

***EXERCISE***

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***NOT A REAL WORLD EVENT*** *This is part of an asteroid threat exercise conducted during the 2015 IAA Planetary Defense Conference.*

## **Newly Discovered Asteroid Poses Small Threat of Earth Impact**

Paul W. Chodas (International Asteroid Warning Network/JPL)

Press Conference, June 9, 2015

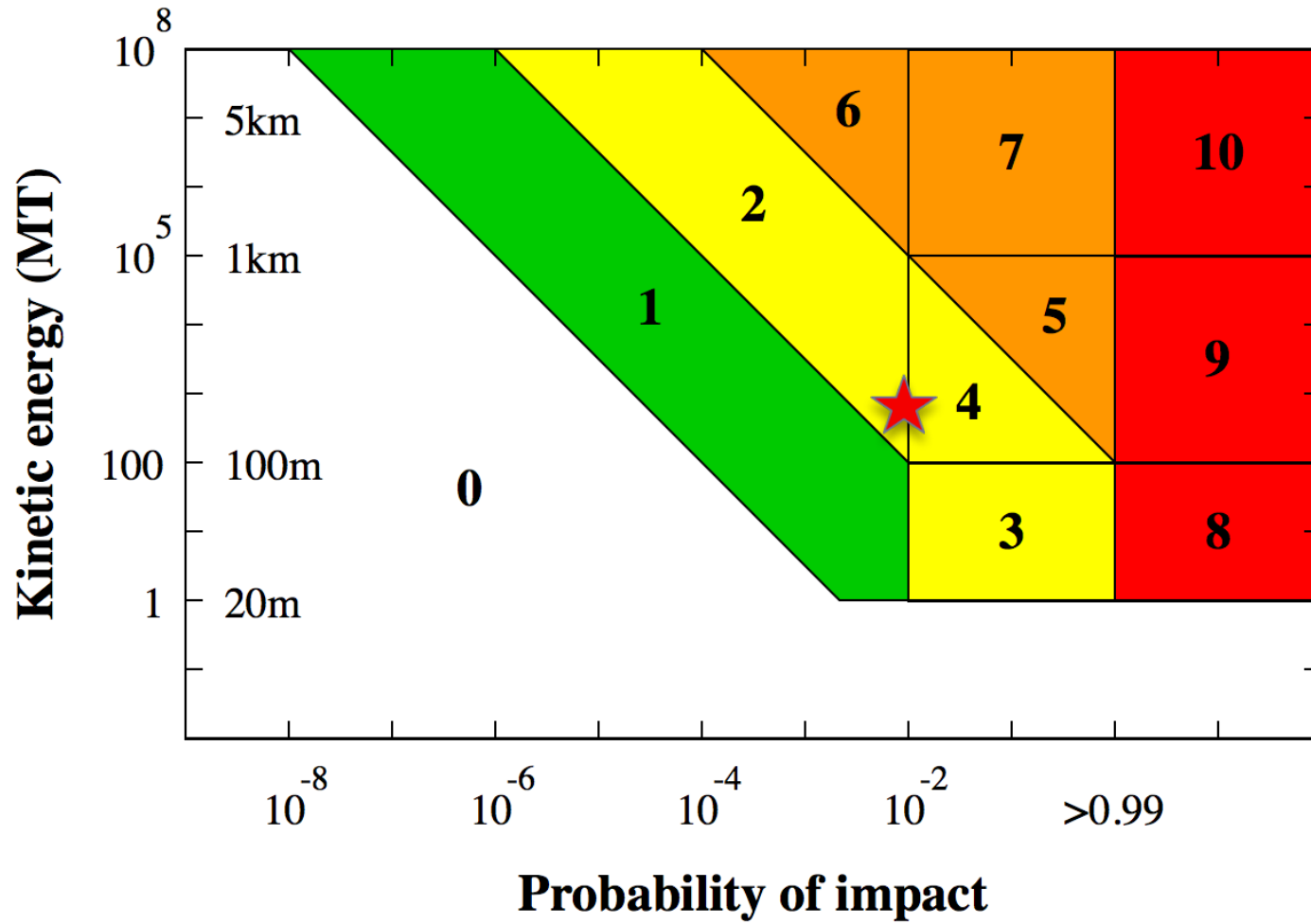
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# Asteroid 2015 PDC

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- ▶ Asteroid 2015 PDC was discovered on April 13, 2015 at visual magnitude 20.9, and is now the most hazardous asteroid on the IAWN risk list
- ▶ Predicted to pass very close on Sept. 3, 2022, nominally about 30,000 km (8% of the distance to the Moon)
- ▶ Impact on that date is unlikely, but it cannot be ruled out; current likelihood of impact is 0.9% or 1 chance in 110
- ▶ Roughly 140 to 400 meters across, too distant for a more accurate estimate, won't approach close again until 2022
- ▶ Reached a rating of 2 on the Torino Scale (Yellow)
- ▶ For more info: **<http://neo.jpl.nasa.gov/pdc15/day1.html>**

# Torino Scale



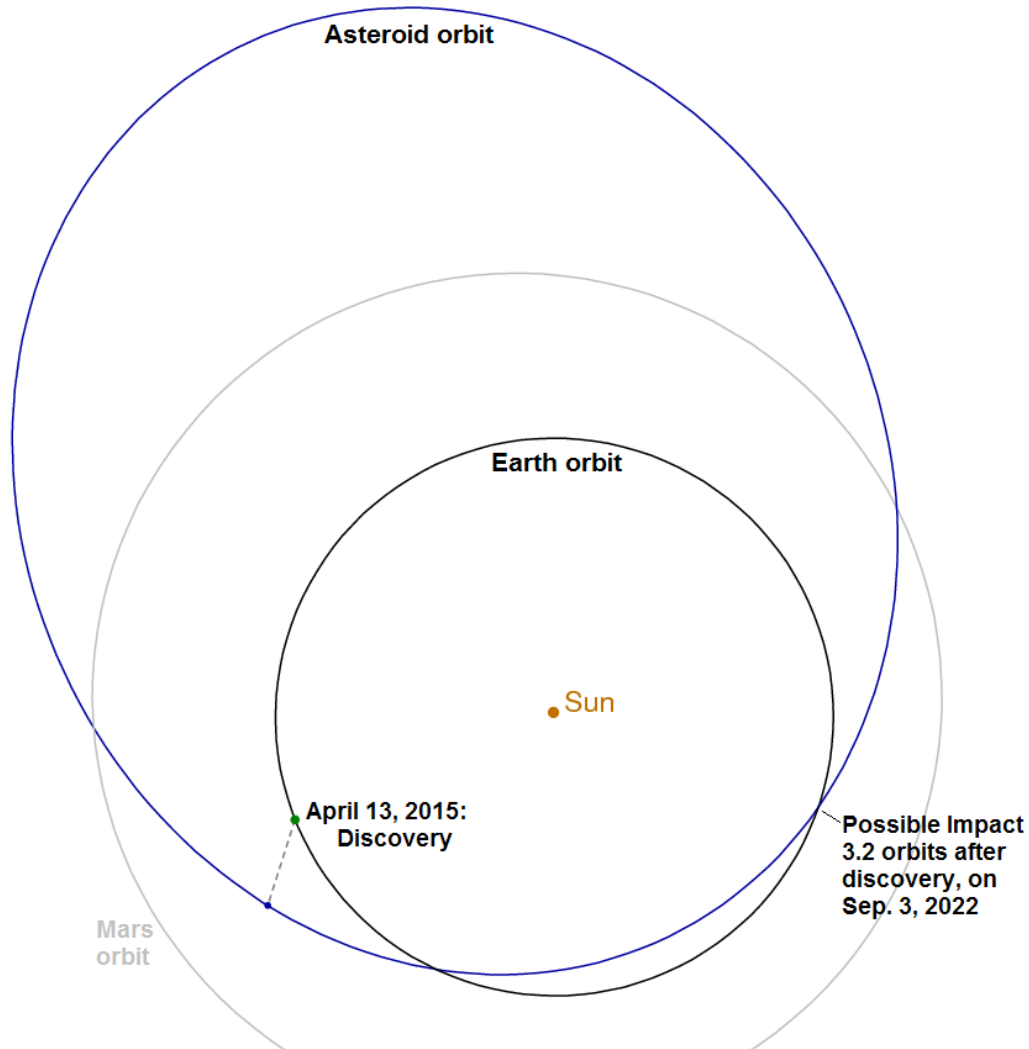
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# Observability of Asteroid 2015 PDC

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- ▶ 2015 PDC will be observable for the rest of 2015 at visual mag 22 and 23; ~2-meter class telescopes will be required
- ▶ In late 2015 through Feb. 2016, the asteroid will fade to visual magnitude 24 and 25; will require 4- and 8- meter telescopes (CFHT, Keck, Gemini, Subaru, VLT etc.)
- ▶ In April 2016, the asteroid's solar elongation will become so small that observations will not be possible
- ▶ The asteroid should be observable again in December 2016

# Orbit of Asteroid 2015 PDC



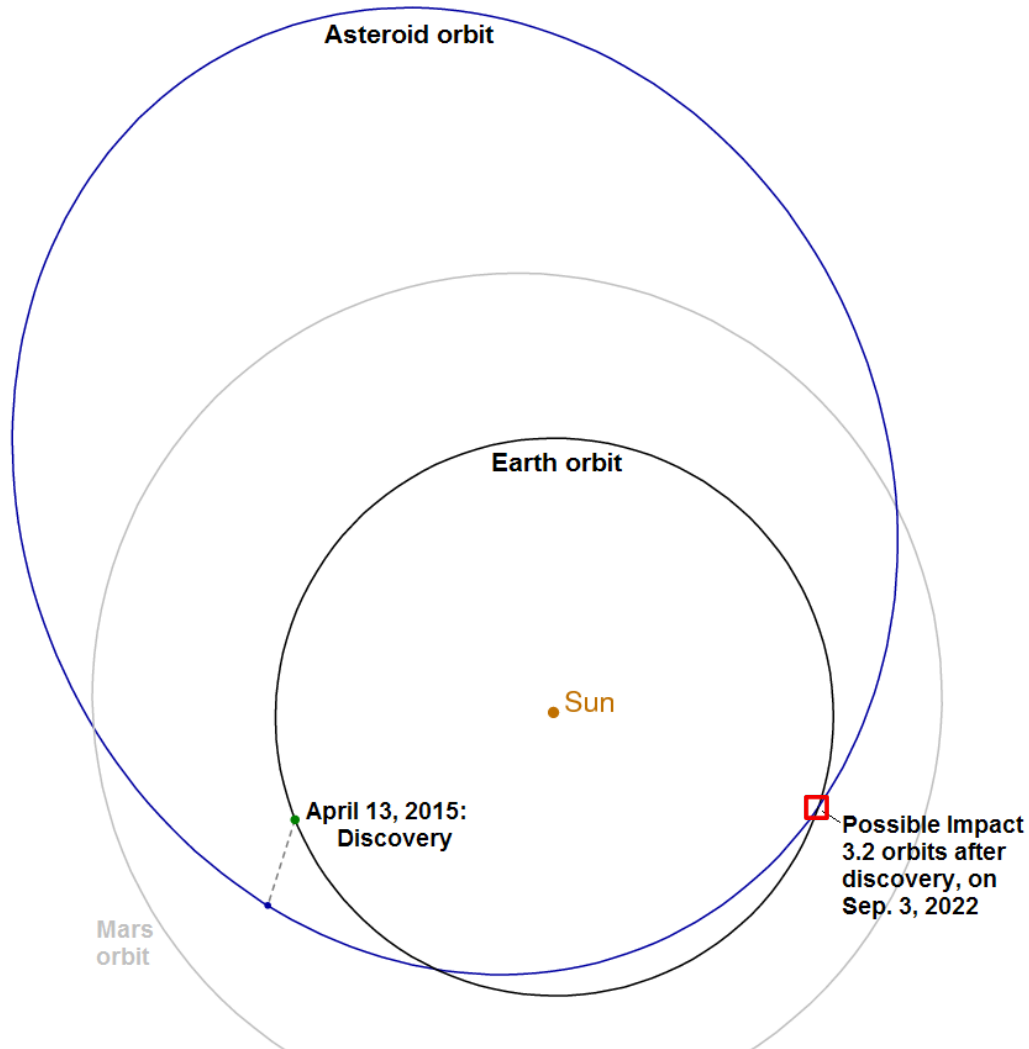
Distance from Sun varies from 0.9 AU to 2.6 AU

Orbital period is 864 days

This is a Potentially Hazardous Asteroid (PHA), since the MOID is very small (0.0001 AU)

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# Orbit of Asteroid 2015 PDC



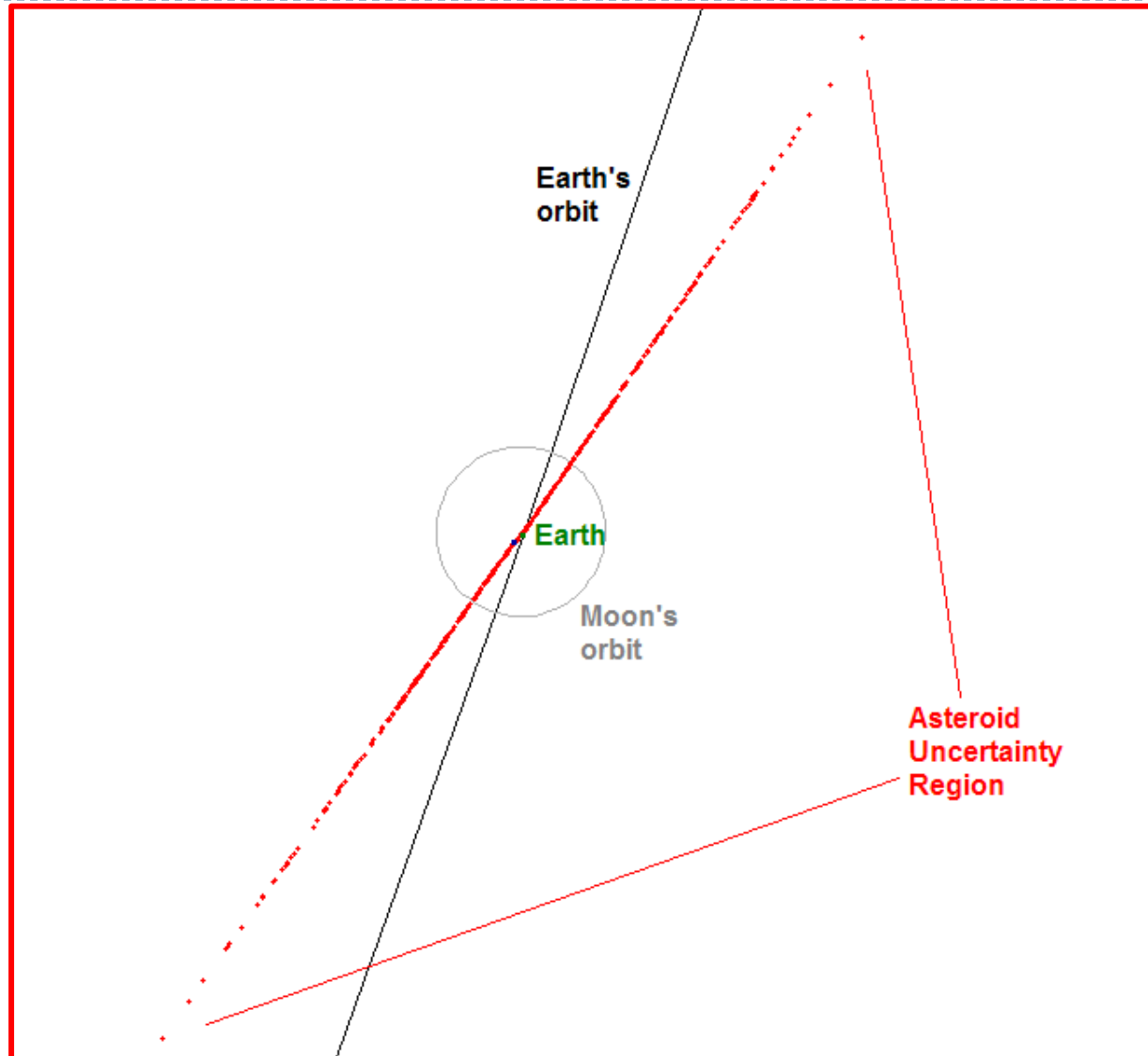
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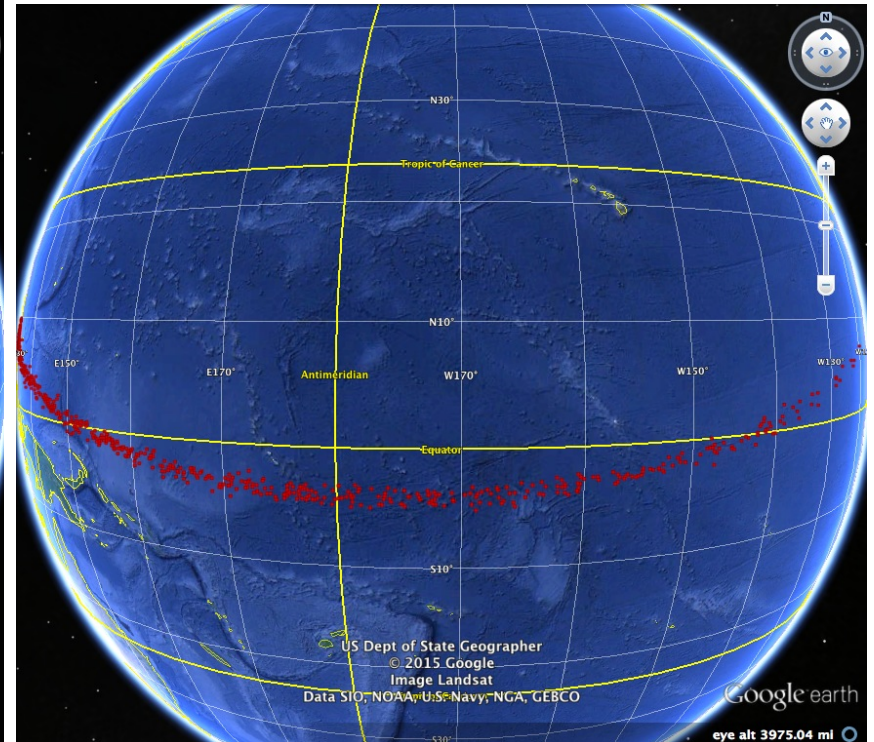
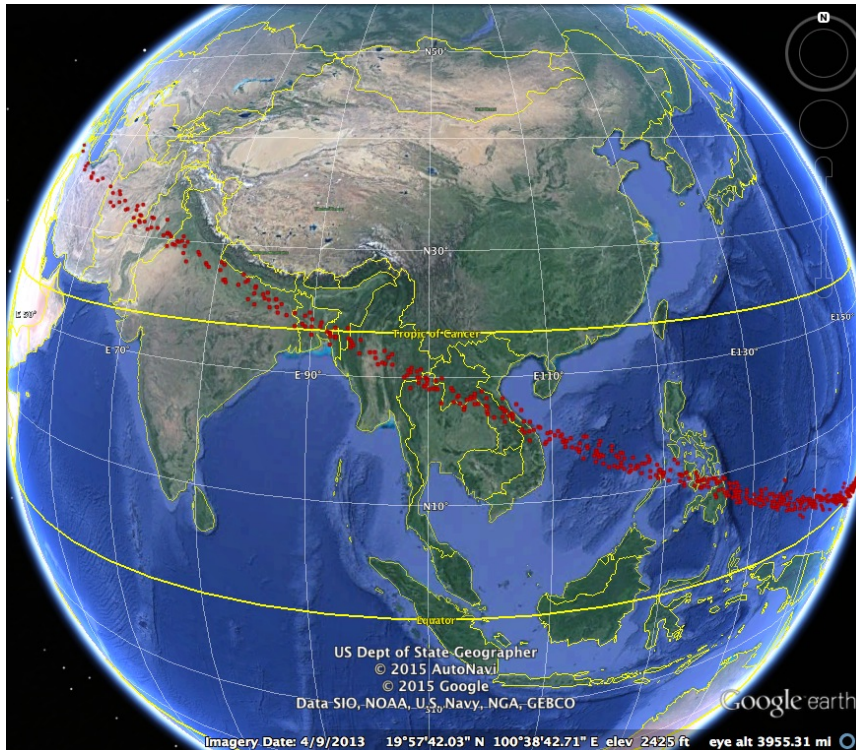
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# Current Position Uncertainty in 2022



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# Risk Corridor



Risk corridor extends more than halfway around the world, from the eastern Pacific Ocean, across the South Pacific, through the Philippines, South China Sea, Southeast Asia, Myanmar, Bangladesh, India, Pakistan, Afghanistan, Iran, and Turkey

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