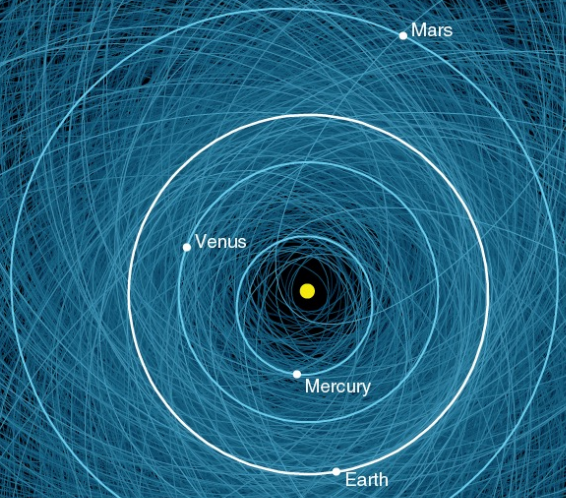
EXERCISE ONLY!!



2021 PDC Exercise Day 2: May 2, 2021

New Data Confirm Asteroid 2021 PDC Will Impact Within Europe or Northern Africa in Six Months

Paul Chodas, on Behalf of IAWN
(CNEOS/Jet Propulsion Laboratory/California Institute of Technology)

2021 Planetary Defense Conference, April 26-30, 2021

EXERCISE ONLY!!

EXERCISE

2021 PDC Impact Confirmed

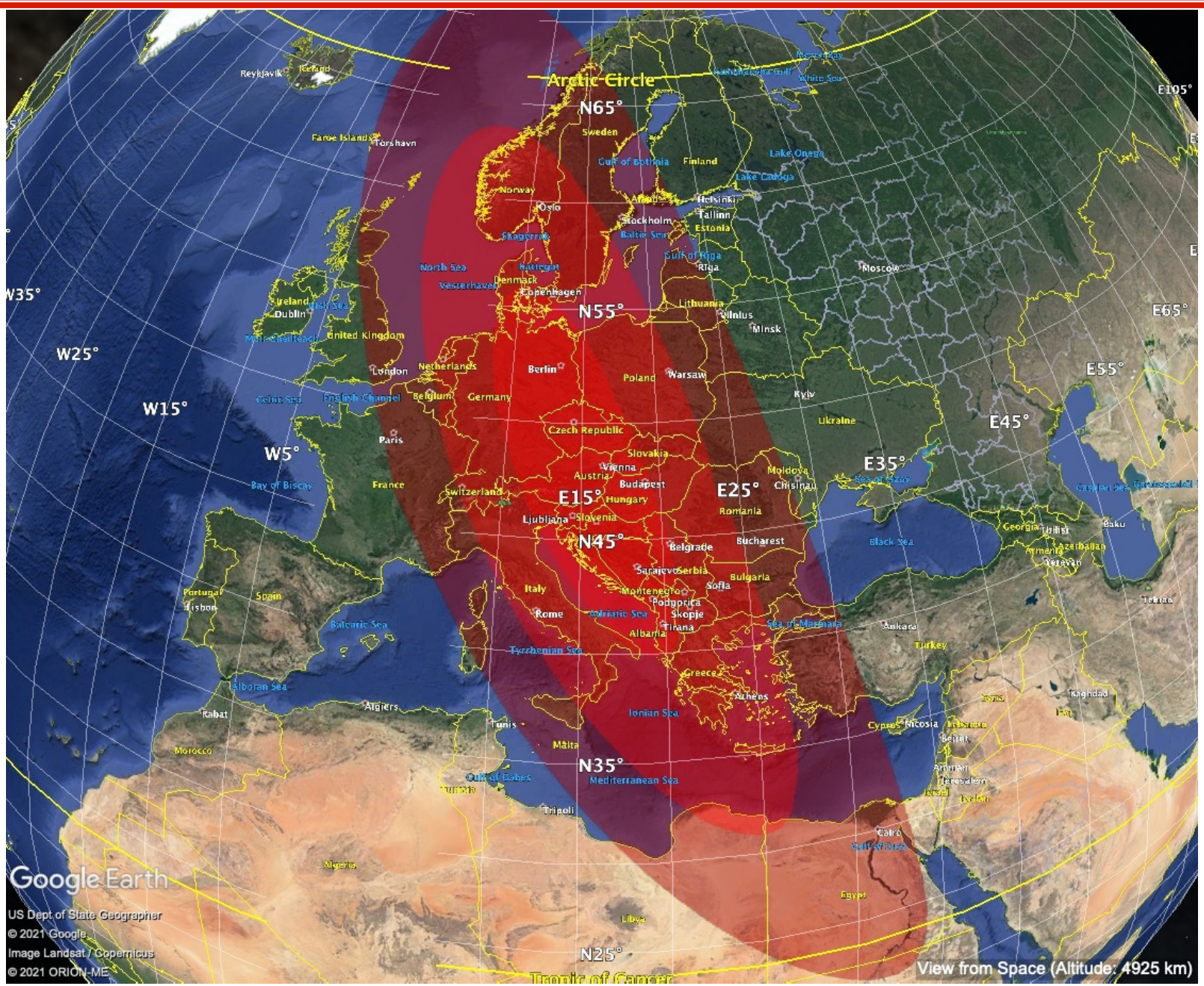
- Newly uncovered observations of 2021 PDC have established that the asteroid will impact in Europe or northern Africa on October 20, 2021 with 100% certainty
- The new data are precovery observations of 2021 PDC found in archival images taken 7 years ago by the Pan-STARRS asteroid survey in Hawaii
  - Noticing that 2021 PDC must have made a distant passage by Earth in 2014, observers predicted the region of sky where the asteroid should have been back then, and a series of archival images was identified for searching. The asteroid was too faint to be discovered, but shifting and stacking the of images resulted in detections
- Lengthened to 7 years, the new data arc produces a much more accurate estimate of the asteroid orbit, leading to a much smaller predicted uncertainty region on October 20. The entire uncertainty region now intersects the Earth
- The general region where 2021 PDC will impact can now be predicted
- The asteroid's size and the impact effects, however, remain highly uncertain
- For more info: **https://cneos.jpl.nasa.gov/pd/cs/pdc21/day2.html**

EXERCISE ONLY!!

EXERCISE

Predicted Impact Location as of May 2

Using the 2014 precovery observations



Impact date:
Oct. 20, 2021

Probabilities of Impact inside the shaded regions:

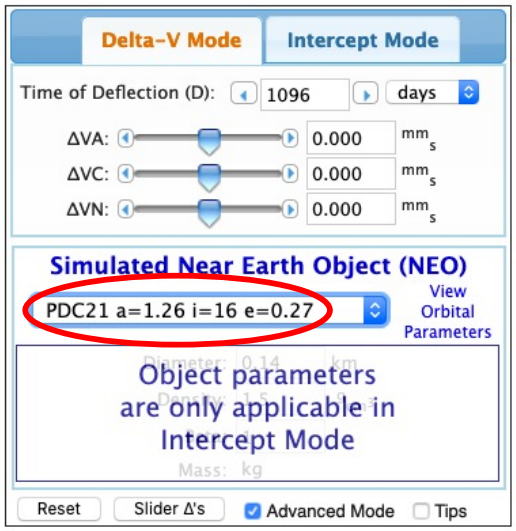
Dark red: 40%
Mid red: 87%
Light red: 99%

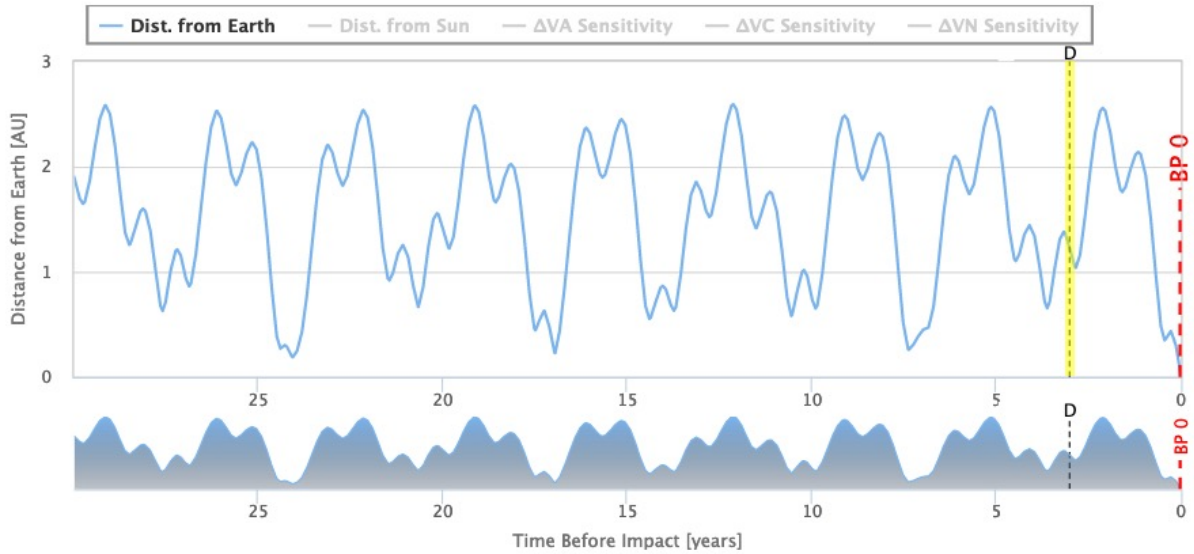
EXERCISE ONLY!!

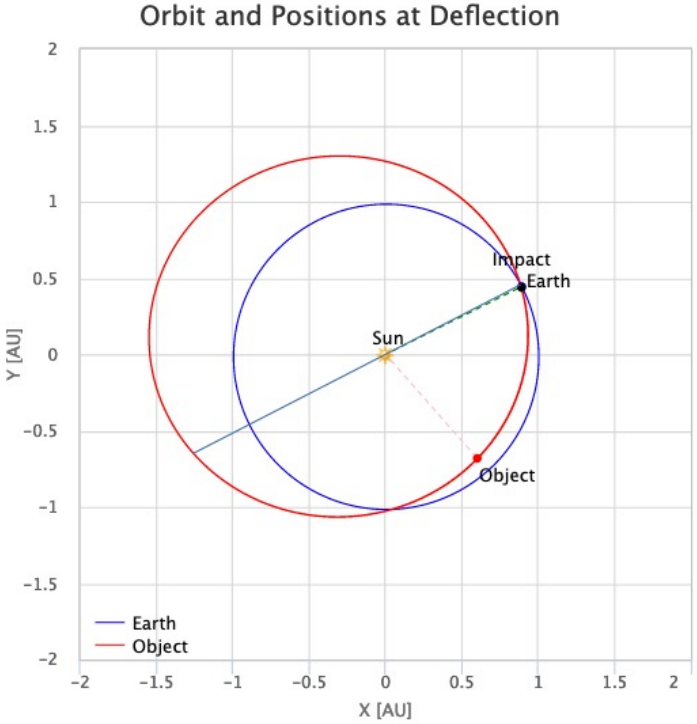
CNEOS NEO Deflection App (NDA)

https://cneos.jpl.nasa.gov/nda/nda.html

EXERCISE





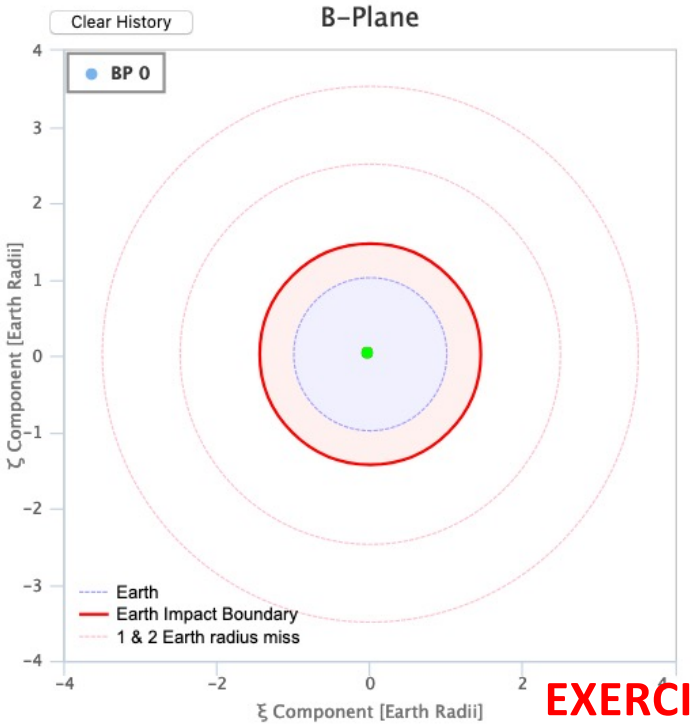


Orbit Changes
ΔVA: 0.000 mm/s
ΔVC: 0.000 mm/s
ΔVN: 0.000 mm/s
Total ΔV: 0.000 mm/s
Period at D: 516.276 d
Δ Period: 0.0000 s

B-Plane Values
ζ (zeta): 0.039 R_e
ξ (xi): −0.022 R_e
B magnitude: 0.045 R_e
Capture Rad.: 1.445 R_e
Perigee Dist.: 0.002 R_e
IMPACT
V_∞: 10.722 km/s

* R_e = Earth Radii

Save Current Session
Restore Session
Deflection Map



EXERCISE ONLY!!