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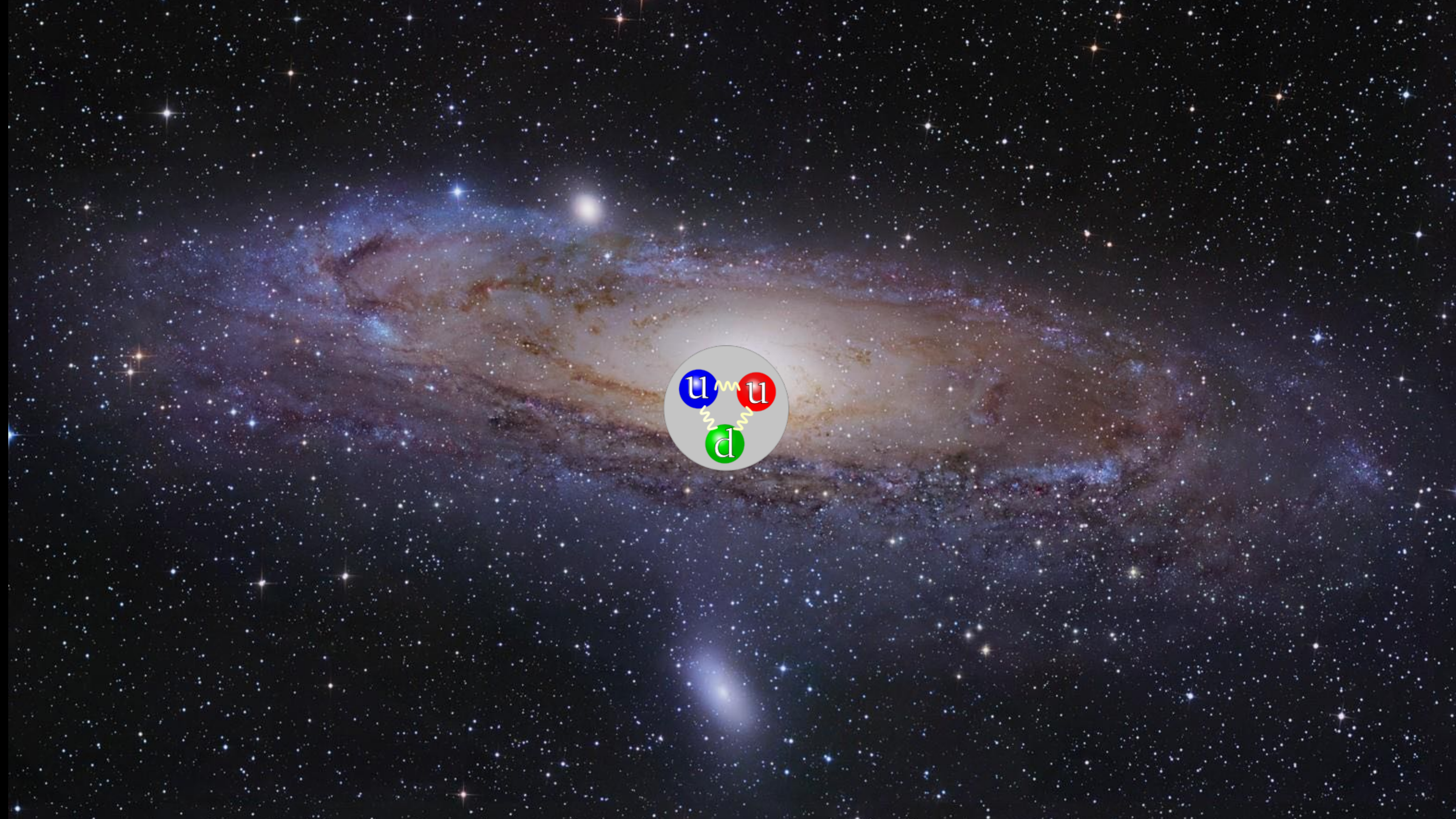
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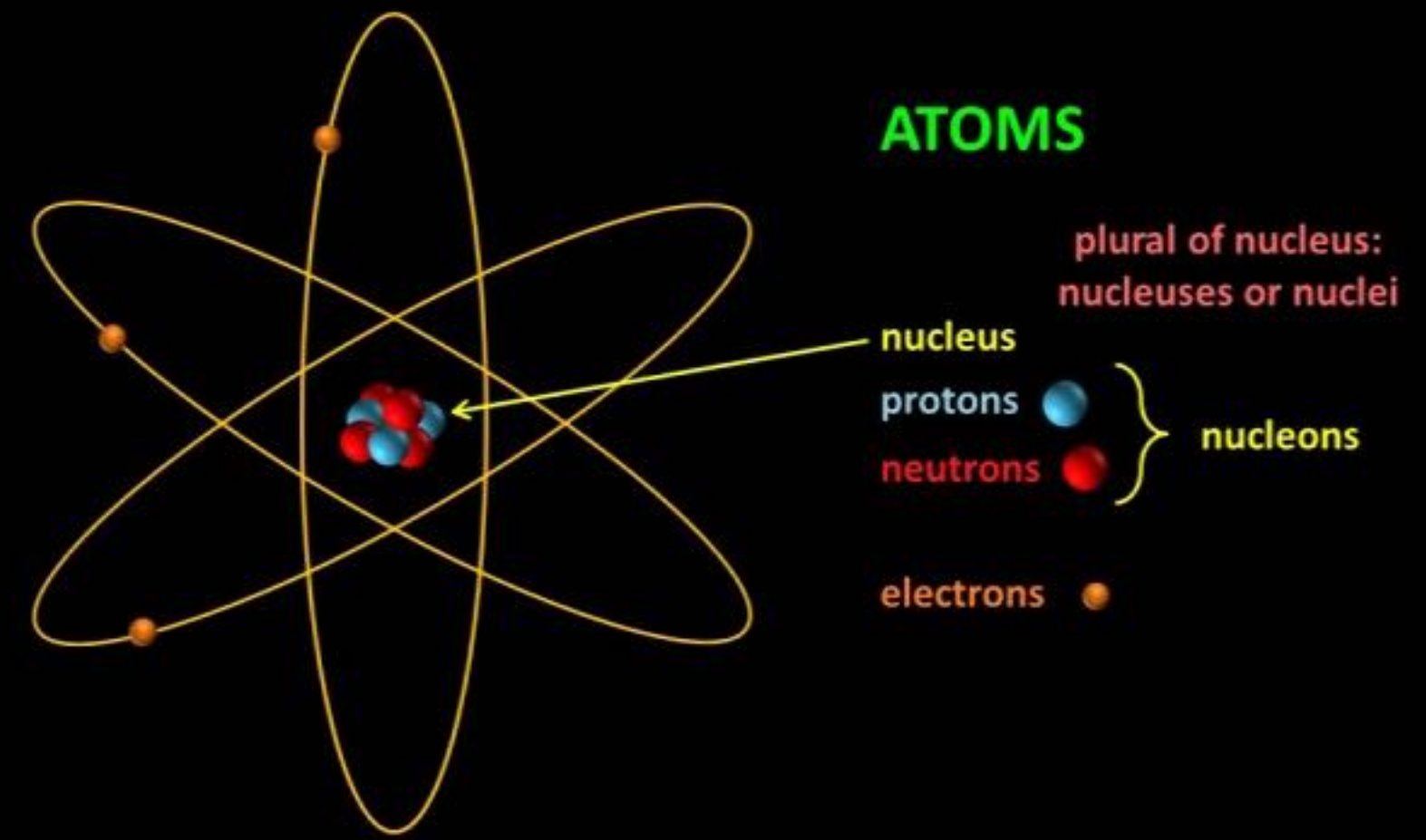
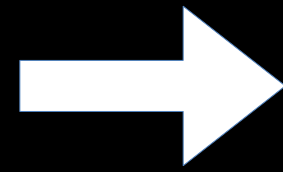
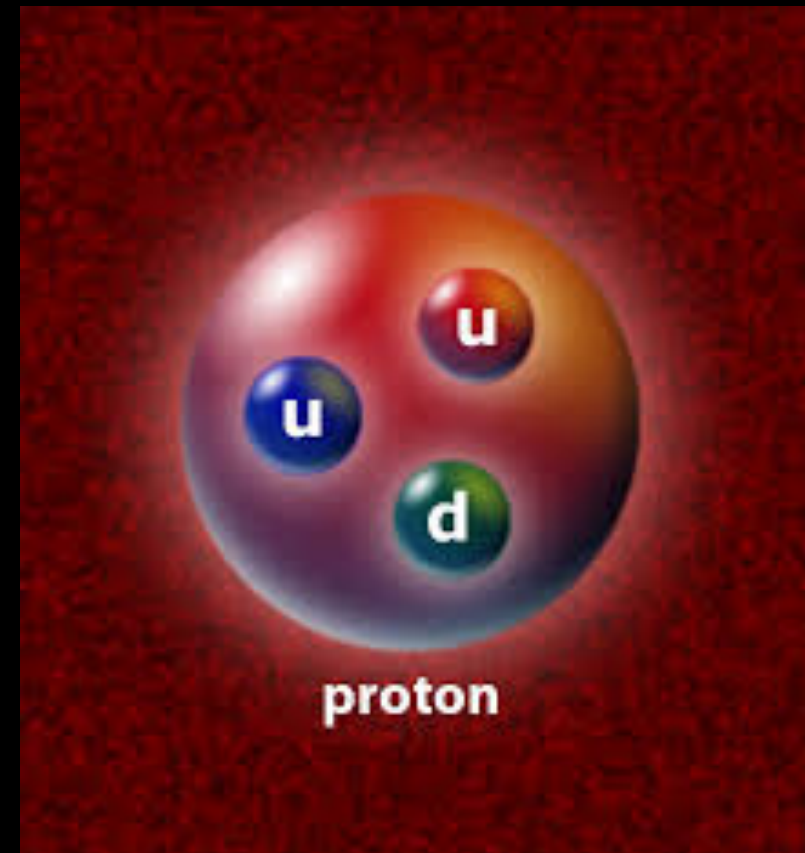
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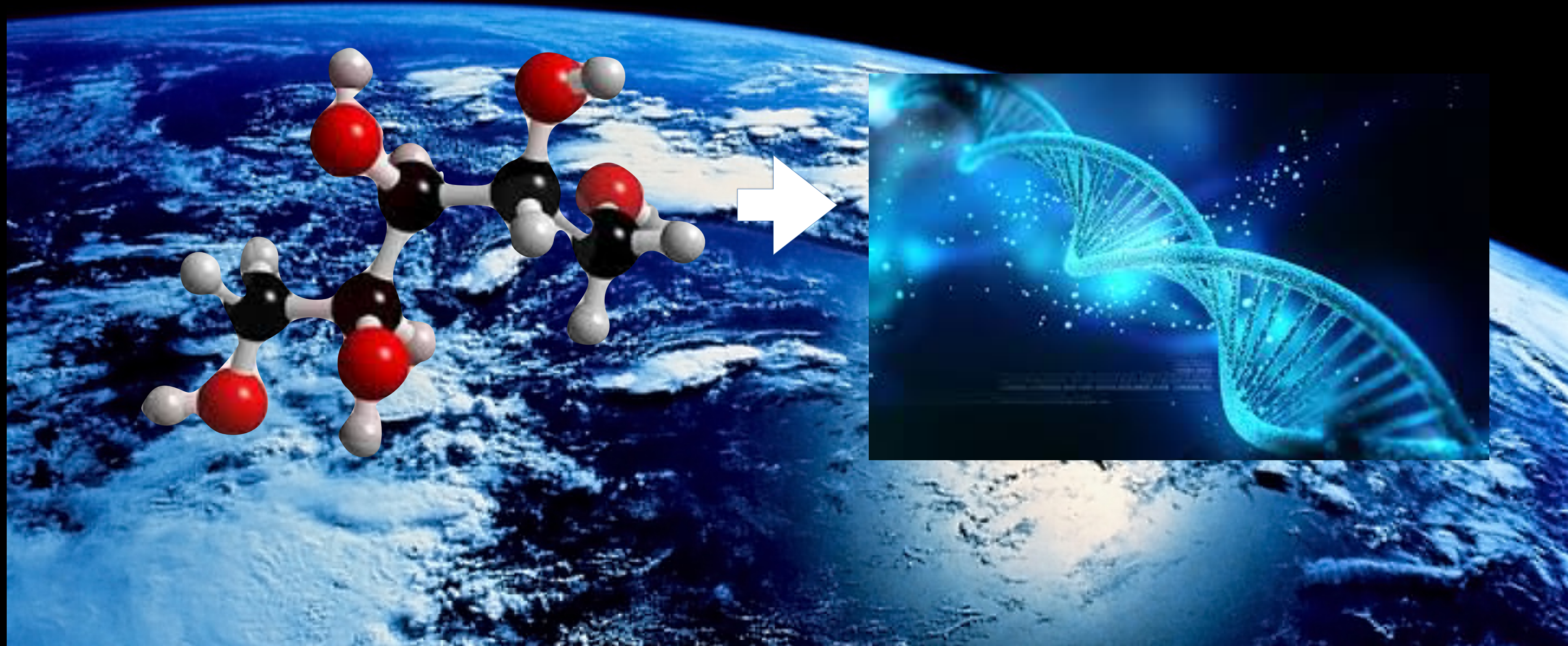
Alex Rodríguez

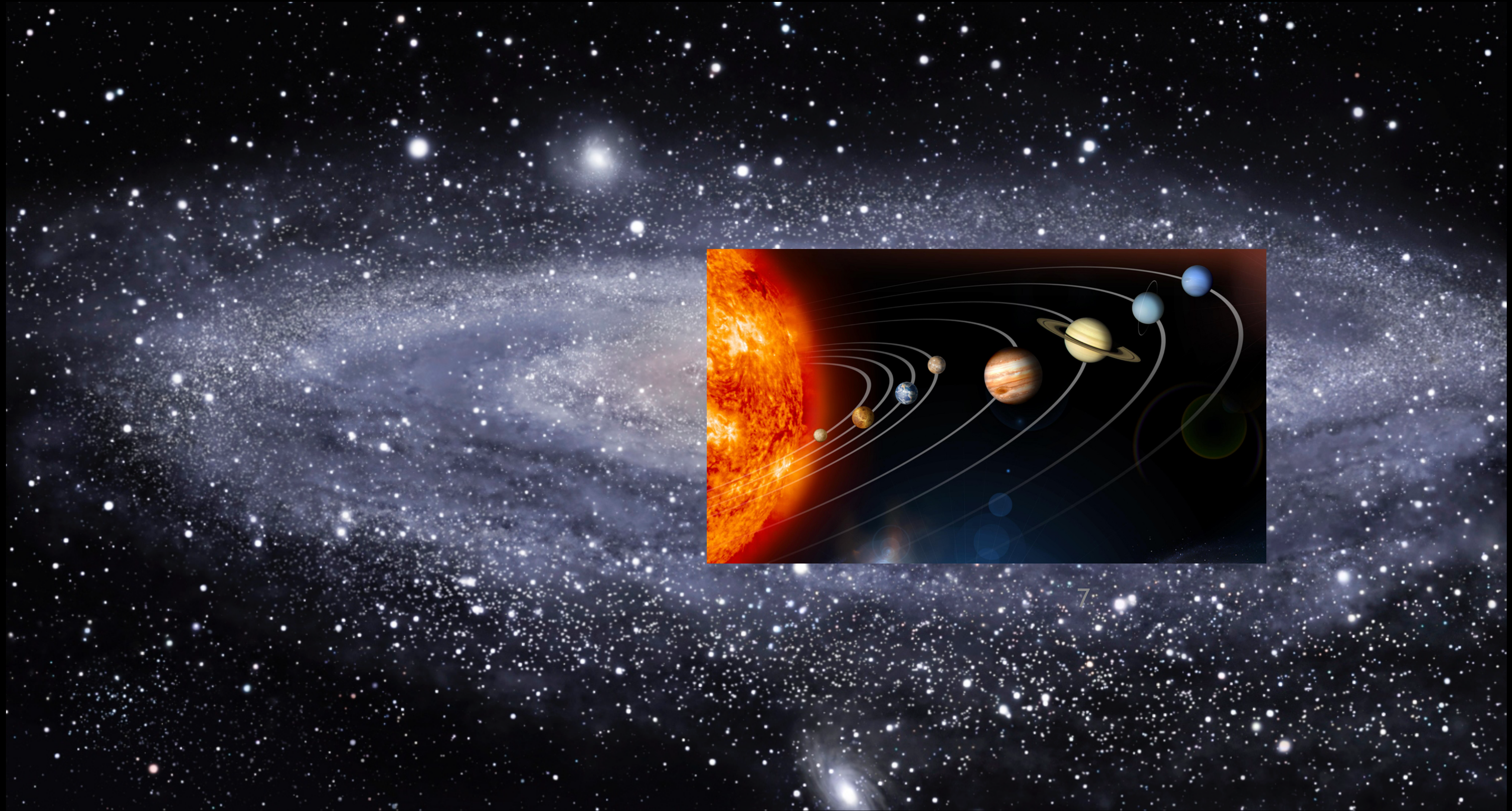
Disclaimer: All these images are from the internet and all this info is not mine, just a compendium!



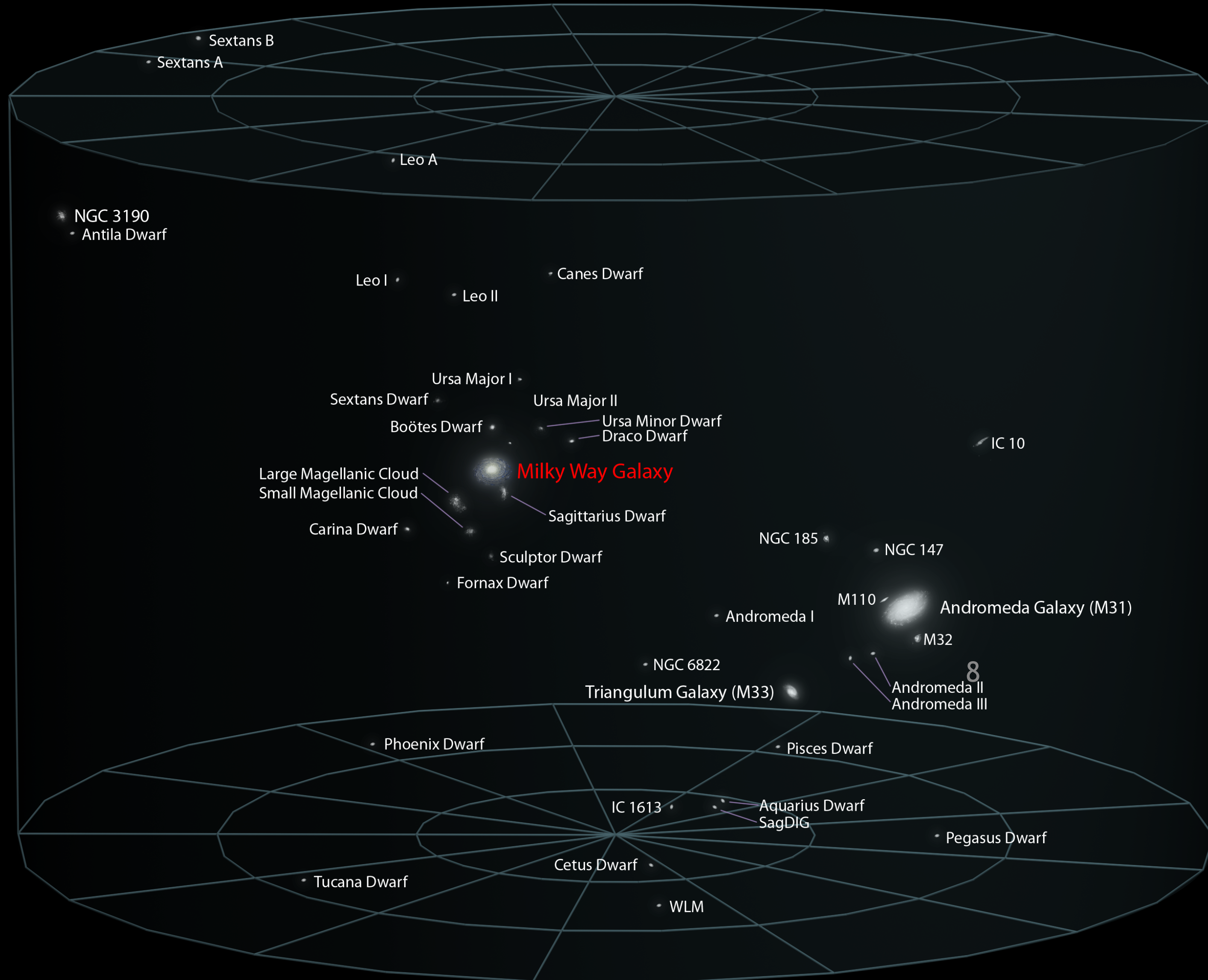


$1,33 \cdot 10^{50}$

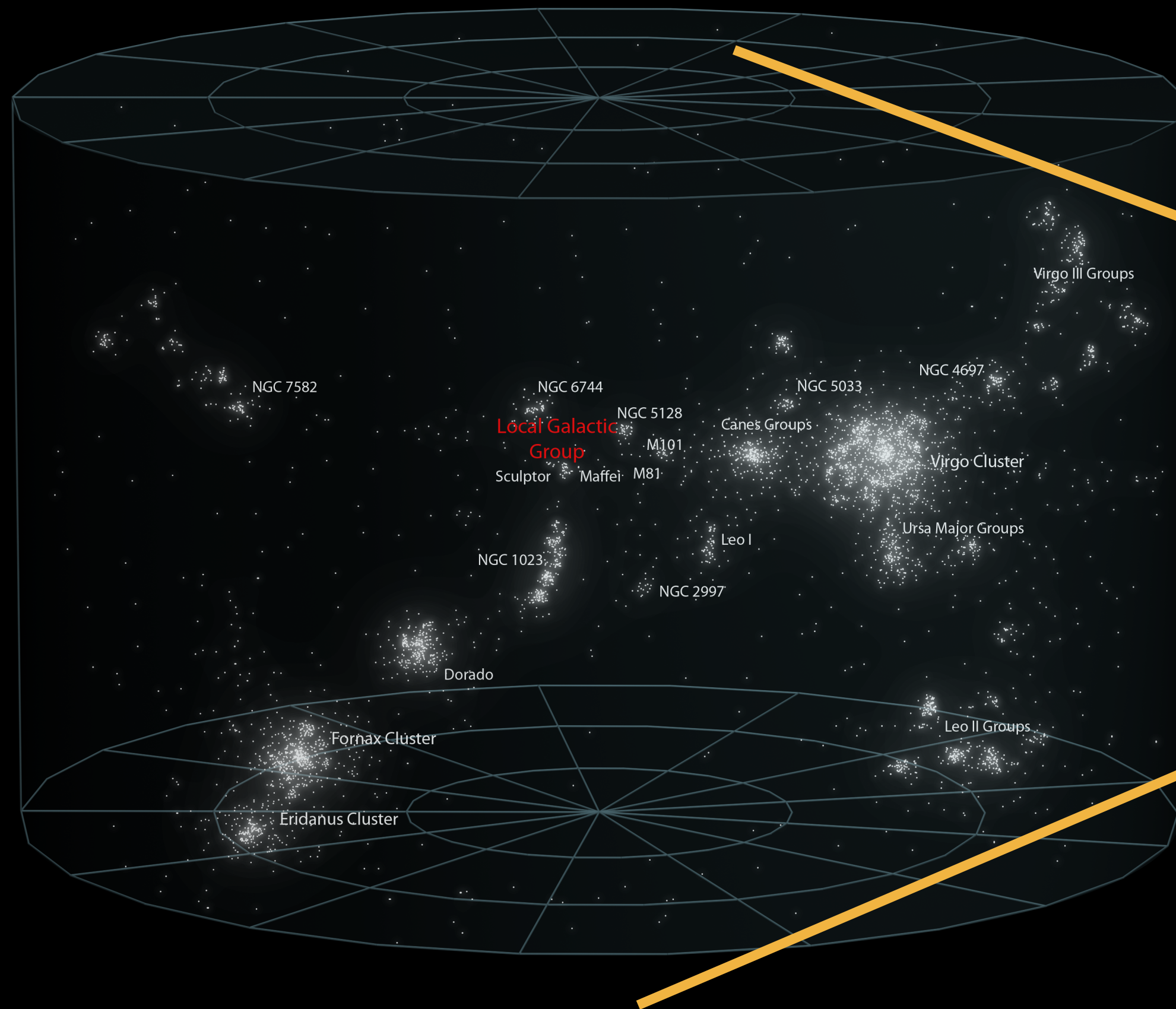




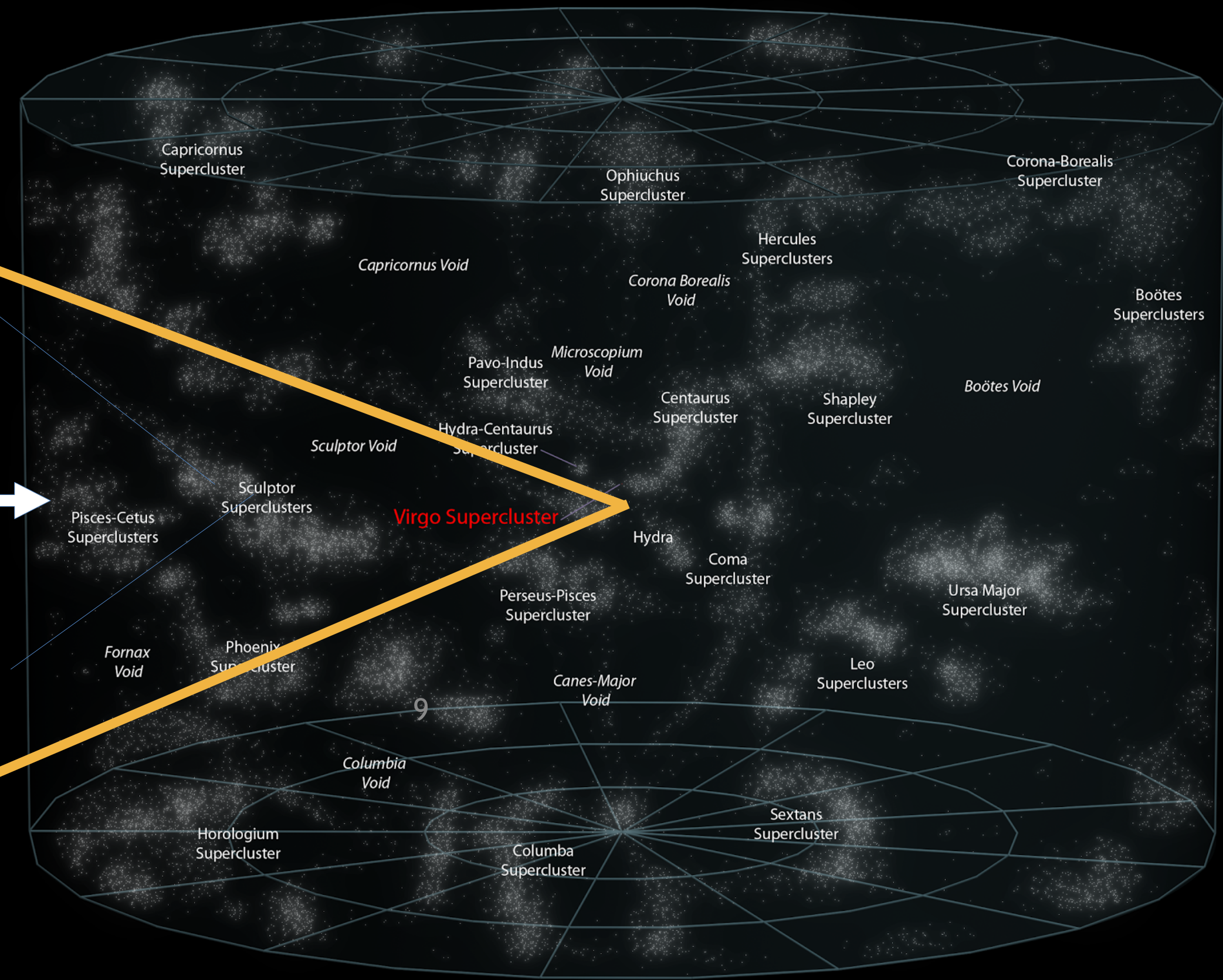
Local Galactic Group

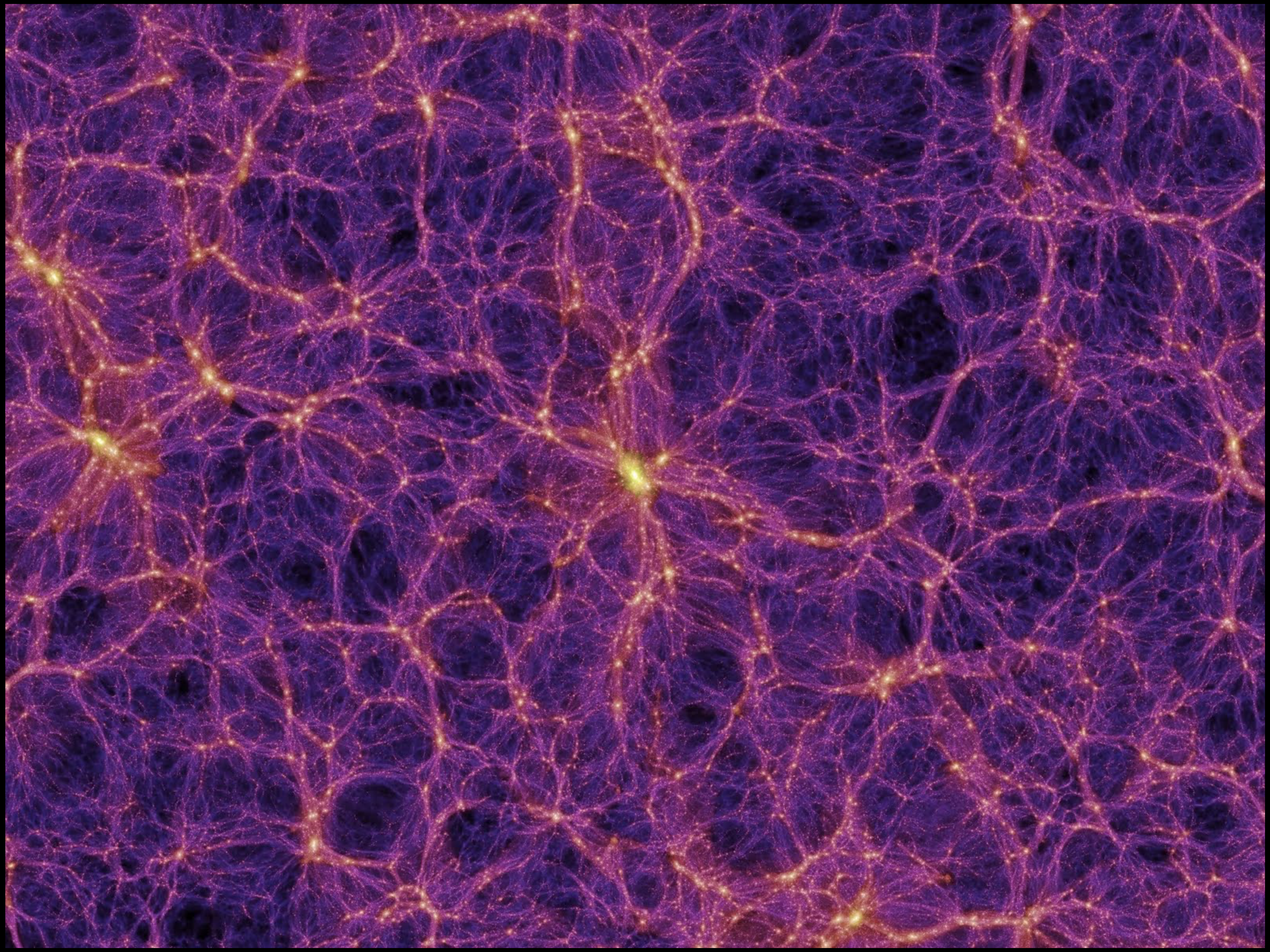


Virgo Supercluster

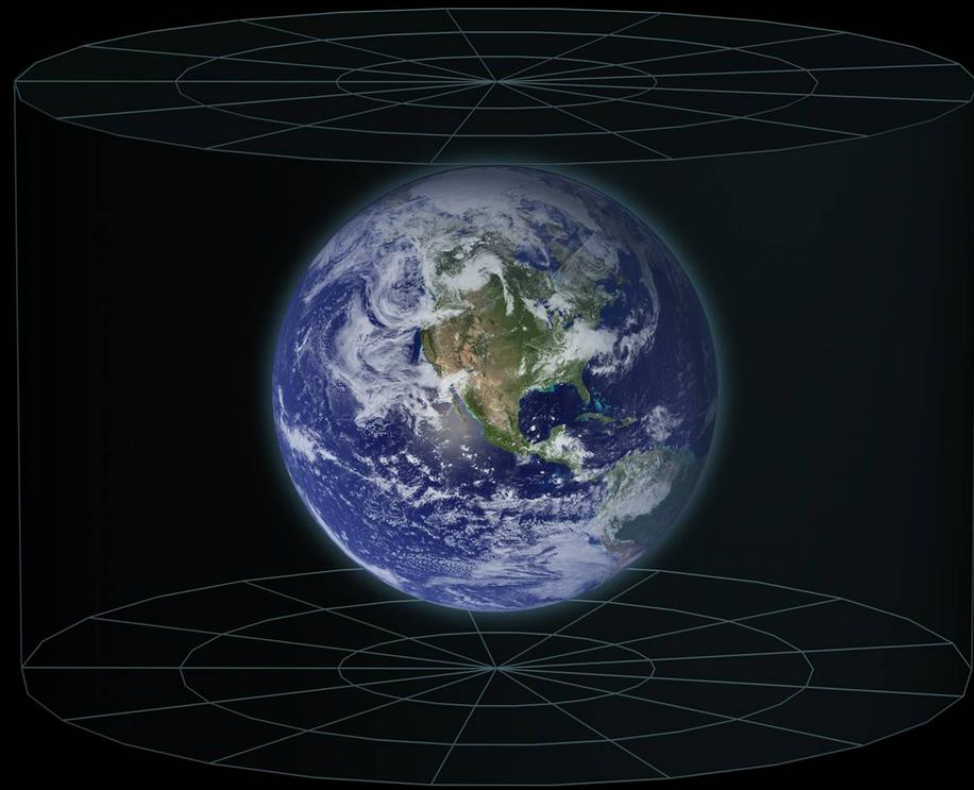


Local Superclusters

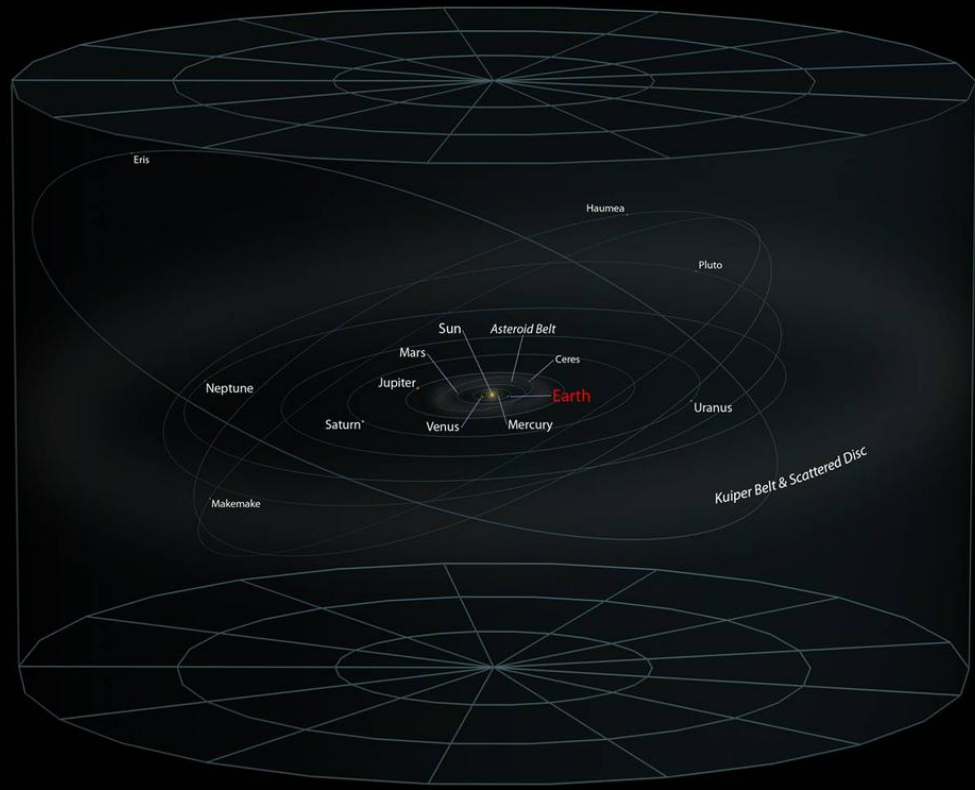




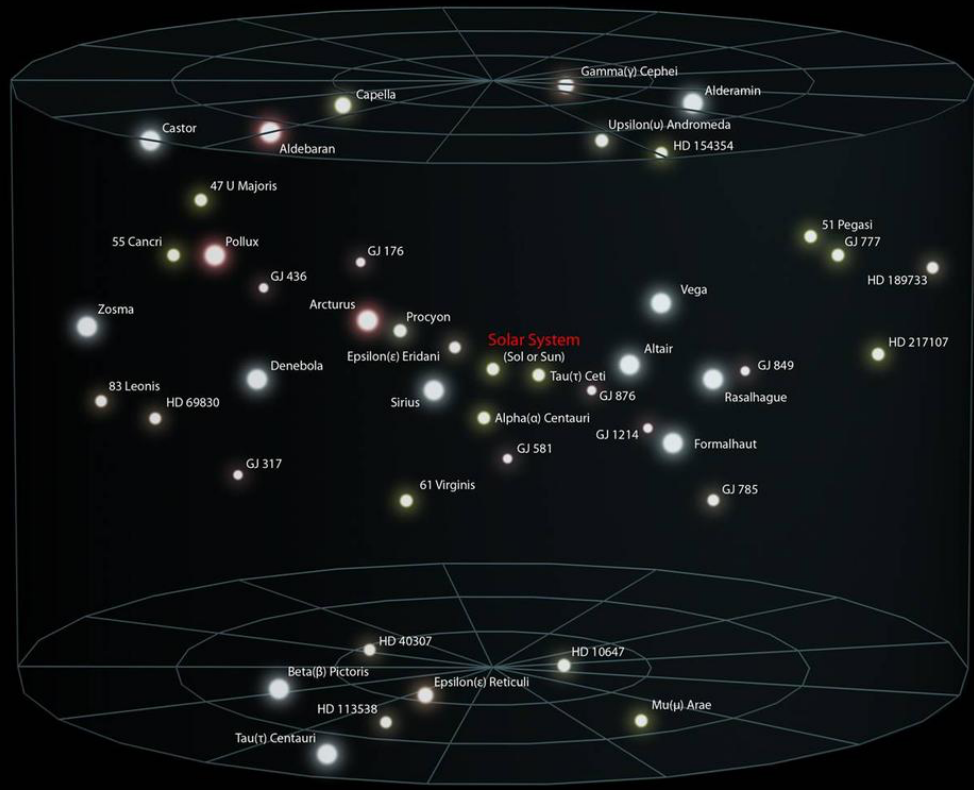
Earth



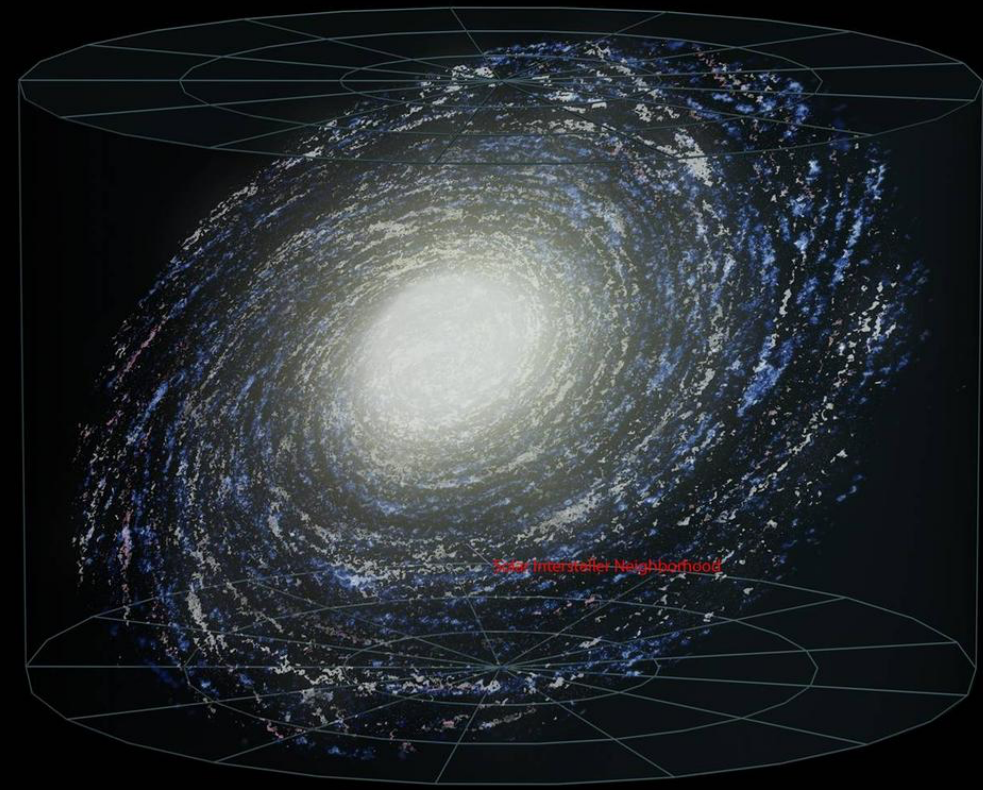
Solar System



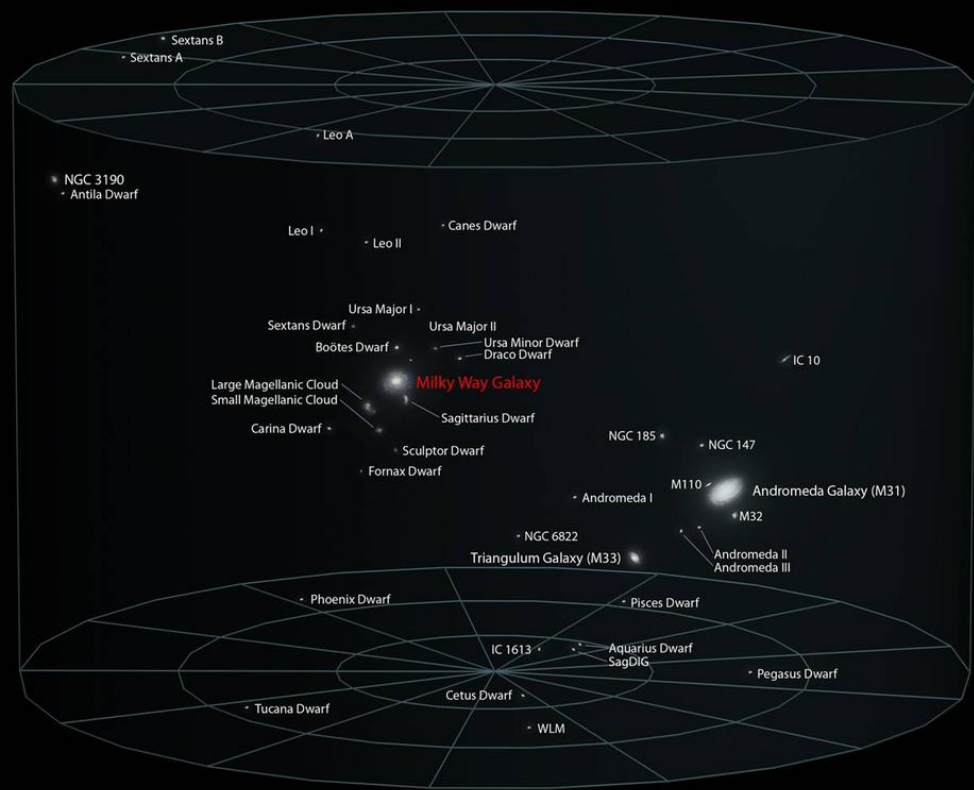
Solar Interstellar Neighborhood



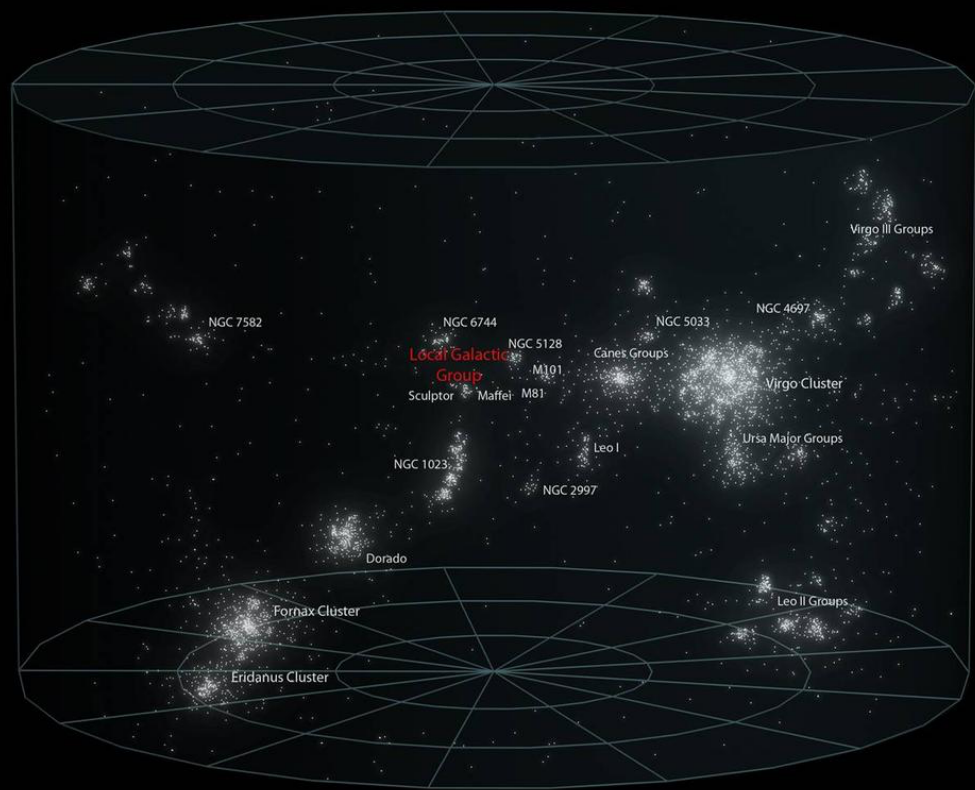
Milky Way Galaxy



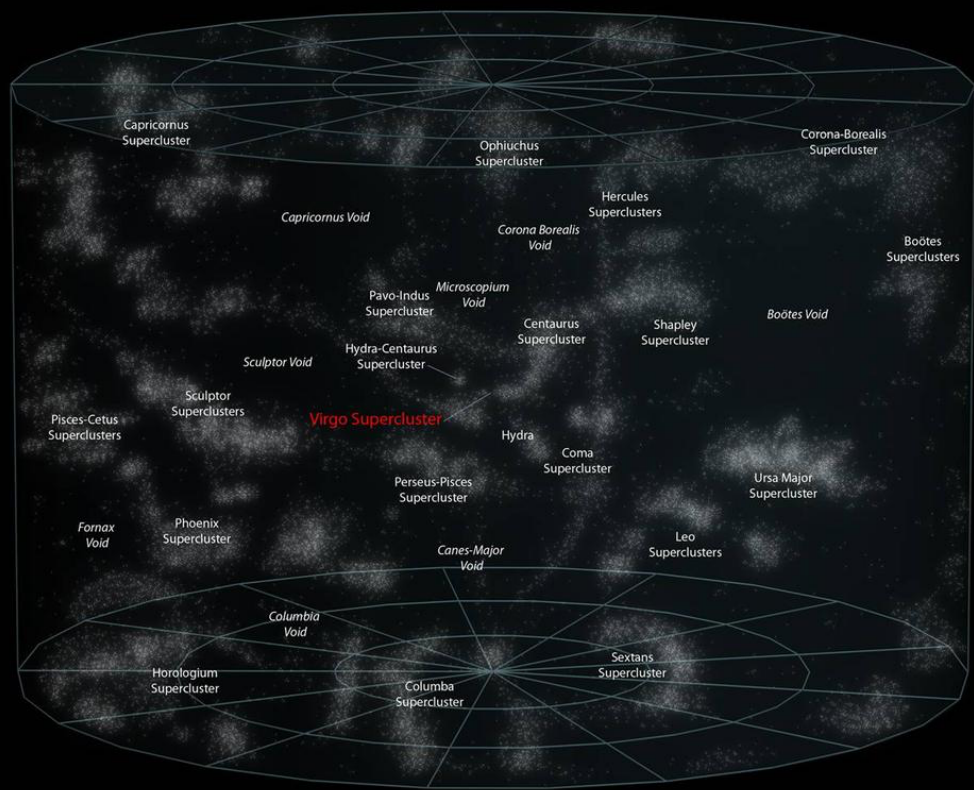
Local Galactic Group



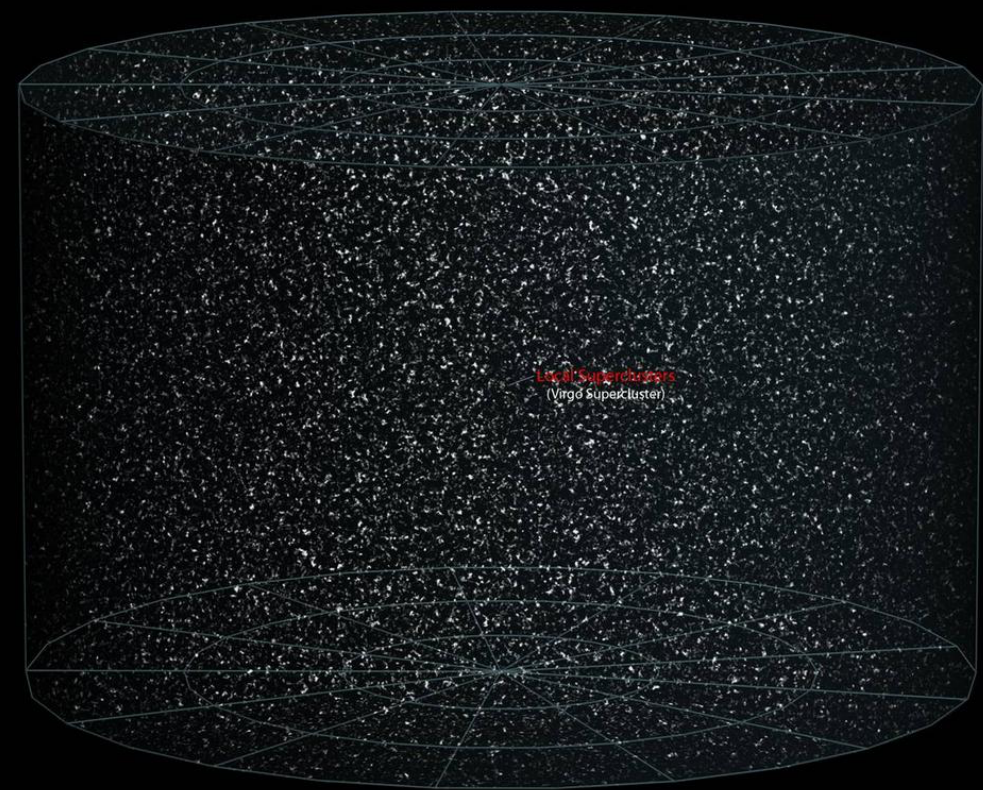
Virgo Supercluster



Local Superclusters

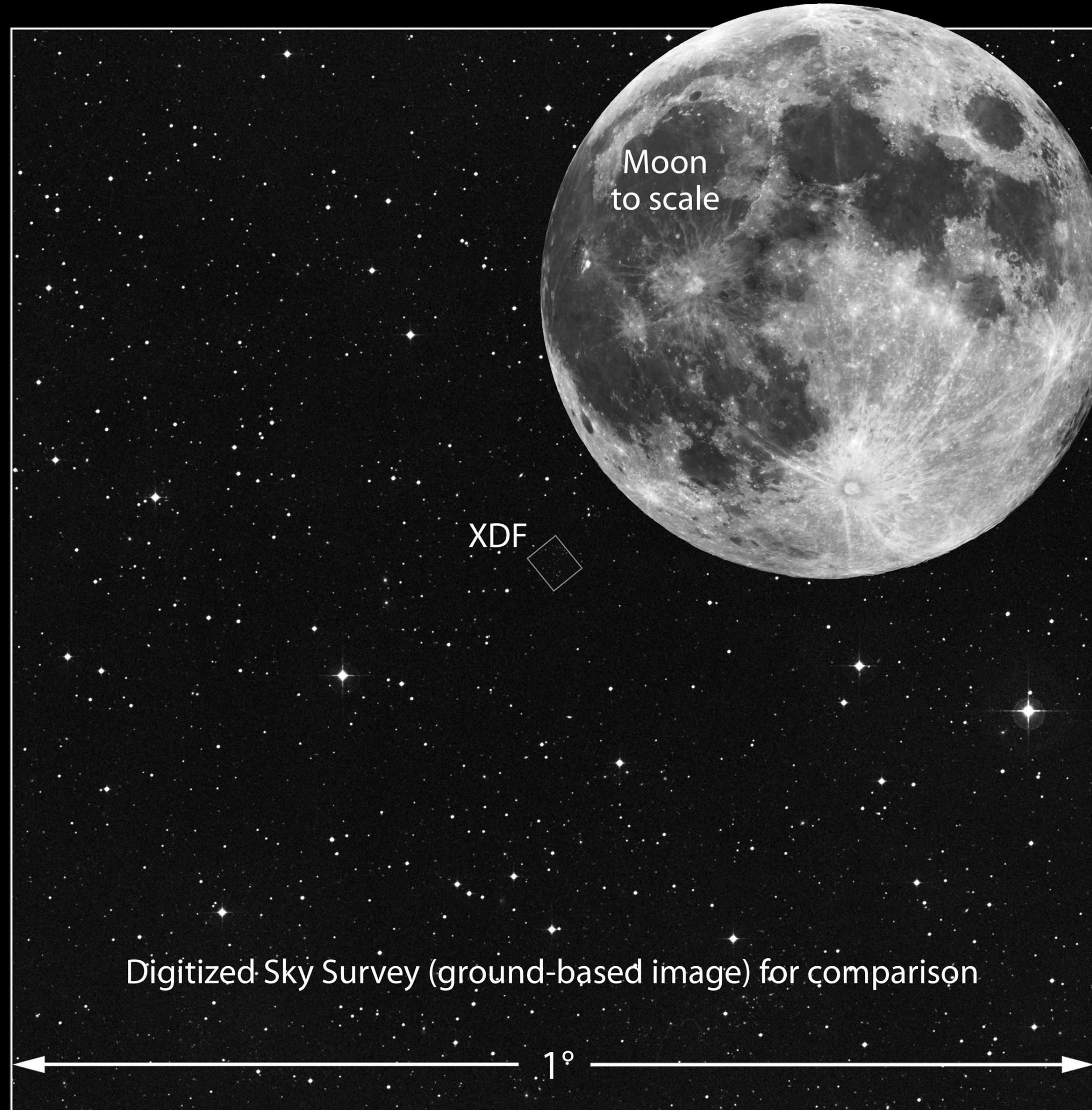


Observable Universe

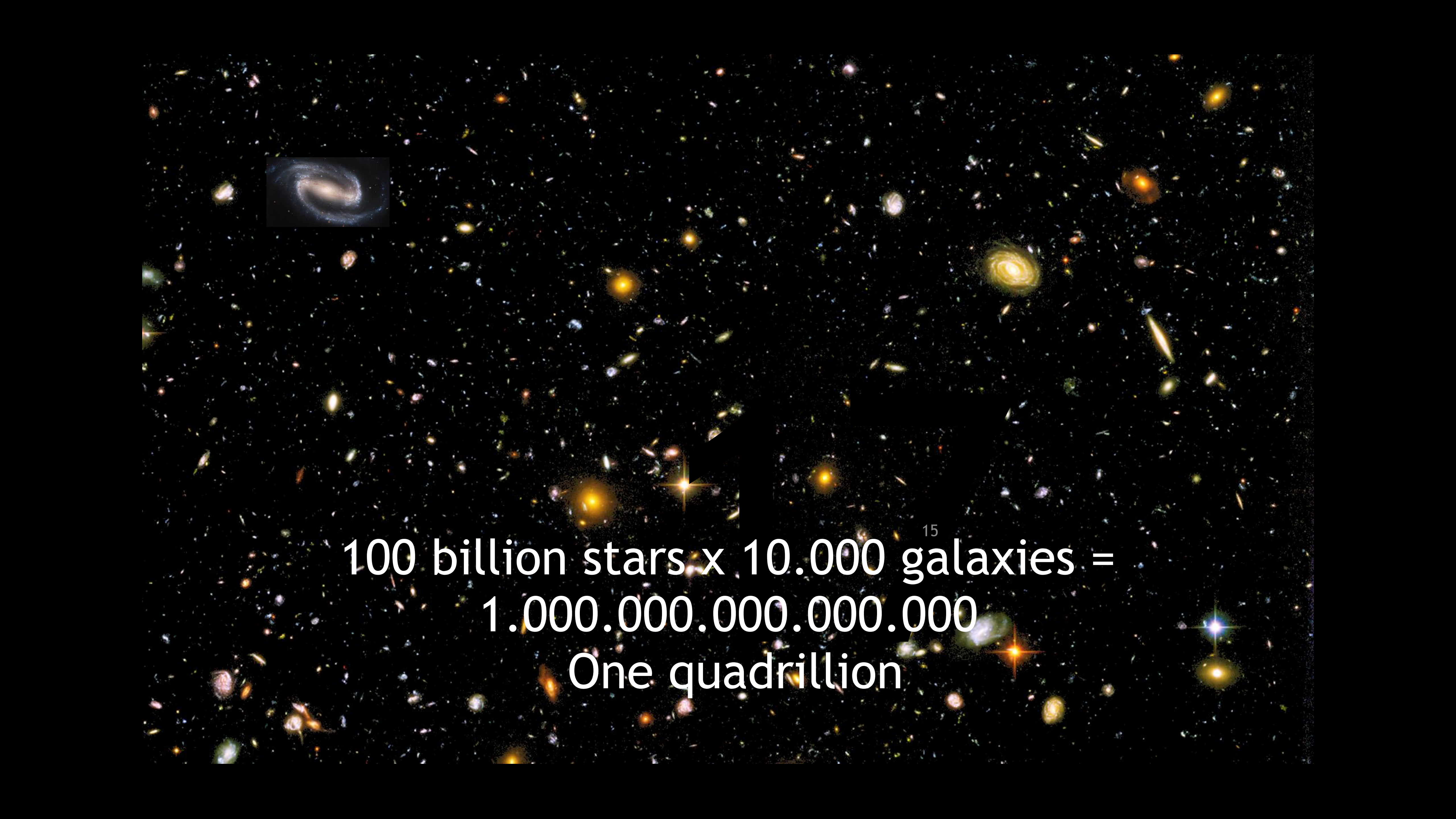


Lol, ok

Size of Hubble eXtreme Deep Field on the Sky

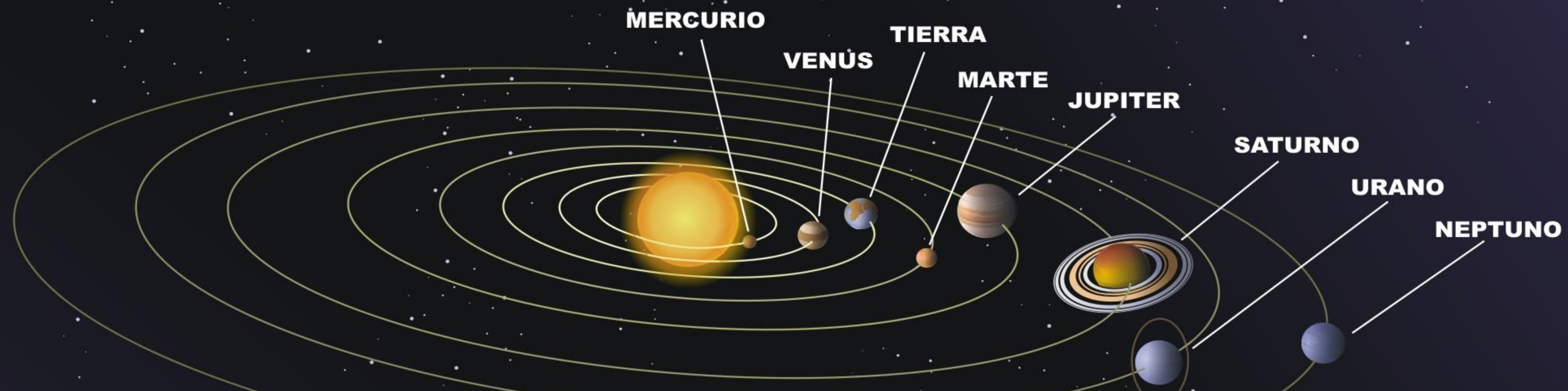






100 billion stars x 10.000¹⁵ galaxies =
1.000.000.000.000.000
One quadrillion





2.000.000.000.000.000.000.000

$\times 8 =$

16.000.000.000.000.000.000.000

I'll be a Physicist

Find aliens?



The chances of finding out
what's really going on in the universe are so remote,
the only thing to do is hang the sense of it
and keep yourself occupied.

- *Douglas Adams,*
The Hitchhiker's Guide To The Galaxy

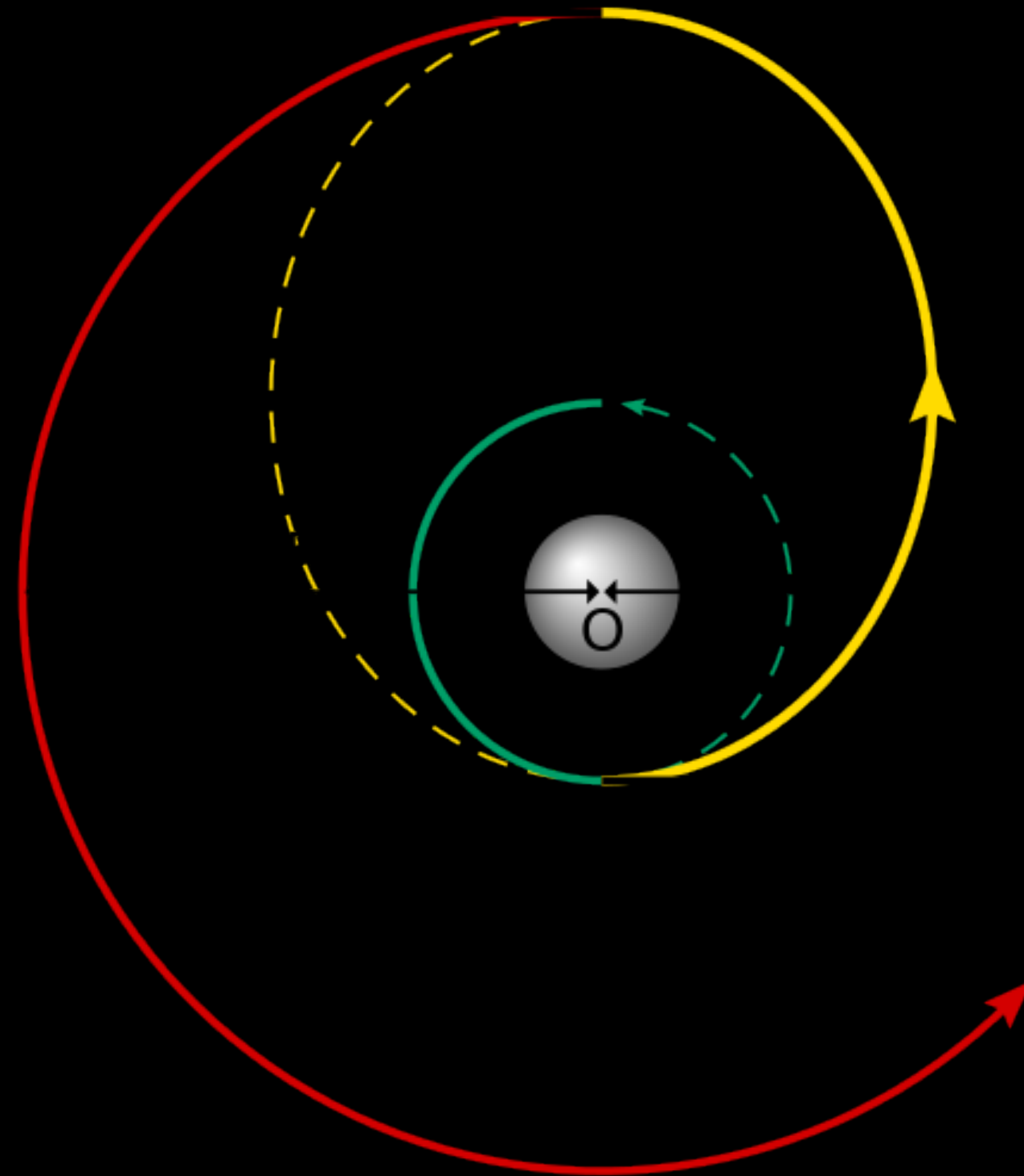
Save the species? Go to Mars? Is NASA cool? Idk

Why living on mars would suck



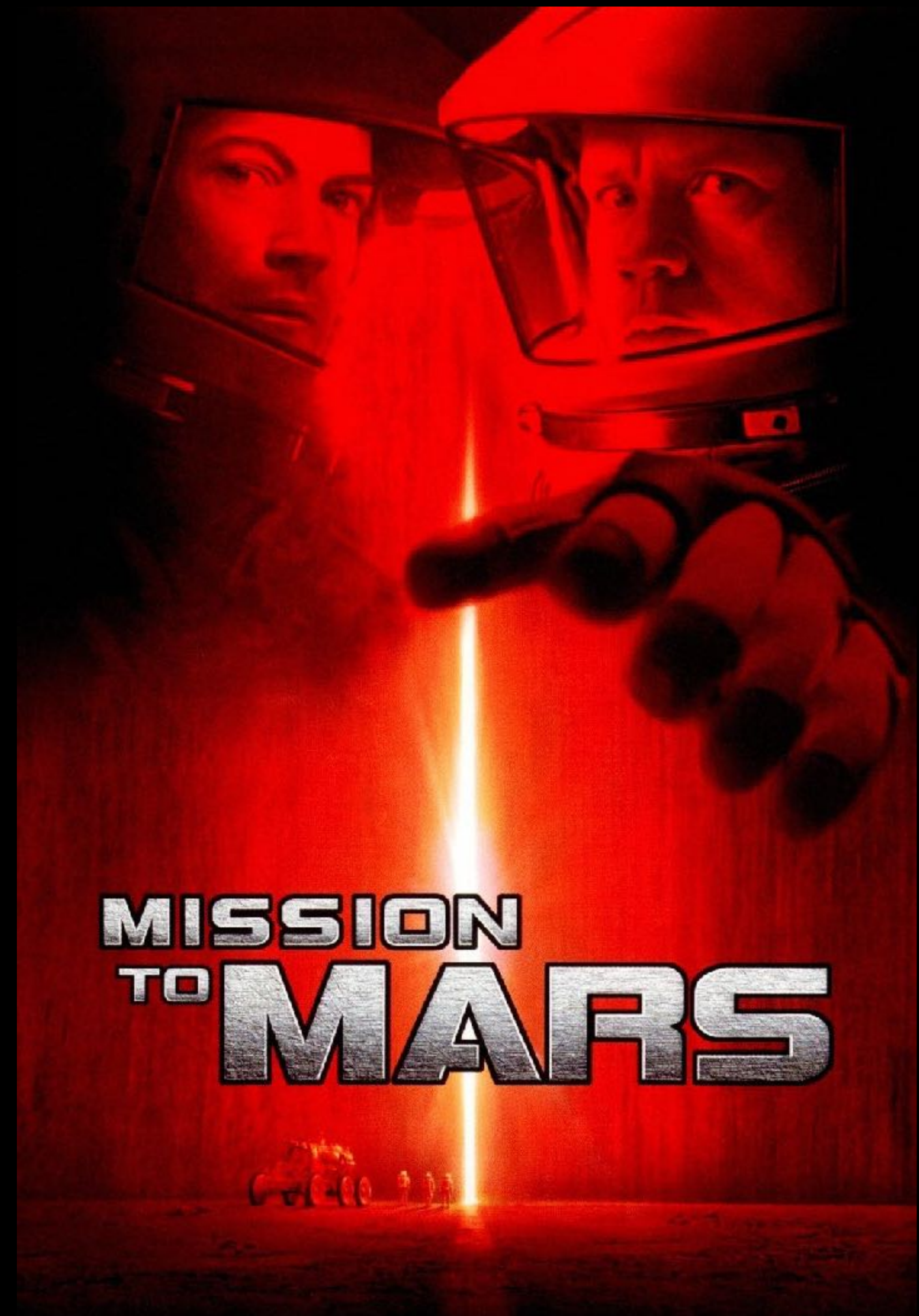
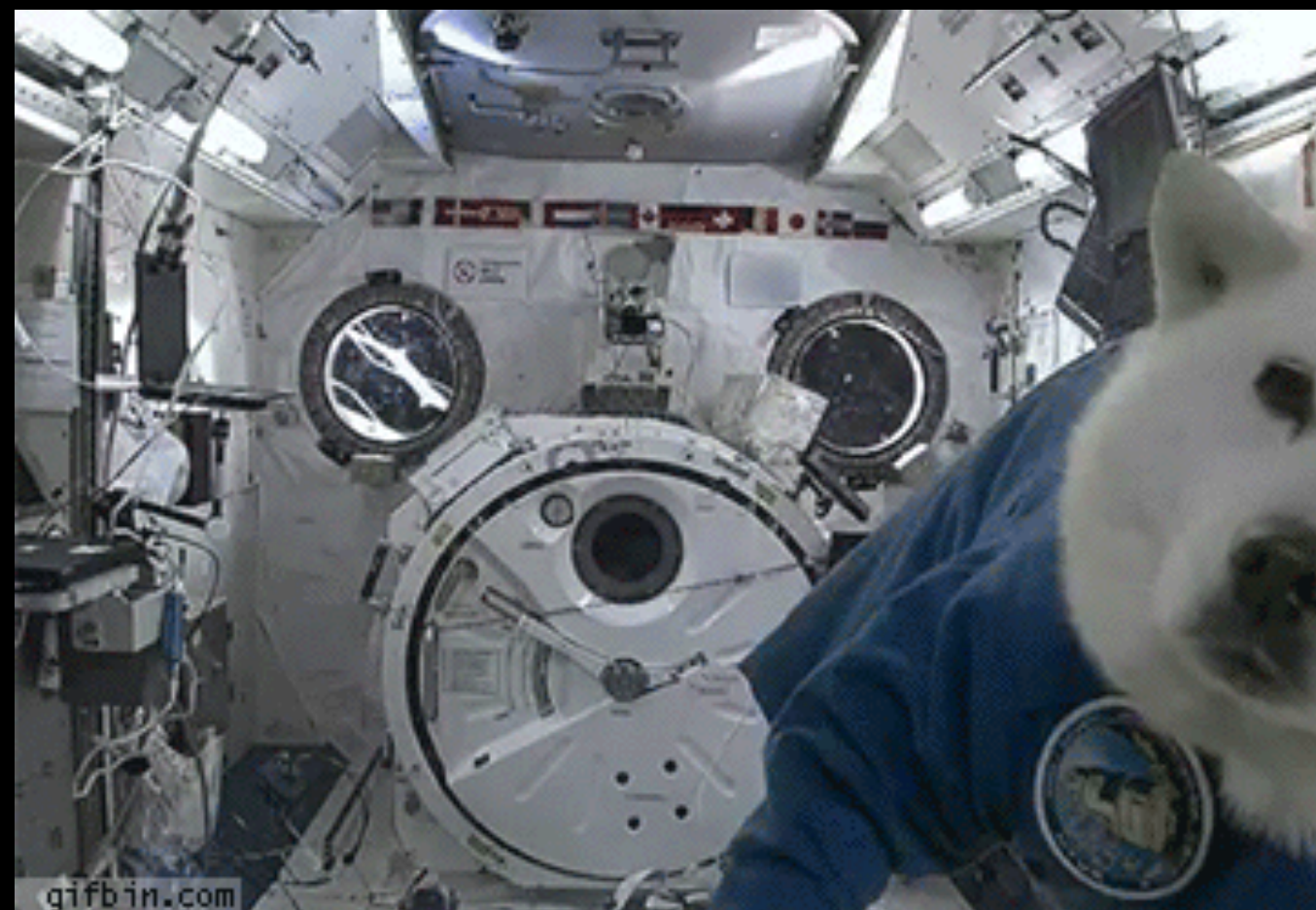
It all starts with the Hohmann transfer

- 6 months to get there
- 18 months there
- 3 months to get back



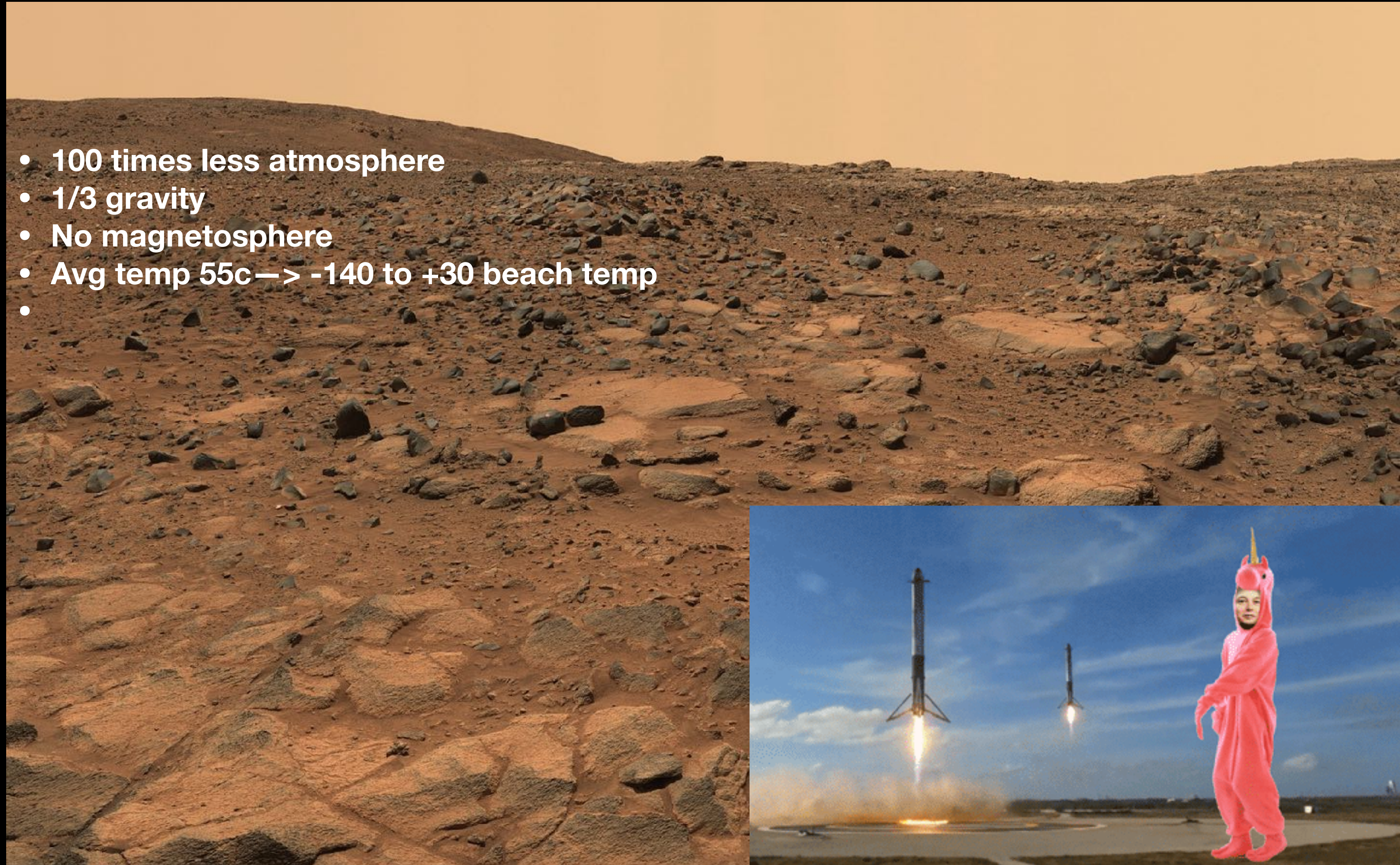


- Up to 9g
- A shipload of Radiation
- 150 days in space w/same people
- Microgravity: Blindness, headache
- Females get UTIs
- Work 2h a day to prevent degen
- Can't have sex
- Don't have foodies/Neighbour Foods
- No Netflix



We get there! Woooooo.....no

- 100 times less atmosphere
- 1/3 gravity
- No magnetosphere
- Avg temp 55c → -140 to +30 beach temp
-






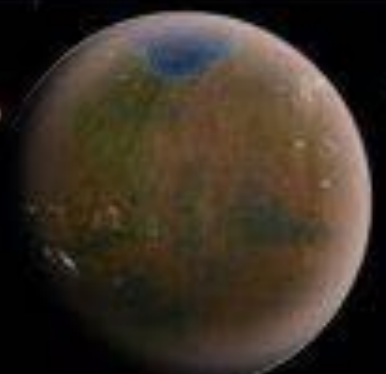
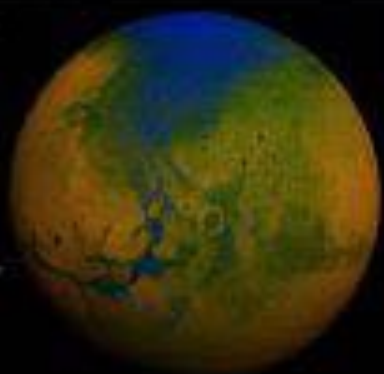
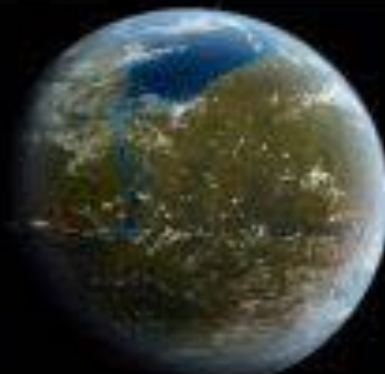
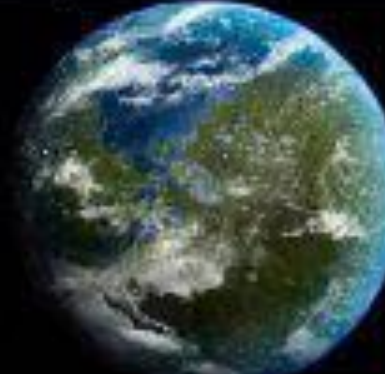
Terraform Me



THE GREEN MARS

Terraforming of Mars



DURATION	90 Years	120 Years	150 Years	50 Years	70 Year
COST	500 Billion USD	700 Billion USD	900 Billion USD	300 Billion USD	1.5 Trillion USD
					

We here, let's set up shop

Laundry list of life : L.L.L.

- **Water**
- **Air**
- **Atmosphere**
- **Temp**
- **Food**
- **Shelter**
- **Coffee**



Water

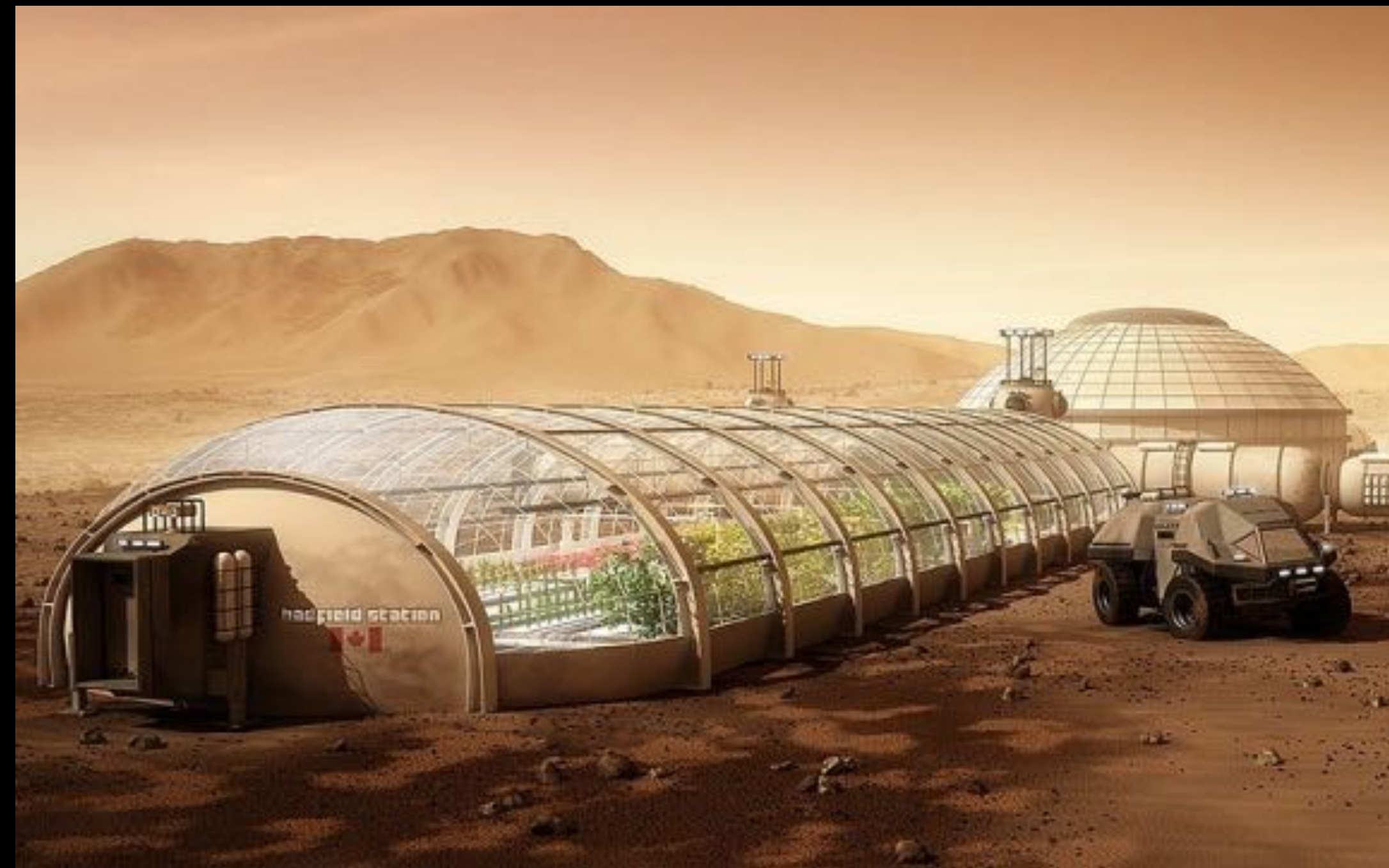
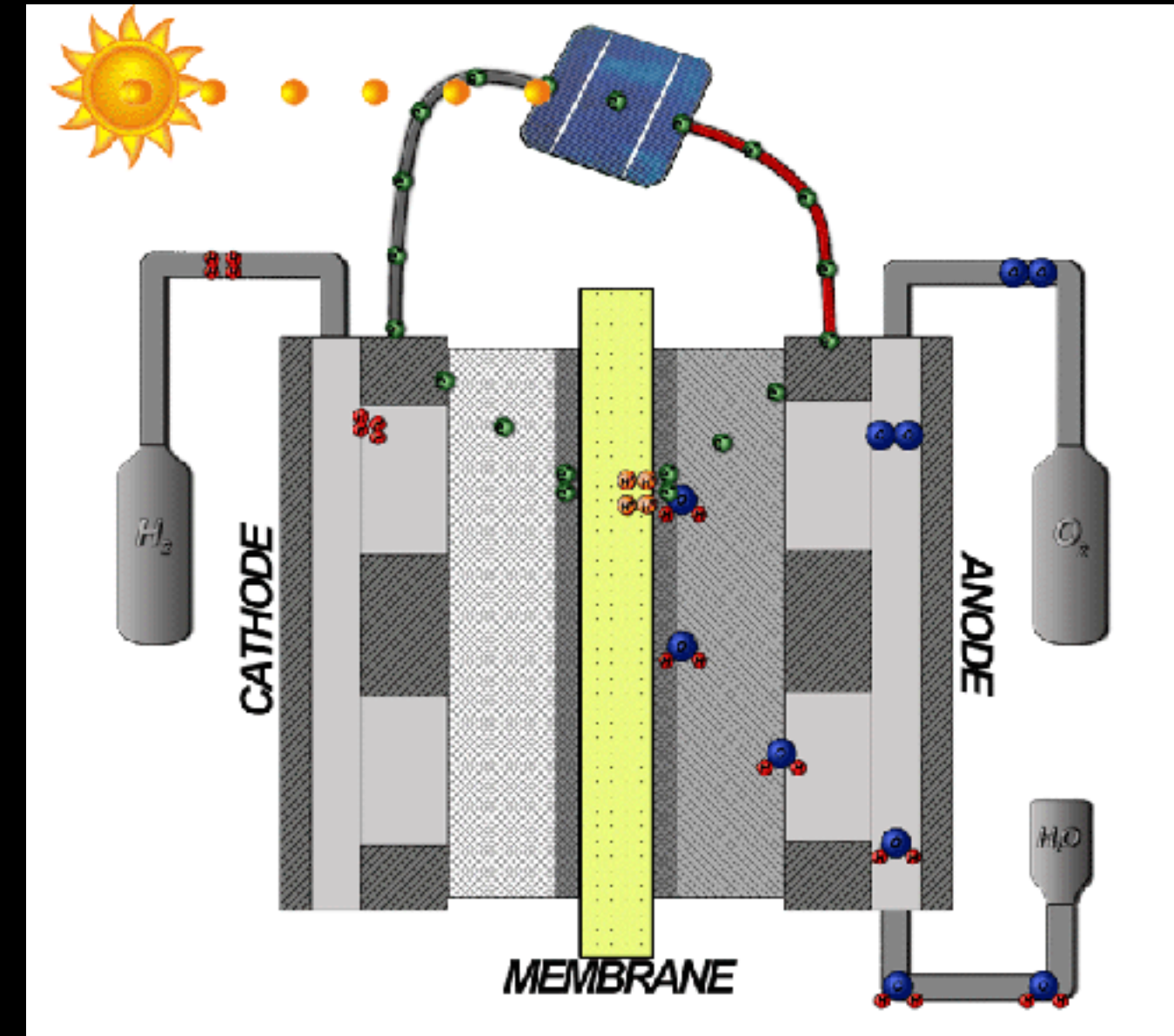


Nukes, asteroids

Air-Food

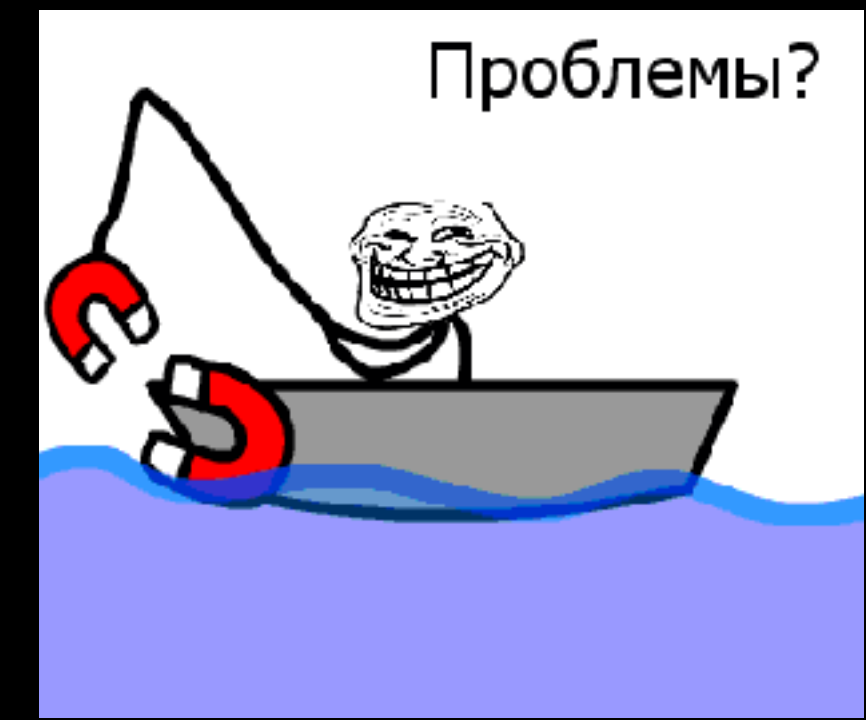
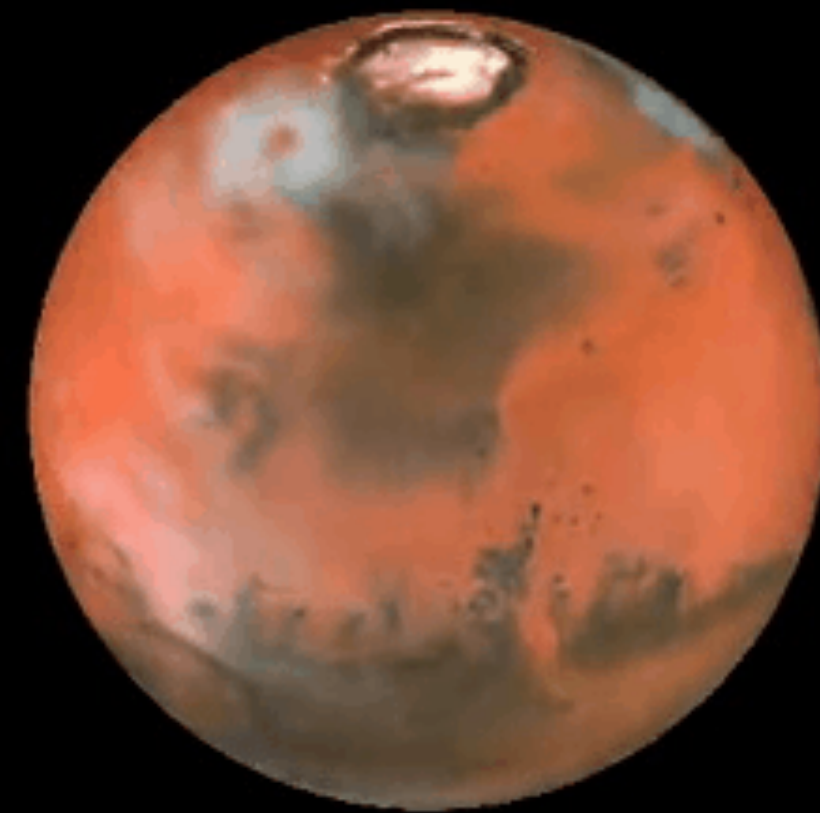
**No
Hunting**

FreeSignPrinter.com



Atmosphere-Temp

- **Factories**
- **Asteroids: Amonia** → Kickstarts greenhouse
- **Nukes** → Radioactive half-life of a bit
- **Artificial mag field and/or more Nukes to restart core**



Shelter

ROTATION PERIOD (DAYS)	23.9 HOURS	24.6 HOURS
REVOLUTION PERIOD (YEARS)	686.9 DAYS	687 DAYS
AVERAGE TEMPERATURE	-55°F (-48°C)	-41°F (-5°C)
ATMOSPHERIC PRESSURE	1.253 MILLIBARS	8 MILLIBARS
Avg DISTANCE FROM SUN	93 MILLION MILES	142 MILLION MILES
TILT OF AXIS	23.5°	37°
GRAVITY	1 G	0.4 G

1 THE THOUSAND-YEAR PROJECT might begin with a series of 18-month survey missions. Each crew making the six-month journey from Earth to Mars would use a small reusable module to the base.

2 AN ATMOSPHERE could be made by releasing carbon dioxide now frozen in dirt and polar ice caps. Factories spewing potent greenhouse gases, and maybe space mirrors focusing sunlight on ice, could start the work.

3 RAIN would fall and water would flow once enough CO₂ had been released to raise the atmospheric pressure and warm the planet above freezing. Microbes, algae, and lichens could start taking the desert rock.

4 FLOWERING PLANTS could be introduced after the microbes had created organic soil and added some oxygen to the atmosphere. Barley and perhaps even temperate tomatoes might eventually take root.

5 ENERGY for cities, if a purpose and a desire for them emerged, might come initially from nuclear power and wind turbines. Fusion reactors, if they could be built, might be the best bet in the long run.

6 MARTIANS would go out only with robots. Their oxygen would remain low for millennia. Over geologic time, before Earth itself becomes uninhabitable, Mars would lose its new atmosphere and freeze again.



- C02 scrubbers
- Solar panels
- Fision reactors
- Water purifiers
- O2 valves

Congratulations! You're finally living on Mars!

- Dust and iron electrical storms
- Dust grinds down gears
- Perchlorates in soil : Anemia or agranulocytosis
- Living Underground
- Never hearing birds
- Never seeing sky
- Always wearing a suit
- Dying the worst death if it breaches
- Shielding from EM waves and Radiation
- Living in a 30 square m apt with the Boyz
- Inbreeding
- Randomly getting hit by an asteroid
- Getting fried by a lightning bolt
- Suffocating from excess Oxygen or CO₂



Thank you for glistening!

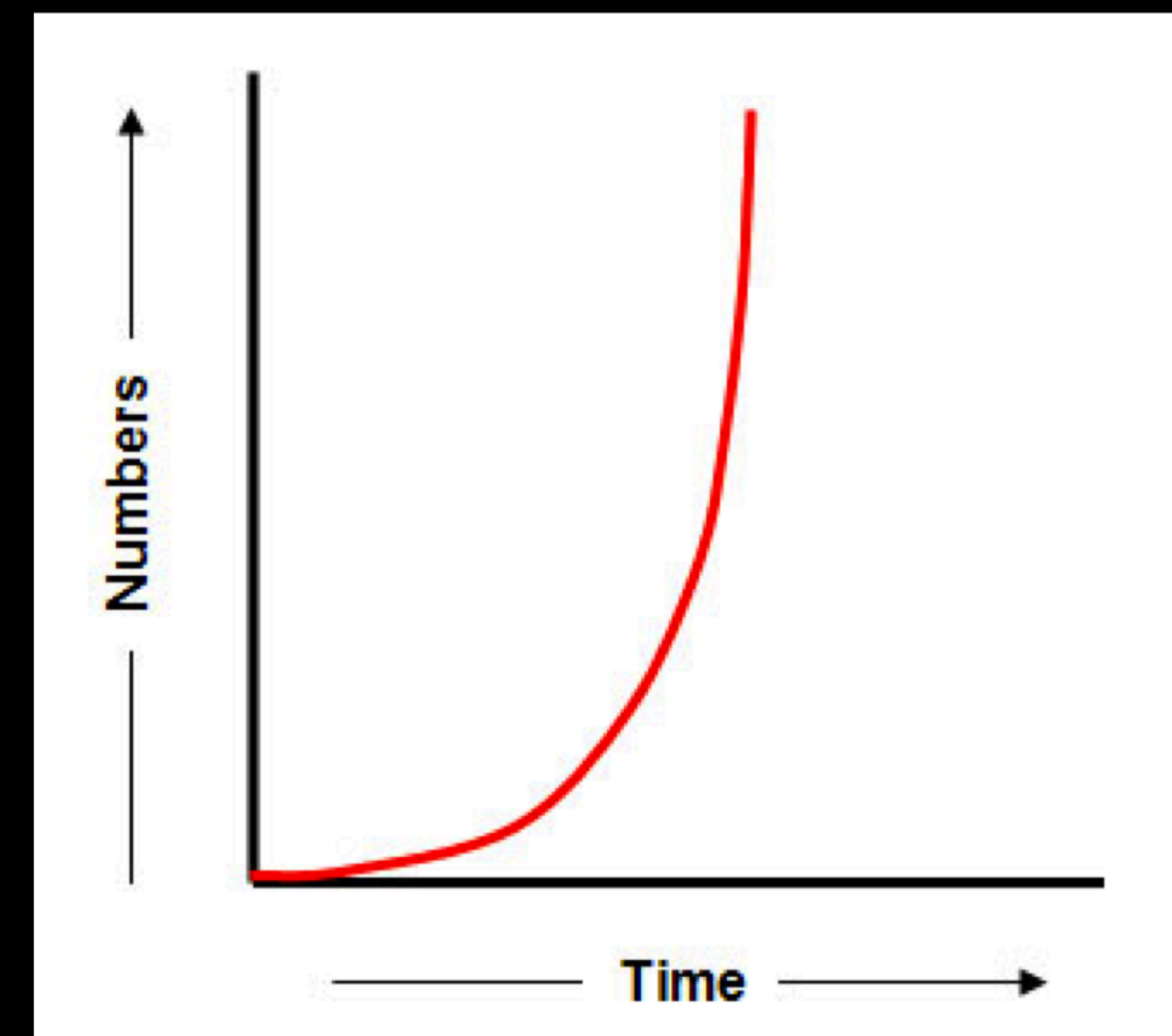
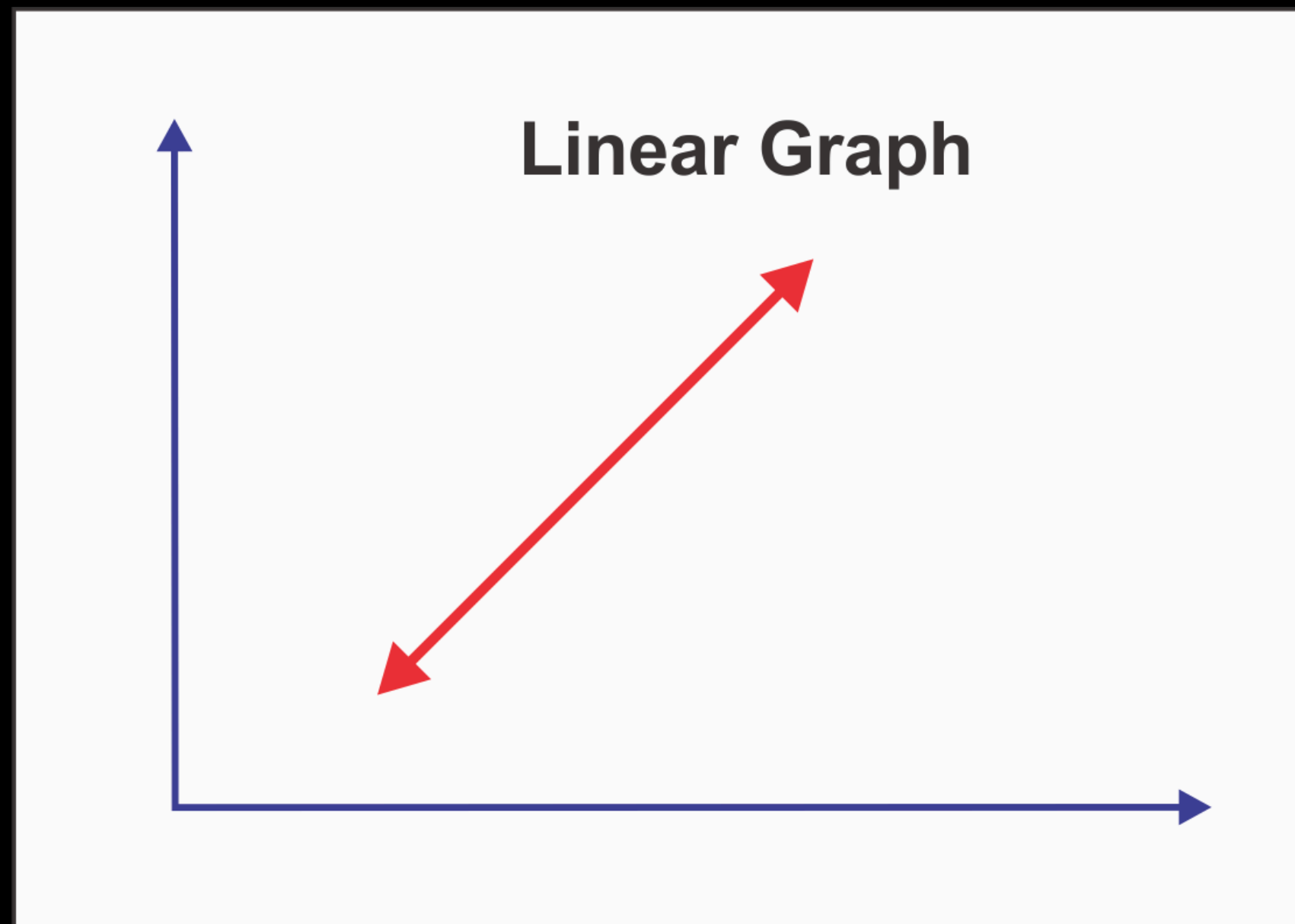


Our Universe is exponential

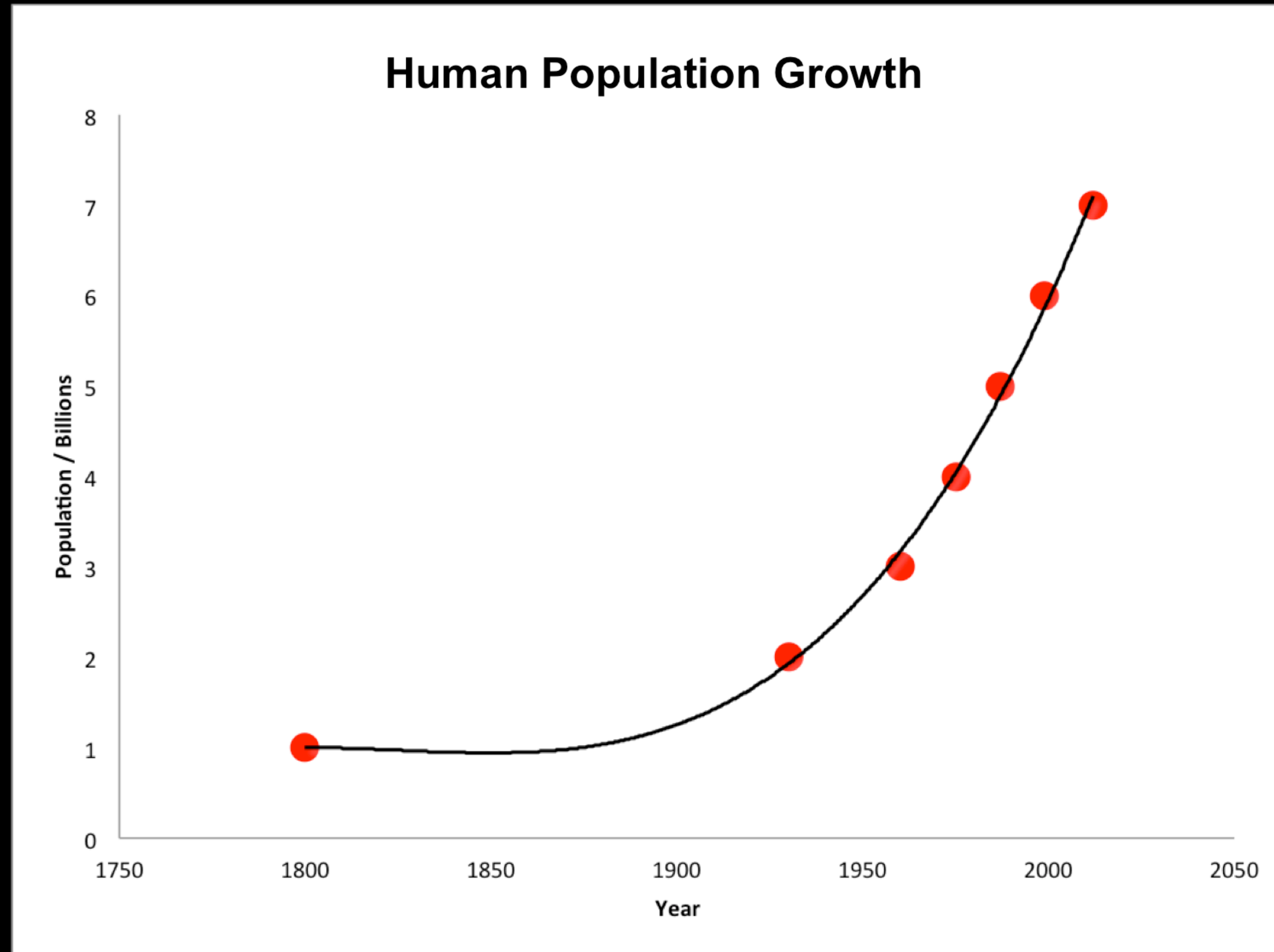
How can I use this to make a difference?

How do we make the future ?

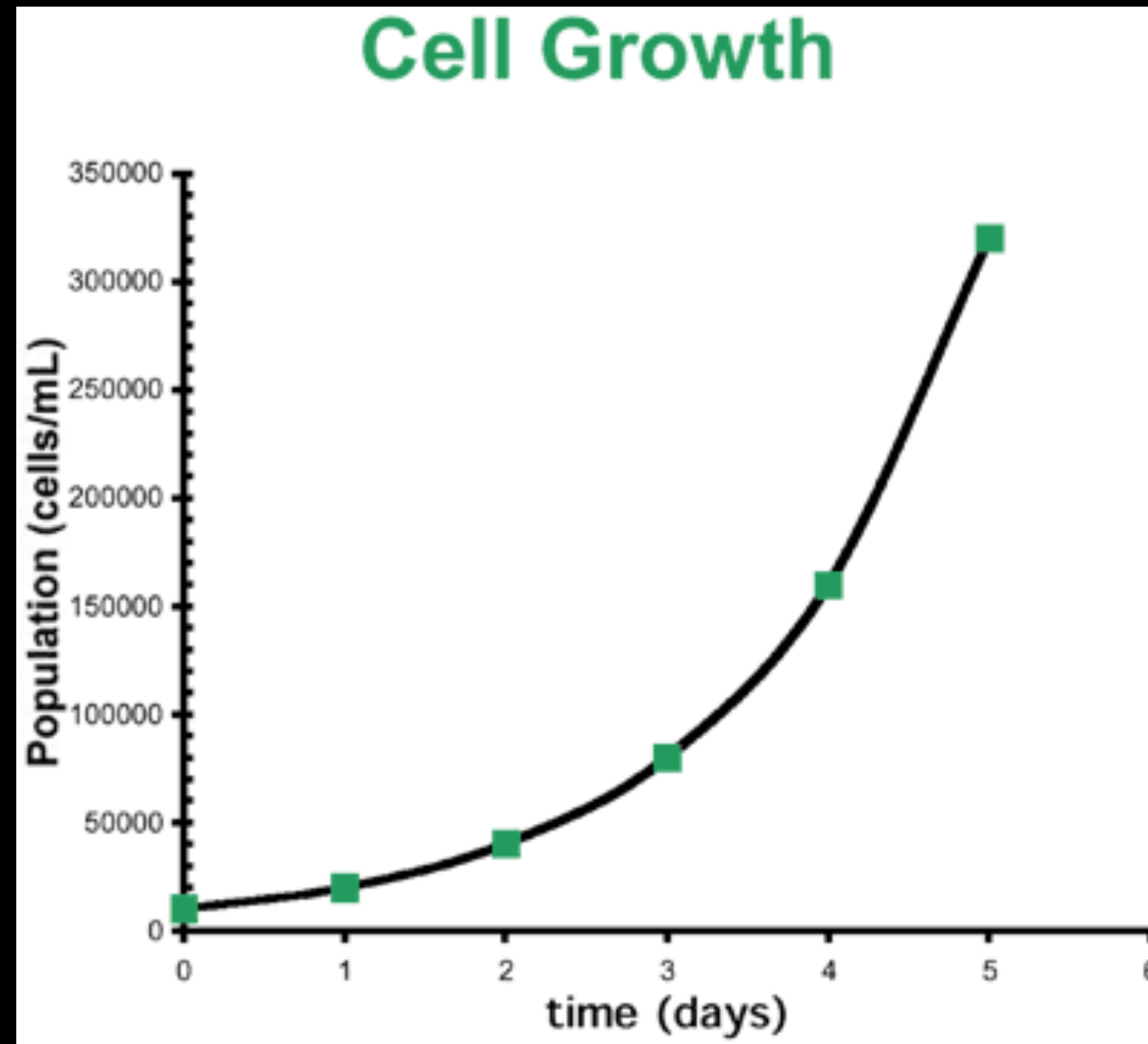
WHAT IS EXPONENTIAL?



GRAPH OVERLOAD



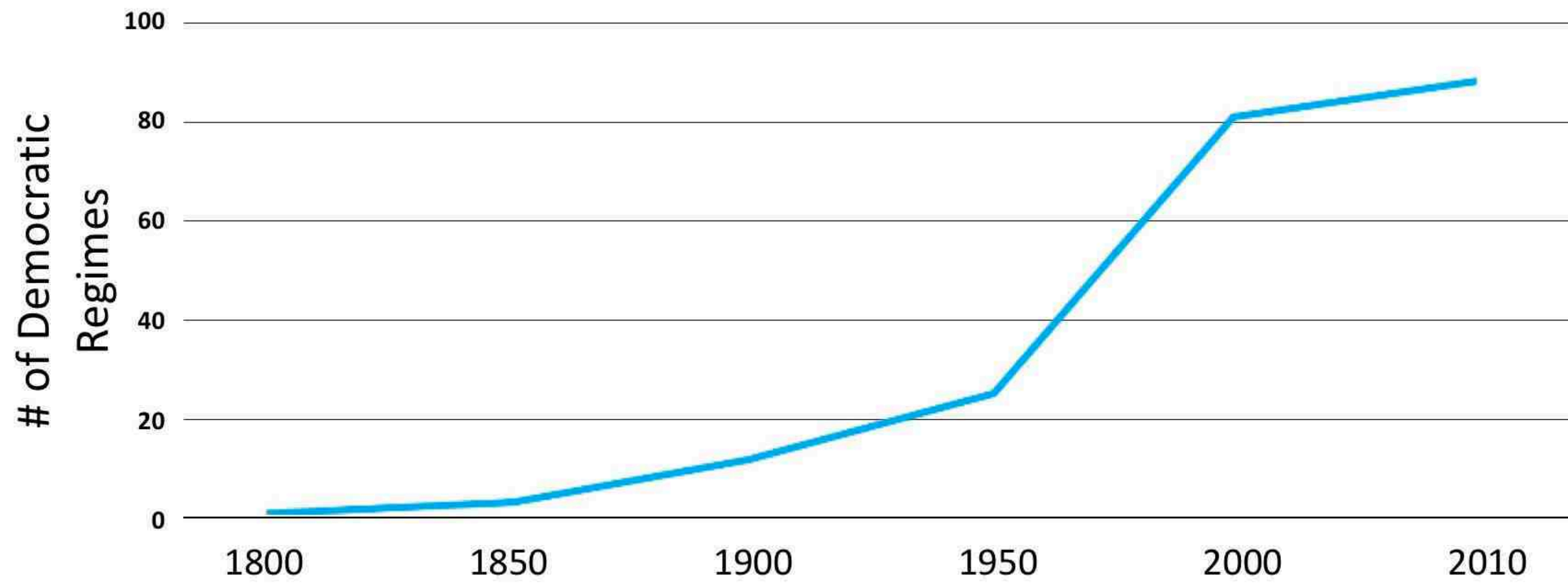
GRAPH OVERLOAD



GRAPH OVERLOAD

Peter Diamandis • www.diamandis.com/data

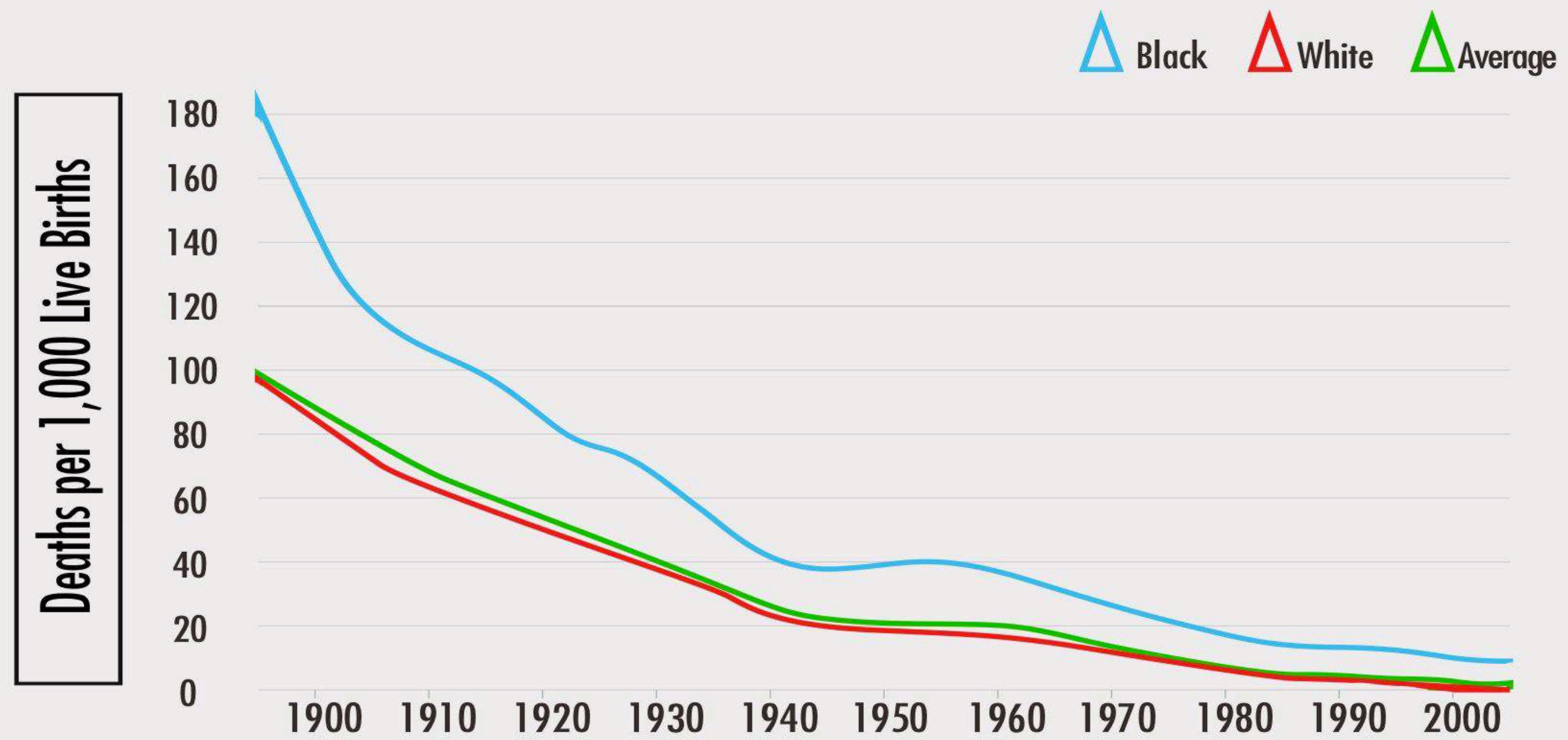
Number of Democracies



GRAPH OVERLOAD

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Decreasing Infant Mortality Rates in US

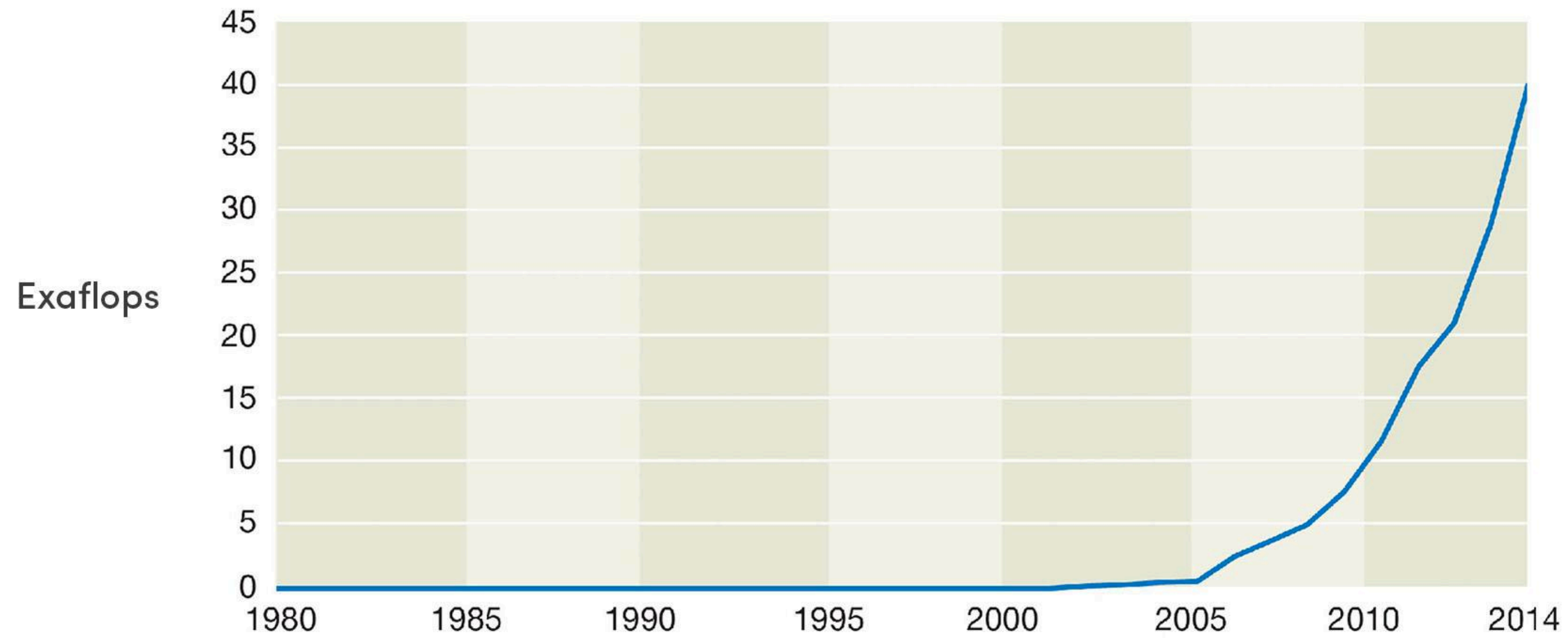


Source: Historical Statistics of the United States, Table B 142-144

GRAPH OVERLOAD

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Annual Additions to Global Computing Power

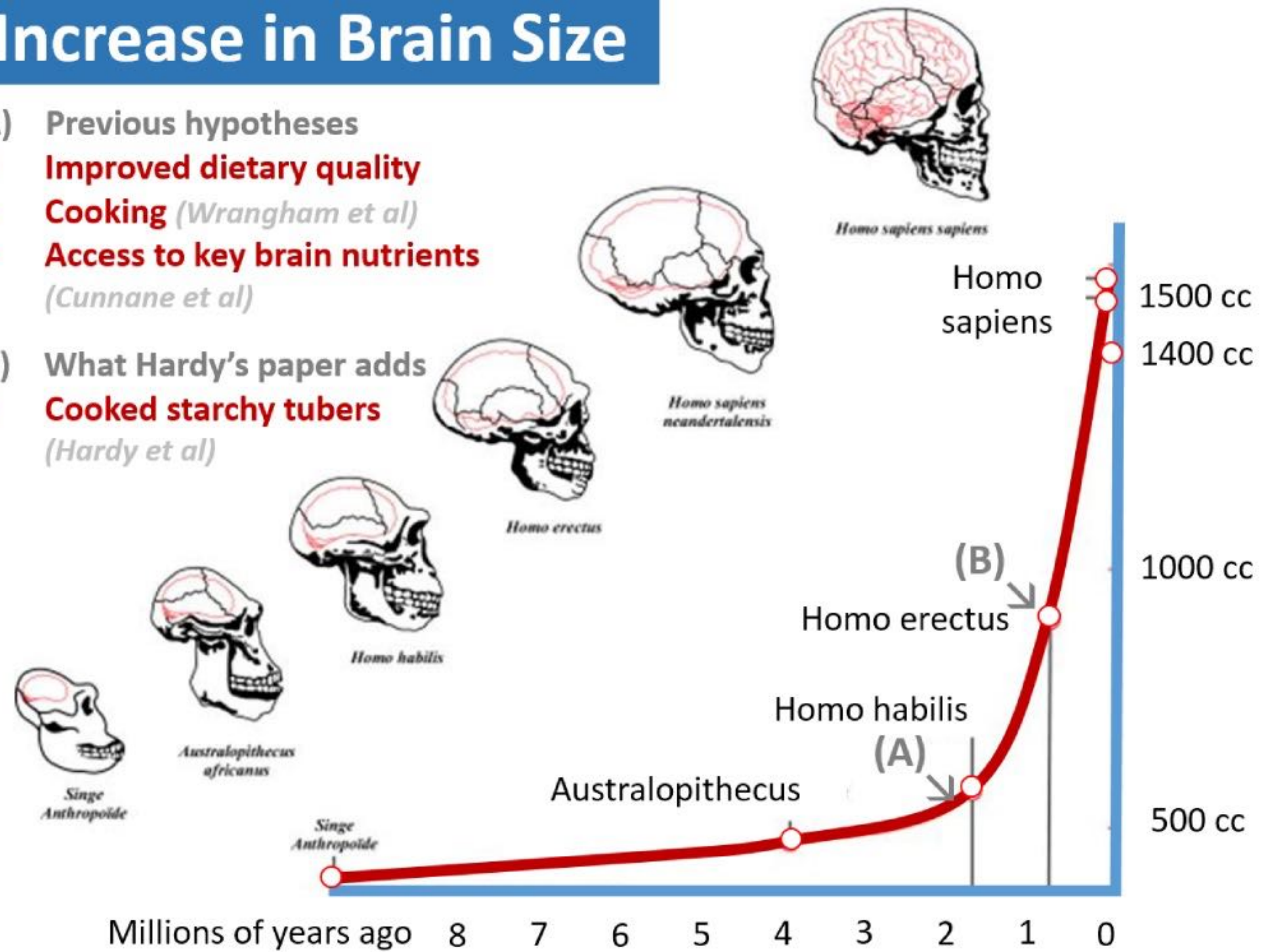


An exaflop is 1 quintillion (10 to the 18th power) floating-point operations per second

Source: William D. Nordhaus, "Two centuries of progress in computing," *Journal of Economic History*, 2007, Volume 6;
US Bureau of Economic Analysis; McKinsey analysis

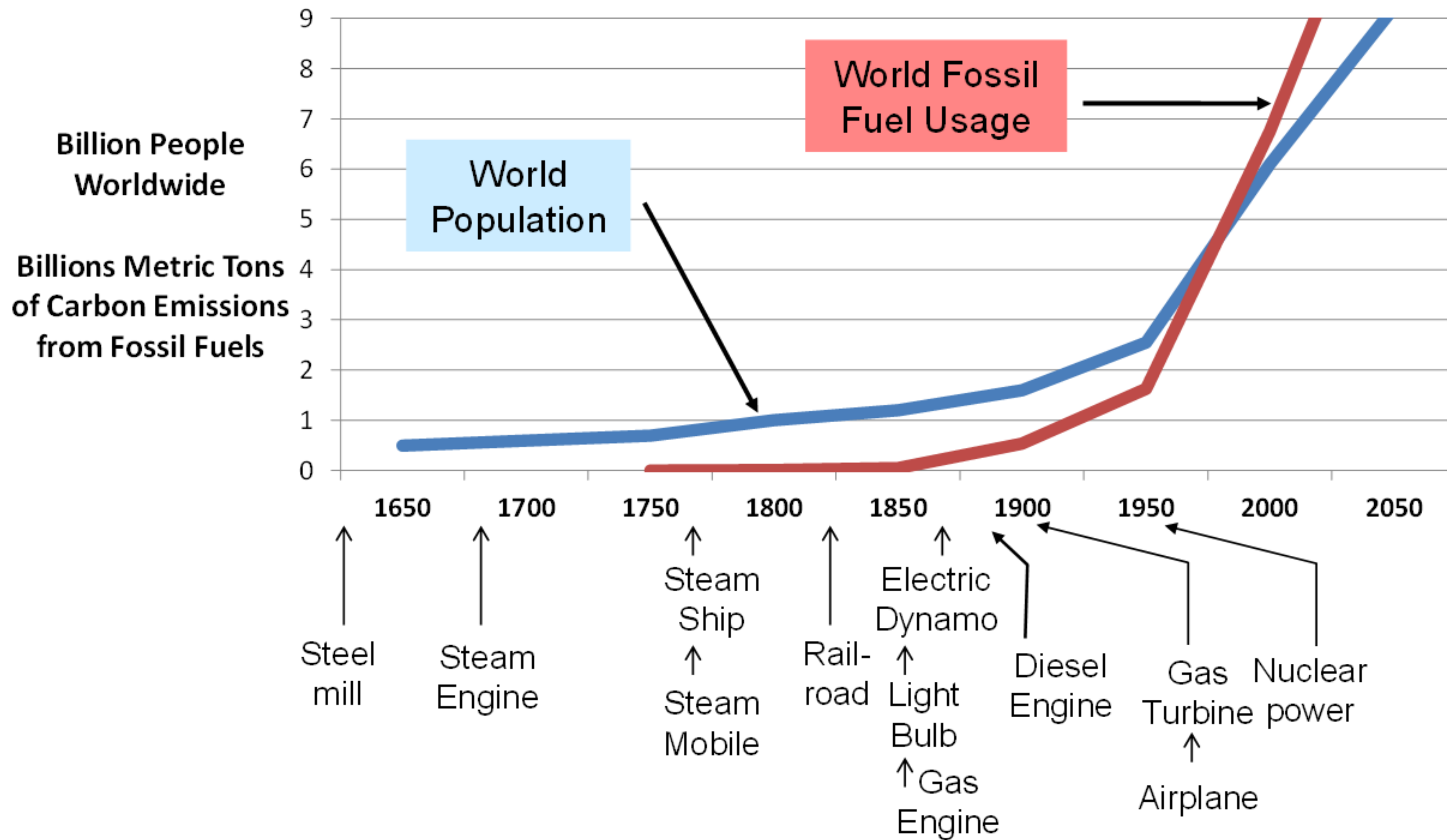
Increase in Brain Size

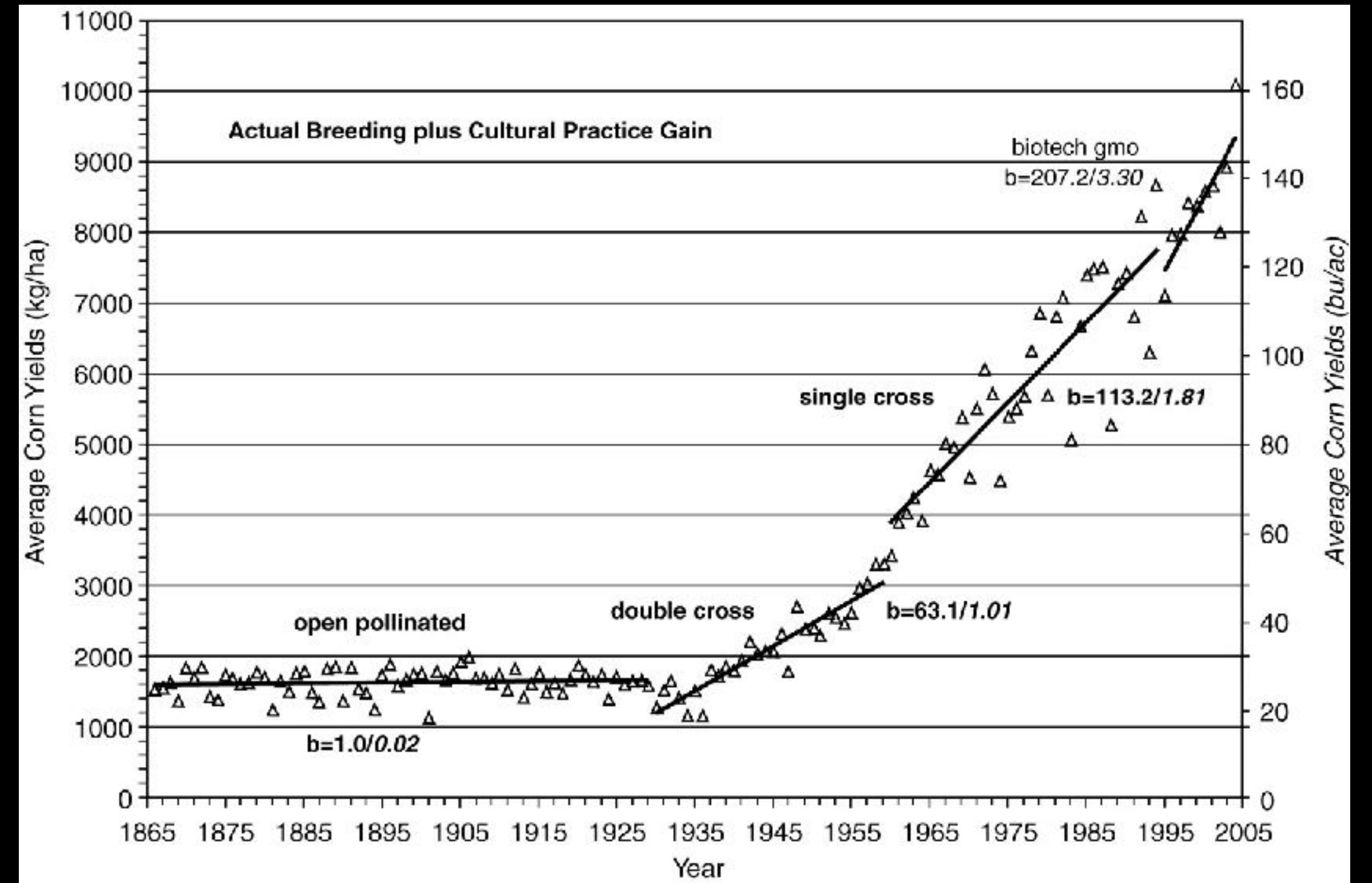
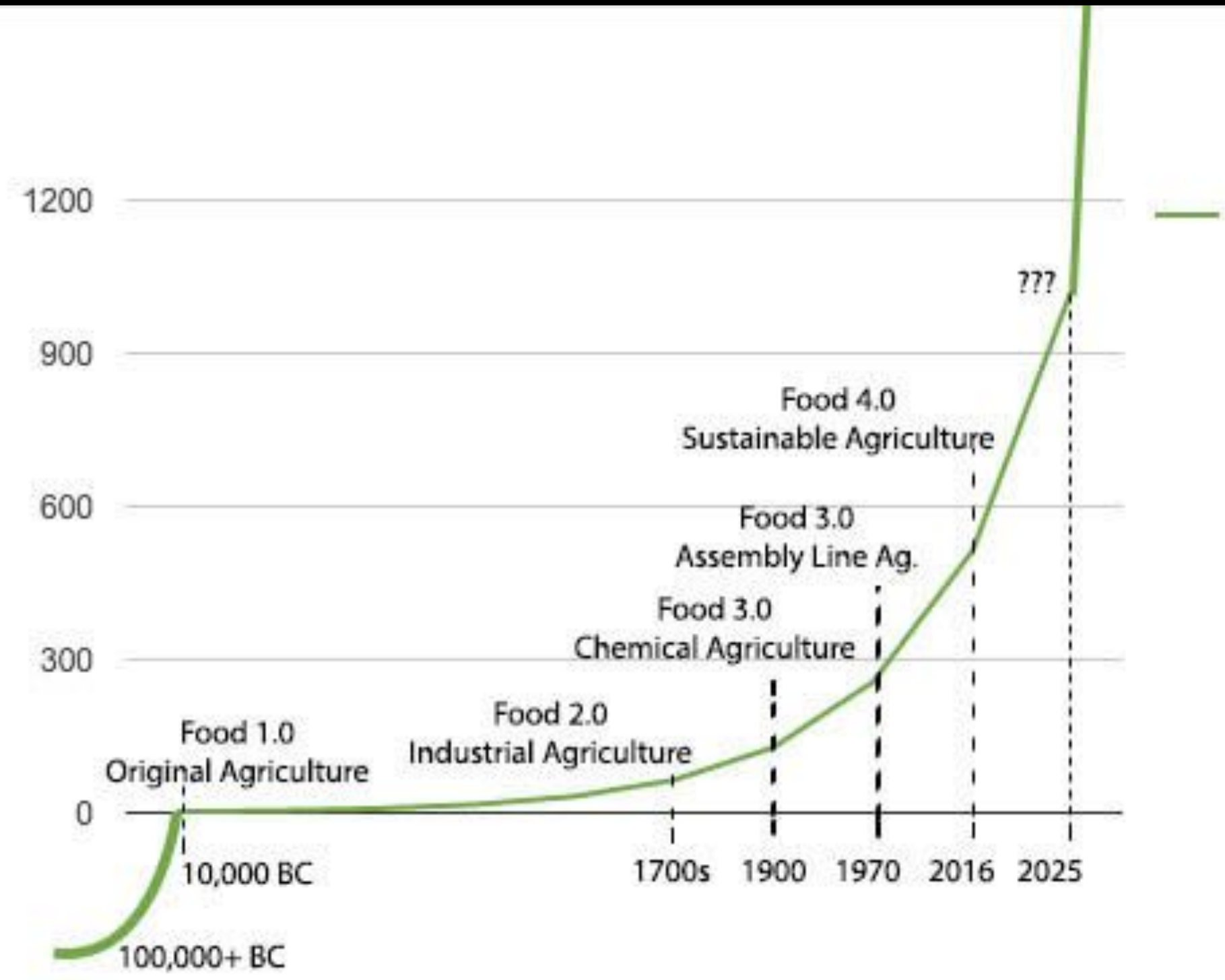
- A) Previous hypotheses
- **Improved dietary quality**
 - **Cooking** (*Wrangham et al*)
 - **Access to key brain nutrients** (*Cunnane et al*)
- B) What Hardy's paper adds
- **Cooked starchy tubers** (*Hardy et al*)



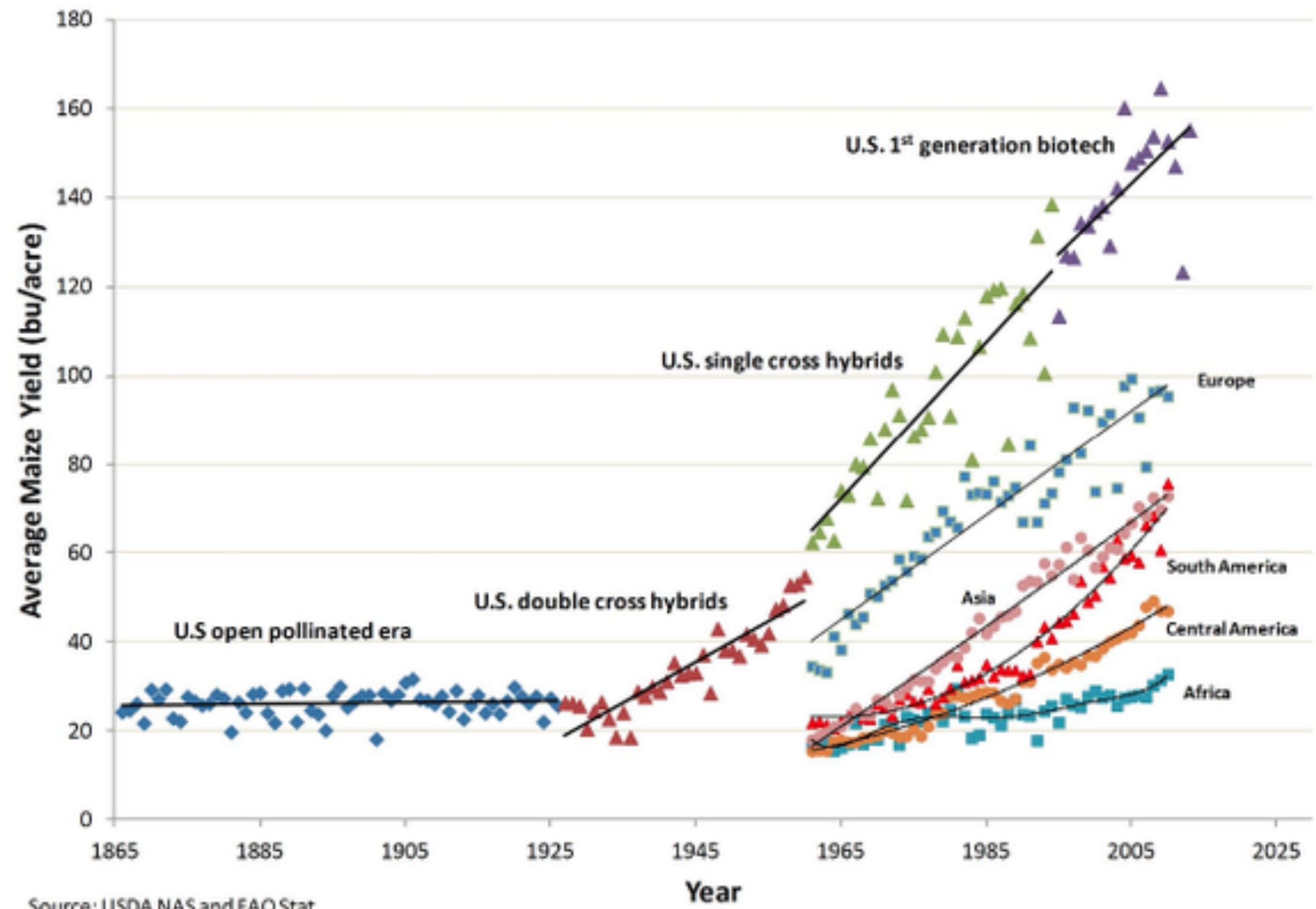


Timeline of Industrialization





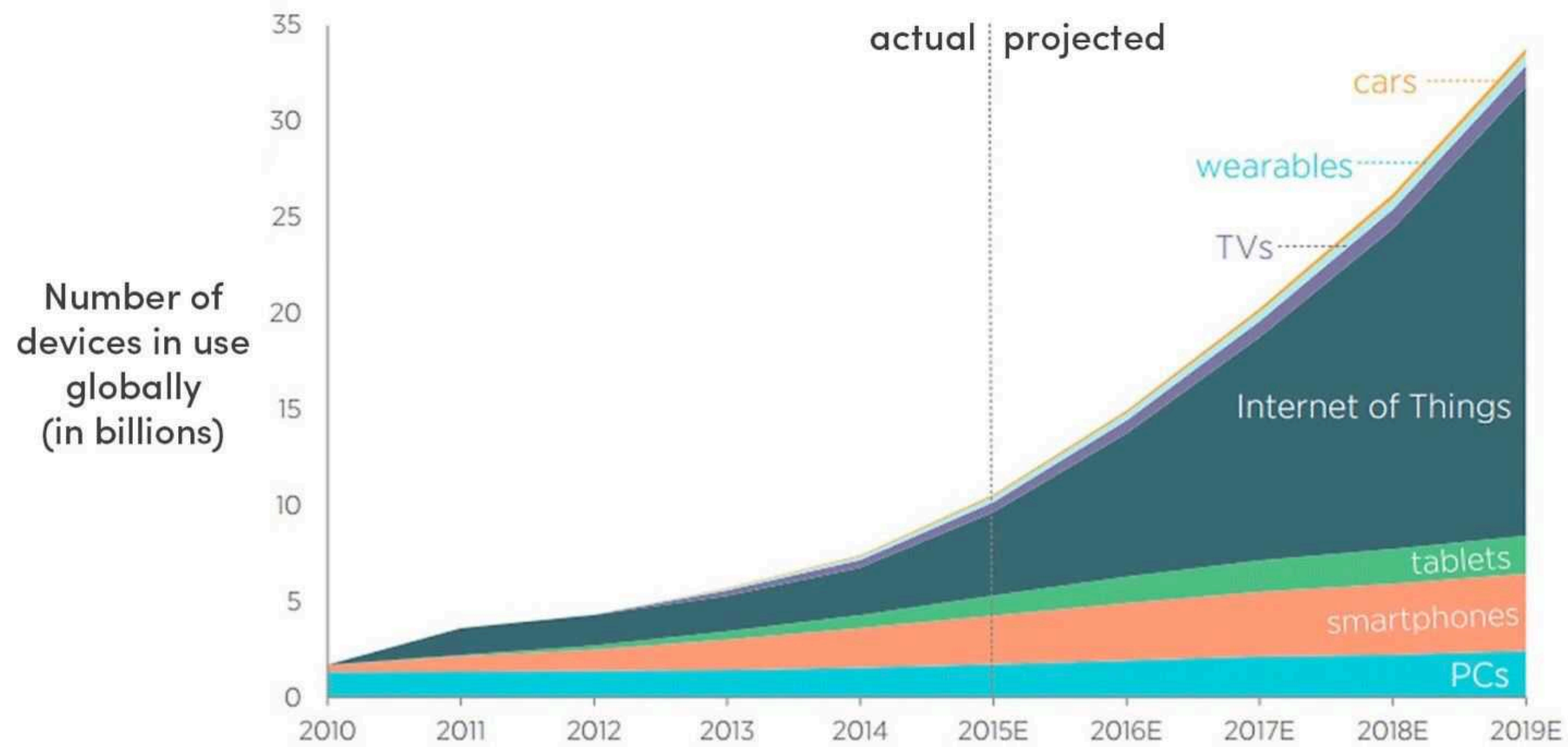
Historic Corn Yield: Selected Regions



GRAPH OVERLOAD

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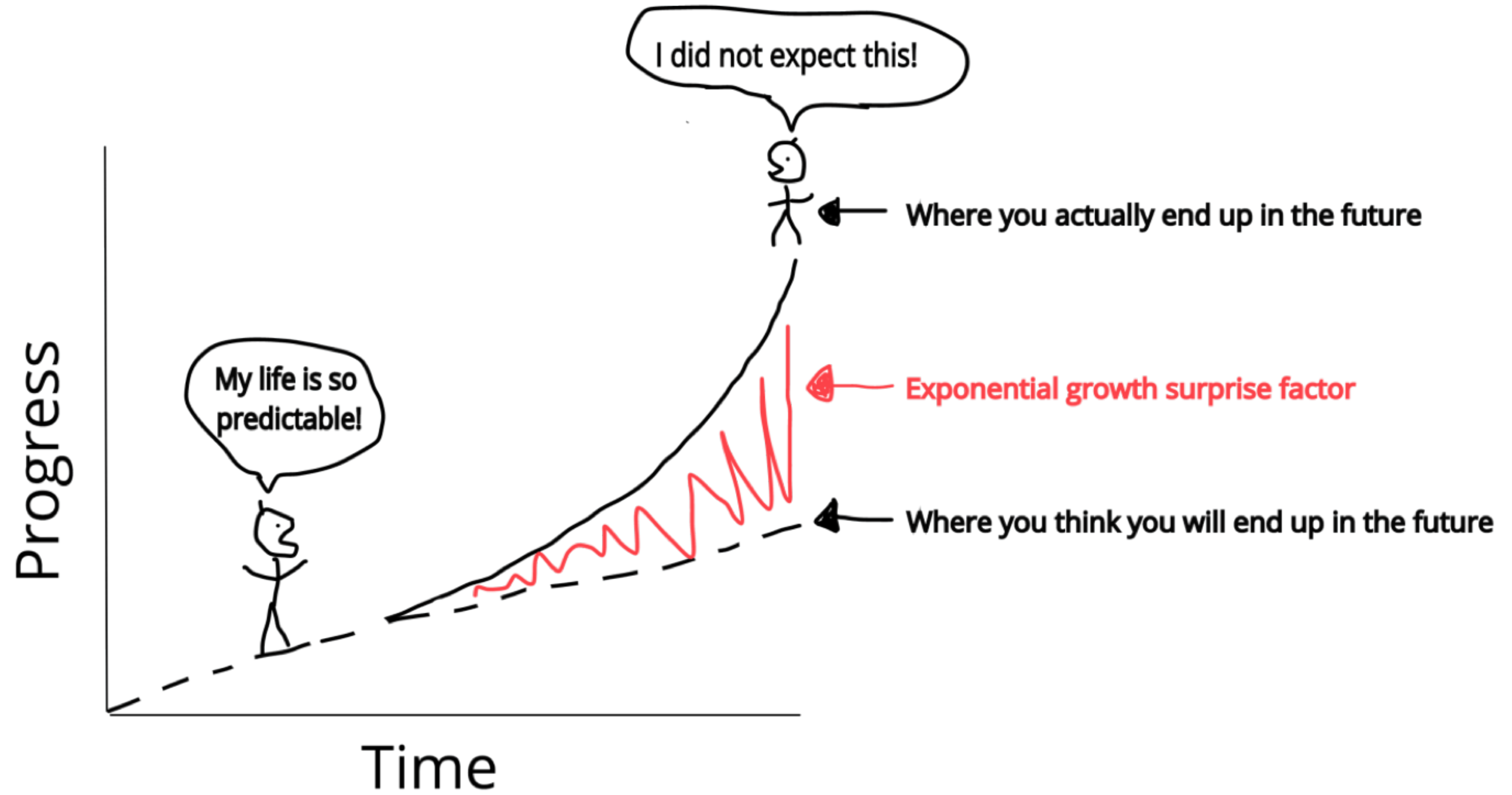
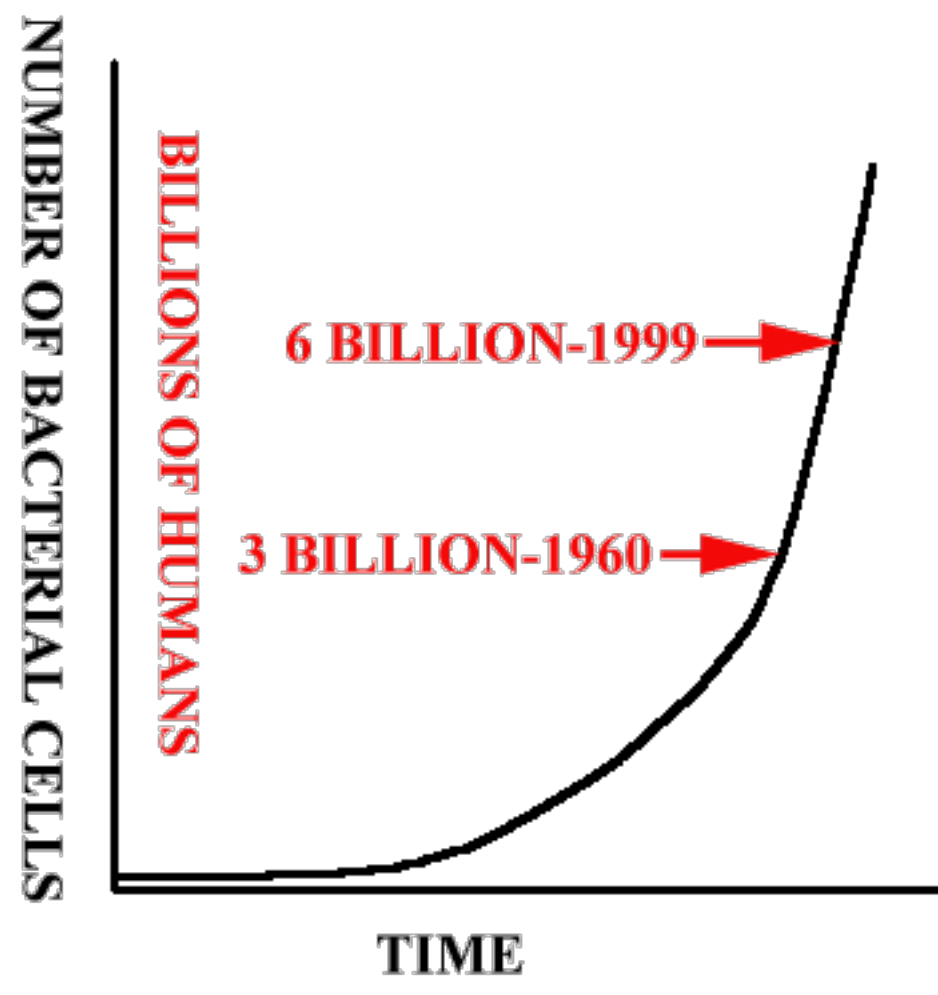
Internet of Everything: Devices in Use Globally



Source: John Greenbrough, "The Internet of Everything 2015", Business Insider Intelligence, Adam Thierer and Andrea Castillo, Mercatus Center at George Mason University, 2015.

Technology increases exponentially,

Your approach should be



WE need to learn how to adapt an innovate.

What is that exponential surprise growth factor? **Let's be part of making it happen!**

LIFE IS EXPONENTIAL

So how the hell do we see into the future?

NEUROMANCER (WILLIAM GIBSON, 1984)

WWW

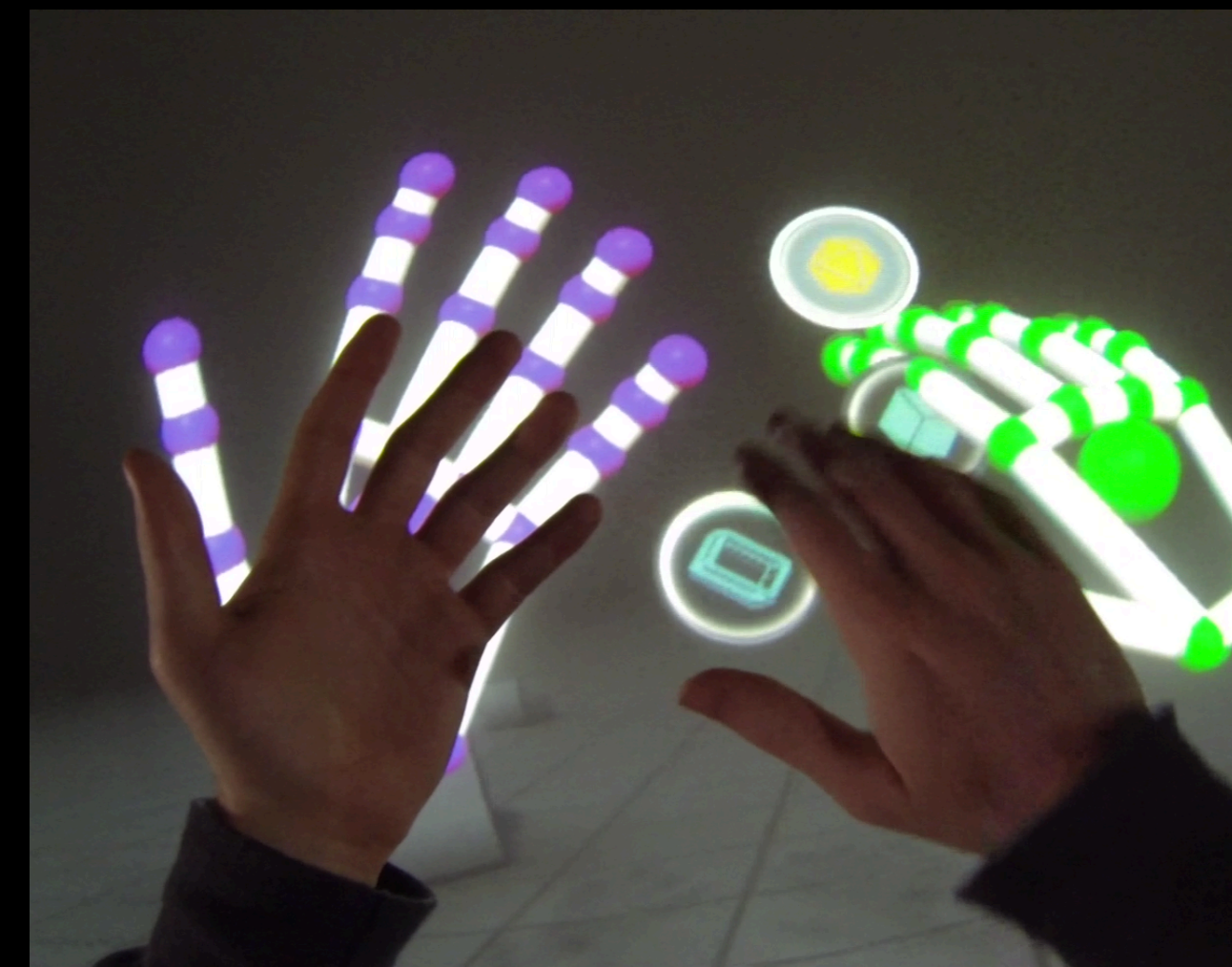
Virtual Reality

Cyber-Security

Body enhancements/hacking

AI, machine learning

- Minority Report - Leap Motion (-12)
- Star Trek - The iPad (-40)
- Batman - Siri (-66)



- Looking Backwards, Edward Bellamy (1888) - Universal Credit
- Ray Bradbury (1953) - Earbud
- Aldous Huxley, A brave new world (1931) - Anti depressants
- George Orwell, 1984 (1949) - Camera Surveillance
- John Brunner, Stand on Zanzibar (1969) - Future of America, Obama, Random acts of Violence and terrorism, School shootings, fuel cell cars, hook-up culture.

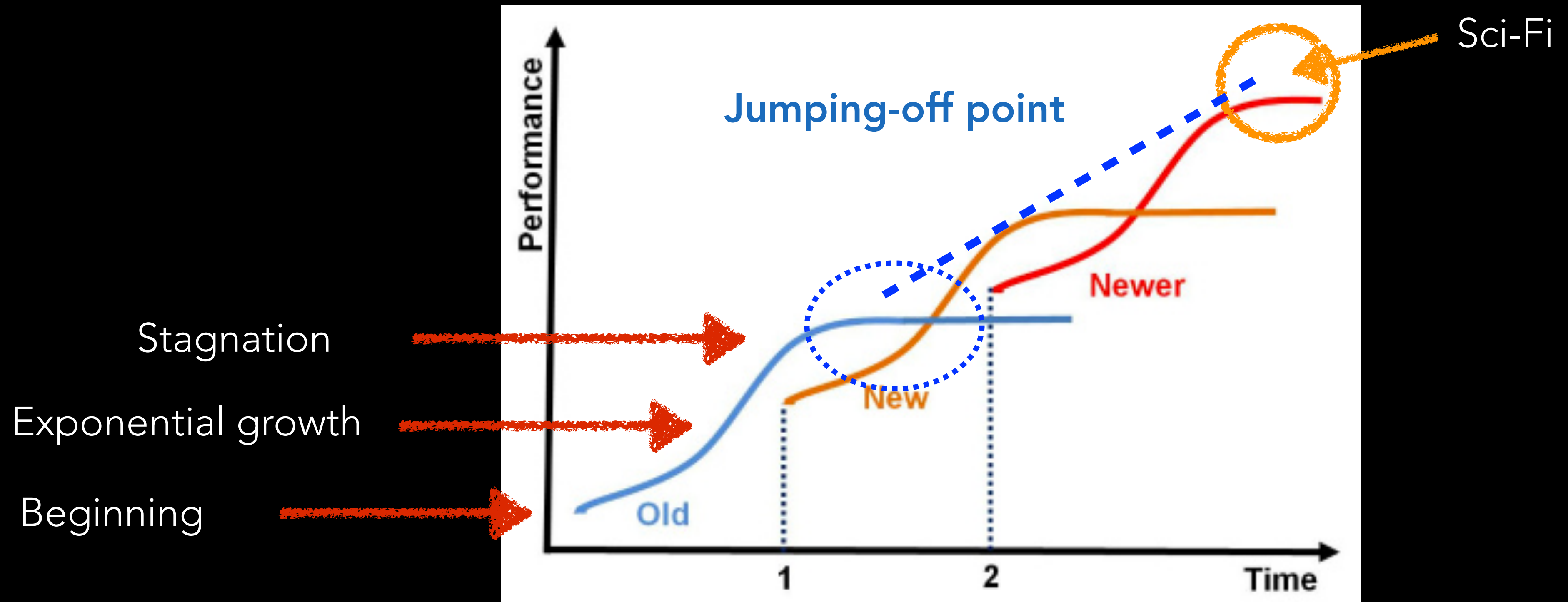
TURNING SCIENCE FICTION INTO SCIENCE REALITY

The \$10 million global competition to
put healthcare in the palm of your
hand

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Innovation S-curve



Remember to think exponentially

- How can you get some help?
- Where's the coolest stuff posted?



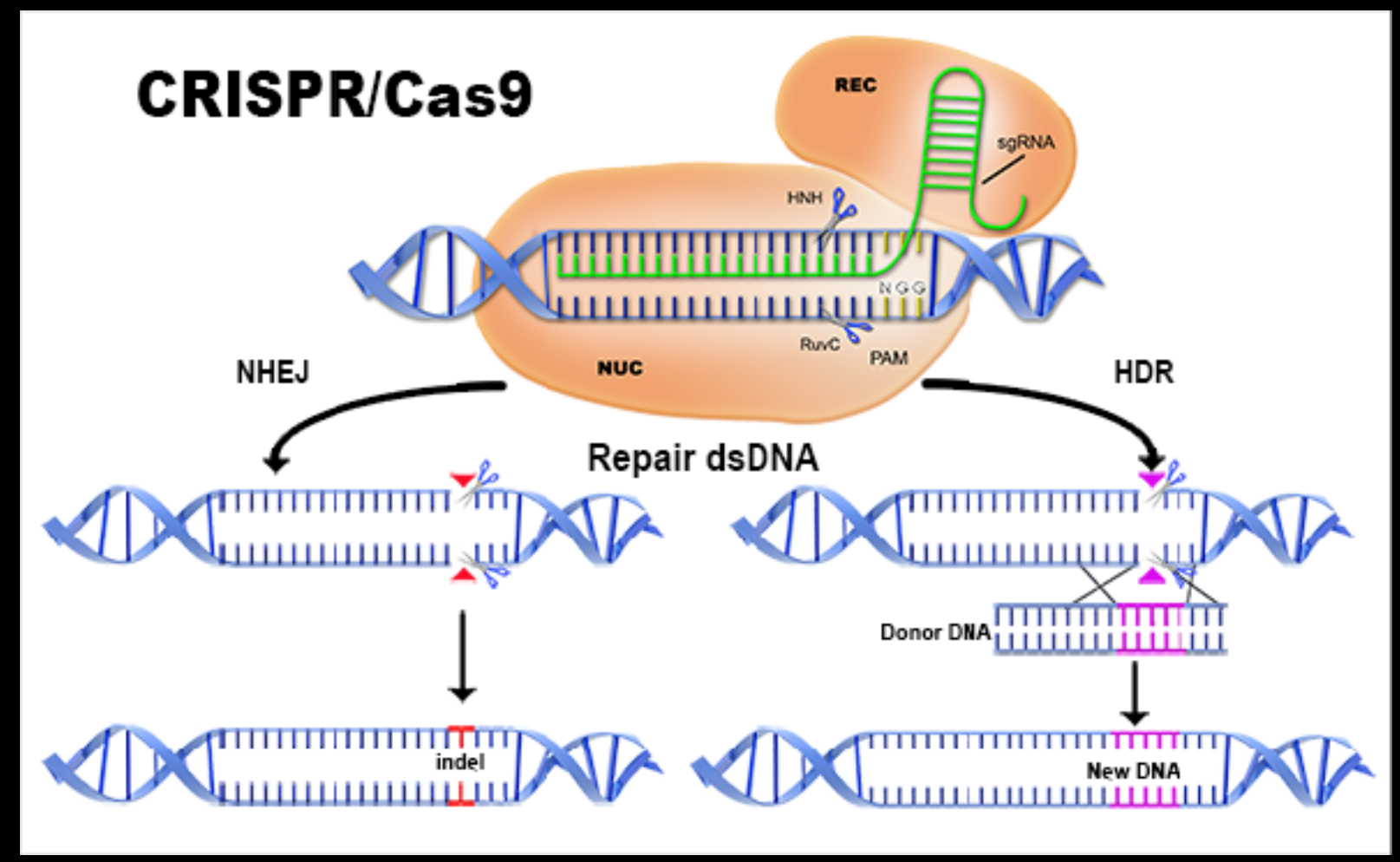
KICKSTARTER

Let's view the future together

3x



Malaria
Cancer
Muscular D
HIV
Blindness
Edit Humans



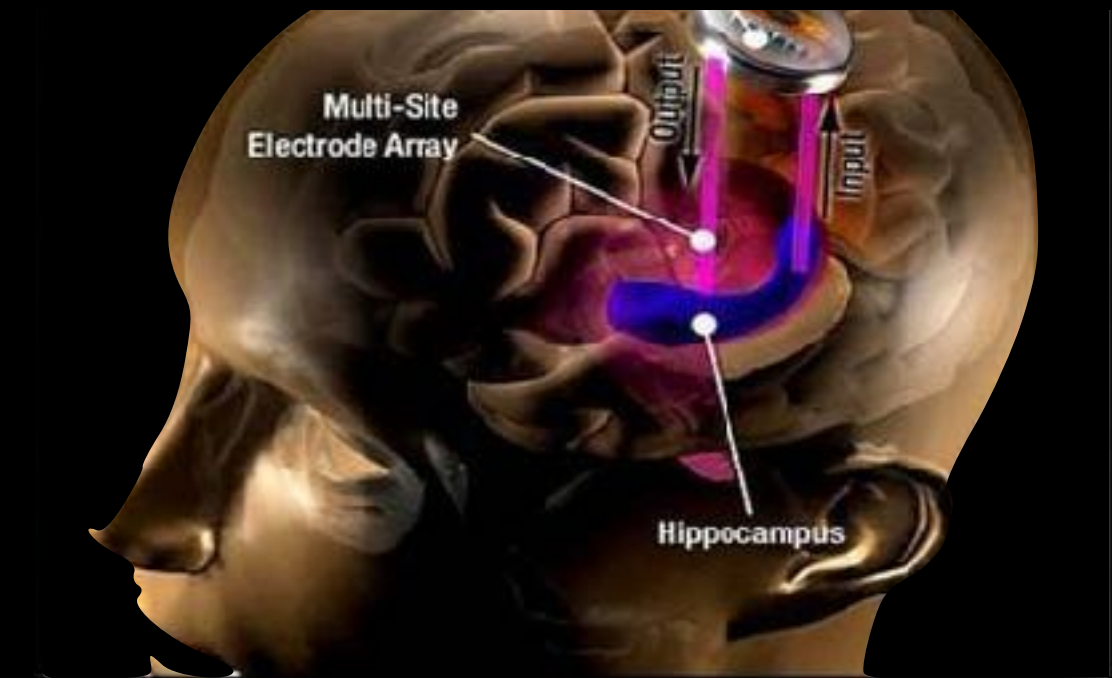
Parallel virtual reality worlds



600 billion ISK —> 13.000\$
66 million \$ in revenue



kernel





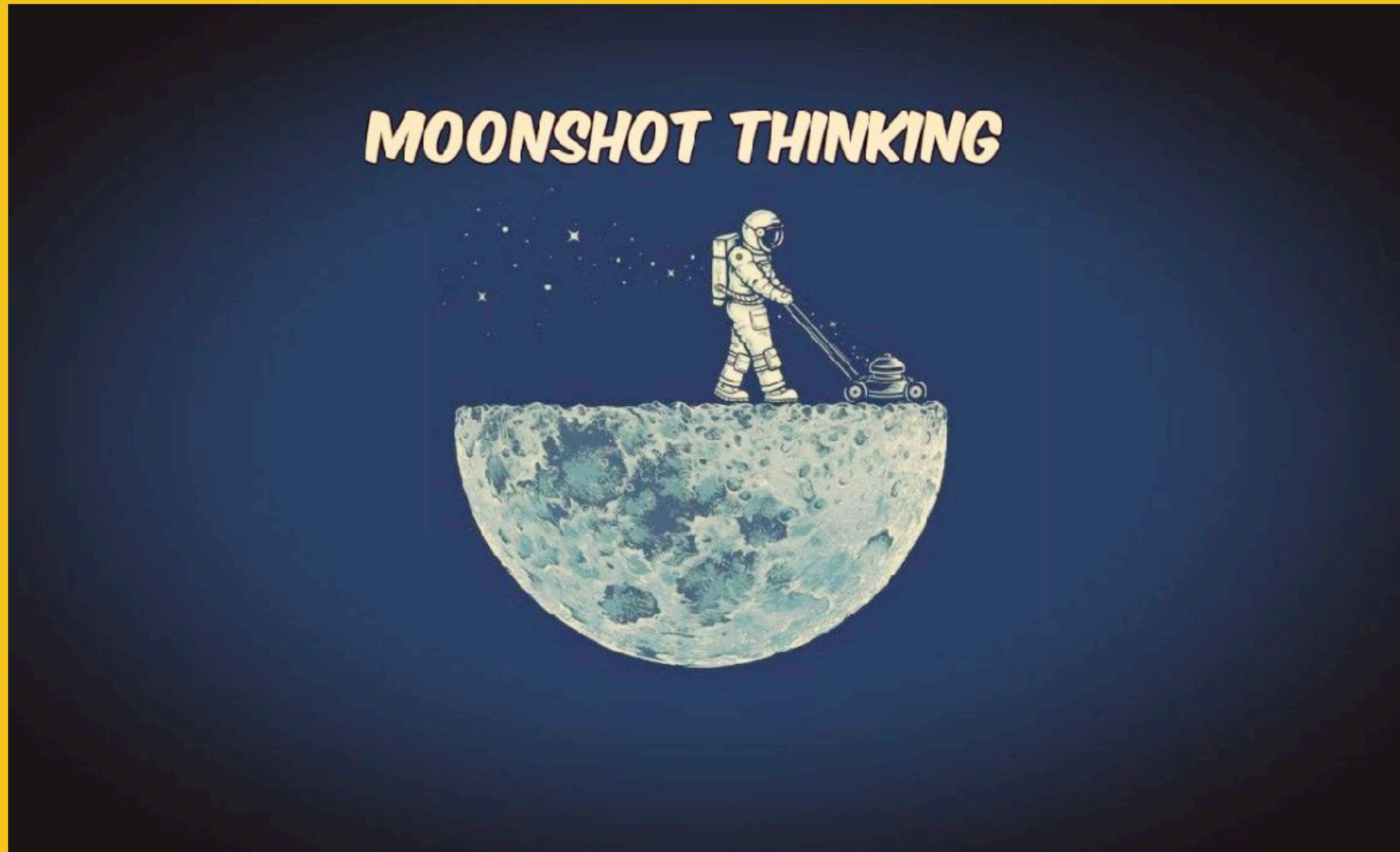


So now what? How do I do something with this?



Powered by *Telefonica*

Moonshots? LoL

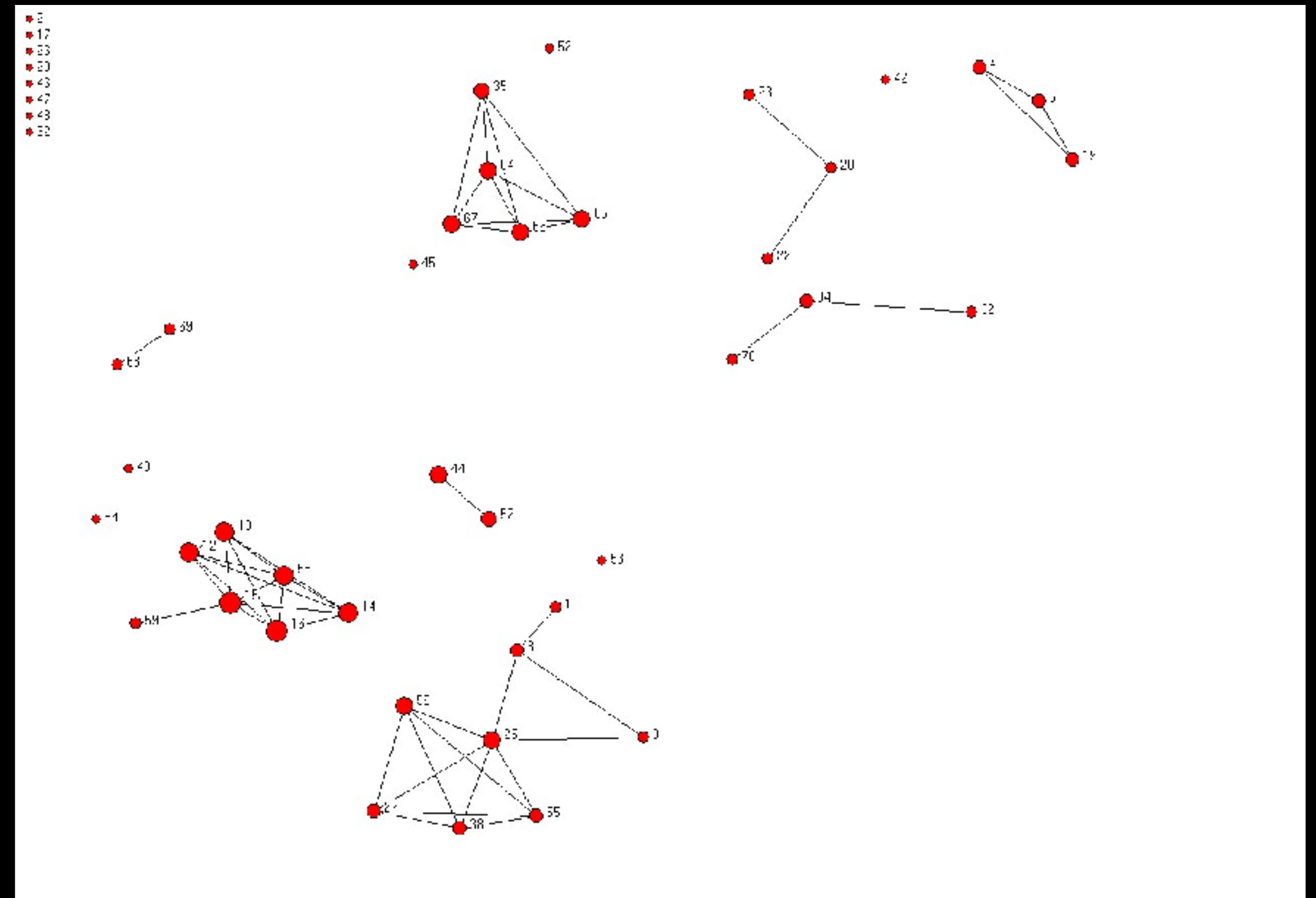
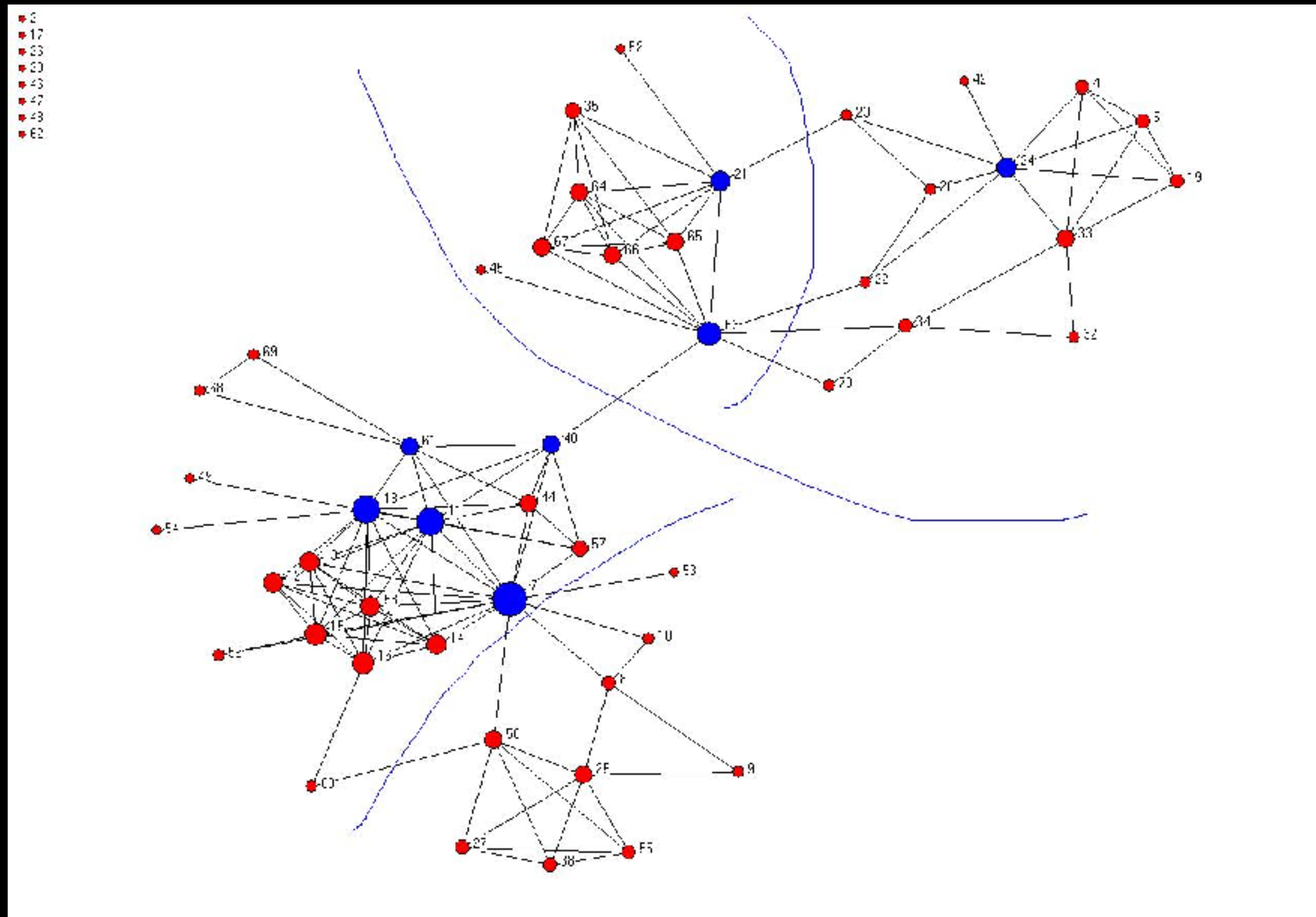


Problem solving

- Try to find the vulnerabilities, where is the **weakest link**? - The shaft on the Deathstar.
- Recognize patterns, apply the “**5 Why’s**”.
 - Robots taking over the world —> Energy production

Problem solving

- What can we solve like hacking? What can we learn from DDOS, Stuxnet or Wannacry? Find the killswitch.
 - Translate problems into programming to solve systematically.
 - If we view cancer like a rogue computer program, can we solve it? - Angiogenesis & Spoofing MAC address

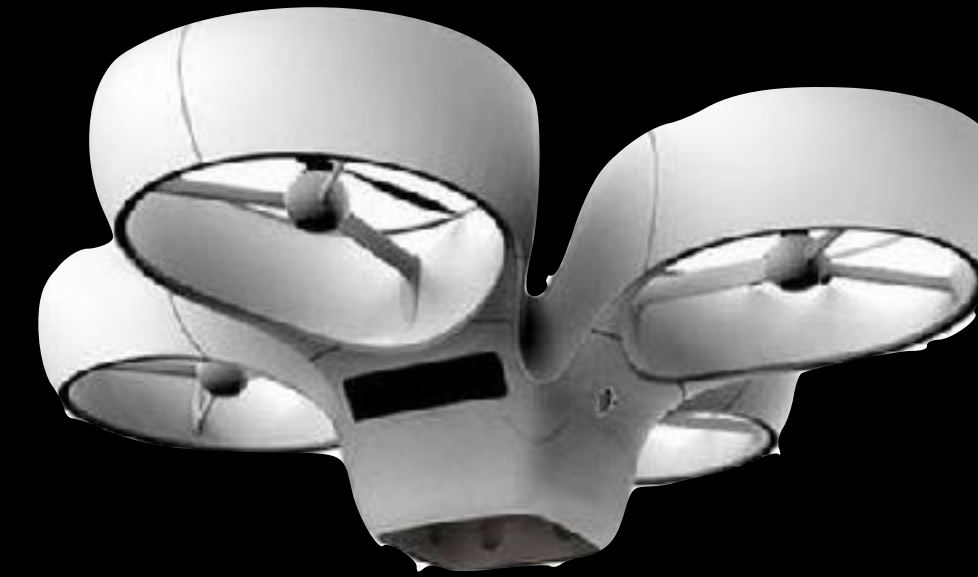


- How do we find the loophole? - Market change example, which channel is less saturated?

BEST examples of **cheap** awesome Problem solving

Solving Global Grand challenges

- Gravity light
- Paperfuge
- Vaccine temp monitoring
- Old phones for illegal deforestation



How long did it take bees to figure out that the hexagons in their honeycombs maximized surface and minimized wax ?

Arthur C. Clarke's three laws:

1. When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.
2. The only way of discovering the limits of the possible is to venture a little way past them into the impossible.
3. Any sufficiently advanced technology is indistinguishable from magic.



Thanks!

Alex Rodriguez
Telefonica Alpha

