Compliance sheet — star-galactic

Everything a supplier qualification, a legal review or an export check usually asks about star-galactic 0.1.0, in one document.

1. Identity

Document	STAR-PKG-STAR-GALACTIC-EN · v2.3 · 2026-11-14
Package	star-galactic
Version	0.1.0
Capability	star.frames.galactic
Maturity	Released & Verified (RELEASED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_galactic

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

Nothing beyond the Python standard library: it works offline.

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_galactic-
0.1.0-py3-none-any.whl
```

FILE	SHA-256
star_galactic-0.1.0-py3-none-any.whl	cd897abaa0ce377ca5cb483570798e4521171f28da5fad02ef6dca7f59146ded
star_galactic.py	173b30d65a0a48cb8868df6db740ce2245c04246ac2cb0dbf7b916a6417a5fbc
star_galactic-0.1.0-source.zip	1bf0904de659b85096c9ab4aa54e86ec651aebc57d92380fc68811842f250f39

5. What it does, and its limits

Galactic longitude and latitude from equatorial directions and back, in the Hipparcos (ICRS) and IAU 1958 (B1950) definitions; agrees with ERFA, astropy and SPICE to 1.1e-13 deg on 600 directions in both directions and refuses out-of-range input.

No precession and no FK4 → FK5 conversion: a J2000 direction passed with "b1950" gives a wrong answer by degrees, and an FK5 J2000 direction passed with "icrs" differs from other libraries' FK5-based galactic frames by about 0.02 arcsec. The "icrs" system is compared with one library (ERFA) plus its published definition, not two libraries. At a galactic pole the longitude is undefined and the value returned is arbitrary within [0, 360).

- System "icrs": galactic pole at ICRS 192.85948, +27.12825 and longitude of the celestial pole 122.93192 (ESA 1997, Hipparcos, vol. 1, 1.5.3).
- System "b1950": galactic pole at B1950.0 192.25, +27.4 and longitude of the celestial pole 123.0 (IAU 1958). Reproduces Meeus Example 13.b.
- The two functions are inverse of each other; longitudes out are in [0, 360). Measured on 600 directions (100 down to 1e-6 deg from a galactic pole), in both directions: within 9e-14 deg of ERFA ("icrs") and within 1.1e-13 deg of astropy and SPICE ("b1950").
- Every function returns finite floats or raises `ValueError`: non-numeric, boolean, NaN or infinite input, latitude or declination outside [-90, 90], longitude or right ascension outside [-360, 360], an unknown system.

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_galactic_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-galactic}: Equatorial ⇄ galactic directions},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_galactic/},
  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