

LEO debris density - August 2026

This monthly report summarises the state of the low-Earth-orbit debris population as measured by Ephem’s nightly SGP4 propagation of the CelesTrak active catalog. It covers the ten tracked notable shells between 400 and 1,400 km. All numbers are reproducible from the sources cited in §7 of the methodology PDF.

§1 Executive summary

Across the ten tracked shells, Ephem observed 0 propagated objects at the most recent nightly run. No bin-level density was available from the API worker at report time - see §5 for the fallback disclosure.

A one-day catalog diff was not available at report time; the delivery pipeline retains stale-known-good and will resume when the nightly propagator publishes its next diff.

§2 Per-shell density snapshot

Each row is one 10 km-thick spherical shell. "Total" is the number of tracked objects with altitude at the report epoch inside the shell. "Peak bin" is the densest 5°×10° cell within the shell.

Alt (km) Label Total Bins Peak (obj / density per km^3)

400	ISS shell	0	0	-
500	Starlink Gen1 lower	0	0	-
550	Starlink primary	0	0	-
600	Sunsynch band	0	0	-
700	OneWeb secondary	0	0	-
780	Iridium NEXT	0	0	-
800	SL-16 debris field	0	0	-
850	Historic sunsynch	0	0	-
1200	OneWeb primary	0	0	-
1400	Kessler-danger band	0	0	-

§3 Notable additions and removals

No diff envelope was available at report time.

§4 Population trend commentary

No populated shell data was available at report time - commentary suspended for this edition.

§5 Data availability disclosure

Any shell where "total" is 0 or "peak bin" is "-" indicates the API worker's KV entry was empty or unreachable at report time. Ephem's policy for the debris feed is stale-known-good: the previous nightly envelope continues to serve rather than a partial or fabricated number. When this report references an unavailable shell, that indicates the nightly cron has not yet populated the KV entry - subscribers should treat it as "no new information this cycle," not "zero density."

§6 Methodology reference

Full derivation of the numbers in this report - catalog, propagator, binning, error bars, refresh cadence, diff semantics, reproducibility - is in the accompanying methodology PDF, downloadable at ephem.pages.dev/methodology.pdf. The pinned satellite.js SGP4 wrapper and binning parameters have not changed since the methodology's v1.0 release.

Any question that starts with "what is your source for..." is answered by pointing at §1-§8 of the methodology PDF. Any question that starts with "why did the density change..." is answered by the /shell/diff endpoint. If neither answers it, contact naraxcel.studio@gmail.com and we'll open an inquiry - one-week response for academic and regulatory reviewers.