Impact Exercise, Day 3: September 3, 2024
Deflection Partially Successful But Large Fragment Remains Headed for Impact, Possibly Still in U.S.

Paul Chodas (Jet Propulsion Laboratory/California Institute of Technology)
• Three Kinetic Impactors (KIs) deflected asteroid 2019 PDC, but a large fragment about 50 to 80 meters in size (160 to 260 feet) broke away during the first KI deflection and remains on a collision course.

• The reconnaissance spacecraft had been on station for 10 months; it observed a large fragment breaking away when the first KI struck; the other two strikes occurred on the main body, not the fragment.

• Today, however, contact was lost with the reconnaissance mission, probably due to debris hitting the spacecraft.

• Using the spacecraft imaging data, IAWN confirms that the asteroid’s main body was successfully deflected, but the fragment was not;

• The precise velocity changes are uncertain because of the short observation period, but IAWN estimates the fragment is on a course towards impact in the eastern U.S. or the Atlantic Ocean.

• For more info: https://cneos.jpl.nasa.gov/pd/cs/pdc19/day4.html

EXERCISE ONLY!!
Impact Footprint for 2019 PDC Fragment
CNEOS NEO Deflection App (NDA)

https://cneos.jpl.nasa.gov/nda/nda.html
Ground Observations of the Fragment

- The deflection occurred while 2019 PDC was 1.7 au from Earth, almost on the other side of the Sun.
- The deflection could not be observed directly from the ground because the solar elongation was low (less than 45 deg).
- IAWN has begun organizing a renewed ground-based observing campaign to track the fragment, in order to better assess its likely impact location.
- Observations cannot begin for 3 months, when the asteroid emerges from behind the Sun.