WORKSHOP ON HISTORY AND EPISTEMOLOGY OF SCIENCE: CASE STUDIES

BARCELONA November 7th 2016
Seminari de Filosofia, Faculty of Philosophy, c/ Montalegre 6, 4th floor

10,00-11,45: Ptolemy´s ugly duckling: how the Almagest´s most criticized element became a key factor in the modern scientific revolution. Gonzalo Recio, UNTREF-CONICE. Chair José Díez

One of the most difficult problems in astronomy since ancient times was that of planetary motions. Eudoxus, Callipus, Aristotle, Hipparchus, and many others, had tried to solve it through complex geometrical models. Nevertheless, it was not until Ptolemy that ancient Greek planetary models achieved a high level of precision. The main difference between the Ptolemaic models and those of his predecessors was the introduction of what was later known as the equant point. His Islamic successors, as well as the first modern European astronomers, saw in the equant an unbearable inconsistency with Aristotelian physics. In a way, to achieve Ptolemy´s precision without introducing the equant became the main goal of their planetary models. After the Copernican revolution, though, the equant found its way again to the centre stage of astronomical discussions, and played a positive and central role in the birth of modern science.

12,00-13,45: Geometrical Diagrams in Ancient Manuscripts. Christián Carman, UNQ-CONICET. Chair Albert Sole

As is well known, diagrams in Ancient treatises of geometry or astronomy were not just mere illustrations but played an essential role in the development of the arguments. Nevertheless, in the vast majority of critical editions, they have been systematically reproduced carelessly. Usually, without any explanation, they were redesigned to make them more intelligible to modern readers. And, in new critical editions that usually worry for registering even the smallest detail of the text, diagrams are directly copied from previous editions. Now, when you look at the original diagrams inspecting manuscripts, the surprise is really big: the original designs are so different to their modern re-presentation that it is usually difficult even to attribute the modern representations to the original ones. The original diagrams seem directly poorly designed and it is difficult to explain how ancient and medieval scholars could have understood the works of Euclid, Aristarchus or Ptolemy with such diagrams. In this talk I will show several diagrams in manuscripts, I will point out the main differences between them and their modern representations and will try to explain such difference.

LUNCH

16,00-17,45: Unexpected Coincidences on the Age of the Earth. Daniel Blanco, UNL – UADER. Chair Carl Hoefer

Nowadays, there exist many independent methods for the determination of the age of the Earth. Fortunately for our desires of knowledge, these methods go hand in hand with each other regarding their results. Relatively recently, the analysis of coral growth has been added to that list showing a nice coincidence between the age of life (at least for

some extinct species) and its associated rocks (which is important to answer to some sceptics of geochronology for whom "the age of a rock is not necessary the age of its fossils"). After a short review of these modern procedures, we will change our focus to XIXth Century coincidences on the same topic. The astounding issue is that those coinciding results proved to be wrong by present criteria, which has important consequences for the controversy over scientific realism.

17,00- 18,30: General Discussion