



CATASTROPHISM RESEARCH ASSOCIATION

THE METHODOLOGY OF THE ASSOCIATION

Contributor Field Guide

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Purpose: everything a capable contributor needs in order to work to the Association's standard in an afternoon. The standard in plain language, with worked examples and every template. Where this guide and the Standards differ, the Standards govern.

Applies to: contributors preparing work for Association publication, and any reader who would rather meet the standard through examples than through the standard itself.

1. The idea in one paragraph

CRA publishes work that can be checked. Every claim says what kind of claim it is. Every hypothesis says what would prove it wrong. Every source carries a grade. Every model earns its standing by testing, not by presentation. Every prediction is written down before the fact and scored after. If your work can live with those five sentences, it belongs here.

2. The three labels, in one minute

Label every substantive claim you make as one of:

- **EF · Established Finding.** Measured, or independently corroborated at high grade, with nothing of equal grade contradicting it. Example: "The excess length of day reached negative values repeatedly in 2024 and 2025 (EF; IERS C04)."
- **WH · Working Hypothesis.** Your proposed explanation. It must come with what it explains and what would falsify it. Example: "The post-2015 tightening of the polar wobble reflects a change in core-mantle coupling state (WH; falsification condition below)."
- **OQ · Open Question.** A material unknown you are naming honestly. Example: "Whether the current dipole decline continues past the 7 ka minimum is an open question (OQ)."

Rules of thumb: if you measured it, EF with the source. If you are explaining it, WH with a falsification condition. If you do not know, OQ, said plainly. Never mix two labels in one sentence; split the sentence.

3. Writing a falsification condition

Use the four-part template:

> If [observable] in [instrument or dataset] shows [threshold or signature] > within [window, if time-bound], this hypothesis is refuted or requires revision.

Example: "If the mean pole drift azimuth in the IERS C04 annual means returns to within one sigma of its 1976 to 2000 direction for three consecutive years by 2031, the coupling-change hypothesis is refuted."

A condition no realistic observation could trigger does not count.

4. Grading your sources

Grade	What it means	Rule of thumb
S1	Primary instrumental or archival data	The instrument's own producer: IERS, IGRF, observatory records
S2	Peer-reviewed or independently replicated	A journal paper, or an analysis two parties reproduced independently
S3	Documented secondary, provenance known	A technical report, curated database, credentialed public analysis
S4	Uncorroborated	A claim you cannot trace or verify

EF needs S1, or two independent S2 lines. S4 can motivate an Open Question and nothing more. Two sources that share one origin count as one. State the version and date of every dataset you use.

5. Publishing through the Association

1. Register your draft (title, tier, datasets, models, forward claims).
2. Run your own audit with the checklist in Section 10 and attach a claims table.
3. Standards review comes back in about five business days: pass, revise, or escalate.
4. Forward claims are registered before release; model claims need grade M2 or higher.
5. Release, with your name on it. Acceptance means the work meets the standard; you keep attribution and your own conclusions.

Member submissions follow the same path through the submission portal (SOP-2): intake, screen (about ten days), two-reviewer peer review (about thirty days), then accept, revise, or decline, always with written reasons.

6. Building and submitting a model

Every model climbs the same ladder, and its grade travels with every output:

- **M0 Conceptual.** An idea with structure. Discuss it as WH or OQ; do not plot it against data as if it predicts.
- **M1 Verified.** Your implementation demonstrably does what you say: test cases and sanity checks reproduce.
- **M2 Hindcast-tested.** You held back a declared slice of history, never tuned on it, and beat a stated baseline out of sample. A reviewer can reproduce the run from your card.
- **M3 Live-scored.** Your registered predictions have resolved and the score is public, hits and misses alike.

Only M2 and M3 models may issue forward claims. Predictive skill is claimed only from the M3 record. Fill in the model card (Section 10); your professional history goes on the card truthfully, but it is the ladder that gates, not the resume.

If your model implements another researcher's named framework: the originator is offered a fidelity review before their framework's name is used. If they decline or do not respond, your analysis still publishes; it is simply renamed to describe what it actually models. Attaching a famous name to something that departs from its specification is a standards violation in both directions, sympathetic or critical.

7. Using machine assistance honestly

Three rules:

1. **Disclose it.** If AI materially helped draft, code, analyze, or synthesize, say so in one standard sentence (template in Section 10).
2. **It is never evidence.** Anything quantitative must re-derive from named data and stated method by a third party who never touches the AI.
3. **You own it.** Fabricated citations or unverified generated results under your name are misrepresentation, whatever produced them.

Review here evaluates derivations, not eloquence. Polish earns nothing; reproduction earns everything. The Association discloses its own machine assistance under the same rule.

8. Working with CRA datasets

Every package in the research library contains the cleaned CSV, a README with the exact cleaning steps and column definitions, the preparation script that reproduces the file from its named source, and SHA-256 checksums. Verify the checksum after download. State the package identifier and version in your work, for example: "cra:eop-c04-daily-1962-2025 v1.0". The READMEs state each source's terms;

CRA cleaning is mechanical only, so anything you find in the data is the source's signal, not our processing.

Citation format: Catastrophism Research Association (year): [package title], v[x.y], cra:[slug]. Underlying data: [source line from the README].

9. Proposing material for the Collection

The Collection is the curated shelf of outside work: analyses, threads, talks, and documents that inform the field, held by link and attribution, graded like any source, and clearly labeled as not-CRA-reviewed. Propose an entry with the link (to the author's own platform), the author's name, date, topic fields, and one line on why it matters. Owners can have their entries amended or removed at any time. Curated work that deserves more becomes a commissioned or submitted Archive piece, with the partnership honoraria attached, and a finder's honorarium recognizes the person who surfaced it.

10. Templates

Claims summary table (append to every work):

#	Claim (one sentence)	Label	Sources (grade)	Falsification condition (WH only)
1		EF / WH / OQ		

Machine-assistance disclosure (choose and complete):

> Machine assistance: [none beyond routine tooling] / [AI-assisted drafting of prose] / > [AI-assisted code in [component], verified by [method]] / [AI-assisted literature > synthesis, all citations verified against originals]. All quantitative results > re-derive from the named data and stated methods without the assisting system.

Model card (one per model version):

Field	Entry
Model name and version	
Authors and relevant track record	
System modeled and question addressed	
Assumptions register	
Input datasets and versions	
Parameters and calibration method	

Field	Entry
Code availability	
Machine-assistance disclosure	
Maturity grade requested (M0 to M3)	
Holdout declaration (M2): interval, declared date, baseline	
Change log	

Forward claim registration:

Field	Entry
Statement (exactly as it will publish)	
Observable and dataset	
Threshold or signature	
Resolution date or trigger	
Model card and grade (if model-derived; M2 minimum)	
Registration date	

Submission checklist (self-audit before you submit):

- ☐ Every substantive claim carries exactly one label
- ☐ Every WH has a four-part falsification condition
- ☐ Every source is graded; dataset versions and currency dates stated
- ☐ Independent corroboration is truly independent (no shared origin)
- ☐ Figures: measured data only, schematics labeled, source lines on-figure
- ☐ Uncertainty stated wherever the data supports it
- ☐ Methods described to the standard of independent reproduction
- ☐ Models: card complete, grade supported, holdout discipline documented
- ☐ Named third-party frameworks: consent and fidelity review, or renamed
- ☐ Machine-assistance disclosure included
- ☐ Forward claims registered; none bypass the register
- ☐ Claims summary table attached

Document record

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Version	1.0
Issued	2026-07-21
Ratification	Not applicable; this guide restates the Standards and does not govern
Impression	Second impression, 2026-08-03. Front matter re-set for readers; no normative text altered.
Companion documents	Methodology Standards v1.1 (governing); Operating Procedures SOP-1 to SOP-6
Published	Openly at catastrophism.org/methodology
Change control	Re-issued whenever the Standards it restates are amended.

Version 1.0 · Catastrophism Research Association. This guide restates the Methodology Standards v1.1 for working use; the Standards govern.