NEOCP to Tycho

Detailed user manual - Version 1.1.0

Purpose

NEOCP to Tycho integrates current NEOCP and PCPP object orbits into Tycho, either manually or fully automatically. These objects can then be used like normal minor-planet orbital elements.

1. Quick start

1. Start the app.

2. Let it find CUSTOM.ORB or select the file.

3. Click Check / load orbits.

4. Select new or updatable orbits and apply the selection.

5. Optionally retain obsolete orbits and delete them manually later.

2. Finding the Tycho file

The app first locates Tycho and reads the user-specific Settings > Known Objects > MPCORB.CUSTOM entry. If that file is missing, it displays the checked path and explains where to verify it in Tycho. Writing actions require a valid CUSTOM.ORB.

3. Orbit validation

The orbit file is downloaded exclusively from the network. An online file no more than one hour old is accepted directly. Older data requires a current, successful, completed published get-cp status. Incomplete or stale output is never written to Tycho. A progress bar shows percentage, ETA, and expected finish time.

4. Lists and selection

New and updatable orbits contains new or changed elements. In CUSTOM.ORB shows active stored objects. No longer on NEOCP/PCCP shows obsolete records. Click selects one entry, Ctrl + click selects separate entries, and Shift + click selects a range. Select all (Ctrl-A) selects the full visible list.

5. Applying and retaining old orbits

Newer elements only replace older elements with the same designation. Retain obsolete orbits until manually deleted preserves objects no longer listed by the MPC, allowing older images to be processed later. Every GUI write requires confirmation.

6. Motion and PA envelope

Actions > Start motion and PA envelope calculates the envelope of all published uncertainty variants for a selected UTC time. Motion is conservatively reported to 0.1 arcsecond/minute and PA in whole degrees. Results appear in a GUI tab and in web\bewegung_pa_huelle.html and web\bewegung_pa_huelle.json below the program directory. JSON is intended for custom programs and scripts. Motion and PA can narrow the search window in Tycho

Synthetic Tracking.

7. Task scheduling

The Windows task can be viewed in full before editing or deletion. Start time plus daily, hourly, or minute recurrence are configurable. The task performs a fully automatic online check and update.

8. Language, updates, and the 90-day rule

German and English can be selected in Settings and the choice is retained. First launch follows the OS language, falling back to English. The 90-day rule concerns only a demonstrably newer software release, never orbit-data age.

Command line

--custom-orb PATH	Tycho CUSTOM.ORB; required by --apply and --remove-stale.
--apply all|FILE|OBJECT	Apply all, a UTF-8 list, or exactly one current object designation.
--remove-stale all|FILE|OBJECT	Remove all, a UTF-8 list, or exactly one obsolete designation; requires --custom-orb.
--download / --status / --list	Download online, validate, or list differences.
--schedule HH:MM	Create a task with --schedule-type DAILY|HOURLY|MINUTE and an interval.
--envelope	Calculate motion and PA envelopes with configurable time and outputs.
--json	Machine-readable output for automation.

Example: NEOCP_to_Tycho.exe --custom-orb "C:\...\MPCORB.CUSTOM" --download --apply P21abcD --json