Compliance sheet — star-epoch

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

1. Identity

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

2. Licence and obligations

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

FILE	SHA-256
star_epoch-0.1.0-py3-none-any.whl	a252f6bbaf5589338e460e7089df5090e668ae04b3128659e390f93922483a44
star_epoch.py	305bee05dfcb9153cc06397813e6897c8f84412fdccd86d8b326f5380103d5b3
star_epoch-0.1.0-source.zip	d945939b551b9cef4d64188edb4ef8dac9d983b817584324900d5a50a032b236

5. What it does, and its limits

Julian and Besselian epochs to and from two-part Julian Dates; agrees with ERFA to 5e-13 yr, with skyfield and five SPICE constants to 3e-10 day on 600 dates and 600 epochs, and refuses out-of-range input.

No time-scale conversion: the epoch is in the scale of the date passed (TT for catalogue epochs). Besselian epochs are compared with one full library (ERFA) and two SPICE constants, not two full libraries. An epoch held in one float resolves about 17 microseconds near the year 2000; use the two-part date when that matters. The agreement with ERFA is exact because the arithmetic is the same: it shows the same convention, not an independent derivation of the constants, which come from the publications above.

- `julian_epoch` and `jd_from_julian_epoch`: J2000.0 = JD 2451545.0 and a Julian year of 365.25 days. Reproduce J1900.0, J1950.0, J2000.0 and J2100.0 exactly.
- `besselian_epoch` and `jd_from_besselian_epoch`: B1900.0 = JD 2415020.31352 and a tropical year of 365.242198781 days (Lieske 1979). Reproduce B1950.0 = JD 2433282.4235 and J2000.0 = B2000.0012775.
- Dates are Julian Dates in two parts; the inverse functions return a day ending in .5 and a fraction in [0, 1). Measured on 600 dates and 600 epochs over 1600–2400: epochs within 5e-13 yr of ERFA, Julian epochs within 5e-13 yr of skyfield, dates identical to ERFA and within 3e-10 day of skyfield and of five SPICE constants.
- Every function returns finite floats or raises `ValueError`: non-numeric, boolean, NaN or infinite input, a date outside JD 2086302.5 … 2816787.5, a fraction outside [-1, 1], an epoch outside [1000, 3000].

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_epoch_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-epoch}: Julian and Besselian epochs},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_epoch/},
  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

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