

The Role of Librarians in FAIR Bibliography Curation and Metric Analyses



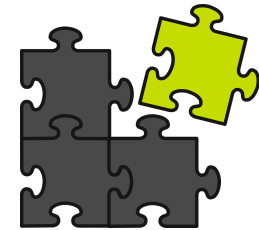
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Motivation

- Bibliographies are **one piece in the evaluative process**
- **Transparency, openness, and understanding of benefits and limitations** are key



Outline

- **Background** on bibliographies
- **FAIR** principles
- **Telescope & Staff bibliographies** at ESO & STScI
- **Open Access** considerations



What are mission (telescope / staff) bibliographies?

- Databases of publications that **fulfill specific selection criteria**: Can include science, engineering/instrumentation, dissertations, mentions, staff papers
- Typically **curated** by librarians
- **Intentional (meta-)data collection** provides basis for bibliometric studies

Shared understanding in bibliometrics

- **Productivity**: # papers; not equitable (favours large facilities)
- **Impact**: # citations, average cites, indices; strives to be equitable

Notes & caveats

- **Use the appropriate metric!** Article-level metrics, not journal-level
- Bibliometrics best used **intra-organisationally**; comparisons are problematic
- **Aim for responsible and comprehensive metrics**: all research artefacts; reward Open Science activities





FAIR PRINCIPLES IN ASTRONOMY



STScI | SPACE TELESCOPE
SCIENCE INSTITUTE

www.go-fair.org/fair-principles



FINDABLE

F1 Unique and persistent identifier. [Digital Object Identifiers \(DOIs\)](#) for papers & data, [ORCID](#) for staff

F4 Indexed in a searchable resource. [ADS](#): papers, [Arc interfaces](#): data, [Tel bib platforms](#): links
[between both](#)

ACCESSIBLE

A1 (Meta)data retrievable using standardised communication protocol. [Metadata in bibliographies](#)
[and underlying archival data linked via standard HTTP protocols](#)

INTEROPERABLE

I1 Use of formal, shared language for knowledge representation. [IVOA standards](#),
[Unified Astronomy Thesaurus \(UAT\)](#) for article keywords

I3 Include reference to other (meta)data. [Verify correct & complete IDs](#) in bibliographies,
[establish links](#) papers < -- > data, Press Release, instrument descriptions, etc.

REPRODUCIBLE

R1 (Meta)data richly described with accurate and relevant attributes. [Evolving and well documented](#)
[set of metadata used in telescope bibliographies; bibliographer collaboration](#)



Collaborators

Mediators

Bibliography curators

Builders, Initiators

Advocates



Plan S
Making full & immediate
Open Access a reality



DORA



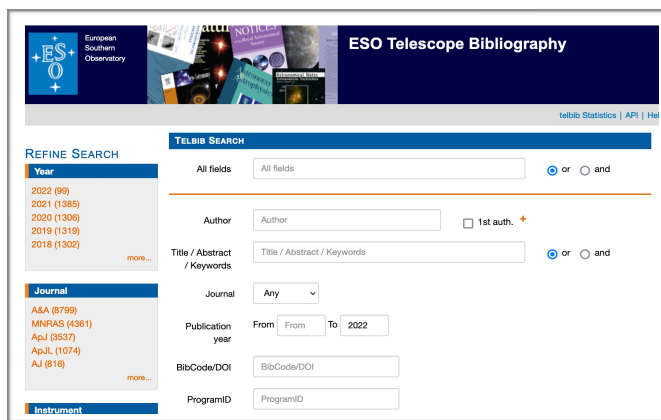
FORCE11
The Force of Research Collaboration and Open Access



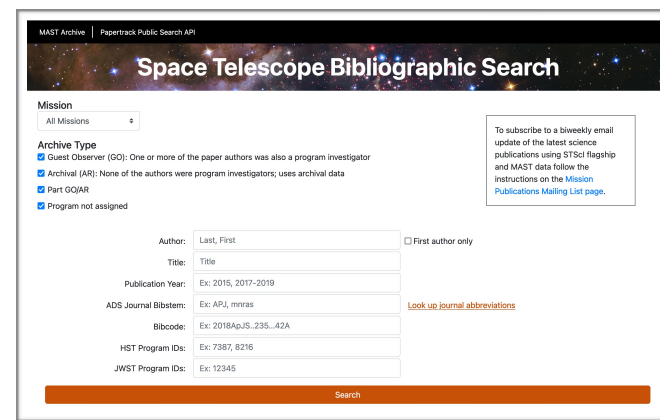
Purpose:

- **interconnect** resources (**link** papers to data in the archive)
- **study** observing programme characteristics vis-a-vis output
- **inform** researchers and institutions of how data is used or repurposed
- **provide suggestions** for future instrumentation or decommissioning of facilities

ADS

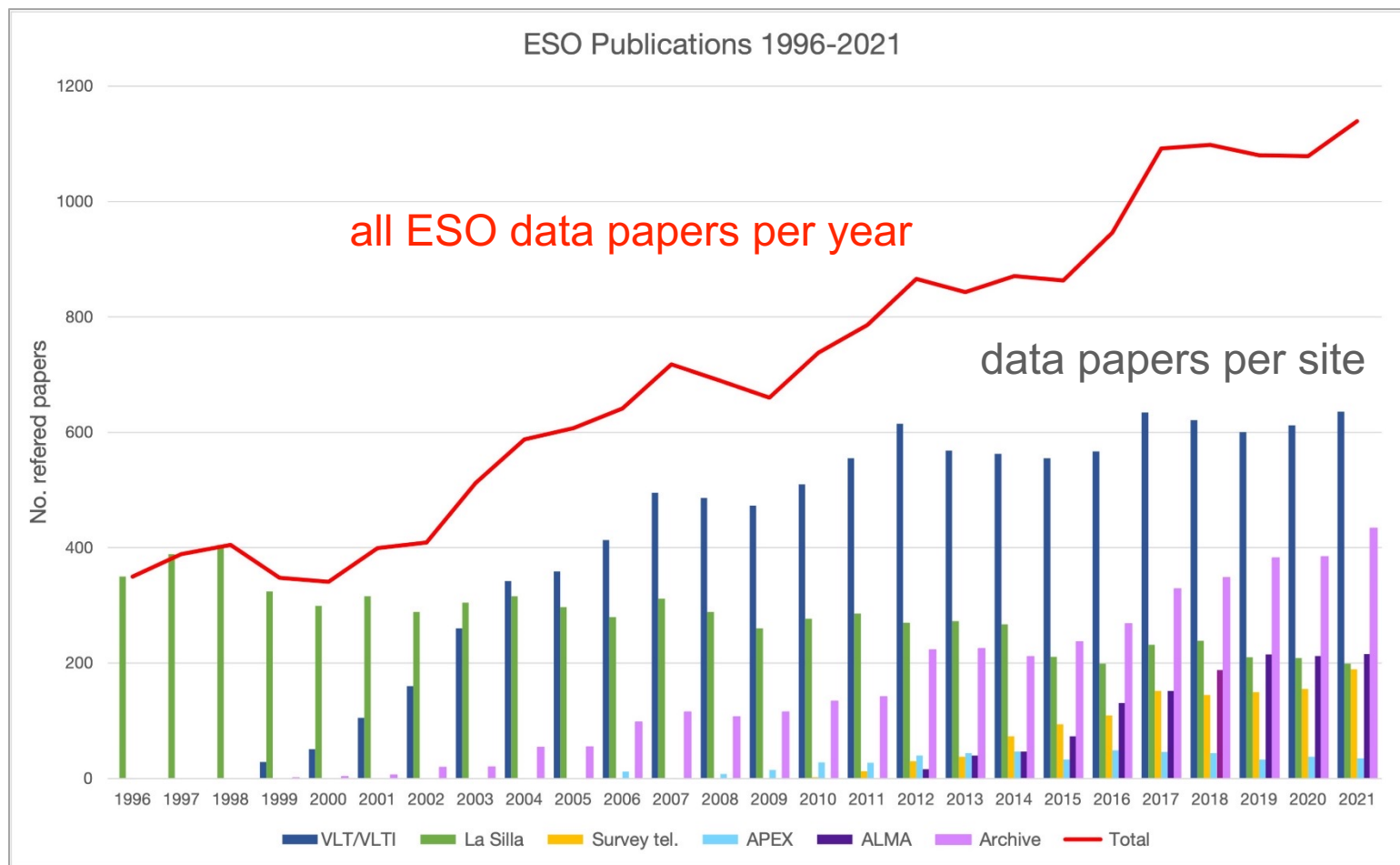
telbib.eso.org



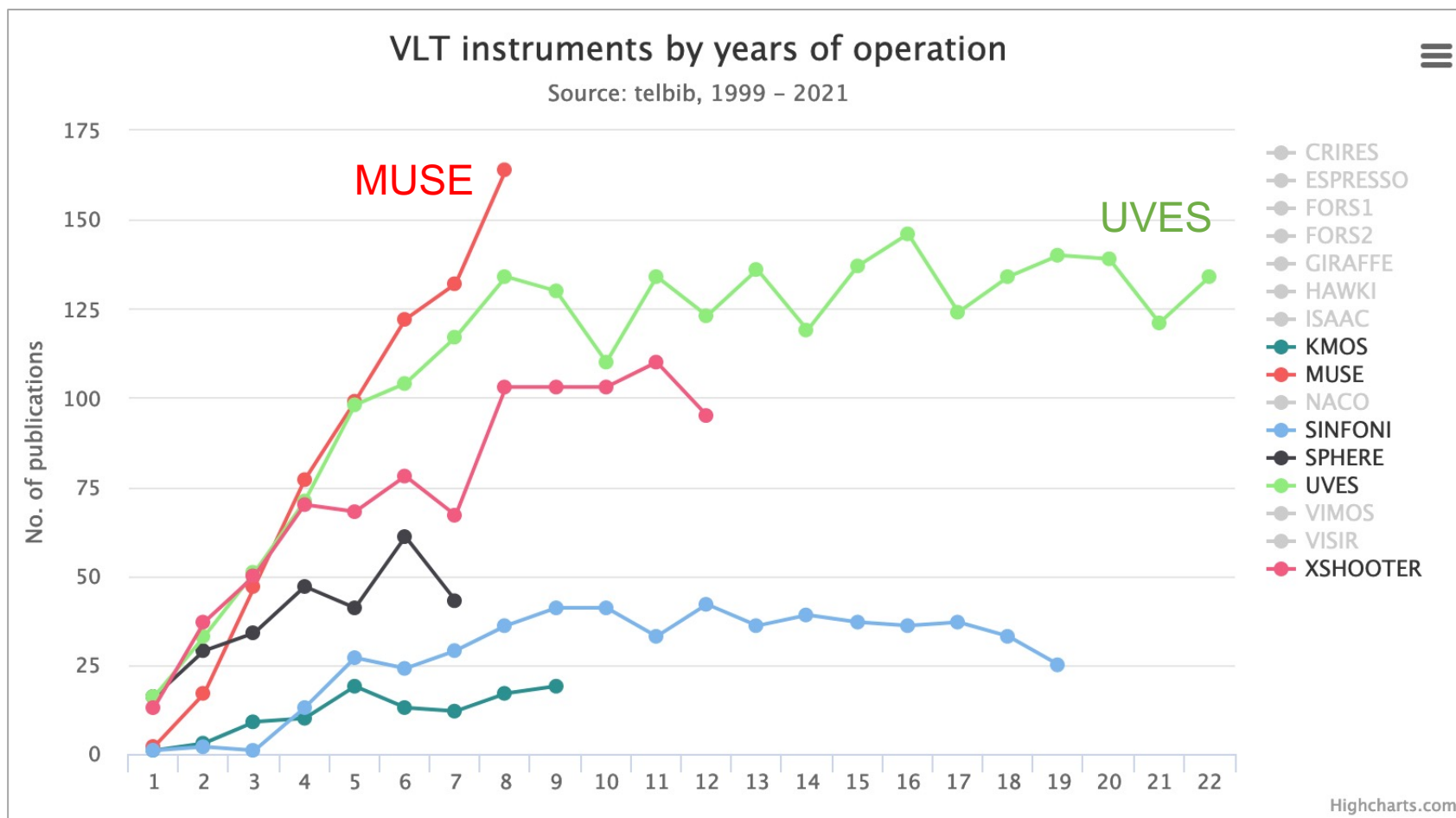
archive.stsci.edu/publishing/bibliography/#/



EXAMPLES (1)

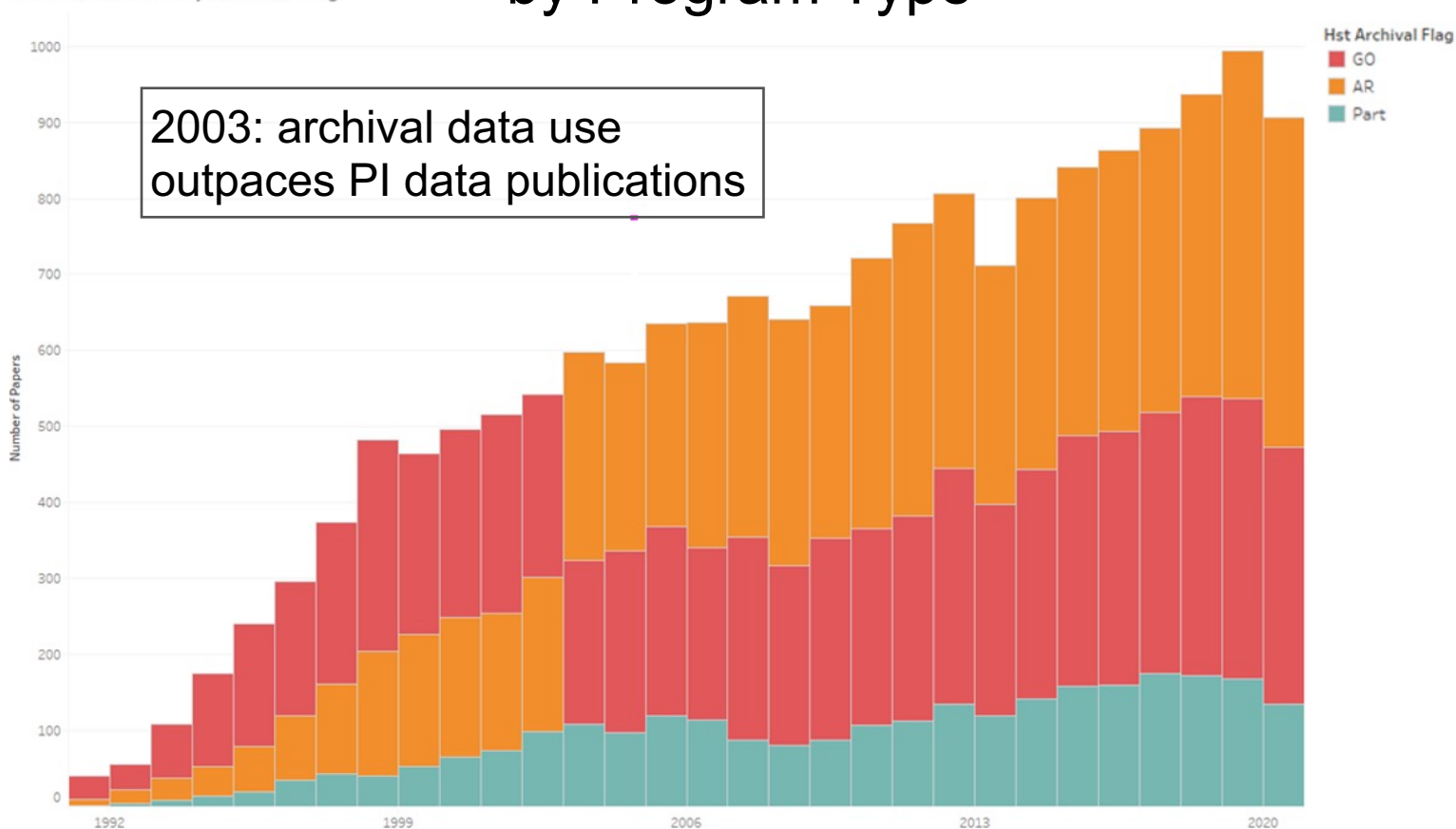


EXAMPLES (2)



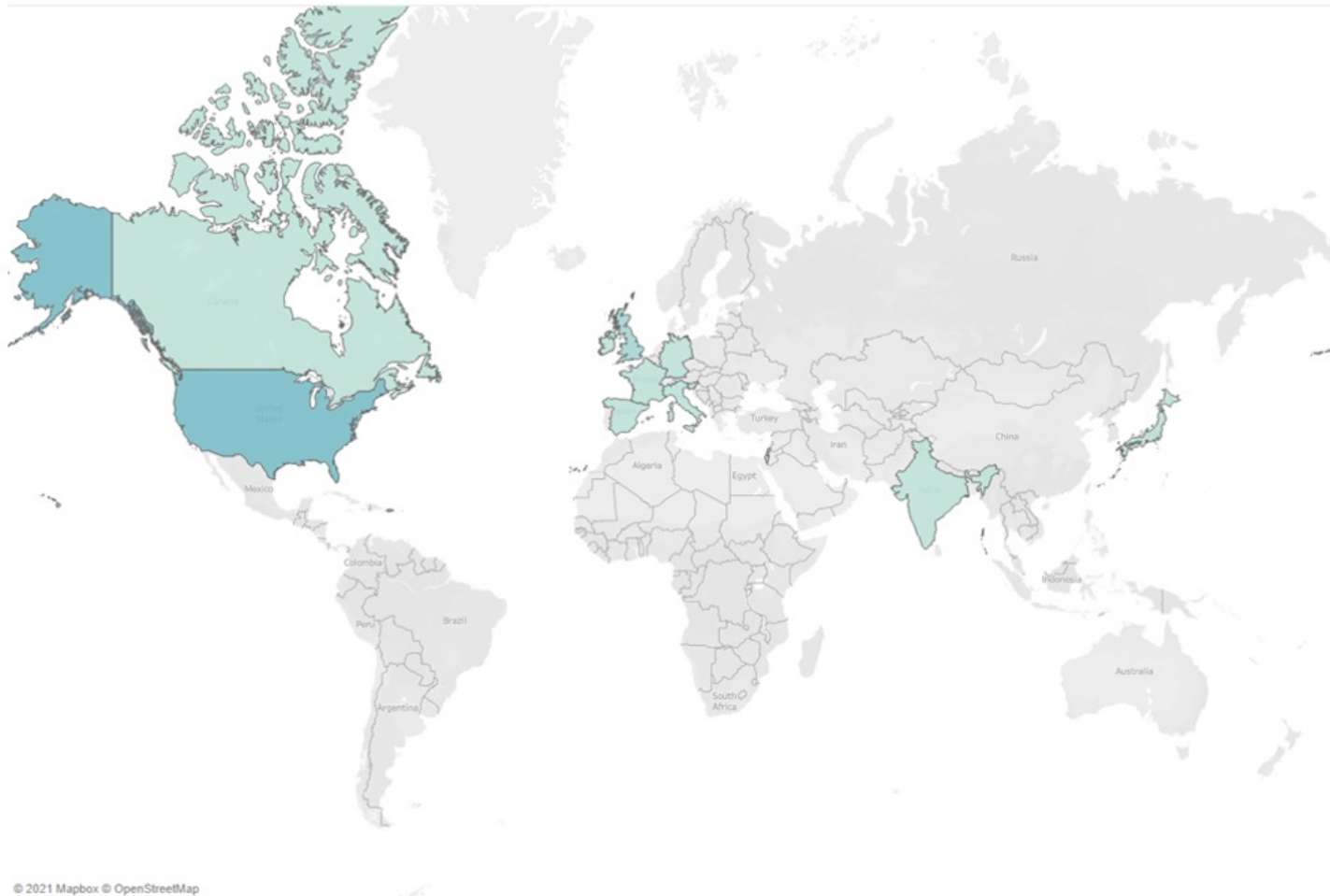
Hubble Space Telescope Annual Metrics by Program Type

HST Publications by Archival Flag



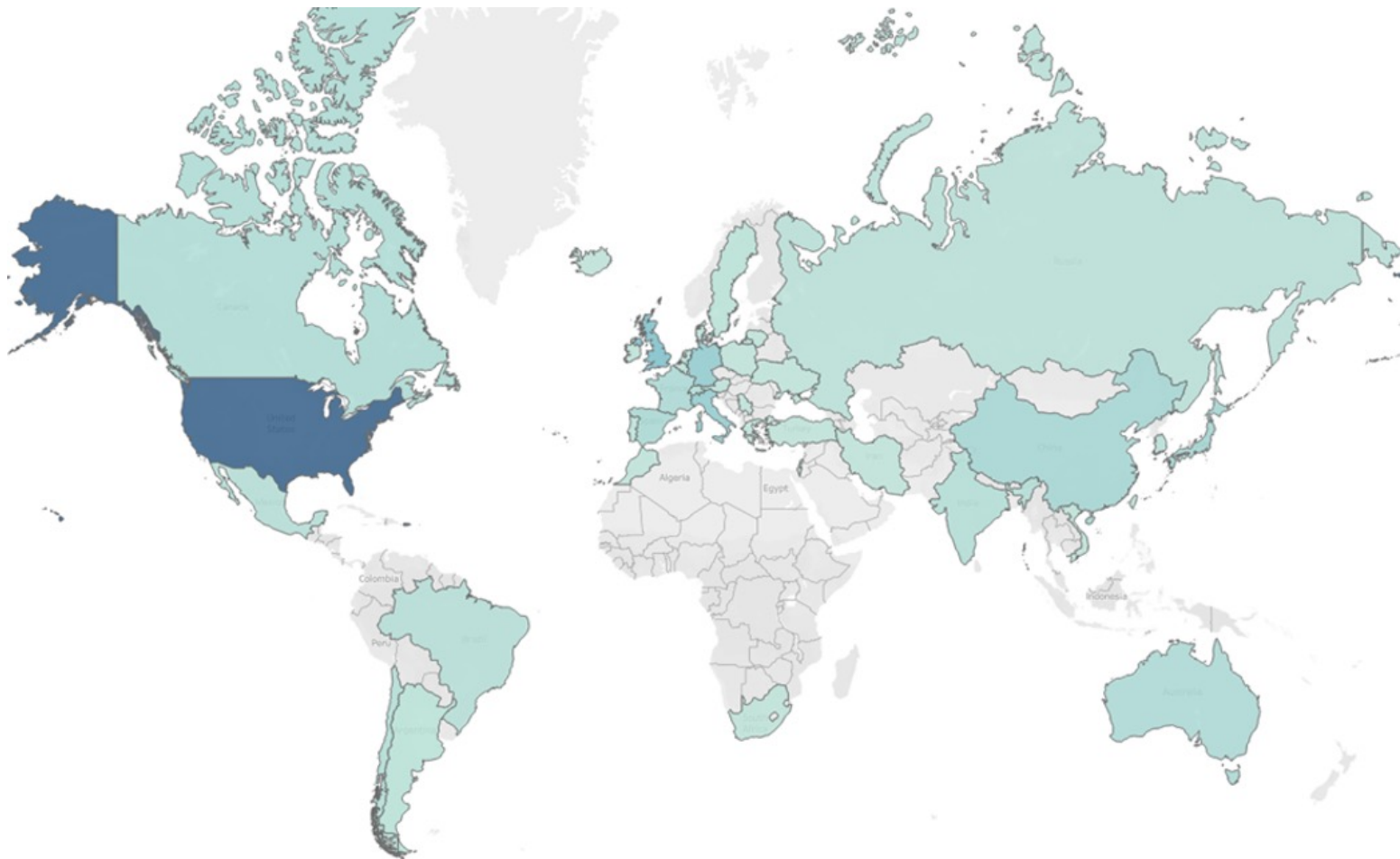
EXAMPLES (4)

Use of Hubble Data in 1995



EXAMPLES (4), CONTINUED

Use of Hubble Data in 2020





STAFF BIBLIOGRAPHIES – STScI



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SCIENCE INSTITUTE

Purpose

- Incorporate staff bibliometrics as [one evaluative tool among many](#)
- [capture breadth of “science activities”](#): mentoring/teaching, public outreach, committees and working groups, science talks/posters, SPIE/instrumentation, software and computational notebooks, white papers and pre-prints
- [ensure fair comparisons](#) for career stages, genders, research areas, etc.

Focus on equity

- [Pick one standard, e.g., ADS](#) as opposed to GoogleScholar, SCOPUS
- [use ORCID and RORs](#) for accurate name-entity associations
- h-index, if used, is accompanied by m-index and other [article-level metrics](#) (DORA)
- [maintain legacy staff data](#) to observe trends over time in both publishing and staff metric averages
- [remove self-citations](#)
- [enable degrees of “first authorship”](#)



- Paradigm shift: Open Science, Open Data, Open Review etc.
- Open Access: from subscription-based journals to general availability
- Motivations: Open publicly funded research; stop rising journal prices
- 2022: ApJ/L/Suppl and A&A moving to OA
- **Effect 1:** toll access barriers removed
- **Effect 2:** insecurities and questions, e.g.
 - Who pays publishing costs? How much? Funding sources?
 - Future of subscription-based journals? Only eprint platforms?
 - Freedom to choose where to publish?
- **Effect 3:** changes in publication behaviour and citations?



Our message today

- Bibliographies and metrics concerning publications and science activities are just one measure in the evaluative process; use these wisely!
- Transparency and application of FAIR Principles allows for more comprehensive and trustworthy assessments, whether for organisations, missions or individual researchers
- Astronomy libraries are vectors for communication among data archives, publishers, standards organizations (such as DOI Federation and IVOA), and researchers
- Thoughtful (meta)data curation can lead to meaningful analysis and informed decision making

Let's talk

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