

# → NEWSLETTER DECEMBER 2025

## ESA's NEO Coordination Centre

### Current NEO statistics

After a month rich in discoveries, we [passed the threshold](#) of 40 000 known NEOs.

- Known NEOs: 40 157 asteroids and 124 comets
- NEOs in risk list\*: 1867
- NEOs designated during last month: 309
- NEOs discovered since 1 January 2025: 3026

### Focus on

When people ask us about meteors, a familiar belief persists: that they somehow favour certain parts of the Earth like deserts or oceans. But when we look at the global fireball data shown in the figure below, they arrive far more uniformly than most expect. The idea that deserts receive more impacts mainly comes from the fact that meteorites are simply easier to spot and recover there. This is due to the limited geological surface activity preserving the original impact sites.

To place these, and [other global fireball observations](#) in context, we can refer to what theoretical models predict. These observational datasets are, however, biased. In principle, fireballs should be evenly spread in longitude, but their distribution in latitude has long been debated. [Some models](#) assume most impactors approach from near the ecliptic plane suggesting that the meteor flux at the equator is about twice the one at the poles. [Other models](#) grounded in Near-Earth Object population dynamics instead point to a nearly uniform influx, or even a slight enhancement at higher latitudes. Furthermore, when we look at smaller, [sporadic meteors](#), their origins often don't lie in the ecliptic plane at all. Together, these results hint that the true global pattern may be more subtle than the simple "meteors prefer the equator" narrative often imagined.

### Upcoming interesting close approaches

During December, no asteroid known at the beginning of the month will come closer than a million kilometres to the Earth.

### Recent interesting close approaches

Three asteroids came closer than the geostationary ring in November

- 2025 WV13, 2025 WE14 and 2025 VN had close approaches between 24 000 km and 37 000 km in November. They reached peak magnitudes between 12 and 13 around the time of their closest approach.

### News from the risk list

Two objects entered high positions in our risk list in November.

- 2025 VP2 entered our risk list in mid-November with an impact probability of about 1 in 4000 in 2048, corresponding to a Palermo Scale rating of about -3. Subsequent observations, including many by our team, led to a progressive decrease of the impact probability, until its complete removal from the risk list.
- 2025 WG4 also entered the list at a similar Palermo Scale level, but as of early December it is still rated high in the list.

\*The risk list of all known objects with a non-zero (although usually very low) impact probability can be found at <https://neo.ssa.esa.int/risk-list>

## In other news

- Based on images captured by the 0.8 m Schmidt telescope in Calar Alto on the morning of 29 November, the NEOCC observers team discovered a faint, previously unknown object. The object exhibited a thin tail pointing away from the Sun, suggesting activity. Follow-up observations indicated that the object is moving on a typical main-belt orbit.
- At ESA's Ministerial Council, Member States confirmed full support for the RAMSES planetary defence mission.
- At Mt. Mufara, the interface plate for installation of the Flyeye-1 telescope has been successfully installed and aligned atop of the pier. Also the metal structures for the office buildings are now in place. Industry is making a concerted effort to complete all concrete works before the winter break, despite the first snowfall having occurred already. Construction activities are expected to resume immediately after the winter break, with the telescope installation expected to start next summer.
- Graduate students are invited to apply for the 2026 [Schweickart Prize](#) with innovative proposals in planetary defence. The deadline for applications is on 4 February 2026.

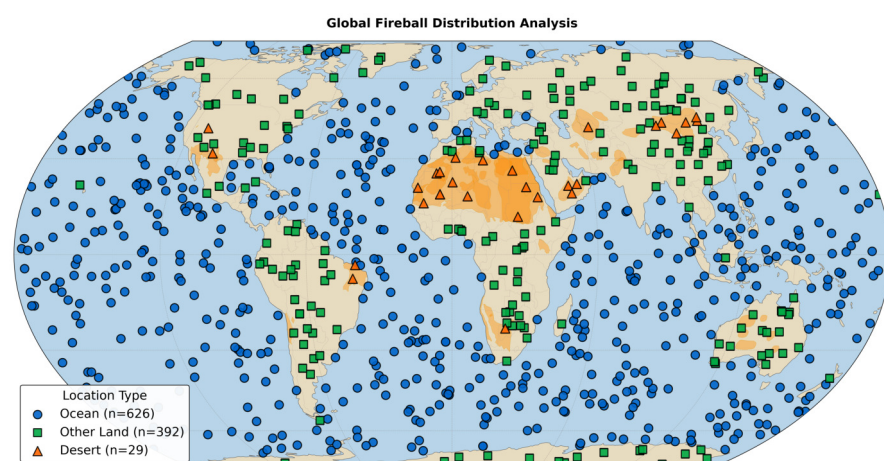
## Upcoming events

- Asteroids, Comets, Meteors Conference, 6-10 July 2026, Poznań, Poland  
<https://acm2026.eu/>

## Number of known NEAs over the years

The table shows the number of known NEAs over the years from the first ever discovered NEAs, (433) Eros, discovered on 13 August 1898, to this month when we crossed the 40 000 known NEAs threshold.

# of known NEAs	Date	Time difference	Discovery rate (#NEAs / year)	Top 3 discoverers
1	1898	-	-	-
5000	November 2007	109 years	46	LINEAR (40%), Spacewatch Kitt Peak (11%), Catalina Mt. Bigelow (11%)
10000	August 2013	5.75 years	870	Catalina Mt. Lemmon (38%), Catalina Mt. Bigelow (22%), Pan-STARRS 1 (12%)
15000	September 2016	3 years	1620	Pan-STARRS 1 (45%), Catalina Mt. Lemmon (26%), Catalina Mt. Bigelow (15%)
20000	March 2019	2.5 years	2000	Catalina Mt. Lemmon (44%), Pan-STARRS 1 (33%), Catalina Mt. Bigelow (9%)
25000	January 2021	22 months	2700	Catalina Mt. Lemmon (43%), Pan-STARRS 1 (33%), Pan-STARRS 2 (8%)
30000	September 2022	20 months	3000	Catalina Mt. Lemmon (36%), Pan-STARRS 1 (21%), Pan-STARRS 2 (21%)
35000	April 2024	19 months	3200	Catalina Mt. Lemmon (34%), Pan-STARRS 2 (20%), Pan-STARRS 1 (17%)
40000	November 2025	19 months	3200	Catalina Mt. Lemmon (26%), Pan-STARRS 2 (26%), Pan-STARRS 1 (16%)



Distribution map for large fireballs generated from [JPL's fireball database](#) in Equal Earth projection. Approximately 60% fall over the oceans, about 3% over deserts, and the remaining 37% over other land areas, numbers that roughly resemble how Earth's surface is divided.

[Data source: NASA / JPL]

## Links for more information

Website: <https://neo.ssa.esa.int>

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

Risk List: <https://neo.ssa.esa.int/risk-list>

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