

Universe; The Beginning!

Since ages people have been wondering on what is universe, how big, and since when? Questions like does it have a beginning, and will there be an end; how was it formed and what was there before all this beginning'?

Tremendous work in science has allowed us more answers in last few years than centuries before. Still many questions are unanswered, and many not even understood properly.

In our “Weekend Lecture Series” we will begin to search for answer of few of the questions.

It will be short series of lectures of around 20 minutes each only.

Lecture Schedule

Lecture 1- 12/June/2020; 20:30 hrs

Lecture 2- 14/June/2020; 09:30 hrs

Zoom Id: 822 3621 1774

Password: 292361



Lecture 1- How it all Began?

- How big is our Universe – not only in Space, but also in the fourth dimension of Time?
- And it all began with a Bang! What is Big Bang and how do we know it happened?
- How can we decided on What to Believe?

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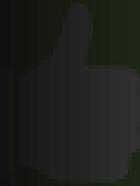
Intuition

Makes sense? What's your gut feeling?



Logic

Is the reasoning systematic?



Authority

Is the source credible?



Evidence

Is the evidence verifiable?





How big is our
Universe? – Big
Question 1

- How big in Space?
- How big in Time?

Resources – Big Question 1

How big is our Universe?

WATCH VIDEOS

SPACE

- The Scale of Universe-
<https://www.youtube.com/watch?v=uaGEjrADGPA>
- Earth compared to rest of the stars-
<https://www.youtube.com/watch?v=1Eh5BpSnBBw>
- Size comparison of heavenly bodies-
<https://www.youtube.com/watch?v=i93Z7zljQ7I>

TIME

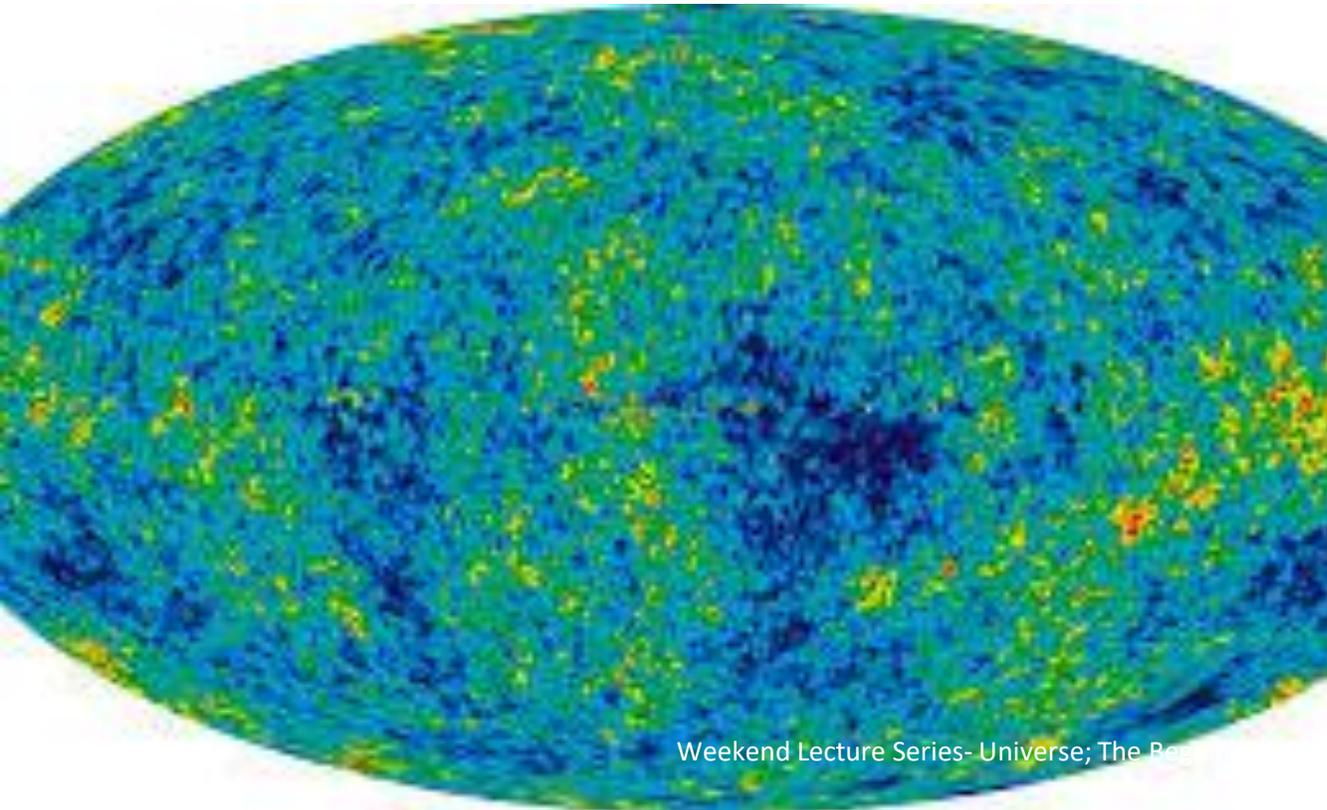
- Cosmic Calendar- <https://www.youtube.com/watch?v=Bl-s4tqR8Bc>

READ

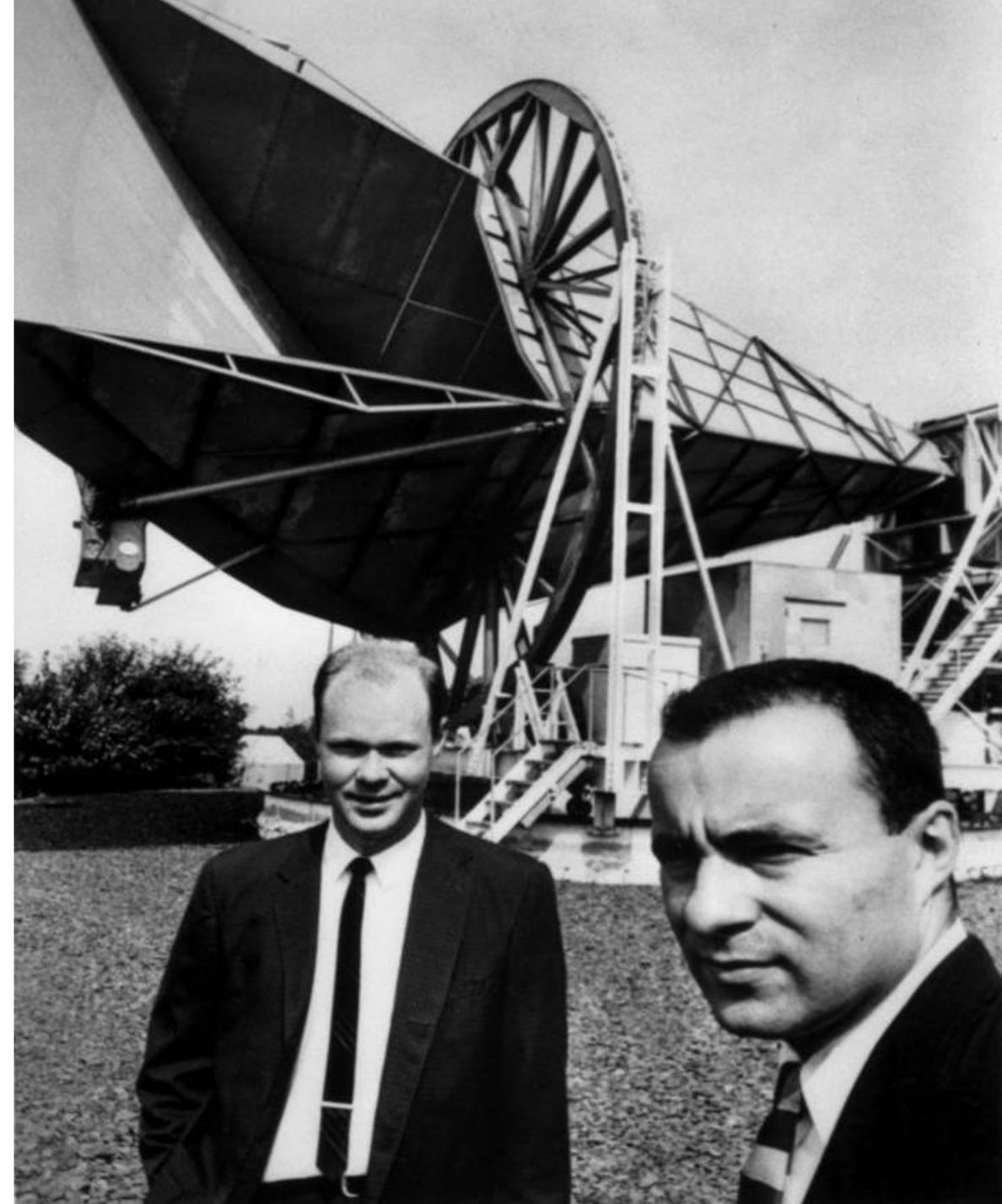
- C.P. Snow's "The Two Cultures and the Scientific Revolution" (1959)-
http://sciencepolicy.colorado.edu/students/envs_5110/snow_1959.pdf

What is Big Bang and how do we know it happened? – Big Question 2

- Georges Lemaître discovered something new?
- What is Cosmic Microwave Background Radiation and what does it prove?



Weekend Lecture Series- Universe; The Beginning



Resource Material – Big Question 2

What is Big
Bang and how
do we know it
happened?

READ

- NASA introductory article on the Big Bang
<http://science.nasa.gov/astrophysics/focus-areas/what-powered-the-big-bang/>
- “Edwin Powell Hubble: The man who discovered the cosmos” by Hubble Space Telescope division of European Space Agency (ESA)
http://www.spacetelescope.org/about/history/the_man_behind_the_name/
- Georges Lemaître, Father of the Big Bang - <https://www.amnh.org/learn-teach/curriculum-collections/cosmic-horizons-book/georges-lemaitre-big-bang>
- CMBR- <https://www.bell-labs.com/about/history-bell-labs/stories-changed-world/Cosmic-Microwave-Background-Discovery/>

WATCH

- Origins of the Universe 101 | National Geographic
<https://www.youtube.com/watch?v=HdPzOWILrbE>
- Time is just an illusion- <https://www.youtube.com/watch?v=ZyYqyYAKGC0>

LISTEN

- “Recording Captures Hiss of Cosmic Background Radiation” uploaded by New Scientist <https://www.youtube.com/watch?v=gJmFnMea1Q>

How can we decided on What to Believe? – Big Question 3

- How can we decided on What to Believe?
- What is the relationship between information and knowledge?
- There are two questions we need to ask, when presented with a particular claim:
 - How do we decide whether or not we should believe it?
 - And secondly, more generally how do we maximize our chances of coming to have knowledge?

Knowledge is Justified Belief!

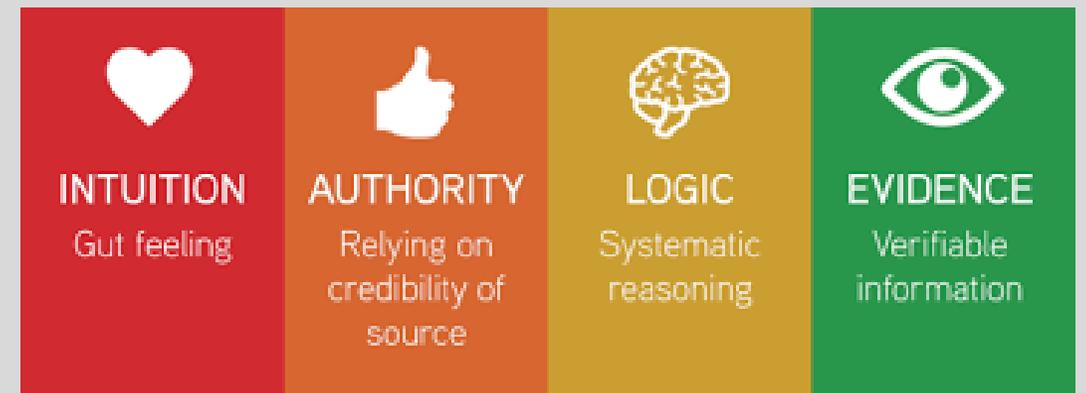
- Epistemology- Plato
- While trying to gain knowledge we have to navigate between scepticism & relativism

What is sufficient for knowledge?

- According to Plato, belief is a necessary part of knowledge
 - But does true belief constitute knowledge?
 - No! Not according to Plato
- Plato claims that in order for one to claim that one “knows” something, the following must be true:
 - The individual must believe X
 - X must be true
 - One has to be able to give the *logos* (give the theory, etc) for X
- For Plato, knowledge is justified belief

Claim Testers

Claim testing helps people decide what to believe, and it also helps them become more skillful in evaluating the **claims** of others. Learning to use **claim testers** will enable you to support your own **claims** when writing and speaking



Resource
Material – Big
Question 3
How can we
decided on
What to
Believe?

WATCH

- "What is Philosophy for?" The School of Life
<https://www.youtube.com/watch?t=17&v=mIYdx6IDDhg>
- Claim Testers-
<https://www.youtube.com/watch?v=vkDCkD88-B0>
- "This thing called science" series, by 'TechNyou' Part 1:
<http://www.youtube.com/watch?v=W9IoN8Tb1wg>

READ

- "Critical Thinking: what it is and why it counts" by Peter Facione
- <http://www.insightassessment.com/CT-Resources/Teaching-For-and-About-Critical-Thinking/Critical-Thinking-What-It-Is-and-Why-It-Counts/Critical-Thinking-What-It-Is-and-Why-It-Counts-PDF>
- "What is Epistemology: A brief introduction to the topic" by Keith de Rose
- <http://campuspress.yale.edu/keithderose/what-is-epistemology/>

Glossary– Big
Question 3
How can we
decided on
What to
Believe?

- **Epistemology:** The area of philosophy concerned with belief and knowledge
- **Fallibilism:** The view in Epistemology that beliefs can be justified without being certain
- **Relativism:** The view that truth is not absolute, but relative to an individual or culture, so what is true for one person may be false for another
- **Skepticism:** As an epistemological thesis, skepticism is the view that we cannot have knowledge. Skepticism can be global (i.e. we cannot have any knowledge) or restricted to a particular area (e.g. we can't have knowledge about the external world; or we can't have knowledge about the past)