

## How a Scientist Views Religion, God and Belief

Michael Lotker  
Rabbi, Jewish Community of Ojai  
Community Rabbi, Jewish Federation of Ventura County

## Why Is the Teapot Boiling?



## Why Is the Teapot Boiling?



Answer #1: Because the stove heated the water to its boiling point....  
Aristotle called this "efficient cause" – how the phenomenon takes place.

***BUT THERE'S ANOTHER ANSWER!***

## Why Is the Teapot Boiling?



Answer #2: ***BECAUSE MY WIFE WANTED TEA!***  
Aristotle called this "final cause," the reason the phenomenon takes place.

### Why Is the Teapot Boiling?



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Aristotle called this "final cause," the reason the phenomenon takes place.  
**Do we have to choose between one correct and the other incorrect answer?**

### So, Why is There a Universe?



**Answer #1: Everything we know about cosmology.**

### So, Why is There a Universe?



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**Answer #2: Because God wanted a universe.**

### So, Why is There a Universe?



**Answer #1: Everything we know about cosmology.**  
**Answer #2: Because God wanted a universe.**

**Do we have to choose between one correct and the other incorrect answer?**

## Is the Universe the Result of God or Simply a Scientific Phenomenon?

## Why Am I So Interested in This Question?

- Training and Career in Physics
- Discovery of the Depth of My Judaism
- Tragedy in My Life
- Training and Career in the Rabbinate

## Two Key Reasons to Act and Live as Though There is a God

1. If there is no God, there is no objective good and evil.
2. If there is no God, there is no intrinsic meaning to life.

**Note that these reasons do not speak to the question of whether there is a God!**

## There Are Problems on Both Sides

1. Those who reject God, have to explain away all the evidence for God and provide a basis for living a ethical life.
2. Those who accept God have to explain the basis for evil and tragedy in the world.

**This presentation will address both areas.**

## Two Key Leaps of Faith

**#1 Is there a God [Intelligence behind the creation of the universe]?**

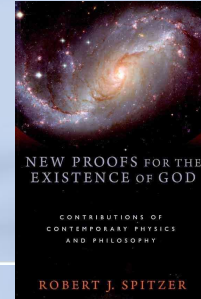
**#2 Does God care?**

- Whether I have turkey or ham for dinner?
- Whether I care for or torture babies?

**This presentation will address both leaps.  
Hang On!**

## Can We Prove God Exists?

Some  
would  
say  
yes....



## Can We Prove God Exists?

But I would say:  
“If we could prove God’s  
existence, someone would  
have done it by now.”

***So the question is “What is the  
evidence for God’s existence?”***

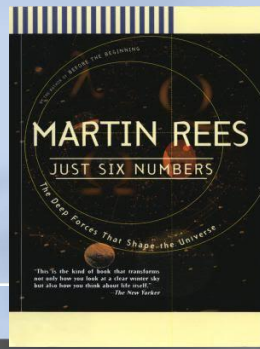
## Evidence for God’s Existence

***Laws of physics tuned to allow for a  
physical universe.***

- Strong Nuclear Force
- Electromagnetic Force
- Gravitational Constant
- Expansion Velocity After the Big Bang

## Evidence for God's Existence

***The Ratios of Key Constants Are Also Fine Tuned***



## Evidence for God's Existence

**Ratio of electromagnetic force to gravity= 1 followed by 36 zeros**

- Few less zeros, short lived mini universe, no time for evolution

**Another ratio is 0.007 (defines how firmly atomic nuclei bound).**

- If 0.006, entire universe is Hydrogen
- If 0.008, no hydrogen, no water, etc.

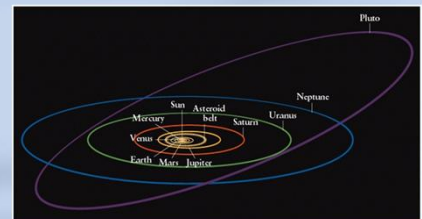
## Evidence for God's Existence

- The odds of our anthropic universe arising amidst all possible universes is one part in 10 to the 10<sup>th</sup> to the 132<sup>nd</sup> power.
- This number is so large that writing in in 10 point type would fill up a large portion of the universe.

Per Robert Spitzer, *New Proofs...*

## Evidence for God's Existence

***Shape of the Earth's Orbit***



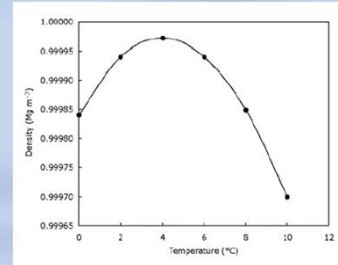
### Evidence for God's Existence

#### Structure of the Water Molecule



### Evidence for God's Existence

#### Structure of the Water Molecule



### Evidence for God's Existence

- Our Galaxy
- Position in our galaxy
- Our solar system
- Type of star our sun is, its mass, luminosity, etc.
- Our planetary neighbors
- Our moon
- Etc.

All seem precisely chosen to allow life on this planet.

"The Goldilocks Zone" in *Everyone's Guide to Atoms, Einstein and the Universe*, by Robert L. Piccioni.

### Evidence for God's Existence

Collision with proto planet gave us:

- The moon
- A magnetic field protecting us from cosmic radiation that would destroy life and our atmosphere.
- The beauty of the Northern Lights.



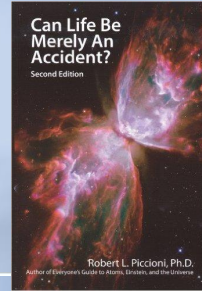
## Evidence for God's Existence

Life and DNA developed almost immediately after the Earth cooled.

- Was the creation of DNA an accident or guided somehow?
- To date, scientists have been unable to create a single molecule of DNA in the lab.

## Evidence for God's Existence

So what's the probability that the DNA molecule was accidentally created?



## Evidence for God's Existence

- Odds of pulling ace of spades from deck = 1 in 52



## Evidence for God's Existence

- Odds of pulling ace of spades from deck = 1 in 52
- Odds of doing it twice in a row = 1 in 2,704



## Evidence for God's Existence

- Odds of pulling ace of spades from deck = 1 in 52
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- Odds of doing it 5x in a row = 1 in 380,204,032



## Evidence for God's Existence

- Odds of pulling ace of spades from deck = 1 in 52
- Odds of doing it twice in a row = 1 in 2,704
- Odds of doing it 5x in a row = 1 in 380,204,032



**The odds that DNA was created spontaneously = pulling that ace 118,000 time in a row!**

## Evidence for God's Existence

- Evolution: God's tool for creation.
- Genesis 1:26: "God said 'Let us make humanity in our image.'"
- God was talking to the animals!



**My bottom line: The evidence convinces me that there is a God.**

## Leap #2: Does God Care?

- If God cares, then we must accept revelation.
- Must I take revelation literally?
- Can I take it seriously but not literally?
- For Jews this leads to the question: What Happened at Mount Sinai?

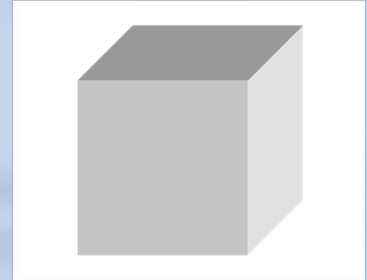


### What Happened at Sinai?

- My answer – something happened --
- but revelation is the imperfect record of human witnesses.

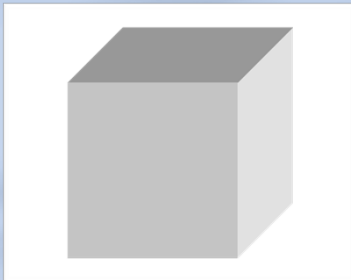


### What Is This?



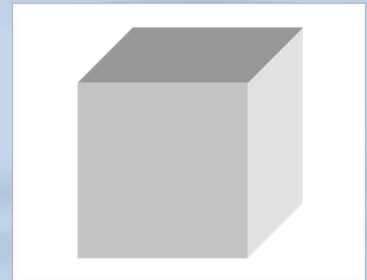
### What Is This? - Answer

- Projected light and shadow on a screen.
- Or, carbon dots on a page.



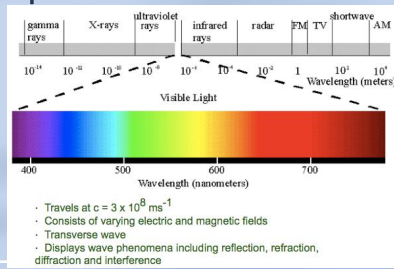
### What Is This?

Psychologists tell us that 90% of what we see is conditioned by our culture and expectations.



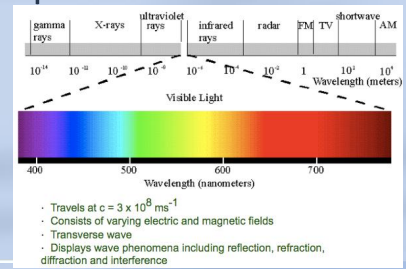
**This affected what was written down at Sinai.**

## We See Only a Tiny Fraction of Spectrum



## We See Only a Tiny Fraction of Spectrum

Ratio of what we see to what's there is equal to ratio of diameter of Hydrogen atom to 3,000 miles!



This affected what was written down at Sinai.

## Is Doubt OK?

- Lesson of the generation of the Exodus
- Doubt/uncertainty necessary for free will.

Police Car Example



I believe that God wants us to have some doubts.  
The word "Israel" means one who wrestles with God.

## Theodicy: The Problem of Evil and Tragedy

- Evil is simply a consequence of human free will. *Where was humanity at Auschwitz?*
- Tragedy is a larger problem.

## Theodicy

According to logic, at least one of these statements must be false:

1. God is all good and all just.
2. God is all powerful.
3. Bad things happen to good people.

***Let's look at them separately.***

With thanks to Rabbis Harold Kushner and Ed Feinstein for this analysis.

## Theodicy

Assume #1 "God is all good and all just" is false:

- This is the God of the philosophers.
- This is God as laws of physics
- This is Job's conclusion.

With thanks to Rabbis Harold Kushner and Ed Feinstein for this analysis.

## Theodicy

Assume #3 "Bad things happen to good people" is false:

- Maybe the thing isn't really bad.
- Maybe no one is really good.
  - > Original sin
  - > Sins in a prior incarnation

With thanks to Rabbis Harold Kushner and Ed Feinstein for this analysis.

## Theodicy

Assume #2 "God is all powerful" is false:

- Lesson from the Talmud
- Nature operates under its own laws
- God cannot intervene in nature.

**This answer makes the most sense to me.**

**God's role is as a teacher, inspirer, commander, friend and companion.**

## God-Where Have You Been Lately?

### Analogy of Parent to a Growing Child

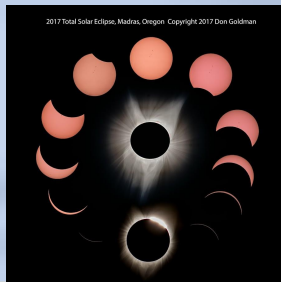
- In infancy, parents work miracles
- Toddlers hear: "If ..., then ...."
- Adolescents hear: "Because I'm your father, that's why"
- Adult children still in relationship with their parents.

## God-Where Have You Been Lately?

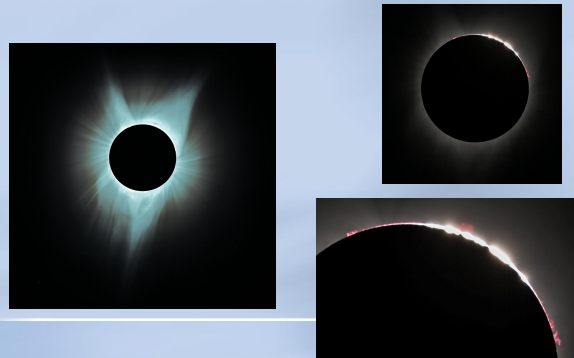
### Analogy of Parent to a Growing Child

- In our spiritual infancy, God worked miracles.
- Toddlers: Book of Deut. "If ..., then ...!"
- Adolescents: Book of Job: "I'm God, you're not!"
- Adult: Today the relationship, the shared wisdom, the love and the caring is central.

## Here's Evidence for God Caring

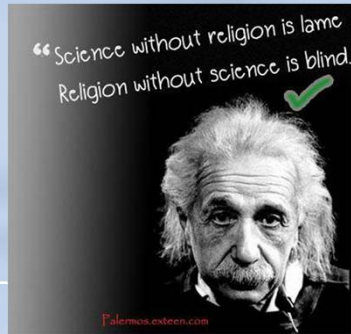


## Here's Evidence for God Caring



## My Bottom Lines

I would go farther than Einstein.



## Religion Needs Science

If the role of religion is to make the world a better place, then we had better understand the world and how it works (science)!

## Science Needs Religion

A world of scientific progress unchecked by religious ethics leads to mass murder and probably our extinction as a species (probably the extinction of all species).

## My Bottom Lines

1. There is nothing irrational about belief in God and the belief that God cares.
2. If we live as though God exists and cares, our lives are better and the world is better.
3. If we are to survive and thrive we better study both science and religion.
4. *Dayenu!* It's enough for me!