Tracking Chandra Publications

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& all past and present members of arcops

Outline

- The bibliographic database: description and usage
- Information about the mission
- Further development
- Collaborations and Seamless Astronomy

Bibliography: what's in it?

- Article ID ("bibcode")
- Category:
  - Presents observations
  - Refers to published results
  - Predicts Chandra results
  - Instrumentation, software, etc.
  - Cannot be classified
- Refereed?
- Publication date
- Data links to archive

Bibliography: what's in it (2)?

- Publication form
  - Article, erratum, memo, abstract, data
- Publication type
  - Journal, proceedings, thesis, circular, review, multi-media, etc.
- Instrument
  - ACIS, HRC, gratings, …, software, operations
- Associated subjects
  - Multi-wavelength, theory, follow-up
- Contributing observatories
- Journal keywords

Database: population and maintenance

- Weekly scan of ADS on key words in title or abstract
- Candidate papers go into database
- Distributed for review and classification to arcops
- Review:
  - Accept?
    - If yes, classify
    - Data links:
      - If yes, find them
  - Second review, if feasible
- Labor-intensive, but worth it

Bibliographic Database

- Chandra science paper:
  - Chandra observations have contributed significantly to the scientific results of the paper
    - Just used the position of a source detected by Chandra: NO
    - Analysis and interpretation of Chandra spectra from another paper: YES

Research with the Bibliography

- The bibliography was originally set up as a service to our users by the CDA – it is first and foremost a research tool, to be used in three ways:
- Links to publications while browsing the archive
  - WebChaser, Footprint Service
- Links to underlying data while browsing the literature
  - ADS
- Combined browsing
  - http://cxc.harvard.edu/cgi-gen/cda/bibliography
  - http://labs.adsabs.harvard.edu/semantic/alpha/explorer/publications

Dataset Ids and Bibliography

- Each ObsId's Primary and Secondary data product packages are assigned a DatasetID
- Special DatasetIDs: groups of ObsIds or contrib. prods
- Bibliography database links DatasetIDs with bibcodes
- Mirrored to ADS
- CDA resolves DatasetID URIs into URLs
- Authors can insert DatasetIDs in manuscripts (please do! it helps a lot); see AAS and CDA web pages
- DSID-DSID links (between missions) are possible

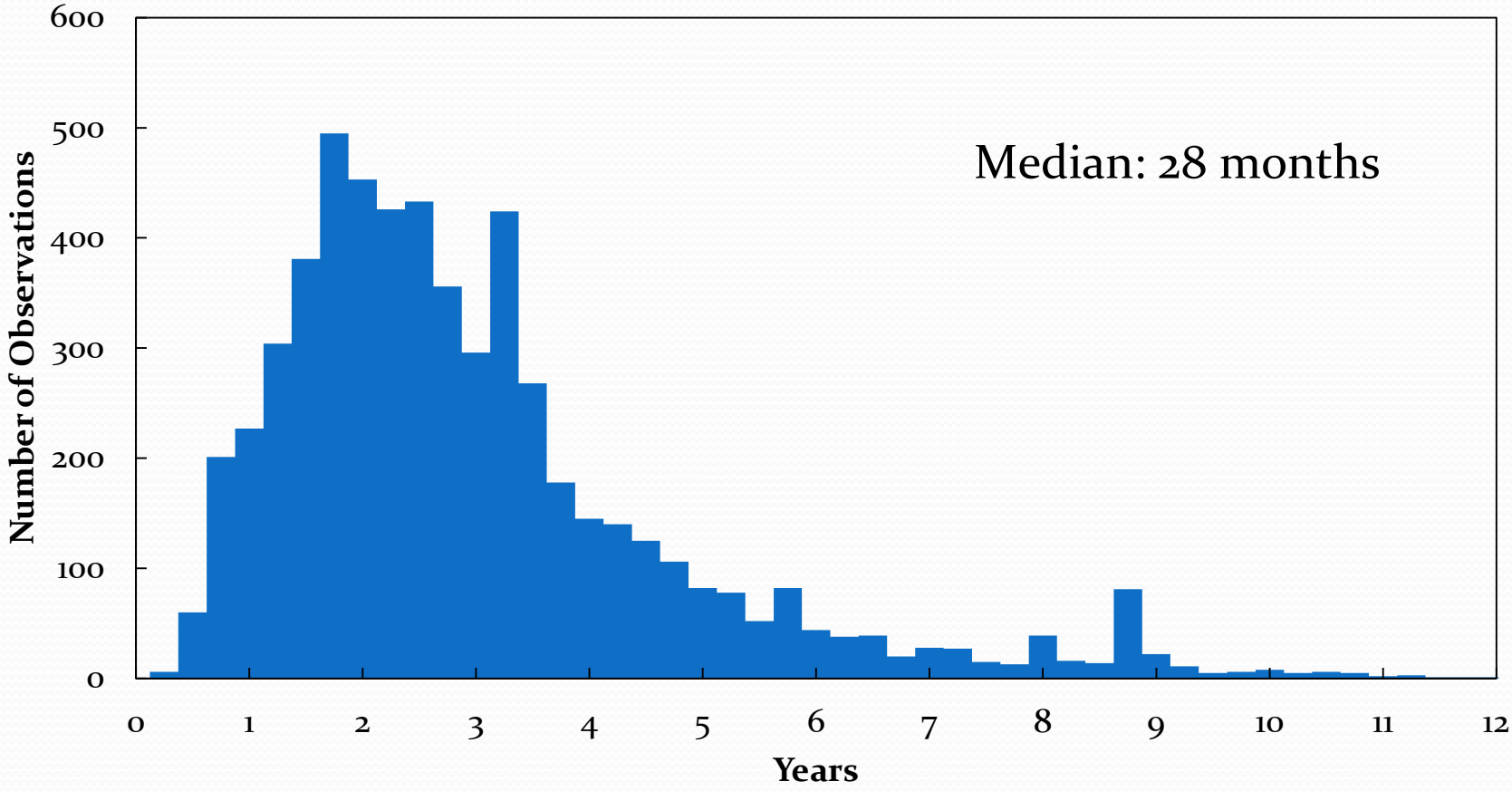
Links to Contributed Datasets

- Users are encouraged to contribute high-level data products derived from Chandra data including, but not limited to, images, graphs, tables in publications
  - CDA will curate them in perpetuity
  - They will be assigned DatsetIDs
  - They can be linked to publications

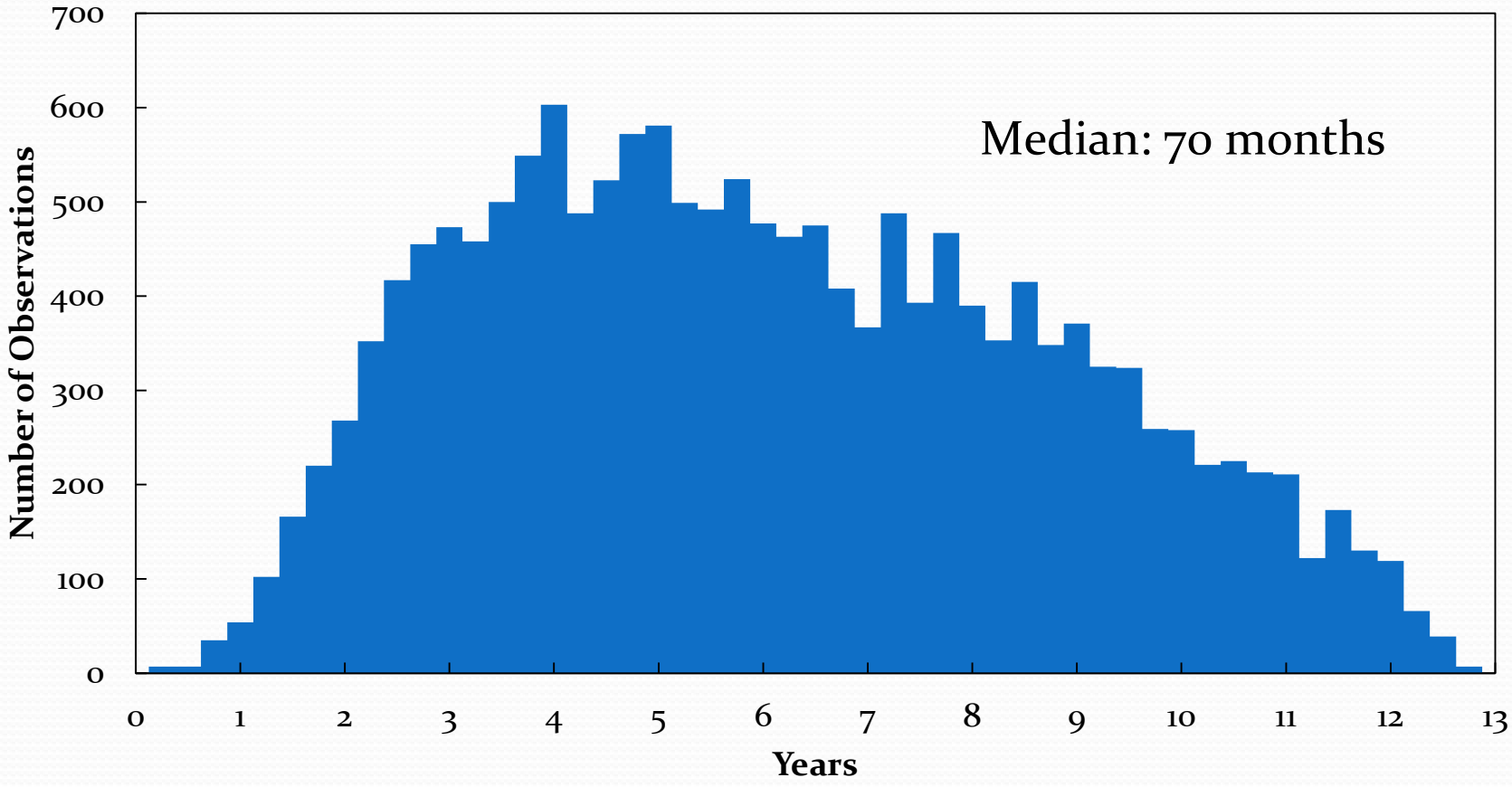
About the mission: metrics

- Traditional bibliometrics are problematic:
  - Plain number of papers is of limited use; for instance, the average number of observations used in a paper has increased dramatically over the life of the mission
  - Number of citations sensitive to self-citation – which cannot be corrected for reliably
- Wealth of metadata in Chandra bibliography offers opportunities for more meaningful metrics – especially because of data-publication links

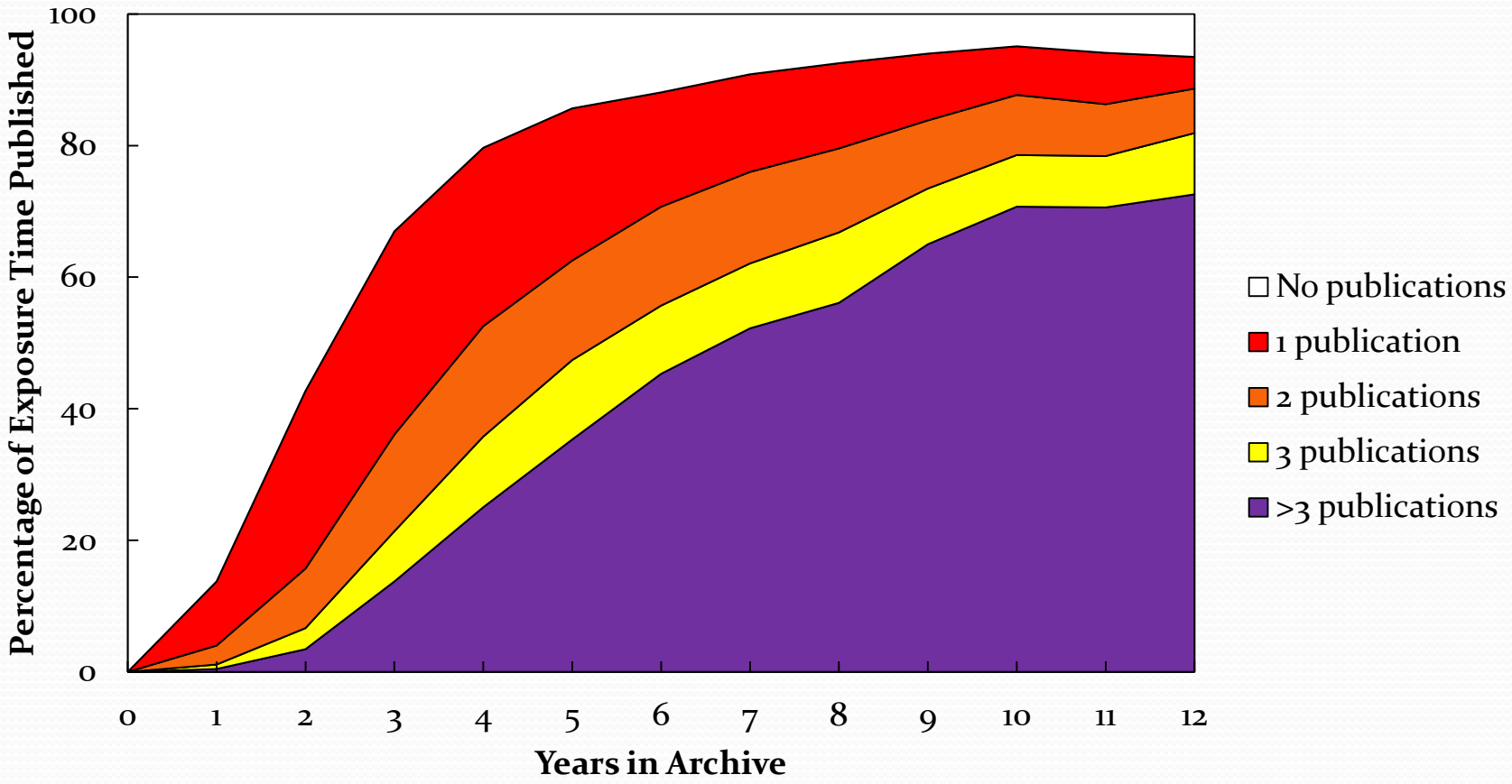
How long till first publication?



Subsequent publications



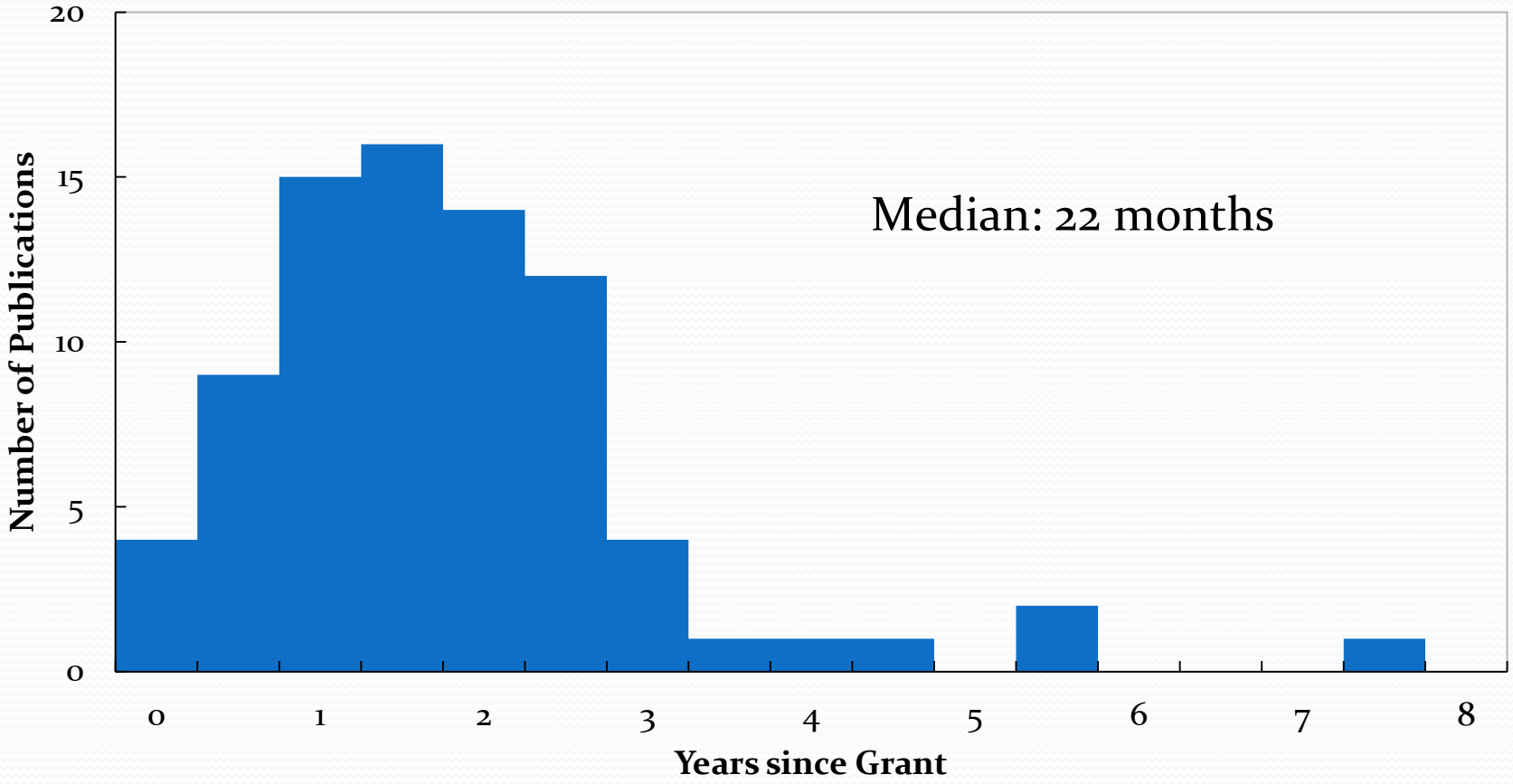
Published percentage of exposure time



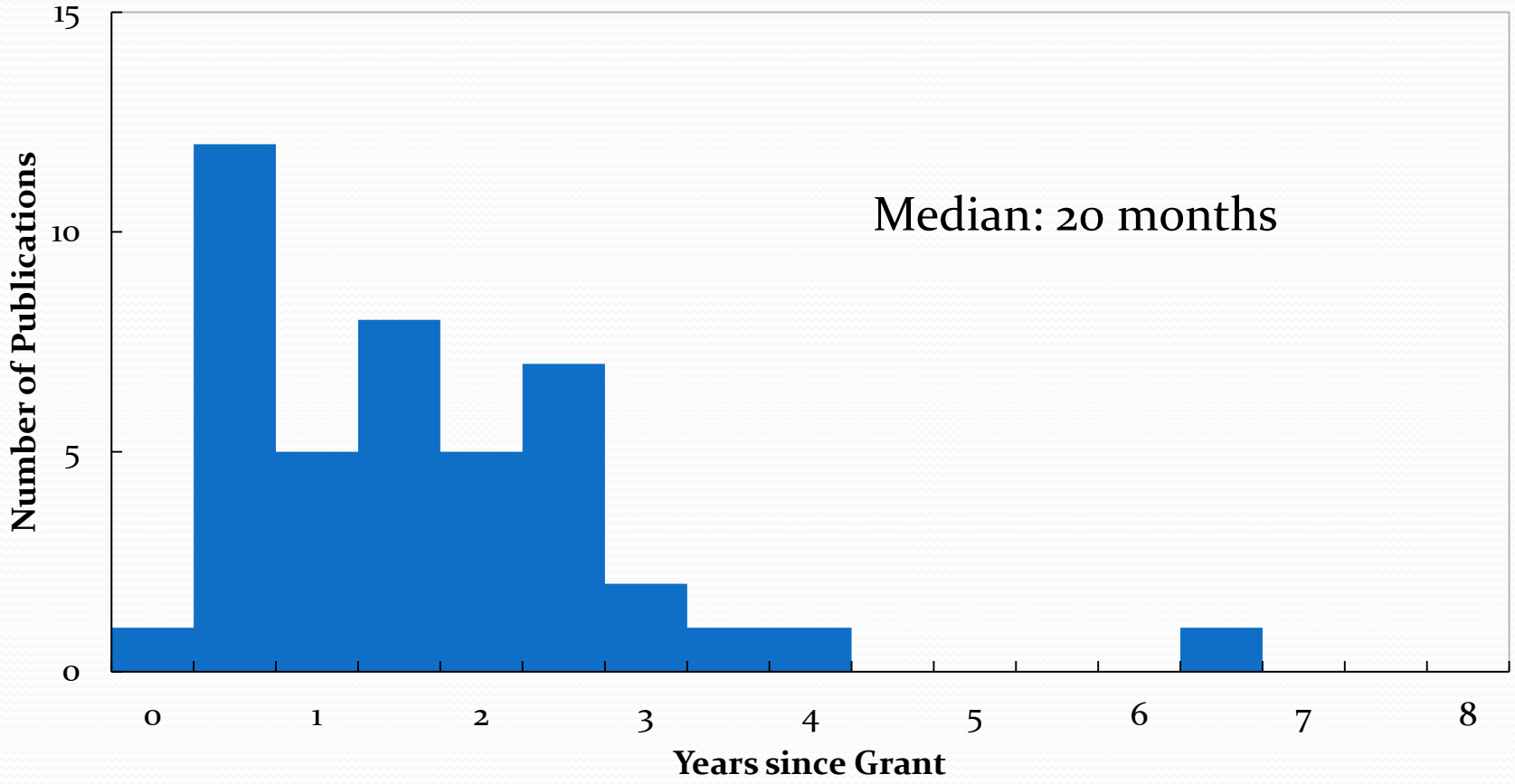
Archive and Theory Proposals

- The publications discussed up to this point have links to observations and we used exposure time as variable
- Could be tied to observing proposals through authors, as well as grant numbers
- For archive and theory proposals all we have to work with are the grant numbers in the acknowledgments
- This is very much a work in progress
  - What percentage of papers acknowledges grants?
  - Are grant numbers correct?
  - Investigate grant number citations in observing papers

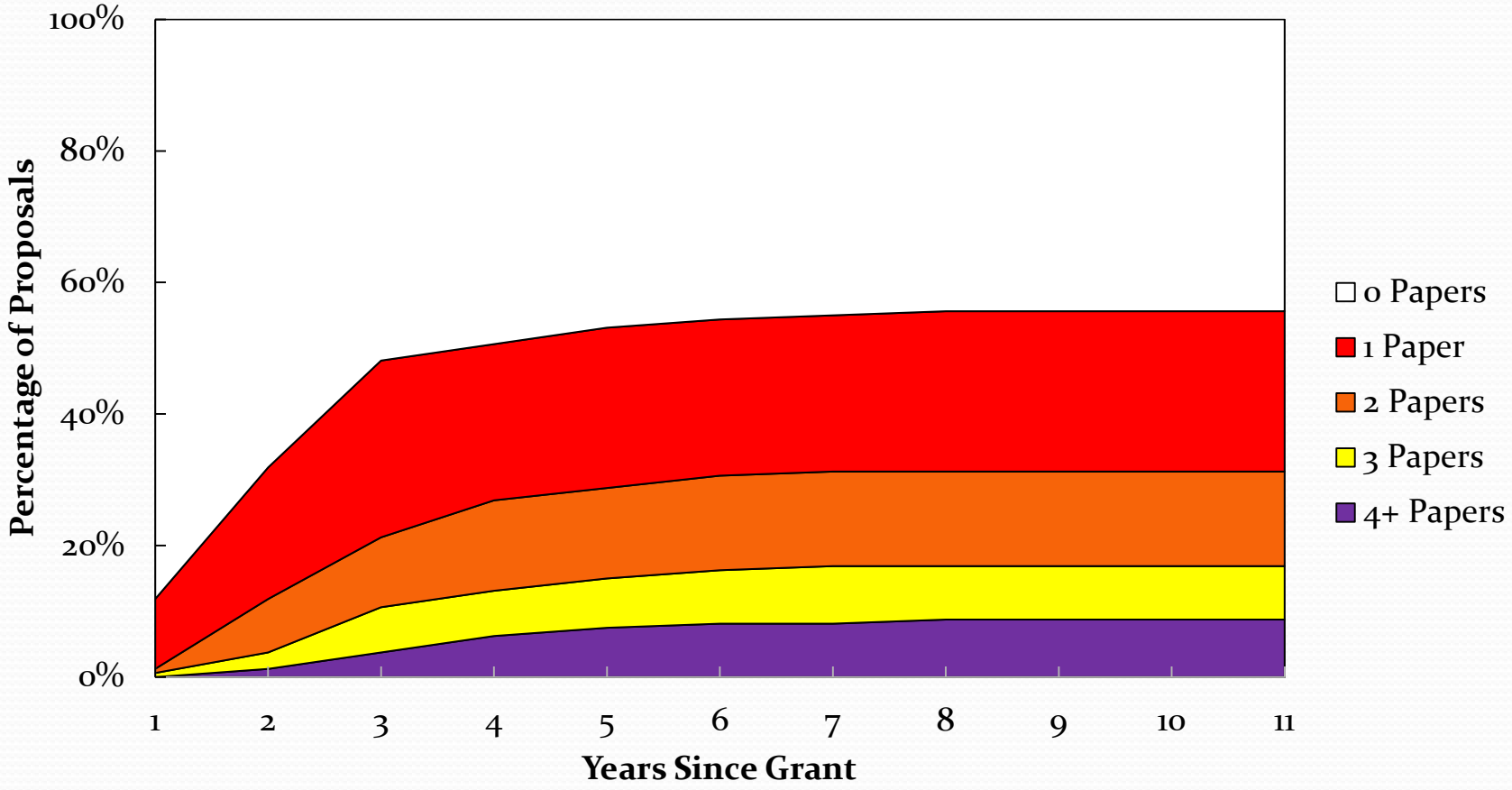
Archive Proposals: First Publication



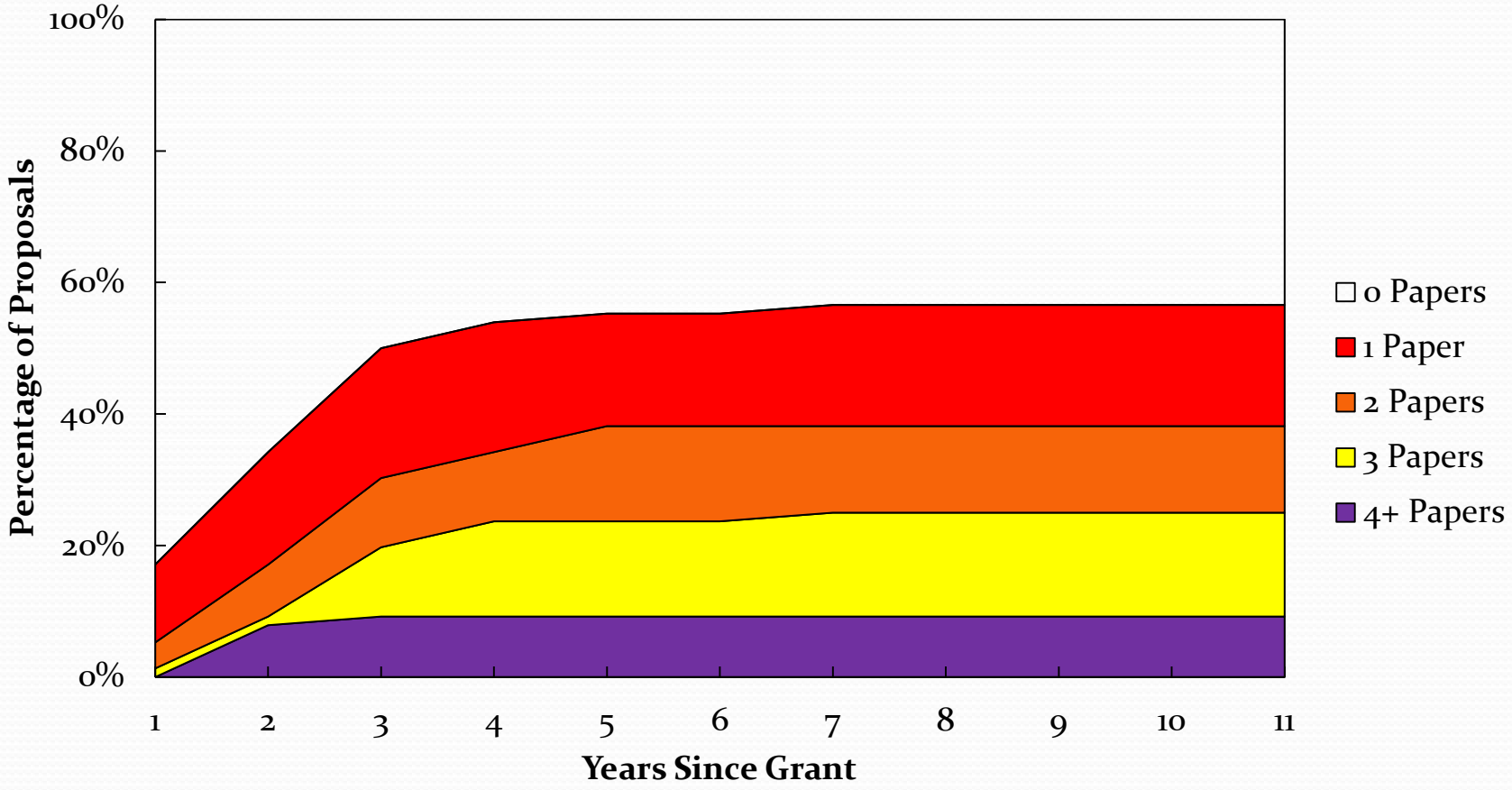
Theory Proposals: First Publication



Archive Proposals: Publications



Theory Proposals: Publications



Further Development

- Include press releases and image gallery
- Aggregate linking
- Full-text search: improve harvesting papers
- Extract grant numbers: tie in grants and proposals; enhance coverage of archive and theory proposals
- More contributed datasets, integrate these sets
- Integrate with RSS feeds

Future Collaborations

- Extended metadata extraction, integration of ontologies, facilitation of semantic tools:
  ADS AstroExplorer
- Text analysis:
  extract more information from text flows than can be obtained just from phrase matching
- SIMBAD/NED links to Fields of View