

MA in Cultural Astronomy and Astrology
Introduction to Cultural Astronomy and Astrology
Astronomy and Cosmologies
Weekly Introduction
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Although astrology and astronomy are regarded as entirely distinct disciplines in the modern world, they share common origins. This week's course work focuses on some developments in modern cosmology and their cultural significance. This class will investigate relevant issues in contemporary astronomy and cosmology, and will consider their relationship with astrology: in what ways do astrologers appropriate the latest astronomical discoveries or cosmological theories? While modern astronomy is normally presented as hostile to astrology, how is it used to reinforce astrology? This is a question of significance for modern debates on the 'politics of knowledge'.

We also need to remember competing definitions of cosmology:

1. Traditional:
 - a. the study of the way in which people align themselves with the cosmos
 - b. the study of traditional theories about the cosmos
2. Modern: the scientific study of the cosmos.

In the traditional sense we should look at the Greek meaning of *kosmos* which is translated as 'beautiful order' or 'adornment' and is the root of the word cosmetic. For Plato (who did so much to craft the Greek theory of the *kosmos*) articulating the standard world view of pre-modern and non-western peoples, the *kosmos* was alive.

The Latin Universe, by contrast, contains everything but has no connotations of meaning, beauty or order.

The implication of *kosmos* is that, we are inside and part of the *kosmos* so the notion of studying it objectively is impossible. In studying the *kosmos* we study ourselves.

Forum Question

Is there anything in modern cosmological models which provides either (a) meaning or (b) a philosophical rationale for astrology?

Note on reading

Nick's notes for this week raise the question of the appropriation of cosmological ideas by astrologers. This was an issue raised by Freud in 1921 in his one study of astrology. He thought that recent scientific discoveries and theories were stimulating public interest in the occult by confusing publicly accepted beliefs on the nature of the universe, or by undermining belief in the objective trustworthiness of science. He cited the discovery of radium and the theory of relativity as two examples.

(Sigmund Freud, 'Psychoanalysis and Telepathy', 1921, in James Strachey (trans.) *The Complete Psychological Works of Sigmund Freud*, Vol. XVIII, London, 1955, pp 177-194.)

The notes have been built up over time and contain information and references on a variety of areas.

Regarding this week's reading, it is difficult to offer clear priorities, so dip in and use your discretion. I have selected reading which will enable you to approach question such as whether modern cosmology contains order or meaning. My impression of the field is that, although the dominant public discourse of scientific cosmologists is materialistic, atheistic and anti-meaning, there is a more discreet group who may be Christian and hence see meaning in the cosmos, or may espouse different varieties of order or 'design' (as opposed Darwinian style notions of open-ended evolution: one physicist, Lee Smolin, argues that the entire universe is subject to laws of natural selection).

Barrow and Tipler's, *The Anthropic Cosmological Principle*, is of wider use than the one chapter we have selected indicates. Most of the book from chapter 5 onwards is on physics, but chapter 2 is an account of 'design' arguments, and chapter 4 is an account of the emergence of the idea of the Anthropic Principle. If you are interested in this area then it is worth getting this book either from a library or second-hand: it costs around \$9.

The passage from Claude Lévi-Bruhl is included because it is a seminal piece in the history of western thought about 'primitive' culture. He coined the phrase 'participation-mystique', to describe the 'primitive' belief that the individual can, through an act of will, engage with and alter the cosmos.

Abraham, R.(1994). *Chaos, Gaia, Eros*. New York: Harper San Francisco, 1994, Chapter 13 ('Chaos and Cosmos').

Barrow, John D., and Frank J. Tipler, *The Anthropic Cosmological Principle*, Oxford: Oxford University Press 1997, chap 3, pp. 122-218.

Bohm, David, *Wholeness and the Implicate Order*, London: Routledge and Kegan Paul 1985, chapter 5.

Burkert, Walter, 'The Logic of Cosmogony', in Buxton, Richard, *From Myth to Reason: Studies in the Development of Greek Thought*, Oxford: Oxford University Press, 1998, pp. 87-106.

Capra, Fritjof, *The Tao of Physics* (London: Fontana 1976), chapter 1

Coles, Peter, *The Routledge Companion to the New Cosmology*, chap 1, (pp 3-19).

Cosgrove, Denis, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination* (Baltimore, Johns Hopkins University Press 2001, pp. 235-267.

Dawkins, Richard, *The Blind Watchmaker*, London: Penguin 1991, Chap 1

Gribbin, John, *In the Beginning: the birth of the living universe*, London: Penguin 1995, chap 7 ('The Goldilocks Effect').

Lévi-Bruhl, Claude, *How Natives Think*, Princeton: Princeton University Press 1985, Chapter 2 ('The Law of Participation').

Lovelock, James, *Gaia: A New Look at Life on Earth*, Oxford: Oxford University Press 1987, chap 3.

McMullin, Ernan, 'Anthropic Reasoning in Cosmology', in Impey, Chris and Catherine Petry (eds.), *International Symposium on Astrophysics Research and on the Dialogue between Science and Religion*, Notre Dame: University of Notre Dame Press 2002, pp. 54-73.

Rees, Martin, *Before the Beginning* (London: The Free Press, 2002 [1997] chap 15.

Sagan, *Cosmos: the story of cosmic evolution, science and civilisation*, London: Warner Books 1994, chap 1.

Schueler, Gerald. "Chaos Theory: Interface with Jungian Psychology." (1997), <http://www.schuelers.com/chaos/chaos9.htm>.

Wheeler, Wendy, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture* (Lawrence & Wishart, 2006), introduction.

Cilliers, Paul, *Complexity and Postmodernism* (London: Routledge 1998), chapter. 1.

Additional Useful Books

Brown, Neville, *Engaging the Cosmos: Astronomy, Philosophy and Faith*, Eastbourne: Sussex Academic Press 2006.

(NB this treats the term Cosmos very loosely so, in terms of the class, it's a low priority, though an interesting book)

Davies, Paul, *The Cosmic Blueprint: Order and Complexity at the Edge of Chaos* (London: Penguin 1995), esp. chapters 1-4, 9-12, 14.

Ellis, George and Nancey Murphy, *On the Moral Nature of the Universe: Cosmology, Theology, and Ethics*, Minneapolis: Fortress Press, 1996.

Hetherington, Norris, (ed.), *Encyclopaedia of Cosmology: Historical, Philosophical, and Scientific Foundations of Modern Cosmology*, New York and London: Garland Publishing, 1993.

Keepin, William, 'Astrology and the New Physics: Integrating Sacred and Secular Science', *The Mountain Astrologer*, Aug/Sept. 1995, pp 12-22.

Osserman, Robert, 'Curved Space and the Poetry of the Universe', in Danielson, Dennis Richard, *The Book of the Cosmos: Imagining the Universe from Heraclitus to Hawking* (Perseus Publishing: New York 2000), pp 350-355.

Polkinghorne, John, *Faith, Science and Understanding*, London: Society for Promoting Christian Knowledge, 2000.

Sagan, Carl, 'Can We Know The Universe', in *Broca's Brain*, Random House 1979, in Martin Gardner, *Great Essays in Science*, Oxford: Oxford University Press 1985, pp. 102-109.

Websites

<http://astunit.com/tutorials/glossary.htm>
glossary of astronomical terms

<http://www.galex.caltech.edu>

NASA's History Office at
<http://history.nasa.gov/>

NASA Histories at
<http://www.hq.nasa.gov/office/pao/History/on-line.ht>