

Re: MSNBC – How a 'safe haven' could help save Hubble

Source: <http://sci.tech–archive.net/Archive/sci.space.policy/2004–12/1956.html>

From: Bill the Cat (bill_at_the.cat)

Date: 12/10/04

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Tom Kent <teeks99stuff@yahoo.com> wrote in
news:Xns95BA55F0D43A4teeks99stuffyahoocom@151.164.30.42:

> *Bill the Cat <bill@the.cat> wrote in*
> *news:Xns95B9E469E7398billthecat@216.196.97.130:*
>
>> *And *any* video–based system is going to require image–recognition*
>> *software that is several orders of magnitude more complex than a*
>> *lidar–based system requires. That, not the hardware, is going to be*
>> *the main cost driver in such systems – and it's also a big source of*
>> *technical risk. So it makes a lot of sense to invest a little more in*
>> *the hardware for the gain of greatly simplifying the software.*
>>
>>> *(Not that what they go to the hubble with will*
>>> *be, but it could be.....that's kinda where dart was heading)*
>>
>> *So how about following DART's lead, and using an expendable satellite*
>> *as the target vehicle, rather than risking HST?*
>
> *Exactaly my point....don't carry big heavy hardware when you can do it*
> *with software that doesn't weigh anything.*

That's not my point at all. First of all, lidar isn't much heavier than a camera – police officers are increasingly using handheld lidars in place of radar guns for traffic enforcement. These handheld lidars only weigh a few pounds, not much more than a digital camera. Whatever the miniscule savings you'd get from a camera over a lidar in launch mass, you'd pay many times over in software development costs. Not to mention technical and schedule risk – keep in mind that once HST dies in 2007–08, it's game over.

> *That's exactaly why we*
> *need to do this now, and why its worth \$2.2 billion, so we can have*
> *that software and use it on all sorts of future missions.*

Now I'm sure you've missed my point. The software needed for docking with an uncooperative target isn't that useful to future missions since future

missions can be designed with cooperative targets.

(It's a moot point anyway, because the HST robotic servicing mission is almost certainly going to use teleoperation rather than autonomous docking. The schedule is far too tight, and the technical risk far too high, to attempt anything else.)

- > *The reason to do this to HST is because it needs fixing anyway, not*
- > *only are you getting a chance to test out this new software (and other*
- > *pieces of the puzzle) but you get to save an asset that otherwise*
- > *would be lost.*

Correction – you get to risk destroying an asset that otherwise could have been saved by a lower risk, lower cost shuttle mission.

- > *Since you're going to spend the \$2.2 billion anyway,*
- > *why not get something out of it?*

You're not necessarily going to spend that \$2.2 billion anyway. Either a shuttle HST mission or a replacement HST would be far cheaper.