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Rumours in space

Posted online: Sun Aug 22 2010, 23:26 hrs

Dimitar Sasselov, an astrophysicist at the Harvard-Smithsonian Center for Astrophysics, lit up the Internet last month with a statement that would stir the soul of anyone who ever dreamed of finding life or another home in the stars.

Brandishing data from NASA's Kepler planet-finding satellite, during a talk at TED Global 2010 in Oxford on July 16, Sasselov said the mission had discovered 140 Earthlike planets in a small patch of sky in the constellation Cygnus that Kepler has been surveying for the last year and a half.

"The next step after Kepler will be to study the atmospheres of the planets and see if we can find signs of life," he said.

Last week, Sasselov was busy eating his words. In a series of messages posted on the Kepler website, Sasselov acknowledged that he should have said "Earth-sized", meaning a rocky body less than three times the diameter of our own planet, rather than "Earthlike", with its connotations of oxygenated vistas of blue and green. He was speaking in geophysics jargon, he explained.

And he should have called them "candidates" instead of planets.

"The Kepler mission is designed to discover Earth-sized planets but it has not yet discovered any; at this time we have found only planet candidates," he wrote. In other words: keep on moving, nothing to see here.

Only three weeks ago, rumours went flashing around all the way to Gawker that researchers at Fermilab in Illinois had discovered the Higgs boson, a celebrated particle that is alleged to imbue other particles with mass. And when the Fermilab physicists reported on their work in Paris last week, there was still no trace of the long-sought Higgs.

Scientists at particle accelerators don't have all the fun. Last winter, physicists worked themselves up into a state of "serious hysteria," in the words of one physicist, over rumours that an experiment at the bottom of an old iron mine in Minnesota had detected the purported sea of subatomic particles known as dark matter, which is thought to make up 25 percent of creation.

Physicists all over the world tuned into balky Webcasts in December to hear scientists from the team, called the Cryogenic Dark Matter Search, gave a pair of simultaneous talks at Stanford and Fermilab, and this newspaper held its front page, only to hear that the experiment had detected only two particles, only one more than they would have expected to find by chance.

One culprit here is the Web, which was invented to foster better communication among physicists in the first place, but has proved equally adept at spreading disinformation. But another, it seems to me, is the desire for some fundamental discovery about the nature of the universe and a growing feeling among astronomers and physicists that we are in fact creeping up on enormous changes with the advent of things like the Large

Hadron Collider outside Geneva and the Kepler spacecraft.

As for planets, I no longer expect to see boots on Mars before I die, but I do expect to know where there is a habitable, really Earthlike planet or planets, thanks to Kepler and the missions that are to succeed it. If such planets exist within a few light-years of here, I can imagine pressure building to send a probe, a robot presumably, to investigate. It would be a trip that would take ages and would be for the ages.

I know that science does not exist just to fulfill my science-fiction fantasies, but still I wish that the ratio of discovery to hopeful noise would go up.

Hardly a week goes by, for example, that I don't hear some kind of rumour. Recently I heard a rumour that another dark matter experiment, which I won't name, had seen an interesting signal. I contacted the physicist involved. He said the results were preliminary and he had nothing to say.