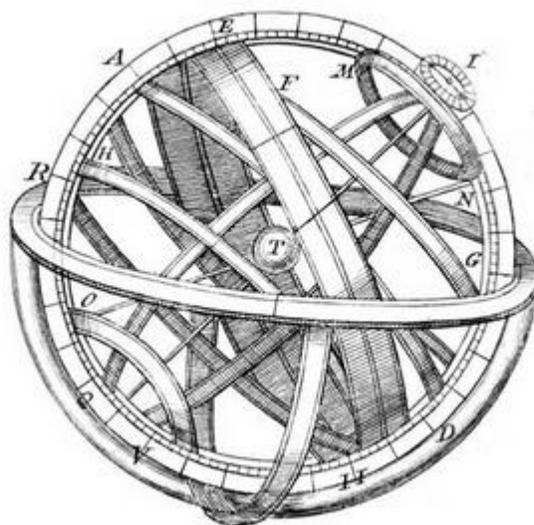


Battle for the Stars

Science's rejection of damned data continues
decades after Fort's books exposed it

By Ian J Kidd
March 2010



Ptolemaic sphere

Big Bangs are staples of cosmology and controversy. According to orthodox cosmology, our Universe began about 15 billion years ago in a 'Big Bang', in which all matter and energy (interchangeable as they are) was created in an instant, followed by a rapid period of expansion, stabilization, galactic formation, and, eventually, highly charged cosmological theorizing. Although this cosmic origins story is the most familiar, it is by no means without alternatives, the best known of which is the 'steady state' theory. Unfortunately, if some of its advocates are correct, then the steady state theory has been unfairly suppressed by a cosmological orthodoxy of the sort which infuriated Charles Fort.

Fort spent some 30 years identifying many of the methodological and sociological mechanisms by which scientific communities regulate the reporting and discussion of 'damned' data. He had a particular hostility to astronomers, and devoted *New Lands* (1923) to exposing "the means by which the science of Astronomy has established and maintained itself". [1] While Fort's criticisms were sometimes vitriolic, they were generally on target: he amassed hundreds of

verified and cross-referenced observational reports, exposing disregarded observations, startlingly inaccurate predictions, and politely ignored anomalous astronomical phenomena. As ever, his concern wasn't with the data itself, but with its treatment by the scientific community. Time and time again, he found 'damned data' and dissenting observers ignored or ridiculed in a manner quite inconsistent with scientific method and professional respect.

Fort emphasized that the "strangulation" of scientific discourse was not due to "the dogmatism and pontifications of single scientists of eminence", but rather resulted from deeper intellectual structures of which these pontificators and dogmatists were mere manifestations: "If we look over Philosophical Transactions of the Royal Society of London, or the publications of the Royal Astronomical Society... we see that Herschel... was as powerless as any boy star-gazer to enforce acceptance of any observation of his that did not harmonize with the system that was growing up... independently of him and all other astronomers..." [2] Today, this idea of deep-seated supra-theoretical structures in the sciences is familiar to us from the work of the historian and philosopher of science Thomas Kuhn, but Fort was already entertaining similar thoughts in 1919. By looking at scientific thought and practice 'from the outside', by concentrating on the phenomena, data, and scientists it excluded, Fort came to some striking conclusions about the structure of science.

Be that as it may, a critic might reply, Fort was writing almost 100 years ago, and science has changed a lot since then, so even if his criticisms do have merit, they only really apply to science then, not science today. However, this isn't the case, as an example from astronomy – Fort's bugbear – will show. The same 'exclusionist' mechanisms are still very much at work in contemporary cosmology and the debate over Big Bang and steady state cosmology.

A prominent advocate of steady state cosmology was Royal Society member Sir Fred Hoyle; although he didn't dispute Erwin Hubbell's evidence for the expansion of the Universe, he disagreed with the interpretation of it. He found the idea of a 'beginning' of the Universe to be philosophically untenable, and so embraced 'steady state' cosmology: his proposal was that new matter is created in the space between expanding galaxies, so that the 'gaps' between galaxies are 'filled in' over time. Against the obvious objection that this continuous creation of new matter is physically absurd, his reply was that it was no more so than the instantaneous creation of the entire *Universe ex nihilo*.

Needless to say, most cosmologists didn't accept steady state cosmology, but the real question is whether they gave the theory fair and impartial treatment. All indications are that they didn't. Geoffrey Burbidge, a leading steady state theorist, has complained about the treatment of observations which clash with the Big Bang hypothesis: "Such observations are delayed at the refereeing stage as long as possible with the hope that the author will give up. If this does not occur and they are published, the second line of defense is to ignore them. If

they give rise to some comment, the best approach is to argue simply that they are hopelessly wrong and then, if all else fails, an observer may be threatened with loss of telescope time..." [3]

Fort would recognize this as an acute case of exclusionism – damned data finds its opportunities for publication minimized and meets with dismissal and overwrought criticism if it is published. Dominant theories win out over observational data. Dissident astronomers find their access to funding, equipment and facilities restricted. Halton Arp, another 'heretic' cosmologist, complained that: "In astronomy today, almost all telescope access has been shut off to projects that explore outside of the conventional." [4] Arp also criticized the domination of astronomy by "scientists who believe they already know all the answers", echoing Fort's acidic attacks on the "the perfect science" and its presumed "infallibility". [5]

Perhaps Hoyle's critics were right all along – or perhaps a steady state renaissance is approaching. But it's not enough to hope that "time will tell", because if Hoyle, Arp and others are to be believed, then there are powerful cliques intent on suppressing alternative theories. As historian of science Helge Kragh notes: "Big-bang theory failed miserably when faced with the totality of observations," yet its advocates persisted in dismissing alternatives – to the point where debates now focus on "big-bang theory and observations, whereas the former controversy between big-bang and steady state cosmology is considered history". [6] However, history is, it's said, written by the victors; and the battle for the stars is far from over yet.