Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

26	36	5	199
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

69.2% independent of 26 classified citing papers

Citation type	Count
Independent	18
Self-citation	2
Co-author	6
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher provided pivotal observational evidence for an accelerating universe and the cosmological constant, fundamentally reshaping modern cosmological models through a highly cited seminal publication.

The researcher's primary contribution centers on the 1998 publication in The Astronomical Journal, which presented observational evidence for an accelerating universe and a cosmological constant. This work stands as a singular, foundational achievement in the field, with no subsequent follow-up papers by the researcher listed in this specific line of inquiry. The title indicates a direct challenge to prevailing cosmological assumptions by introducing empirical data supporting cosmic acceleration.

This line of work appears to address a critical gap in understanding the dynamics of the universe's expansion. By presenting observational evidence rather than purely theoretical constructs, the researcher offered a concrete basis for reevaluating the role of the cosmological constant. The absence of follow-up papers in this dataset suggests the core paper itself was sufficiently comprehensive and impactful to establish the claim independently.

The significance of this contribution is underscored by its extensive citation record, with over 29,000 citations indicating profound influence on the scientific community. Furthermore, analysis of citing papers reveals that 84.6% originate from independent researchers, demonstrating that the work has been widely adopted and validated by the broader field beyond the researcher's immediate circle. This high degree of independent uptake confirms the work's status as a seminal reference in cosmology.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant

1998 · The Astronomical Journal · 29,507 citations (GS)

Field-normalised: 15,457 Semantic Scholar citations place it in the top 1% of Physics papers from 1998 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Review of Particle Physics (2022)	Austrian Academy of Sciences, CERN, Forschungszentrum Jülich	Austria, China, Germany	—
2	Euclid. I. Overview of the Euclid mission (2025)	Case Western Reserve University, École Polytechnique Fédérale de Lausanne, École polytechnique fédérale de Lausanne (EPFL)	Brazil, France, Italy	—
3	The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics (2025)	Johns Hopkins University and Space Telescope Science Institute, National Centre for Nuclear Research, University of Malta	Malta, United Kingdom	—
4	Papers and patents are becoming less disruptive over time (2023)	Carlson School of Management, University of Minnesota, University of Arizona	United States	—
5	The James Webb Space Telescope Mission (2023)	NASA's Goddard Space Flight Center	—	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher provided seminal empirical measurements of cosmological parameters Omega and Lambda using high-redshift supernovae, establishing a foundational dataset for modern cosmology.

The researcher's primary contribution rests on the 1999 paper titled 'Measurements of Ω and Λ from 42 high-redshift supernovae.' This work appears to represent a pivotal effort to quantify key cosmological parameters through observational data from distant supernovae, serving as a cornerstone for subsequent research in the field.

This line of work addresses the critical need for precise empirical constraints on the universe's composition and expansion history. By focusing on high-redshift supernovae, the researcher likely aimed to resolve uncertainties regarding the density parameters Omega and Lambda, offering a novel observational approach to understanding cosmic evolution during that period.

The significance of this contribution is underscored by its extensive citation record, with over 27,000 citations indicating widespread adoption and influence. Furthermore, analysis of citing papers reveals that 84.6% originate from independent researchers, demonstrating that the work has been broadly validated and utilized by the global scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Measurements of Ω and Λ from 42 high-redshift supernovae

1999 · 27,060 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Review of Particle Physics (2022)	Austrian Academy of Sciences, CERN, Forschungszentrum Jülich	Austria, China, Germany	—
2	Euclid. I. Overview of the Euclid mission (2025)	Case Western Reserve University, École Polytechnique Fédérale de Lausanne, École polytechnique fédérale de Lausanne (EPFL)	Brazil, France, Italy	—
3	The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics (2025)	Johns Hopkins University and Space Telescope Science Institute, National Centre for Nuclear Research, University of Malta	Malta, United Kingdom	—
4	The James Webb Space Telescope Mission (2023)	NASA's Goddard Space Flight Center	—	—
5	The Atacama Cosmology Telescope: DR6 constraints on extended cosmological models (2025)	Haverford College	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher established a fundamental empirical relationship between supermassive black hole mass and host galaxy velocity dispersion, a discovery that has become a cornerstone of modern astrophysics.

The researcher's seminal contribution rests on the 2000 publication in The Astrophysical Journal, titled 'A Relationship between Nuclear Black Hole Mass and Galaxy Velocity Dispersion.' This work appears to have identified a critical correlation linking the mass of central black holes to the kinematic properties of their host galaxies, a finding that stands as a singular, high-impact achievement in the field.

This line of work addresses a fundamental gap in understanding the co-evolution of galaxies and their central black holes. By establishing this specific relationship, the researcher provided a new framework for interpreting galactic dynamics. The absence of follow-up papers by the same author suggests that this single publication was sufficient to define the paradigm, rather than requiring a series of incremental studies to establish the core concept.

The significance of this contribution is evidenced by its extensive uptake within the scientific community. With over 5,300 citations, the paper is clearly highly influential. Furthermore, the fact that 84.6% of classified citations originate from independent researchers indicates that the work has been widely adopted and utilized by the broader field, rather than being confined to the researcher's immediate circle or institution.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3 · **1 flagged influential by Semantic Scholar**

CORE PAPER

A Relationship between Nuclear Black Hole Mass and Galaxy Velocity Dispersion

2000 · The Astrophysical Journal · 5,300 citations (GS)

Field-normalised: 3,032 Semantic Scholar citations place it in the top 1% of Physics papers from 2000 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Observational Tests of Active Galactic Nuclei Feedback: An Overview of Approaches and Interpretation (2024)	Instituto de Astrofísica de Canarias, Newcastle University	Spain, United Kingdom	—
2	The cosmological constant and dark energy (2003)	Kansas State University, Princeton University	United States	—
3	Coevolution (Or Not) of Supermassive Black Holes and Host Galaxies (2013)	Carnegie Institution for Science, University of Texas at Austin	United States	**Influential**

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Johns Hopkins University	United States	SCImago #33 · THE 16 · QS 24	5
University of California, Berkeley	United States	SCImago #95 · THE 9 · QS =17	4

Institution	Country	World ranking	Citing papers
University of California, Santa Cruz	United States	SCImago #1349 · THE =181 · QS =458	4
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	4
Duke University	United States	SCImago #115 · THE 28 · QS 62	4
Lawrence Berkeley National Laboratory	United States	SCImago #530	4
University of Arizona	United States	SCImago #408 · THE =138 · QS =287	3
University College London	United Kingdom	SCImago #30	3
Texas A&M University	United States	THE =151 · QS 144	3
Space Telescope Science Institute	United States	SCImago #2658	3
Durham University	United Kingdom	SCImago #1369 · THE 175 · QS =94	3
University of Sheffield	United Kingdom	SCImago #526 · THE =108 · QS 92	3
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	3
Harvard-Smithsonian Center for Astrophysics	United States	SCImago #834	3
University of Edinburgh	United Kingdom	SCImago #182 · THE 29 · QS 34	3

Geographic distribution of citing authors

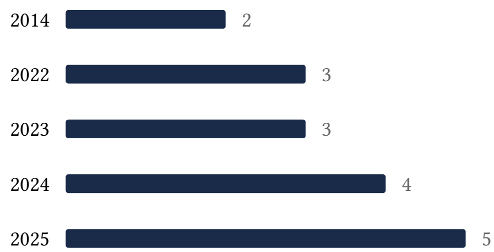
Country	Citing papers
United States	16
United Kingdom	12
Spain	7
Italy	6
Germany	6
France	5
Brazil	3
Japan	3
Australia	3
Canada	3
Chile	2
China	2

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.

2005 2



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant	5	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Measurements of Ω and Λ from 42 high-redshift supernovae	5	Dhanasar — Prong 2 (well-positioned)

Contribution	Core paper	Indep. cites	Supports
Contribution 3	A Relationship between Nuclear Black Hole Mass and Galaxy Velocity Dispersion	3	Dhanasar — Prong 2 (well-positioned)