Compliance sheet — star-orbit

Everything a supplier qualification, a legal review or an export check usually asks about star-orbit 0.2.2, in one document.

1. Identity

Document	STAR-PKG-STAR-ORBIT-EN · v2.3 · 2026-11-14
Package	star-orbit
Version	0.2.2
Capability	star.orbit.propagation
Maturity	Beta (VERIFIED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_orbit

2. Licence and obligations

Apache License 2.0. You may use, copy, modify and distribute it, also commercially, and you receive a patent licence from the contributors. When you redistribute it: keep the LICENSE file and the copyright notices (and a NOTICE file, if a future version adds one), and state in modified files that you changed them. You may not use the S.T.A.R. name to endorse your product.

3. What it needs at run time

NEEDS	LICENCE	SOURCE
star-timescales	Apache-2.0	S.T.A.R.

4. Integrity

SHA-256 fingerprints of the files published on this website. Check a downloaded file with:

```
python -c "import
hashlib,sys;print(hashlib.sha256(open(sys.argv[1],'rb').read()).hexdigest())" star_orbit-
0.2.2-py3-none-any.whl
```

FILE	SHA-256
star_orbit-0.2.2-py3-none-any.whl	ef98a4e44c6d0249bda2c68dbd7a85f0bbb4b b1a892bac0a1f16da790fa14c05
star_orbit-0.2.2-source.zip	d715b1ee14cf0d63de4ecd0233eb618d1714a f8eca801d297d21fc2f6135b724

5. What it does, and its limits

Cowell numerical orbit propagation (fixed-step RK4) with two-body + J2 gravity, federated with star-timescales for epochs.

Drag/SRP in the released package, higher-order geopotential, third bodies, published reference trajectory comparison, any operational or flight use.

- `propagate_orbit(OrbitState, duration_sec, step_sec, include_j2=True, ...) -> list[OrbitState]`, SI units (m, s, m/s), mu = 3.986004418e14 m^3/s^2, Re = 6378137 m, J2 = 1.08262668e-3 (WGS-84 / EGM96).
- Requesting a force that is not available (drag/SRP without star-weather) raises `RuntimeError`; a force is never silently dropped.

6. Export, use and certification

The package is published and freely available. That usually takes software out of export-control lists, but not every use of it: read the page on space activities and export control before using it in a controlled programme. It is not certified or qualified for flight; the evidence describes what was tested and how.

7. Citation and bill of materials

```
@software{cavazzini_star_orbit_0_2_2,
  author  = {Cavazzini, Andrea},
  title   = {{star-orbit}: Numerical orbit propagation (Cowell, fixed-step RK4) with two-body
+ J2 gravity, linked to star_timescales},
  version = {0.2.2},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_orbit/},
  note    = {Apache-2.0. Source: https://github.com/Andrea07072000/S.T.A.R.-, commit dc09f61d}
}
```

CITATION.cff · BibTeX · SBOM CycloneDX 1.5 · SBOM SPDX 2.3

8. Warranty and liability

Provided "as is", without warranties or conditions of any kind (Apache License 2.0, sections 7 and 8), to the extent the law allows. This never excludes liability that the law does not allow to exclude.

Related: space activities and export control · acceptable use · evidence and limits · licence texts