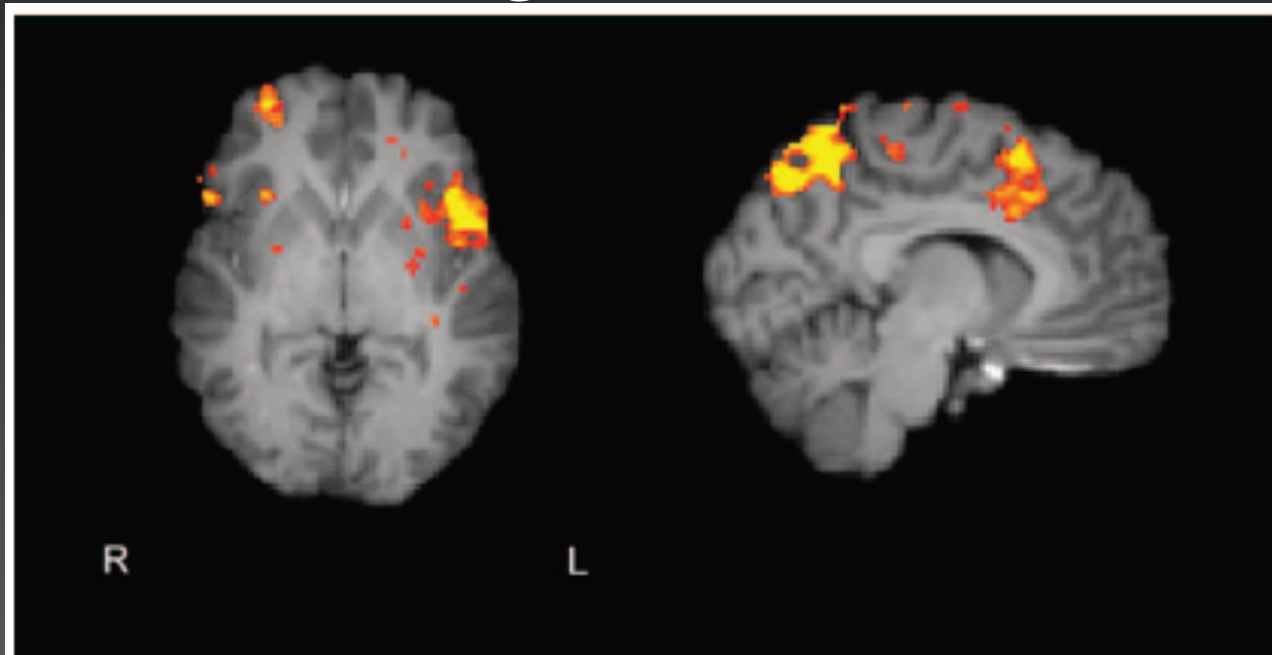
1. Contrasting belief and disbelief in the brain scans yielded a spike in neural activity in the *ventromedial prefrontal cortex*, associated with decision-making and learning in the context of rewards.



2. Contrasting uncertainty with both belief and disbelief revealed elevated neural action in the *anterior cingulate cortex* (ACC), our error detection network.



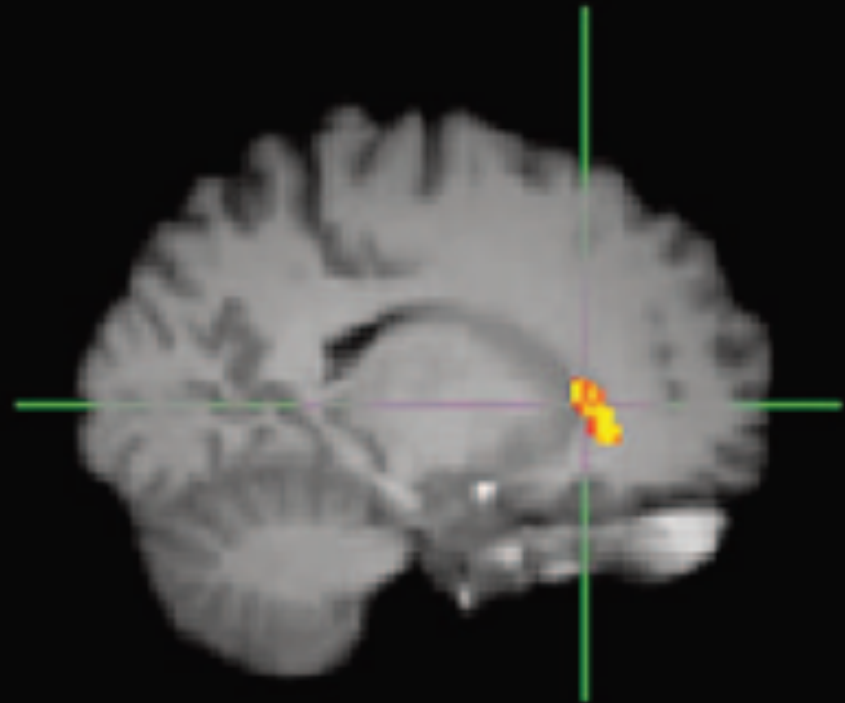
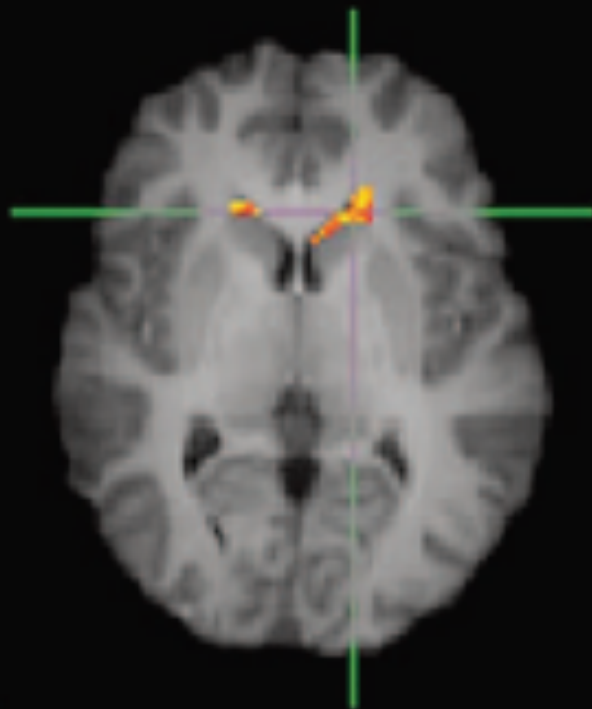
3. Contrasting disbelief and belief showed increased brain response in the *left inferior frontal gyrus*, the *anterior insula* and the *dorsal anterior cingulate*, all associated with responses to negative stimuli, pain perception, and disgust.



4. Significant reaction time differences in evaluating statements:

Belief statements are evaluated quickly

Disbelief/Uncertain statements slower



L

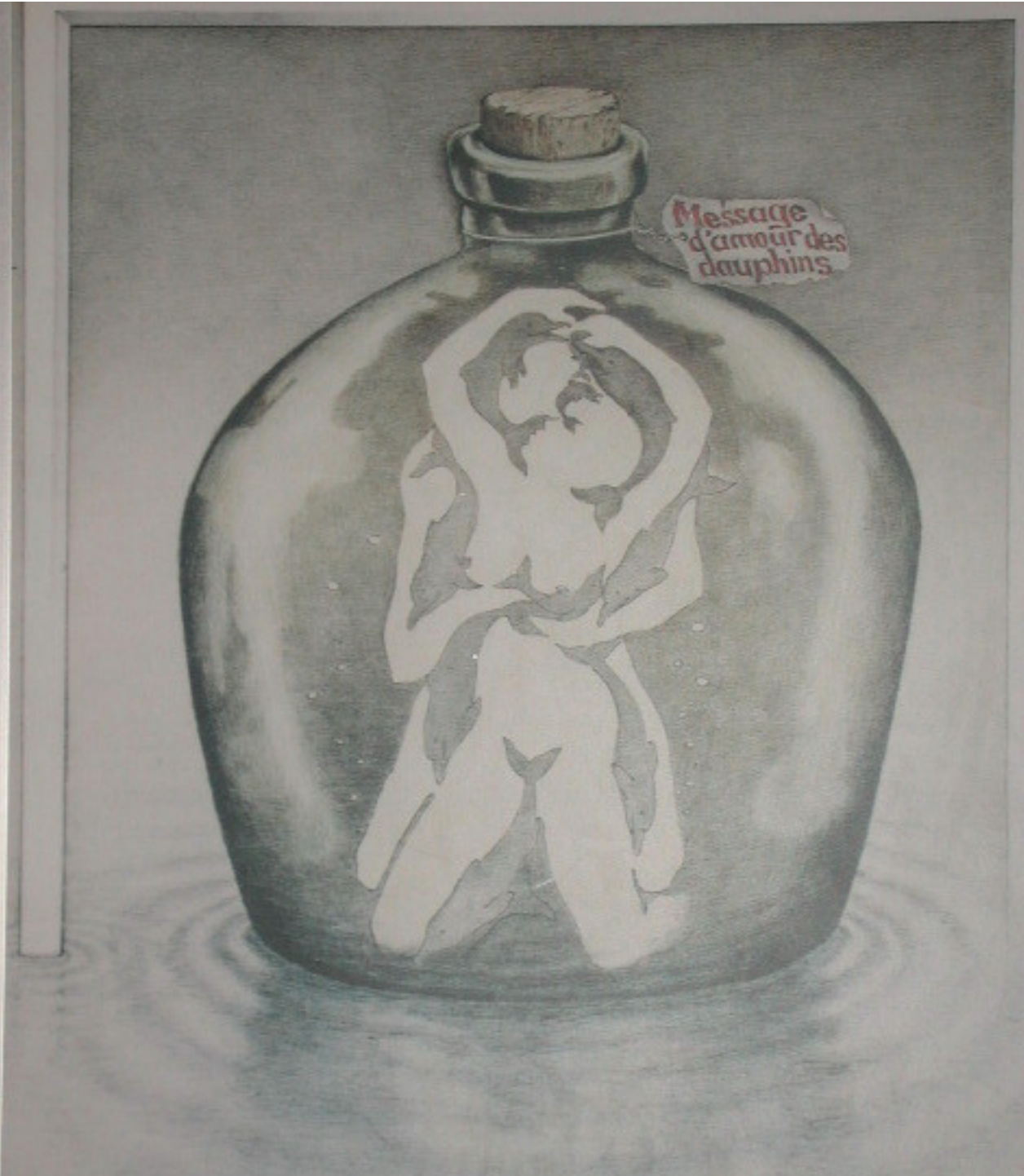
We accept appearances as reality until they prove otherwise.

Belief comes quickly and naturally.

Skepticism is slow and unnatural.

Most people have a low tolerance for ambiguity.

The mere comprehension of a statement entails the tacit acceptance of its being true, whereas disbelief requires a subsequent process of rejection.



Message
d'amour des
dauphins







Your feet can be very too.



Your feet can be very too.

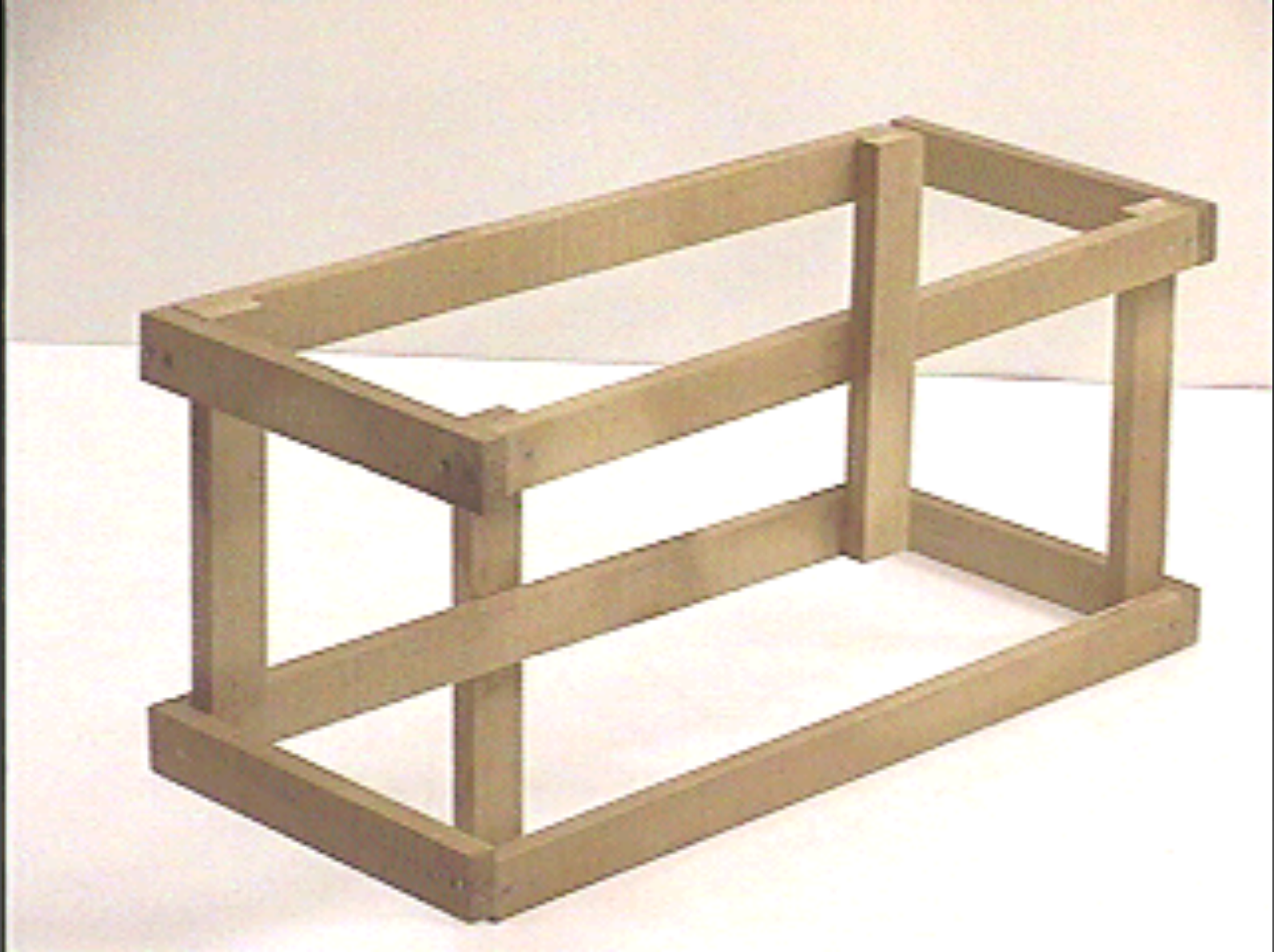








The Impossible Crate Illusion



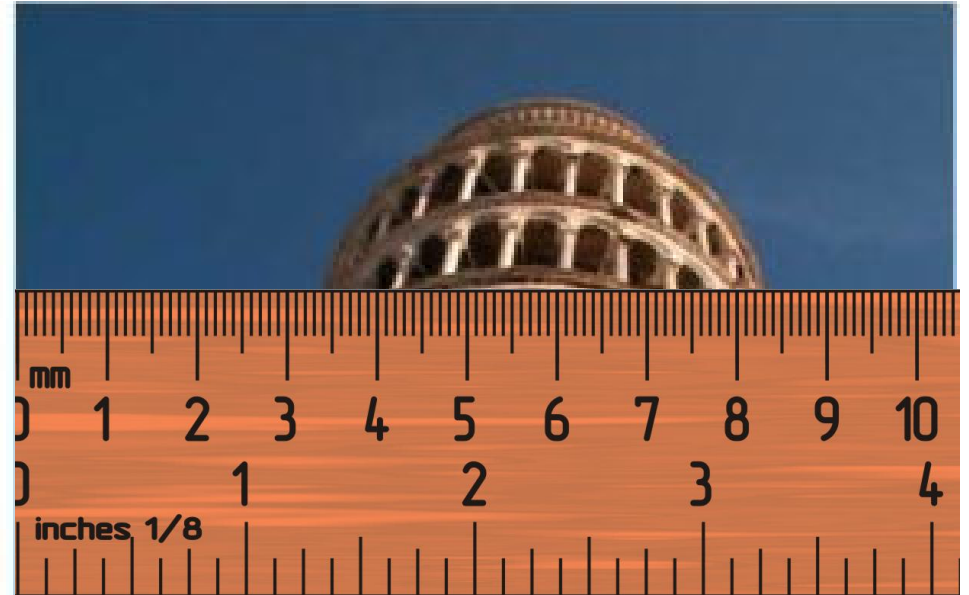
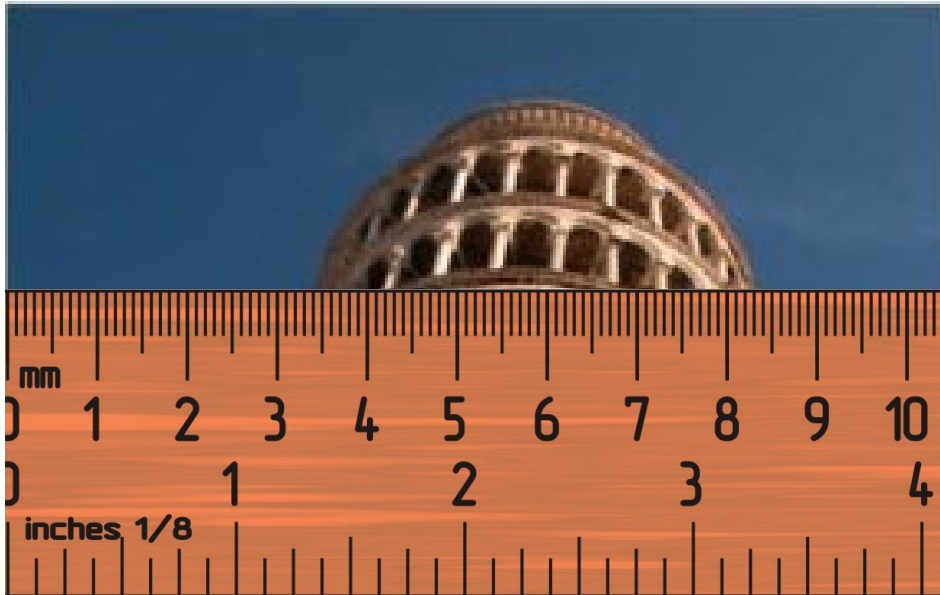
Jerry Andrus' 3D Impossible Crate





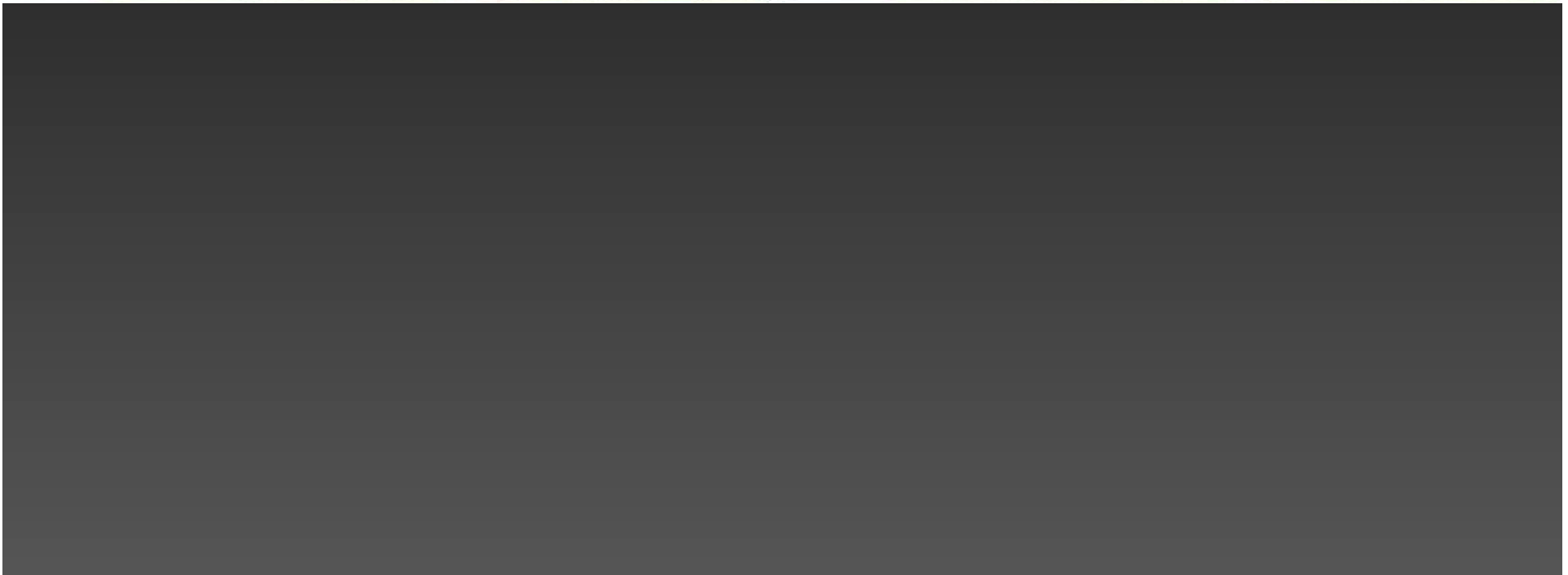


Fred Kingdom, Ali Yoonessi, Elena Gheorgiu, McGill U.



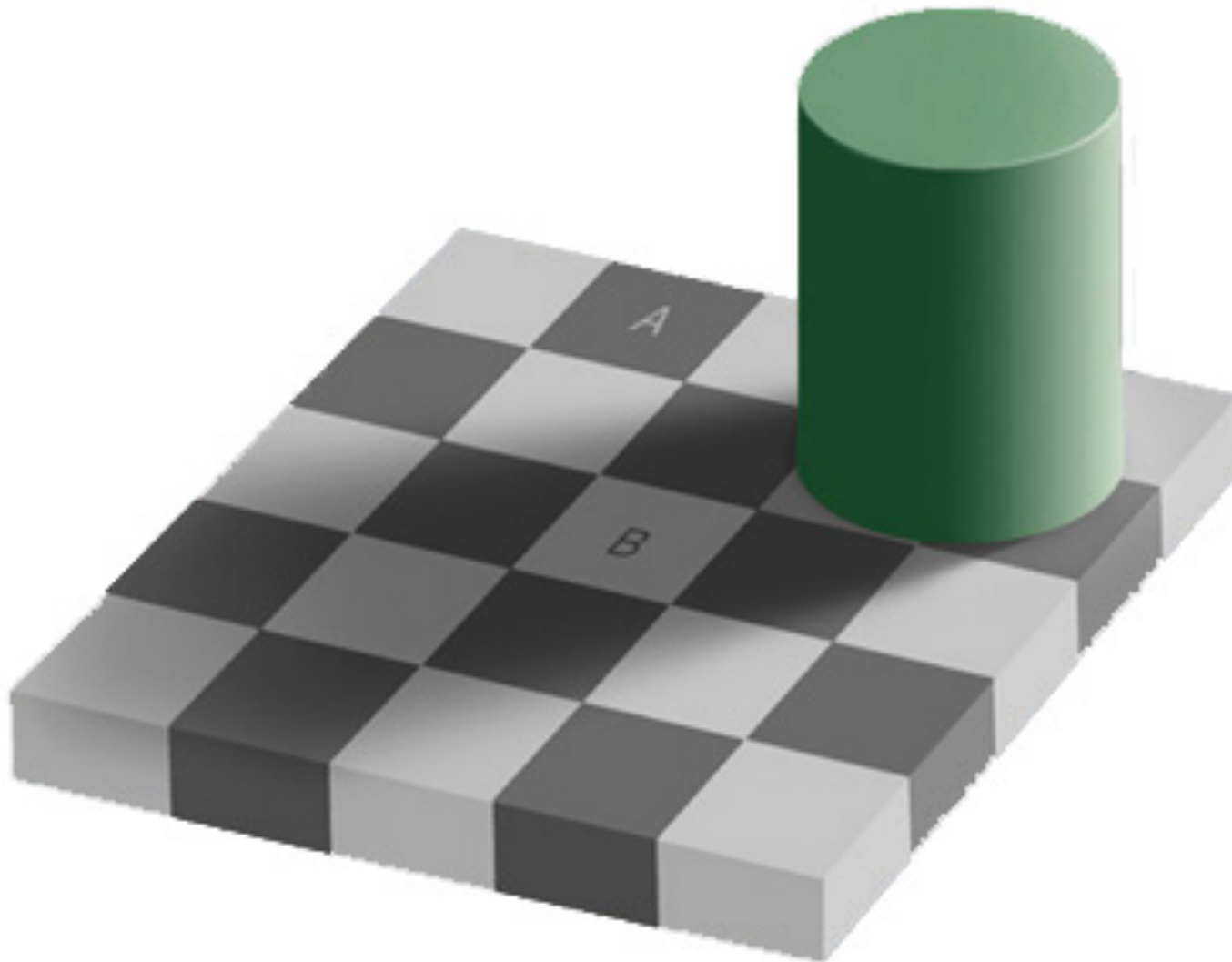
Fred Kingdom, Ali Yoonessi, Elena Gheorgiu, McGill U.

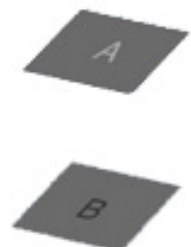
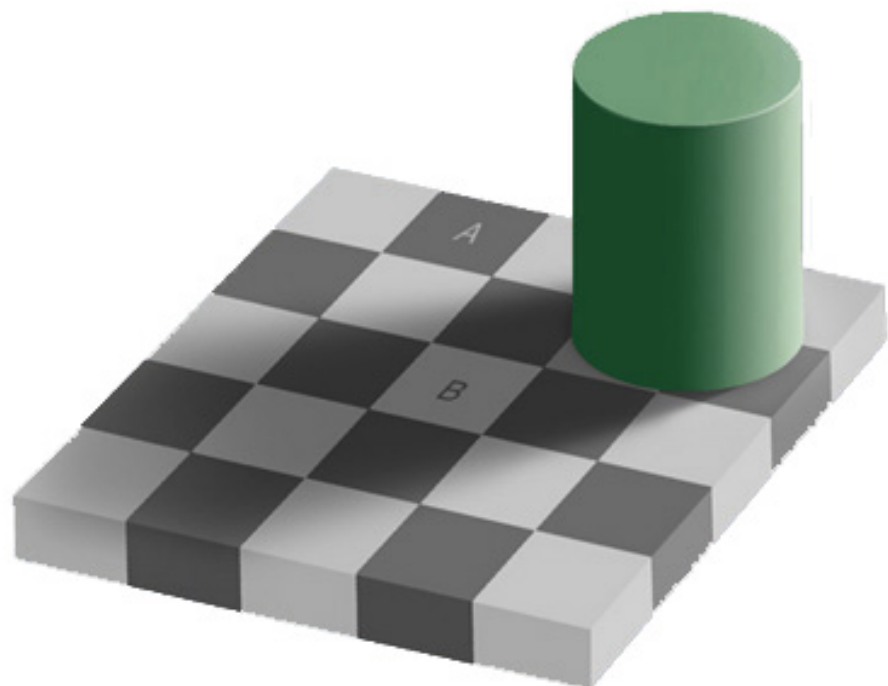


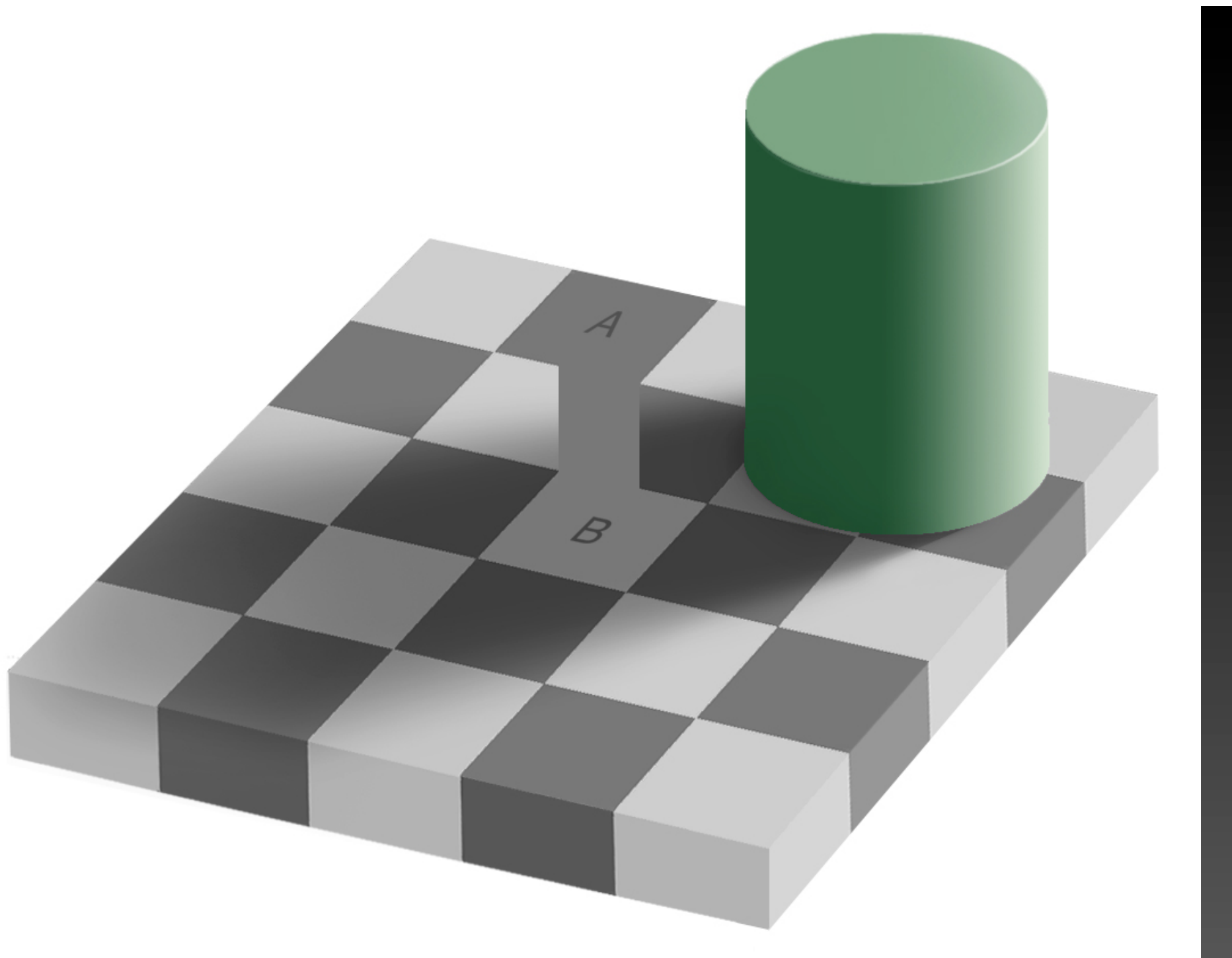


The Shadow Illusion

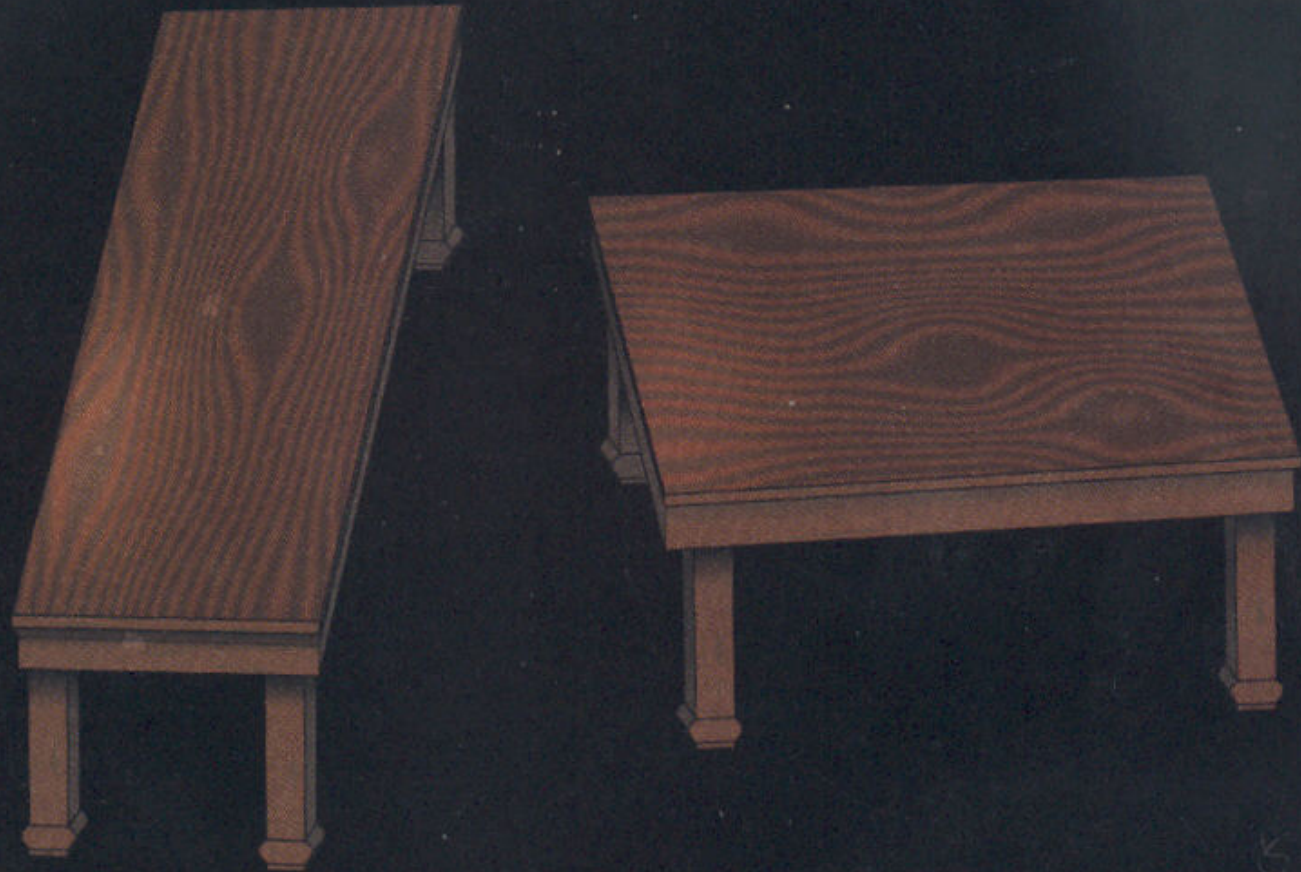
Edward H. Adelson, MIT



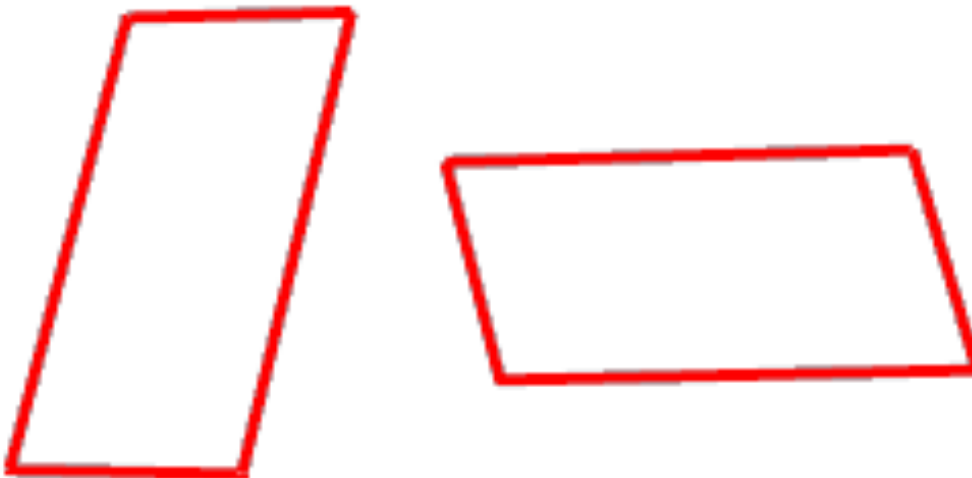
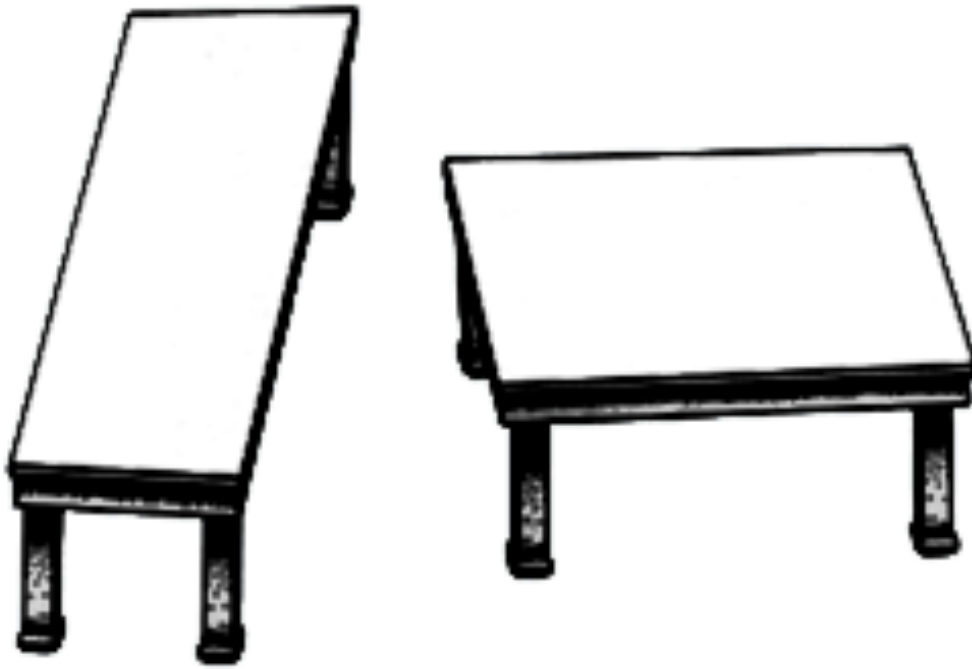




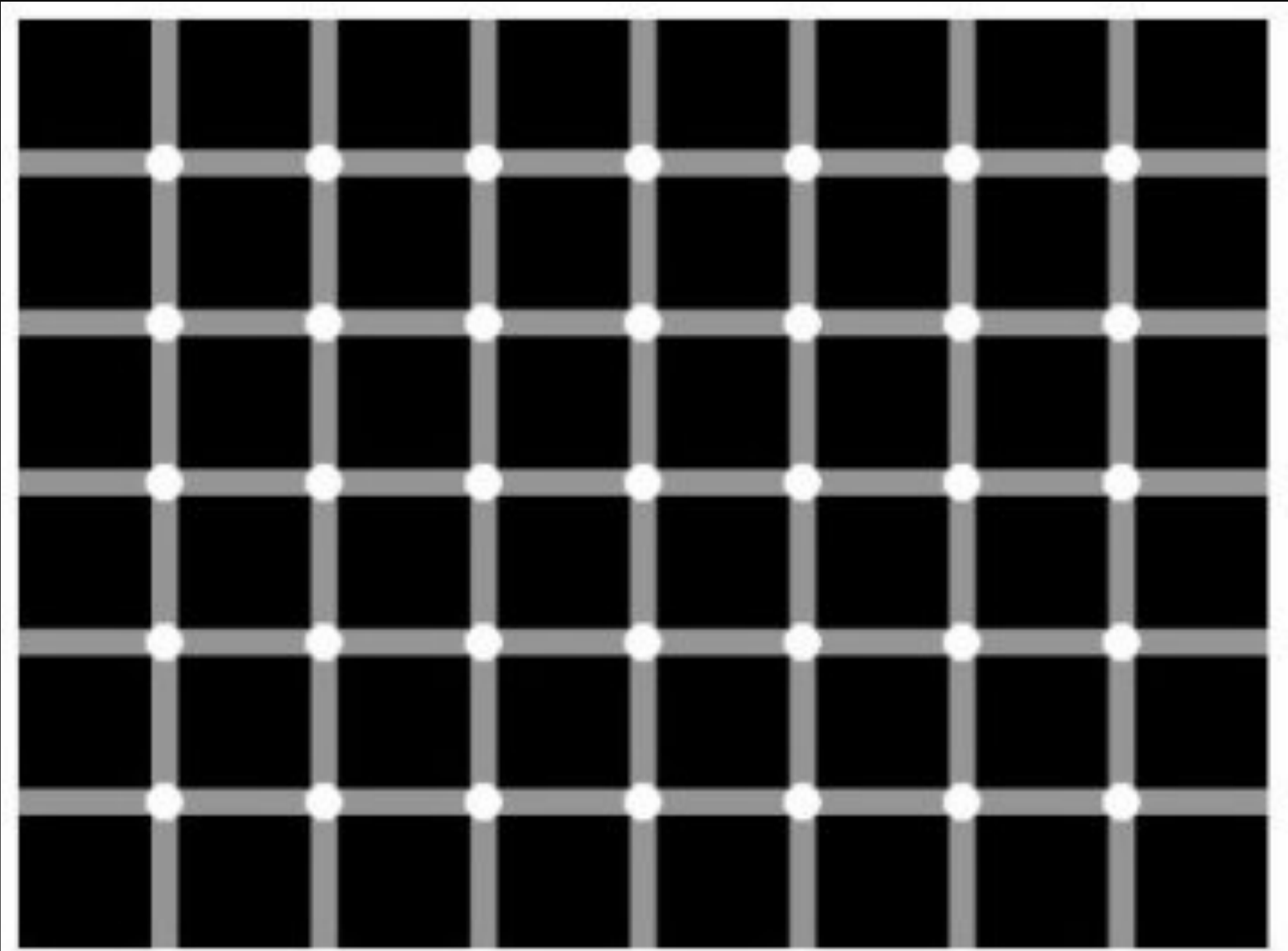
The Table Illusion



Illusion by Roger Shepard

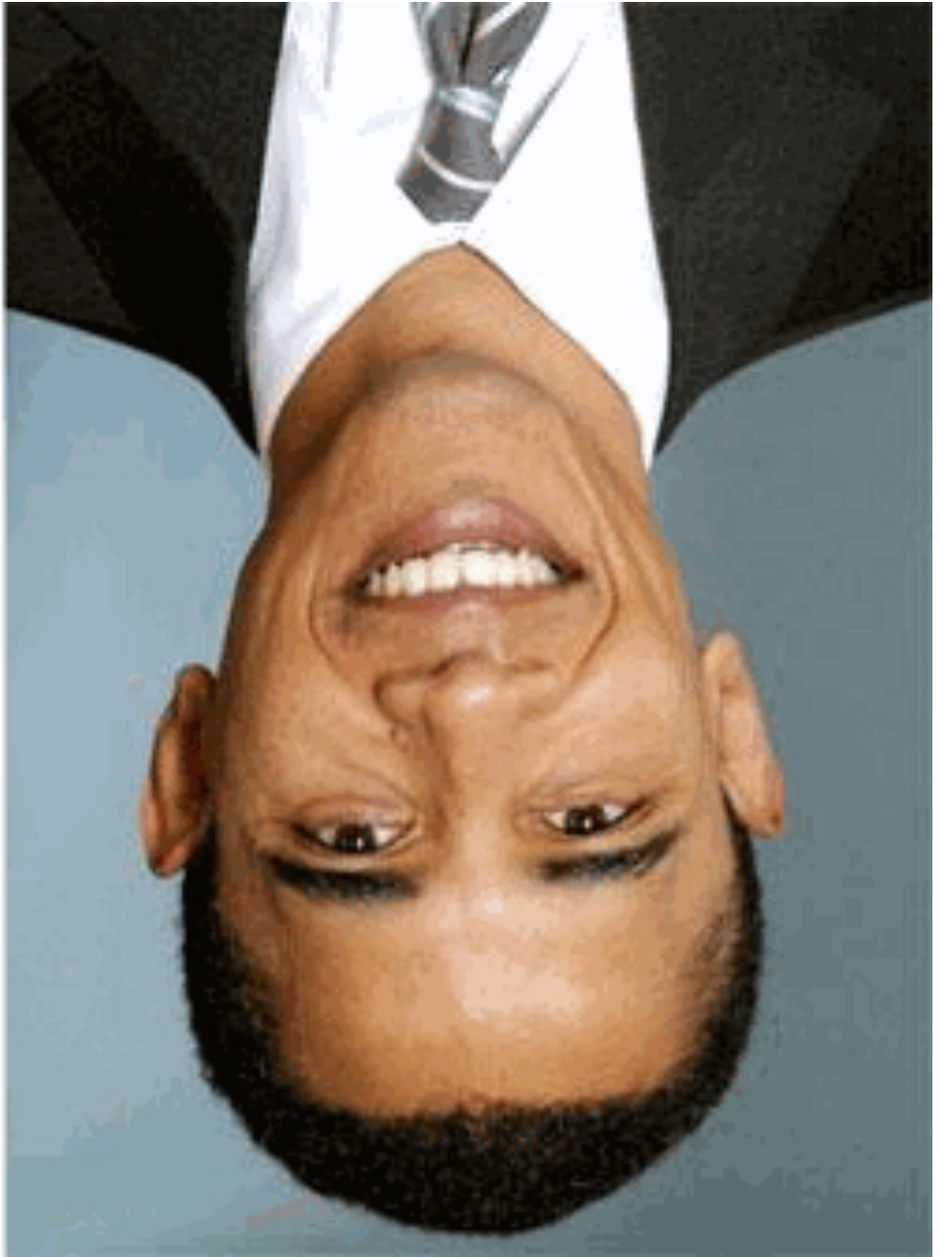
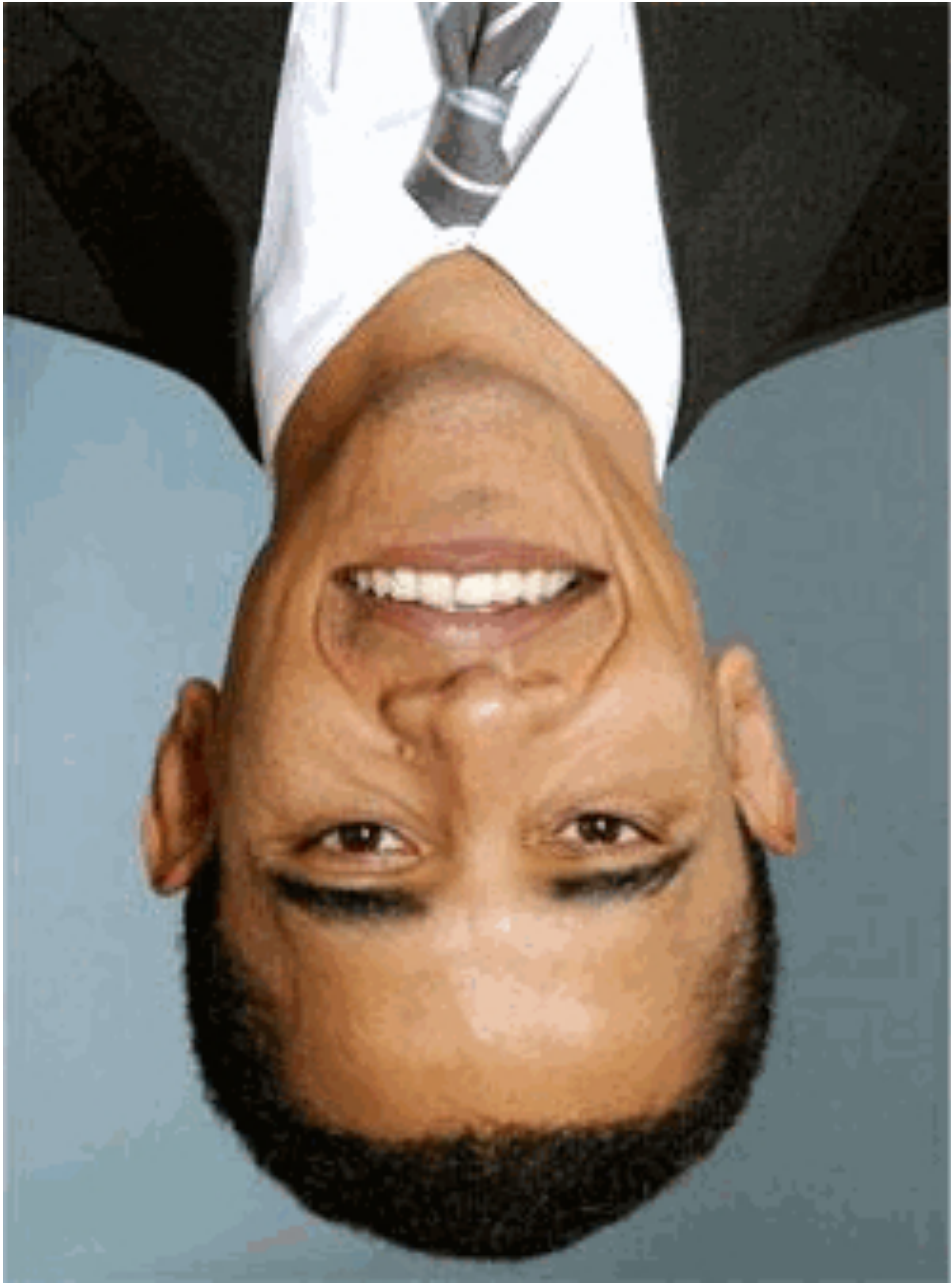


2000 Presidential Election Florida Recount Count the Black Chads!







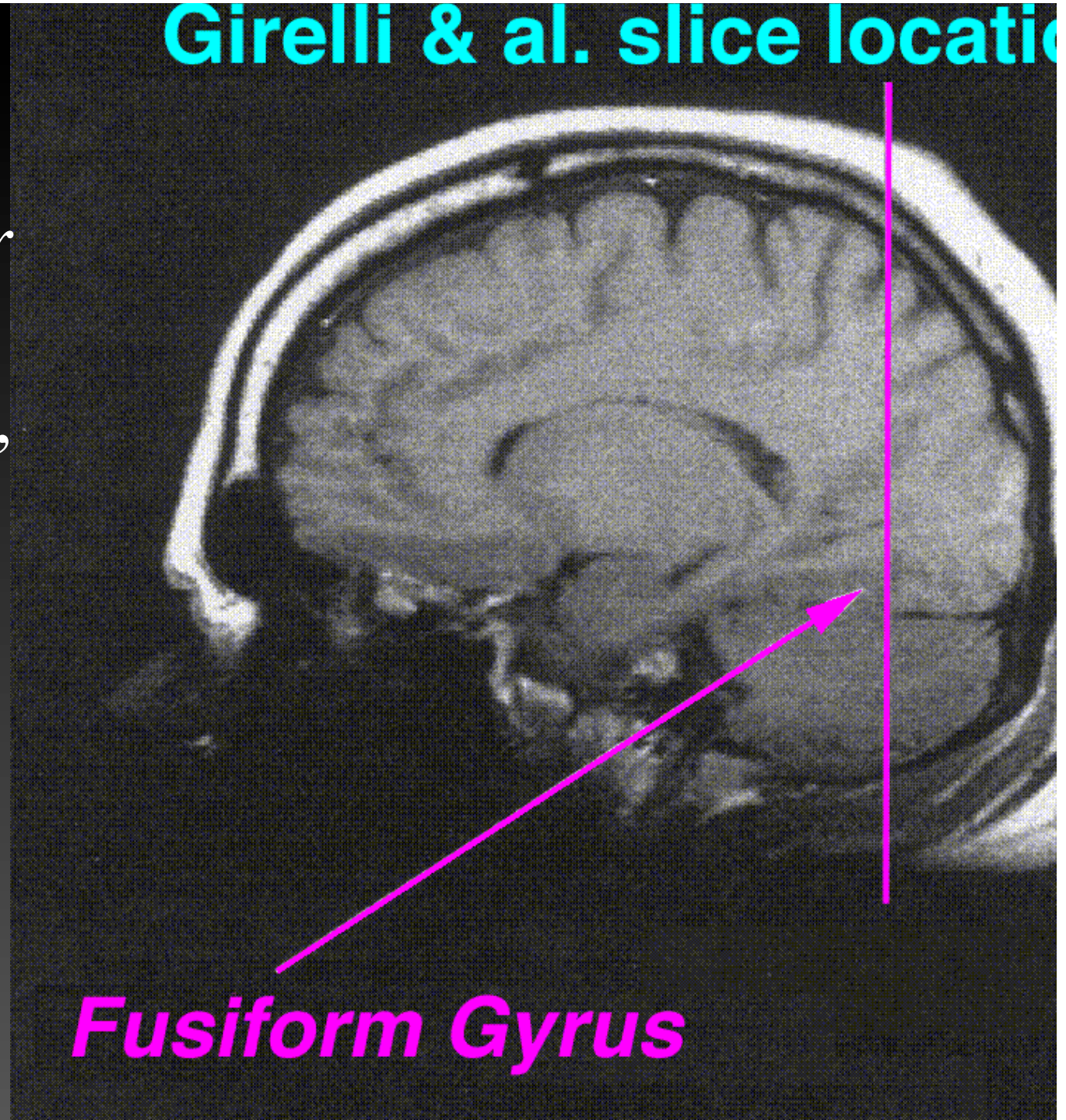




Effect 1st discovered by Peter Thompson, York U

Girelli & al. slice location

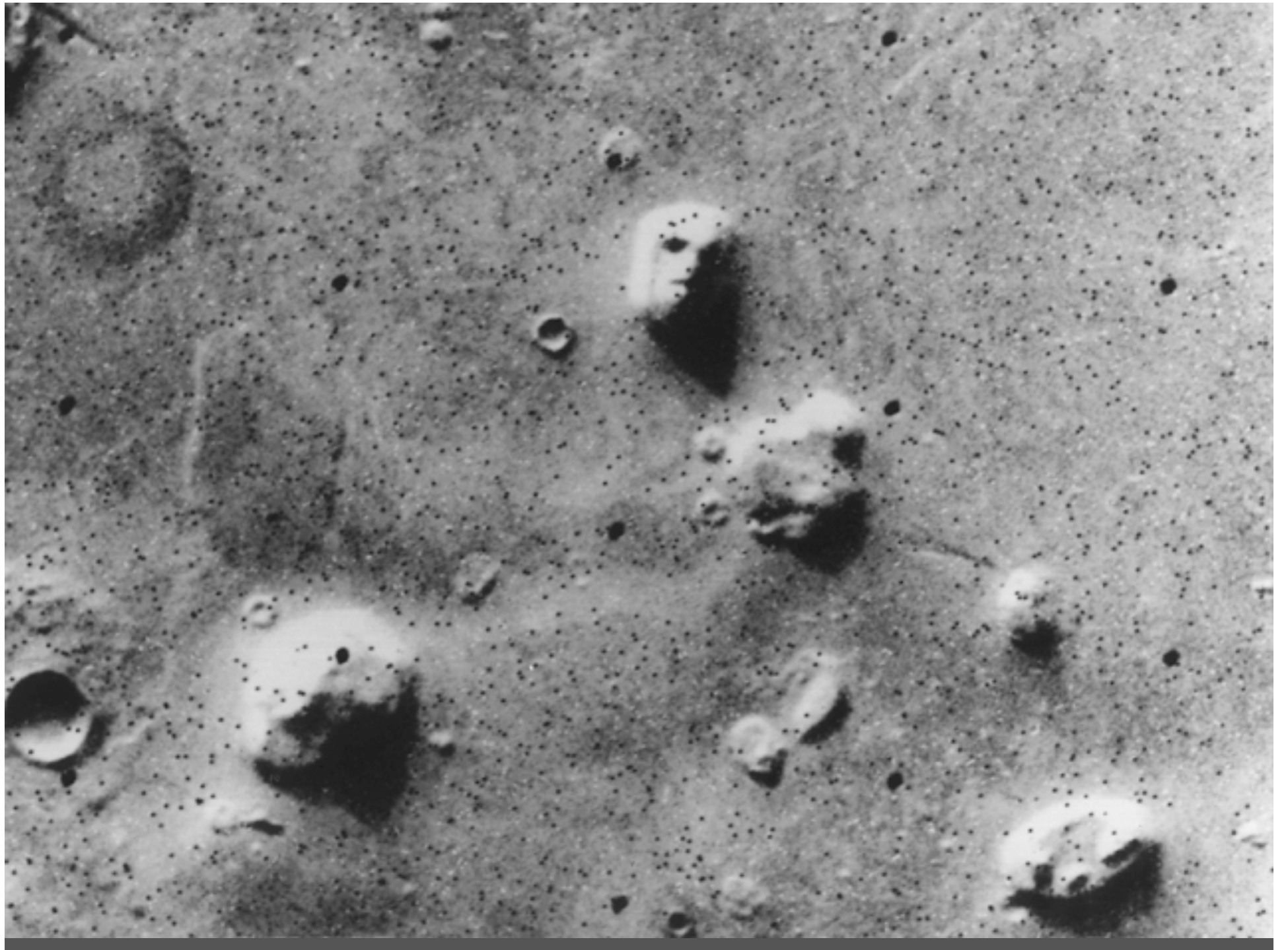
2 cell types:
rapid
magnocellular
pathway
(general face),
slower
parvocellular
pathway
(facial details
such as eyes,
nose, and
mouth

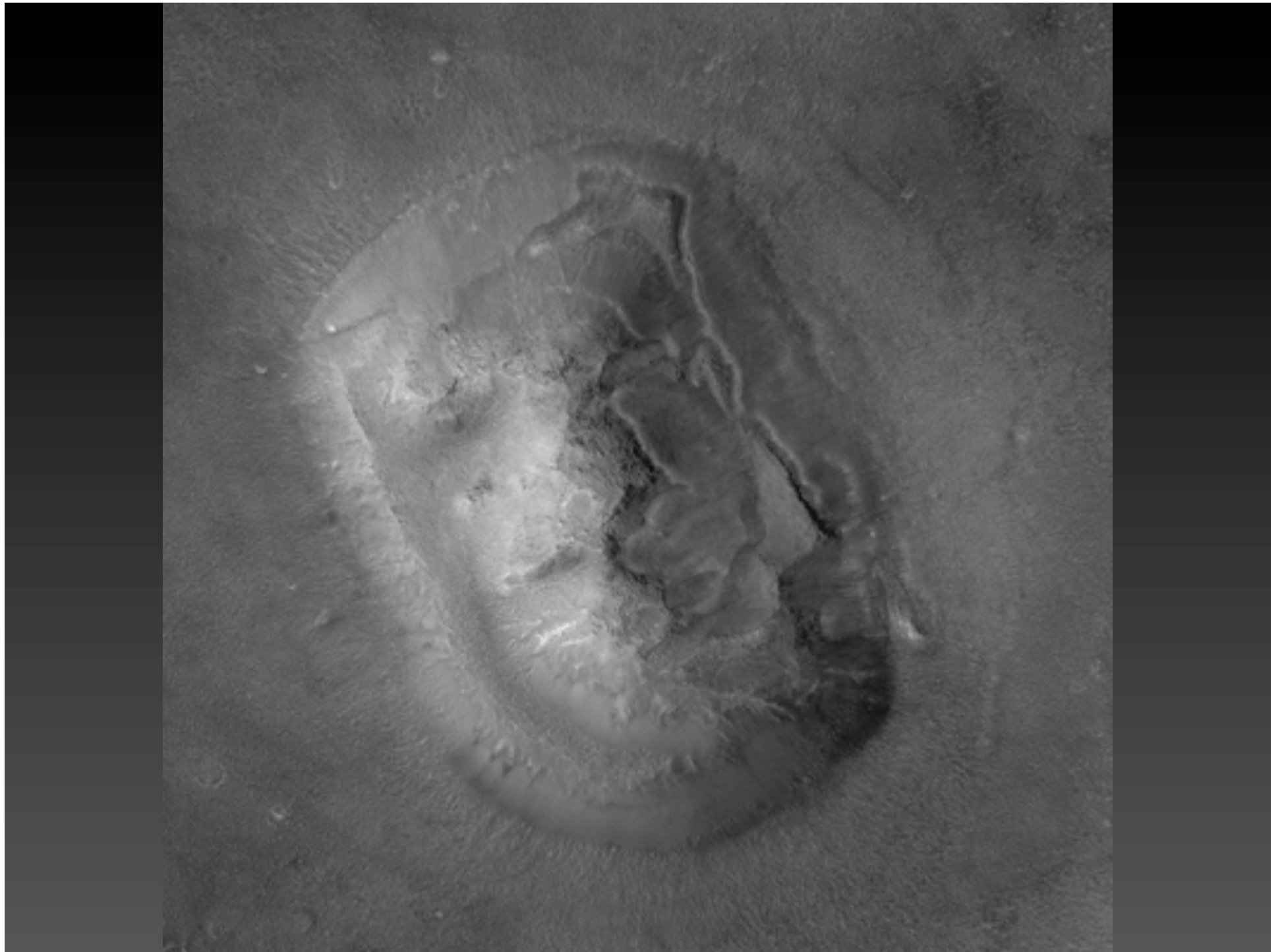


Fusiform Gyrus




Contrasting Faces by Richard Russell,
Harvard University







1999 MOC2-89 Malin Space Science Systems/NASA



© 2010 Google
Image © 2010 DigitalGlobe

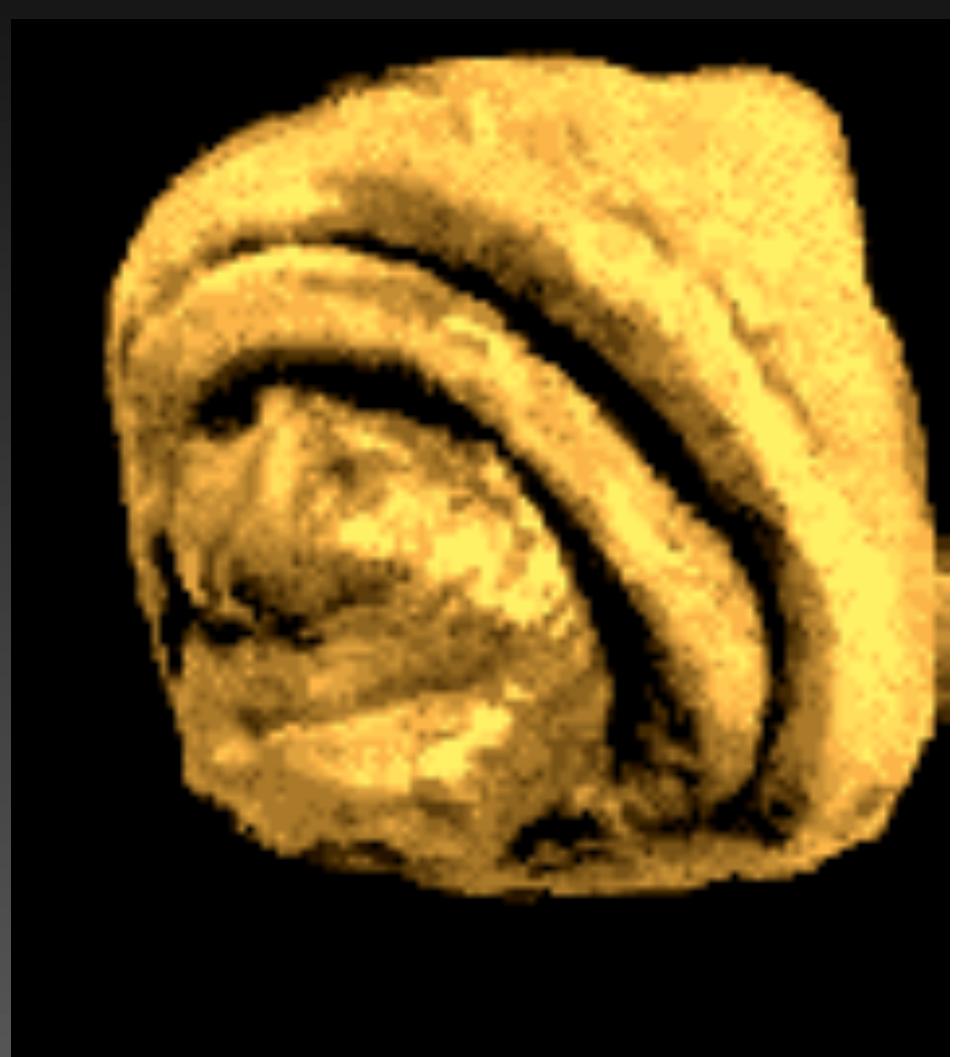
©2010 Google

Imagery Date: Nov 14, 2002

50°00'39.02" N 110°06'45.99" W elev 784 m

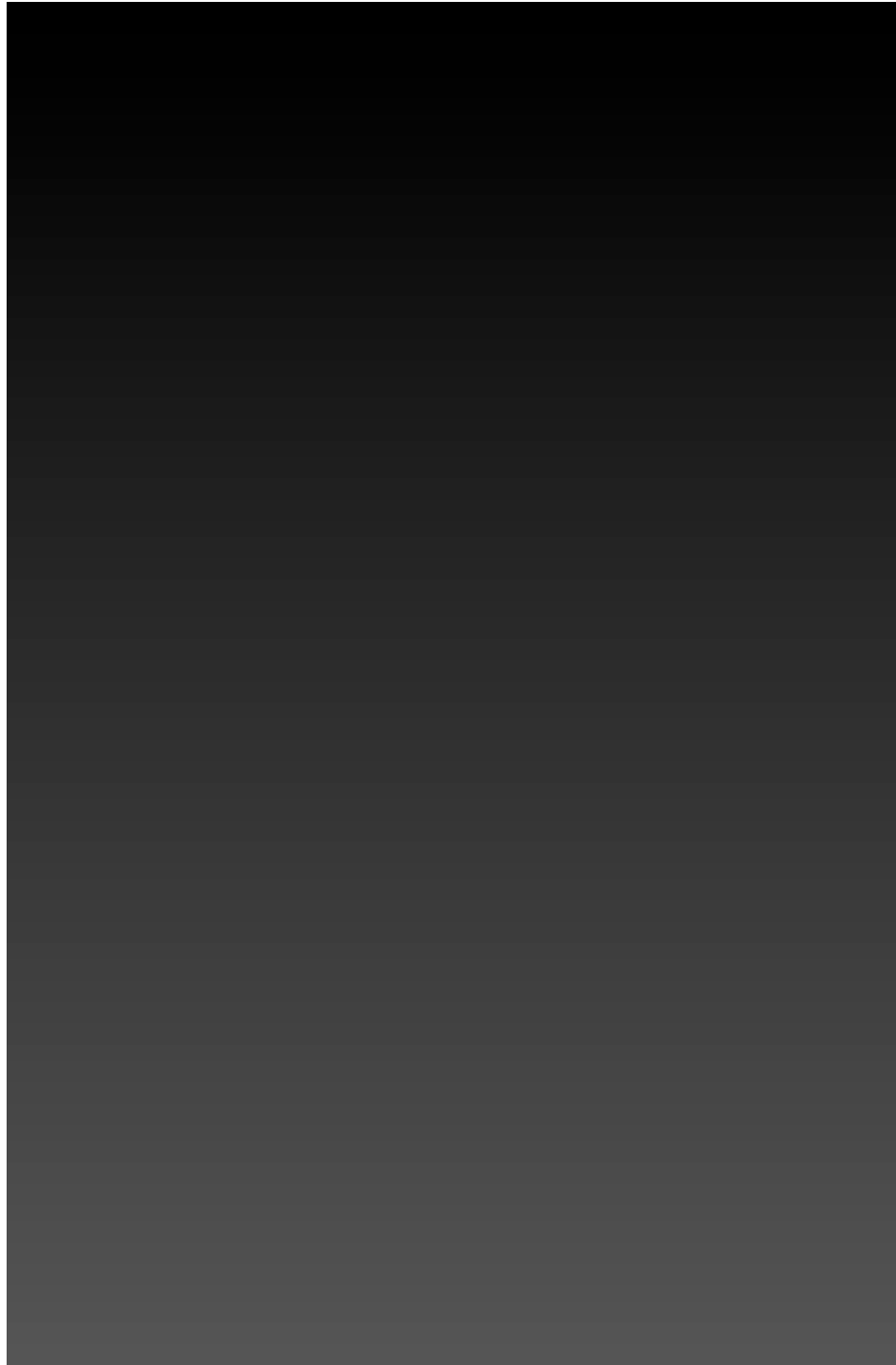
Eye alt 1.79 km

The Nun Bun



Our Lady of the Chicago Underpass







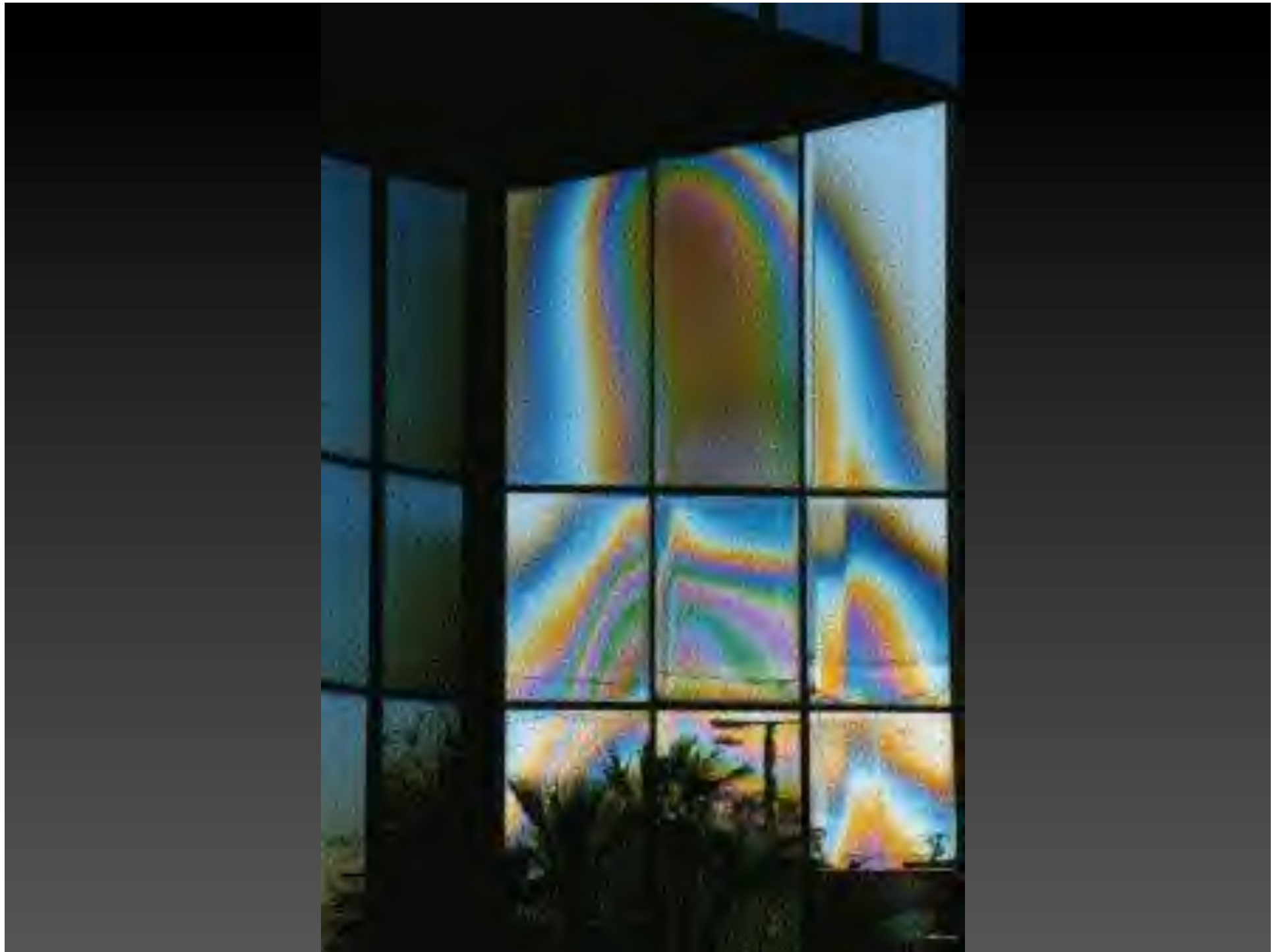
The Virgin Mary on a Grilled Cheese Sandwich

Sold on eBay
for \$28,500 to a
Las Vegas
Casino

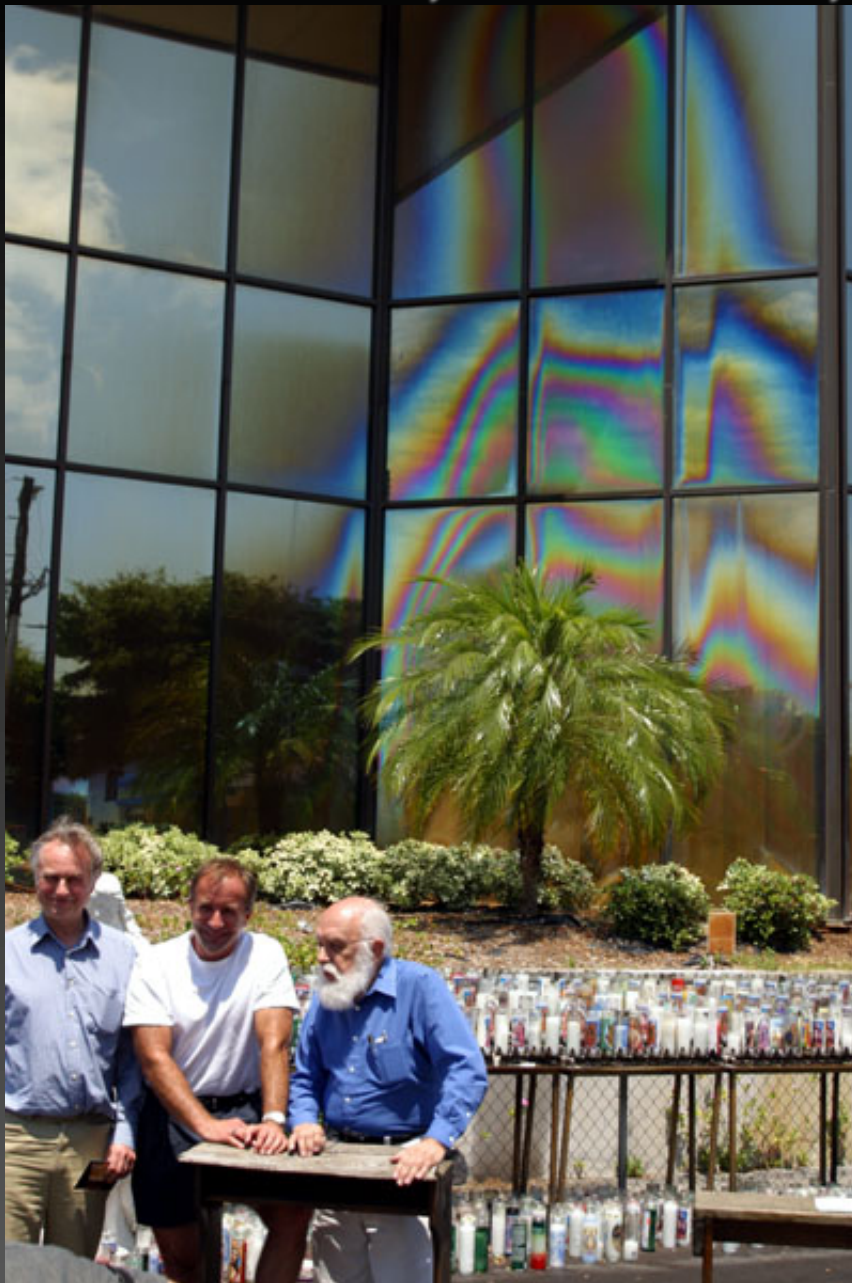




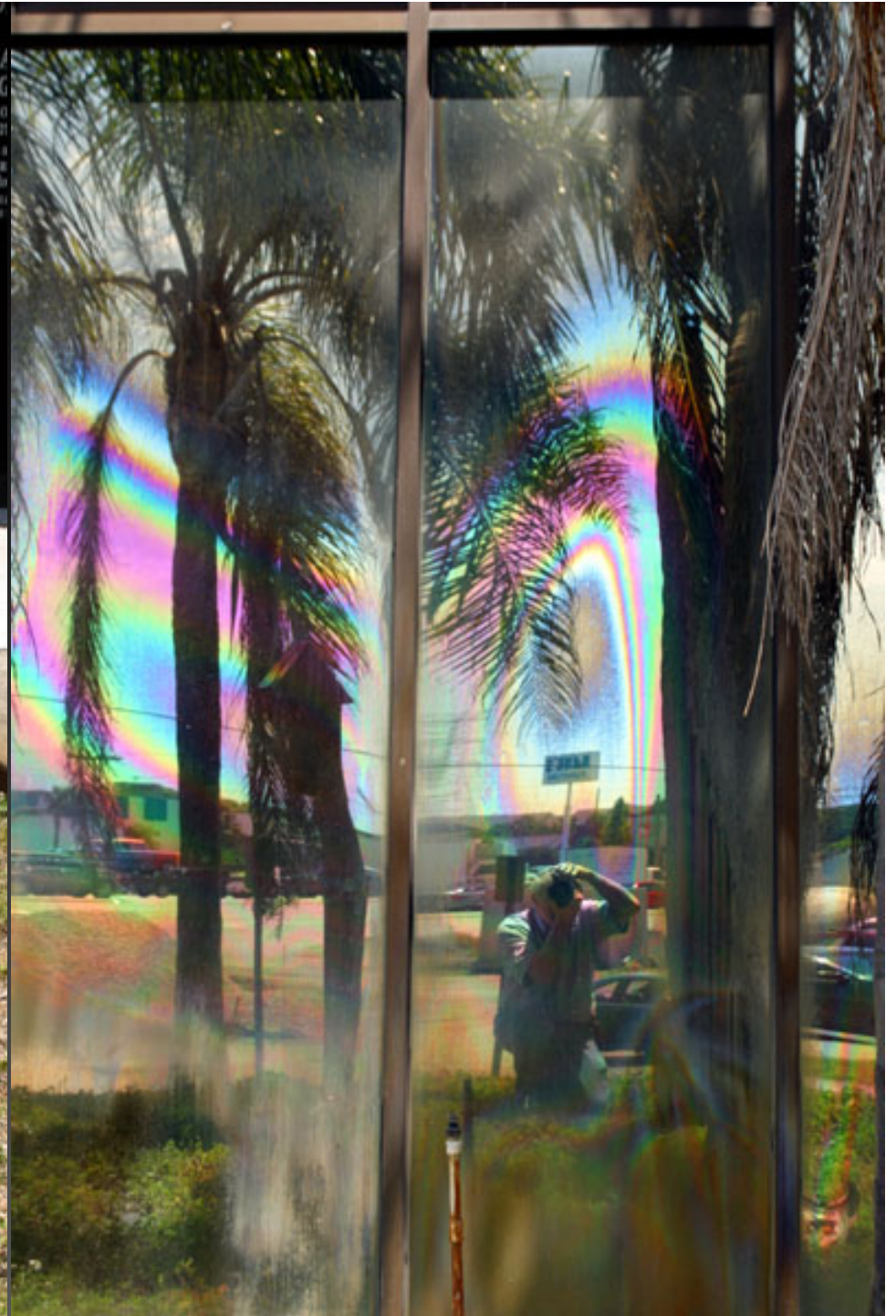


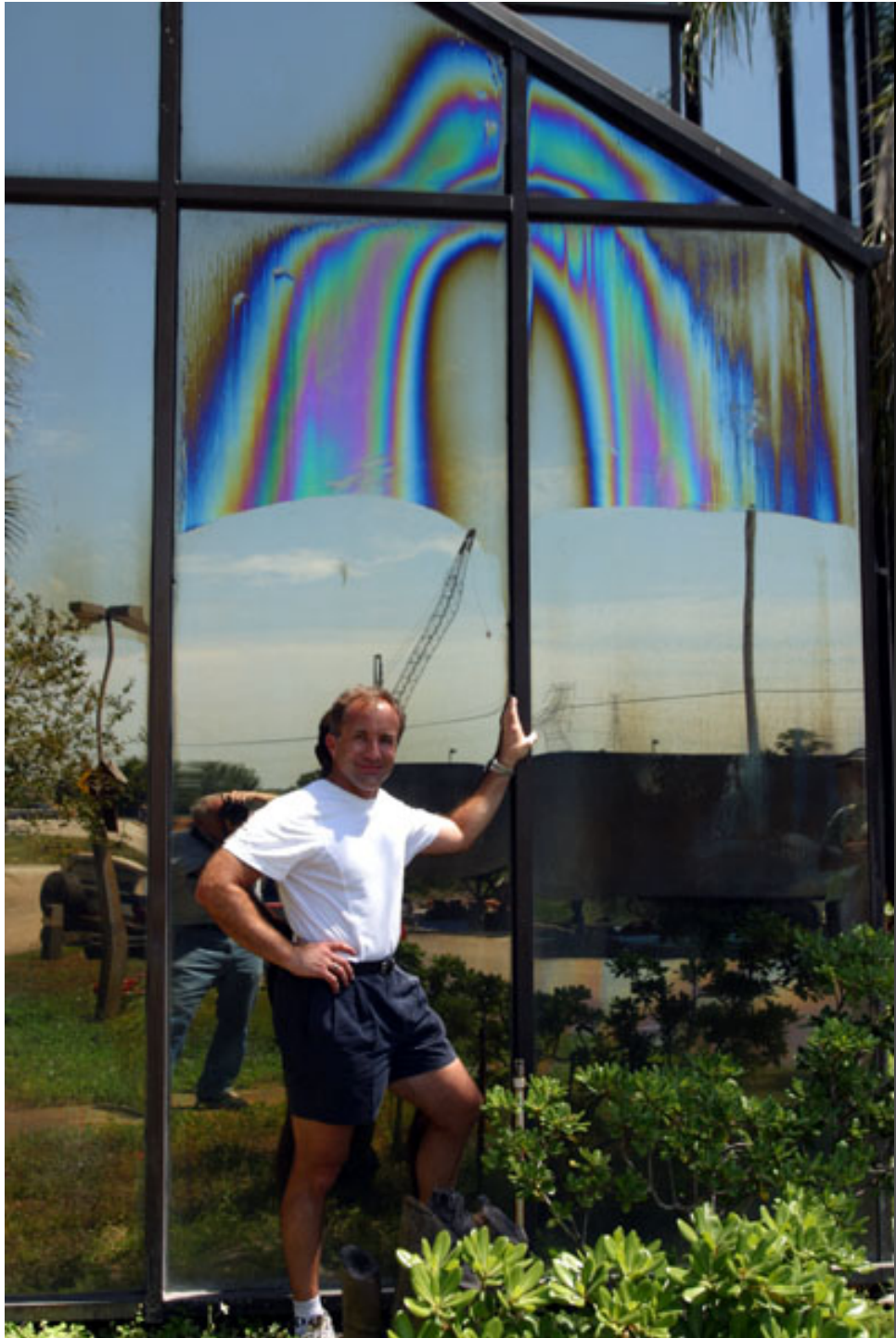


Dawkins, Shermer, Randi Visit the Icon









Is it really a miracle of Mary...



or is it a miracle of Marge?



What is the difference between...
the **Wind** & a **Dangerous predator**?
The wind is **inanimate**, a dangerous
predator is an **intentional agent**.

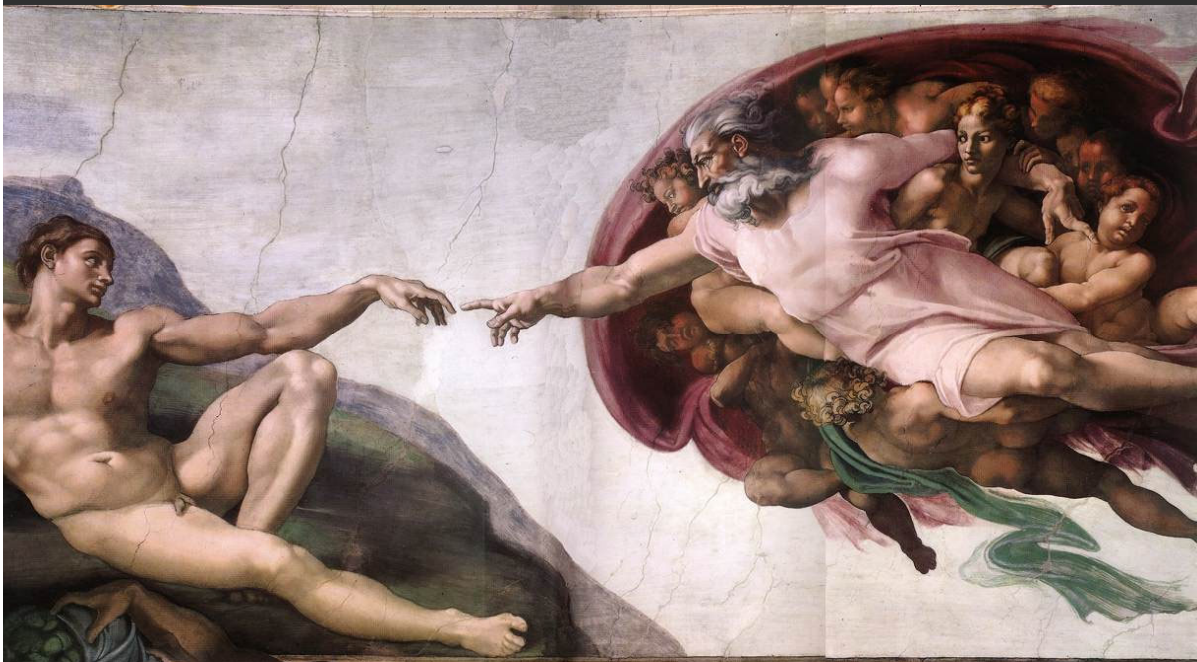


Agenticity

The tendency to infuse patterns with meaning, intention, and agency, often invisible beings & from the top down.



Souls, spirits, ghosts, gods, demons, angels, aliens, intelligent designers, government conspiracists, and all manner of invisible agents with power and intention are believed to haunt our world and control our lives.





Agenticity & Animism



Agenticity & Polytheism

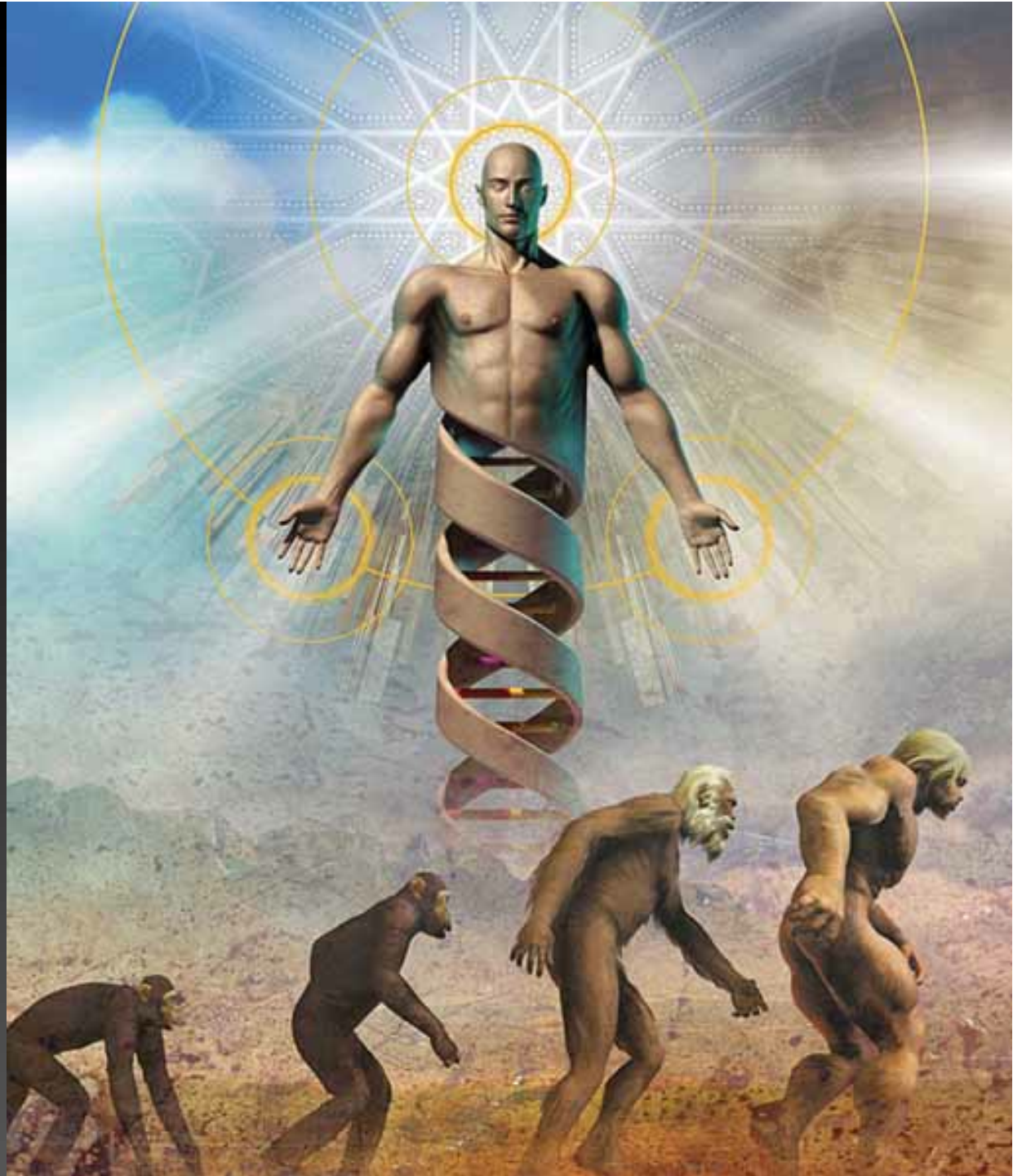


Agenticity & Monotheism



Agenticity & Aliens

Agenticity & Intelligent Designers



Agenticity & Intelligent Government Designers



The God of
the Government

Government Agents will Save Us



Agenticity & Conspiracies





CONSPIRACY

It is always better to lie than admit the truth, for it is our ability to deceive that separates us from the animals.

'It's a think-tank of some kind'

Elite are ever elusive

While there might be a few dukes inside, guards keep out our Earl

While all need a little security in our lives and here's one: The Bilderberg Group.

For decades, by talking on my head as I stand behind the security barrier, I read what took the Brookstreet Hotel where dark-limbed aristocrats peep up to the front entrance sporadically throughout the day, dispatching figures who dart quickly inside through the jockey of glass-level gates dressed like aristocrats.

Who, I ask myself, are all these aristocrats, and aristocrats come detailing the last days around the hotel, on a night?

The aristocrats themselves say it's the Bilderberg Group, the so-called world secret government of politicians, petroleum, industrialists, bankers, and of barons who set the new life and death agendas for us all, and have served for a week-end of new agenda-setting, associated, as always, from the planet public.

It is the Bilderberg Group, with its paranoia for secrecy, then I'm thinking these guests have been strictly monumentally illegal. The historical and newspapers have had stories for weeks that the Bilderbergers will be meeting this week-end at the Brookstreet Hotel. Knowing this, which they had to, would mean the Bilderbergers, a group of



Earl McRae

OUR INTREPID Earl McRae tries his luck with the security officials outside Kanata's Brookstreet Hotel yesterday.

Leads (shortly tomorrow) are in need of massive security, the reason for which is beyond me.

The only way I decide to find out if it's Bilderberg or Bilderberg is to get past the security into the hotel. So, I walk ten blocks down the street, cut into a parking lot of a hotel's driveway, and take a circuitous route back to the rear of the hotel, hoping it'll be behind of security.

First, though, my eyes were the girl course adjoining the hotel, where the guests have privileges. I agree it's not Queen's Lane running in a road loop, I'm Bilderberg bound. But Ladies, when checking in, would ask for a road trap, not a road.

I don't open the Ladies, but, unfortunately, do spot one of the aristocrats at a barricade I'd have to get



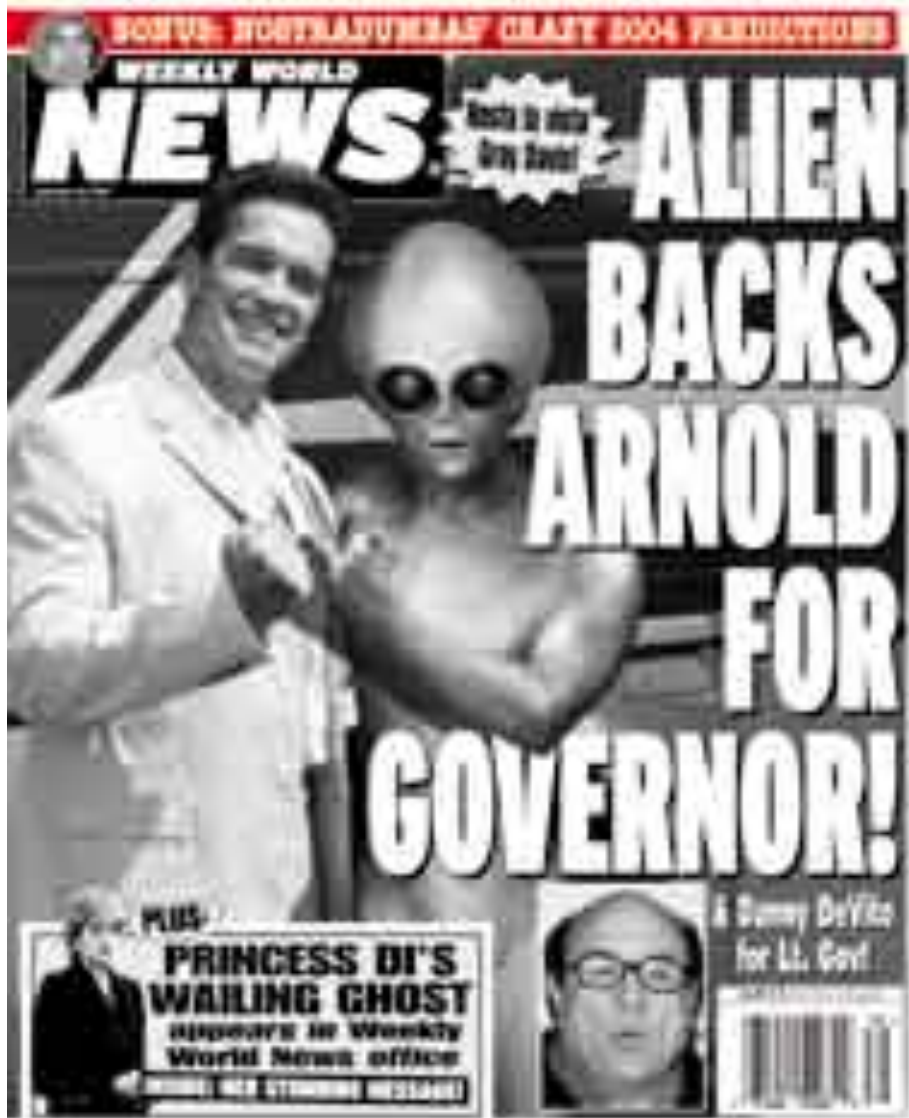
QUEEN BEATRIX of the Netherlands arrives at the Brookstreet Hotel before the meeting of the elite Bilderberg Group.

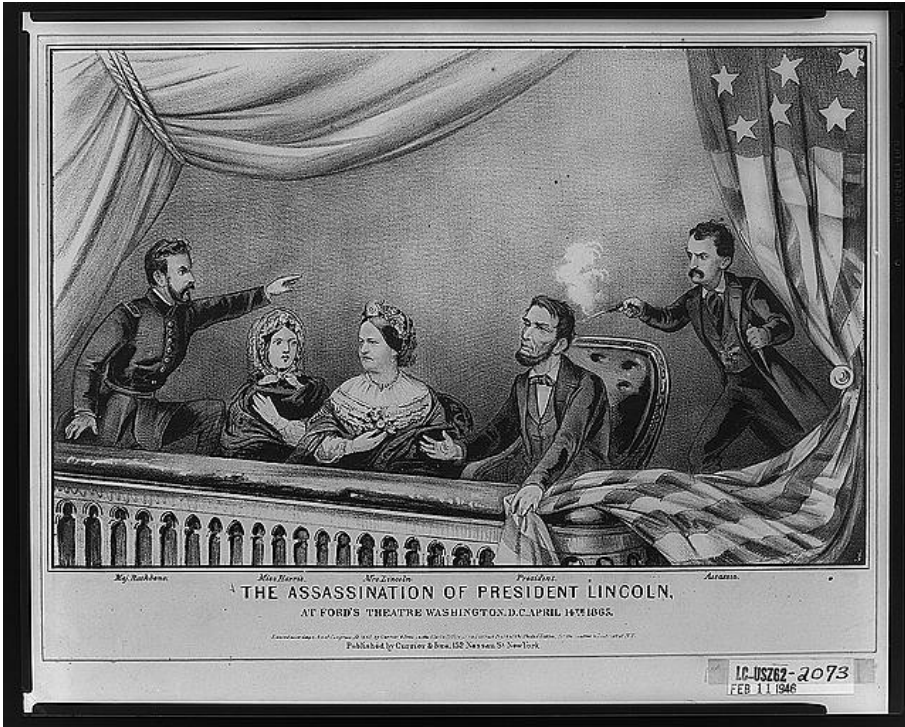
Everybody Who's Anybody

Some of the more prominent attendees at this year's annual conference of the Bilderberg group, a secretive society that includes some of the world's most powerful people:

- Jacques Delors, CEO of Banco Pk.
- George Angelopoulos, finance minister of Greece.
- Ahmed Abdalla, former deputy prime minister of Iraq and longtime co-chairman of Saddam Hussein.
- George A. Davis, chairman of Coca-Cola.
- Paul Desmarais, CEO of Power Corporation.
- Richard Harwood, buy American negotiator for the Bush administration.
- Herman Amundsen, friend and confidante of Bill Clinton.
- Henry Kissinger, foreign policy guru and secretary of state under Richard Nixon.
- Johannes Kasse, Norwegian Christian and president of Right to Play organization.
- Ed Kinnear, director of NATO's public affairs office.
- Norman-Loren







Lincoln Was
Assassinated by
a Conspiracy

JFK Conspiracies



MEMBERS OF
Evidence of
Changes

LEAST resistant
wood buildings and NEVER
in steel frame high-rises.

These characteristics...

AE911Truth.org

Over 1,000 Architects & Engineers Reveal:

What the Government & Media
Are Not Telling You About

9/11



POCKETS OF SHORT-LIVED FIRE
not cause floor system failure by "thermal expansion" (MIST) in this modern fire-proofed steel-framed building.

An initiating event (a girder unsupported - MIST) can not cause the systematic & total FAILURE OF BRIDGE STRUCTURAL STEEL CONNECTIONS PER SECOND.

Numerous incidents and recorded statements reveal FOREKNOWLEDGE. These include a countdown, warnings, and announcements from both CNN and the BBC of the collapse... before it happened!

ARCHITECTS & ENGINEERS
for 9/11 TRUTH

Re-examining the 3 WTC high-rise "collapses."

ARCHITECTS & ENGINEERS
for 9/11 TRUTH
AE911Truth.org



9/11: BLUEPRINT FOR TRUTH

The Architecture of Destruction

BONUS
2008
COMMEMORATIVE
EDITION

Running Time: 2 Hours

ARCHITECTS & ENGINEERS
for 9/11 TRUTH

AE911Truth.org



WORLD TRADE CENTER

ARCHITECTS & ENGINEERS

H QUESTION

Dietrich Eckhardt

FRANCIS PARKER YOCKEY

Other Losses

Updated Edition with Shocking New Evidence

AN INVESTIGATION INTO THE MASS DEATHS OF GERMAN PRISONERS AT THE HANDS OF THE FRENCH AND AMERICANS AFTER WORLD WAR II

JAMES BACQUE

THE INTERNATIONAL JEW

by HENRY FORD SR.

Mein Kampf
Adolf Hitler



Mein Kampf

PROTOCOLS OF THE LEARNED ELDERS OF ZION

Translated from the Russian of NILUS by VICTOR E. MARSDEN Late Russian Correspondent of "THE TIMES"

REV VII

Advs



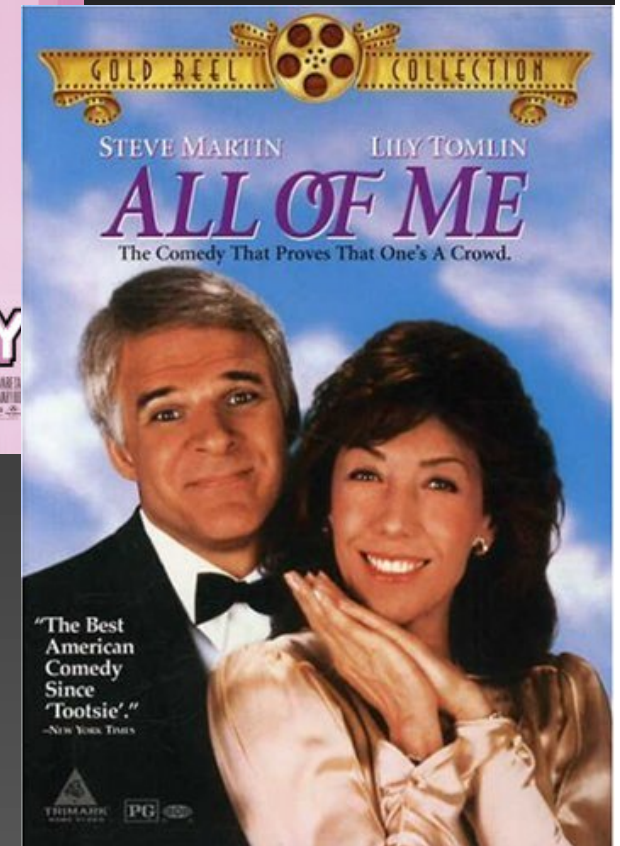
The Conspiracy Theory Detector

1. Proof of the conspiracy is a pattern of “connecting the dots” between events that need not be causally connected. When no evidence supports these connections, or when the evidence fits equally well to other patterns—or randomness—the conspiracy theory is likely false.
2. The agents behind the pattern of the conspiracy would need nearly superhuman power to pull it off. Most of the time people are not nearly so powerful as we think they are.
3. The conspiracy is complex and its successful completion demands a large number of elements.
4. The conspiracy involves large numbers of people who would all need to keep silent about their secrets.
5. The conspiracy encompasses some grandiose ambition for control over a nation, economy or world domination.

The Conspiracy Theory Detector

6. The conspiracy theory ratchets up from small events that might be true to much larger events with lower probabilities of being true.
7. The conspiracy theory assigns portentous and sinister meanings and interpretations to what are most likely insignificant events.
8. The theory tends to commingle facts and speculations without distinguishing between the two and without assigning degrees of probability.
9. The theorist is extremely and indiscriminately suspicious of any and all government agencies or private organizations.
10. The conspiracy theorist refuses to consider alternative explanations and seeks only confirmatory evidence to support what he has *a priori* determined is the truth.

Agenticity & Dualism



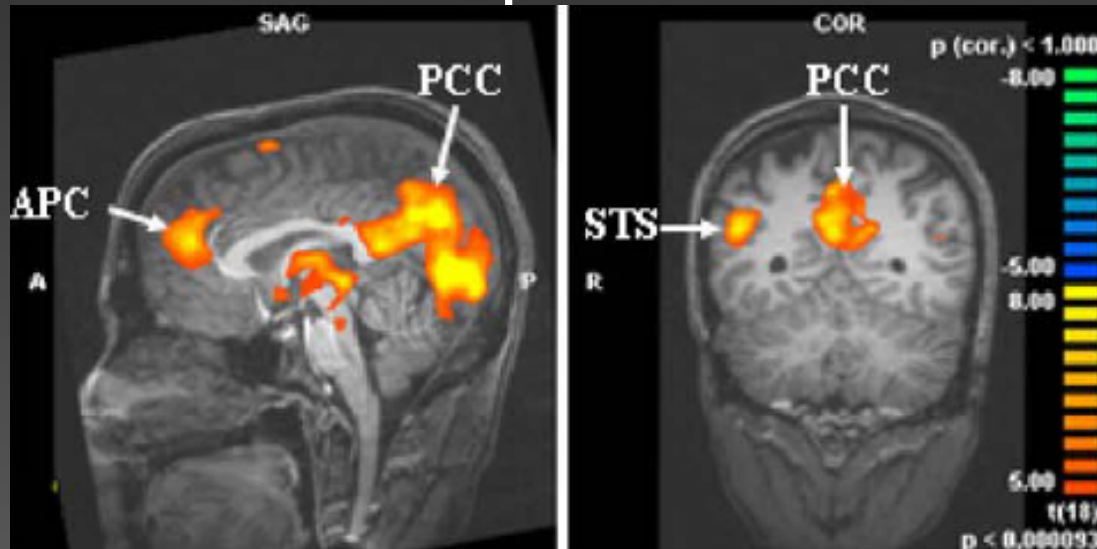
Agenticity & Theory of Mind

2 areas (cortex & temporal lobes):

Anterior Paracingulate Cortex (APC):

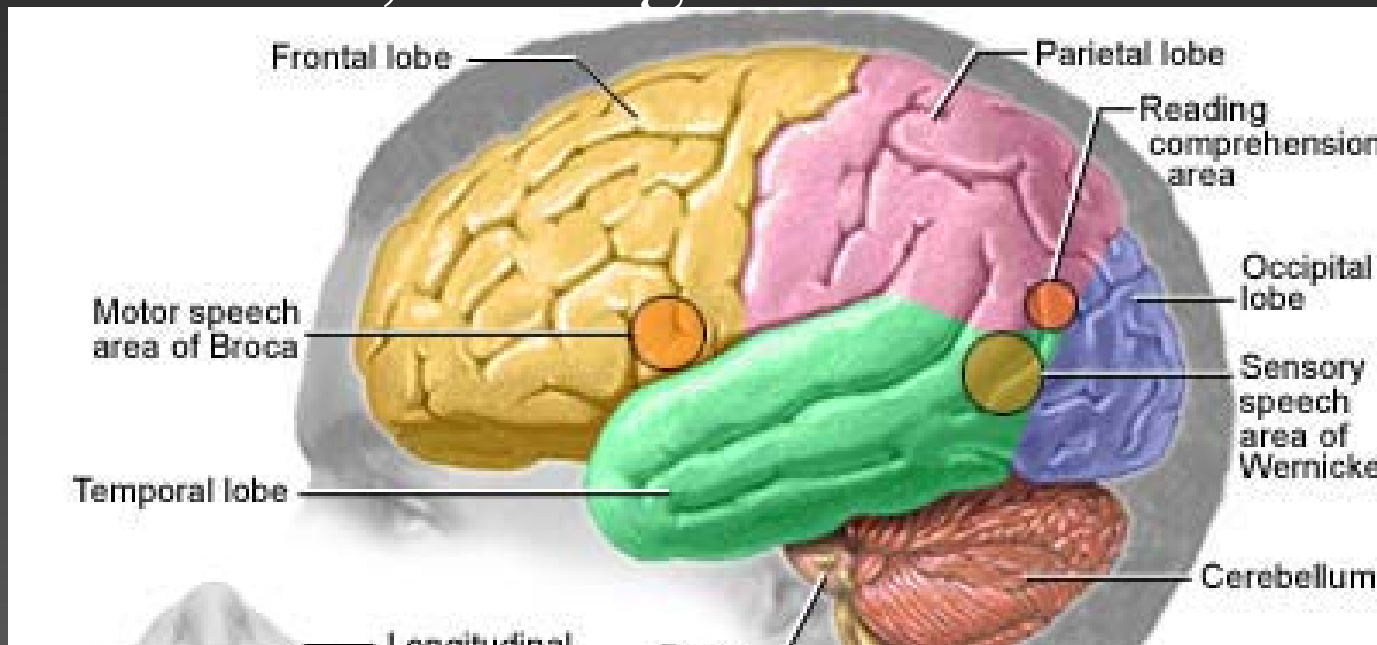
perception of intentional behavior on the part of other organisms, such as “that predator intends to eat me.”

Superior Temporal Sulci (STS): essential for the retrieval from memory of personal experiences, such as “the last time I saw a predator it tried to eat me.”

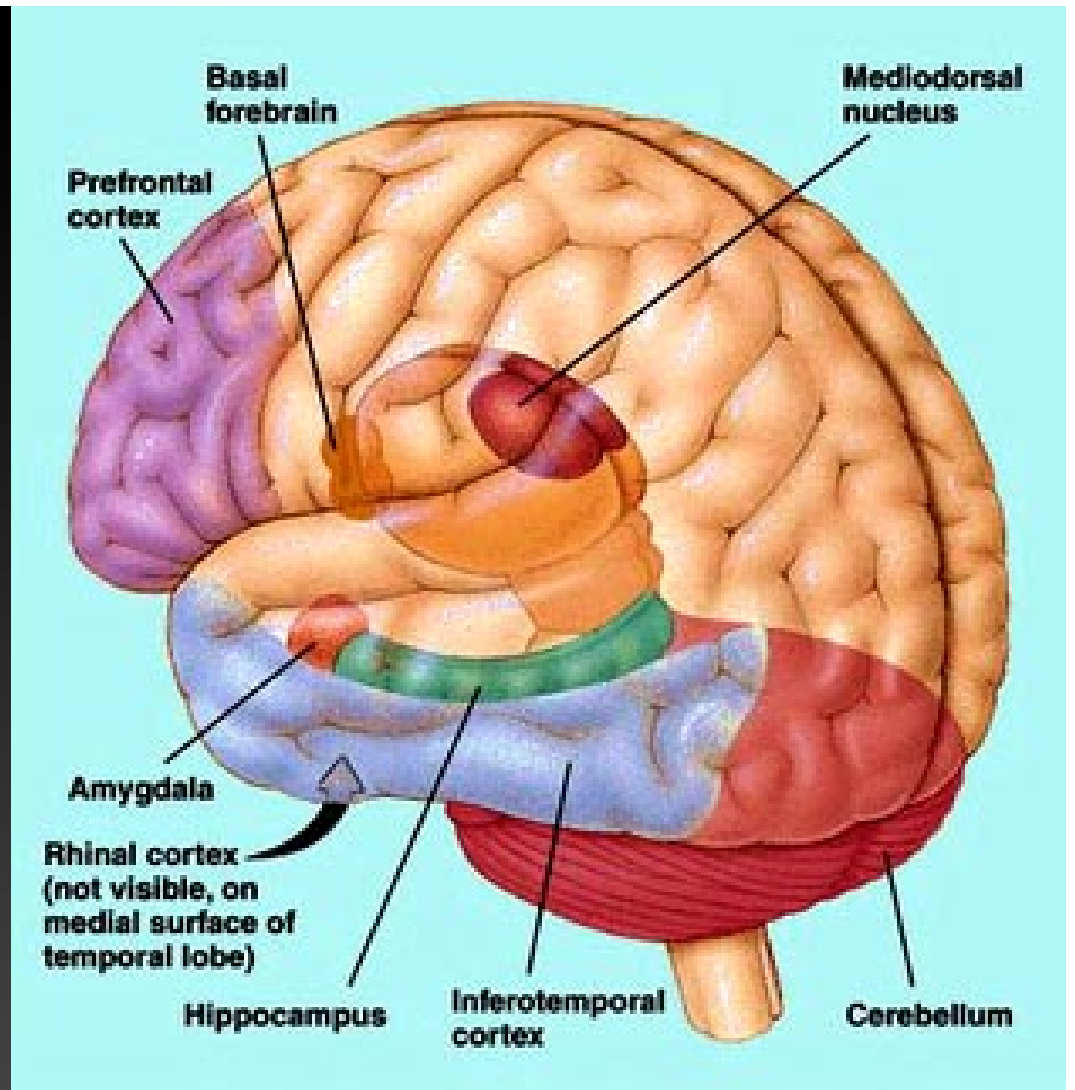


Agenticity & Temporal Lobe

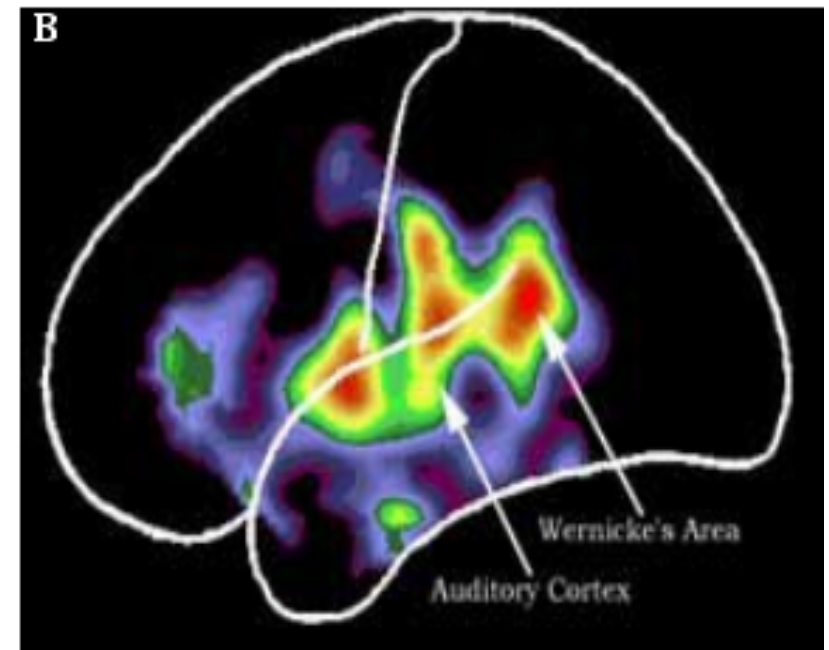
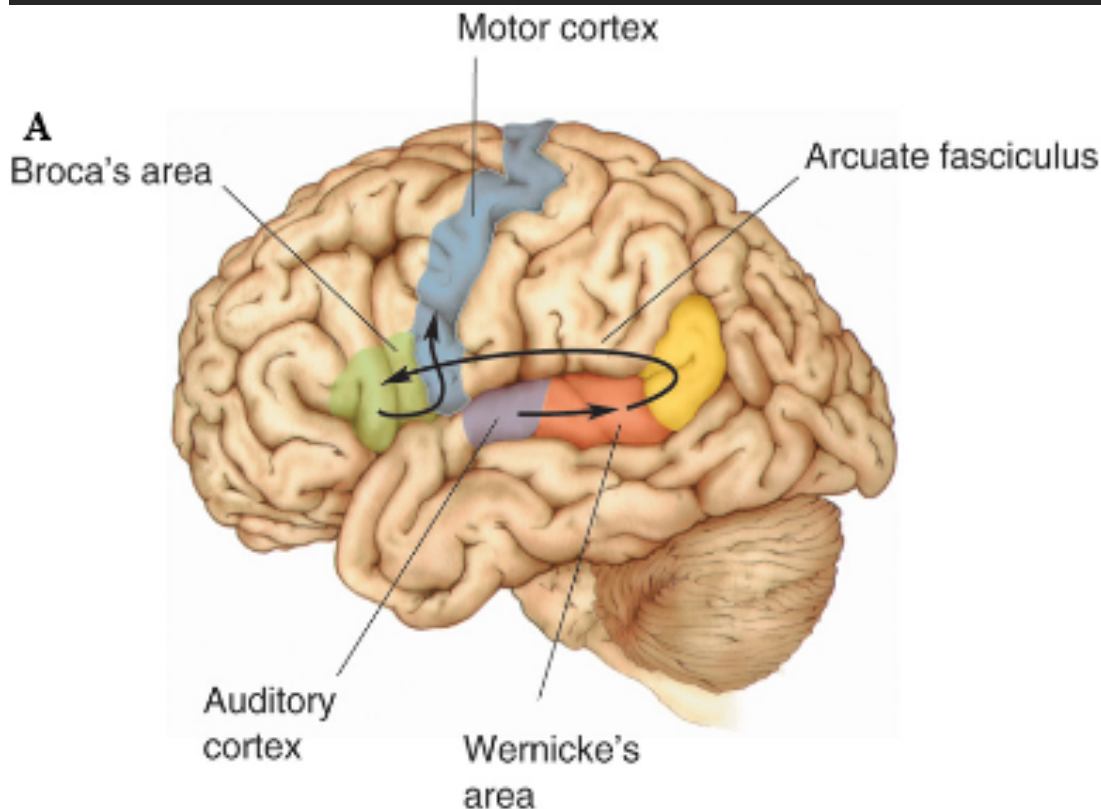
Wilder Penfield's 1963 Temporal lobe stimulation: déjà vu, OBEs, trances/fugue states, feelings of being in the presence of others, hearing music, hearing angelic voices, intense meaningfulness, connected to a force greater than themselves, talking to God.



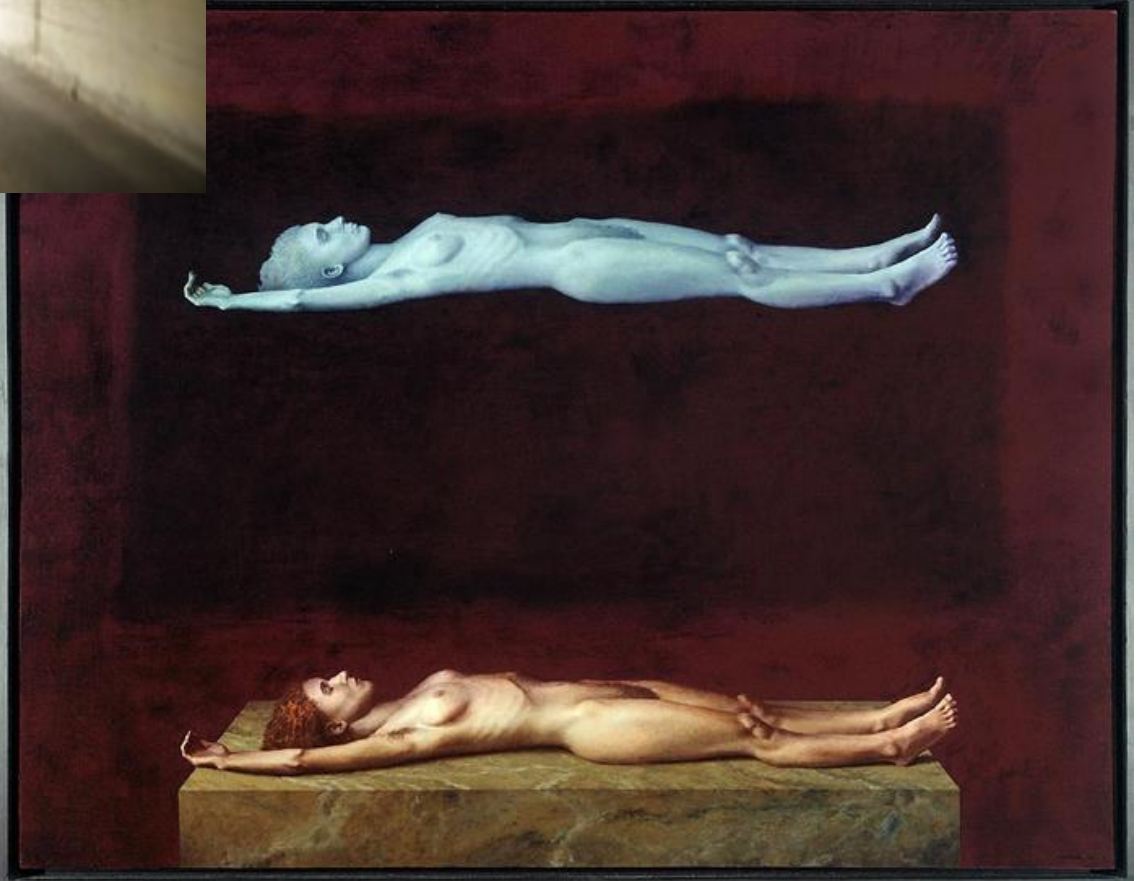
Deep temporal lobe stimulation of the amygdala and hippocampus of the limbic system produces feelings of intense meaningfulness, depersonalization, connection with God or cosmos.



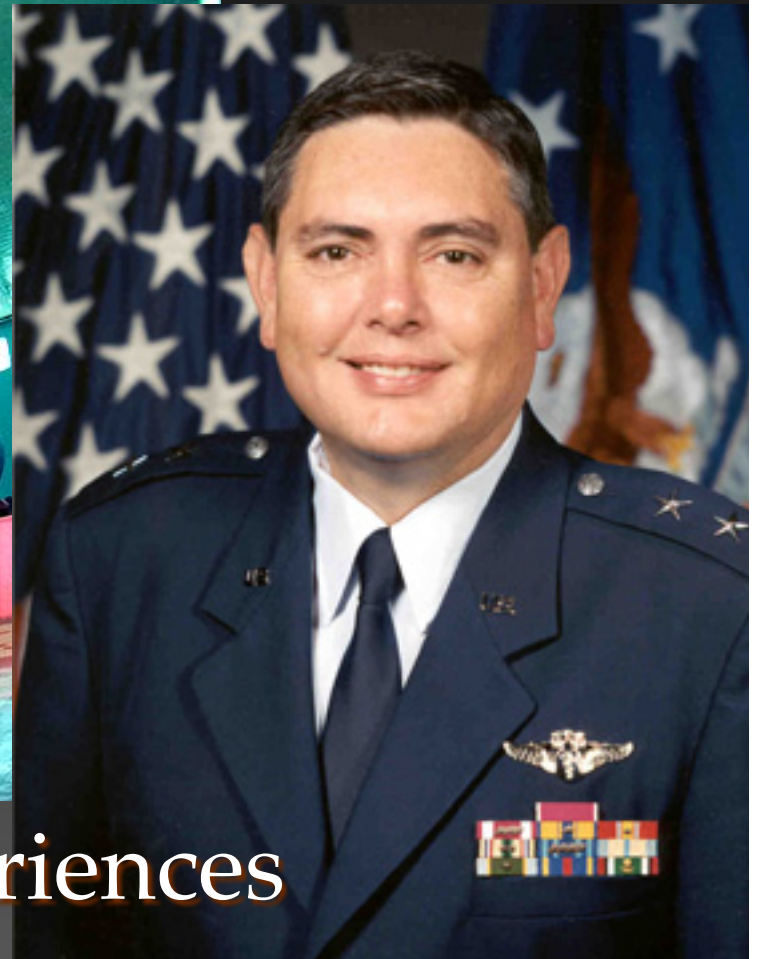
All Belief is Mediated by the Brain
“Mind” is just a word for what brain does.
If a portion of brain is lost, mind function
associated with it is lost, unless rewired. No
neural structure, no mind function.



Near-Death Experiences Out-of-Body Experiences

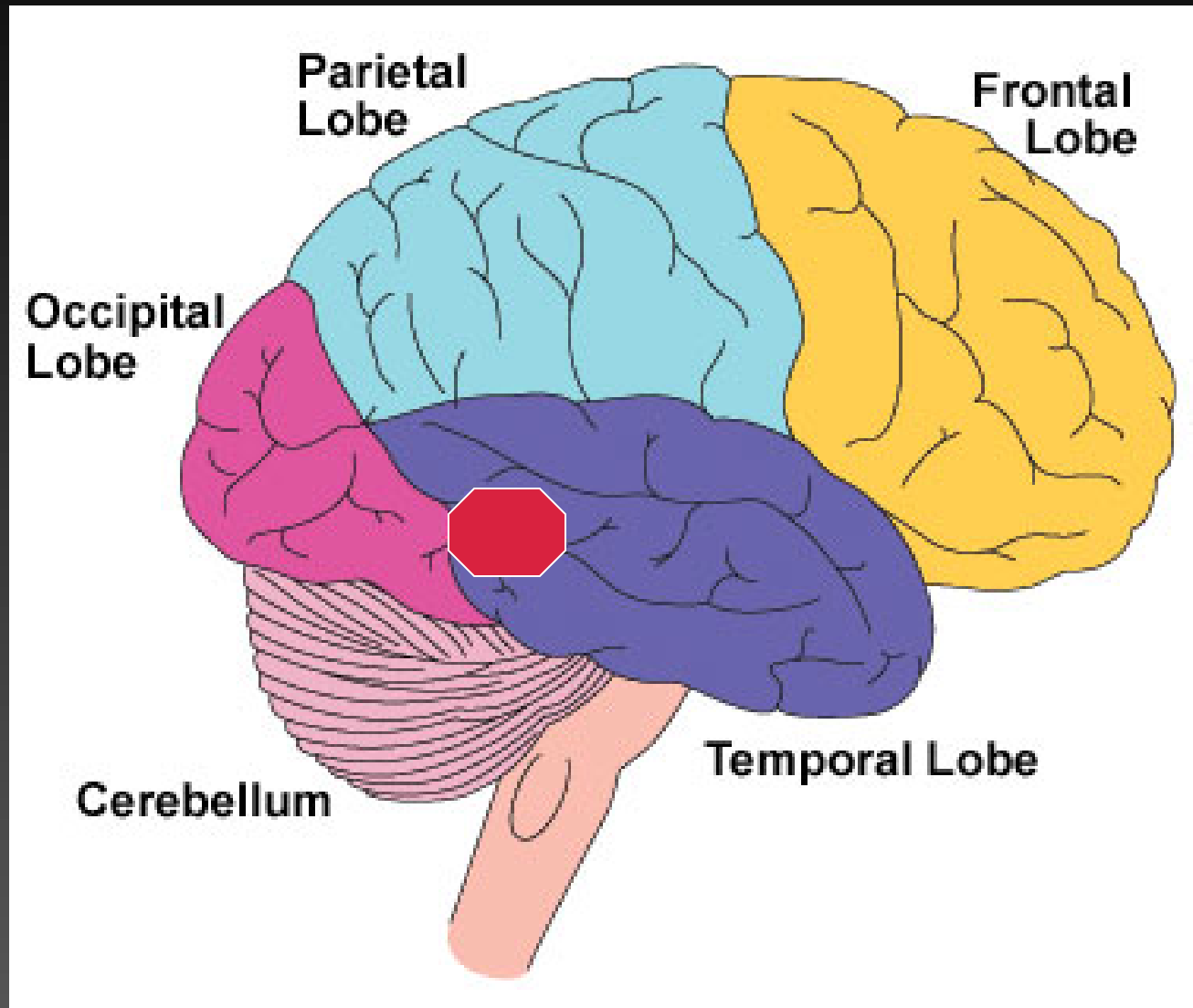


Major General Dr. James Whinnery, USAF G-Force Loss of Consciousness in Pilots



G-LOC Out-of-Body Experiences

Stimulation of right angular gyrus (red) produces Out-of-Body Experiences



Are UFOs Coming to Earth? Are Humans being Abducted by Aliens?



What is more likely?
UFOs = spacecraft from other worlds?
UFOs = anomalies from this world?



What is more likely?

Alien abductions = alien-human contact?

Alien abductions = human psychology?



Sleep Paralysis

Henry Fuseli's *The Nightmare*, 1781

Several centuries ago, the English referred to nighttime sensations of chest pressure from witches or other supernatural beings as the “mare,” from Anglo-Saxon *merran*, “to crush.” “Nightmare”: the crusher who comes in the night.



Sleep Deprivation & Alien Abductions

Dr. Michael Persinger's Neuroscience Lab

The "God Helmet" bombards temporal lobes



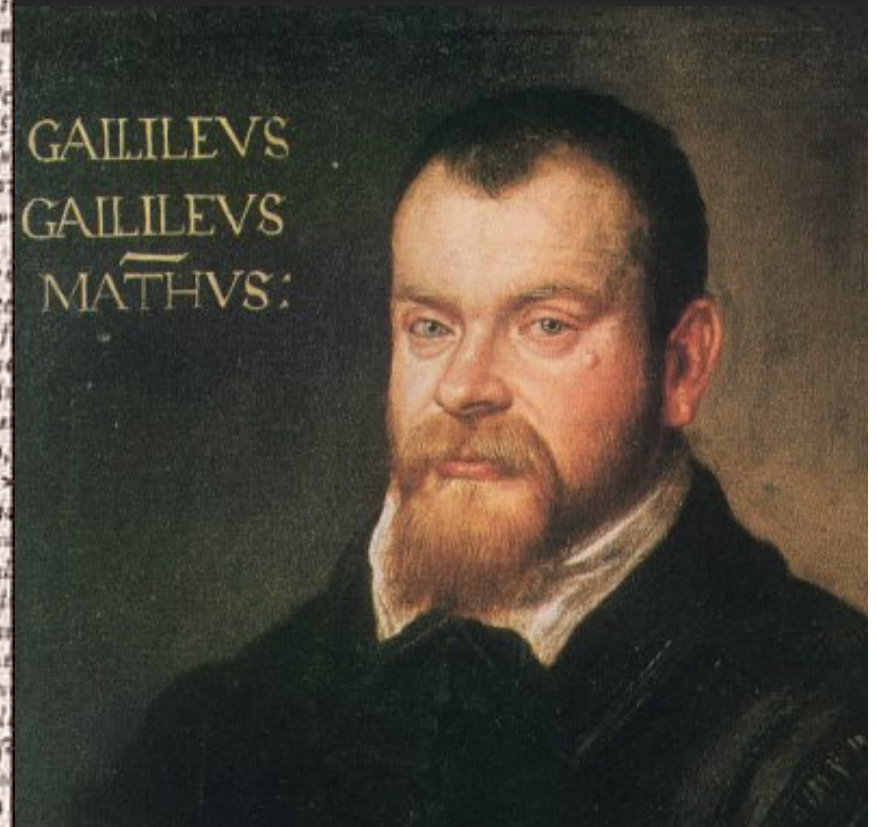
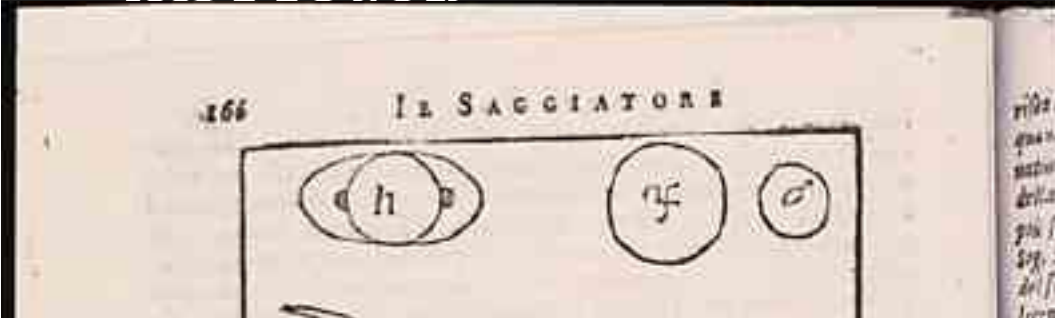








Galileo's 1610 Observation

“Altissimum planetam tergeminum observavi”

“I have observed that the farthest planet is threefold”



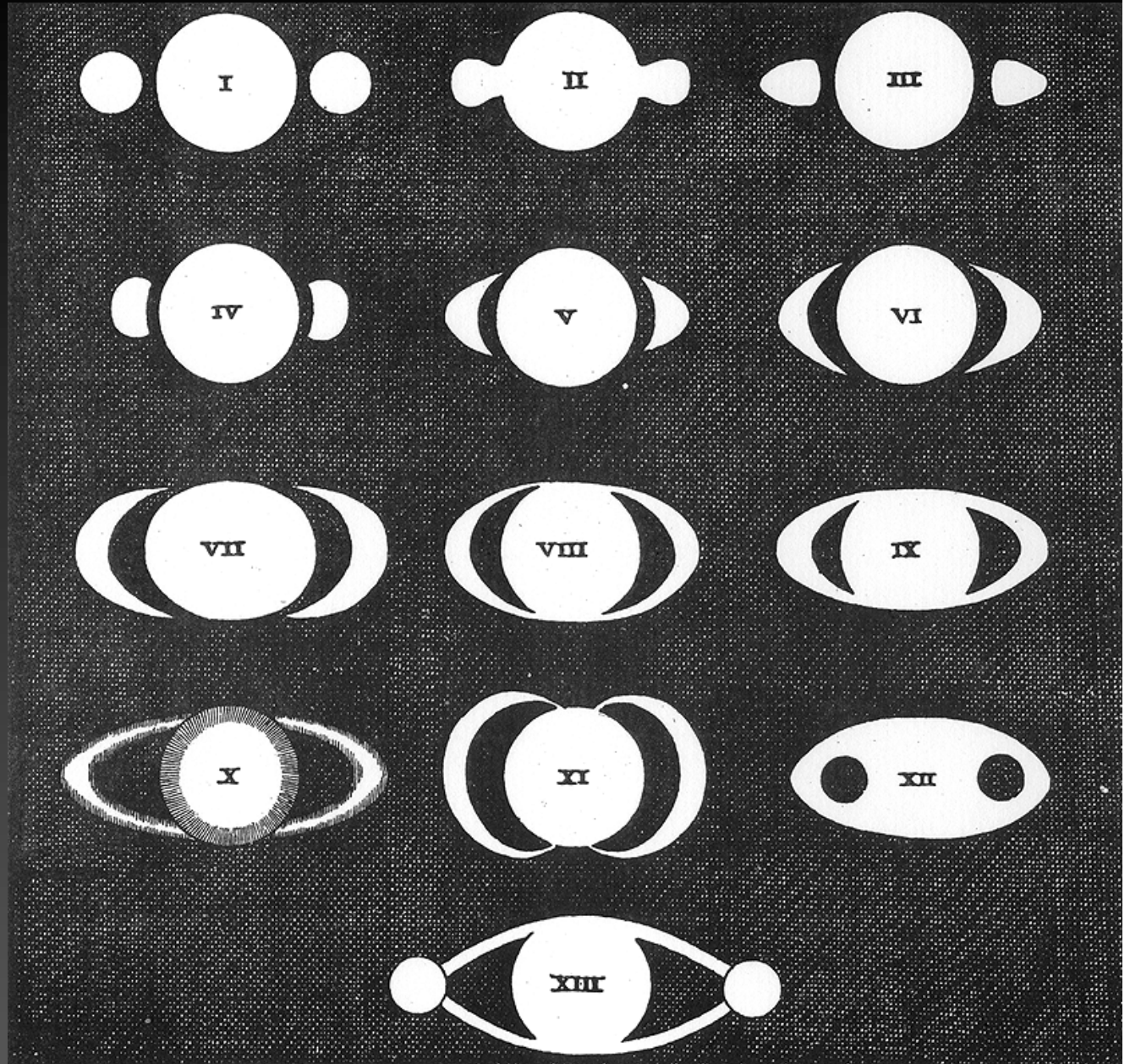
ta imperfezzione dello strumento, ò dell'occhio del riguardante,perche sendo la figura di Saturno così , come mostrano alle perfette viste i perfetti strumenti , doue manca tal perfezzione apparisce così  non si distinguendo perfettamente la separazione , e figura delle tre stelle ; ma io che mille volte in diuersi tempi con eccellente strumento l'hò riguardato, posso assicurarla , che in esso non si è scorta mutazione alcuna, e la ragione stessa fondata sopra l'esperienze, che hauia-

The shape of Saturn is thus  as shown by perfect vision and perfect instruments, but appears thus  where perfection is lacking, the shape and distinction of the three stars being imperfectly seen.¹

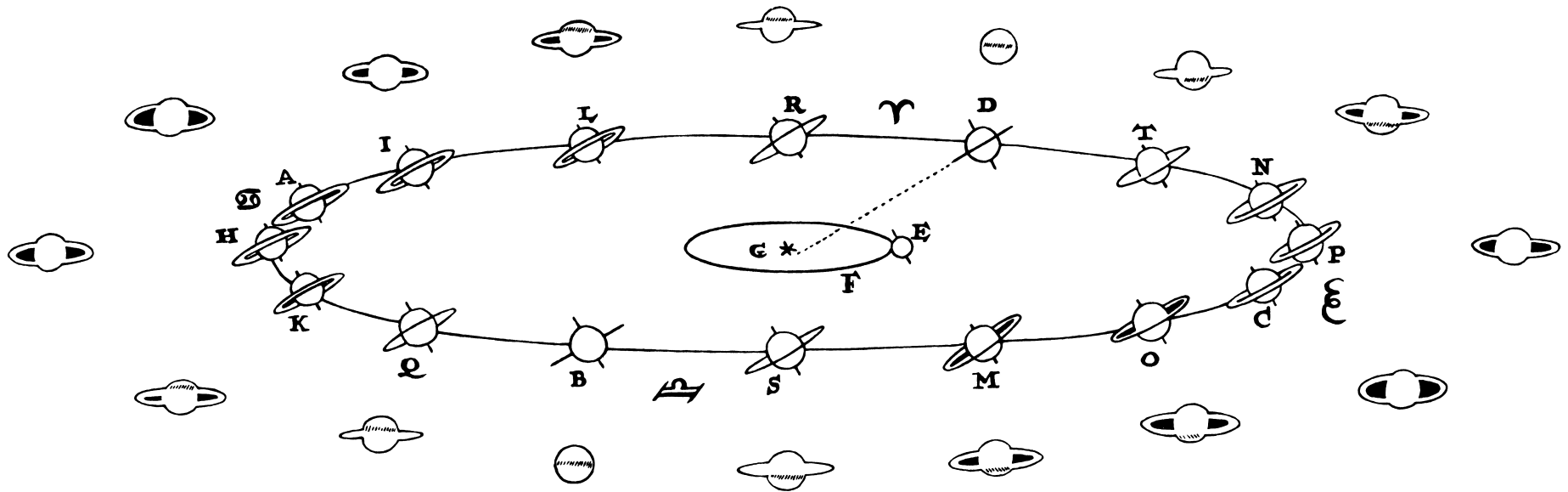


Christiaan Huygens *Systema Saturnium* 1655

- I Galileo, 1610
- II Scheiner, 1614
- III Riccioli, 1641
- IV-VII Hevel theory
- VIII-IX Riccioli, 1648
- X Divini, 1646-48
- XI Fontana, 1636
- XII Gassendi, 1638
- XIII Fontana, 1645



Christiaan Huygens *Systema Saturnium* 1655









Milky Way Galaxy

Kepler Search Space

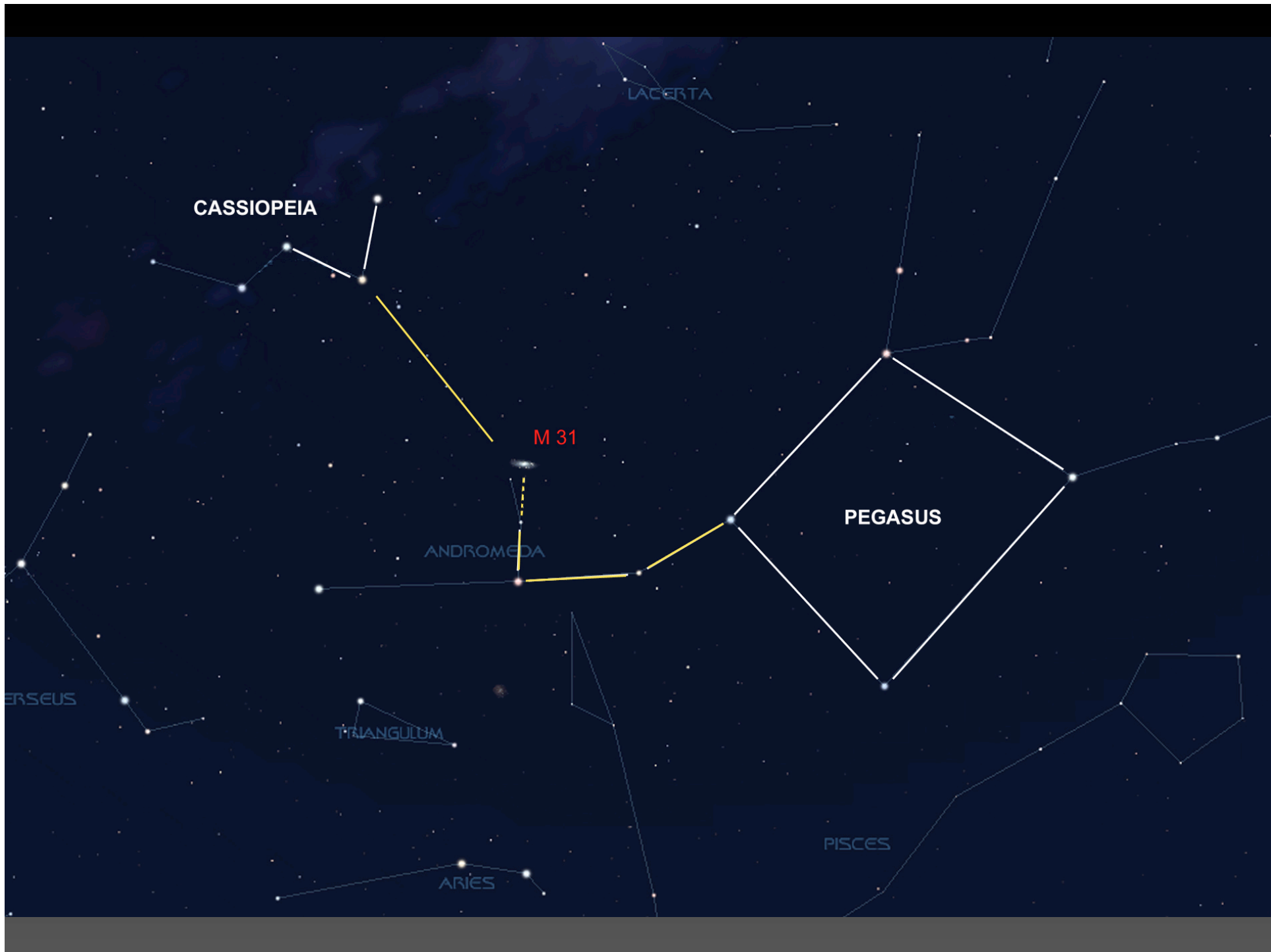
← 3,000 light years →

Sagittarius Arm

Sun

Orion Spur

Perseus Arm



LACERTA

CASSIOPEIA

M 31

ANDROMEDA

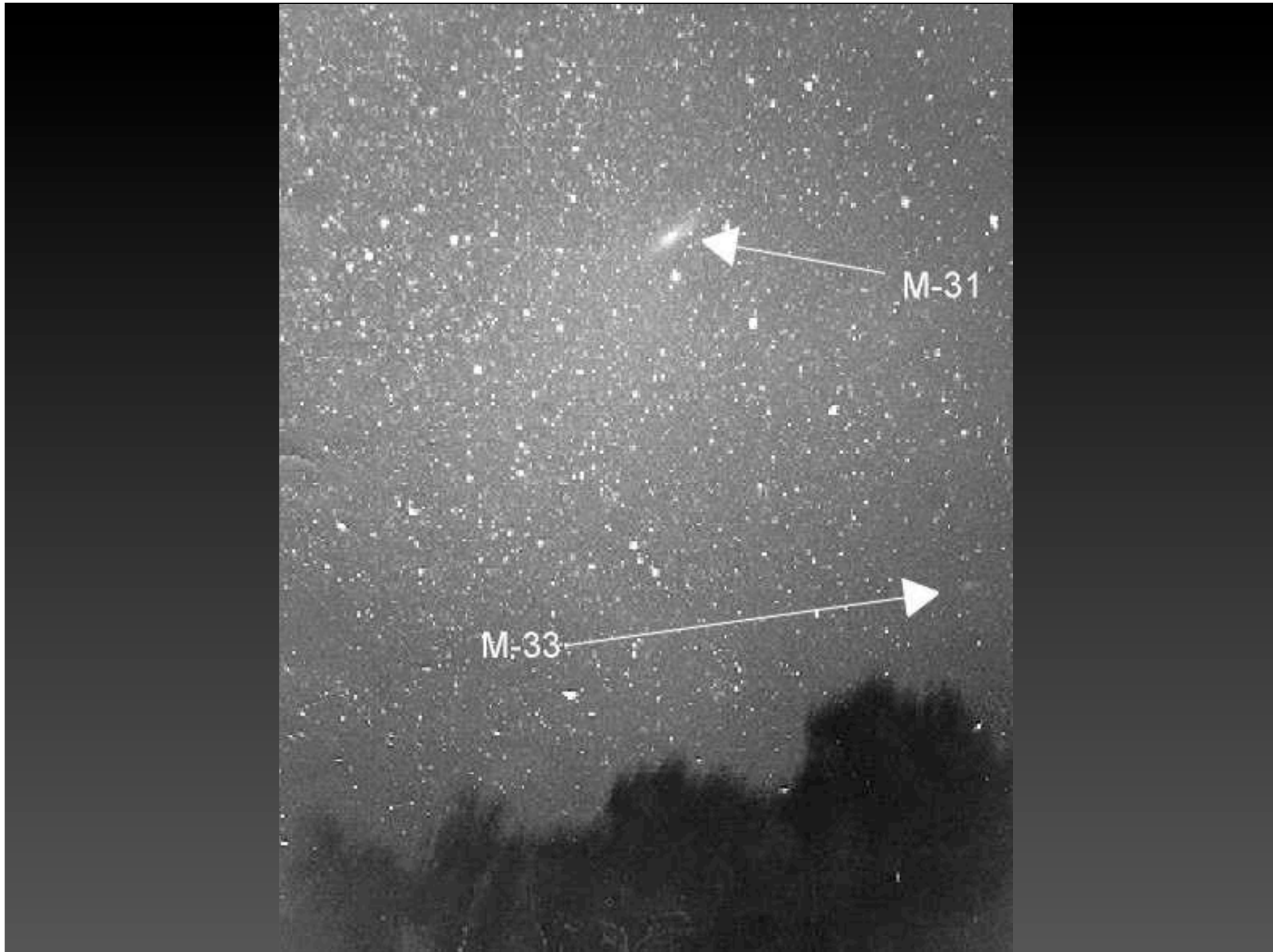
PEGASUS

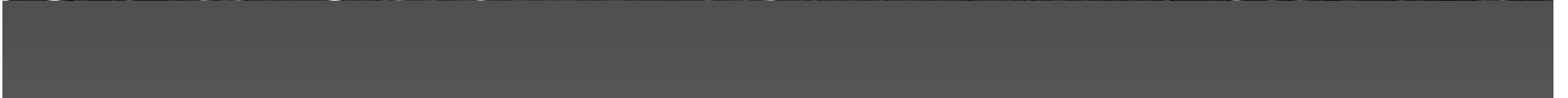
PERSEUS

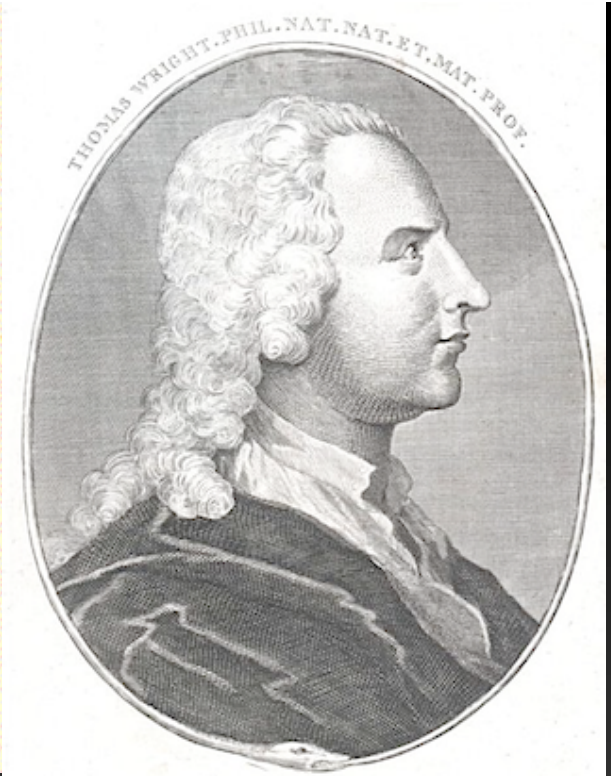
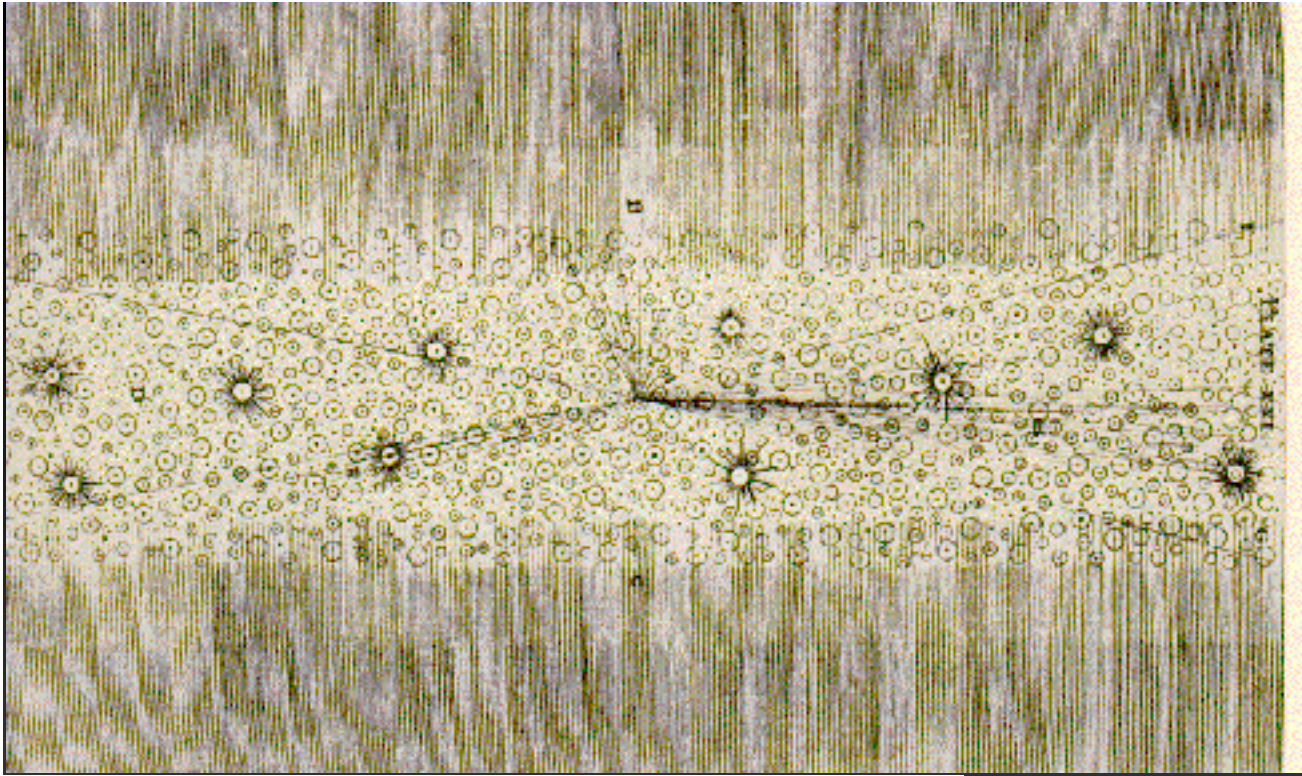
TRIANGULUM

ARIES

PISCES







Wright's Milky Way (1750)

A New Theory of the Universe, 1750

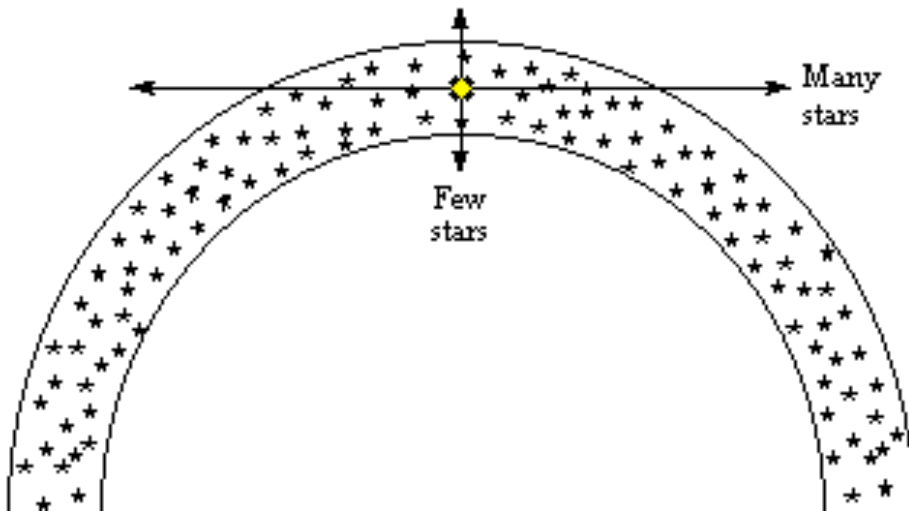


PLATE. XXXI.

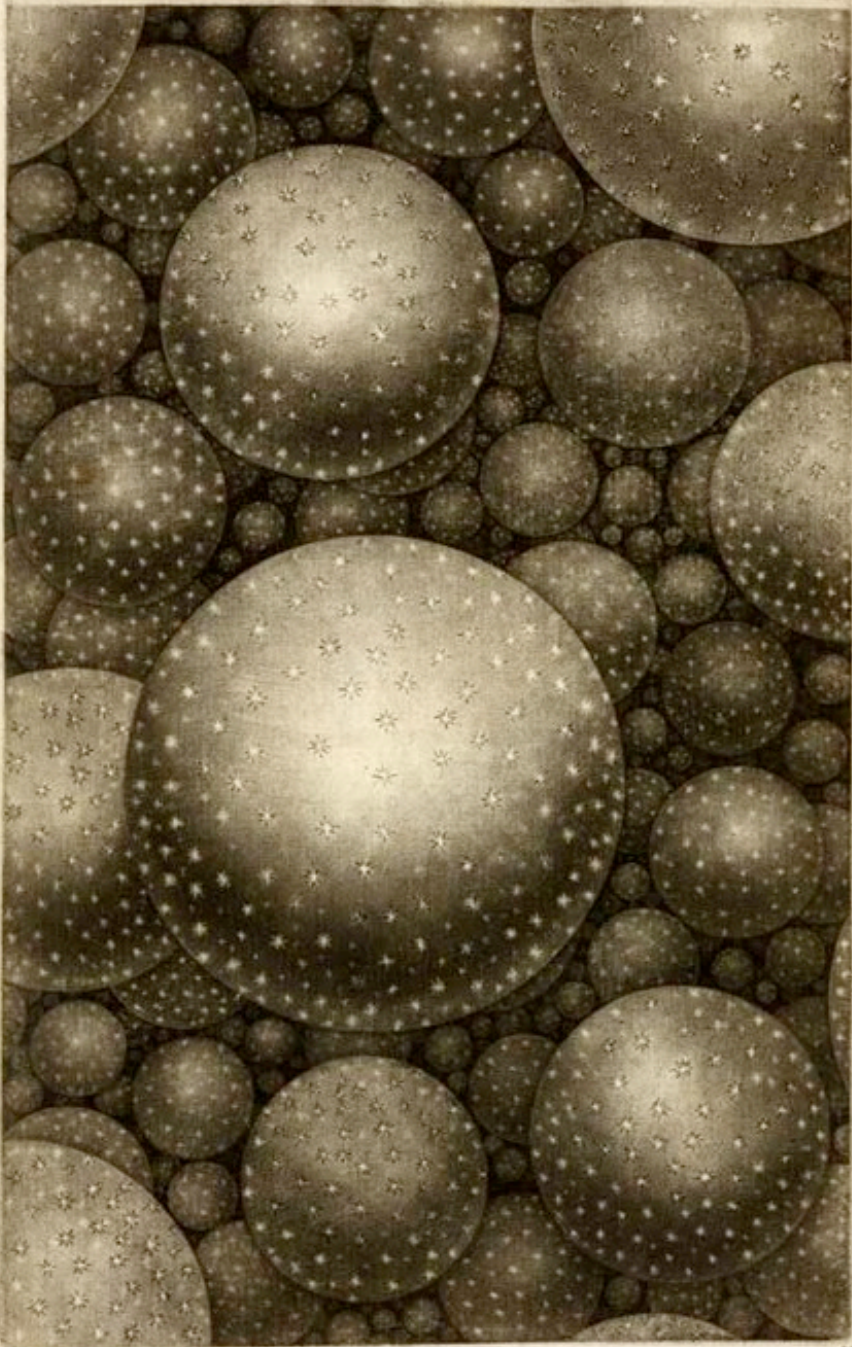
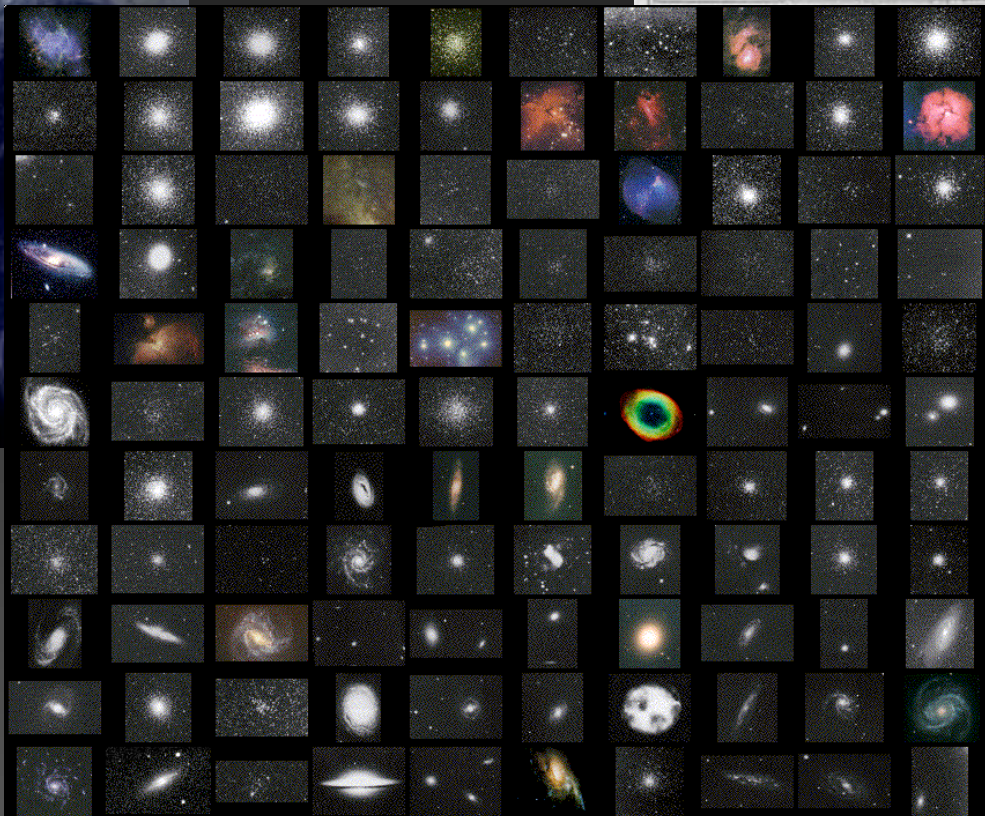
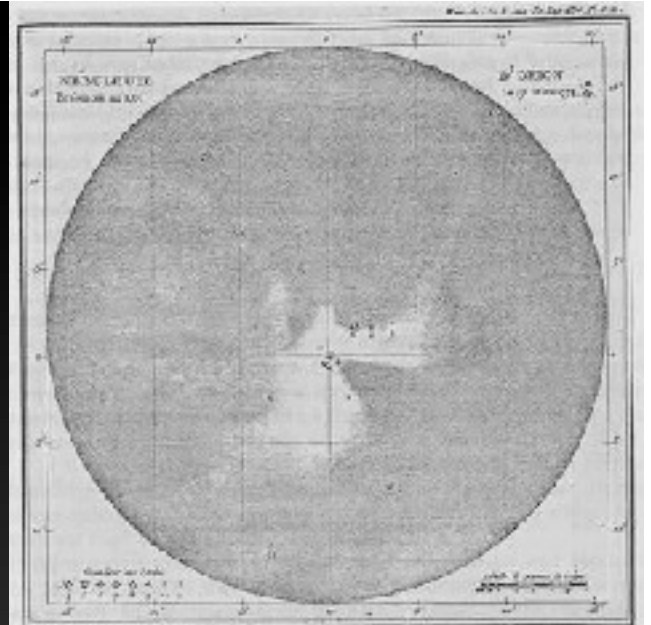


PLATE XVII.





DATE des OBSERVATIONS.	Nombres des Nébuleuses	ASCENSION DROITE.		DECLINAISON.	Diamètre en degrés & min.
		En Temps.	En Degrés.		
		H. M. S.	D. M. S.	D. M. S.	
1758. Sept. 12	1.	5. 20. 2	80. 0. 33	21. 45. 27 B	
1760. Sept. 11	2.	21. 21. 8	320. 17. 0	1. 47. 0 A	0. 4
1764. Mai. 3	3.	13. 31. 25	202. 51. 19	29. 32. 57 B	0. 3
	8	4. 16. 9. 8	242. 16. 56	25. 55. 40 A	0. 2 $\frac{1}{2}$
	23	5. 15. 6. 36	226. 39. 4	2. 57. 16 B	0. 3

Détails des Nébuleuses & des amas d'Étoiles.

Les positions sont rapportées ci-contre.

1. Nébuleuse au-dessus de la corne méridionale du Taureau, ne contient aucune étoile; c'est une lumière blancheâtre, alongée en forme de la lumière d'une bougie, découverte en observant la Comète de 1758. Voyez la Carte de cette Comète, *Mém. Acad. année 1759. page 188*; observée par le Docteur Bévis vers 1731. Elle est rapportée sur l'*Atlas céleste* anglois.
2. Nébuleuse sans étoile dans la tête du Verseau, le centre en est brillant, & la lumière qui l'environne est ronde; elle ressemble à la belle Nébuleuse qui se trouve entre la tête & l'arc du Sagittaire, elle se voit très-bien avec une lunette de deux pieds, placée sur le parallèle de α du Verseau. M. Messier a rapporté cette nébuleuse sur la Carte de la route de la Comète observée en 1759. *Mém. Acad. année 1760, page 464*. M. Maraldi avoit vu cette nébuleuse en 1746, en observant la Comète qui parut cette année.
3. Nébuleuse découverte entre le Bouvier & un des Chiens de Chasse d'Hévélius, elle ne contient aucune étoile, le centre en est brillant & sa lumière se perd insensiblement, elle est ronde; par un beau ciel on peut la voir avec une lunette d'un pied: elle sera rapportée sur la Carte de la Comète observée en 1779. *Mémoires de l'Académie de la même année. Revue le 29 Mars 1781*, toujours très-belle.
4. Amas d'étoiles très-petites; avec une foible lunette on le voit sous la forme d'une nébuleuse; cet amas d'étoiles est placé près d'Antarès & sur son parallèle. Observé par M. de la Caille, & rapporté dans son Catalogue. Revu le 30 Janvier & le 22 Mars 1781.
5. Belle Nébuleuse découverte entre la Balance & le Serpent, près de l'étoile du Serpent, de sixième grandeur, la cinquième suivant le Catalogue de Flamsteed: elle ne contient aucune étoile; elle est ronde, & on la voit

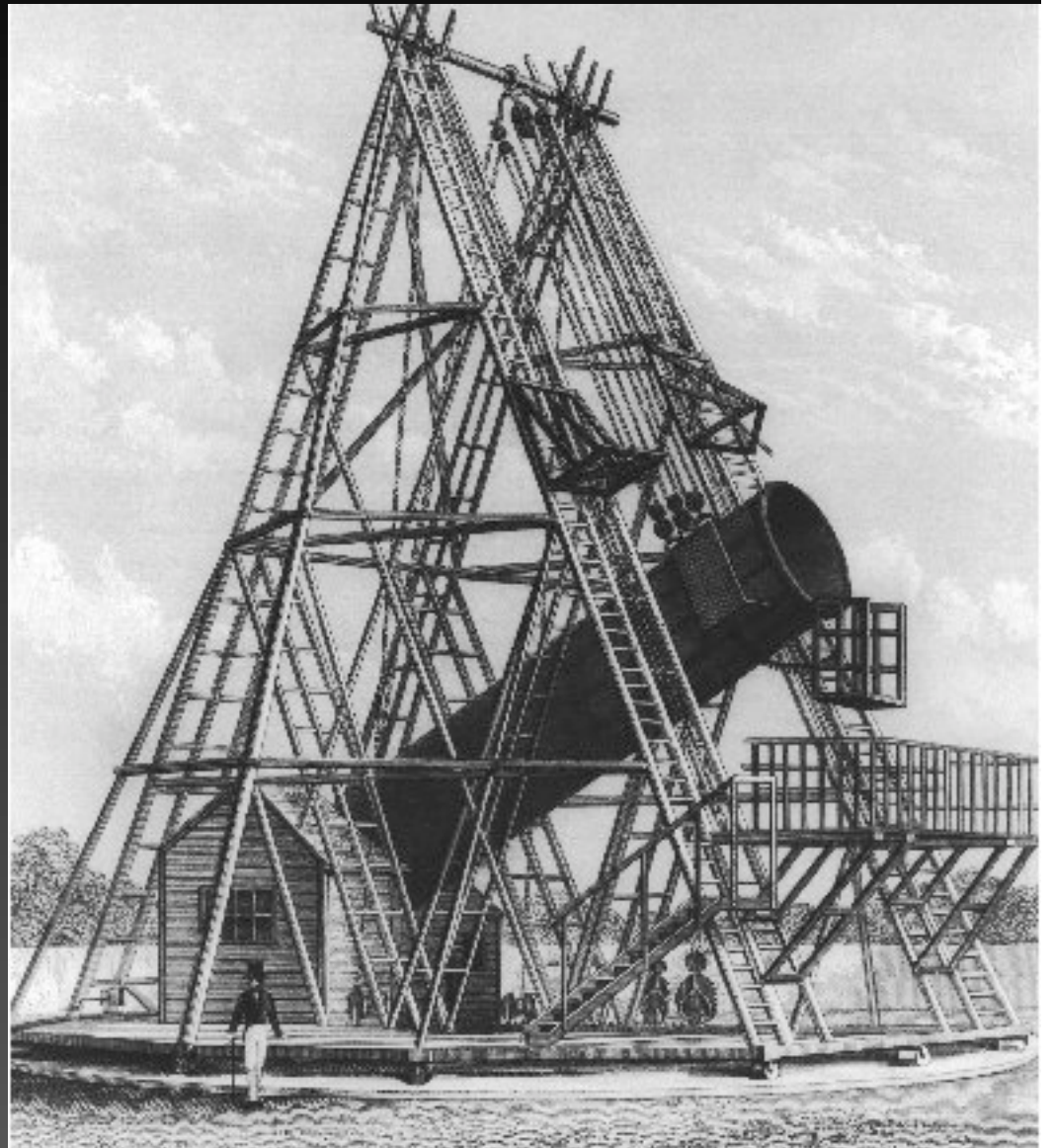
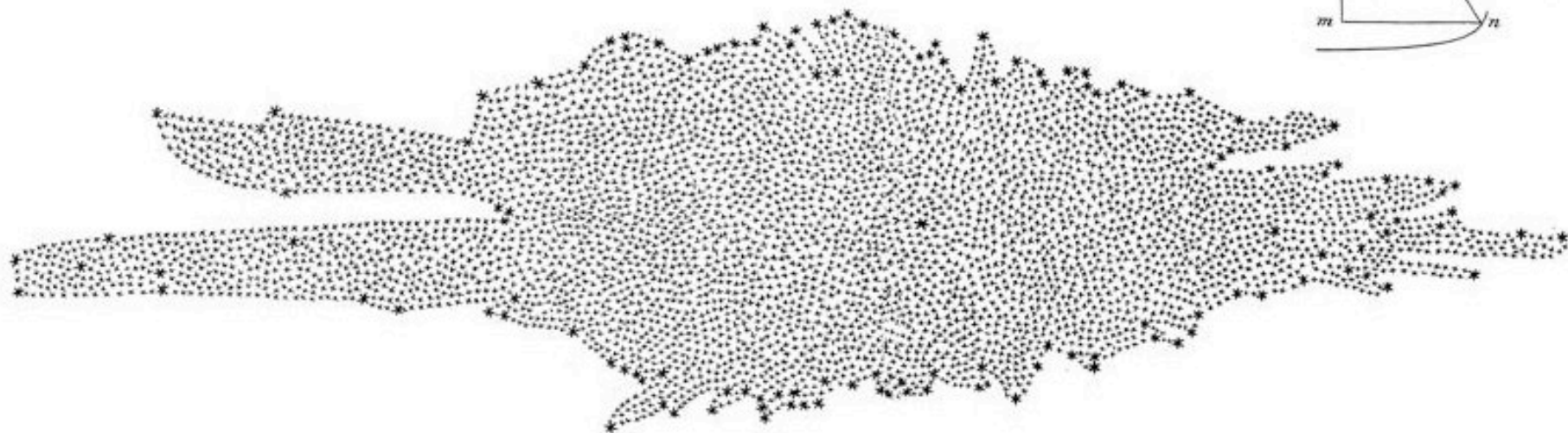
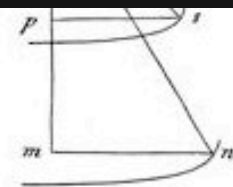


Fig. 4.









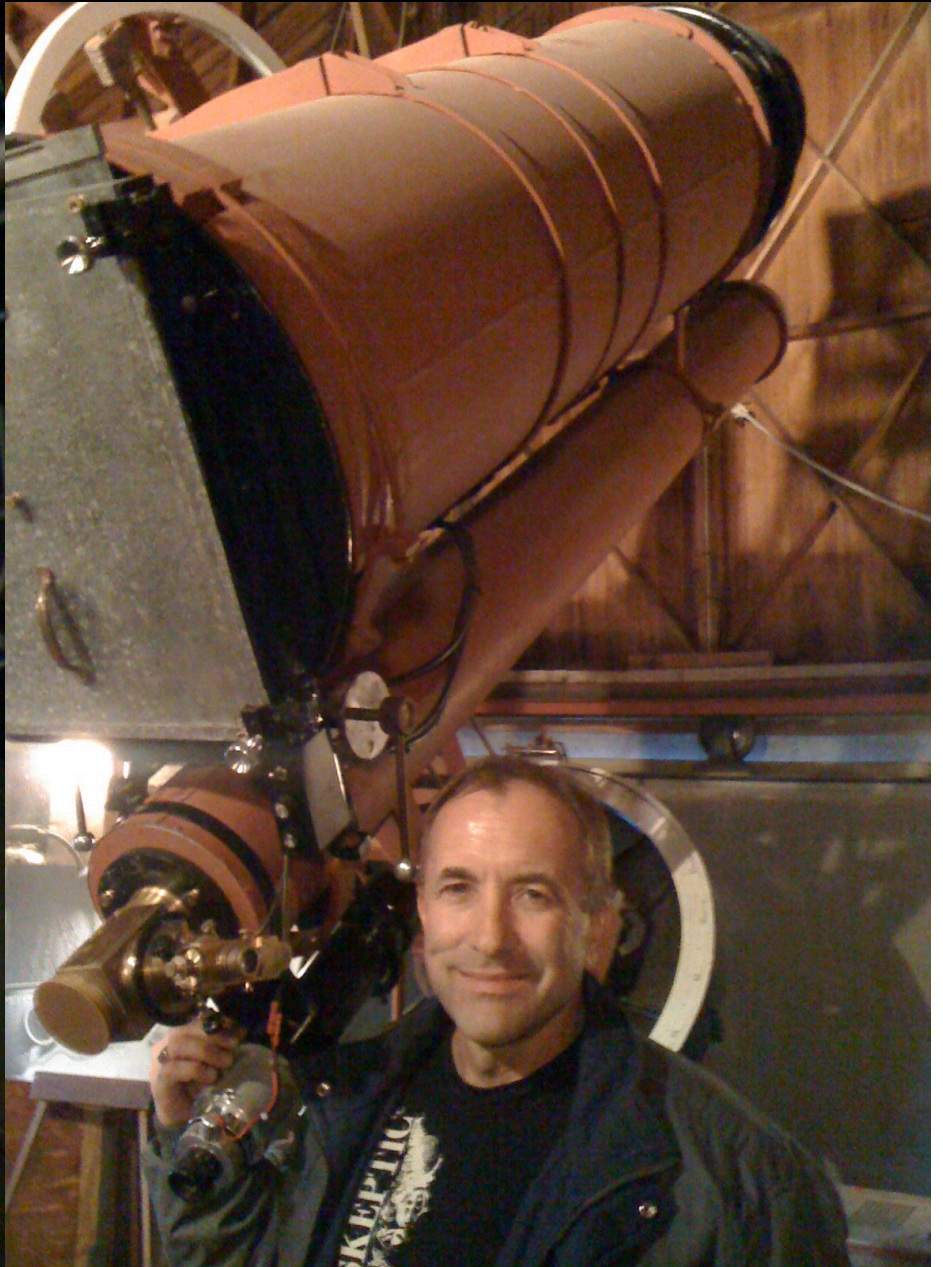
H 131

Phil. Trans. MDCCCLXI. Plate XXVI.

Fig. 10

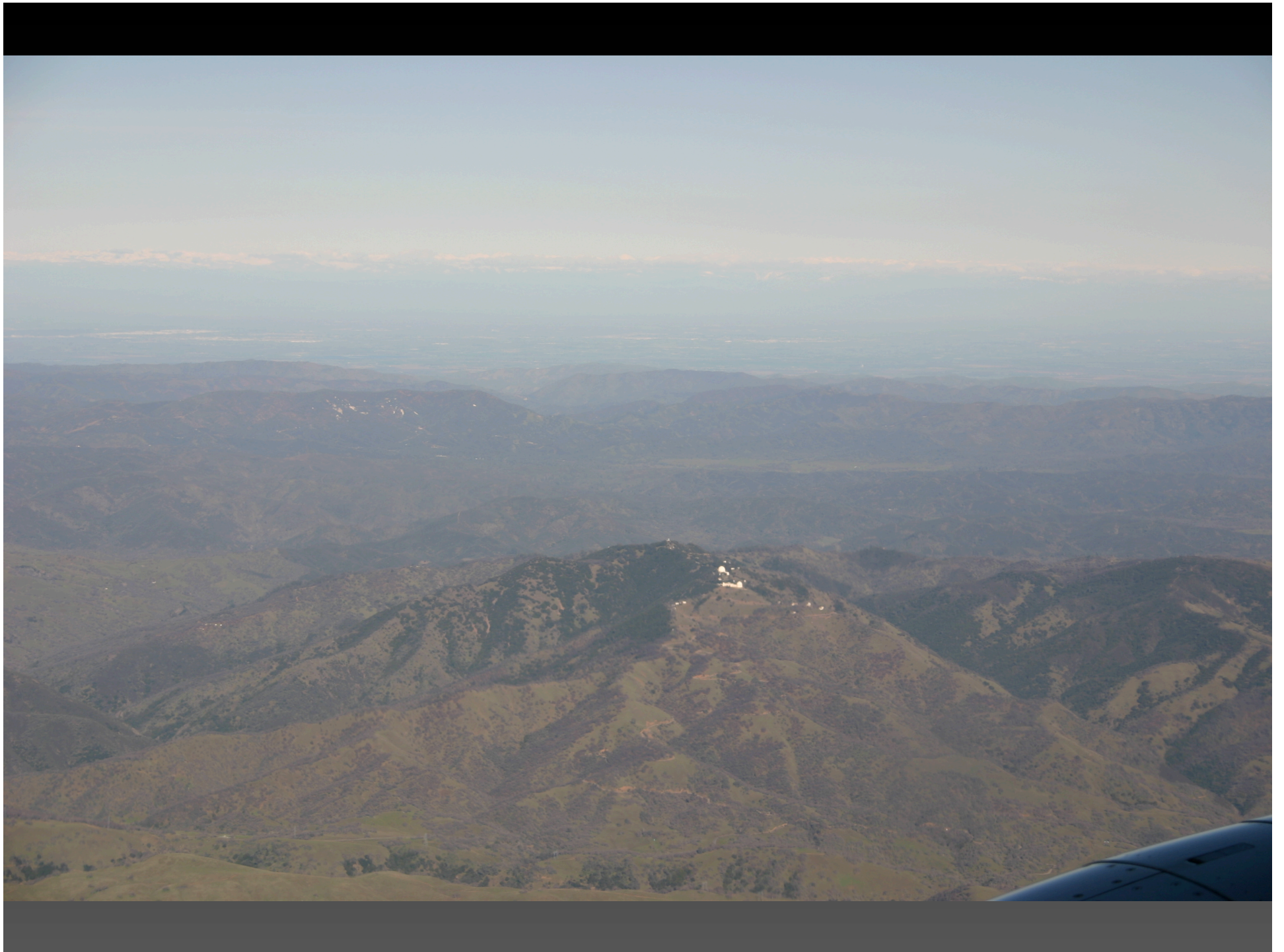


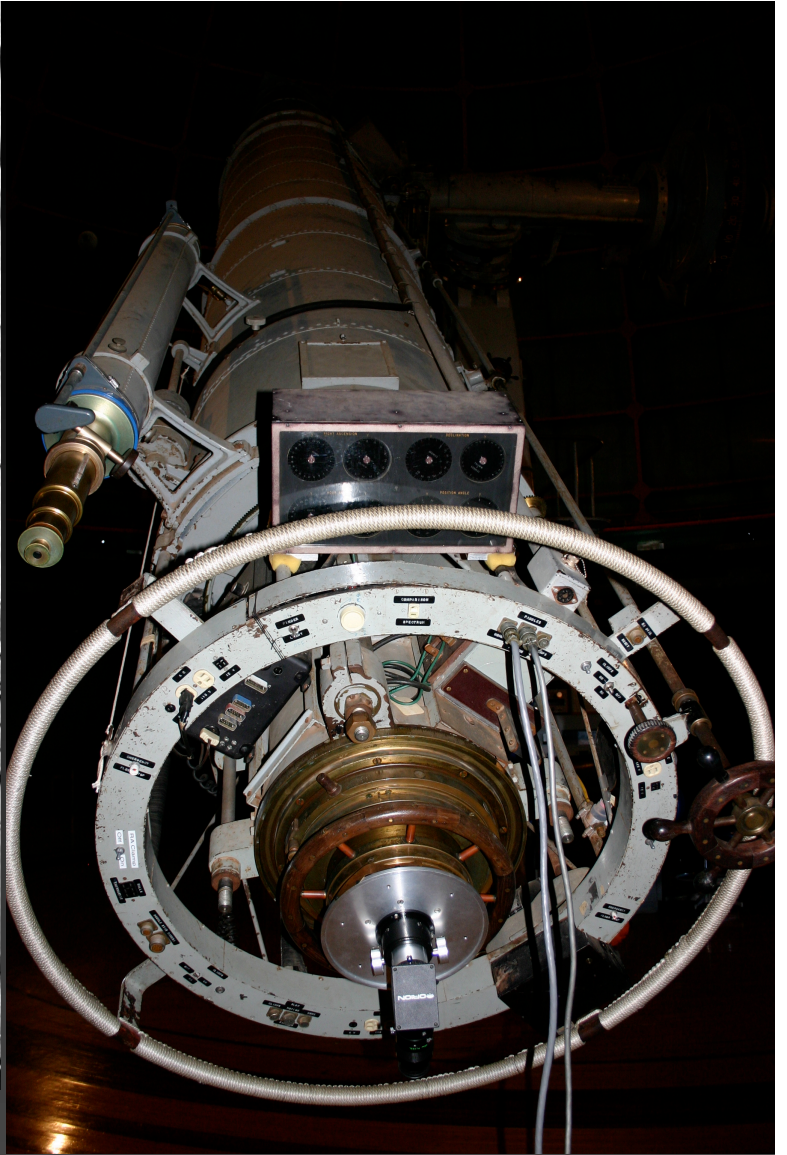
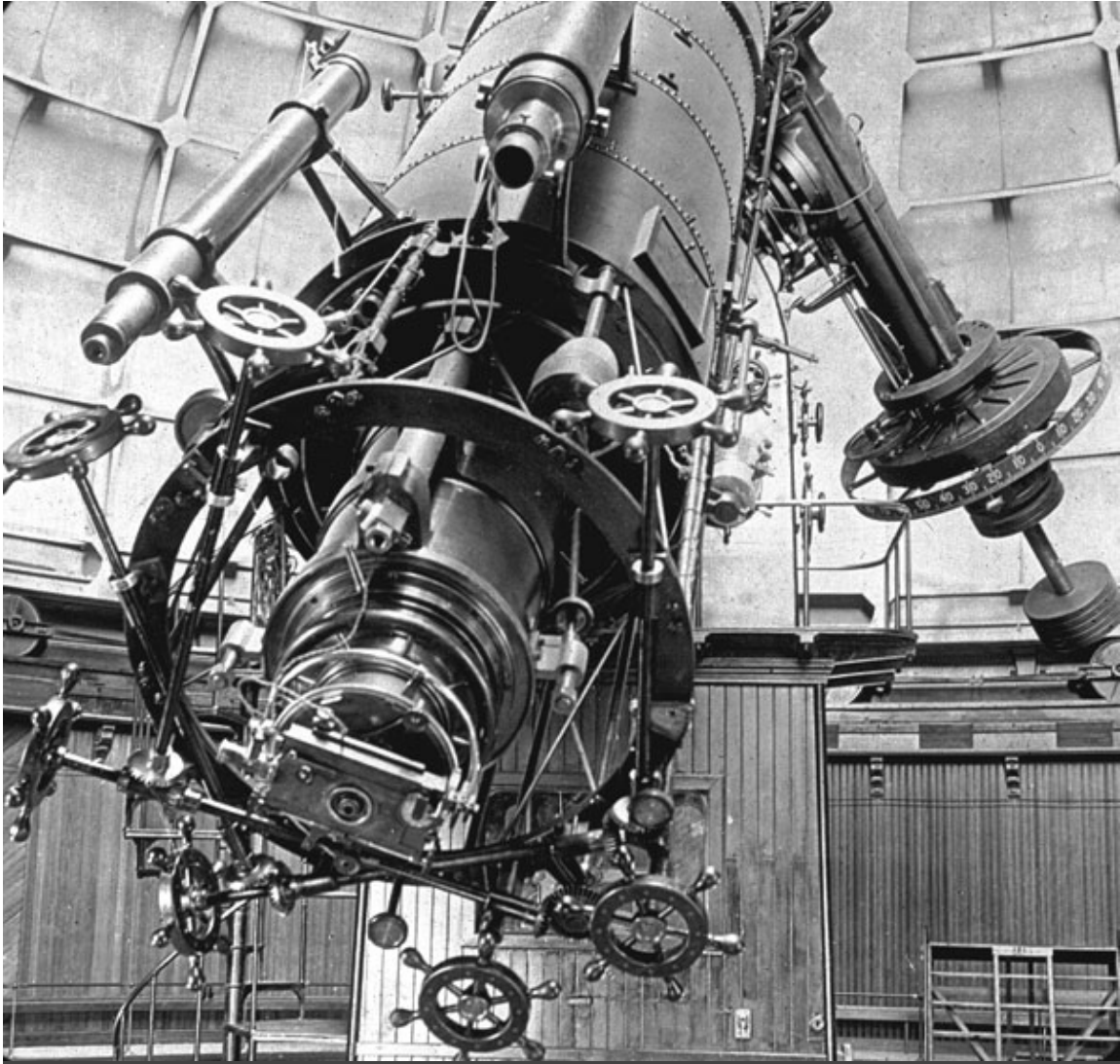
J. Bosc

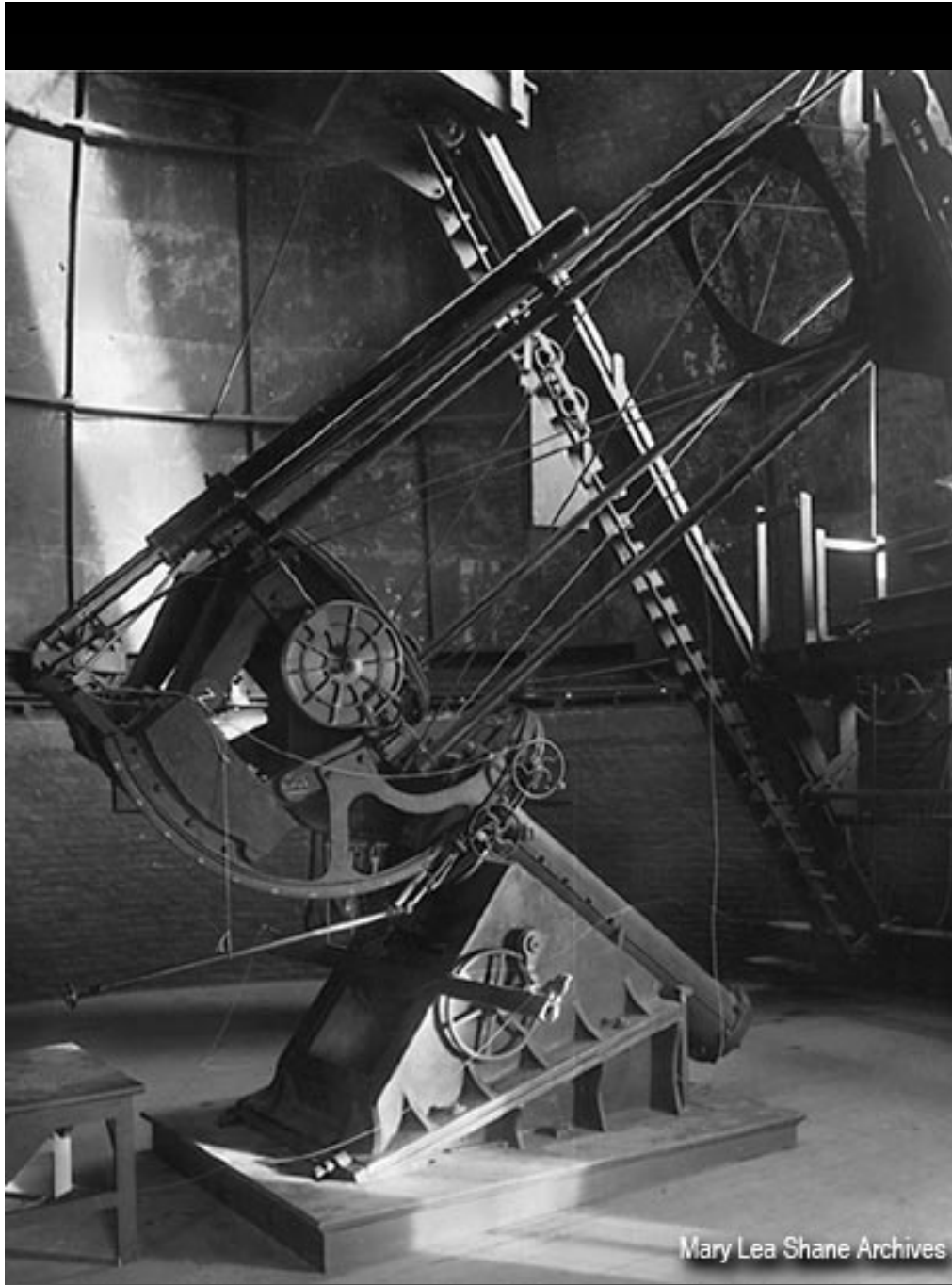




LICK OBSERVATORY
UNIVERSITY OF CALIFORNIA







Mary Lea Shane Archives





ED 45. 70. 4013.



Orange
Blue

117
117

117

DK 45. 70. 471.



From sketches opposite.

Aug 22, 1889.

Chalco Spectroscope.

97

Figure. Shows the same as last night.

A bar has more easily visible.

No dark line below it. A few faintly.

ED 30. 4013



40. 4

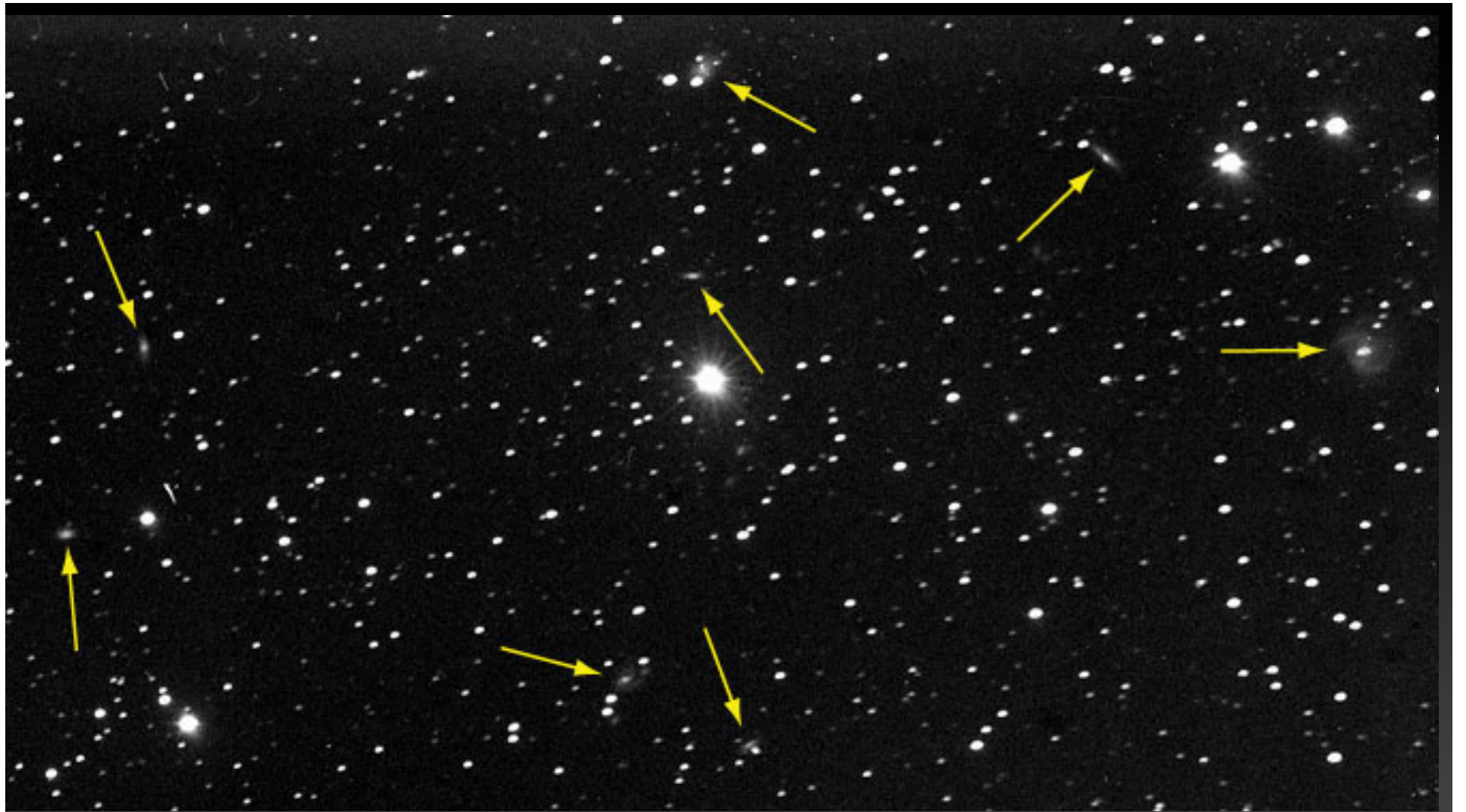
Respects line in end at times.

DK 3571.

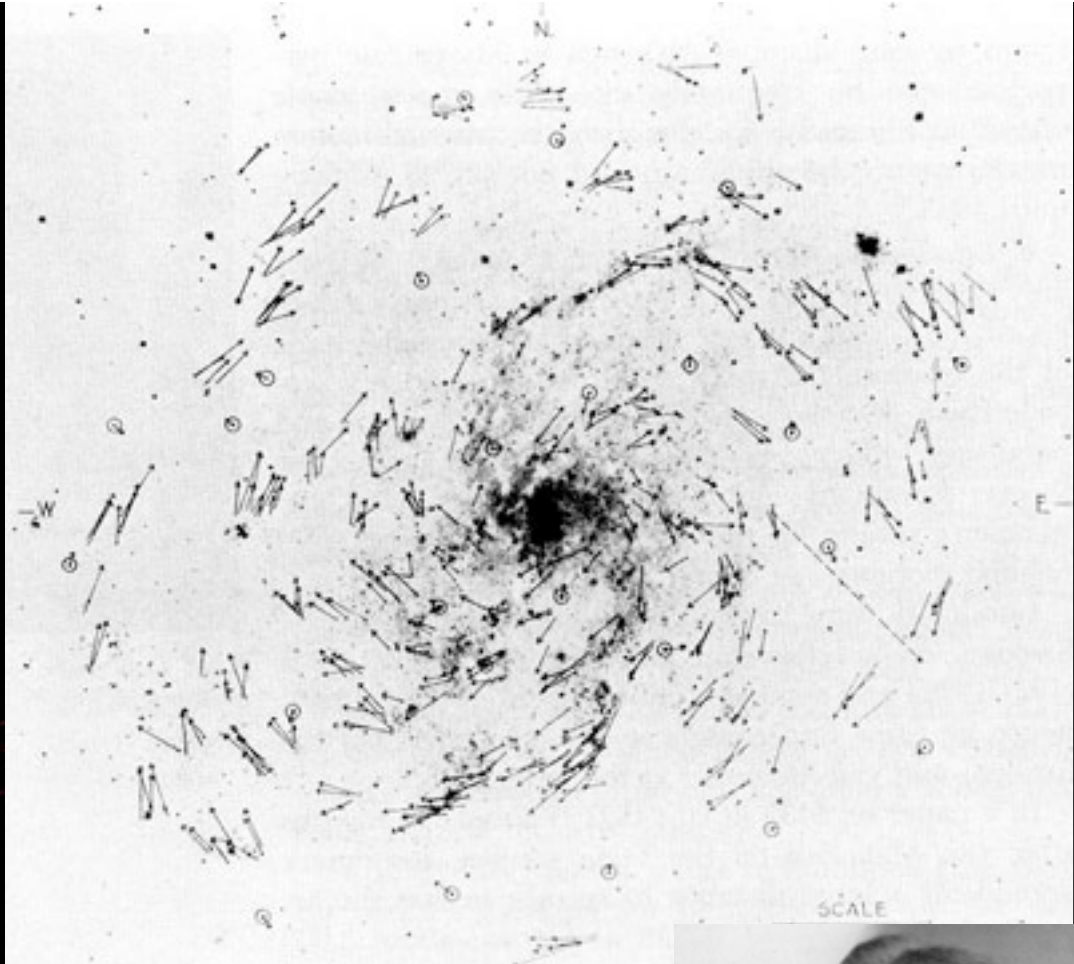
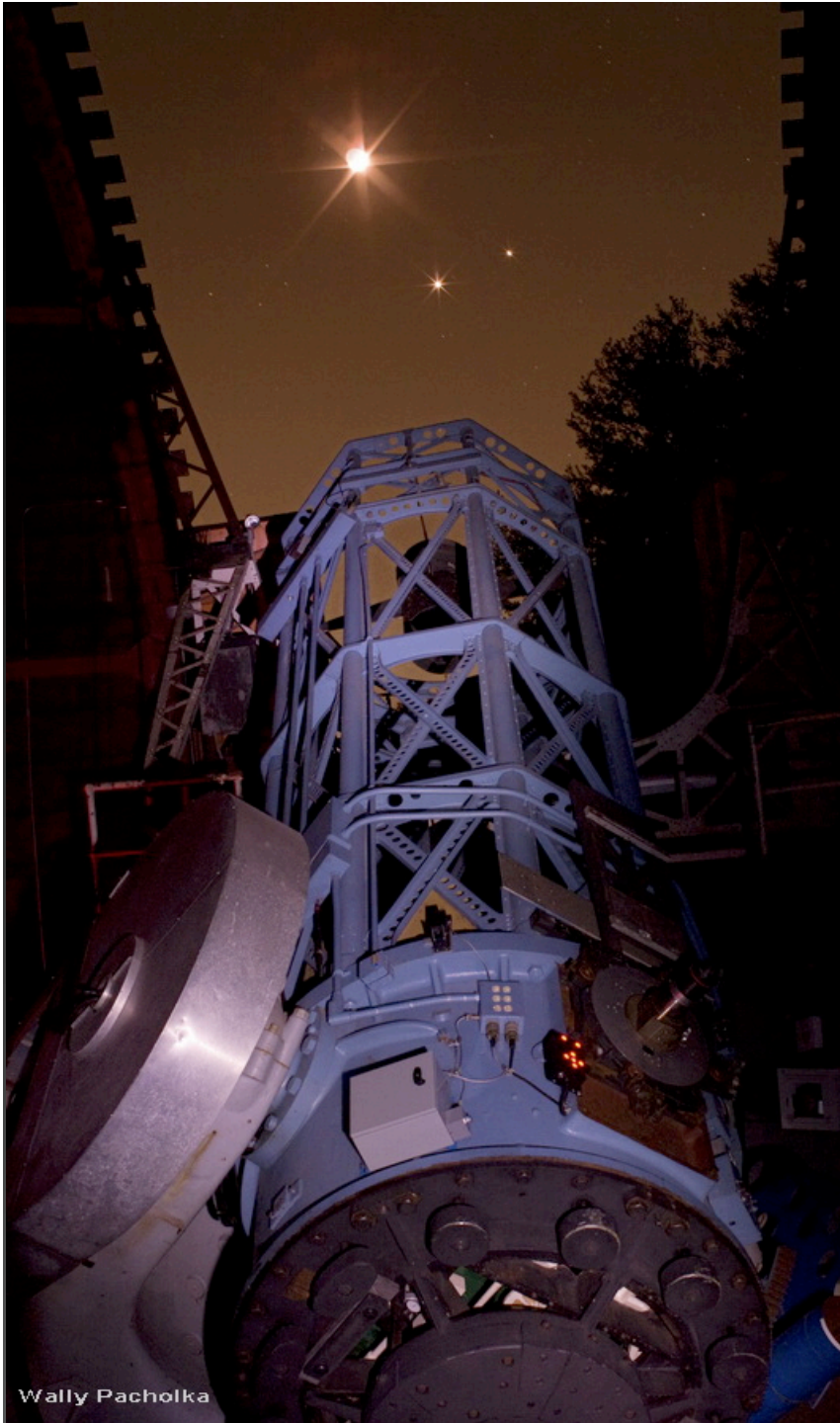


Differ from others of this class in having no very sharp lines except those in yellow, which are fairly sharp. Bands are broad & diffuse. There is dark band above blue.





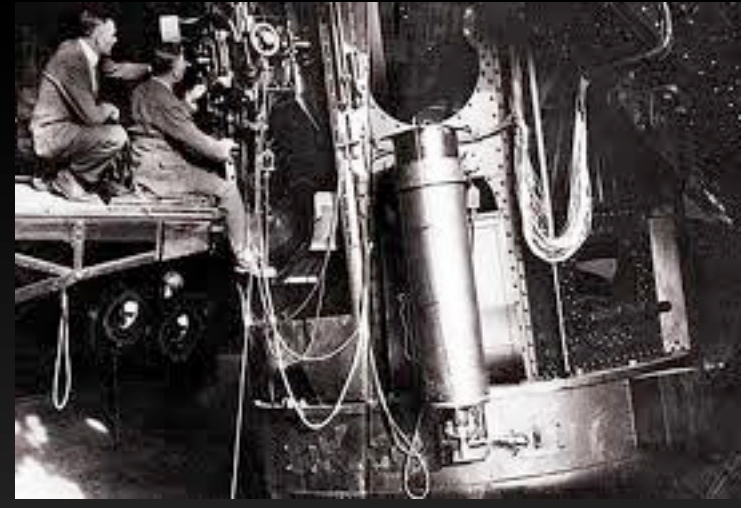
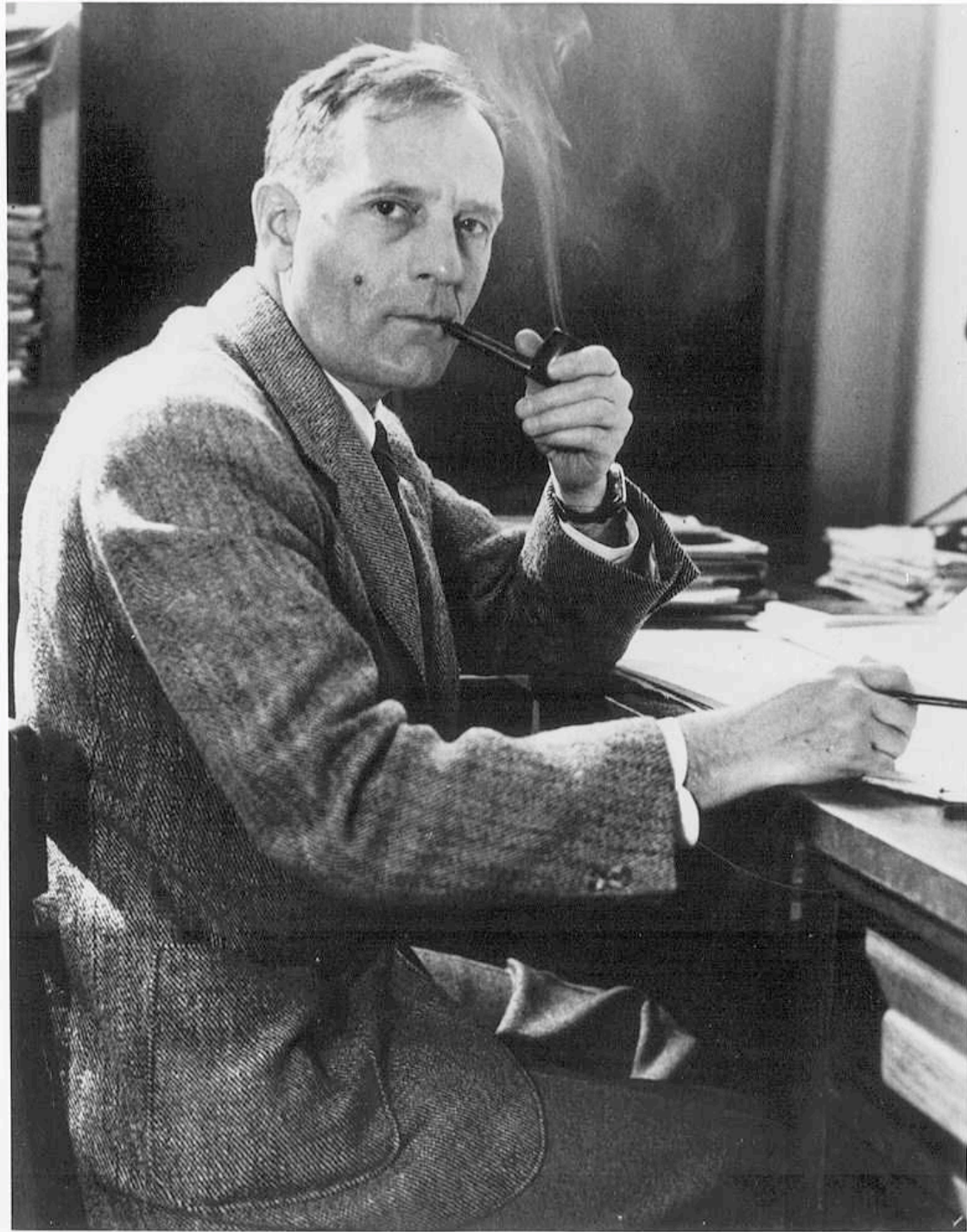


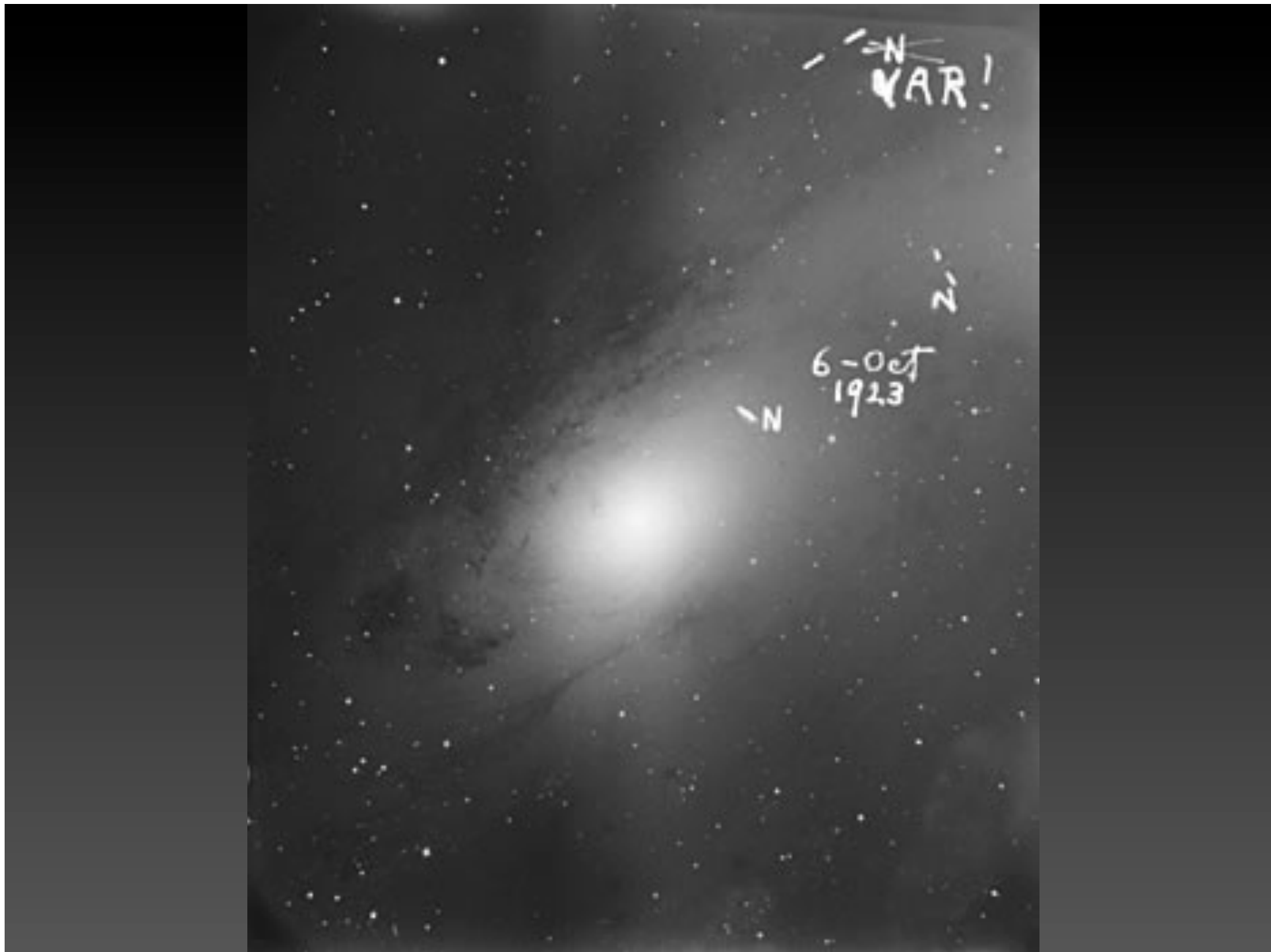


Wally Pacholka

Adriaan van Maanen







Whenever possible...
Observe, Test, Experiment

Therapeutic Touch



Massaging the Human Energy Field

The touchy feely without the touchy

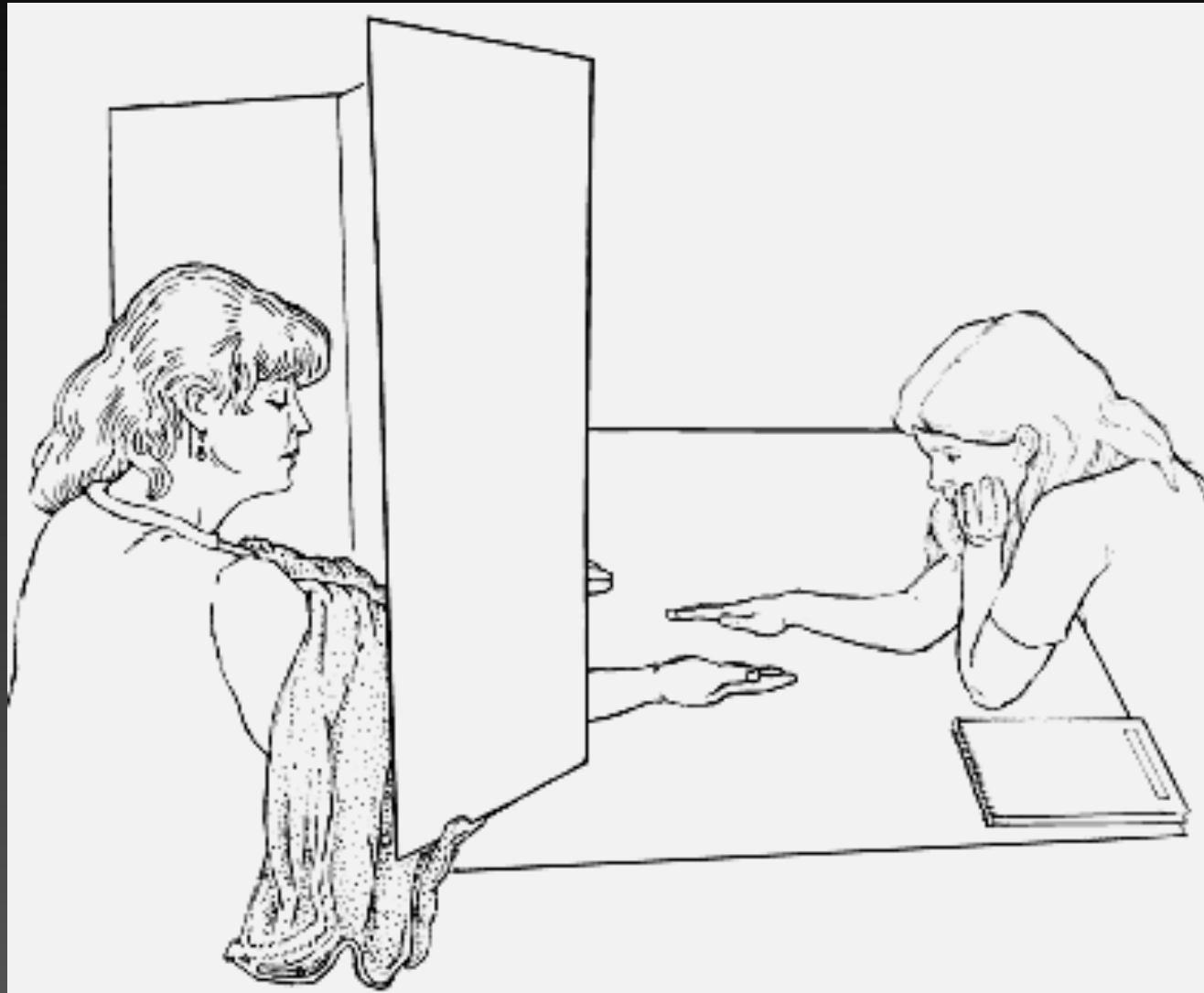


(CNN)

Emily Rosa's 4th Grade Science Project: Testing Therapeutic Touch



Can a Therapeutic Touch therapist detect Emily's energy field if they can't see it?



The Emily Experiment



21 TT Therapists Tested, experience 1-21 yrs



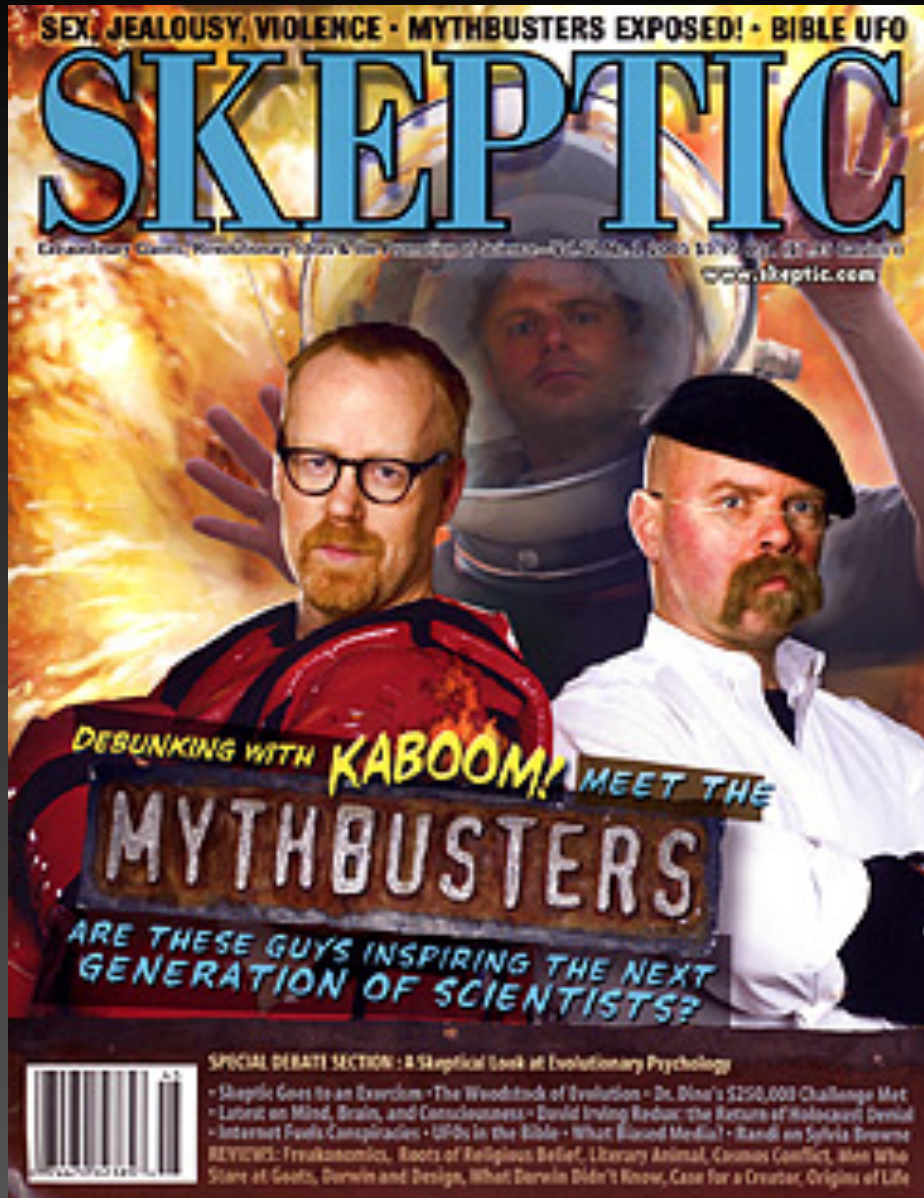
Emily's Results

280 trials: 123 hits, 157 misses
44% hit rate—50% expected



(CNN)

Emily's Results Published!



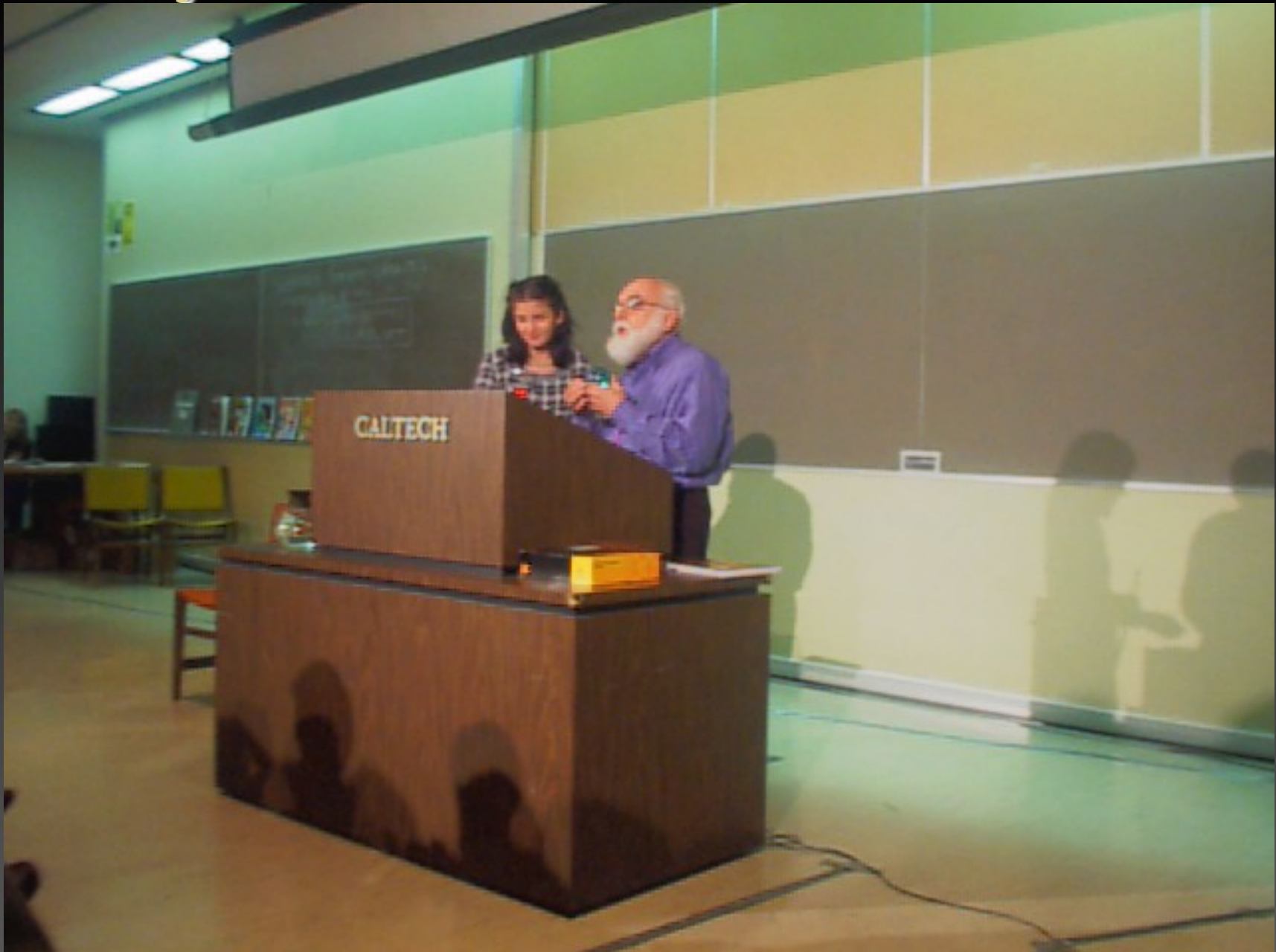
JAMA[®]

September 22/29, 1999

The Journal of the American Medical Association



Emily Wins Guinness Book Award!



Little Emily All Grown Up Science is Sexy!



Priming Effect

Prime the brain to see & hear
and it will obey

Belief --> Perception
Concepts --> Percepts

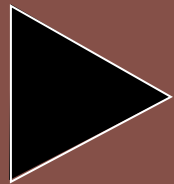
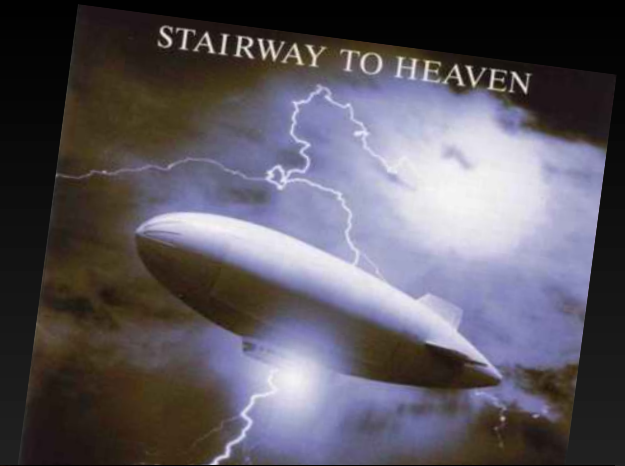
If there's a bustle in your
hedgerow.

Don't be alarmed now.

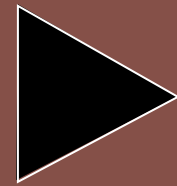
It's just a spring clean
for the May Queen.

Yes, there are two paths you
can go by, but in the long run.

There's still time to change
the road you're on.



PLAY



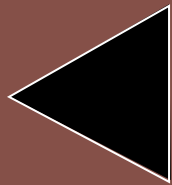
Oh

Here's to my sweet Satan.

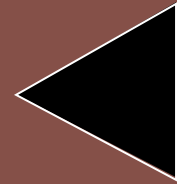
The one whose little path
would make me sad whose
power is Satan.

He'll give you, give you 666.

There was a little toolshed where
he made us suffer, sad Satan.



REVERSE



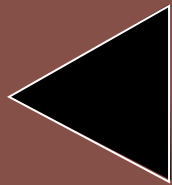
Oh

Here's to my sweet Satan.

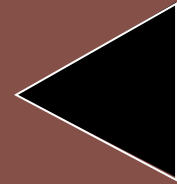
The one whose little path
would make me sad whose
power is Satan.

He'll give you, give you 666.

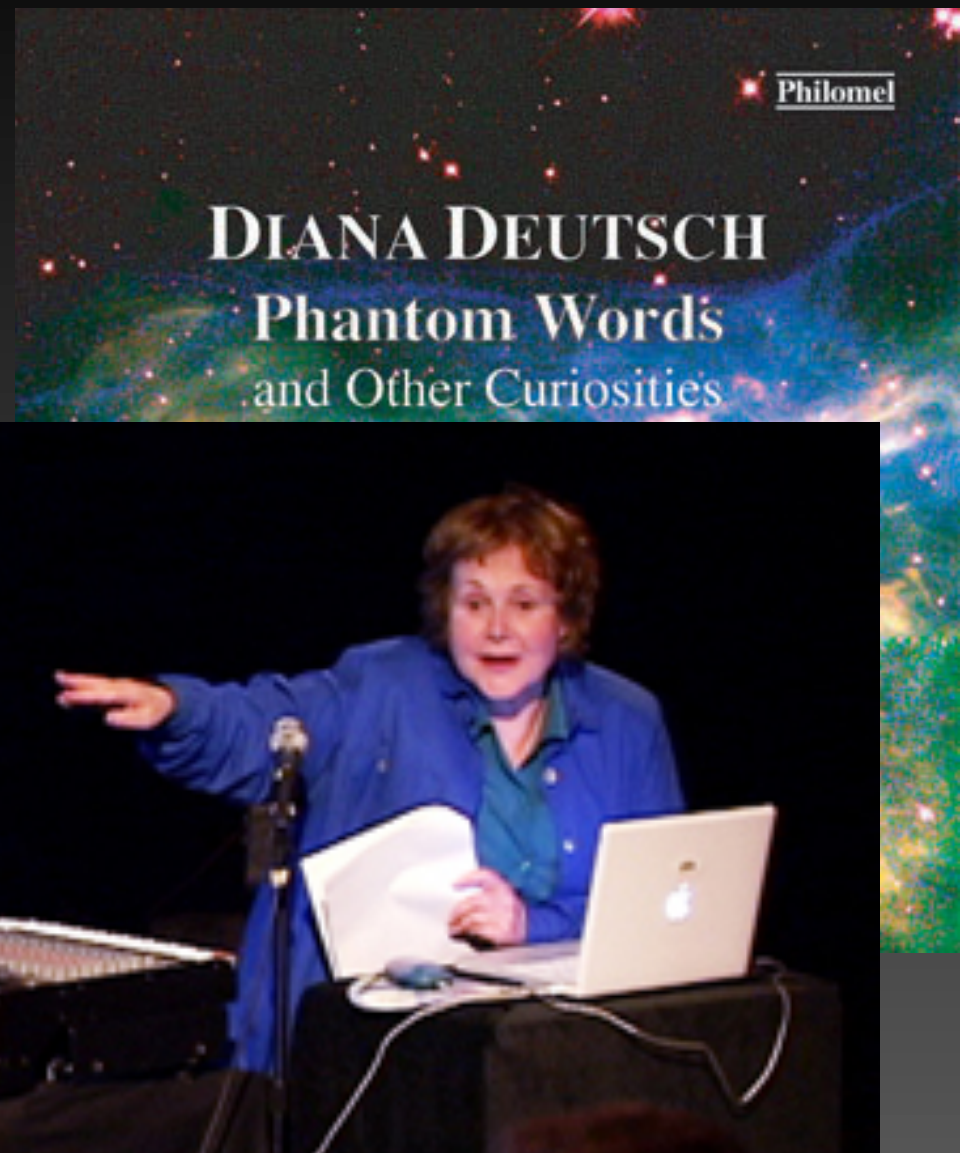
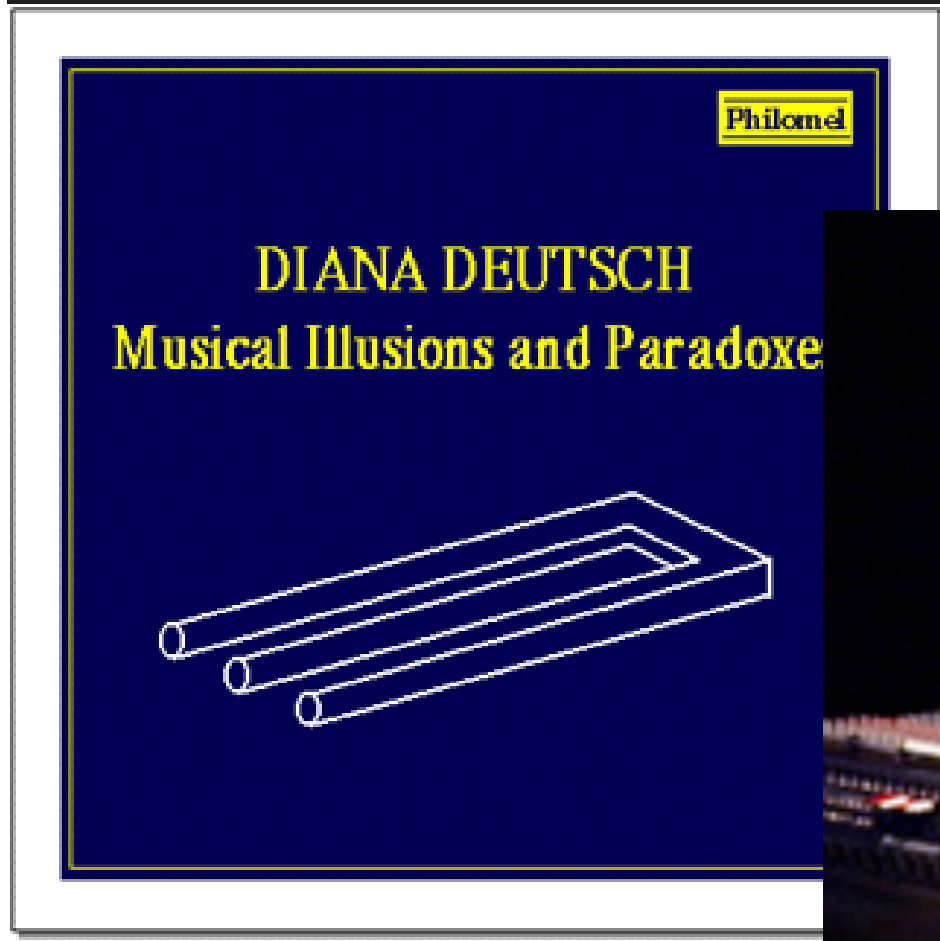
There was a little toolshed where
he made us suffer, sad Satan.



REVERSE



Listen Carefully What Do You Hear?



Auditory 1
Downtown
Downhill
Backup
Guilty
Kilda
Hilga

Auditory 2

Coffee

Golf

God

Equal

Igor

Auditory 3

Respond

Progress

Bogus

Boris

What does this say?

A e y o s r t a t s w a t i t s y s ?

What language are you reading in?

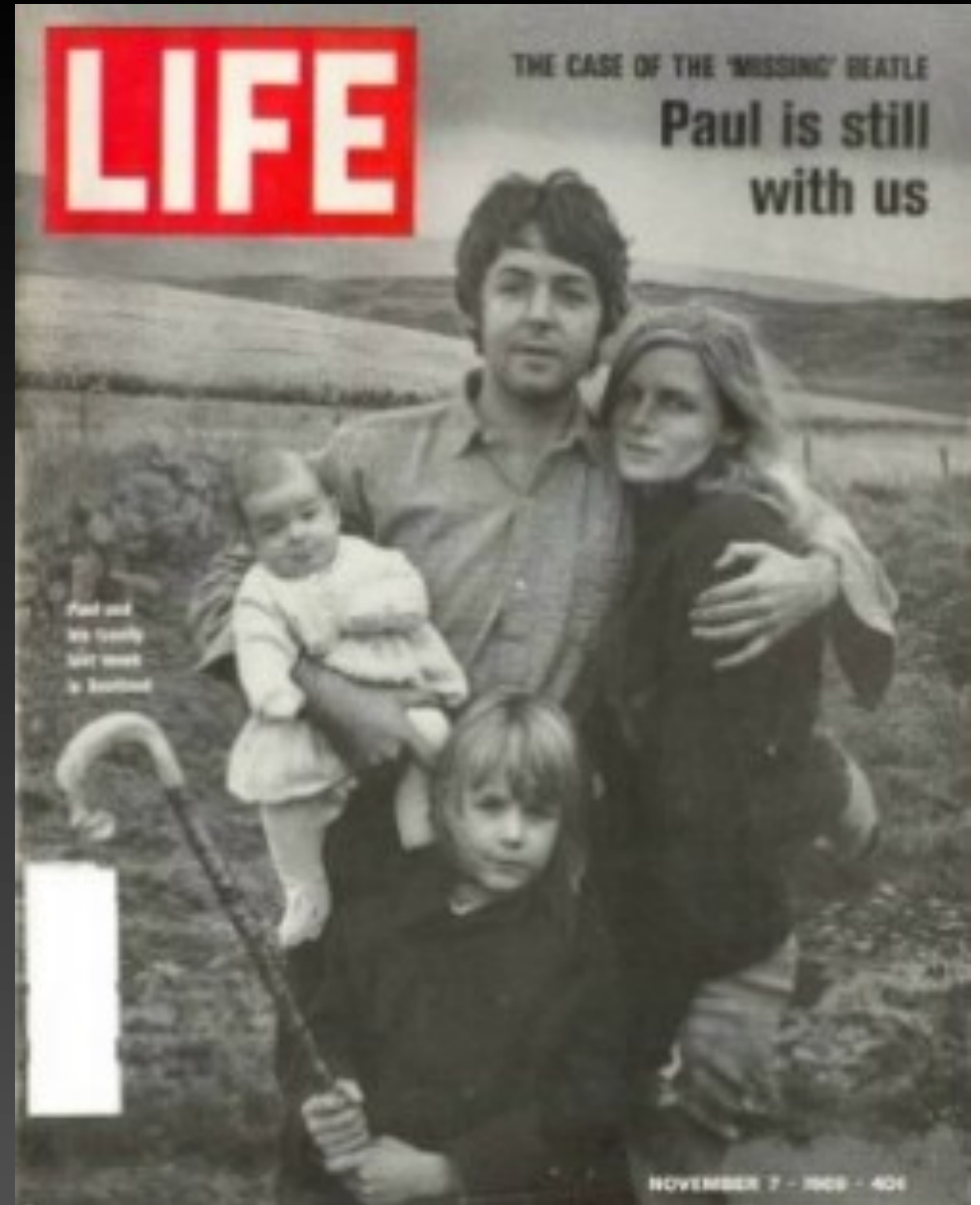
Bivelee it or not, rcesrhaeers at Cmabrigde hvae dirvoseced taht the oredr of ltteers in a wrod deson't rlaley matter. The olny iprmoetnt tihng is taht the frist and lsat ltteer are in the rghit pclae. Eevn if the rset are tolatly julebmd up you can sitll raed it. Tihs is bcuseae the huamn barin deos not raed ecah lteter indivduialy, but inesatd renizgoecs the wrod as a wlohe.

Confirmation Bias

The tendency to seek & find confirmatory evidence for one's beliefs, and to ignore disconfirmatory evidence

Confirmation Bias

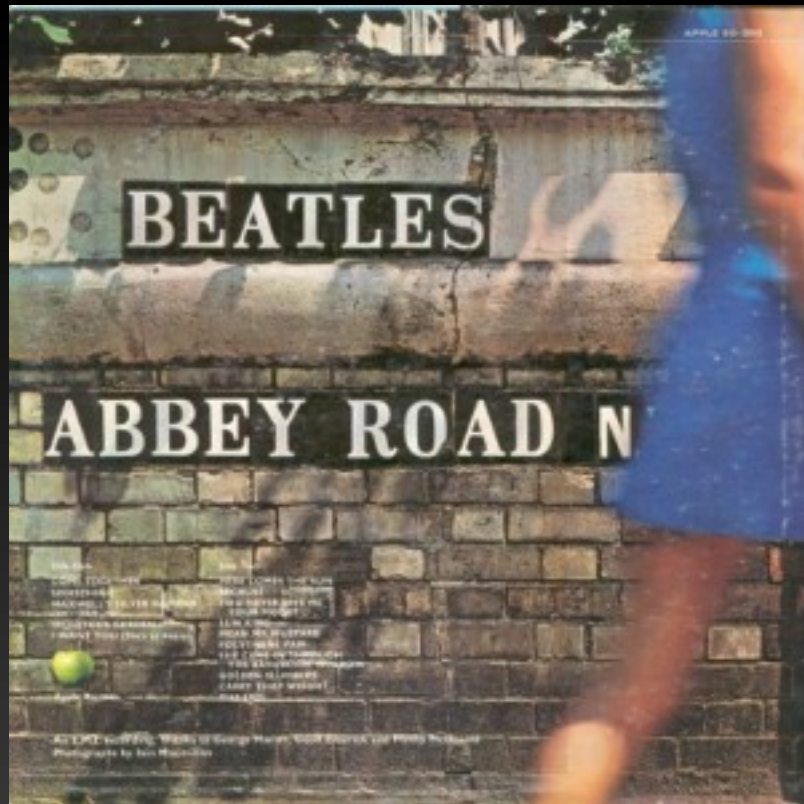












SCIENTIFIC AMERICAN

Microbial Forces Sparking the Future of Data Storage
The NANODRIVE

FRESH FROM THE LAB (Impressions)

PROTECTING CANCER WITH A LIGHT

THE GOVERNMENT'S WARRIOR ON TERROR

Skeptic



Codified Claptrap

The Bible Code is numerological nonsense masquerading as science By MICHAEL SHERMER

In the epilogue of *In Memoriam A.H.H.*, Alfred, Lord Tennyson captured the essence of the quest for a single unifying principle and purpose in nature: “One God, one law, one element,/And one far-off divine event,/To which the whole creation moves.”

The noble dream of finding teleological succor in the march of time has become big business, as demonstrated by works from Hal Lindsey’s 1970s blockbuster *The Late Great Planet Earth* to today’s *Left Behind* series, by Tim LaHaye and Jerry B. Jenkins. (Both are said to have sold in the tens of millions.) And if you can sprinkle your homiletics with scientific jargon,

Just like the prophecies of soothsayers past and present, all such predictions are actually postdictions.

so much the better. The latest and most egregious example of the (mis)use of science in the (dis)service of religion is Michael Drosnin’s *Bible Code II*, enjoying a lucrative ride on the *New York Times* best-seller list, as did the 1997 original.

According to proponents of the Bible Code—itsself a subset of the genre of biblical numerology and Kabbalistic mysticism popular since the Middle Ages—the Hebrew Pentateuch can be decoded through an equidistant-letter-sequencing software pro-

gram. The idea is to take groups of letters, whose numerical value (chic or astrologer forewarned us about 9/11). To be tested scientifically, Bible codes would need to predict events *before* they happen. They won’t, because they can’t—as Danish physicist Niels Bohr averred, predictions are difficult, especially about the future. Instead, in 1997 Drosnin proposed this test of his thesis: “When my critics find a message about the assassination of a prime minister encrypted in *Moby Dick*, I’ll believe them.”

Australian mathematician Brendan McKay did just that, locating no fewer than nine political assassinations secreted in the great novel, along with additional discoveries in *War and Peace* and other tomes (see cs.anu.edu.au/~bdkm/dilugim/moby.html). American physicist David E. Thomas predicted the Chicago Bulls’s NBA championship in 1998 from his code search of Leo Tolstoy’s novel. He also recently unearthed “the Bible code is a silly, dumb, fake, false, evil, nasty, dismal fraud and snake-oil hoax” from *Bible Code II* (see www.nmsr.org/biblecod.htm).

If there is an encrypted message in all this numerological poppycock it is this: there is a deep connection between how the mind works and how we perceive the world works. We are pattern-seeking animals, the descendants of hominids who were especially dexterous at making causal links between events in nature. The associations were real often enough that the ability became engrained in our neural architecture. Unfortunately, the belief remains enrooted, occasionally identifying false patterns

Reading Michael Drosnin's response to Michael Shermer's column on the Bible "code" and its ability to accurately predict the future, I could not help but laugh. I have been a writer and illustrator of comic books for the past 30 years, and in that time I have "predicted" the future so many times in my work my colleagues have actually taken to referring to it as "the Byrne Curse".

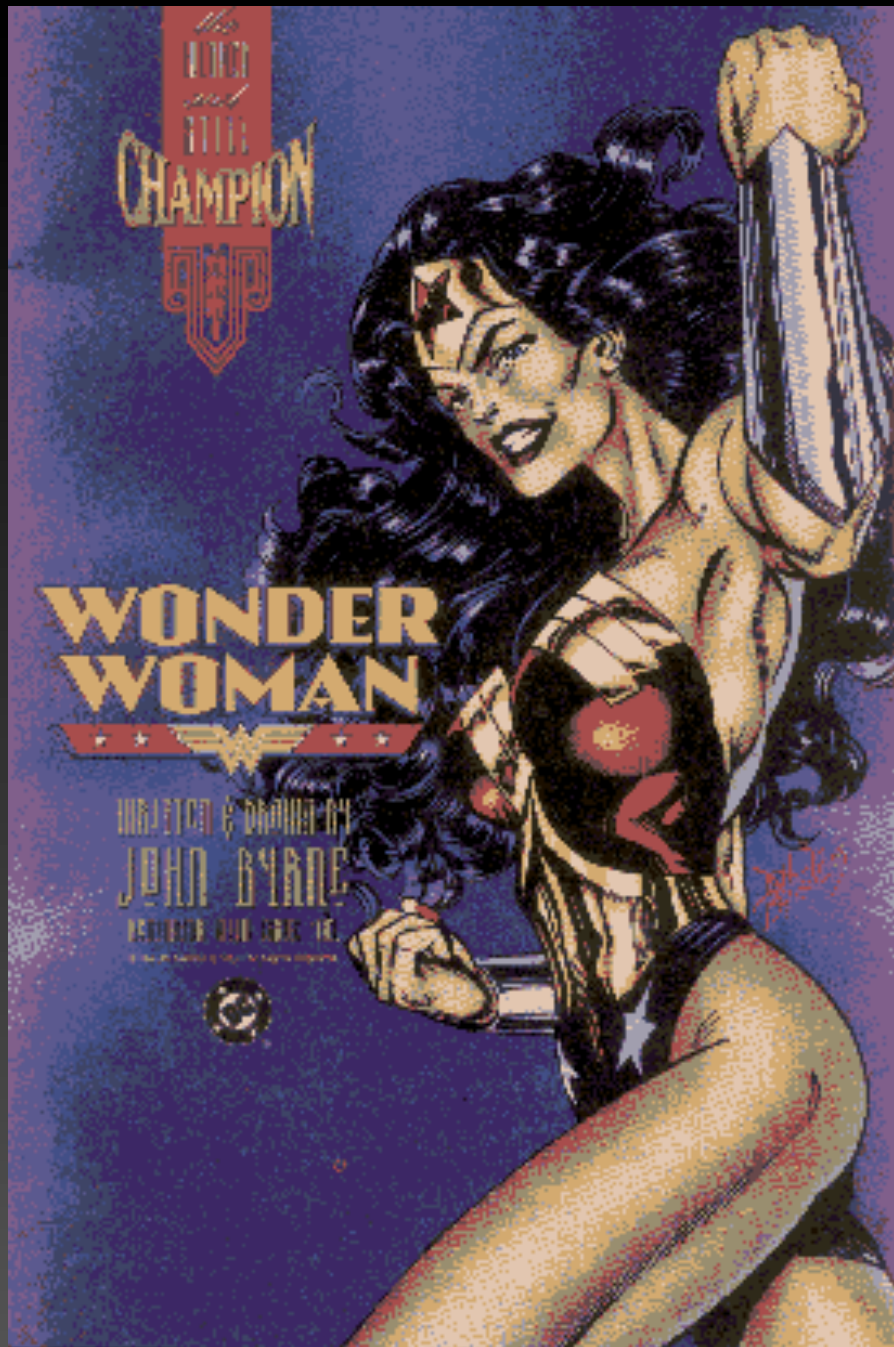


It began in the late 1970s. While working on a Spider-Man series titled “Marvel Team-Up” I did a story about a blackout in New York. There was a blackout the month the issue went on sale (six months after I drew it.) While working on “Uncanny X-Men” I hit Japan with a major earthquake, and again the real thing happened the month the issue hit the stands.



Now, those things are fairly easy to “predict,” but consider these: When working on the relaunch of Superman, for DC Comics, I had the Man of Steel fly to the rescue when disaster beset the NASA space shuttle. The Challenger tragedy happened almost immediately thereafter, with time, fortunately, for the issue in question to be redrawn, substituting a “space plane” for the shuttle.





Most recent, and chilling, came when I was writing and drawing “Wonder Woman”, and did a story in which the title character was killed, as a prelude to her becoming a goddess.

The cover for that issue was done as a newspaper front page, with the headline “Princess Diana Dies”. (Diana is Wonder Woman’s real name). That issue went on sale on a Thursday. The following Saturday. . . I don't have to tell you, do I?

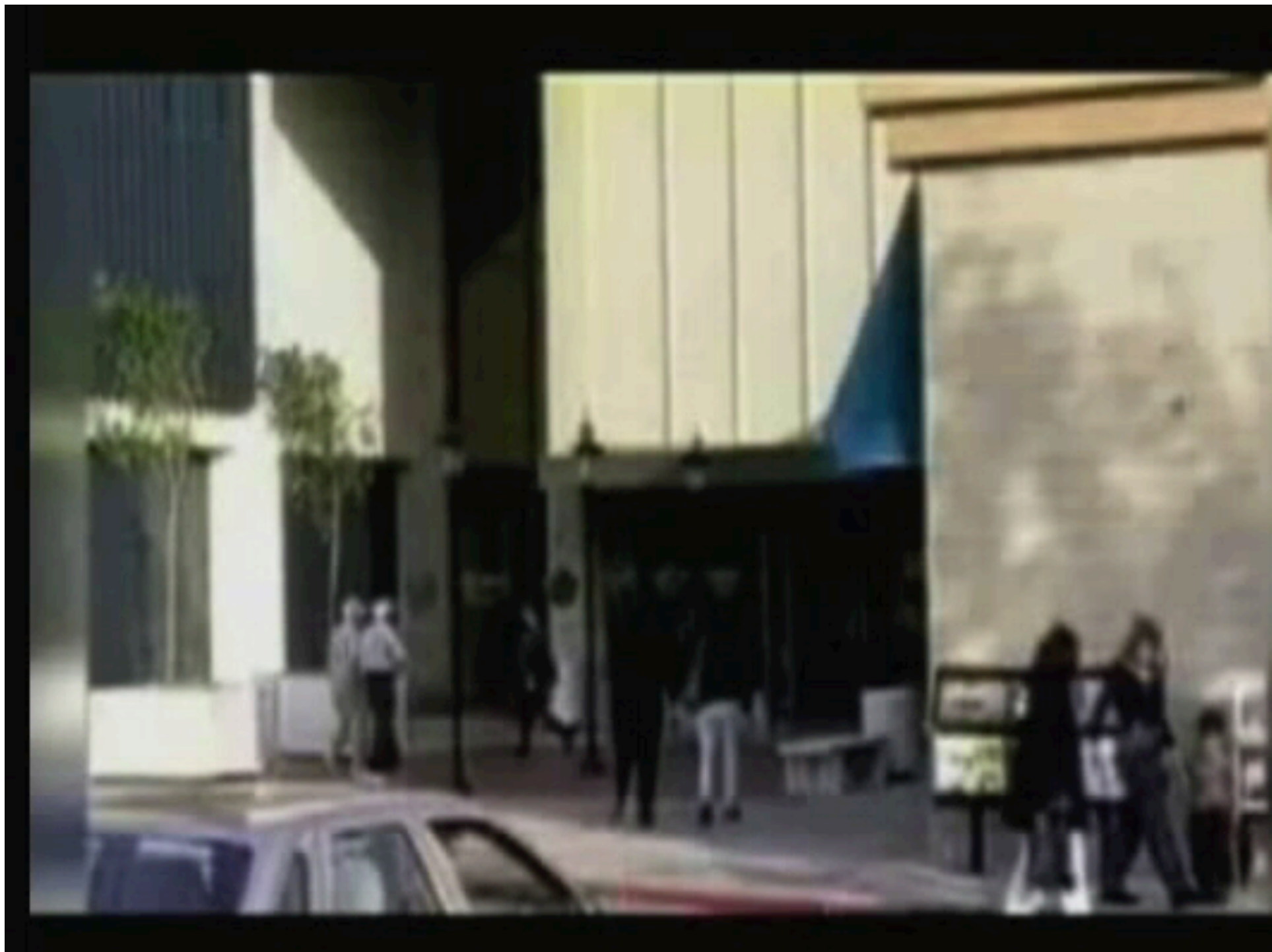


My ability as a prognosticator, like Drosnin's, would seem assured—provided, of course, we reference only the above, and skip over the hundreds of other comic books I have produced which featured all manner of catastrophes, large and small, which did not come to pass.

—John Byrne



Priming Effects
Confirmation Bias
Expectation Violation



The
**BELIEVING
BRAIN**

From **GHOSTS** *and* **GODS** *to*
POLITICS *and* **CONSPIRACIES** —

*How We Construct Beliefs
and Reinforce Them as Truths*

**MICHAEL
SHERMER**

Author of **Why People Believe Weird Things**



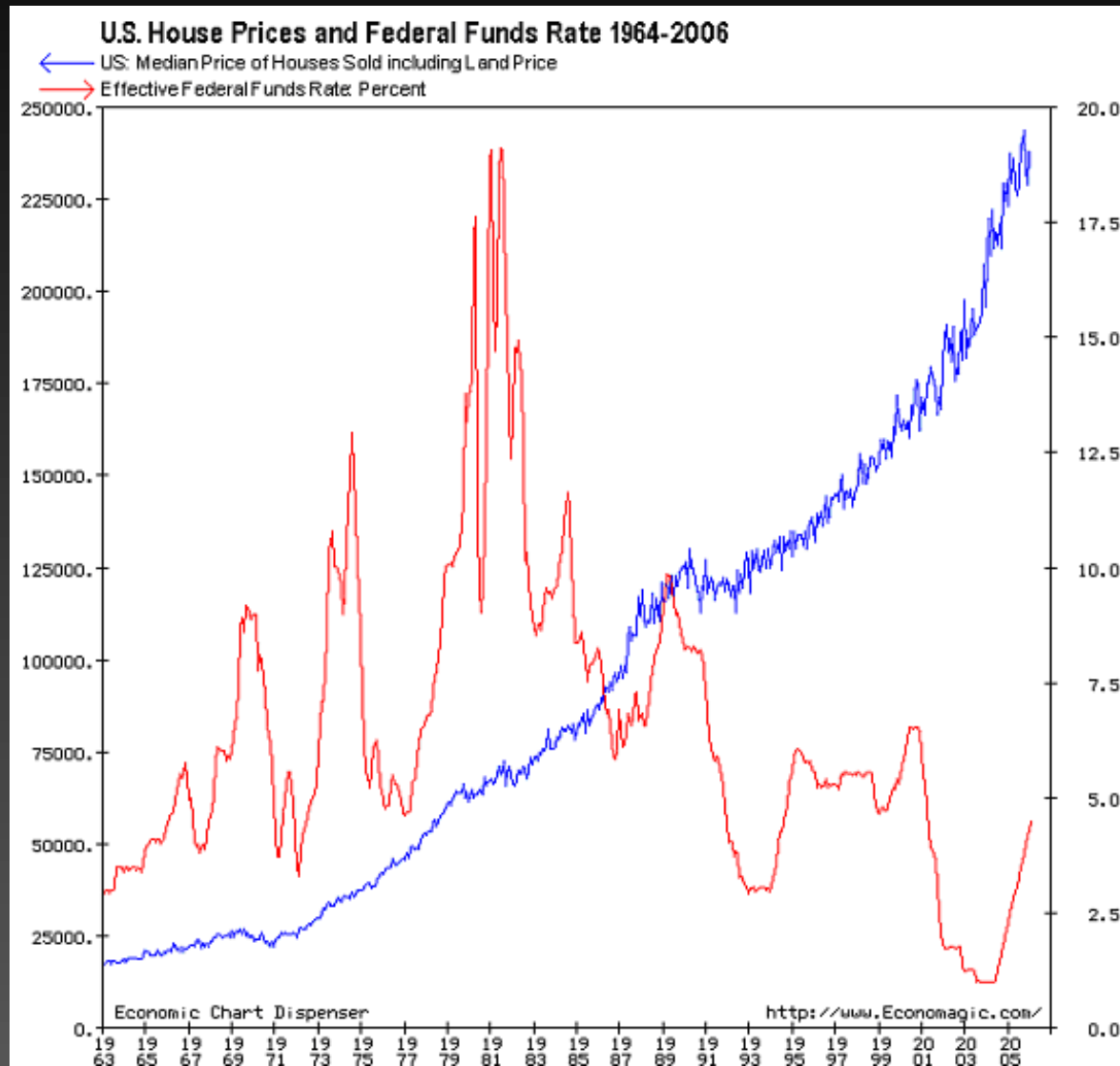
Folk Innumeracy

- Misperceive and miscalculate probabilities.
- Think anecdotally instead of statistically.
- Focus on short-term trends and small-number runs.
- We notice a short stretch of cool days and ignore the long-term global warming trend.
- We note the recent downturn in the housing and stock markets, forgetting the half-century upward-pointing trend line.
- Our senses are geared to focus on each tooth's up or down angle & ignore the overall



Illusion of Small Numbers

A small number of data points \neq a trend



“Regression to the Mean”

1. Height (2 tall parents: for every 4 children, 3 will be shorter for every one taller)
2. I.Q. (2 smart parents: for every 4 children, 3 will be dumber for every one smarter)
3. Hollywood films (producers and directors get fired after one bad film, even though their films under production go on to success)
4. *Sports Illustrated* Cover Curse (to get on the cover an athlete has to have a statistically extraordinary game or season, which is unlikely to happen again)

The Monty Hall Problem

Let's Make a Deal!

3 Doors: 1 car, 2 goats

Monty knows what's behind all 3 doors

Monty will not reveal what's behind your door

Monty can only show you a goat

You choose Door #1

Monty shows you what's behind door #2: Goat

Door #1: ? **Door #2: Goat** **Door #3: ?**

Do you want to keep your choice or switch?

The Monty Hall Problem

At the start: $1/3^{\text{rd}}$ chance of picking the car and a $2/3^{\text{rds}}$ chance of picking a goat.

Switching doors is bad only if you 1st chose the car, which happens only $1/3^{\text{rd}}$ of the time.

Switching doors is good if you 1st chose a goat, which happens $2/3^{\text{rds}}$ of the time.

Thus, the probability of winning by switching is $2/3^{\text{rds}}$, or double the odds of not switching.

10 Doors: 1 car, 9 goats

Monty knows what's behind all 10 doors

You choose Door #1

Monty reveals door #s 2-9: Goats

Door #1: ?

Door #2: Goat Door #3: Goat Door #4: Goat

Door #5: Goat Door #6: Goat Door #7: Goat

Door #8: Goat Door #9: Goat

Door #10: ?

Do you want to keep your choice or switch?

The Monty Hall Problem

At the start: $1/3^{\text{rd}}$ chance of picking the car and a $2/3^{\text{rds}}$ chance of picking a goat.

Switching doors is bad only if you 1st chose the car, which happens only $1/3^{\text{rd}}$ of the time.

Switching doors is good if you 1st chose a goat, which happens $2/3^{\text{rds}}$ of the time.

Thus, the probability of winning by switching is $2/3^{\text{rds}}$, or double the odds of not switching.

Human-Generated Hs and Ts

[1]	H	T	T	H	H	T	H	T	T	H	H	H	T	T	H	T	H	T	T	H
[21]	T	T	T	H	H	T	H	T	T	T	H	H	H	T	H	T	H	H	T	T
[41]	T	H	T	H	H	H	H	T	T	T	H	T	H	H	T	T	H	T	H	H
[61]	T	T	T	T	T	H	H	T	H	T	H	T	H	T	H	T	T	T	H	T
[81]	H	H	T	H	H	T	T	H	T	H	T	T	H	H	T	H	T	T	T	T
[101]	H	T	H	H	T	T	H	T	H	H	H	H	T	T	T	T	T	H	H	H
[121]	T	H	T	H	T	H	T	T	T	H	T	H	T	H	T	T	T	H	H	H
[141]	T	T	H	H	H	T	H	T	T	H	T	H	H	H	T	T	H	T	H	T
[161]	H	T	H	T	H	T	H	T	H	T	H	T	T	H	H	T	H	H	H	T
[181]	T	H	T	T	H	T	H	T	H	T	T	T	H	T	H	T	T	T	H	H

Green: streaks of 4 or more Hs

Blue: streaks of 4 or more Ts

Humans trying to emulate random sequences will almost never place more than four heads (or tails) in a row.

200 Random Hs and Ts

[1] H H H T T T H H H H T T T H H H T H H H
[21] H H H H H H H H H H H H T T T T T T H T
[41] H T T T T T H H T H T T T T T T H H H T
[61] T H T T T T T H H H T H T T H T T T T T
[81] H T T T T H H H H T T T H H H H H T H T
[101] H T T T H H T H T H H H T H H H T T T H
[121] T T T T H H T T T H T T H T T H T T T T
[141] T T T H T H T T H H H T T T T H T H T T
[161] T H T T H H H H H H T H H T T T T H T T
[181] T T H H H T T H T T T H H T T T T H T T

Green: streaks of 4 or more Hs

Blue: streaks of 4 or more Ts

In a true random generation, the probability of at least one string of 5 or more identical outcomes is 0.999 and for a sequence of 6 it is 0.96!

200 Random Hs and Ts

```
[1] H H H T T T H H H H T T T H H H T H H H
[21] H H H H H H H H H H H T T T T T H T
[41] H T T T T T H H T H T T T T T H H H T
[61] T H T T T T T H H H T H T T H T T T T
[81] H T T T T H H H H T T T H H H H H T H T
[101] H T T T H H T H T H H H T H H H T T T H
[121] T T T T H H T T T H T T H T T H T T T
[141] T T T H T H T T H H H T T T T H T H T T
[161] T H T T H H H H H H T H H T T T T H T T
[181] T T H H H T T H T T T H H T T T T H T T
```

Human-Generated Hs and Ts

```
[1] H T T H H T H T T H H H T T H T H T T H
[21] T T T H H T H T T T H H H T H T H H T T
[41] T H T H H H H T T T H T H H T T H T H H
[61] T T T T T H H T H T H T H T H T T T H T
[81] H H T H H T T H T H T T H H T H T T T T
[101] H T H H T T H T H H H H T T T T T H H H
[121] T H T H T H T T T H T H T H T T T H H H
[141] T T H H H T H T T H T H H H T T H T H T
[161] H T H T H T H T H T H T T H H T H H H T
[181] T H T T H T H T H T T T H T H T T T H H
```

It is easy to spot which is human generated: it is the one that looks least random!

The “hot hand” Illusion



PHOTO: MICHAEL O'NEILL

The Drunkard's Walk

How
Randomness
Rules Our
Lives

Leonard Mlodinow

"A wonderfully readable guide to
how the laws of randomness affect our lives."

STEPHEN HAWKING

author of

A BRIEF HISTORY OF TIME



PHOTO: MICHAEL O'NEILL

CNN Money.com™
A Service of CNN, Fortune & Money

The greatest money manager of our time

What do ant colonies, novels and river systems have to do with making money? Ask Bill Miller, the man who's topped the market 15 years running.

**Fortune managing editor Andy Serwer reports.
November 15 2006: 4:07 PM EST**

(Fortune Magazine) -- Have you heard the story about the money managers and the three bears? It was a gorgeous afternoon last June on a ranch outside Cody, Wyo. Legendary investor Bill Miller was riding horseback with Chris Davis of Davis Funds and Michael Larson, who runs Cascade, Bill Gates' investment company.

The three had been out about an hour when dead ahead of them, no more than 100 yards off, appeared three grizzly bears. Larson gently pulled up on his reins and quietly began to back his horse away. But Miller had other ideas. "Let's see how close we can get," he said, and edged ahead. Larson stayed back. "I don't know what Bill was thinking," Larson said later. "I guess he figures he's on a horse and can ride faster than Chris Davis."

“Odds of beating S&P for 13 years straight are 1 in 149,012”

“Odds of beating S&P the 14th year are 1 in 372,529”

“Greatest fund feat in past 40 years”



The Scientific View:

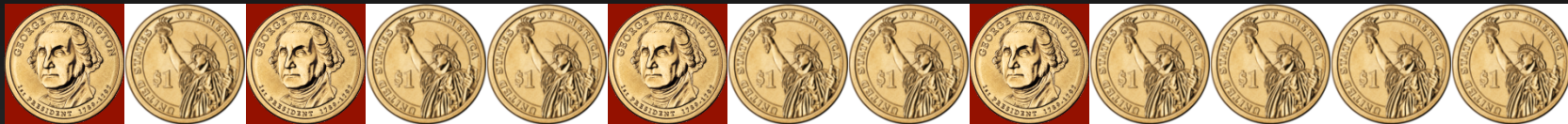
Assume random 1 in 2 chance of beating S&P per fund manager, each year...

Probability of

Bill Miller

beating the S&P 15 years in a row starting in 1991 = 1 in 32,768...

Thousands of Managers:



•
•
•



Assume random 1 in 2 chance of beating S&P per fund manager, each year...

Probability of Someone among all the managers beating the S&P 15 or more years in a row starting any year in the last 40 years = ???... 3/4 or .75

Headline should NOT be:



The greatest money manager of our time

By [Andy Serwer](#), Fortune managing editor
November 28 2006: 10:58 AM EST

But rather...



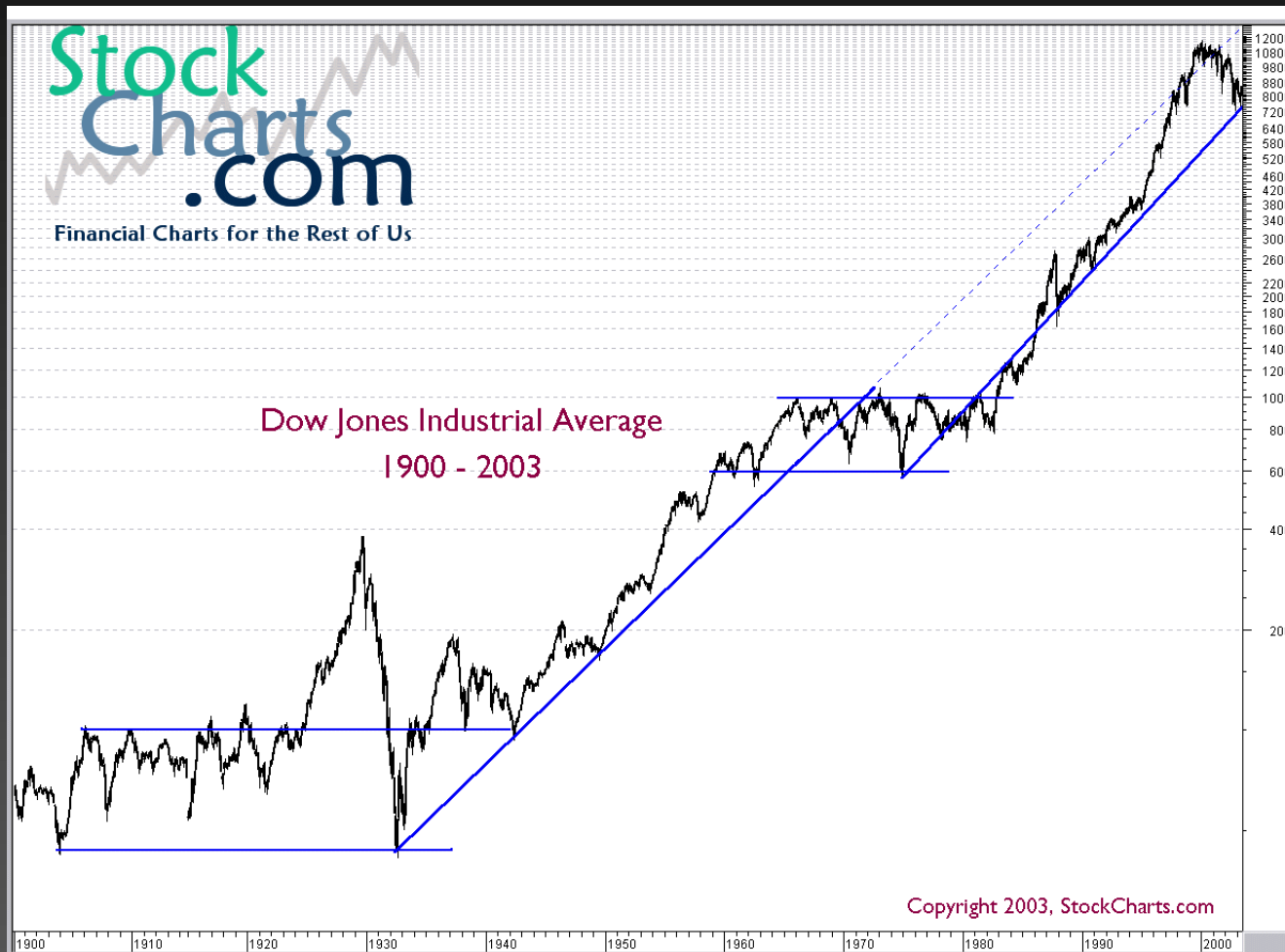
Expected 15-year run finally occurs
Bill Miller lucky beneficiary!!

By [Andy Serwer](#), Fortune managing editor
November 28 2006: 10:58 AM EST

Illusion of Large Numbers

Black Swan effects in complex systems

Million to one odds happen 300 x/day



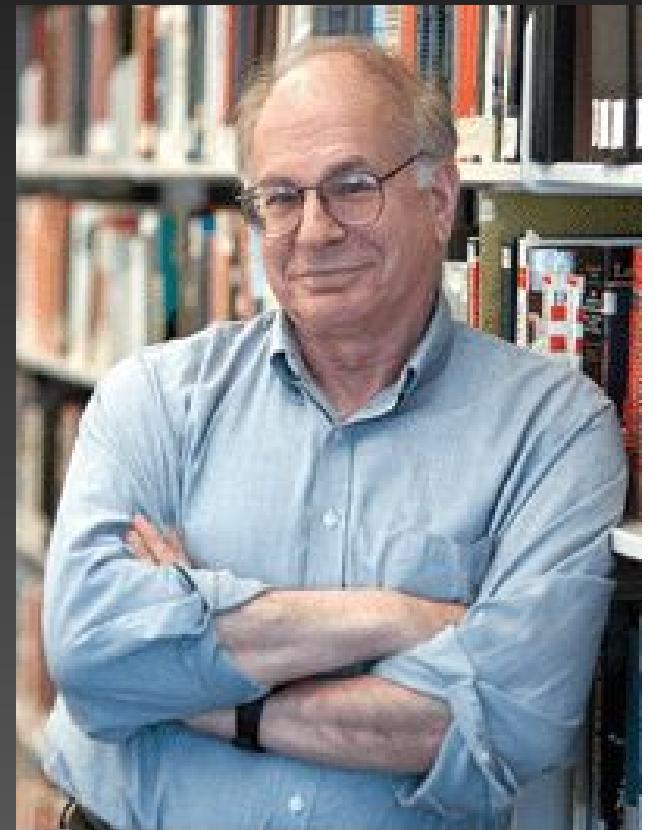
Framing Effects

If you were at a store where an item cost \$100, would you walk six blocks to purchase that same item for \$50? If the item were \$1000 at the first store and \$950 at the other store, would you walk the six blocks?



Amos
Tversky

Daniel
Kahneman



Anchoring Fallacy

Question 1: what percentage of African nations are members of the United Nations? Do you think it is more or less than 45 percent? Please give an exact percentage.

Question 2: what percentage of African nations are members of the United Nations? Do you think it is more or less than 65 percent? Please give an exact percentage.

red blue orange purple

orange blue green red

blue purple green red

orange blue red green

purple orange red blue

green red blue purple

orange blue red green

green purple orange red

XCEVH JGHYT GHYTR

GHYDS AERTW EDTSR

JHAGT XCEVH JGHYT

GHYTR GHYDS AERTW

XCEVH JGHYT GHYTR

GHYDS AERTW EDTSR

JHAGT XCEVH JGHYT

GHYTR GHYDS AERTW

Miracles = 1 in a million odds

We see & hear things happen about 1/second
30,000 seconds in one 8-hour day

1 million events per month

Most are insignificant

We should expect about 1 miracle to happen,
on average, once a month

Confirmation bias:

we remember the unusual, forget the usual

Death Dreams

5 dreams/day = 1,825 dreams/year

1/10 remembered dreams = 182.5/year

295 million Americans = 53.8 billion remembered
dreams/year

Each of us knows about 150 people fairly well

Network grid of 44.3 billion personal relationships

Annual U.S. death rate = .008 = 2.6 million/year

Inevitable that some of those 53.8 billion

remembered dreams will be about some of these
2.6 million deaths among the 295 million

Americans and their 44.3 billion relationships.

*It would be a miracle, in fact, if some death
premonition dreams did not come true*

How to See the World Anew

1. Think out of the box, change perspectives, look for the gorilla
2. Look for new patterns, be playful, relaxed, and see the bigger picture
3. Be curious, ask why, examine the unexpected
3. Look for disconfirmatory evidence and alternative explanations
4. Seek peer review, constructive criticism, and feedback
5. Be willing to change your mind, to say “I don’t know” and “I could be wrong”



SKEPTICAL DOG

is skeptical