

INTERNATIONAL ASTEROID WARNING NETWORK (IAWN)¹**POTENTIAL ASTEROID IMPACT NOTIFICATION – HYPOTHETICAL SIMULATION**

Date: 15 July 2026

From: International Asteroid Warning Network (IAWN)

IAWN Coordinating Officer (NASA) for the IAWN Steering Committee

To: Chair (ESA), Space Mission Planning Advisory Group (SMPAG);

Planetary Defence Programme Officer, United Nations Office for Outer Space Affairs (UNOOSA)

Title: Potential for Impact of Near-Earth Asteroid 2026 PDC27 on 10 July 2038

Impact Probability	16% as calculated by NASA JPL Center for NEO Studies, ESA Near-Earth Objects Coordination Centre (NEOCC), and NEO Dynamic Site (NEODYs)
Date of Potential Impact	10 July 2038
Impact Risk Corridor	Across the Pacific Ocean, United States of America, Canada, the Atlantic Ocean, Spain, France, Italy, Greece, Turkey, and the Mediterranean Sea
Asteroid Size	Most likely in the range 40–120 meters (140–390 feet) in diameter but potentially in the range 30–340 meters (100–1120 feet)
Expected Damage Level if Impact Occurs	Local to regional blast damage, ranging from window breakage to potential structure collapse. The asteroid might explode in the air or create a crater in the ground.
When will there be new information?	Information will be updated when new observational data is available. The asteroid is currently observable and will continue to be so through the end of July 2026. New information will be available in December 2026 when the asteroid returns to the twilight and then night sky or if detections of the asteroid are found in archival data.

ADDITIONAL DETAILS:

- **Relevant Thresholds:** 1% is the notification threshold for IAWN². IAWN and SMPAG recommend a threshold for terrestrial preparedness planning of greater than 10% probability of an impact within 20 years for an object estimated to be 20 m or larger in size².
- **Impact Probability:** There is a 16% probability that near-Earth asteroid (NEA) 2026 PDC27 could impact Earth on 10 July 2038. While there is large uncertainty in whether the asteroid will impact Earth, if an impact occurs it will be on this date. There is an 84% probability that 2026 PDC27 will safely pass by Earth on this date.
- **Impact Probability Confirmation:** The impact probability was calculated by the NASA JPL Center for Near-Earth Object Studies (CNEOS), ESA Near-Earth Objects Coordination Centre (NEOCC), and NEO Dynamic Site (NEODYs), in coordination with the worldwide network of observatories in the International Asteroid Warning Network (IAWN) submitting observations to the Minor Planet Center (MPC).
- **Future Observability and Update to Impact Probability:** Future observations will reduce the uncertainty in 2026 PDC27's trajectory and impact probability. The NEA will be observable

through late 2026 July, after which point it will become too close to the Sun in the sky to be observable. During that period, the impact probability will change as new data are incorporated. Searches for detections of 2026 PDC27 in archival sky survey data are also in progress.

2026 PDC27 will be observable again from 2026 December to 2027 August, when the NEA will be quite faint and will likely require large (2-meter and larger) telescopes. By the end of the 2027 observability window, the impact probability could increase up to 100% or, more likely, it could drop back below the notification threshold (1% impact probability).

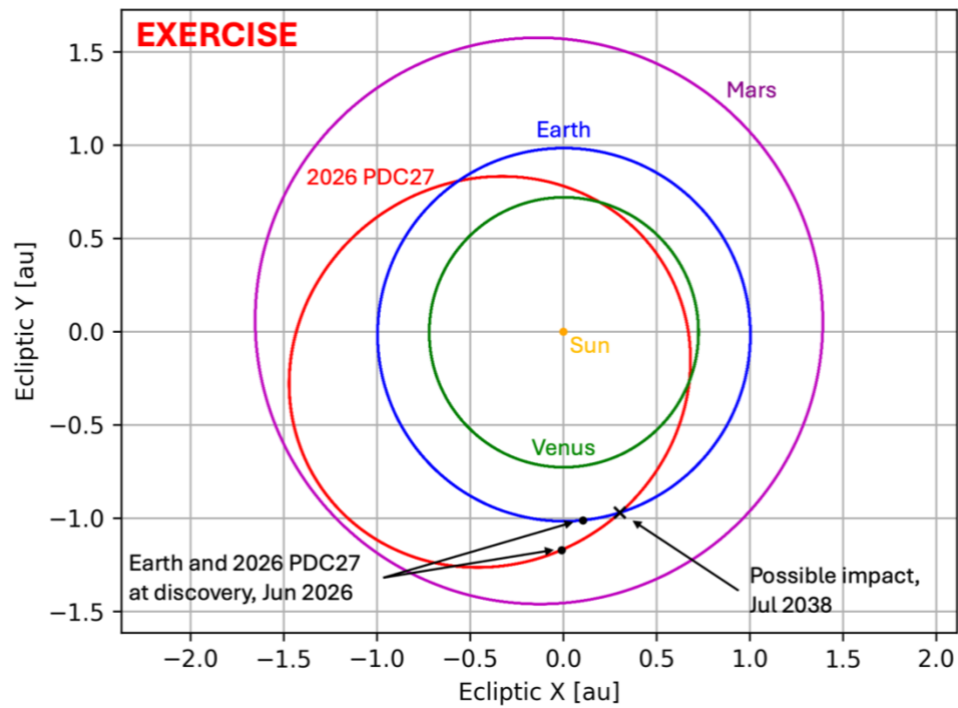
- **Impact Risk Corridor:** The impact risk corridor for 2026 PDC27, which is the region of Earth along which a potential impact could occur, extends across the Pacific Ocean, United States of America, Canada, the Atlantic Ocean, Spain, France, Italy, Greece, Turkey, and the Mediterranean Sea.
- **Asteroid Size:** 2026 PDC27 is most likely in the range 40–120 meters (140–390 feet) in diameter as inferred from brightness measurements, but the size range could be as broad as 30–340 meters (100–1120 feet) if unusually reflective or dark. The size may be further constrained with thermal infrared observations from the James Webb Space Telescope in the coming week. The asteroid is too distant for radar observations and will not come within radar range until 2038.
- **Expected Damage Level if Impact Occurs:** Blast damage would likely occur out to 70 kilometers (40 miles) or less from the impact location for typical asteroid properties, but could extend as far as 240 kilometers (150 miles) if the asteroid has more unusual properties and a larger size. Blast damage could break glass across cities or counties, and could potentially flatten structures near the impact. IAWN will perform a full damage risk assessment utilizing available data at the end of the current observation window.
- **Discovery:** 2026 PDC27 was first reported on 28 June 2026 by Panoramic Survey Telescope and Rapid Response System 1 (Pan-STARRS1) of the University of Hawai'i located at Haleakalā, Maui, during NEA search operations for NASA. The worldwide network of observatories of the IAWN continued to perform follow-up observations. Detections were also found in archival images taken by the Vera C. Rubin Observatory's Legacy Survey of Space and Time (LSST) on 11, 17, and 23 May 2026 and 4, 10, and 16 June 2026.

¹ IAWN is a worldwide collaboration of asteroid observers and modelers that was recommended by the United Nations, pursuant to the General Assembly resolution [70/82 of 9 December 2015](#) notes with satisfaction the establishment and the work of the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG) to implement recommendations for an international response to the near-Earth object impact that were endorsed by the Committee on the Peaceful Uses of Outer Space in 2013 ([A/68/20, para. 144](#)). See <https://iawn.net>.

² Agreed criteria and thresholds by the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG), (see Status report by the IAWN and SMPAG to the 62nd session of the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space, [A/AC.105/C.1/2025/CRP.6](#)). The Committee in its annual reports ([A/79/20, para. 135](#)) notes that should a credible threat of impact be discovered by the IAWN, available information would be provided by IAWN and disseminated to all Member States through the Office for Outer Space Affairs. The threshold for issuing warnings of possible impact effects is a probability of impact greater than 1% and a rough size estimated to be greater than 10 meters.

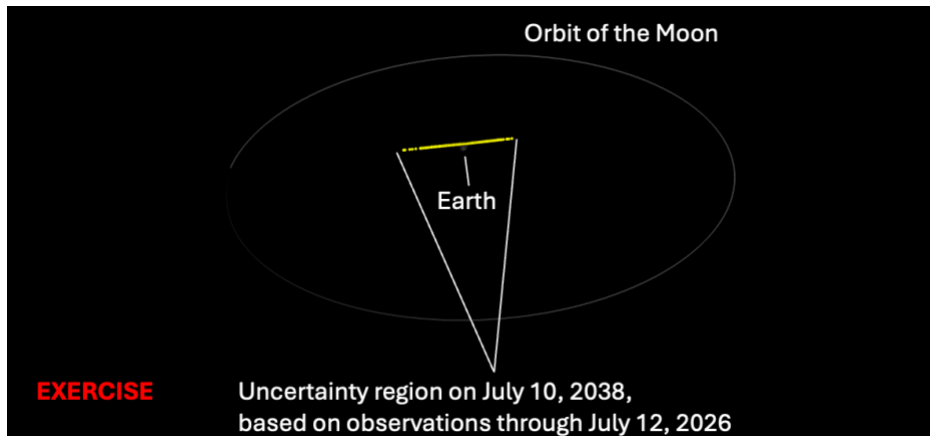
Graphics

1. Heliocentric orbit diagram of 2026 PDC27
 2. Possible locations of 2026 PDC27 relative to Earth on 10 July 2038 and impact risk corridor
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1. Heliocentric orbit diagram of 2026 PDC27, with position relative to Earth orbit of 2026 PDC27 at discovery in June 2026 and around the time of the possible impact on 10 July 2038.

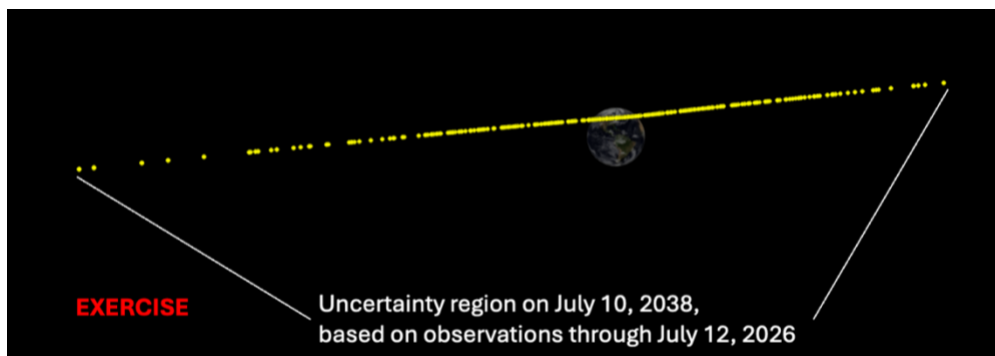


2. Possible locations of 2026 PDC27 relative to Earth on 10 July 2038 from Monte Carlo modeling.
- Panel 2a. Location uncertainty compared to the orbit of the Moon. The Earth-Moon distance is shown to scale.
- Panel 2b. Close-up of the location uncertainty. The size of the Earth is shown to scale.
- Panel 2c. Impact risk corridor: the portion of the location uncertainty that intersects the Earth.

2a.



2b.



2c.

