

# Arthur S. Eddington: From Physics to Philosophy and Back Again

## 27 – 29 May 2019

### MONDAY 27 MAY 2019

Institut d'Astrophysique de Paris, Amphitheatre  
98 bis boulevard Arago, 75014 Paris

9h00 *Registration and coffee*

#### 9h30 **Welcome**

**Francis Bernardeau** (IAP) and **Michel Boyancé** (IPC)  
Introduction — **Florian Laguens** (IPC)

#### 10h-12h **Eddington and Religion**

Chair: Helge Kragh

The Questing Quaker: Eddington's religious life in science.  
**Matthew Stanley** (New York University)

Eddington, Lodge and the Religious Roots of a "Modern" Ether.  
**Jaume Navarro** (University of the Basque Country)

May a Quaker be a Cosmologist?  
**George F. R. Ellis** (University of Cape Town)

12h00 *Cocktail* (Observatoire de Paris, Salle du Conseil)

#### 13h30-16h **Eddington on Stars and Stellar Systems**

Chair: David Valls-Gabaud

A. S. Eddington: The Founder of the Theory of Stellar Structure.  
**André Maeder** (Université de Genève)

Eddington and the Foundations of Stellar Dynamics.  
**James Binney** (University of Oxford)

Eddington's Approach to Star-Streams and the Structure of the Universe.  
**Scott Walter** (Université de Nantes)

Selection Bias in Astronomical Surveys: Eddington, Malmquist and Bayes.  
**Martin A. Hendry** (University of Glasgow)

16h00 *Coffee break*

#### 16h30-18h **Lemaître and Eddington**

Chair: Florian Laguens

Eddington and Lemaître: Their Encounters, Their Science and Their Philosophies.  
**Matthew P. Wiesner** (Benedictine University)

Eddington, Lemaître and the Discovery and the Expanding Universe.  
**Cormac O'Raiheartaigh** (Waterford Institute of Technology, Dublin Institute for Advanced Studies)

When Eddington Showed an Algebraic Pathway: Georges Lemaître's Spinor Theory.  
**Dominique Lambert** (Université de Namur)

18h-18h30 General discussion

# Arthur S. Eddington: From Physics to Philosophy and Back Again

## 27 – 29 May 2019

### TUESDAY 28 MAY 2019

Observatoire de Paris, Salle du Conseil  
77 avenue Denfert-Rochereau, 75014 Paris

9h30 Welcome - **Claude Catala** (Observatoire de Paris)

#### 9h30-11h **Operationalism and Structuralism**

Chair: Huw Price

Equations, Verification, and Operations: Wittgenstein's Remarks on Eddington.

**John Preston** (University of Reading)

Arthur Eddington and the *Gestalt* theory.

**Anna Curir** (Osservatorio Astronomico di Torino)

Eddington's Structuralism: How Deep Does it Go?

**Steven French** (University of Leeds)

11h00 *Coffee break*

#### 11h30-13h **Time and consciousness**

Chair: Steven French

Exceedingly Sharp and Mostly Well-Aimed – Eddington's Arrow of Time.

**Huw Price** (University of Cambridge)

Eddington and Gravitational Evolution from Initial Heat Death.

**Amr El-Zant** (British University in Egypt)

Eddington and Bergson on Time: is There Really Something to Say about It?  
**Florian Laguens** (IPC-Facultés Libres de Philosophie et de Psychologie)

13h00 *Lunch*

14h30 *Private tour of Paris Observatory and exhibition*

#### 15h-17h **Debates in Astrophysics and Cosmology**

Chair: Gerry Gilmore

Pioneer of Nuclear Astrophysics: Eddington and the Solar Energy Problem ca. 1917-1930.

**Helge Kragh** (University of Copenhagen)

Relativistic Cosmological Models 1917-1934.

**Jean-Pierre Luminet** (Observatoire de Paris, Laboratoire d'Astrophysique de Marseille)

The Philosophical Aspects of the Eddington-Milne Debate.

**Gauvain Leconte** (Institut d'histoire et de philosophie des sciences et des techniques)

Eddington: Father of Matter Creation in Cosmology?

**Eve-Aline Dubois** (Université de Namur)

17h-17h30 General discussion

19h00 *Conference Dinner* at the Ciel de Paris Restaurant

(Montparnasse Tower, 56<sup>th</sup> floor, avenue du Maine, 75015 Paris)

# Arthur S. Eddington: From Physics to Philosophy and Back Again

## 27 – 29 May 2019

### WEDNESDAY 29 MAY 2019

Institut d'Astrophysique de Paris, Amphitheatre  
98 bis boulevard Arago, 75014 Paris

#### 9h-11h **The 29 May 1919 Eclipse**

Chair: André Maeder

Eddington, Dyson and the Eclipse of 1919.

**Daniel J. Kennefick** (University of Arkansas)

The 1919 May 29 eclipse: On Accuracy and Precision.

**David Valls-Gabaud** (Observatoire de Paris)

The 1919 Eclipse: Were the Results Robust?

**Gerry Gilmore & Gedrun Pebody** (University of Cambridge)

Chasing 'Mare's Nests': Eddington and the Early Reception of General Relativity among Astronomers.

**Jeffrey Crelinsten** (University of Toronto)

11h00 *Coffee break*

#### 11h30-12h30 **General Relativity Theory**

Chair: George Ellis

Eddington's Essential Role in Clarifying the Contents of Early General Relativity.

**Olivier Darrigol** (Université Paris-Diderot)

Weyl's *Raum Zeit Materie* and Eddington's *Space, Time and Gravitation*: General Relativity and beyond.

**Christophe Eckes** (Université de Lorraine)

12h30 *Lunch*

#### 14h-15h **From Subjectivism to Fundamental theory**

Chair: Olivier Darrigol

Eddington and the Fine Structure Constant.

**Jean-Marc Lévy-Leblond** (Université de Nice)

Eddington's Epistemology as a Gateway to His Quantum Theory.

**Agne Alijauskaite** (Vilnius University)

15h-16h General discussion

16h00 **End of conference**