

Fermilab Saturday Morning Physics

Cosmology

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A brief list of references for more information:

Aristotle, Metaphysics

Original Text

<http://classics.mit.edu/Aristotle/metaphysics.html>

Four Causes summary

<http://plato.stanford.edu/entries/aristotle-causality/#FouCau>

Discussion of Aristotle's Metaphysics

<http://plato.stanford.edu/entries/aristotle-metaphysics/>

Overview of Metaphysics

<http://www.newadvent.org/cathen/10226a.htm>

Limitations of Physical Science

Michael Crichton's observations

[http://stephenschneider.stanford.edu/Publications/
PDF Papers/Crichton2003.pdf](http://stephenschneider.stanford.edu/Publications/PDF%20Papers/Crichton2003.pdf)

Euclidian Geometry (axioms)

https://en.wikipedia.org/wiki/Euclidean_geometry

The value of Cosmology for our Vision of Ourselves

<http://www.its.caltech.edu/~nmcenter/sci-cp/sci85074.html>

Godel's Incompleteness

https://en.wikipedia.org/wiki/G%C3%B6del's_incompleteness_theorems

Wolpert's Knowledge Limit

[http://www.scientificamerican.com/article.cfm?id=
limits-on-human-comprehension](http://www.scientificamerican.com/article.cfm?id=limits-on-human-comprehension)

Scientific Methods

https://en.wikipedia.org/wiki/Scientific_method

Physical Cosmology + tools

https://en.wikipedia.org/wiki/Physical_cosmology

scale: <http://htwins.net/scale2/>

Doppler effect: https://en.wikipedia.org/wiki/Doppler_effect

Black body radiation: https://en.wikipedia.org/wiki/Black-body_radiation

Nuclear Physics: https://en.wikipedia.org/wiki/Nuclear_physics

Hubble's Law

https://en.wikipedia.org/wiki/Hubble's_law

<http://blog.modernmechanix.com/>

[blast-of-giant-atom-created-our-universe/](http://blog.modernmechanix.com/blast-of-giant-atom-created-our-universe/)

Cosmic Microwave Background

https://en.wikipedia.org/wiki/Cosmic_microwave_background_radiation

Big Bang Nucleosynthesis

https://en.wikipedia.org/wiki/Big_Bang_nucleosynthesis

Lambda Cold Dark Matter Cosmology

https://en.wikipedia.org/wiki/Lambda-CDM_model

Dark Energy

https://en.wikipedia.org/wiki/Dark_energy

Inflation

[https://en.wikipedia.org/wiki/Inflation_\(cosmology\)](https://en.wikipedia.org/wiki/Inflation_(cosmology))

Projects

Dark Energy Survey <http://www.darkenergysurvey.org/>

LSST <http://www.lsst.org/lsst/>

MS-DESI

<http://ms-desi2013.lbl.gov/program.php>

http://www.noao.edu/meetings/lsst-spec/files/Newman_MSDESI.pdf

CMBPOL

http://astro.fnal.gov/cmb/Supplementals_files/inflation.pdf

<http://cosmology.berkeley.edu/~yuki/CMBpol/CMBpol.htm>

Dark Matter

https://en.wikipedia.org/wiki/Dark_matter

COUPP: <http://www-coupp.fnal.gov/>

CDMS: <http://ppd.fnal.gov/experiments/cdms/>

Darkside: <http://darkside.lngs.infn.it/>

Interferometer

Holometer: <http://holometer.fnal.gov>

LIGO: <http://www.ligo.caltech.edu/>

Advanced LIGO: <https://www.advancedligo.mit.edu/>

Wonder

<http://giving.tamu.edu/faculty/archives/SuntzeffCosmology.aspx>

Le Petit Prince

<http://www.angelfire.com/hi/littleprince/>

Antoine de Saint-Exupery