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- Ongoing and Upcoming Mission Highlights
- Apophis: T-4 Years
- Hypothetical Asteroid Threat Exercise
- Key International and Policy Developments
- Near-Earth Object (NEO) Discovery
- NEO Characterization
- Deflection / Disruption Modeling & Testing
- Space Mission & Campaign Design
- Earth Impact Effects & Consequences
- Disaster Management & Impact Response
- Public Education and Communication
- The Decision to Act: Political, Legal, Social, and Economic Aspects

**StarGrind & Armory Practice – Using Earth’s Best Bad Habits as a Last Ditch
Stand Against Short Warning Time NEO Impacts**

**Jan Thimo Grundmann^{(1)#*}, Laura Borella⁽²⁾, Ross Centers^{(2)(3)#}, Dirk
Plettemeier⁽⁴⁾, and Fabienne Seibert⁽⁵⁾**

⁽¹⁾*DLR German Aerospace Center, Institute of Space Systems, Robert-Hooke-
Strasse 7, 28359 Bremen, Germany*

**corresponding coauthor +49-(0)421-24420-1107, jan.grundmann@dlr.de*

⁽²⁾*Consultants to DLR Institute of Space Systems*

[#]*Planetary Sunshade Foundation, Golden, Colorado, United States*

⁽³⁾*Ethos Space, Los Angeles, United States*

⁽⁴⁾*Dresden University of Technology, Chair for RF Engineering, Dresden, Germany*

⁽⁵⁾*Faculty of Aerospace Engineering, FH Aachen University of Applied Sciences,
Hohenstaufenallee 6, 52064 Aachen, Germany*

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This time, we have time. 2024 PDC₂₅ takes 16 years, 10 months, 2 weeks, and 6 days from its fictitious discovery to its fictitious impact on Wednesday, April 24th, 2041 – *and it will*, because *this is an exercise!* 2021 PDC was not so kind, leaving us only 6 months to play with it. The coming close encounter of (99942) Apophis on Friday, April 13th, 2029, when it will get to within 31650 km altitude over the North Atlantic at 21:46 UT in the night sky of more than a billion people, reminds us that, if it had not been for an

exceptional discovery at very low solar elongation – 56° – and very long range – 1.1 AU – for a 370 m object in a midsummer night in 2004, we might well have gotten a shocking Friday 13th naked-eye surprise below geostationary altitude 4¼ years from now instead of an impact probability peaking at 2.7% for Christmas 20 years ago. With 6 months to go, or even 6 years considering from the perspective of a surprise in 2029 the possible 2036 impact of Apophis that took 9 years to rule out completely, who knows what, when a NEO should approach this globe to destroy it, as it often has been and will be destroyed, we could tear from its foundations by means of ingenuity and improvisation, to hurl masses, as Deep Impact and DART have done, against the piled rubble? Well, for starters, we are good at churning out the same stuff all over again and again from assembly lines – known as armory practice before it came to Detroit. Nearly a century after the Springfield Rifle, the U.S. alone built over 300,000 airplanes during the 6 years of World War II. Today, the world builds more than 85 million cars a year, and more than 1.4 billion mobile phones. One company alone built over 7500 satellites and put them into orbit with over 215 launches, within 6 years, and thousands more are planned, also by other space service providers. Although the detailed design of these spacecraft is proprietary, sufficient public information exists to derive their approximate properties and capabilities, and to lay out a feasibility study of last-ditch attempts to save Earth from a near-term large impact on the scale of the PDC Exercise targets or their notorious leftovers aimed at the participating civil defense and disaster management communities, and a location conveniently close to the conference center. With lead times ranging from several months to a few years to impact, the adaptation and development potential spans the range from shoot and hope straight off production lines accelerated to the very limit, to largely mission-specific redesign based on the now-term technology of the day, in global synergy of planetary science and planetary industry working hand in hand to grind down an approaching asteroid in space by a long series of somewhat DART-like impacts. And then we shall have traditions of tycoons and telescopes again, and of wars with rocks.

Comments: oral presentation preferred, poster (or equivalent) welcome

(Alternative session, Time slot, Oral or Poster, Etc...)