

To Whom This Should Concern

Arguments Towards a National Planetary Defense Authority: NASA vs. DoD



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In any real sense: in terms of Planetary Defense, aside from the chance discovery of a potential Earth impact threat, NASA's Spaceguard Survey is doing little more than randomly counting rocks in space... strategically speaking.

Were this issue already in the hands and minds of sound strategic thinkers: those experienced and expert in managing critical and dire Risk, the previous illustrations and arguments would hardly be necessary. Then, the Risk would present itself in its most essential and fundamental strategic characterization: large asteroid impacts are random and aperiodic events that can occur at any time and rise to the level of our extinction. We do not – can not – know *When* and are left with only one rational option in response. Build a Planetary Defense against the worst case scenario *Now!* Preparation, Training and Vigilance... *Forever.*

With some rational encouragement... Congress and/or the Executive Office could be persuaded into taking up the issue of tasking the responsibility for responding to the threat of asteroid impact and addressing a threat we have known about and all but ignored for 40 years and finally begin to meet this unavoidable cosmic cost of living. A cost that, in terms of preparation, training and vigilance, should we fail to meet in advance and in full and with sufficient skill, will hold our species and its survival in forfeit.

Since responding to this threat will require a vast increase of our manifest capabilities in space this leaves us only two domestic candidate agencies: NASA and DoD. Taking care not to allow the objectivity of science to dictate the necessarily subjective strategy to defend the planet we must have an agency qualified to present us with a clear and cogent perception of this threat and a comprehensive plan founded in something more relevant to the conduct of implementing a response than what are found in the dissociations of random chance probabilities.

Implementing our best response will invariably involve a continuous evolution of our technical expertise in areas of engineering and physics and astronomy, and will likely involve massive but relatively surgical nuclear options in space - so scientists will always be required at the tactical level. However, at its core any agency that is to be responsible for defending the planet from asteroid and comet impact will require far more strategic expertise and acuity than we may ever find in NASA. It should be self-evident that collectively, the scientists and academics at NASA do not have the strategic sense God gave a bucket of frogs. All things considered a hybrid agency comprised from the mission appropriate talents of *both* NASA and DoD would appear to be the more viable option. Then, the question is no longer about the players but authority and a clear chain of Command, Control and Communication.

If it ever was, this issue is at least no longer about science. It is not about justifying the existence of NASA or the exploration of our solar system or the commercialization of space. This issue is not some new vehicle for more pork for anyone. This is about maintaining the prosperity and survival of our species. Task the right agency for the right role and let the spin-offs fall where they may. We must recognize the critical strategic nature of this issue and promote the responsibility for determining what is essential to the conduct of implementing our response out the hands and minds of academia and scientific interest up to those who attend to our defense and security and wellbeing. Those who have diligently developed strategic acuity and expertise in responding to threats as a matter of their profession. Those whose decisions and actions, as a matter of doing their daily business, reflect dire negative consequences to others should they fail.

However, because this threat must be addressed in space, at first glance many do see NASA as the likely agency of choice to protect us. Yet in its 40 years NASA has never protected anyone from anything. Job One at NASA today is the redistribution of discretionary federal funds back to the states in direct proportion to their electoral votes... not to respond to any of the problems or fears reflected in our national security interests. So after decades of discretionary pork barrel funding whenever NASA asks for more money for something it is naturally taken to be merely a matter of more pork. In fact, in terms of our survival, knowing exactly which asteroid is the next large asteroid impactor constitutes the single most crucial piece of knowledge mankind can ever possess... And deflecting its impact the single most important thing mankind will ever do. Yet simply because this presents itself to be the business of NASA serves to mitigate the congressionally expressed public perception of the credibility and imminence of this threat. As a result the level of necessity for funding this effort rises to little more than just another academic 'astronomical handout'. On the other hand, DoD has successfully protected this nation from threats to its citizens and way of life and interests for over 200 years. When DoD asks for money it is taken to be a matter of life and death! With 25 times NASA's budget as a reflection of perceived necessity, DoD alone voices the credibility to warrant any reasonable expectation of justifying and securing the funding necessary to develop and maintain a response, both in technology and expertise, equal to the magnitude of this perpetual threat.

Today, the Battle Cry at NASA is "Safety First"! Engineers and program managers constantly walk a line between the value of the Man and the value of the Machine. The 'Mission' is barely in their equation, and for good reason. There are no dire negative consequences if any NASA mission ever fails or even if NASA fails in its overall mandate or charter mission statement altogether. Which is fortunate in that far too many NASA missions fail in their principal objective, if not altogether. In science, failure is not only an option it is an opportunity to learn. In this, we may not survive a failure in order to learn from our mistakes. At DoD it is more often the rule that mission failure is unacceptable and 'at any cost' includes both machine and man in the expected course of doing business, as may be the case with this issue. Complete mission success will be the single imperative and only acceptable result. So the question can come down to the comparative mindset, focus and the character of resolve that has become organic in these two cultures. Should we try and teach the scientists at NASA to think like soldiers or task DoD with a new mission in space? DoD does already have a space program of its own.

Given the planet wide nature of this threat it will be a natural and rapid evolution of this agency's authority to assume a leadership role in creating a unified global congress of national planetary defense agencies. And the number of space capable nations in the world today can be counted on one hand. Whereas the number of nations with military agencies is virtually total. It would not be difficult to conceive that these brothers-in-arms by profession set aside any adversarial postures to ally and find a level of compatibility under the precept of a 'common enemy' and work in consort to address this threat. At least far easier to conceive than the prospect their respective political counterparts ever doing so. Then, with the right 'common' perspective and well-applied statecraft, perhaps an international planetary defense effort could be seen to be readily fundable by the incremental and proportional reallocation of standing world military budgets. Essentially, saving mankind from asteroid impact and extinction at the cost of reducing our opportunity to kill each other over political, economic and religious principals... Win/Win.

Certainly the first task any agency charged with the defense of the planet will undertake will be to appreciate and qualify all the elements in this issue in order to produce a strategic risk and response assessment. At this point we do not even know what tactical capabilities we can reliably employ in any response. Since the tactical abilities at our disposal, or lack thereof, are fundamental and deterministic to the formulation of any strategy, a rigorous and diligent analysis of all feasibly executable deflection systems and methods will be the first priority. Such an analysis will likely show that even our most advanced propulsion-based deflection proposals are tens of thousands of times more massive than even augmented nuclear deflection tactics. Since, in space, mass is cost and cost is time, the quicker we can respond and/or the greater the response we can bring to bear the greater the likelihood of success. Do we really want to be giving the scientists and academics at NASA gigatons of such thermonuclear discretionary authority?

Perhaps the best argument against NASA as principal agent in this is simply that they really do not want the job. They have been aware of this threat since Gene Shoemaker pointed at a fresh bucket of Moon Rocks and declared them to be asteroid impact ejecta. They have had ample time to somehow evolve and cast themselves as the unequivocal and clear choice for this responsibility. Yet their chosen role has been "...to look for asteroids and study them. Not to deflect them or blow them up." They know their limitations. They know that being strategically challenged is a price you pay for disinterested objectivity: to be a scientist. They understand that any strategically crucial mission will bring an end to whatever it is that makes NASA, NASA. On the other hand, DoD stands awaiting orders from its Commander in Chief.

It would be hard to effectively defend a position that NASA should have the general strategic responsibility in this agency. This is not to say that NASA could not play a crucial role and that they and their sub-contractors would not derive constructive benefit from this agency's funding allocations. NASA has a core of relevant tactical experience and culture that will facilitate the mission of this agency and it would seem to be unnecessary if not counterproductive to reinvent these resources at DoD:

- Manned Mission Experience
- Heavy Lift Capability
- Small Mission Experience Beyond LEO
- A Diverse and Relevant Core of Scientists and Engineers
- NEO Observation Program

Strategically directed, as the tactical and operational element and non-responsible component of this agency, NASA and its inherent resources can be an effective tool in the defense of the planet. But merely giving a scientist a gun will not make him a soldier anymore than giving a soldier a degree makes him a scientist. There is a fundamental organic dichotomy of perspective that is specific and essential to the effective conduct of both these professions. Their appropriate and discrete usefulness should be a paramount consideration in creating and empowering an agency with the resources necessary to successfully implement a response to this threat.

With DoD we already have:

- Necessary Funding Credibility
- Professional Strategic Acuity
- Mission Imperative Mindset
- Space Program and Aerospace Infrastructure
- International Military Compatibility
- Standing Budget
- Delegated Nuclear Authority
- General Mission Flexibility
- Appropriate General Security Perspective

in order to successfully meet all the Command, Control and Communication objectives and inherent responsibilities required of this agency to serve the nation both directly and in a subsequent world leadership role. Since it is far more realistic to consider the material resources and personnel of NASA conveyed to the command and discretion of DoD than it would be to imagine DoD at the discretion of NASA the principal responsible executive element for this agency should be clear.

Precautionary Principle: "Governments shall take action to prevent harm even when it is uncertain if, when, or where the harm will occur." Make no mistake, sooner or later any legislation either formulated in Congress or proceeding from the Executive Office to create an agency to preemptively deal with the threat of asteroid impact will be proved to be the single most profound and crucial piece of human foresight in history.

When you consider that the scope and scale of any mission to deflect a large asteroid or comet may well mass millions of tons and cost trillions of dollars in human endeavor, and the potential magnitude of the loss should this mission fail. And that taken collectively the broad operational elements of this issue are far too dense and complex and the consequences of even basic tactical

decisions are potentially far too dire for the ad hoc narrowly informed incidental judgment of our merely elected politicians. Then the strategic necessity to have one expert agency entrusted with a singularly decisive and autonomous authority, and the discretion to ultimately command tremendous amounts of global treasure, becomes manifestly apparent. In creating a *National Planetary Defense Agency* we may well be creating the progenitor for the single most powerful global agency on the planet... so we create wisely.

Sooner or later responding to the impending impact of The Next Large Asteroid on its way to strike Earth will require the full measure of technological and economic resources, political leadership and sheer human will of the United States of America. And by extension this effort need to be manifest in its President. Sooner or later the President will need to be the most qualified person on the planet to save the world and We The Species from Extinction by NEO. And as things stand today the Executive Office of these United States is not even in the loop.

Perhaps we *are*, somehow, a Chosen Species. Even if this is so, at the very least we should endeavor to evolve to earn our own survival... lest we become spoiled. Yet today, all that is standing between The Next Large Asteroid on its way to strike Earth and our Extinction by NEO are the random chance probabilities of academics and the blind bias of false hope they represent. How can *this* possibly be wise?