Compliance sheet — star-era

Everything a supplier qualification, a legal review or an export check usually asks about star-era 0.1.2, in one document.

1. Identity

Document	STAR-PKG-STAR-ERA-EN · v2.3 · 2026-11-14
Package	star-era
Version	0.1.2
Capability	star.time.earth-rotation
Maturity	Released & Verified (RELEASED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_era

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_era-0.1.2-
py3-none-any.whl
```

FILE	SHA-256
star_era-0.1.2-py3-none-any.whl	b0f62feaae0ee3707c0a6c28debd06df9f76c522aa44f26123f0fe4507e5b68a
star_era.py	b4a2b1a0cf05a226236016ca318e668d60e48248dd19790e1435860590b2e373
star_era-0.1.2-source.zip	ba0a3a53430ae240eede8ff648d29f2b8c54ea3f5476ff7260d858ebf17a0243

5. What it does, and its limits

Earth Rotation Angle and IAU 2006 Greenwich Mean Sidereal Time from two-part Julian Dates over 1800-2200; reproduces the SOFA validation values to 1e-13 rad and agrees with ERFA and Skyfield within 4e-8 arcsec.

Mean sidereal time only: no equation of the equinoxes (apparent sidereal time), no polar motion, and UT1 is an input (UT1 - UTC comes from the IERS, not from here). For the 1982 GMST model see `star_sidereal`.

- `era_deg(ut1_day, ut1_frac=0)`: ERA in degrees in [0, 360), IERS Conventions (2010) eq. 5.15. Reproduces the SOFA validation value to 1e-13 rad.
- `gmst06_deg(ut1_day, ut1_frac, tt_day, tt_frac)`: ERA plus the IAU 2006 polynomial in TT (eq. 5.32). Reproduces the SOFA validation value to 1e-13 rad.
- Dates are two-part Julian Dates (any split); a nanosecond of UT1 stays visible. Measured on 1000 dates over 1800-2200: within 2.4e-8 arcsec of ERFA (ERA and GMST) and 3.6e-8 arcsec of Skyfield (ERA).
- Every function returns a finite angle in [0, 360) or raises `ValueError`: non-numeric, boolean, NaN or infinite input, a date outside 1800-01-01 to 2200-01-01.

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_era_0_1_2,
  author  = {Cavazzini, Andrea},
  title   = {{star-era}: Earth Rotation Angle and IAU 2006 sidereal time},
  version = {0.1.2},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_era/},
  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