

From Idea to Implementation: BIBFRAME Becomes Reality

# BIBFRAME Resource Description with Sinopia: New Data & New Opportunities



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UNIVERSITY  
OF ALBERTA

# [ LINKED DATA ]

Implementation Plan

[https://docs.google.com/document/d/1heSEuYO\\_9fry764yWAZak2Zc5J5vpvMB-zqEg4cAPY8/edit?usp=sharing](https://docs.google.com/document/d/1heSEuYO_9fry764yWAZak2Zc5J5vpvMB-zqEg4cAPY8/edit?usp=sharing)

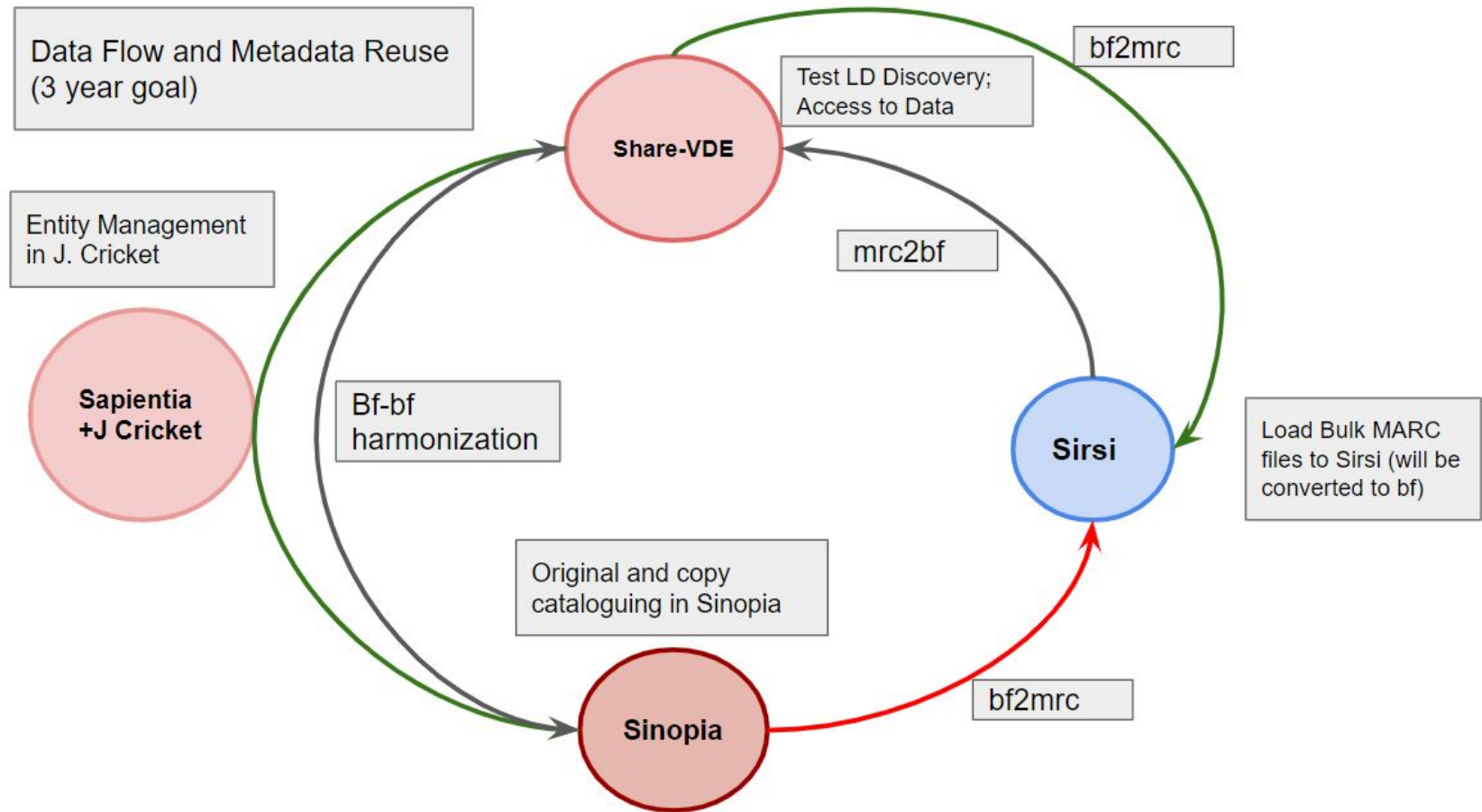
# Requirement: Cataloguing Editor for Linked Data

For those working on implementation, need to move beyond converting data and start describing resources in RDF (BIBFRAME more specifically in this case).

Simple enough right? Except:

- New technology
- New data
- Complex transitional environment
  - Need to support new and legacy systems

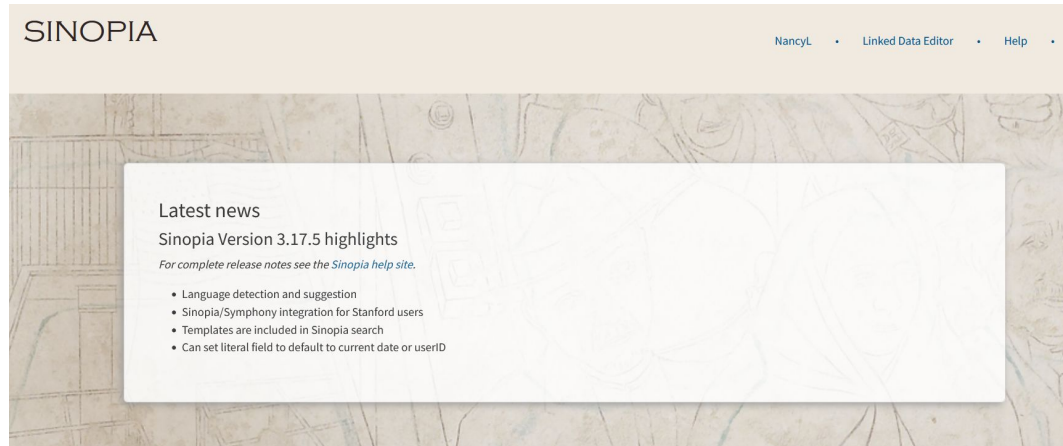
# Connecting systems through transition





# Sinopia

- Developed as part of the Linked Data for Libraries (LD4P) grant series funded by the Mellon Foundation
- Linked data creation environment
  - Linked data template maker & editor
  - Lookups to linked vocabularies via Questioning Authority (QA)
  - Database of templates & descriptions created by members
- Open source
  - Web-based
  - Anyone may join
    - “group membership” allows for restrictions on editing & saving, but not on re-use of templates or descriptions



[stage.sinopia.io](https://stage.sinopia.io)  
[sinopia.io](https://sinopia.io)



# Sinopia

- Templates may use any RDF-based ontology, though the database search favors BIBFRAME and to a lesser extent RDA/RDF
- UAL uses BIBFRAME as its base ontology, with the Library of Congress extension (bflc), along with the Program for Cooperative Cataloging (PCC)
- Templates also act as metadata application profiles for their users
  - Properties/classes to be used
  - Modeling of RDF
  - Required/Repeatable/Ordered
  - Vocabularies
  - Defaults
  - Links to content standards (e.g., RDA)
  - Other help information

SINOPIA - STAGE

Dashboard Editor Resource Templates Actions Search Sinopia

\_PCC BF2 Work (Monograph) WORK

has Manifestation (BIBFRAME Instance)

> Work Title

> Variant Work Title

> Primary Contribution

> Contribution

Form of Work

Date of Work

Place of Origin of the Work

In Series

>

(Geographic) Coverage of the Content

(Time) Coverage of the Content

> Intended Audience

Class Work (<http://id.loc.gov/ontologies/bibframe/Work>)

Optional classes ☐ Text (<http://id.loc.gov/ontologies/bibframe/Text>)

has Manifestation (BIBFRAME Instance)

Property: <http://id.loc.gov/ontologies/bibframe/hasInstance>

Enter your own URI and label

Enter lookup query for has Manifestation (BIBFRAME Instance)

Lookup with: Sinopia BIBFRAME instance resources

Create New

+ Add another has Manifestation (BIBFRAME Instance)

Work Title\*

Title--Work Title

Property: Title (<http://id.loc.gov/ontologies/bibframe/title>)

# New Data

Preview

View:

Turtle

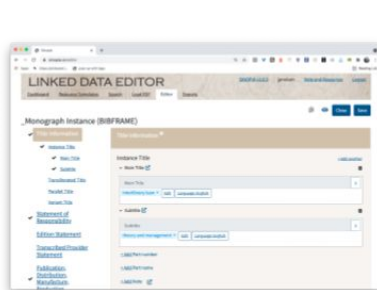
Copy RDF

```
<https://api.stage.sinopia.io/resource/183c9b9d-fb91-4bc9-b9ae-5e1bf7f761f> <http://sinopia.io/vocabulary/hasResourceTemplate> "Stanford:bf2:Monograph:Instance:Literarywork:Version1";
  a <http://id.loc.gov/ontologies/bibframe/Instance>; <http://id.loc.gov/ontologies/bibframe/Print>;
  <http://id.loc.gov/ontologies/bibframe/instanceOf> <https://api.stage.sinopia.io/resource/1cee8053-f5e6-4a08-9103-39becd8f6288>;
  <http://id.loc.gov/ontologies/bibframe/title> _:b6;
  <http://id.loc.gov/ontologies/bibframe/responsibilityStatement> "Ted Chiang"@en;
  <http://id.loc.gov/ontologies/bibframe/editionStatement> "First edition"@en;
  <http://id.loc.gov/ontologies/bibframe/provisionActivityStatement> "New York : Alfred A. Knopf [2019]"@en;
  <http://id.loc.gov/ontologies/bibframe/provisionActivity> _:b7;
  <http://id.loc.gov/ontologies/bibframe/copyrightDate> "02019"@en;
  <http://id.loc.gov/ontologies/bibframe/identifiedBy> _:b8;
  <http://id.loc.gov/ontologies/bibframe/extent> _:b9;
  <http://id.loc.gov/ontologies/bibframe/dimensions> "22 cm"@en;
  <http://id.loc.gov/ontologies/bibframe/issuance> <http://id.loc.gov/vocabulary/issuance/mono>;
  <http://id.loc.gov/ontologies/bibframe/media> <http://id.loc.gov/vocabulary/mediaTypes/n>;
  <http://id.loc.gov/ontologies/bibframe/carrier> <http://id.loc.gov/vocabulary/carriers/nc>;
  <http://id.loc.gov/ontologies/bibframe/adminMetadata> _:b10.
<https://api.stage.sinopia.io/resource/1cee8053-f5e6-4a08-9103-39becd8f6288> <http://www.w3.org/2000/01/rdf-schema#label> "Exhalation"@en.
_:b6 a <http://id.loc.gov/ontologies/bibframe/Title>;
  <http://id.loc.gov/ontologies/bibframe/mainTitle> "Exhalation"@en;
  <http://sinopia.io/vocabulary/bf/nonfilling> 0.
_:b7 a <http://id.loc.gov/ontologies/bibframe/Publication>;
  <http://id.loc.gov/ontologies/bibframe/place> <http://id.loc.gov/authorities/names/n79007751>;
  <http://id.loc.gov/ontologies/bibframe/agent> <http://id.loc.gov/authorities/names/n50062227>;
  <http://id.loc.gov/ontologies/bibframe/date> "2019"@en.
<http://id.loc.gov/authorities/names/n79007751> a <http://id.loc.gov/ontologies/bibframe/Place>;
  <http://www.w3.org/2000/01/rdf-schema#label> "New York (N.Y.)"@en.
<http://id.loc.gov/authorities/names/n50062227> a <http://id.loc.gov/ontologies/bibframe/Agent>;
  <http://www.w3.org/2000/01/rdf-schema#label> "Alfred A. Knopf, Inc."@en.
_:b8 a <http://id.loc.gov/ontologies/bibframe/Isbn>;
  <http://www.w3.org/1999/02/22-rdf-syntax-ns#value> "9781101947883"@en;
  <http://id.loc.gov/ontologies/bibframe/qualifier> "hardcover"@en, "alk. paper"@en.
_:b9 a <http://id.loc.gov/ontologies/bibframe/Extent>;
  <http://www.w3.org/2000/01/rdf-schema#label> "350 pages"@en.
<http://id.loc.gov/vocabulary/issuance/mono> a <http://id.loc.gov/ontologies/bibframe/Issuance>;
  <http://www.w3.org/2000/01/rdf-schema#label> "single unit"@en.
<http://id.loc.gov/vocabulary/mediaTypes/n> a <http://id.loc.gov/ontologies/bibframe/Media>;
  <http://www.w3.org/2000/01/rdf-schema#label> "unmediated"@en.
<http://id.loc.gov/vocabulary/carriers/nc> a <http://id.loc.gov/ontologies/bibframe/Carrier>;
  <http://www.w3.org/2000/01/rdf-schema#label> "volume"@en.
_:b10 a <http://id.loc.gov/ontologies/bibframe/AdminMetadata>;
  <http://id.loc.gov/ontologies/bfcl/catalogerId> "NancyL";
  <http://id.loc.gov/ontologies/bibframe/creationDate> "2022-09-13";
  <http://id.loc.gov/ontologies/bibframe/source> <http://id.loc.gov/vocabulary/organizations/cst>;
  <http://id.loc.gov/ontologies/bibframe/descriptionConventions> <http://id.loc.gov/vocabulary/descriptionConventions/rda>;
  <http://id.loc.gov/ontologies/bibframe/descriptionLanguage> <http://id.loc.gov/vocabulary/languages/eng>;
  <http://id.loc.gov/ontologies/bfcl/encodingLevel> <http://id.loc.gov/vocabulary/mencvl/3>.
<http://id.loc.gov/vocabulary/organizations/cst> <http://www.w3.org/2000/01/rdf-schema#label> "Stanford University"@en.
<http://id.loc.gov/vocabulary/descriptionConventions/rda> a <http://id.loc.gov/ontologies/bibframe/DescriptionConventions>;
  <http://www.w3.org/2000/01/rdf-schema#label> "Resource Description and Access"@en.
<http://id.loc.gov/vocabulary/languages/eng> a <http://id.loc.gov/ontologies/bibframe/Languages>;
  <http://www.w3.org/2000/01/rdf-schema#label> "English"@en.
<http://id.loc.gov/vocabulary/mencvl/3> <http://www.w3.org/2000/01/rdf-schema#label> "Abbreviated"@en.
```

## BIBFRAME RDF output from Sinopia

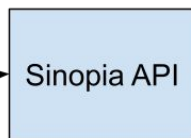
Slide from: Lorimer, Nancy. Closing loops: Moving to metadata production in BIBFRAME at Stanford Libraries. BWE 2022, Budapest, Hungary.

# Sinopia MiddleWare



Cataloger initiates  
publish-to-ils  
workflow with a  
button click

Sinopia API generates a  
SNS message and sends  
it to a SQS queue



SNS  
Message  
with JSON  
body

AWS SNS/SQS



Message  
Queue

Sinopia API used to  
update RDF document in  
backend MongoDB using  
BF Instance URI



- Institutional DAG (Directed Acyclic Graph)
- SQS Sensor Task monitors for SQS Message queue
- When message comes in, BF Instance is sent to rdf2marc
- MARC converted to Symphony JSON



MARC JSON



- Login and create/overlay record with Symphony Web API calls
- Retrieves cat-key
- cat-key is added Instance RDF

cat-key

# Sinopia MARC Output



The screenshot shows a web application window titled "Sinopia MARC Output". It features a button labeled ".Copy MARC" in the top left corner. The main area displays a MARC record in a monospaced font. The record includes fields for leader, 008, 020, 040, 050, 100, 245, 250, 264, 300, 336, 337, 338, 500, 505, 650, 655, 758, and 884, each containing specific bibliographic data and URIs.

```
LEADER 01756nam a22002653u 4500
008 220913s2019 nyu eng||
020 $a 9781101947883 $q hardcover $q alk. paper
040 $a CSt $b eng $c CSt $e rda
050 4 $a PS6303.H53 $b A6 2019
100 1 $a Chiang, Ted $0 http://id.loc.gov/authorities/names/n2001156449
245 10 $a Exhalation $c Ted Chiang
250 $a First edition
264 1 $a New York (N.Y.) $b Alfred A. Knopf, Inc. $c 2019
300 $a 350 pages $c 22 cm
336 $a text $b txt $0 http://id.loc.gov/vocabulary/contentTypes/txt $2 rdacontent
337 $a unmediated $b n $0 http://id.loc.gov/vocabulary/mediaTypes/n $2 rdamedia
338 $a volume $b nc $0 http://id.loc.gov/vocabulary/carriers/nc $2 rdacarrier
500 $a Transcribed publication statement: New York : Alfred A. Knopf [2019]
505 0 $a The Merchant and the Alchemist's Gate -- Exhalation -- What's Expected of Us -- The Lifecycle of Software Objects -- Dacey's Patent Automatic Nanny -- The Truth of Fact, the Truth of Feeling
650 0 $a Short stories, American $0 http://id.loc.gov/authorities/subjects/sh85121819
655 7 $a Fiction $0 http://id.loc.gov/authorities/genreForms/gf2014026339 $2 lcgt
655 7 $a Science fiction $0 http://id.loc.gov/authorities/genreForms/gf2014026529 $2 lcgt
655 7 $a Short stories $0 http://id.loc.gov/authorities/genreForms/gf2014026542 $2 lcgt
758 $4 http://id.loc.gov/ontologies/bibframe/instanceOf $i Instance of: $a Exhalation $0 https://api.stage.sinopia.io/resource/1cee8053-f5e6-4a08-9103-39becd8f6288
884 $a Sinopia rdf2marc $g 20220913 $k https://api.stage.sinopia.io/resource/183c9b9d-fb91-4bc9-b9ae-5e1b0f1f761f $u https://github.com/LD4P/rdf2marc
```

BF Instance for a book  
(Stanford:bf2:Monograph:Instance)

Slide from: Lorimer, Nancy. Closing loops: Moving to metadata production in BIBFRAME at Stanford Libraries. BWE 2022, Budapest, Hungary.

# Output in SIRS Symphony

Exhalation / Chiang, Ted									
Control Bibliographic MARC Holdings Call Number/item Bound-with									
<input type="checkbox"/> Shadow title									
Rec_Status			Rec_Type	a		Bib_Lvl	m	TypeCtrl	
Enc_Lvl	3		Desc	u		Entrd	220913	Dat_Tp	s
Date1	2019		Date2			Ctry	nyu	Illus	
Audience			Form			Cont		GovtPub	
ContPub			Festschr			Indx		LitForm	
Blog			Lang	eng		Mod_Rec		Source	
	Tag	Ind.	Contents						
	020		9781101947883 ghardcover qalk. paper						
	040		CS l beng c CS erda						
	050	4	PS6303.H53 bA6 2019						
	100	1	Chiang, Ted 0http://id.loc.gov/authorities/names/n2001156449						
	245	10	Exhalation c Ted Chiang						
	250		First edition						
	264	1	New York (N.Y.) b Alfred A. Knopf, Inc. c2019						
	300		350 pages c22 cm						
	336		text b 0http://id.loc.gov/vocabulary/contentTypes/bdt 2rdacontent						
	337		unmediated bn 0http://id.loc.gov/vocabulary/mediaTypes/n 2rdacontent						
	338		volume bnc 0http://id.loc.gov/vocabulary/carriers/nc 2rdacarrier						
	500		Transcribed publication statement: New York : Alfred A. Knopf [2019]						
	505	0	The Merchant and the Alchemist's Gate -- Exhalation -- What's Expected of Us -- The Lifecycle of Software Objects -- Dacey's Patent Automatic Nanny -- The Truth of Fact, the Truth of Feeling -- The Great Silence -- Omphalos -- Anxiety is the Dizziness of Freedom -- Stor Notes.						
	650	0	Short stories, American 0http://id.loc.gov/authorities/subjects/sh85121819						
	655	7	Fiction 0http://id.loc.gov/authorities/genreForms/gf2014026339 2 cgft						
	655	7	Science fiction 0http://id.loc.gov/authorities/genreForms/gf2014026529 2 cgft						
	655	7	Short stories 0http://id.loc.gov/authorities/genreForms/gf2014026542 2 cgft						
	758		4http://id.loc.gov/ontologies/bibframe/instanceOf instance of: a Exhalation 0https://api.stage.sinopia.io/resource/1cee8053-f5e6-4a08-9103-39becd8f6288						
	884		Sinopia rd2marc g2020913 khttps://api.stage.sinopia.io/resource/183c9b9d-fb91-4bc9-b9ae-5e1b0f17f61f uhttps://github.com/LD4P/rd2marc						
	918		13717322						
	596		GREEN						

Slide from: Lorimer, Nancy. Closing loops: Moving to metadata production in BIBFRAME at Stanford Libraries. BWE 2022, Budapest, Hungary.

# Converted Sinopia data in FOLIO Inventory

Inventory

Search & filter

InstanceHoldingsItem

Keyword (title, contributor, id)

Search

Reset all

Effective location (item)

Language

Resource Type

Format

Mode of issuance

Nature of content

Staff suppress

Suppress from discovery

Statistical code

Date created

Date updated

Source

MARC

FOLIO

SINOPIA

Tags

Inventory		
4 records found		
Title	Contributors	Publishers
<input type="checkbox"/> Exhalation		Alfred A. Knopf, Inc. (2019)
<input type="checkbox"/> Foxglove summer tale		Victor Gollancz Ltd. (2015)
<input type="checkbox"/> Образование--Культурный код человечества	Chekmarev, V. V.	Kostromskoi gosudarstvennyi univers
<input type="checkbox"/> ليل يديها	Wahbi, Zāhī	Dār al-Rāfidayn (Beirut, Lebanon) (20
< Previous 1 - 4 Next >		

Instance • Exhalation • Alfred A. Knopf, Inc. • 2019

https://api.stage.sinopia.io/resource/183c9b9d-fb91-4bc9-b9ae-5e1b0f1f761f • Last updated: 9/13/2022

Actions

Resource identifier type	Resource identifier
ISBN	9781101947883

Contributor

Descriptive data

Publisher	Publisher role	Place of publication	Publication date
Alfred A. Knopf, Inc.	Publication	New York (N.Y.)	2019

Edition

Physical description

350 pages, 22 cm

Resource type term	Resource type code	Resource type source
text	txt	rdacontent

Nature of content

Format category

Format term	Format code	Format source
unmediated	volume	nc
		rdacarrier

Language

English, English

Publication frequency

Publication range

Slide from: Lorimer, Nancy. Closing loops: Moving to metadata production in BIBFRAME at Stanford Libraries. BWE 2022, Budapest, Hungary.

# Sinopia

- Original and copy cataloguing with BIBFRAME
- Connection with Share-VDE to populate a larger data pool, including the PCC data pool
- Send bf: data to OCLC in RDF
- Sinopia Middleware allowing for BIBFRAME to generate MARC for use in existing ILS

This means that we can look forward to changing original and copy cataloguing workflows to Sinopia (BIBFRAME), while still populating our Sirsi MARC dataset, and contributing to PCC.

Galileo Galilei > "Sidereus nuncius"



Volume ⓘ

## Sidereus nuncius

Astronomical treatise of Galileo.

*Sidereus Nuncius* is a short astronomical treatise published in New Latin by Galileo Galilei on March 13, 1610. It was the first published scientific work based on observations made through a telescope, and it contains the results of Galileo's early observations of the imperfect and mountainous Moon, the hundreds of stars that were unable to be seen in either the Milky Way or certain constellations with the naked eye, and the Medicean Stars that appeared to be circling Jupiter. – [Wikipedia](#)

This is part of the series [Early European books](#), [Early English books, 1641-1700](#), [Warnock library](#), [Classici Ricciardi](#), [Early English books online](#), [Saggi per il nostro tempo](#), [Science et humanisme](#), and [Ursan julkaisuja](#).

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Publication year

Format

Publication place

Contributor

Type

Language

51 results

Sort by (A – Z) ▾



1 • [Sidereus nuncius, or, The Sidereal messenger \(Volume in English, published in 1989.\)](#)

Contributors:

**Thank You!**  
**Hopefully this ruff overview has been helpful**



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While Nancy couldn't be here, she provided an excellent presentation on the amazing work at Stanford at the BIBFRAME Workshop in Europe, which can be found here: <https://www.casalini.it/bfwe2022/>

\*Thank you Nancy for reuse of some of the slides from this talk