

→ CAFS FOR 2026 PDC27, EPOCH 1

ESA's NEO Coordination Centre

EXERCISE

EXERCISE

EXERCISE

This document does not describe a real asteroid impact threat. The information here is fictional and provided only to support an international exercise conducted in the framework of the Space Mission Planning Advisory Group (SMPAG).

Close approach fact sheet for asteroid

A medium size asteroid has ~19% probability to impact the Earth on 10 July 2038. NEOCC is providing this CAFS as this case fulfils the criteria of both ESA and IAWN for generating an impact warning message.

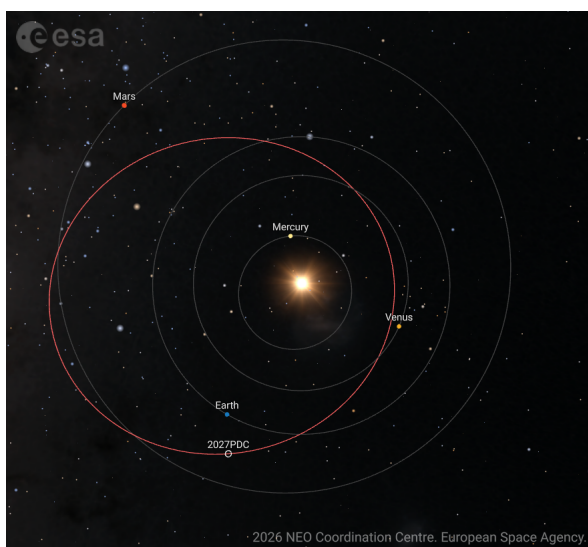
Possible impact date	2038-07-10
Possible impact time	~ 05:35 UTC
Velocity at entry interface point	~ 18.0 km/s
Size range	75-90 m
Discovery date	2026-06-28
Discovery site	Pan-STARRS 1, Haleakala

All error bars quoted in this table correspond to one standard deviation.

Orbit information

Date before the possible impact	Orbital period (year/day)	Aphelion distance (au)	Perihelion distance (au)	Eccentricity	Inclination (deg)
2038-06-10	1.198/437	1.590	0.666	0.410	13.751

All orbital elements in this table are referred to the ecliptic at the epoch of J2000.0



Ecliptic projection of the asteroid orbit (in red). Credit: ESA / PDO

Physical and mitigation information

Time to impact	Impact probability	Composition	Rotation period (hours)
4323 days	0.19	S-type	Unknown

Observational information

Asteroid 2026 PDC27 will be astrometrically observable by large-aperture telescopes during the first half of 2027, and then by more modest metre-class telescopes in early 2028. It will then undergo a long period of poor observability from the ground until an excellent observational opportunity in 2032, when it will become brighter than magnitude 20, also offering excellent conditions for physical characterisation. Another observing window for moderate size telescopes will open in early 2034. After that, the object will become easily observable again only during its incoming approach before the potential impact in 2038.

Other information

Encounter peculiarities	Previous encounter	Next encounter
Possible impact	1977-07-09	2038-07-10

Only encounters within 0.05 au are considered.

Links

Orbit visualiser:

<https://neotools.neo.szp.esa.int/ovt?object=2026PDC27>

Close approaches page:

<https://neo.ssa.esa.int/close-approaches>

neo.ssa.esa.int

To subscribe or to unsubscribe to this CAFS fill the form at
<https://neo.ssa.esa.int/subscribe-to-services>



Impact risk information sheet for asteroid 2026 PDC27

Impact information

Size (m)	Impact date (UTC)	IP	TS	Velocity (km/s)	Angle (°)	Expected energy (Mt TNT equiv.)
75-90	2038-07-10 05:35:31	0.19	3	18.0	0.0-56.8	30.2

Impact corridor plot

The plot shows the asteroid's current impact corridor, stretching across a wide area from the western Atlantic towards Europe and the Mediterranean. It shows the range of possible impact locations, rather than a single predicted path, and should narrow as more observations become available. The corridor is shown for a 0 km altitude, assuming airless propagation to the surface, with both the 1-sigma and 3-sigma uncertainty curves included.



Credits: ESA / PDO

neo.ssa.esa.int

To subscribe or to unsubscribe to this CAFS fill the form at
<https://neo.ssa.esa.int/subscribe-to-services>

