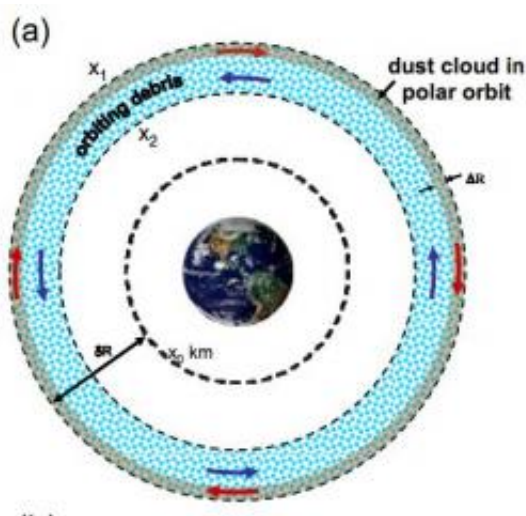


Tungsten dust cloud: New radical idea proposed to clean up space junk

April 13 2011, by Bob Yirka



Schematic illustration of the orbital dust deployment. See <http://arxiv.org/abs/1104.1401>

(PhysOrg.com) -- Anyone who has been following space flight knows we have a big problem on our hands; one that is growing worse every year. It's space junk, the detritus left over from fifty years of both manned and unmanned space missions that has grown, like the islands of junk out in the middle of our major oceans, into a major navigational hazard. But now, there is a new proposal to create a cloud of tungsten to bring it all down.

The idea, dreamed up by Gurudas Ganguli and his colleagues at the US

Naval Research Laboratory, and published in *arXiv*, involves carting tons of tungsten (in dust form) into space and spreading it around such that it would eventually form a thin cloud covering the whole planet. The tungsten, would then adhere to the [space junk](#), causing it to become heavy enough (because it is a seriously heavy metal) to fall back towards Earth where it would burn up upon reentry.

The scheme is aimed at the tiny bits of junk; those smaller than 10 cm across that are too small to be tracked, and thus avoided by still functioning spacecraft; likely numbering in the hundreds of thousands, these small pieces of junk pose a serious risk to satellites, manned missions and the development of new space technology.

Many schemes and ideas have been tossed around for nearly as many years as we've been polluting the space above our outer atmosphere; the Russians are currently working on a project that would involve deploying a space pod with a nuclear powered ion drive that would fly around knocking stuff back down to Earth. NASA's most recent proposal involves shooting at the stuff with lasers, while DARPA envisions giant nets that would gather the stuff together where it could then be dealt with in some reasonable fashion.

The problem with the tungsten solution, and in fact all of the recent proposals, is that they have downsides that keep them from being used. The tungsten idea for example, could conceivably wind up polluting outer space even more than it is now if the [tungsten](#) coalesces onto itself to form balls that float around up there and don't fall back to Earth, giving us a Saturn like ring.

It's also likely that the eventual solution won't come from a government or one of its agencies, but from the brain of someone who sees dollar signs in trash collection, just as has been done down here in the real world for thousands of years.

More information: A Concept For Elimination Of Small Orbital Debris, Gurudas Ganguli, Christopher Crabtree, Leonid Rudakov, Scott Chappie, arXiv:1104.1401v1 [physics.space-ph]

arxiv.org/abs/1104.1401

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