

Are We Just a Speck in the Universe?



*1st International Congress of Science & Faith
November 7-9, 2018*

Jay W. Richards, OP, PhD
The Catholic University of America & Discovery Institute

Materialism

“The Cosmos is
all that is, or ever
was, or ever will
be.”

- Carl Sagan

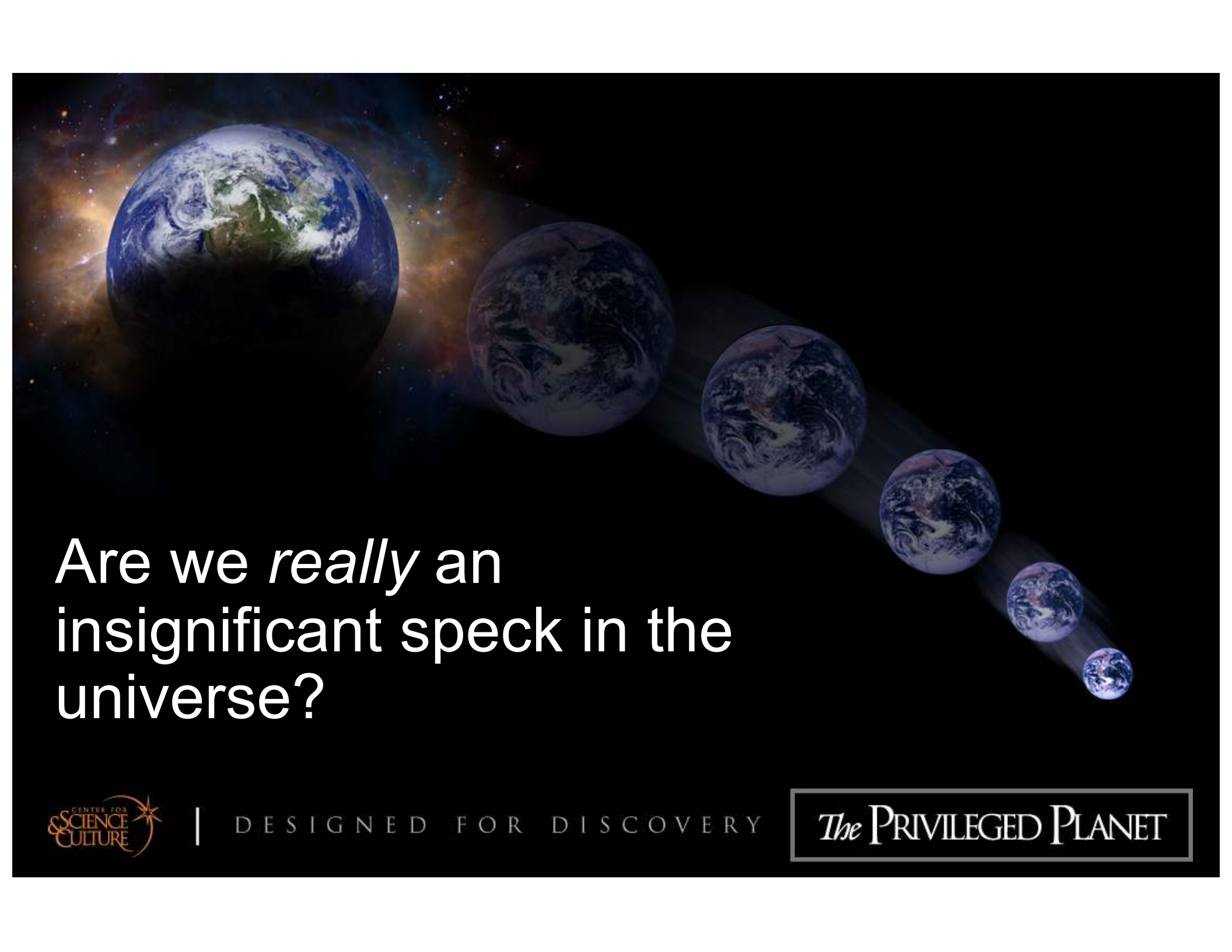


Copernican Principle

“ . . . Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all this vastness, there is no hint that help will come from elsewhere to save us from ourselves.”



-Carl Sagan, *Pale Blue Dot*



Are we *really* an
insignificant speck in the
universe?



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

Carbon and Water





A Habitable Planet

- Liquid water
- Right terrestrial planet
- Stabilizing moon
- Plate tectonics
- Right atmosphere



A Habitable Planet

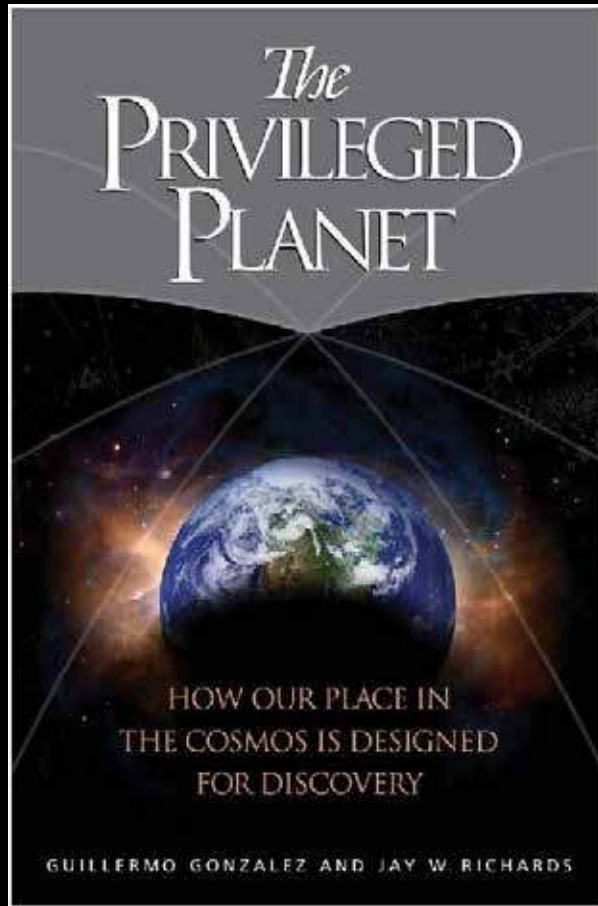
- Right planetary neighbors
- Right single star
- Right galaxy
- Galactic location
- Right cosmic time

The Dilemma

Chance,
or
Design?



Our Argument



Habitability
correlates *with*
Measurability



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

The same narrow
circumstances that allow
us to exist also provide us
with the best *overall*
setting for making
scientific discoveries.



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

The very conditions that make Earth hospitable to intelligent life also make it well suited to viewing and analyzing the universe as a whole.



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET



Examples of the “Correlation”

- Perfect solar eclipses
- Layering processes
- Plate tectonics
- Transparency of atmosphere
- Planetary neighbors
- Stars
- Galactic location
- Cosmic time
- Fine-tuned cosmos

Examples of the “Correlation”

➤ Perfect solar eclipses

- Layering processes
- Plate tectonics
- Transparency of atmosphere

- Planetary neighbors
- Stars

➤ Galactic location

- Cosmic time
- Fine-tuned cosmos



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

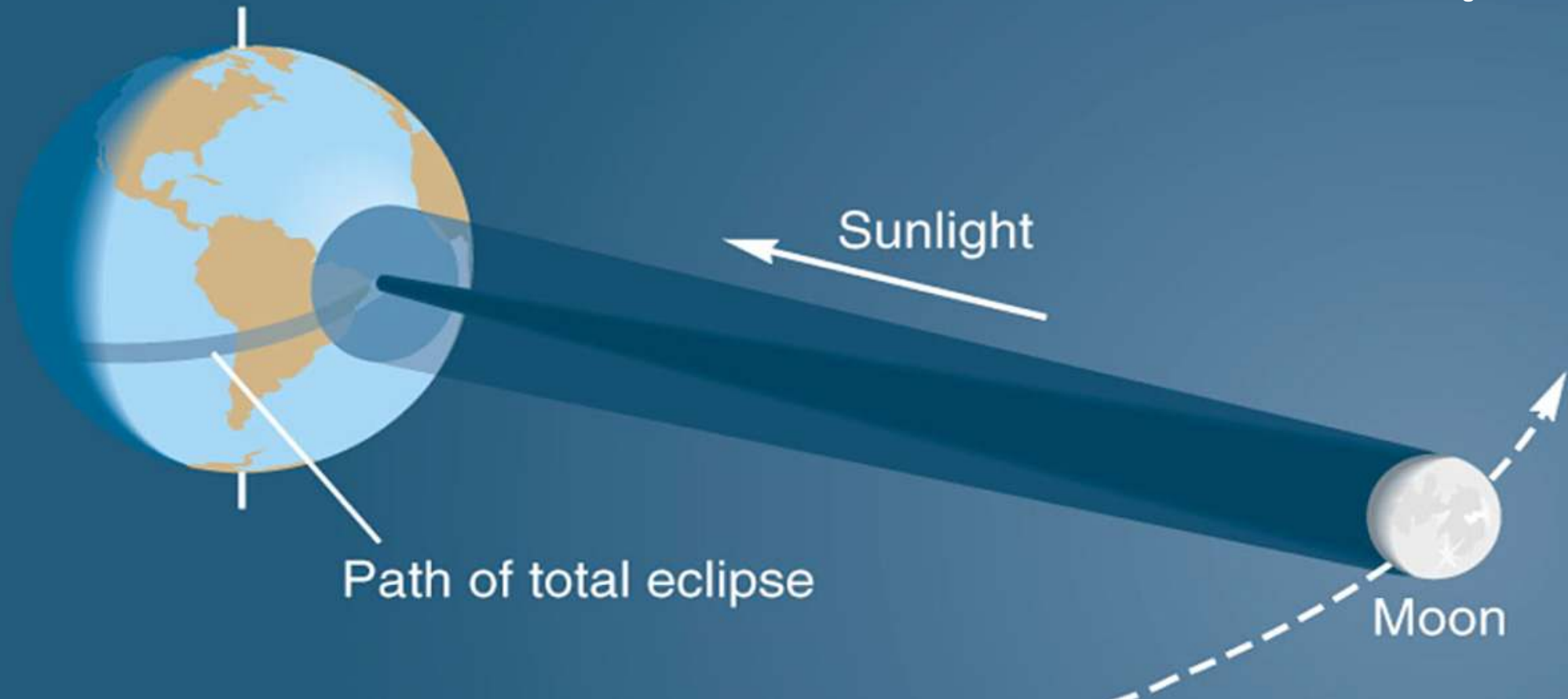
Total Solar Eclipses

A photograph of a total solar eclipse. The sun's disk is completely obscured by the moon, leaving a dark circular shadow. The sun's corona is visible as a bright, glowing ring of light around the shadow. The background is a deep blue. A faint grid is overlaid on the image, with numerical labels -5, 0, 5, and 10 along the bottom. Two white crosshairs are positioned on the left and right sides of the image.

The start of an enquiry...

How To See an Eclipse

© 2001 Brooks/Cole Publishing/ITP



Perfect Eclipses



Angular Size Ratio (Satellite/Sun)

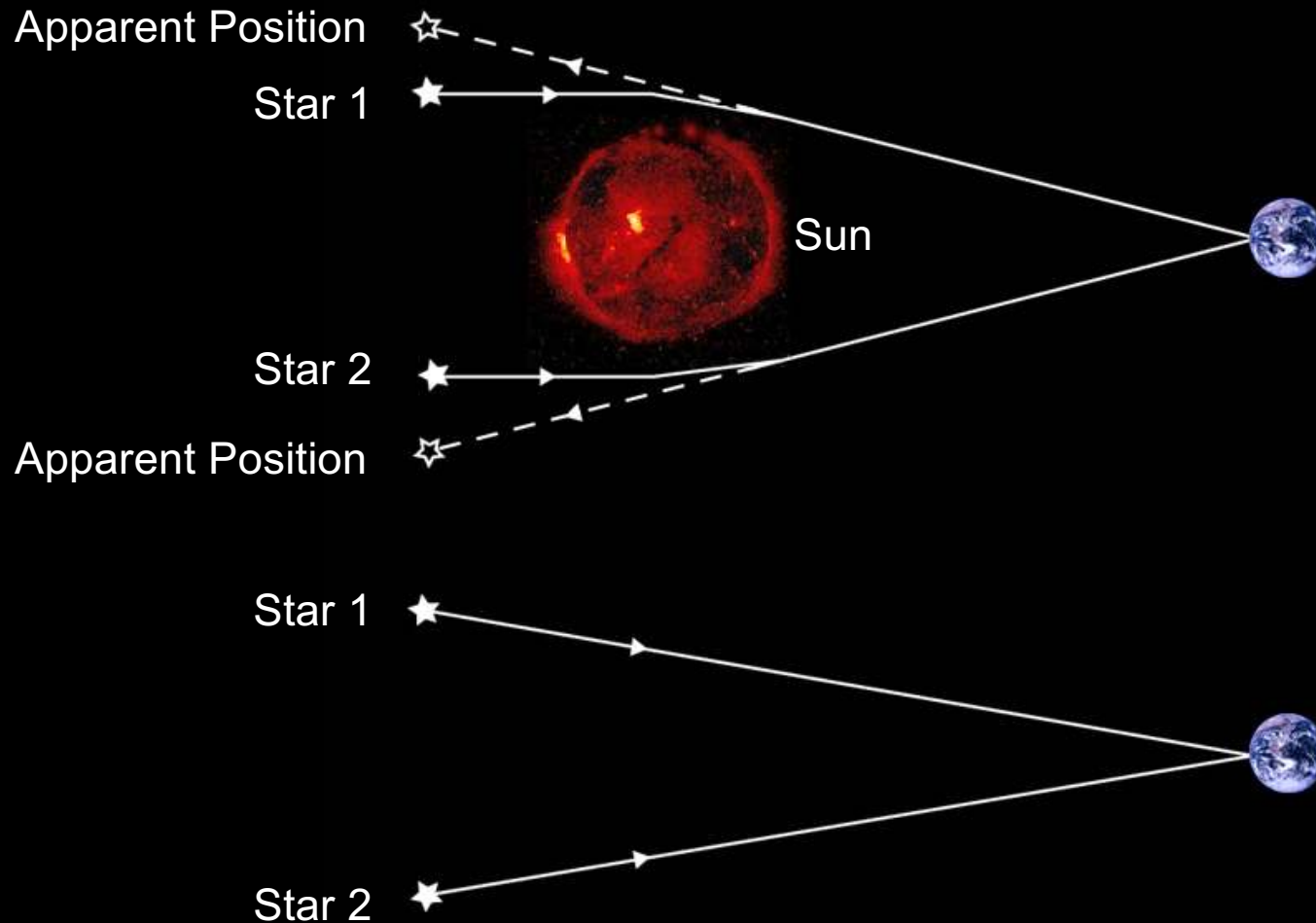


The PRIVILEGED PLANET

Eclipses are important for scientific discovery.

- Test of General Relativity
- Makes chromosphere detectable
- Helps reveal stars as hot balls of gas

Test of General Relativity



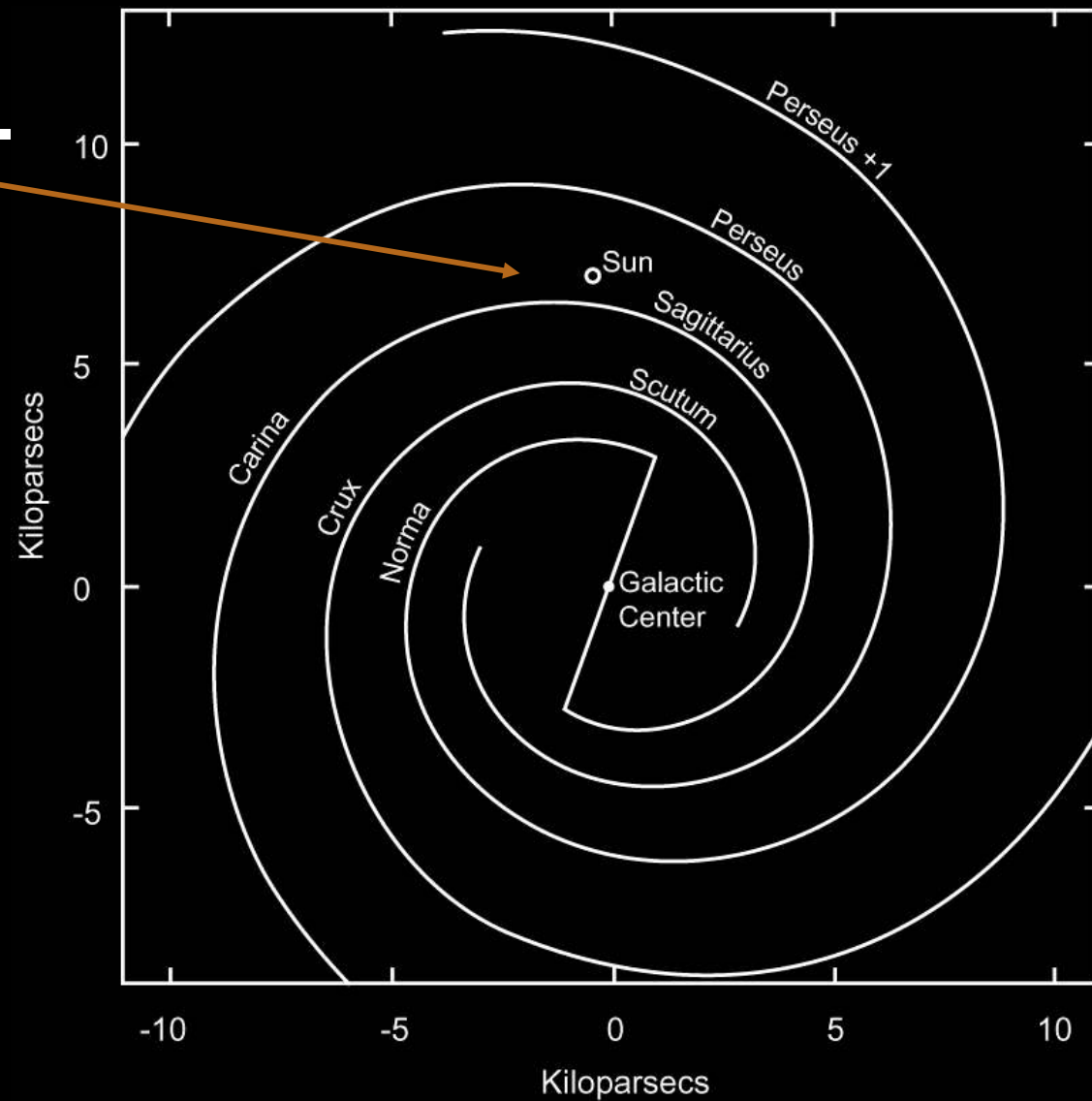
The Galactic Habitable Zone



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

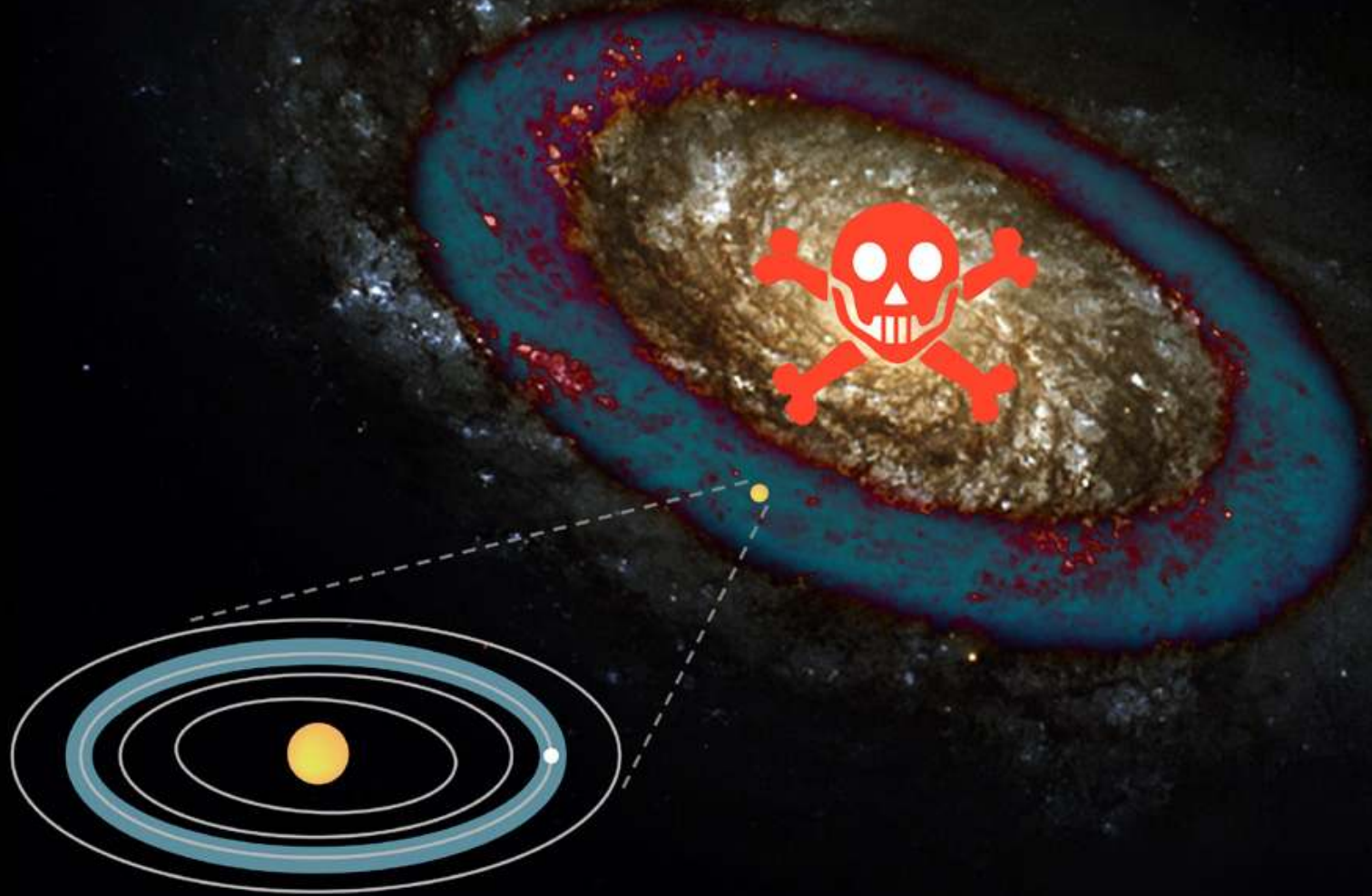
We are here.



DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET

The Galactic Habitable Zone



For science, where would you want to be?



The Galactic Habitable Zone

The background is a deep space image featuring a grid of faint, light blue lines. The grid has numerical labels: '-10', '-5', '0', '5', and '10' are visible along the top and bottom horizontal lines. The background itself is a mix of dark, reddish-brown and teal/greenish-blue nebulae. A bright, glowing pinkish-white region is visible in the lower right. A small, bright blue star is located near the bottom center. A white crosshair is visible on the right side of the image.

SO
WHAT?

Detecting Design



| DESIGNED FOR DISCOVERY

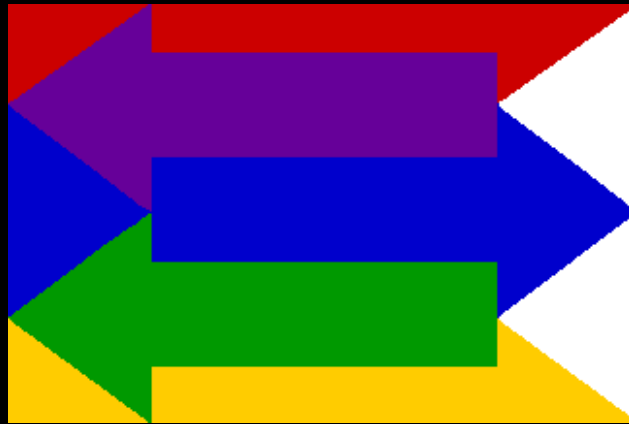
The PRIVILEGED PLANET

Complexity = Improbability



- The conditions that allow for habitability are improbable.
- The conditions that allow for measurability are improbable.

Specification = a meaningful pattern



The correlation of habitability
and measurability forms a
meaningful pattern.



The Pattern:
Observers plus good conditions
for observing



A Modest Conclusion

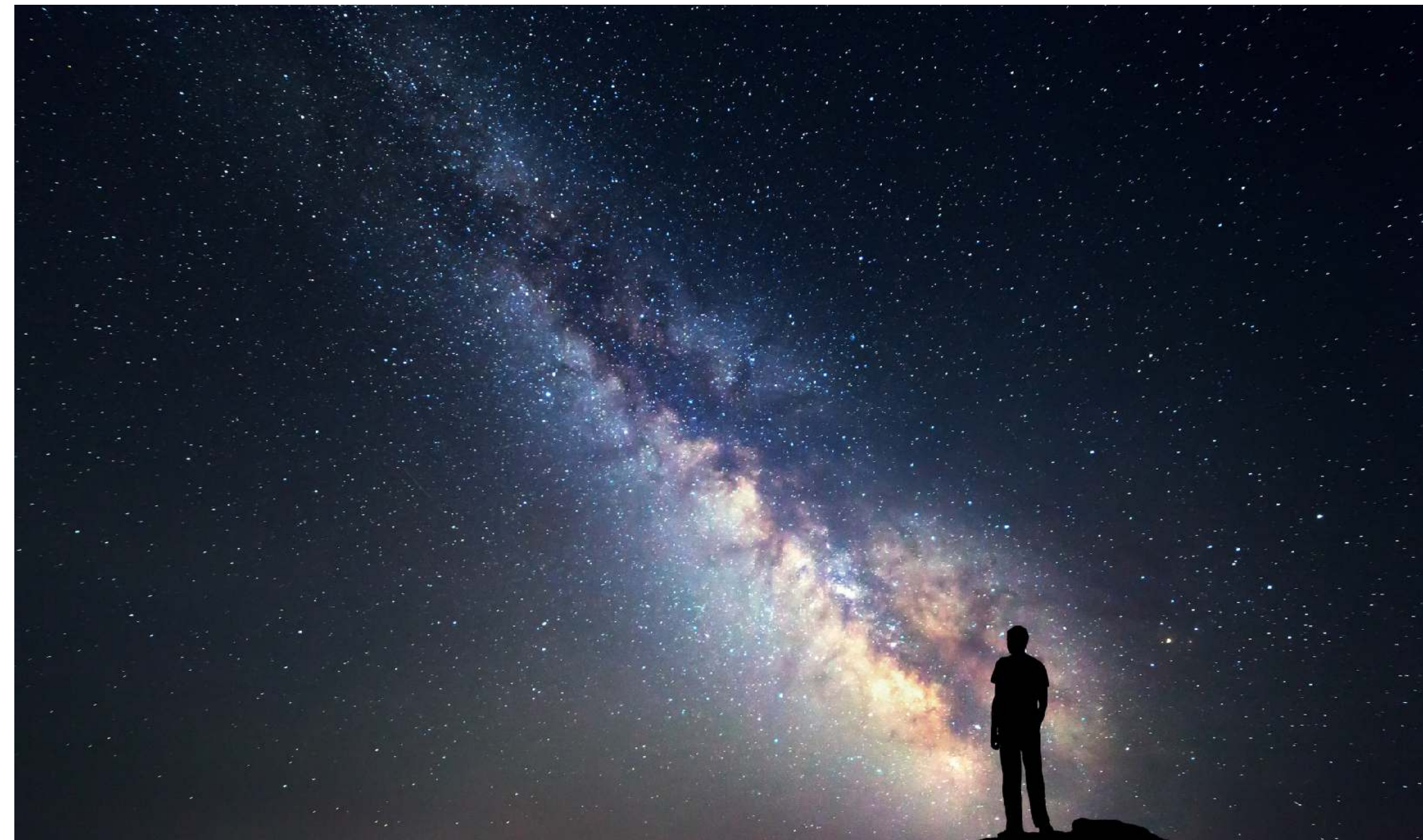
The universe is fine-tuned so that environments habitable to observers will provide the best overall conditions for observation and discovery.

The universe is designed for *discovery*.



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET



| DESIGNED FOR DISCOVERY

The PRIVILEGED PLANET