Compliance sheet — star-albers

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

1. Identity

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

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

FILE	SHA-256
star_albers-0.1.0-py3-none-any.whl	c9dc992d306c6977d8946310988a4ef5d002b0e5904e1c14068d560fb6e44623
star_albers.py	2526228dcff2e0540ecc506cc8f42ccd770a5b0f4261beb2806047b7694011c8
star_albers-0.1.0-source.zip	79233697ad9c3326226558d840c6ccd3504a4fb6e4ef23db00d1a41a26159b80

5. What it does, and its limits

Albers equal-area conic projection, forward, inverse and both scale factors, for cones in either hemisphere and the tangent cone; within 1.9e-6 m of PROJ and 9.1e-7 m of PyGeodesy on 600 cases; reproduces Snyder's published coordinates and scale factors and refuses degenerate cones.

No false easting or northing, no named national grids. The cone constant is computed as a difference between the two standard parallels: when they are very close (0.04 deg apart in the worst case measured) about four digits are lost and the difference from the libraries reaches 2 micrometres; PyGeodesy's formulation does not have this loss. The accuracy stated is agreement with two libraries, not with a survey.

- `albers_forward` and `albers_inverse`: Snyder's formulas (USGS PP 1395, 14-1 … 14-21), cones in either hemisphere, equal parallels for the tangent cone, the central meridian anywhere including across the date line. Reproduce Snyder's numerical example to the printed 0.1 m.
- `albers_scale` returns (h, k) with h·k = 1: areas are preserved; k = 1 on the standard parallels. Reproduces Snyder's h = 1.0085173 and k = 0.9915546.
- Measured on 600 cones and points on WGS-84 (60 tangent cones): forward within 1.9e-6 m of PROJ and 9.1e-7 m of PyGeodesy; inverse within 2.6e-6 m of the starting point; parallel scale within 9e-14 of PyGeodesy and 1.3e-9 of PROJ (which differentiates numerically).
- Every function returns finite floats or raises `ValueError`: non-numeric, boolean, NaN or infinite input, latitudes beyond ±89, longitudes beyond ±180, standard parallels on opposite sides of the equator or within 1e-3 deg of it, an ellipsoid outside the stated ranges, a point outside the image of the cone.

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_albers_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-albers}: Albers equal-area conic projection},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_albers/},
  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